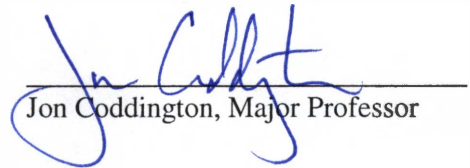
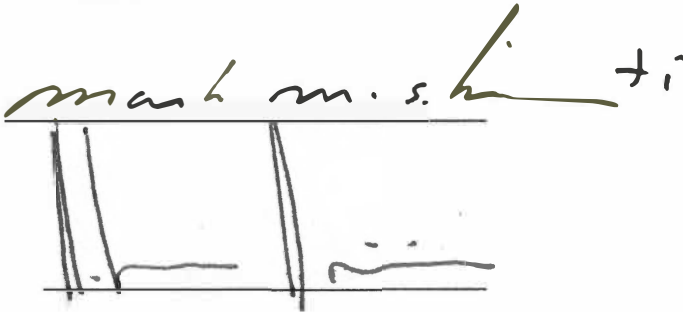


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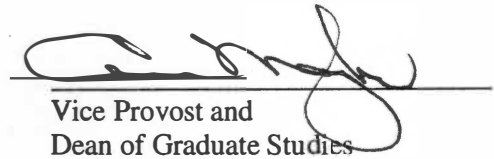
I am submitting herewith a thesis written by Robert Stenhouse entitled "An Exploration in Challenge and Integration." I have examined the final paper copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Architecture, with a major in Architecture.


Jon Coddington, Major Professor

We have read this thesis
and recommend its acceptance:



Accepted for the Council:


Vice Provost and
Dean of Graduate Studies

An Exploration in Challenge and Integration

A Thesis
Presented for the
Master of Architecture
Degree
The University of Tennessee, Knoxville

Robert Bruce Stenhouse
August 2002

DEDICATION

This thesis is dedicated to Fay and David Stenhouse, who have so unselfishly helped me in all of my successes in life.

ACKNOWLEDGEMENTS

There are many people to whom I am eternally grateful for their generous contributions to this project. First I would like to sincerely thank the chair of my thesis committee, Jon Coddington, for his uplifting remarks in my times of doubt, as well as his dedication to my success, to that of my classmates and to the graduate program as a whole. It has been a great pleasure to learn from one so committed to the success of the architectural profession. I would also like to thank the other members of my committee: Professor Adam Drisin for his creative ideas, and Professor Mark Schimmenti, for his willingness to inconvenience himself for my benefit. Thanks to Professor Randy Jones for his wise contribution to this project as well. This proposal would not be nearly as sophisticated, nor would many of the others I have designed over these three years, were it not for their knowledge, expertise and above all, willingness to share.

I would particularly like to thank Detective James Underwood of the Nashville Metropolitan Police Department for allowing me access to the Metro Police bus barns even though that was the September day, 2001, when the United States began its war on terrorism.

I am so grateful to my parents for their unflinching support in this endeavor, as well as the rest of my family. I want to especially thank my brother for his talks and his desire to see me succeed in life. I also am indebted to Christy Downard and her family, who have been behind me every step of the way. She has sacrificed much for my success, and I do not think this degree would have been possible without her help.

Finally, thanks to all those who have said a prayer, asked about how I was doing, and kept tabs on me, even as I was unable to do likewise. Your interest in my life is greatly appreciated, even more than you know.

ABSTRACT

The architecture of today must seek to challenge and simultaneously integrate with the architecture of yesterday. This can be done through design with both thought and creativity. By simply devaluing the old, we lose our rootedness, even as our expressive capabilities become less limited. At the same time, by sanctifying the old, we lose the ability to meet new challenges, even though we are able to preserve our past.

This thesis maintains that it is necessary to build in a way that helps us understand our past but also be mindful that conditions change over time. New buildings must show our partnership with and our differences from the past. This thesis will investigate how one can build by responding to an old condition, and designing in a manner that allows the old to be expressed while showing the nature in which we live today. The thesis illustrates through design the importance of our past, while at the same time encourages the creativity needed to face the significant challenges of our future.

Now, in its day, this was an important concept; and, as a conviction that only the new is fully authentic, one may still feel its cogency. However, whatever may be the authenticity of the new, alongside novelty of artifacts one might just possibly recognize novelty of ideas.

-Colin Rowe,

introduction to Collage City

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CHAPTER ONE: ARCHITECTURAL ISSUES

There are a number of issues that will be dealt with during this thesis investigation. The primary issues deal with adaptive reuse, renovation, sustainability, the impact of modernism on a pre-modern condition, and the transformation of the ordinary into the extraordinary.

ADAPTIVE REUSE

“Adaptive reuse” is the combination of two words: adapt and use. To adapt means to undergo modification or alteration in order to sustain a productive existence in a changing or changed environment. To use means to employ for any purpose, or to put into service. The prefix “re” most often times means again, so to “reuse” means simply to employ or put into service again (Webster). Together, “adaptive reuse” means to undergo an alteration or modification within a changing environment so that an entity can be put into productive service again (Webster). This is how the term will be defined throughout the body of this document. The Gasometer project in Vienna is an interesting example. Coop Himmelb(l)au and others adapted old fuel tanks, turning them into apartments (figure 1.1, 1.2).

Adaptive reuse relates to this thesis project because it is the phrase most commonly used to describe the reuse of an existing building for a purpose other than the one it was originally intended. This thesis has chosen its primary vehicle to be the adaptive reuse of a series of low-rise industrial buildings, formerly gasoline-

Much of our old architecture will be destroyed if it cannot be made productive.
-Robert Jensen

“The Architect’s role in Preservation”
Architectural Record

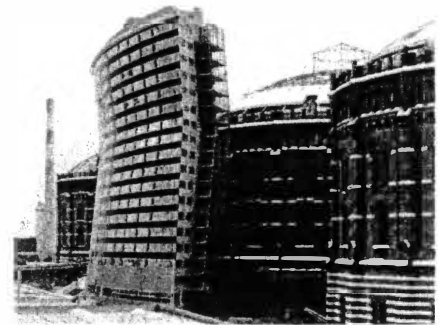


Figure 1. 1: Gasometer Project, Vienna

Source: *Architectural Record*

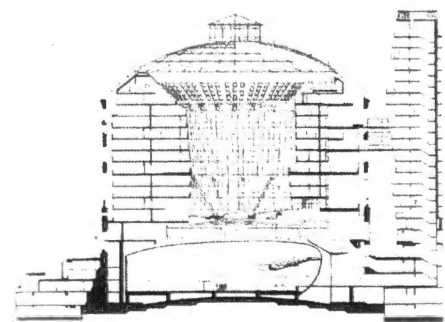


Figure 1. 2: Gasometer project section

Source: *Architectural Record*

powered bus barns and now serving as repair buildings for vehicles of the Metro Police department of Nashville, TN. A new program will be inserted into these existing buildings and this site that will not involve automobiles, even though they were specifically designed for the purpose of vehicle repair

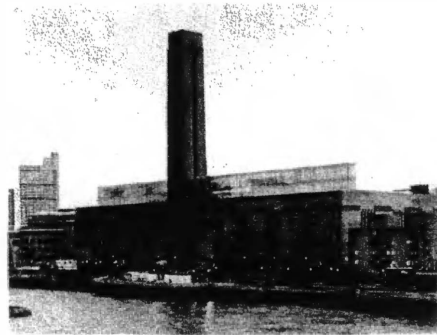


Figure 1. 3: Tate Gallery of Modern Art, London

Source: El Croquis

RENOVATION

Within the context of the expression “adaptive reuse” comes another relative term, renovation. This word has a chain of meanings associated with it, but in its simplest form it means to renew, revive, and/or repair.

An adaptive reuse was chosen as the vehicle for the thesis because an adaptive reuse takes an existing building, primarily something that is old, and adds to it new programmatic and construction elements. The thesis recognizes that there is often a rift between the old and new in modern society. Through the proposed adaptive reuse of these bus barns, this thesis investigates common ground between these two contrasting elements of the architectural landscape. In the process of the adaptive reuse, where the existing site and buildings will be given a new program and the facility creation to match, the buildings and site will be renovated. In the terminology of the thesis, the site and buildings will undergo renewal, revival, and repair.

Another aspect of renovation considers possible ways to help renew the area surrounding the chosen site. The Tate Gallery adaptive reuse by Herzog and Demeuron qualifies as this type of project (figure 1.3). It is conceived as a catalyst designed to revive a portion of

the city that had been previously neglected. Here adaptive reuse is used not just as a building design strategy but as an urban design strategy as well.

The thesis site is located just a short distance from downtown Nashville, and the neighborhood it is located within contains a significant access road leading to the downtown area. The neighborhood has a significant number of buildings but their uses are so widespread there is little cohesion, and almost no identity to the area. Although architecture cannot be looked at to solve these types of ills, neither is it an island that can be thought of as something that will have no impact on the area. On the contrary, this thesis, through its community based programming and its architectural design, has every intention of stimulating life to this rather stale area of Nashville, TN. In this manner the goals of the thesis will be pursued: adding new features to the existing part of a neighborhood to create a greater whole.

SUSTAINABILITY

The thesis project deals with sustainability and its impact upon the architectural design. Sustainability is a multi-faceted idea, however. What follows are the ways it will be considered during the design process.

The first part of sustainability deals with creating an architecture that lasts over a period of time. Christopher Alexander in his book Notes on the Synthesis of Form states that it is vital to be able to make small adjustments to a building that seem integral to the buildings' design. He feels that the ideal situation is a building that is flexible, and does not need to be rebuilt

or renovated every 10 to 15 years. This is the idea that drives this particular aspect the thesis project. The architectural elements added to the project reflect needs and aspirations that the current buildings cannot provide, no matter how radically they may be reconfigured. The existing buildings themselves are inherently flexible, considered by some authors to be the most flexible building type currently existing (Brand, 58). The goal is to create new architectural spaces that can be reinvented again and again over time, allowing the present to always be engaged with the past. An example of this is “building 20” located near the campus of MIT. in Cambridge, Massachusetts. The building was originally designed for experiments in radar during World War II (figure 1.4). Since the war it has been used by MIT students as offices or laboratories (figure 1.5). Due to its inherent flexibility, students find the building an easy place to work, spread out, and to do experiments without the worries of destroying a more restrictive building plan. Note the add-ons, shingles, and how the “in-between” spaces have been turned into rough courtyards.

A second aspect of sustainability to be considered will be the renewal of most of the existing buildings on the site. The thesis pursues the interdependence of old and new and therefore will reuse some of the existing buildings. It is not to be a restoration thesis, however. The buildings on the site cannot simply be restored to their original condition, as “museum pieces.” In the thesis design, the old cannot be thought of as absolutely precious. New and existing buildings have reciprocal relations with one another, each collaborating with the other as well as with the site.

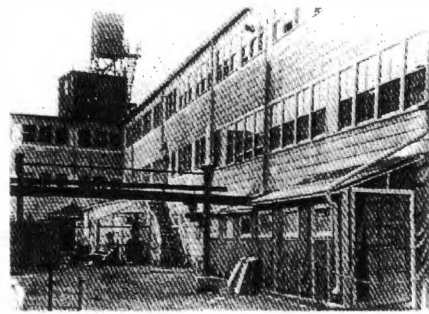


Figure 1. 4: “Building 20,” 1945

Source: [How Buildings Learn](#)

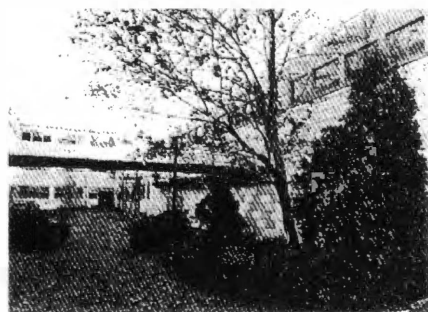


Figure 1. 5: “Building 20,” 1990

Source: [How Buildings Learn](#)

The project must be thought of as an enhancement to what already exists.

MODERNISM

The next issue to be used as an avenue for exploration is the agenda of modernism and its relation to these part-modern part pre-modern existing buildings. These one story sheds are constructed of brick and mortar supporting steel roof trusses. Windows are cut into brick infill walls to provide light. They were built for one purpose only, as buildings to house the industry located within their spaces. Currently, many of the existing buildings' windows are boarded or have screens on them. It is hard to tell whether the buildings had enough light when they were first built. The inclusion of light is an important part of the design and the influence of modern ideas.

Modernism embraced the freedom of industrial interiors, with their free spans and flowing, open spaces as an inspiration for a new type of architecture. The existing buildings have aspects of both the modern and the pre-modern, and in essence there exists the language of an integration of old and new architectural technologies before the design is even begun. The fact that the newer lighter material rests and relies on the older, heavier material is a powerful design statement, speaking directly towards the thesis. The Ford Factory in Detroit is an example of what the moderns were looking for when it came to their search for spaces that were light-filled and airy. They desired to move away from the tradition of dark, cave like structures into light, tent-like buildings.



Figure 1. 6: Ford Factory

Source: [Industrial Buildings](#)

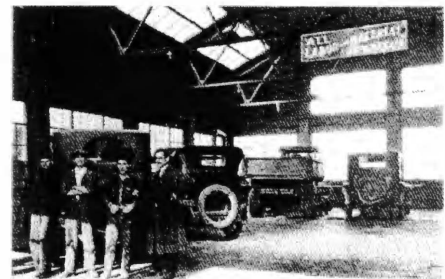


Figure 1. 7: Garage 1925

Source: [How Buildings Learn](#)



Figure 1. 8: 1925 garage in 1993

Source: [How Buildings Learn](#)

Modernism is also a theory based on the health and welfare of the common man, and the programmatic elements of the thesis emphasize this aspect of the modern movement. The primary programmatic element revolves around the creation of a wellness center. The premise behind a wellness center is based on a holistic approach to health, where one treats the emotional and spiritual aspects of the body, not only the physical ones. LeCorbusier talks about the “necessary degree of health and peace to enable men to meet the anxieties of work,” and the program of a wellness center is designed to provide a healthy environment as well as preventative care for all ages and walks of life. The idea that health, hygiene and a healthy lifestyle is vital to the differences between modernism and pre-modernism. The wellness program is truly one that has roots in modernism.

ORDINARY AND EXTRAORDINARY

Finally the thesis will examine how to make an ordinary, everyday condition into something extraordinary. To achieve its best results, the thesis explores a building or set of buildings that are relatively ordinary and carry little or no architectural significance (figure 1.8). If there is pressure to sanctify or preserve the existing architecture, such as the Metro General Hospital building located adjacent to the site, then interdependence cannot be achieved (figure 1.9). The bus barns are to be adaptively reused as a wellness center. The hospital building in turn will most likely be turned into housing. Both of the previous conditions are somewhat ordinary, especially the bus barns. The new programs create renewed interest in both the barns and

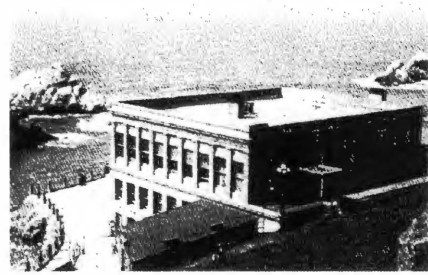


Figure 1. 9: From Ordinary...

Source: [How Buildings Learn](#)

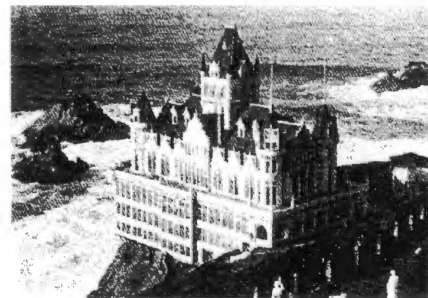


Figure 1. 10: to extraordinary...

Source: [How Buildings Learn](#)



Figure 1. 11: back to ordinary

Source: [How Buildings Learn](#)

the hospital, taking advantage of their strategic location on the bluff and up on the hill.

The spaces within the bus barns are long, narrow and dark because of little light penetration through the walls and none through the roof. In contrast, the spaces between the buildings are long and narrow yet flooded with light, due to the fact the sheds are only one story and do not block out sun nor give an intimidating sense of enclosure. The removal of sheds to the west end of the site allows free movement of the space that is located between the buildings creating a rhythm of closed and open spaces. By taking advantage of the potency of this site and giving it public access, this ordinary set of garage buildings will open themselves up to the extraordinary potential of this site.

These issues are the determining architectural factors that are considered within the context of the thesis design. The issue of adaptive reuse is explored by the reprogramming of the existing garage buildings located on the site. Renovation is explored by determining the new construction that is placed within and among the buildings chosen to be reused. Ideas of sustainability over time and the reuse of the existing buildings instead of their demise, all fall under the umbrella of sustainable design. Finally the driving ideas behind modernism and how they can be used to influence these pre-modern buildings is addressed.

CHAPTER TWO: THE PROGRAM

The program for the thesis project is a wellness center. Wellness centers are more than gyms or health clubs. They are the physical manifestation of a decidedly new way of thinking about health and what living a healthy lifestyle means.

