I, Dylan G Fischer, hereby submit this original work as part of the requirements for the degree of Master of Architecture in Architecture (Master of).

It is entitled:
The Multi-use Stadium: A proposal for the integrated, multi-use programmatic expansion of Nippert Stadium and the University of Cincinnati

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This work and its defense approved by:

Committee chair: Michael McInturf, M.Arch
Committee member: Aarati Kanekar, Ph.D.
The Multi-use Stadium
A proposal for the integrated, multi-use programmatic expansion of Nippert Stadium and the University of Cincinnati

A thesis submitted to the Graduate School of the University of Cincinnati in partial fulfillment of the requirements for the degree of

Master of Architecture

in the School of Architecture and Interior Design of the College of Design, Architecture, Art and Planning

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by

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Stadia host gatherings of millions of people worldwide and are the single architectural typology that brings entire communities together to become one in celebration of sport, city and country. During an event, thousands of people descend upon the area around a stadium and, if planned and designed well, the surrounding site contains program that supports and compliments the activities going on within the stadium. More often than not, however, this is not the case. Specifically in the United States, most large professional stadia are located either away from downtown urban centers or in areas that cannot support complimentary functions around the stadia. Furthermore, stadia are generally used for a fraction of the year, as sport seasons, football in particular, are relatively short in duration. The continued design of modern football- and baseball-only stadia in the United States contributes further to the limited use of these facilities. The combination of these planning and use issues creates a disconnect between the stadium and the surrounding community and city. This thesis project investigates how related concepts of multi-function programming, social spaces, thresholds, and integrated space can establish a new generation of stadia – one that creates integrated public facilities which can be used and enjoyed year-round and contribute to the well-being of the urban environments where they are located.

This project offers a proposal for a renovation and expansion of Nippert Stadium, home of the University of Cincinnati’s football and lacrosse teams. The stadium, which has hosted
football games since 1902, currently seats 32,643 – the lowest capacity for a stadium in the Big East Conference. With the recent success of UC’s football program, there has been growing interest in increasing the number of seats in Nippert to 40,000-50,000. In addition, with its ever-growing student body the University is experiencing a shortage of classroom and meeting spaces, both temporary and permanent. Rather than focusing solely on increasing the capacity of Nippert, this thesis considers the needs of both the university and the athletic department in a proposal that creates flexible, multi-use spaces that contribute to the needs and health of the entire University of Cincinnati community.
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Chapter 1
History of the Typology

Stadia have existed as a venue for sport for millennia. The ancestral prototypes for the modern stadium seen today are the stadia of ancient Greece, dating back to the eighth century BC.¹ The first stadia were laid out in a U-shape and were approximately 600-feet in length. Many of these, borrowing from the construction technique of Greek theatres, were carved into hillsides so that banks of seating could follow the natural topography of the site while affording spectators good sightlines. Greek stadia held great civic and cultural importance, as demonstrated by the stadium at the ancient city of Olympia. In addition to the stadium itself, the site contained several temples and altars, suggesting that the sporting events were religious in nature, as this site was a central meeting point for the Greek world.²

While Greek stadia sought to provide a sacred experience for sport, Roman stadia played host to militaristic gatherings and displays of combat and violence.³ Unlike Greek stadia, which were typically located in rural areas and compounds, the Roman venues were often located in the heart of urban centers to allow for both people of stature and the general public to have easy access to the events. In order to allow as many people to view the events as possible, Roman stadia were elliptical in shape and surrounded on all sides by high tiers of seating that allowed spectators to have clear views of the event. Because of their typical urban setting, these

² Ibid.
³ John, Sheard and Vickery, 4.
fig. 1.1: Delphi Stadium
fig. 1.2: Messini Stadium
Stadia were usually constructed on flat ground, with designers creating artificial slopes for the seating. These venues were some of the first examples of multi-use stadia. In addition to hosting the well-known gladiatorial events that occurred, these arenas could be flooded with water and used for naval and aquatic events, and often held to a number of public and political gatherings and displays.4

The Flavian Amphitheater in Rome, more commonly known as the Roman Colosseum, is perhaps the greatest example of the Roman stadium. With the ability to accommodate a crowd of 48,000 people, the Colosseum remained the largest stadium in the world until the twentieth-century. Like many other Roman stadia, the Colosseum hosted a wide variety of events, including gladiatorial combat events, aquatic displays, and public and political gatherings. The 80 arched openings around the lower seating tier created a strong connection between the stadium and the surrounding city. The design of the lower concourse also allowed for public program, including shops, markets, and entertainment spectacles to enter the stadium, further strengthening the idea that the stadium itself was an extension of the city and its activity rather than a single, separate entity.