Any major new addition to older buildings requires that the architect be a bridge between one era and another.

-Robert Jensen

THE WELLNESS PHILOSOPHY

Wellness as a term can best be described by its practitioners. Dr. William Dunn, one of the first doctors to define individual wellness in 1959, states wellness is “an integrated method of functioning which is oriented towards maximizing the potential of which the individual is capable, within the environment where he is functioning” (Swinford 3). Patricia Swinford and Judith Webster, co-authors of Promoting Wellness, A Nurses’ Handbook, describe wellness as “the integration of mind and spirit - the appreciation that everything you do, think, feel, and believe has an input on your state of health” (Swinford, 36).

Programs of wellness centers differ, but the following seems to be typical for most types of wellness centers:

“A Community Wellness Center is a specially designed medical building that merges curative and preventive care. A Community Wellness Center incorporates a variety of services including: Primary Care, Specialty Physicians, Physical Therapy, Occupational Medicine, Ancillary Services, Modern Fitness Center, Health Education Classrooms, Youth Activity

Center, Children's Programs, Synergistic Environment, Recreation, Leagues, Instruction, Personal Training, and Weight Management.”

The Glastonbury Wellness Center

Healthtrax, a company with world wide web presence shares their wellness center mission statement:

“Our mission is to serve as a community resource for health improvement, combining traditional medical services with prevention, rehabilitation, fitness, education and wellness services... Youth Conditioning programs, Martial Arts classes and many other activities involve children of all ages. Student, Senior Matinee and Grandparent Plans permit three generations to exercise together...”

Especially applicable to this thesis is the notion of a community resource, the involvement of all ages of people, a place where all generations can come together.

The philosophy is based on a personal responsibility towards well being that involves a holistic view, seeking to pursue health not only physically, but mentally and spiritually as well. These holistic values “encompass self-responsibility, physical fitness, nutrition, internal and external environment, and psychological/social/spiritual aspects of [a] person” (Swinford, 35). Where a health club has places to work strictly on physical fitness, a wellness center includes rooms for classes, health education, youth activity and other opportunities for health promotion. When in treatment, the individual is the focus instead of the ailment (ibid). Finally, the ultimate goal is for balance. The wellness approach believes that individuals know

themselves best, know when they are ‘out of balance,’ and in turn should know what is best and what works most for them (ibid).

WELLNESS AND RENOVATION

In the architectural vocabulary for the thesis, there are a number of parallels between the proposed program and the definitions of wellness. Renovation, one of the terms referred to most throughout the thesis is defined as to renew, revise, or repair; to restore to good condition. Adaptive reuse, another oft used term is defined as undergoing an alteration or modification within a changing environment so that an entity can be put into productive service again.

When compared, the architectural terminology sounds remarkably the same as those from wellness terminology: ‘achieving your highest potential; an active process...toward a more successful existence; pursuing the highest level of health within your capability; an integrated method of functioning which is oriented towards maximizing the potential...within the environment where he is functioning.’ This overlap of meaning is further reinforced when practitioners use architectural terminology to describe the “building blocks” of the wellness lifestyle. Swindon and Webster state, “All the dimensions of wellness – self responsibility, nutritional awareness, environment (internal and external) physical fitness, and psychological/spiritual/social – must be considered in building a framework for self care. Finally, buttressing the framework is the individual’s potential for moral development...” (Swindon 36).

Much of the theory behind wellness behavior lies in the change from an unhealthy lifestyle to one that is more productive mentally, physically and spiritually. The premise behind renovation and adaptive reuse is to “improve the life” of existing structures. Overall, it seems that wellness and adaptive reuse have a sense of commonality in their goals, making them appropriate partners for the thesis.

This thesis calls for challenge and integration between new and old, and that idea must reflect not only in site choice, but also in the program. A wellness center is appropriate because they are designed to attract and benefit people of all backgrounds, those healthy or unhealthy, those young or old (Glastonbury mission statement). All of these differing types of people come together in one place with a common goal, to make themselves healthier physically, mentally, and spiritually. As this wide range of ages, backgrounds and lifestyles come together, a physical interaction of old and young people happens at the same time and place where old and new architecture is coexisting. In addition, the program is one of activity and movement, which the context of the site and its placement dictates. Finally, the wellness goal is to revitalize and encourage life, ideally one more pleasant and desirable because of the physical, spiritual and mental strength they help people achieve. The renovation of these barns creates a community of buildings that create a coherent whole while still retaining their distinct identity. This is reflective of how the larger community is to be affected by the introduction of this program.

NEIGHBORHOOD RENOVATION

The wellness center and its placement within the old bus barns is planned to be a catalyst for new development within this area of Nashville known as Rutledge Hill. As it stands right now, this area is quite fragmented, being a mix of renovated structures, wholesale commercial businesses, retail businesses, offices, new housing and large plots of under-developed land. The focal point of the entire area is the site where the now vacant Nashville General Hospital is located. Located at the highest elevation in the area, this large building is a dominant figure in the landscape.

A design charette called The Plan for Sobro took place in Nashville in 1997. In this plan, significant amounts of housing are proposed for this area, of which a large portion is planned for the hospital building. If this were to eventually materialize, there would be a need for the residents of Rutledge Hill to have a place to gather and stay physically fit. The addition of a wellness program and its emphasis on sound, well-rounded health awareness is an asset to overall community building, which a newly developed area of any city needs. In fact, Carolyn Clark, R.N. goes so far to say that “All communities, schools, companies and agencies can benefit from wellness programs” (Clark, 295).

The bus barns are the place where the coming together of old and new takes place. The barns will undergo a renovation when the new elements are placed within them. The Wellness program in the same manner will be used to help revitalize members of the local community, ideally giving people of various ages a place to come together and intermingle, creating a place where old and new come together. Therefore three

layers of renovation at different scales happen within the thesis proposition. Health is restored to a building with the introduction of the new use and the subsequent renovation. Health for the people who use the wellness facilities essentially renovates those whose lives are bettered from the program. Finally, there is particular potential to renovate the surrounding neighborhood, acting as a catalyst for healthy thinking and community involvement, although it does not attempt to prove or demonstrate this.

MAJOR PROGRAMMATIC ELEMENTS

Amphitheater (49,000 square feet)

Public outdoor space for live shows, as well as for individuals to use during downtimes. Located at the base of the old Nashville General Hospital building which is proposed to become residential, and renovates the existing topography to make it useful for our times.

Bath (5700 square feet)

A series of pools that are designed to replicate the baths of Vals and ancient Rome, if not in manner, in the form behind them. In addition to the public bath, private saunas are located adjacent to the pools which look out into a semi-private garden.

Cardiovascular Area (4300 square feet)

Area dedicated to cardiovascular equipment such as treadmills, stationary bikes and stair climbers (fig. 2.1). Also contains spaces for stretching and body composition analysis. Purpose is to enhance muscle

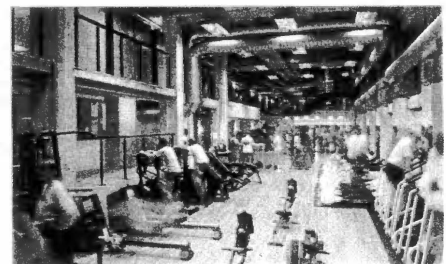


Figure 2. 1: Cardiovascular Area

Source: *The Architect's Journal*

Strength, endurance, and flexibility (Swindon 103).

Central courtyard space (16,300 square feet)

Provided as a place for the community to come together. Part garden and part green space to sit in and meet or greet others. Located on the diagrammatic axis of the project, in between the amphitheater and the inhabitable roof of the gymnasium.

Dance/exercise studios (2800 square feet)

Designed to be the 'endcap' on the gymnasium, with an emphasis on views as its dramatic location looks over the Cumberland River. Versatile spaces with storage areas that support aerobic workout programs as well as dance.

Doctor offices and Consultation spaces

(10,300 square feet)

Private spaces that a variety of doctors would use in the wellness center. Outdoor consultation spaces are provided to support interviews or for client counseling. These offices are located in the renovated building that also serves as the main entrance into the center.

Gallery (3500 square feet)

Public space provided for people of the community to display various types of artwork, or for small exhibits to be displayed.

Gymnasium (22,700 square feet)

Flexible indoor public space designed for all types of activities. Inserted into the existing landscape as a way to involve the thesis of the project into the design. Connected to the wellness center by a grand stair and a long handicapped access ramp. The roof is occupiable (grass) and adds new language to the way the integration of building and landscape is understood through continuity of surface. The gym is part of the new, and is understood and seen within the context and in contrast to existing and more typical landscape/building connection. Provides another communal gathering area complimenting the amphitheater.

Interior 'courtyard' (4900 square feet)

Public area that serves as an indoor meeting and eating area. Located to the west of the outdoor courtyard, and designed as an extension of the outdoor courtyard. Placed adjacent to the sandwich bar/kitchen as well. This area is terraced, as it leads directly to the grand stair which descends to the gymnasium.

Meditative Japanese garden (3850 square feet)

A public garden space with areas of semi-privacy that allow for contemplation, meditation and quiet. Located in the relatively secluded area in between the entrance building and the structure housing the cardiovascular and weight room (fig. 2.2).

Landing (6000 square feet)

A public space designed to connect the site to the whole of Nashville. Boats can dock here for people to use the facility. A stop would be established here as a



Figure 2. 2: Looking into the Japanese garden

Source: The Japanese House

connection between downtown and other area attractions along the Cumberland River. A ramp system is attached to the cliff face to allow access to the landing. A tower is built with elevators and stairways as a further access point to the landing and proposed greenways.

Library (5518 square feet)

A public space to be used for information gathering and current periodicals research. Also included is an outdoor reading area that inserts itself into the shell of one of the removed buildings. Located adjacent to the gallery area.

Pools

The wellness center will take advantage of three pools designed for a variety of purposes. The main indoor pool is located in the northernmost building and is used year round to serve as a family pool and for competitions as well. The outdoor pool and deck is primarily for general use, but is large enough to hold competitive meets. A lap pool is designed primarily for individuals to swim unencumbered. It is set up as a long, thin pool for swimming laps. The indoor pool resembles the project shown above where an indoor pool is creatively placed right in the middle of the project (fig. 2.3).

Run/walk track

Essential to any physical fitness facility, the run walk track is to be used by all people no matter their physical ability. A winding track that will add variety to those using it. On the west end of the track it encloses a garden space, where runners and walkers can stop to rest.



Figure 2. 3: Step pool

Source: *The Architect's Journal*

Sport fields (222,000 square feet)

Two fields, a soccer field and baseball field, are placed to the west of the wellness center where at one time a large city-owned warehouse and asphalt lot once stood. The fields take advantage of the existing topography; the elevation lowers as it heads towards the west and downtown and the land is terraced so that the baseball field is at a lower elevation than the soccer field.

The Program

A Wellness Center for Nashville

Patron Support Spaces

Entrance/Lobby	1026	sq. ft
Library	5518	sq. ft
Gallery	3538	sq. ft
Locker Rooms	3388	sq. ft
Café	2445	sq. ft
Indoor Court	4897	sq. ft
Toilets	644	sq. ft
Observation Deck	7570	sq. ft

Health and Recreation

Cardiovascular/stretching/weight	9191	sq. ft
Indoor pools and decks	24,174	sq. ft
Dance/exercise Studios	2808	sq. ft
Bath	5691	sq. ft
Saunas	3608	sq. ft

Medical Consultation

Doctor Offices	4928	sq. ft
Consultation	3726	sq. ft
Meeting Rooms	1712	sq. ft

Staff Support Spaces

Offices	1108	sq. ft
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Outdoor Spaces

Amphitheater	31,415	sq. ft
Courtyard	16,380	sq. ft
Meditative Garden	3848	sq. ft
Other Gardens	41,000	sq. ft
Pool and deck	35,583	sq. ft
Observation Deck	7676	sq. ft
Landing/Boat Dock	6000	sq. ft
Circulation Tower	676	sq. ft

Athletic Fields	222,000	sq. ft
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Building Support Spaces

Mechanical / Circulation Spaces	27,000	sq. ft
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Parking	149 cars
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TOTAL INDOOR SPACE	112,972	sq. ft
TOTAL OUTDOOR SPACE	142,578	sq. ft

Figure 2. 4: Summary of the programmatic requirements.

CHAPTER THREE: THE SITE

OVERVIEW

In order to investigate the thesis proposition, a site is required that contains an older condition with the opportunity to insert elements that are new. The site could not be located in a 'new' place, because the lack of an older context would not allow interaction between the two conditions. Likewise, a site within an older area would be inadequate. A site that exists in an area in between these two conditions would be ideal.

Renovations are often times a catalyst for future development in marginal areas of cities. Instead of placing the proposal into a relatively stable and vibrant area of a city, a site that provides an opportunity for architecture and the program to renovate the neighborhood would be an essential component. The idea of renovating a neighborhood coincides with the idea of renovating buildings as well as an opportunity for people to become "renovated" in the choice of a wellness center for the program. An appropriate site fulfilling these requirements exists along the bluffs overlooking the Cumberland River in Nashville, Tennessee.

LOCATION

The thesis site is located to the east of downtown Nashville, TN. Primary access is from Hermitage Avenue, which runs roughly east west and is the southernmost boundary of the site (figure 3. 2). Closer

At every step, another man's ideas and another era's ways must govern. There is no room for ego in a good restoration.

- Robert Jensen

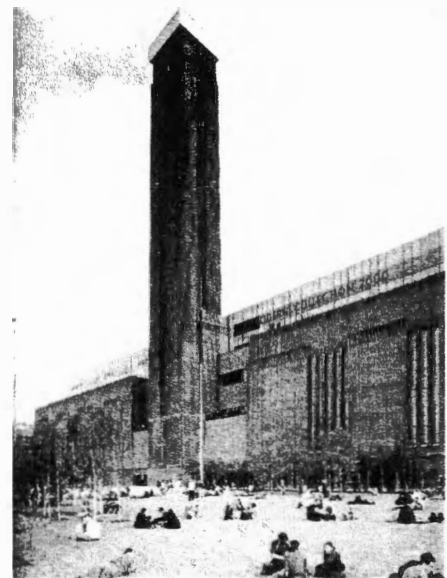


Figure 3. 1 Tate Gallery, London

Source: El Croquis

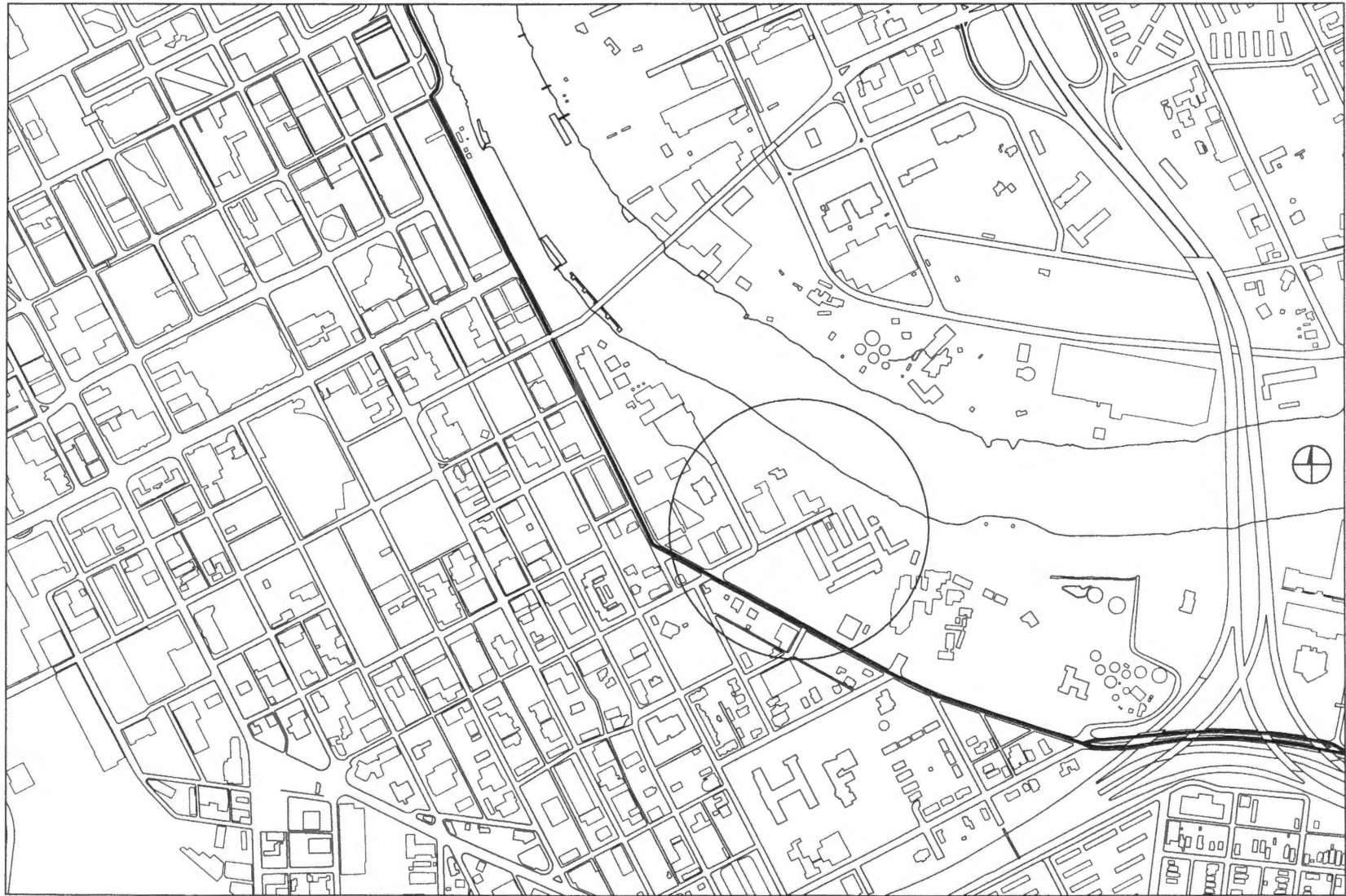


Figure 3.2 Hermitage Road Adapted From: Nashville Planning Department - Mapping Services

to downtown, Hermitage becomes First Avenue, connecting by roadway the site to Broadway, the main downtown artery, and then to the old public square of Nashville where the courthouse is now located. Immediately there is a physical connection between the site, the main street of downtown and tourist area, and one of the older sections of the city.

To the east of the site (moving away from downtown) Hermitage Avenue follows the Cumberland River and becomes one of the links between downtown and the suburbs, one of the newer areas of Nashville. Every weekday along this route, commuters from the newer suburbs travel past the site downtown to work.

Immediately surrounding the site is an unconnected series of buildings that contain a similarly unconnected arrangement of programs. A radio station, older housing, dense new residential housing and renovated buildings that now exist as offices are just a few of the wide array of businesses within this location of the city, also known as Rutledge Hill (figures 3.3 – 3.5). The wider area is known as SoBro, short for south of Broadway. SoBro is bounded by Interstate 65/40 to the south and the Cumberland River to the North and East. To the West it is bounded by Broadway, the main east-west thoroughfare in downtown (figure 3.6). This region is slated to be the next big area for investment and development by the city of Nashville. The Gaylord sports arena and the Country Music Hall of Fame are two large projects developed in this area in recent years.

Rutledge Hill connects to another area of Nashville by pedestrian bridge (Fig. 3.7). Located near this bridge is a gated community (fig 3.8). This connection allows Rutledge Hill to be reached by a

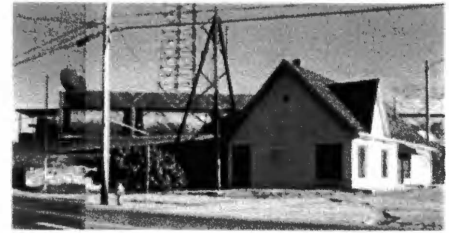


Figure 3. 3: Local Radio Station

Source: Author



Figure 3. 4: Rutledge House

Source: Author



Figure 3. 5: Renovated Vanderbilt University building

Source: Author

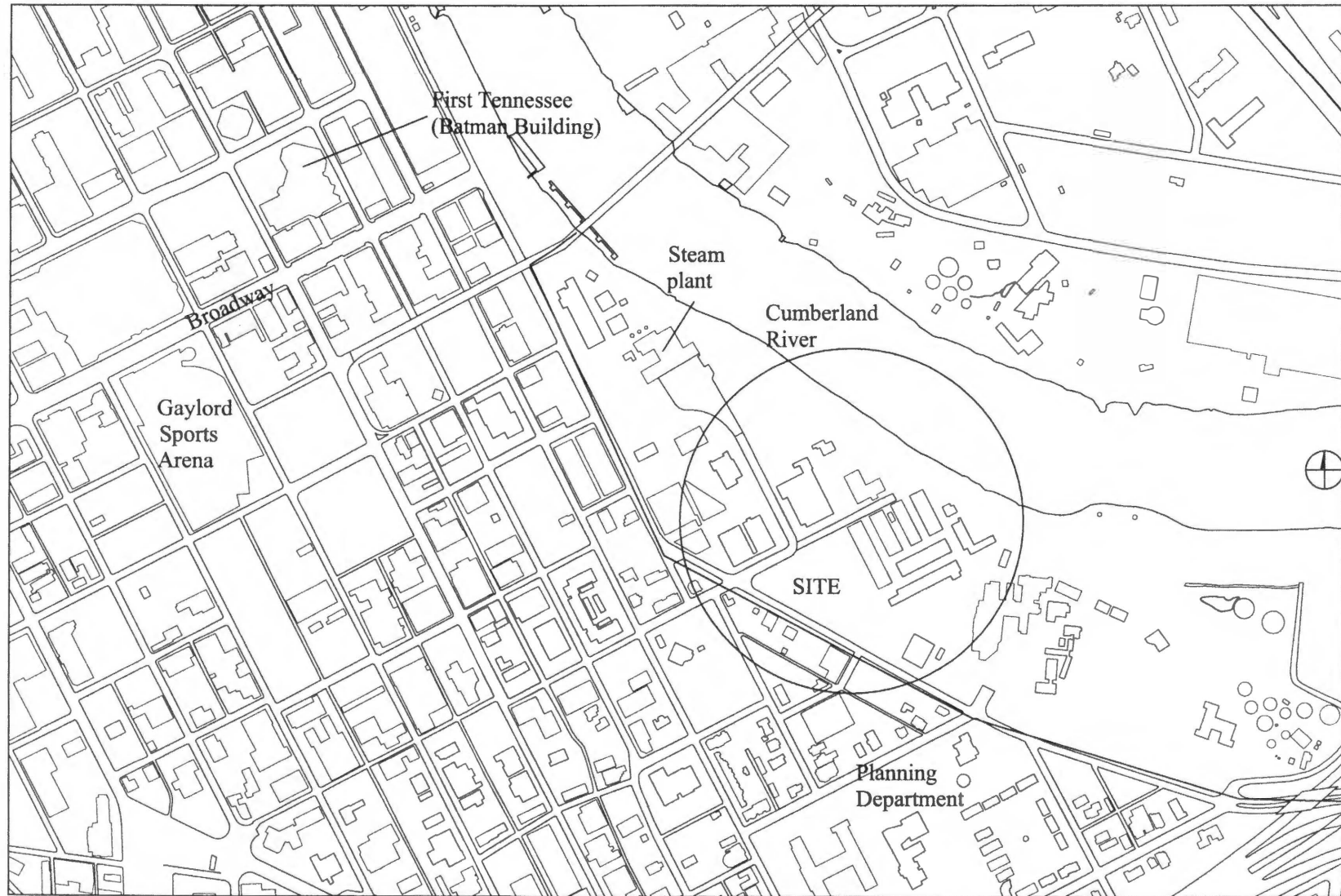


Figure 3. 6 Existing Buildings (SoBro), Nashville Adapted From: Nashville Planning Department - Mapping Services

densely populated and project dominated part of southern Nashville, and links the site with a density of people that would walk or use a bicycle.

The topography of the site and the surrounding area is significant (figure 3.9, 3.10.). The area of Rutledge Mill Hill is one of the highest points in the city, second only to the hill that the Capital building is located. From inside the site, one can see the skyscrapers of downtown to the west northwest, as well as Adelphia Coliseum to the northwest (figure 3. 11). To the east is located the old Nashville General Hospital, now vacant. The hospital building itself stands at an elevation of around 40-50 feet above the site at its base, the building towering 50 feet over the neighborhood and site (fig. 3. 12). The location of the hospital and its presence start to determine the programmatic aspects for this site. The hospital is slated to be turned into apartments/residential units, and it seems obvious that any program placed at the foot of the hospital building would compliment that large and prominent building. The area where the bus barns are located is level.

The site is simultaneously connected to the city, as well as disconnected. The placement of the bus barn buildings align them with the city grid, connecting them to the larger city (fig 3. 13). But they do not engage the river they are located above, and the only thing connecting the site the neighborhood above is an asphalt parking lot. Hermitage Avenue acts almost as the border between city and site. Between Hermitage/Fist Avenue the grid of city streets ends, and a zone of industrial buildings and manufacturing begins (fig 3.14). This forms a buffer zone between the city and the river edge,



Figure 3. 7 Pedestrian Bridge

Source: Author

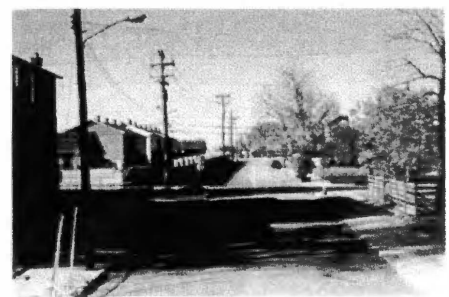


Figure 3. 8 Gated Community

Source: The Tennessean

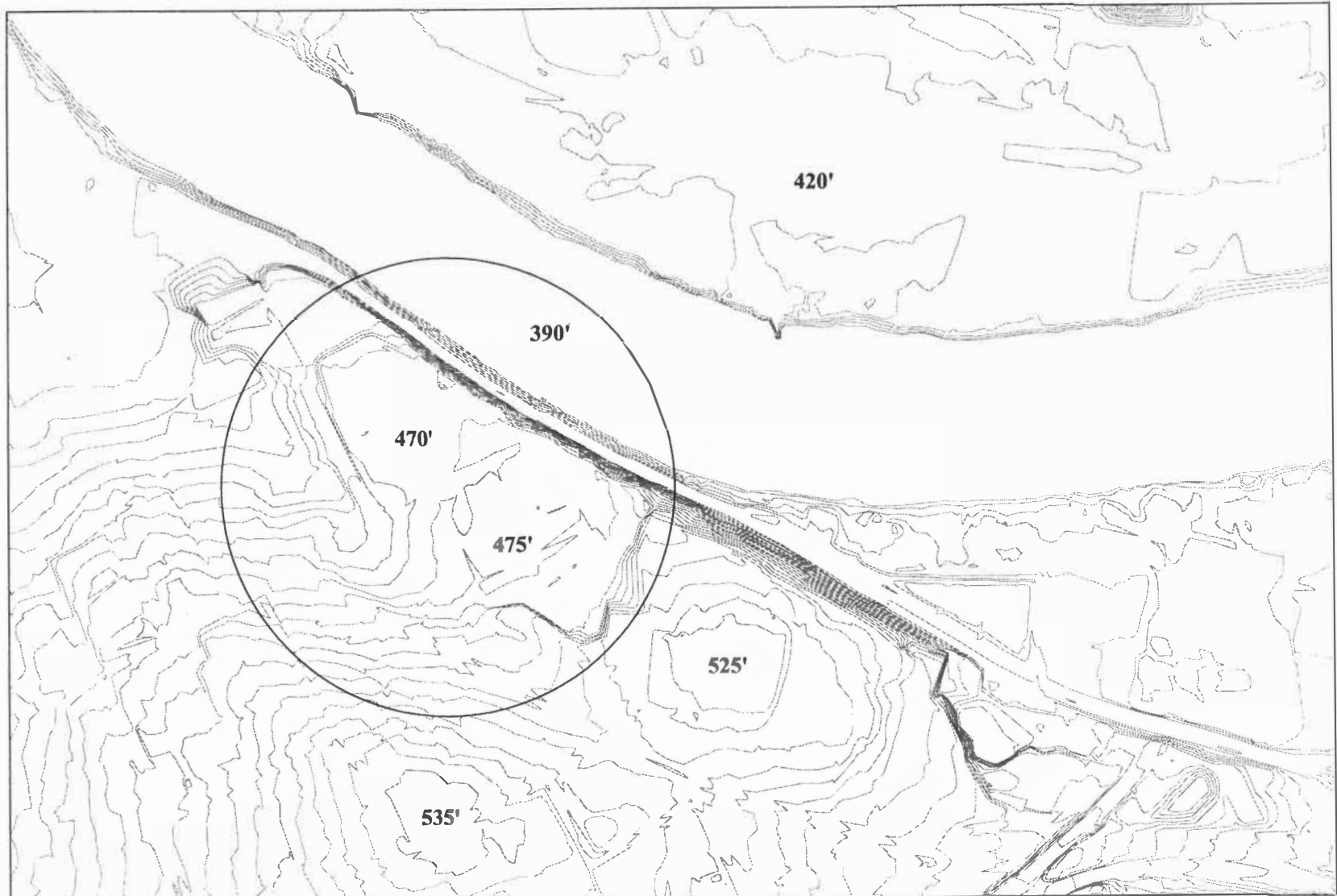


Figure 3. 9 Topographic levels, Nashville Adapted From: Nashville Planning Department - Mapping Services