It was not until the nineteenth and twentieth centuries that the stadium as an architectural building typology saw significant advancement and change in both form and function. With the revival of the Olympic tradition at the end of the nineteenth century, 4 John, Sheard and Vickery.
fig. 1.3: Colosseum, plan
fig. 1.4: Colosseum, section
century, there was a need for a venue that could host athletic events and a large number of spectators. For the 1896 Athens games, the 331 BC stadium was excavated and rebuilt. It was around this time that the first of five generations of stadia, according to Rod Sheard in *The Stadium: Architecture for the New Global Culture*, emerged.5

As sport gained public interest, franchises and cities sought to build stadiums with large capacities to generate and maximize revenue (Michigan Stadium, University of Michigan, and Neyland Stadium, University of Tennessee, are both examples). These venues were strictly profit-driven and little consideration was given to spectator comfort or the quality of facilities during design.6

The second generation of stadia emerged as a direct result of the television age in America. The 1960s witnessed the boom of the television and the new technology quickly became a household staple, providing people a visual source of news and entertainment. Networks began broadcasting sports events across the country and fans could watch and root for their teams from the comfort of their own home. This convenience, coupled with the poor conditions created by earlier stadia led to a sharp decline in event attendance.7 In response, organizations and architects began designing and constructing stadiums that emphasized spectator comfort

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6 Sheard, *Stadium*, 103.
7 Sheard, *Stadium*, 107.
fig. 1.5: Michigan Stadium
fig. 1.6: Neyland Stadium
(individual seats, wider rows, better sightlines) and improved facilities (larger number of cleaner bathrooms, concessions, wider concourses) in an attempt to draw live crowds back to events. The fundamental goal of these new stadia was to create unique buildings and identities that could captivate the sports teams themselves, their fan-base, and their cities. Greater emphasis was placed on the whole user experience through cleaner and more comfortable facilities to provide an alternative to other family-oriented leisure activities.\textsuperscript{8}

This generation also witnessed the rise of the multi-purpose stadium. Five stadiums, located in Atlanta, Cincinnati, Philadelphia, Pittsburgh and St. Louis, were built between 1966 and 1971 and hailed upon opening as modern, economical, comfortable and technologically advanced.\textsuperscript{9} These stadia were circular and fully-enclosed and were designed to host both football and baseball events. Because of the completely different field shapes and dimensions, the seating layouts were able to be reconfigured for each sport. Despite the initial acclaim and multi-purpose nature of these buildings, they soon became criticized for their aesthetics as each one looked remarkably like the others. This led to the coining of the nickname ‘‘cookie-cutter stadium’’. Spectators also complained about poor sightlines due to the vastly different seating arrangements for football and baseball, despite their ability to convert from one sport to the other. Furthermore, although

\textsuperscript{8} Sheard, Stadium, 109.
\textsuperscript{9} Mike Dodd, “Last cookie-cutter stadium crumbles,” USA Today, September 20, 2005.
fig. 1.7: Atlanta-Fulton County Stadium
fig. 1.8: Riverfront Stadium
the stadia accommodated multiple sports, they still remained relatively segregated from their surrounding communities. Rather than hosting solely athletic events, these facilities could have attempted to become integral parts of their urban fabric to create truly multi-purpose stadia. A number of other multi-purpose stadiums were built around the same time, including Candlestick Park in San Francisco, the Oakland Coliseum in Oakland and Sun Life Stadium in Miami, and each received similar criticism as the “cookie-cutters.” Ironically, it was the heralded multi-sport-driven design and configuration that ultimately led to the demise of this generation of stadia.

Owners and team franchises did not take their fans’ criticisms lightly. Beginning in the late-1980s and early-1990s, new stadia were designed to house one sport and to continue the initial development of the whole user-experience. This fourth generation sought to capitalize on the ability to market these single-use, modern venues as icons for cities. This trend gained momentum with the opening of Baltimore’s Oriole Park at Camden Yards, designed by HOK Sport (now Populous), in 1992. This baseball-only stadium reversed the trend of the multi-sport stadium and allowed the urban site to generate the edges and configuration of the seating and field. These new ballparks looked to historic precedents like Wrigley Field in Chicago and Fenway Park in Boston to inform the development of the modern, “retro,” urban stadium. Additional examples of multiple, single-sport stadia include Paul Brown Stadium (football) and Great American Ballpark (baseball) to
fig. 1.9: Old Busch Stadium
fig. 1.10: New Busch Stadium
fig. 1.11: Oriole Park at Camden Yards
replace Riverfront Stadium in Cincinnati, and the new Busch Stadium (baseball) to replace Busch Stadium in St. Louis.