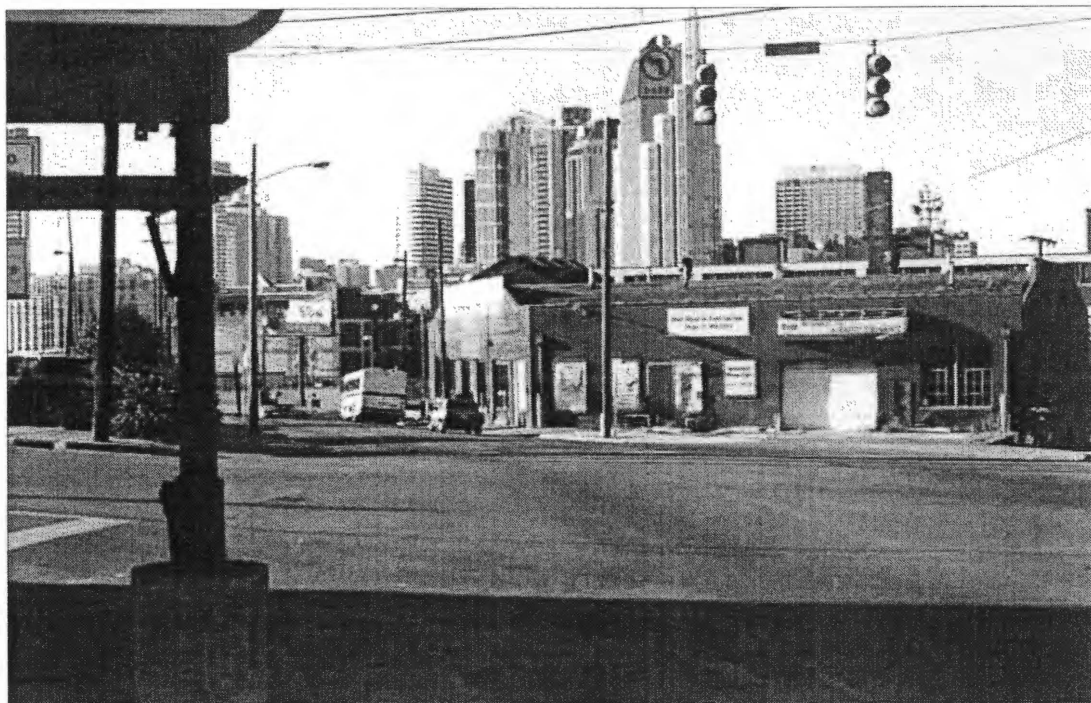


Figure 3.11: Downtown in the Distance

Source: Author

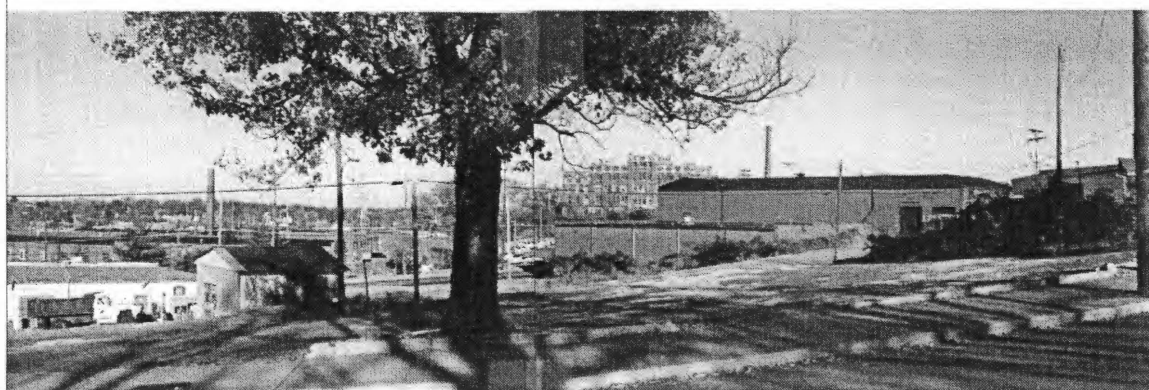


Figure 3. 12: Influence of hospital building on neighborhood

Source: Author

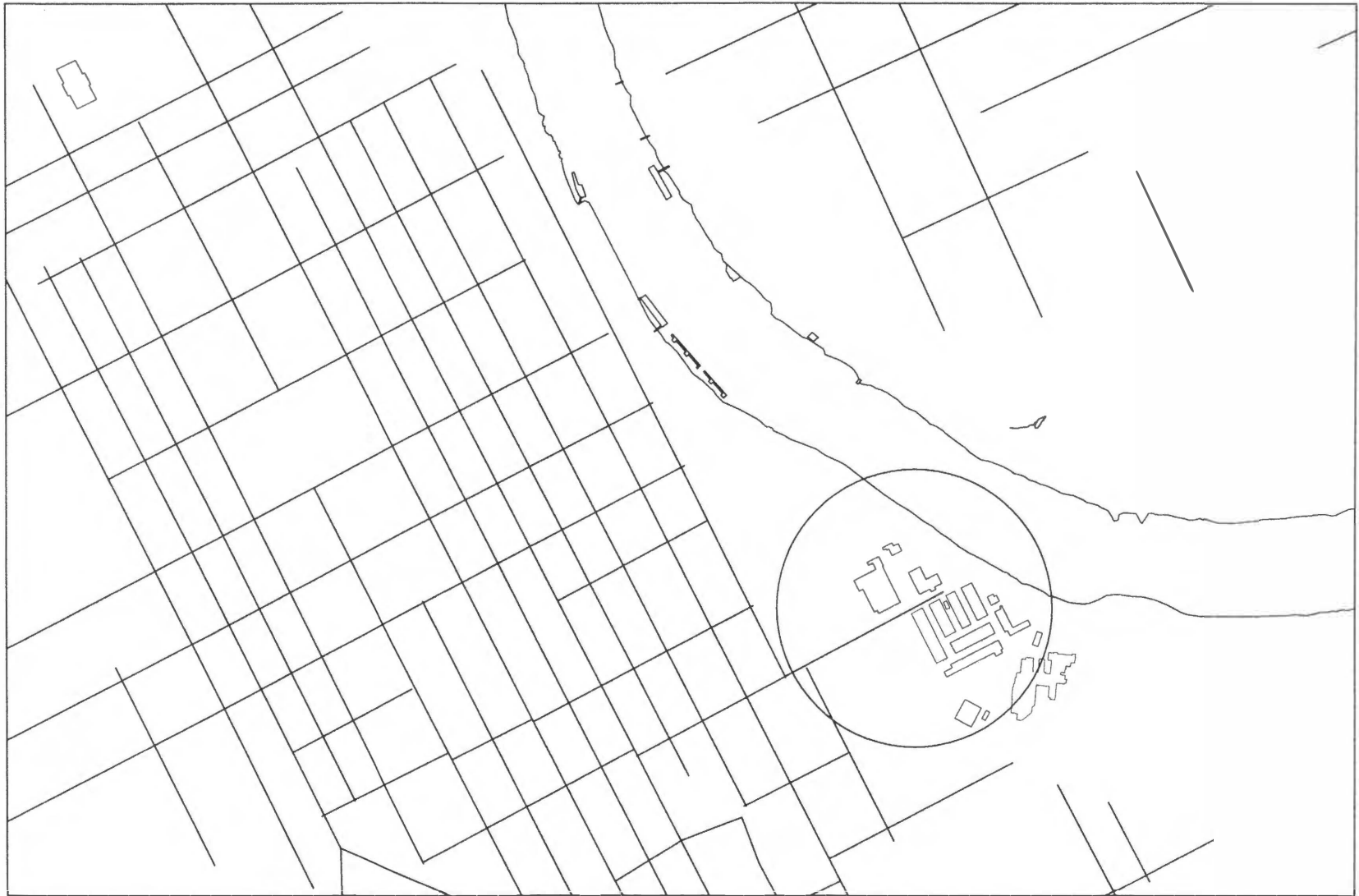


Figure 3. 13 City Grid Adapted From: Nashville Planning Department - Mapping Services

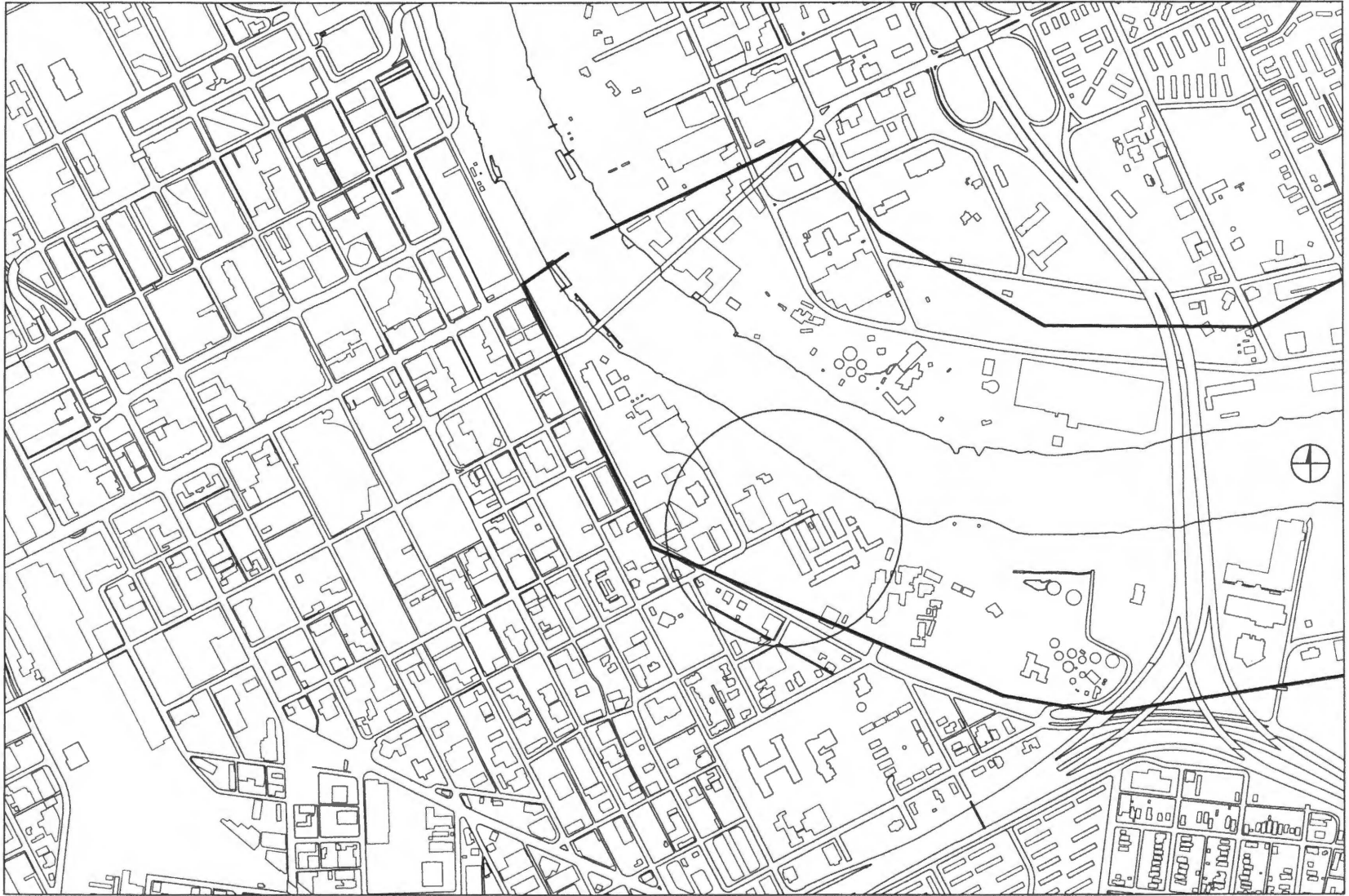


Figure 3. 14 Industrial Zones Adapted From: Nashville Planning Department - Mapping Services

although not a very pleasant one. In addition, much of the land on the waters edge is privately or city owned, with limited access afforded to the residents of the city. This zone of industry extends up and down river, and it is mirrored on the opposite side.

Located on the site are a series of bus barns originally created to maintain the new fleet of gas-powered mass transportation vehicles that were to eventually take the place of streetcar transit, of which Nashville was a pioneer. The trolley system was brought to Nashville in the 1880s, and replaced horse drawn buggies as a means for moving people around the city. The streetcars became immensely popular and innovations such as fully electric vehicles and in ground wiring kept trolley manufacturing innovative and cutting edge. In 1908, Henry Ford introduced the Model T to the American public and by 1941, the final streetcar run was made in Nashville. At that time busses officially took over as the primary means for mass transit in the city (figure 3.16).

Currently these barns carry on the maintenance yard tradition for the Metro Police department. Although the land has public access, the police department is fully entrenched. The bus barns are used as garages geared to repair police department vehicles as well as other emergency equipment (3.17-3.23) The open asphalt lot facing Hermitage is used for parking by employees, but also as a small junkyard that stores wrecked squad cars and other vehicles to salvage their remaining parts (figure 3.24). To the west of the site are large warehouses, also owned by the city, which store equipment for the Metro government and police department (figure 3. 25).



Figure 3. 15 Brick warehouse

Source: Author

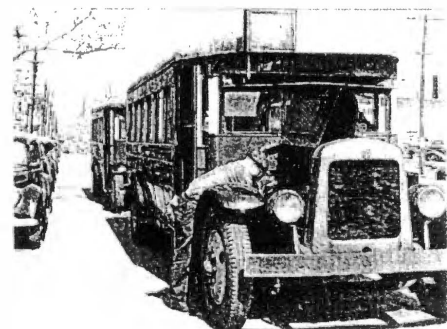


Figure 3. 16: Early Nashville Busses
circa 1940

Source: The Tennessean

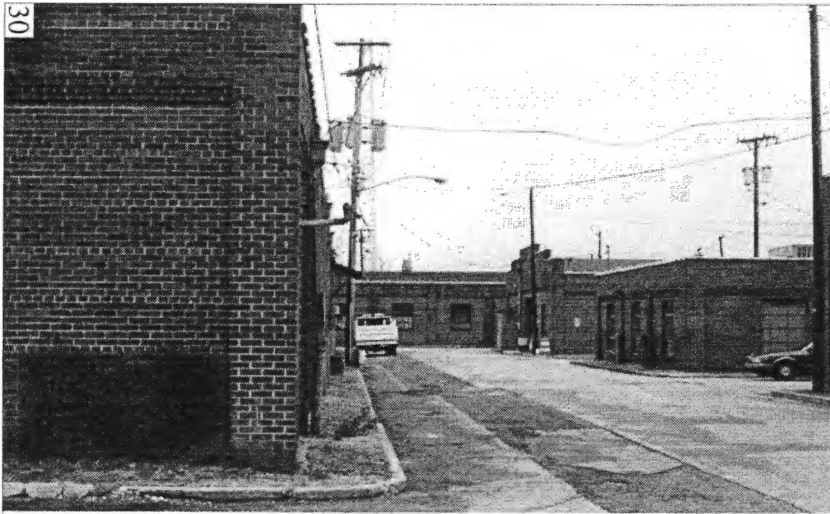


Figure 3.17 Site Interior **Source:** Author

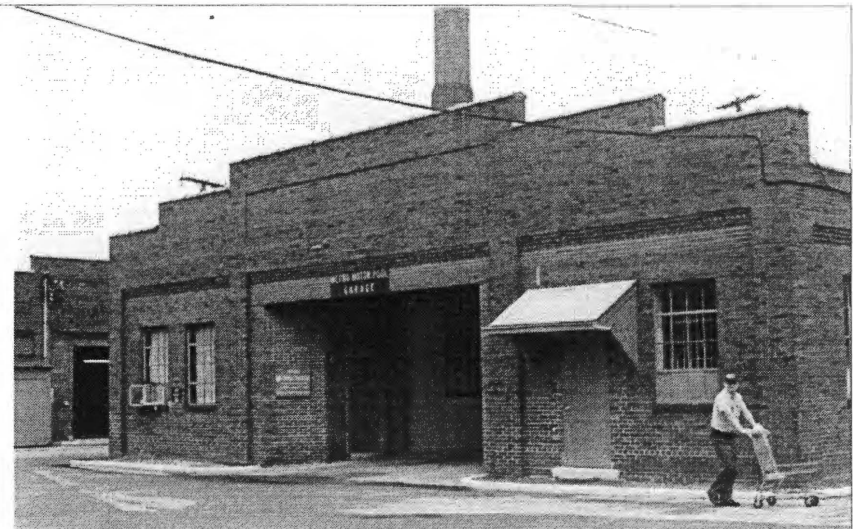


Figure 3.18 Front of bus barn facing Peabody Street **Source:** Author



Figure 3.19 Site Interior showing Adelphia Coliseum **Source:** Author



Figure 3.20 Site Interior showing coliseum in background **Source:** Author

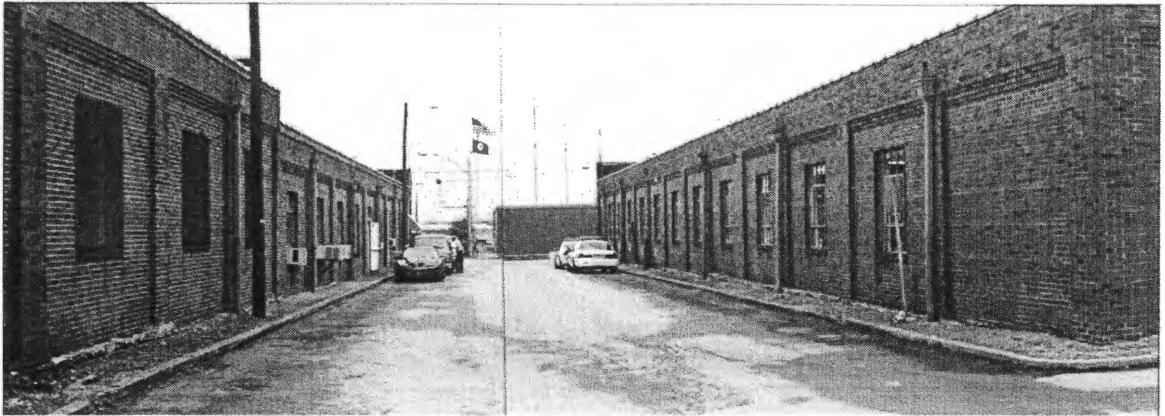


Figure 3. 21 Interior Site Photograph looking towards downtown **Source:** Author



Figure 3. 22 Interior Site Photographs **Source:** Author



Figure 3. 23 Rear of site showing large trees **Source:** Author



Figure 3.24: View looking into site showing building, parking and storage yard
Source: Author



Figure 3.25: Warehouses to the west of site
Source: Author

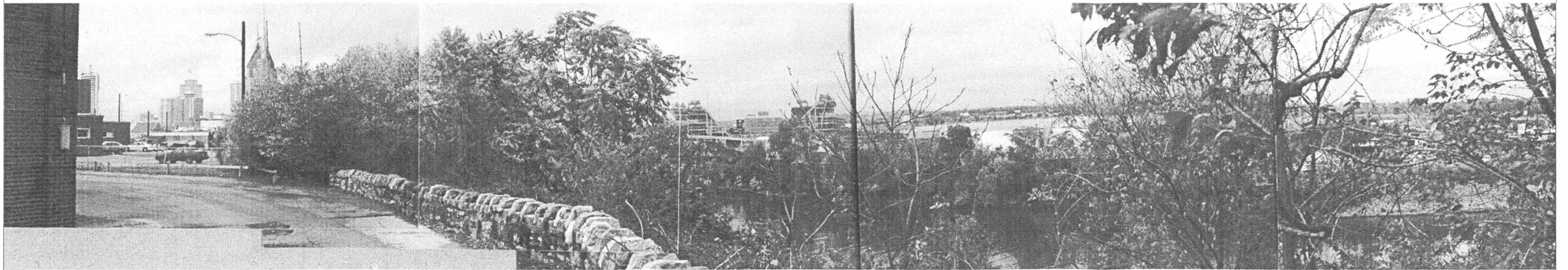


Figure 3.26 View at bluff edge looking towards downtown
Source: Author

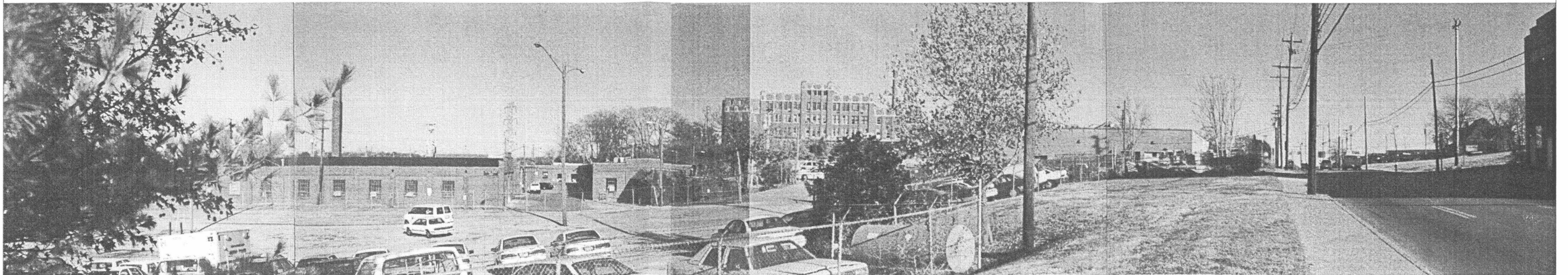


Figure 3.27 View looking into site, showing influence of old General Hospital building
Source: Author

The location of the site on a bluff overlooking the Cumberland River is a way in which the site speaks to the idea of old and new (3.26). At one time the Cumberland River flowed naturally past the site, free to rise and fall as the weather mandated. After many years the flow of the river carved out the bend where the site is located. This is the old condition. Now it is dammed and controlled by the Tennessee Valley Authority, which monitors and establishes the level at which it rises and falls and the amount of water that flows downstream. This has become the new condition.

There are currently two entrances into the site. the second and less used entrance off of Lea Avenue, closer to the hospital building (figure 3. 27). The primary entrance is from Peabody Avenue (figure 3.28) Parking into the site is accessible from both entrances. The Lea Avenue entrance gives access to the parking lot of the site only. The Peabody Avenue entrance accesses the warehouses to the west of the bus barns as well as the parking area for the bus barn employees and salvage yard.

In a sense a full circle has been made, as these buildings that were created to maintain a new means of transportation that would render an older one obsolete, are now in a particular place to offer themselves as old buildings that stand not physically obsolete, but programmatically so. The barns provide an opportunity to place a program that does not call for their destruction but uses their walls to create something new that is worthwhile for the surrounding community within them. Finally these buildings were once used for the maintenance and upkeep of mechanical vehicles. Considering the potential of the site, it seems that in this

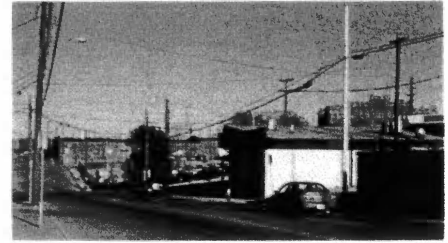


Figure: 3. 28 Entrance to site at Peabody Street

Source: Author

capacity the bus barns are under programmed. The wellness center allows them to be used for the upkeep of individuals and for the surrounding community to use for its enhancement.

By virtue of these attributes, the site on the bluff of the Cumberland River occupied by the old “bus barns” is highly suitable for a wellness center. On this site a dialog between the old and the new can be established, with the idea that interdependence between the old and the new has the capacity to bring meaning to the site. Through the integration of building, landscape and community as meaning is informed through a dialogue between new and old.

CHAPTER FOUR: THE PROJECT

The design process is informed by the desire to carefully combine found and new conditions in order to transform the existing into something new while still respecting its original state. The thesis statement is the driving force behind all decisions made, both physically and conceptually. All architectural decisions, no matter how large or how small, were considered through the lens of the thesis statement.

Although the description of the project will be essentially linear, the architectural decisions made were decidedly unlinear, with various changes being made in different areas throughout the project as it unfolded over time. Please refer to the design drawings as they are the primary record of the project. A verbal description is only one type of explanation. The enclosed drawings should be considered the primary notation of the thesis project.

PRIMARY ARCHITECTURAL DECISIONS

There are four primary architectural decisions made at the outset of the design project. The first is the creation of an amphitheater which takes advantage of the existing topography to the southeast of the site. At the base of the old Nashville General Hospital site there is a steep, curved limestone cliff that with some earthwork allows a fairly large sized outdoor amphitheater (fig. 4.1). Besides the shape of the existing terrain, a precedent for this move is a project for the renewal of the Sutro Baths located in San Francisco, California (fig 4.2). In this project, an amphitheater is placed into the

Preservation is a flexible concept now, alive with new possibilities. The intent is not to create museum pieces or stop the clock, but to retain a sense of continuity in our lives, making the best use of still useful architecture.

-Robert Jensen



Figure 4. 1: Topographic possibilities

Source: Author

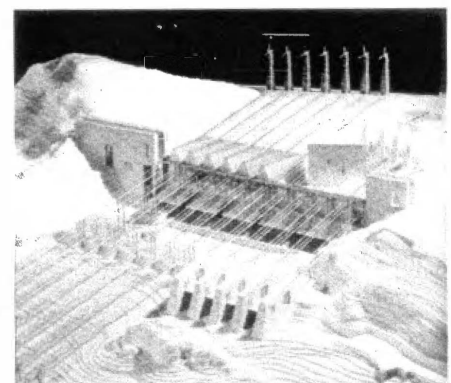


Figure 4. 2: Sutro Bath Project model

Source: Progressive Architecture

hillside above the baths as one of many public gathering spaces. The nature of the amphitheater in the thesis project is to create a new public space while also taking advantage of the existing topography. The rear wall of the existing building closest to the amphitheater remains to serve as a backdrop and a spatial definer (fig. 4.3, 4.4)

The second substantial architectural response was the removal of several existing buildings on the site and the keeping of the boiler house smokestack, the most prominent architectural formation within the site (fig 4.5). The removal of buildings is two-fold. The first reason is to ensure that the thesis is understood as a combination of old and new conditions and how these two interact. If all the buildings are saved, then the project becomes more about preserving the existing buildings and less about transforming the old conditions into something new. Further it is the entire site that is considered, not just the buildings that are located on it. The existing buildings are considered in service to the project as a whole, not just as buildings by themselves.

The removal of several existing buildings allows for different types of spaces to be created. In addition, the somewhat controversial removal of the building that houses the boiler room allows for an axis of circulation as well as the conceptual center of the project to exist where this building stands (fig. 4.6). The smokestack is saved to signify where the center is located. Around the smokestack is placed an outdoor courtyard, a public space created for community gathering. The existing condition is a building housing the boiler room functions of the bus barns (fig. 4.7). The new condition (fig.4.8) is a large open space that creates the project center, on axis with the new outdoor amphitheater and the new gym.

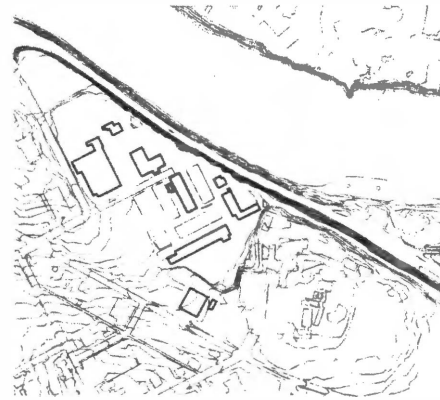


Figure 4.5: Removed buildings

Source: Adapted

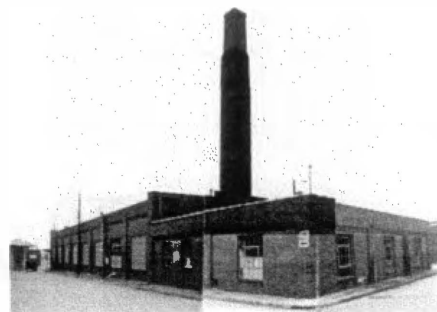


Figure 4.6: Boiler house and stack

Source: Author

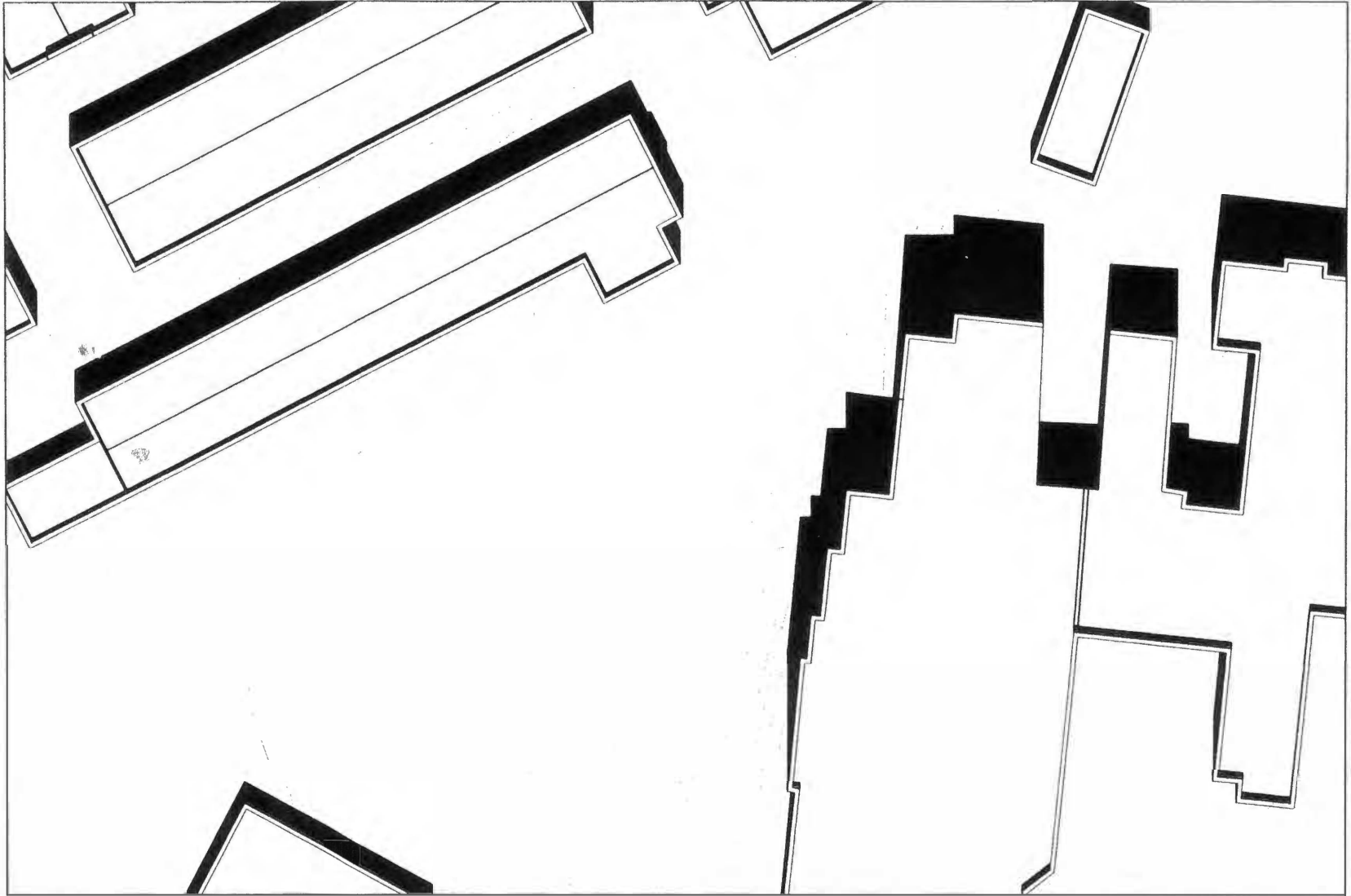


Figure 4. 3 Existing rock conditions Adapted from: Nashville Planning Department-Mapping Services

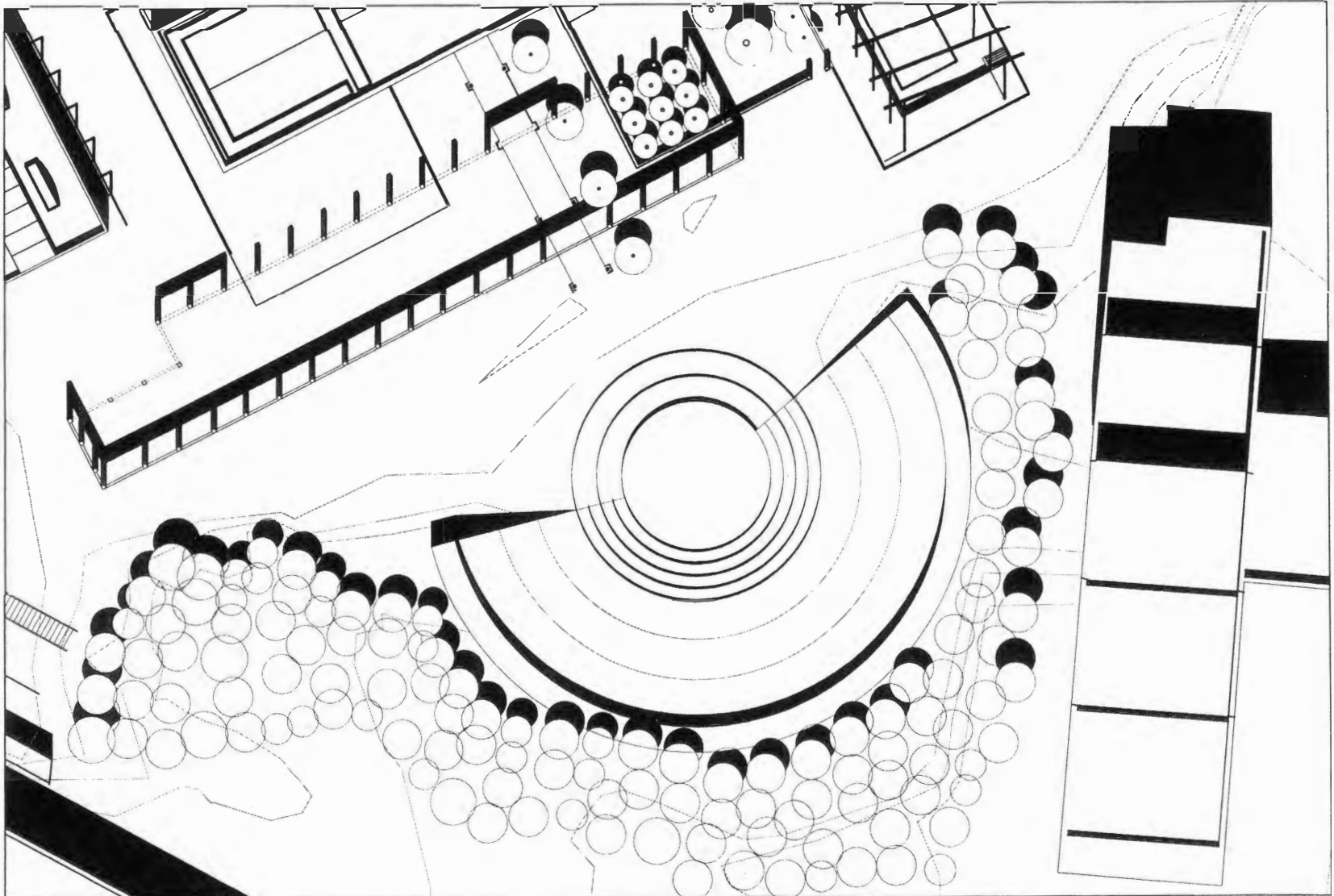


Figure 4. 4: New amphitheater conditions Adapted From: Metro Planning Department-Mapping Services

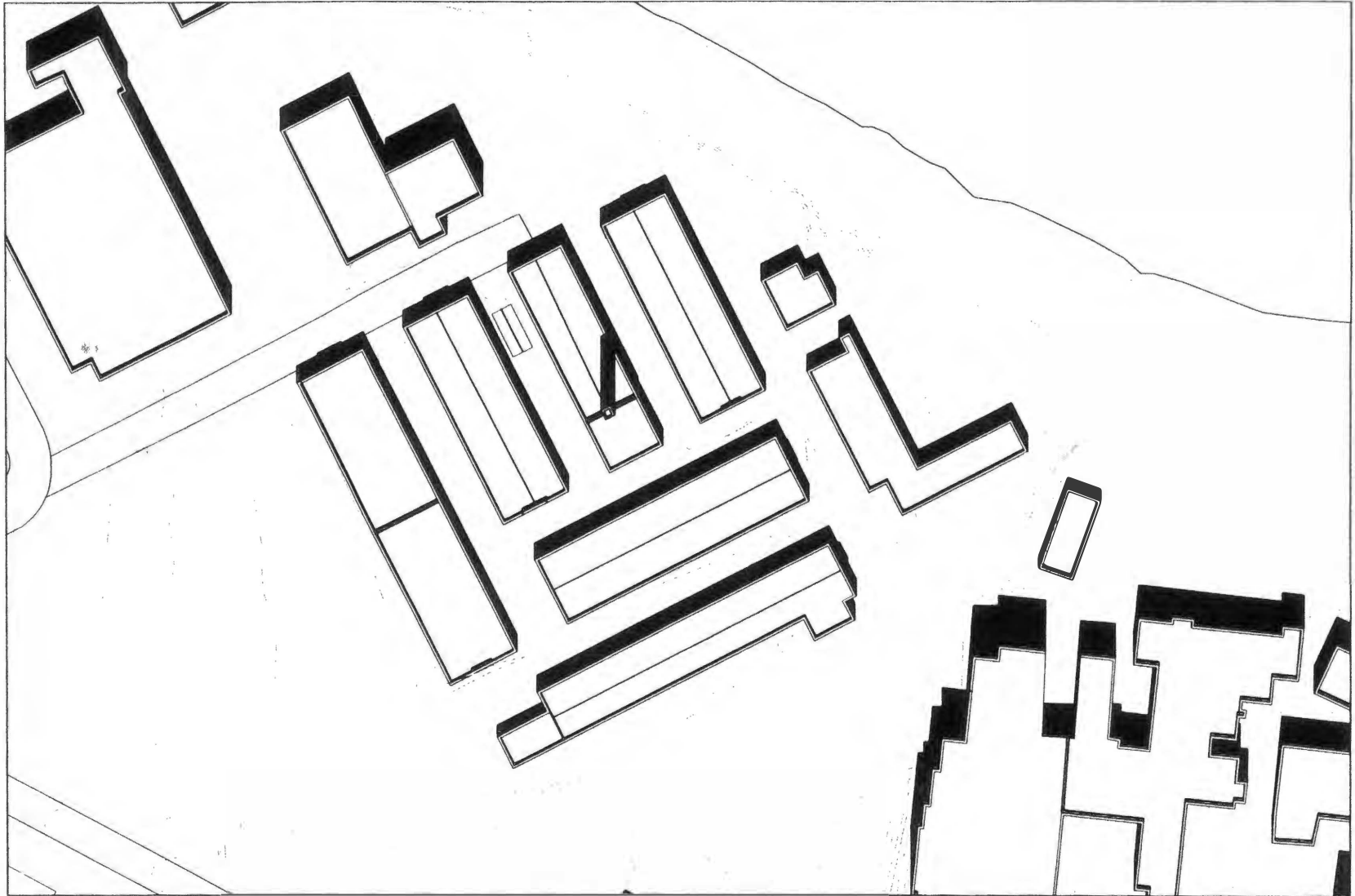


Figure 4.7 Existing building configuration Adapted from: Nashville Planning Department-Mapping Services

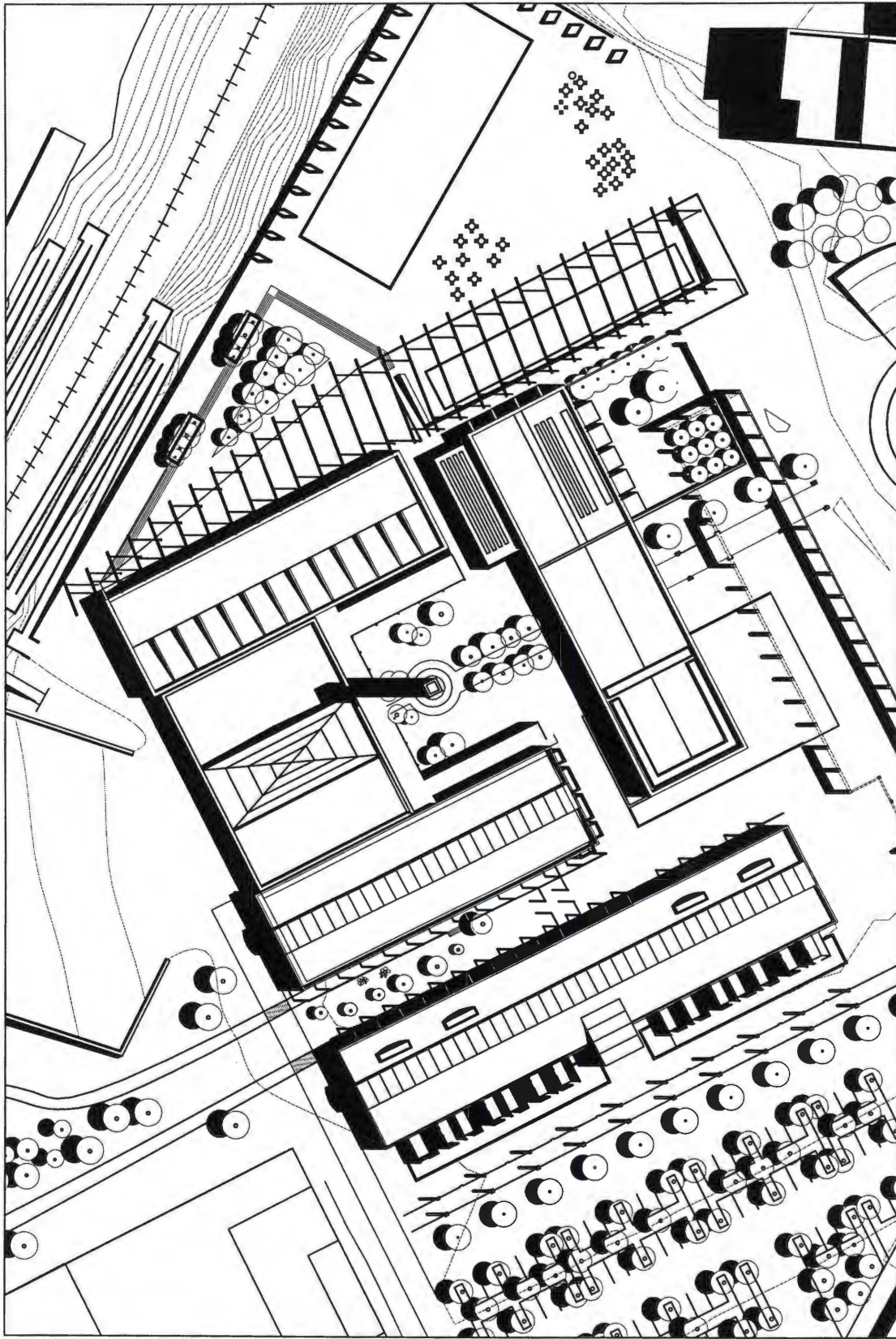


Figure 4. 8: New courtyard Adapted From: Metro Planning Department-Mapping Services

The gymnasium, the only completely new building, is located on the northwest corner of the wellness center building complex. It serves as the completion of the diagrammatic central axis and is designed to be the third in a series of different types of open community spaces. It is located in a way that allows patrons to occupy the roof space and take advantage of views both up and down the Cumberland River. In elevation it exists below the level of the amphitheater, so those inhabiting the theater have an unencumbered view of downtown Nashville and upriver, as well as good views into the wellness center itself.

Finally, a rules system is established concerning the existing buildings, and how they are to be interacted with. The primary rule is that the basic structure is preserved in all the buildings not removed. That means that the masonry columns and the steel trusses remain intact. The infill walls that stand between the columns are removable, if necessary. The manner in which new construction meets old is that they slide past one another instead of touching. In this manner the new and existing become interdependent while retaining their unique identities.

PRIMARY DESIGN LANGUAGE

The primary design language is through the idea of insertion (fig 4.9, 4.10). Outside there are two large scale insertions. The first is the outdoor amphitheater made to insert itself into the existing topography at the southeastern corner of the site. It literally uses the topography to its advantage, fitting into the site in much

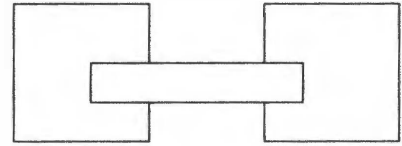


Figure 4. 9: Insertion

Source: Author

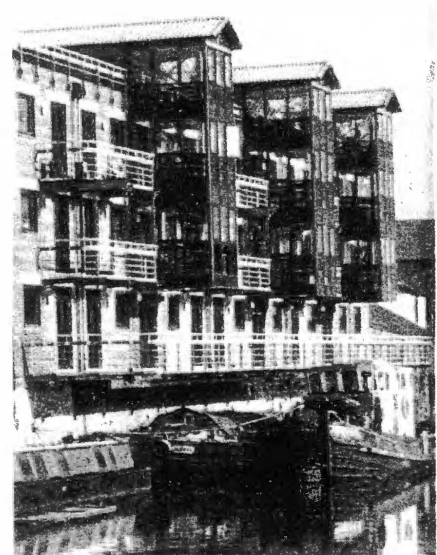


Figure: 4. 10: Using insertion

Source: Industrial Buildings

the same way the Greeks used existing topography in the creation of the amphitheater of Epidaurus (figure 4. 11).

Another iteration is the placement of the gymnasium into the bluff above the Cumberland River. The existing condition is of solid-rock bluffs carved out by the river, time, and most recently by man. The new condition takes advantage of the vantage point provided by these bluffs above the river, creating not just a place to view the river from the bluff edge, but also from literally inside the cliffs.

A gymnasium is inwardly focused and does not require an exterior view, so the view created is used by a dance and exercise studio that will have a solid wall that separates the gym from the studios, and a glass wall that allows dancers or others using the space to partake the views up and down river. Due to its placement into the bluff, it will seem as if the studios are floating out over the river. In addition, the occupiable roof inserts itself into the flat existing landscape, conceptually peeling itself up. Now those occupying the new athletic fields and green spaces can see into the new condition located below the ground where once existed only rock and flat pavement.

The last iteration involves the insertion of various types of office spaces and private spas into and through the walls of the existing buildings (fig. 4. 12). The office spaces insert themselves through the infill walls of the bus barns and cantilever out over water on the exterior and into the spaces of the interior. This insertion is the point at where the new condition engages the older condition. The old condition, the walls of the



Figure 4. 11: Theater at Epidaurus

Source: Historic Preservation



Figure 4. 12: Private spa looking out

Source: The Japanese House

existing buildings, dictate the size of the spaces that insert through them (fig. 4.13). The new condition, the office spaces and/or spas, are of modern materials such as cast-in-place concrete and glass. The new elements are created and derive from the rhythm of the existing buildings. Their interaction is dictated by the thesis: the old is transformed into something new, yet the new is mindful and respectful of the old in its original state.

The parti of the project shows through in the major organizational element of the project, an axis that extends from the amphitheater through the major outdoor communal space and out into the landscape (fig.4.14). It acts to connect the three primary outdoor spaces and it overlaps the primary circulation zone as well. This element became apparent at the insertion of the amphitheater; as it nestled into the rock formation, it opened up to the landscape downriver and almost directly in line with the boiler house building. On the other side of the barns from the amphitheater the gym was to be inserted, and the axis seemed almost to form on its own, helping to put various programmatic pieces of the puzzle together. It is this axis that becomes the handicapped access ramp into the gymnasium. Those who use the ramp will actually be on the axis instead of those who take the stairs. In plan the ramp helps to tie the gymnasium into the rest of the project. The ramp is the connection that is being inserted from the gym into the rest of the project.

With all of the mention of the bluff and the view to the river, how to get down to the river is another design challenge. This is met in two specific ways. The first is the construction of a boardwalk type of access ramp the attached to the side of the rock face, cutting

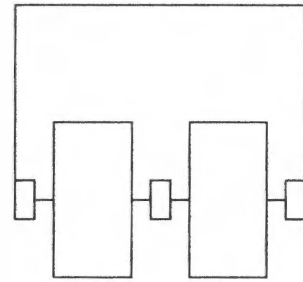


Figure 4.13: Building Insertion, determined by building structure

Source: Author

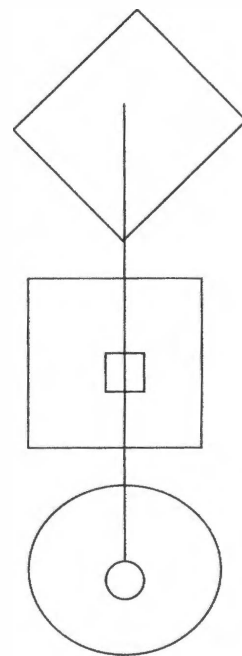


Figure 4.14: Parti strategy

Source: Author

back and forth with small nooks at the turns for rest, to take in a view, to contemplate, or just to wait on someone. The ramp system is quite extensive, as again it is designed to be handicapped accessible and wide enough for runners to jog up it. This is necessary because of the connection to Nashville's planned greenway system scheduled to be constructed along the river's edge. The wellness center is connected not only to the local community but to the larger community of Nashville.

The other way that one gains access to the river is by a tall tower element connected to the outdoor deck area, with underground access from the gymnasium as well. The tower is reached in both places by crossing a catwalk extended out to the rectangular structure. The tower inserts itself into the base of the cliff, half in the cliff itself and half into a flat area where a pair of railroad tracks runs. The tower is relatively thin and is designed as nothing more than a circulation piece and site beacon. It is equipped with two elevators, an interior wrap stair and exterior observation decks where one can take advantage of the scenery or a cool breeze.

DEVELOPMENT OF SPACES

The program of a wellness center is a driving force in the development of certain types of spaces in addition to the influence of the thesis in spatial development. The wellness program revolves around four areas of awareness when it comes to considering overall health. These areas are the physiological, the psychological, the spiritual and the social (Swinford,

243). Only when each of these areas is healthy and balanced is the entire body “well.” Considering the specific needs for the wellness program, it is necessary to develop various types of spaces that will enhance the existence of these four essential qualities.

The first needs to consider are spaces which speak to the mental state. These spaces should primarily provide for the stimulation and well-being of the mind, providing areas where one can enhance knowledge. The spaces designed for this need are a library, a gallery and several conference spaces. The library takes its primary influence from the Exeter Library of Louis Kahn, and contains interior stacks and reading areas around its perimeter. The gallery space is located adjacent to the library and is essentially an open space that can service any kind of small display, be it art or some other kind of individual work(s). Conference spaces are designed to meet the needs of group therapy and interaction, as well as for educational training for the wellness center staff. It is hoped that these differing spaces are used to enhance the education of the wellness center clients (library), provide for exercises in promoting self-discovery (gallery) and for group therapy sessions (conference rooms).

The second set of spaces are those that provide for the well-being of the body. In this project, those spaces take their form in the housing of pools, a cardiovascular center and weight room, a run/walk track, outdoor playing fields, a gymnasium and a pair of dance studios (fig. 4.15). The run/walk track in particular is an element influenced by the thesis (fig. 4.16). It is conceptually inserted into the area between the southernmost building and the one directly to its north.



Figure: 4. 15: Health club “Under the Arches”

Source: *The Architect's Journal*

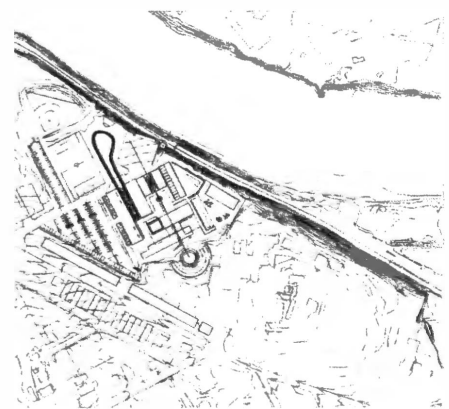


Figure 4. 16: Diagram of track

Source: Adapted, Metro Planning Dept

In addition it inserts itself into the area where the outdoor fields are located, helping to give definition to the area that without this insertion would be undefined open space.

The third set of spaces driven by the wellness program revolve around the creation of places that enhance the spiritual well-being of the individual. The manifestation of these spaces is in garden spaces, specifically a meditative Japanese Garden (fig. 4. 17). Other spaces are those that include views and vistas and spaces around water, both designed to allow for contemplation. It is not through religious means that these spaces are derived, although that could be read into them. Instead, the goal is to create spaces where one can get in touch with their inner self through quiet meditation and contemplation. The gardens of Sir Edward Lutyens inspired ideas as well (fig. 4.18).

Finally, the last spatial considerations were those that revolve around the creation of community. Without any communal connection, not only is the wellness program left unfulfilled, but the site, which is being reclaimed for public use, would be left alienated and unable to relate to its localized surroundings or to the larger city of Nashville. The larger scale community spaces are the ones located outdoors: the amphitheater, outdoor courtyard, and occupiable roof of the gymnasium. Other community spaces are an indoor courtyard and food court and a public landing on the waterway connected to the site by a boardwalk down to the river. Outdoor sport fields and connections to the local public greenway system connect people from all over the city to the site, while a well thought-out

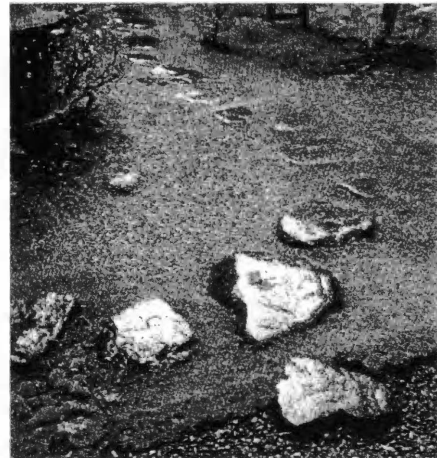


Figure 4. 17: Japanese garden

Source: The Japanese House

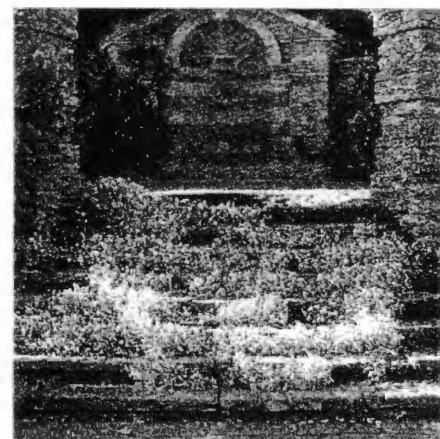


Figure 4. 18: English Garden

Source: Sir Edwin Lutyens

handicapped accessible floor plan makes the wellness center and surrounding site development as all-inclusive as possible. Handicapped accessibility is more than just an afterthought. Ramps and other handicapped features are vital design features that help form and connect the entire project.

This wellness center is designed using a number of different influences. The primary influence is the language of the thesis statement and the attempt to reach the goal of thoroughly exploring how the old and new can challenge and integrate with one another. The second big influence on the project was the research into precedent and the analysis of what this designer has found important during his education. Views, outdoor spaces, places for community to gather and intimate “places to be discovered” are all part of the overarching personal biases put into the project. Finally, the program choice itself dictates and is highly influential in the development of space and how elements fit together. Initially it seemed there were too many influences and as positive decisions were made on one hand, these negatively affected other parts of the design. To make matters more challenging, the project took on a life of its own and grew enormously in scope.

In the end, however, the Nashville Wellness Center does come together, and an interesting proposition for this particular piece of the city is now created.

CHAPTER FIVE: PROJECT PRESENTATION

The following (Fig. 5.1 – 5.9) is a presentation of the drawings of the project. For a verbal explanation of the project, see Chapter Four.

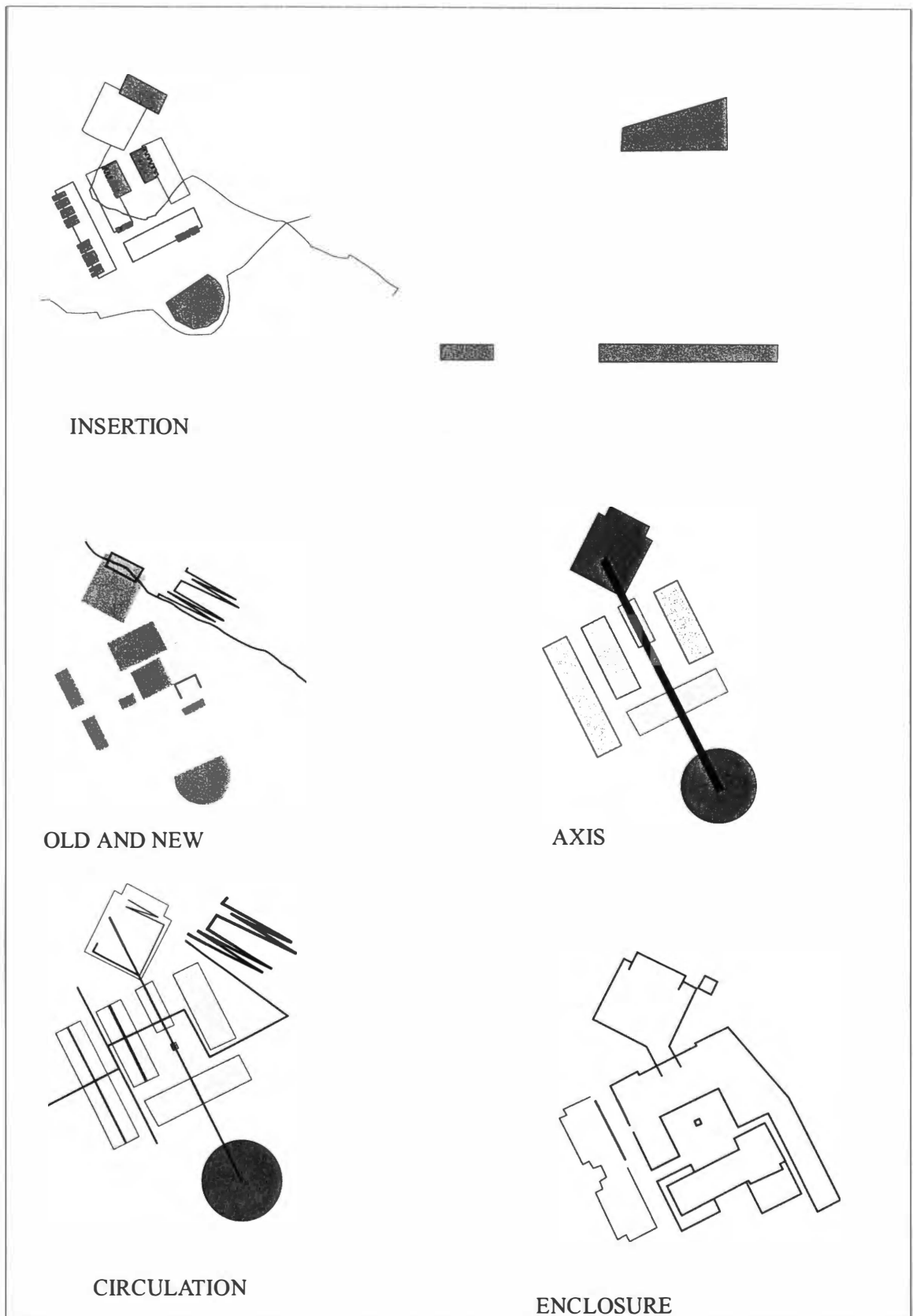


Figure 5.1: Design Diagrams Source: Author

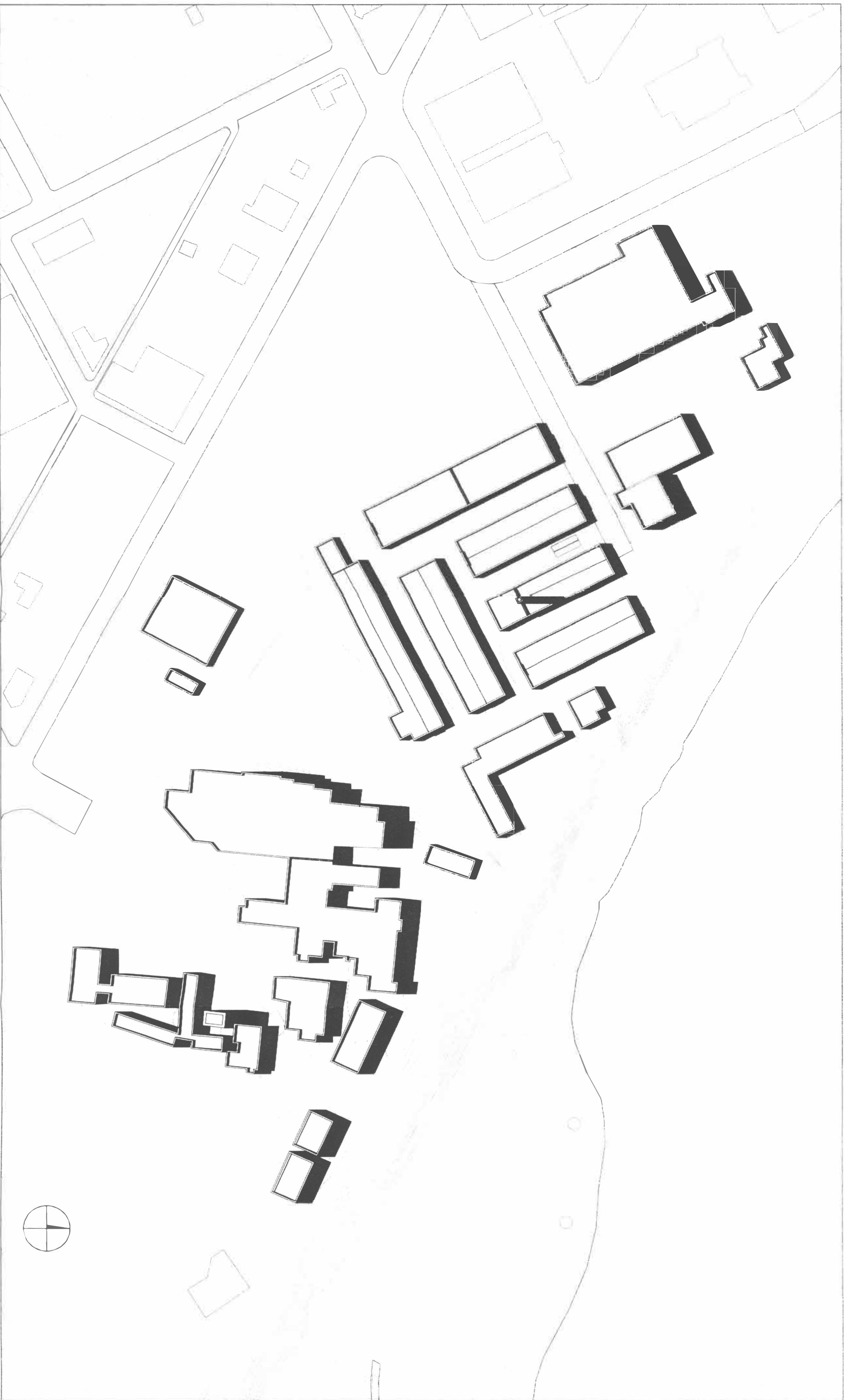


Figure: 5. 2: Shadow Plan showing existing site and conditions **Adapted From:** Nashville Planning Department - Map Services



Figure: 5.3: existing site and conditions **Adapted From:** Nashville Planning Department - Map Services

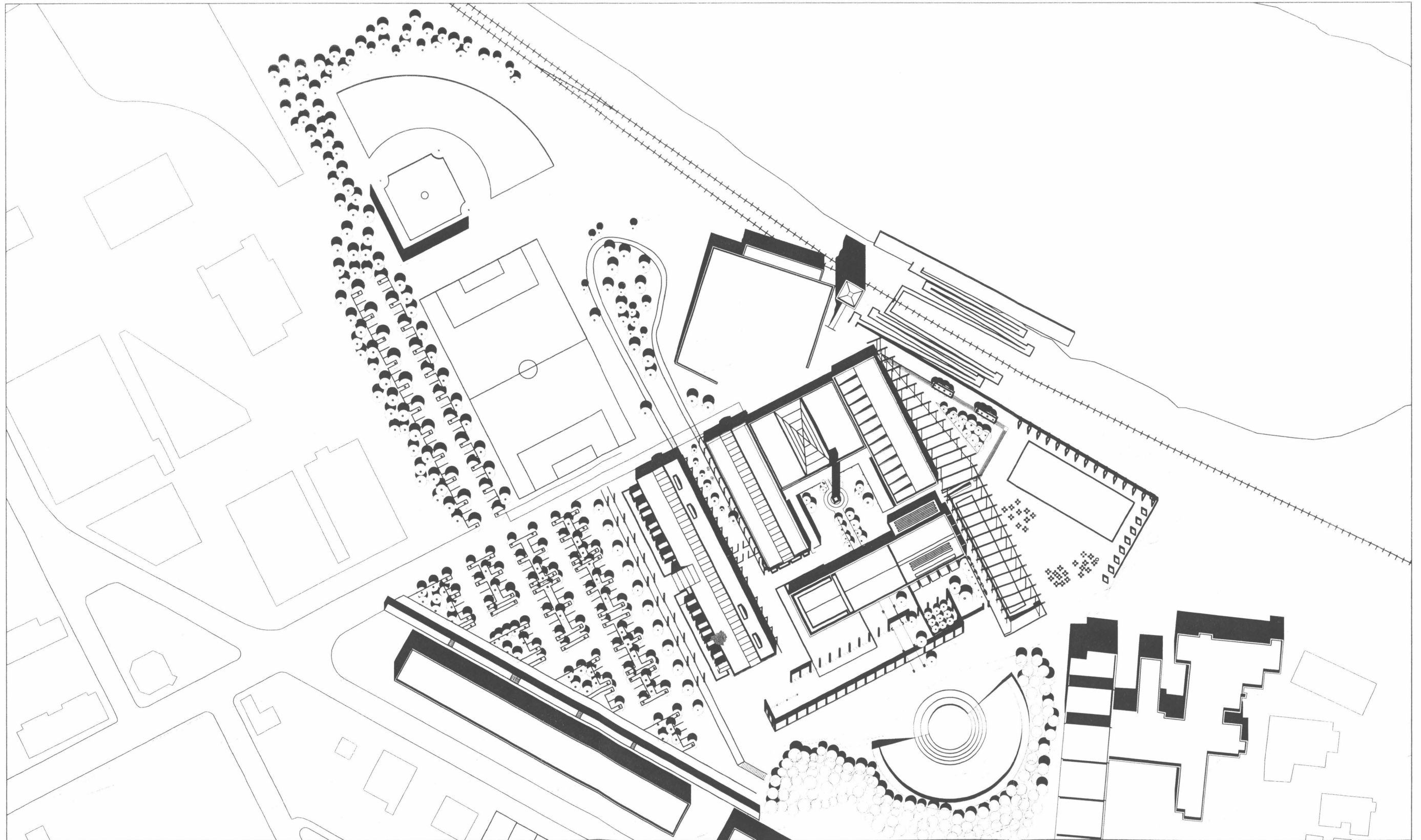


Figure: 5.4: Shadow Plan **Adapted From:** Nashville PLanning Department-Map Services

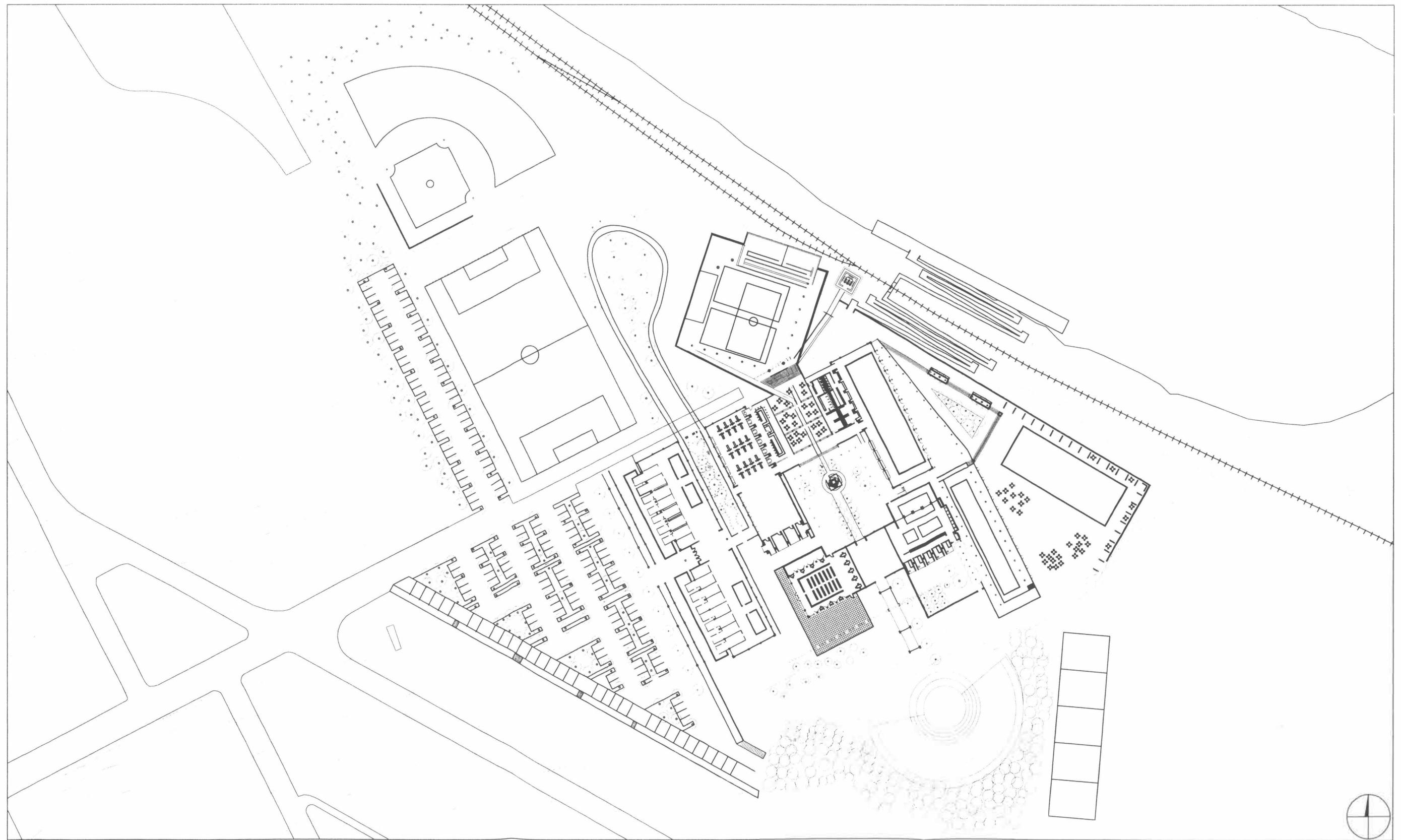


Figure: 5.5 Site Plan **Adapted From:** Nashville Planning Department - Mapping Services

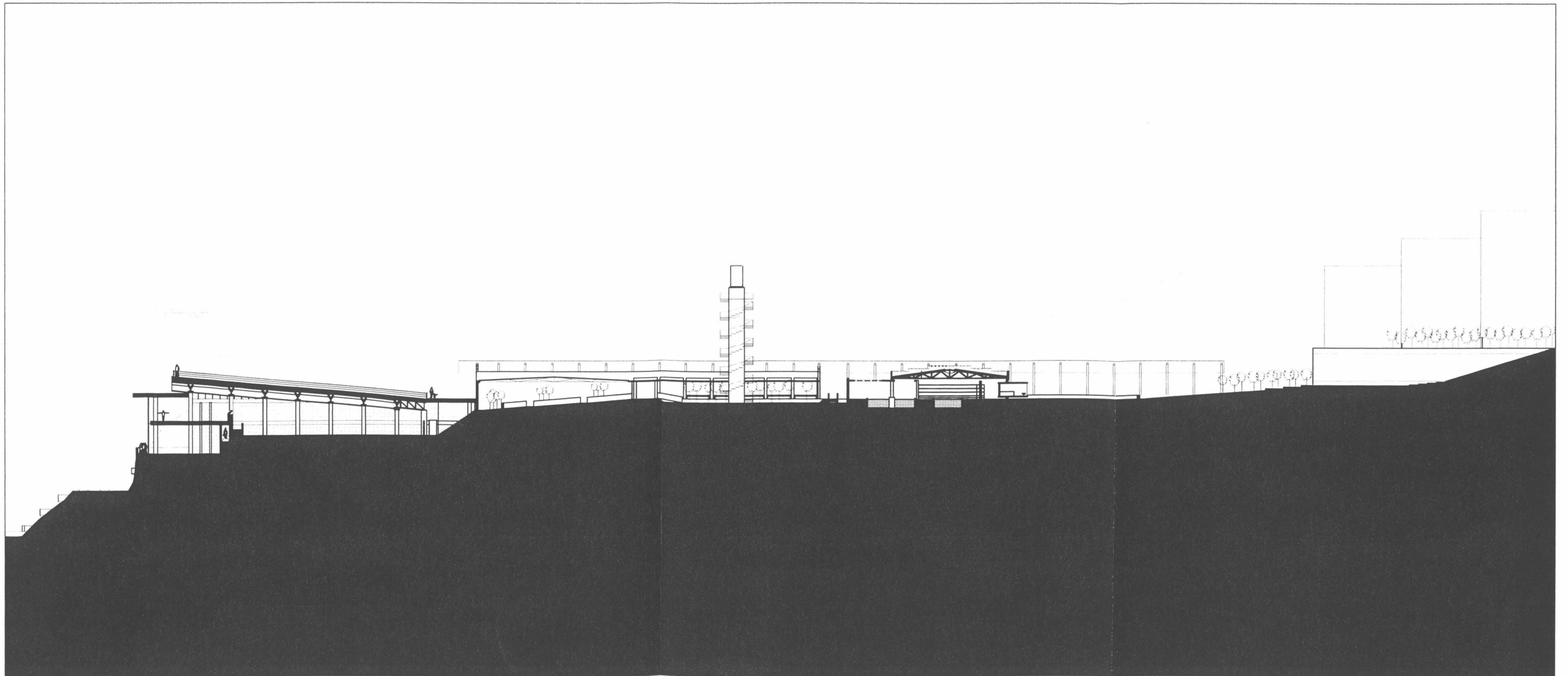
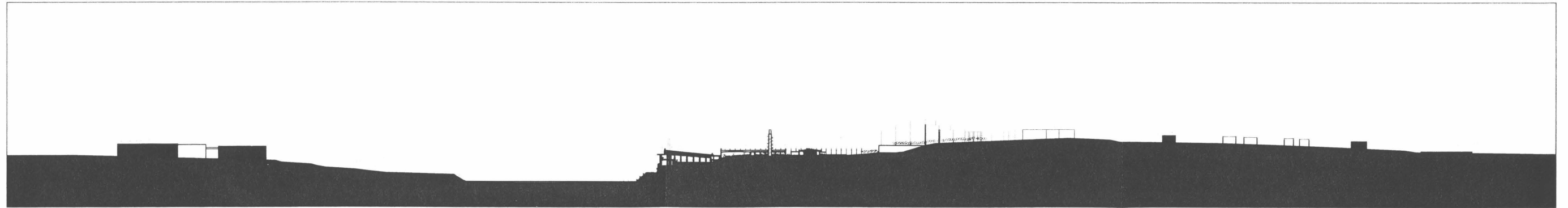


Figure 5.6: Longitudinal Section Adapted From: Nashville Planning Department-Map Services

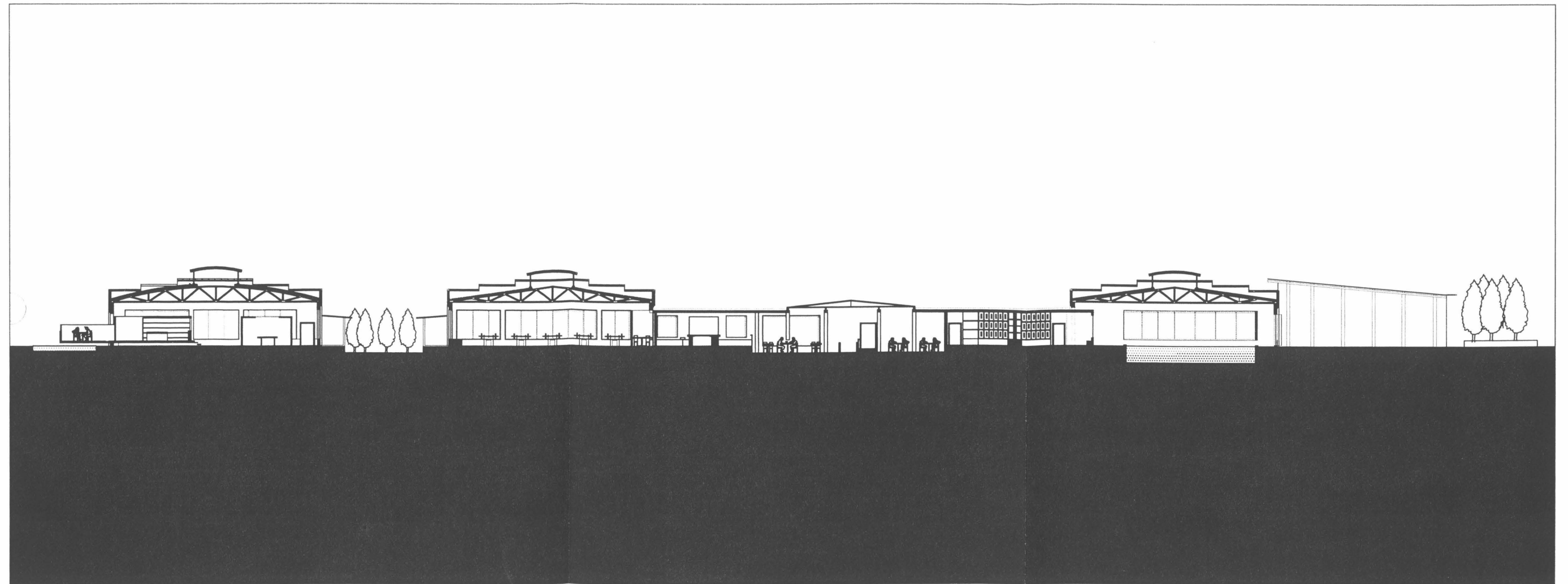
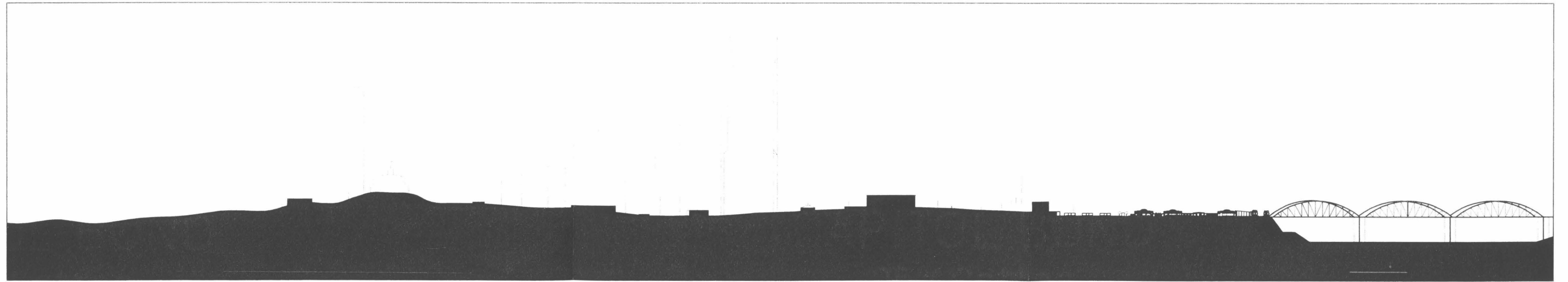


Figure 5.7: Transverse Section **Adapted From:** Nashville Planning Department-Map Services

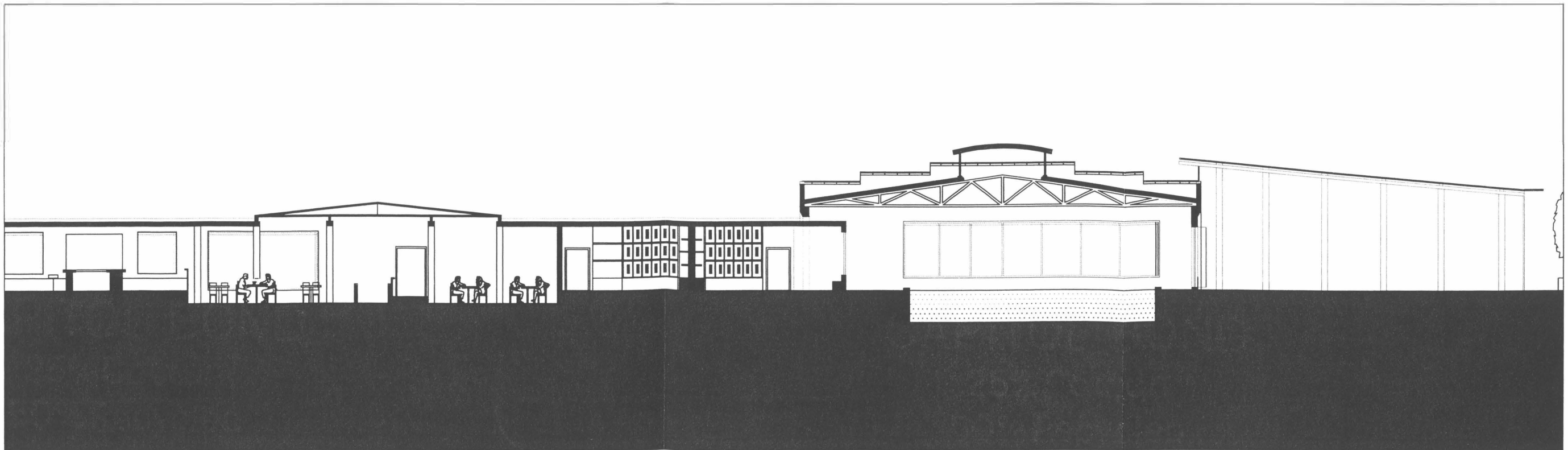
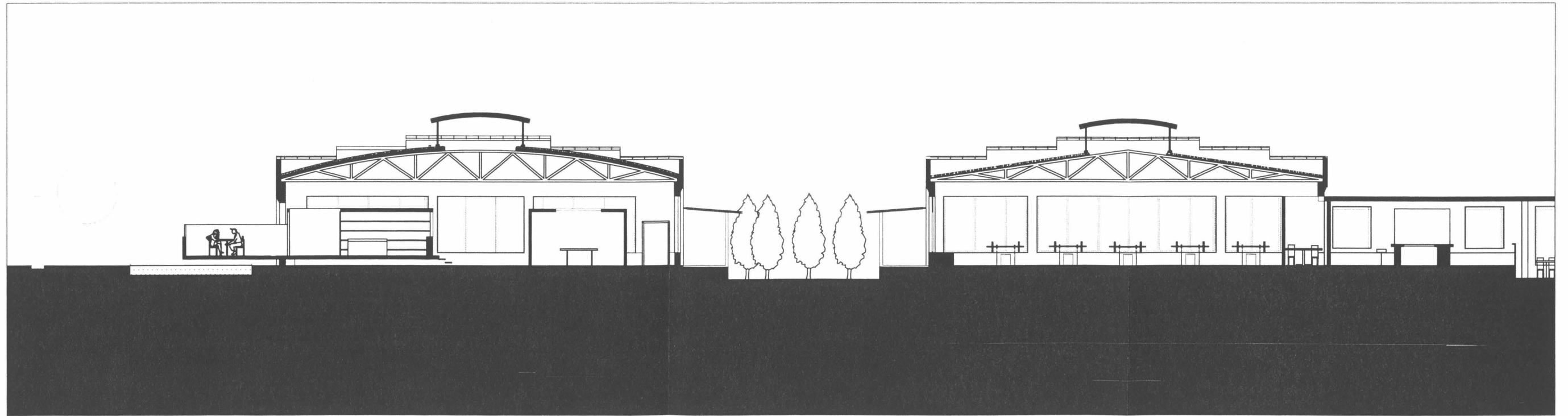


Figure 5. 8: Transverse Section Details Adapted From: Nashville Planning Department-Map Services

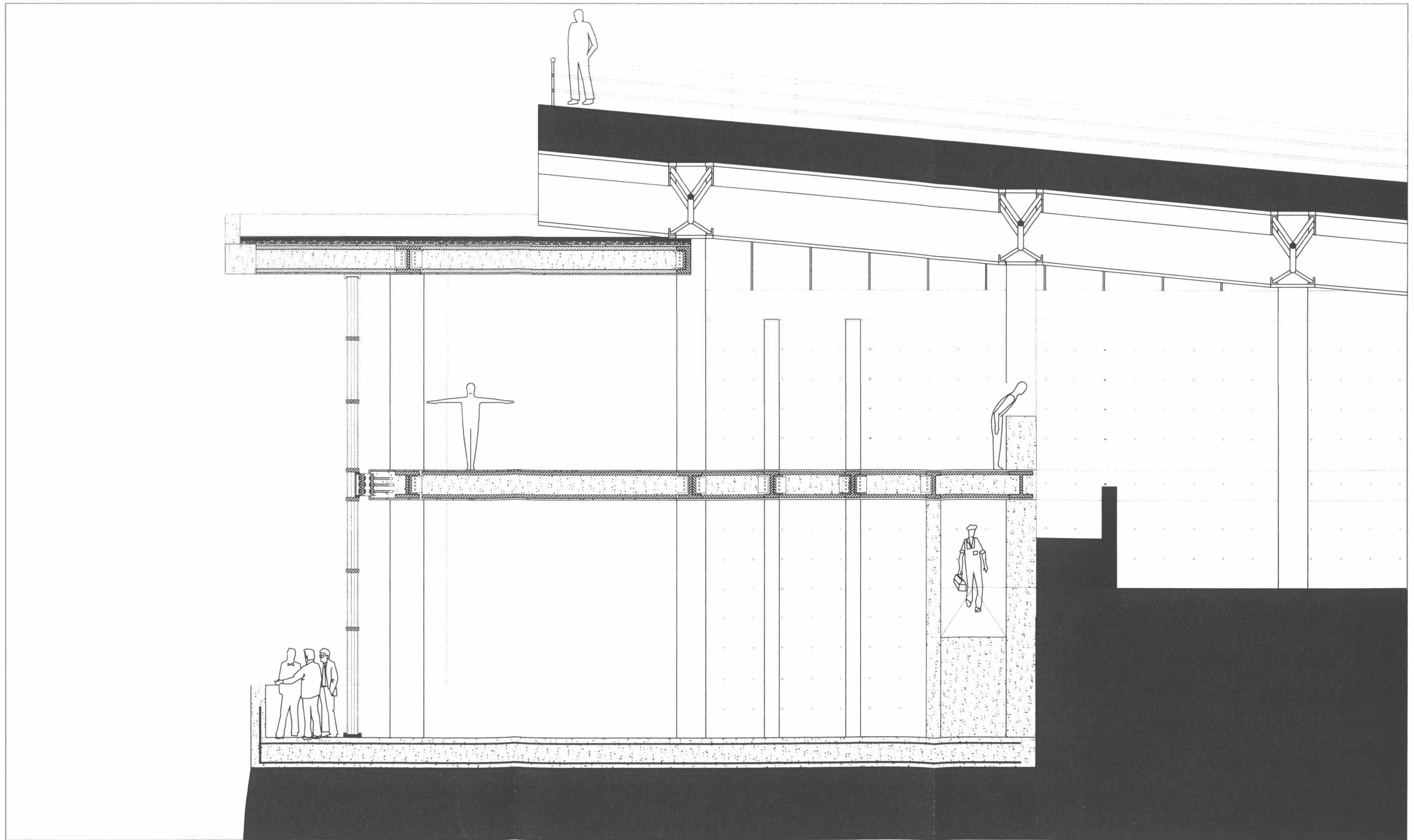


Figure 5. 9 Detailed wall section Source: Author

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VITA

Robert Stenhouse was born and raised in Orlando, Florida and graduated from Edgewater High School in 1989. He studied the Liberal Arts at Denison University in Granville, Ohio and graduated with a Bachelor of Arts degree in English Literature and Economics in 1993. Upon graduating, he took on a number of different job opportunities, most significantly working four years as a counselor and supervisor at a Wilderness Education camp for troubled teenagers in Hendersonville, North Carolina. Always sure he would attend architecture school since a Summer internship in Orlando after High School, he finally entered the Master's Degree program at the University of Tennessee in 1999. Upon graduation, he plans to begin his apprenticeship and significantly contribute to the field of architecture in any way possible.