More recently, a fifth generation of stadia has emerged that aims to use the popular iconic status of professional facilities for the purpose of urban regeneration in blighted or brownfield areas. One of the best examples of this type of stadium is AT&T Park in San Francisco, home of the San Francisco Giants baseball team. Like Oriole Park, AT&T Park is an urban stadium situated in a unique setting along the San Francisco Bay. Since the stadium's opening in 2000, it has driven a wave of development in the area that has transformed what was once an urban wasteland into one of the most popular neighborhoods in the entire city.¹⁰ A similar project is the recently completed Olympic stadium in London. Built for the 2012 Olympic Games, the stadium is located in the heart of the Olympic village and drove the transformation of East London. Before the games, the site comprised hundreds of dilapidated buildings, and was referred to by locals as a run-down “rust-pocket” that was seldom used by the city.¹¹ Planners working with the London Olympic Committee identified this problem early in the design phase and sought to create a beautiful and beneficial solution for both the Games and the area beyond 2012. The toxic soil on-site was treated, public transit nodes were established around the area, and new housing, schools, offices, and retail spaces were built in

¹⁰ C.W. Nevius, “AT&T Park at 10: A home run of an urban concept,” SFGate, April 11, 2010.
fig. 1.12: AT&T Park
fig. 1.13: London Olympic Park
conjunction with the new 560-acre park to be used after the closing of the Olympics. Most important, the legacy of the Olympic Park and the facilities located on-site consider future uses, and planners and designers attempted to develop design strategies that would allow the site to host a multiplicity of program and event types.
Chapter 2
The Modern Stadium Problem

The evolution of the stadium as an architectural typology, from its beginnings in antiquity to the rapid transformations seen throughout the past hundred years, is impressive to trace. However, despite the innovations and attempts to correct flaws with previous generations of stadia, a number of pressing problems still exist that, if addressed, could transform the type into an integrated and sustainable solution.

ECONOMIC

From the early 1900s until the 1950s, stadia were regularly filled to capacity and watching live events became the new national past time. As a result of the technological and television age, a number of professional franchises are unable to fill their stadiums, leaving owners and managers struggling to find a solution to their financial survival. The notions that stadia can instantly become a generator for millions of dollars of revenue and that they can instantly revitalize a run-down area of a city are two of the biggest misconceptions in the sports industry. Presently, it is extremely difficult for a sports stadium to be financially viable for a city or organization without some type of subsidy.

Rod Sheard establishes three factors that a facility must meet in order to be a realistic option:

- The required subsidy is not impossibly large
- The project is sufficiently attractive to public sources

of finance to justify investment from the public purse ...

• and sufficiently attractive to private sponsors to persuade them to bridge any remaining financial gap

Today, it is more common, though not guaranteed, for the organization proposing the stadium to offer at least some form of financial support, rather than relying solely on outside public and private funds. The San Francisco 49ers and the city of Santa Clara have sold $670 million worth seats and luxury boxes for their new stadium, currently under construction, even though it is not expected to open until the 2014 NFL season. This amount covers a little more than half of the expected $1.2 billion cost. The rest of the funds will be obtained from the NFL itself, a new hotel tax and a city redevelopment fund. This ability to keep public funding to a minimum is, unfortunately, the exception rather than the norm. Despite this advantage over other stadia, the new 49ers stadium lacks the design suitable for a truly multi-use stadium that can be accessed and utilized by the community year-round.

Cincinnati and Hamilton county in Ohio are still feeling the financial burden brought about by the construction of Paul Brown Stadium and Great American Ballpark, homes of the Cincinnati Bengals of the National Football League and the Cincinnati Reds of the Major League Baseball, respectively. In

fig. 2.1: New 49ers Stadium, rendering
the 1990s, the Bengals threatened to move to another city if a new, football-only stadium was not built. Hamilton County agreed to build the stadiums and provide almost all of the financing for the project, the cost of which was estimated at $550 million. To finance this, Hamilton county assumed more than $1 billion in debt by issuing its own bonds without any support from surrounding counties. The stadium has created an immense financial burden on the county and its citizens, nearly 14-percent of whom live below the poverty line. In 2010, the stadium’s operating cost was $34.6 million, or 16.4-percent of a county’s budget that has cut funding to local police forces and public schools. Too often, a city will propose a new stadium in an attempt to keep a franchise and fans interested in the city and team without obtaining appropriate funding. The resulting financial impact can cripple the local economy of an area without providing a significant return to the citizens supporting the stadium.

SOCIAL

One of the most significant criticisms of modern stadia is the lack of use and contribution to cities during non-event periods. As a typology, stadia typically see a days-used-per-year ratio under 1:2, and this ratio is often less, depending on the sport. Arenas and ballparks generally have a higher use ratio than football stadiums due to the length of these sports seasons and the enclosed configurations of arenas. An

fig. 2.2: Paul Brown Stadium
fig. 2.3: Great American Ballpark
MLB stadium will host 81 regular season home games and a maximum of eight playoff games. An arena that houses both an National Basketball Association and National Hockey League team will host a maximum of 120 games, including preseason, regular season and playoffs games. While several stadia host other events, including concerts, extreme sporting events and exhibitions, these large buildings often sit vacant for a substantial percent of the year. During this time, the public is prohibited from using the venue. Most professional and college stadia are massive buildings that dominate a site and area and sit separated from the surrounding community, which creates a disconnect between the stadium and the public. Two examples of this are the University of Phoenix Stadium in Glendale, AZ and Qualcomm Stadium in San Diego, CA. Both stadiums are located outside of the city centers and are surrounded by hundreds of acres of parking. These two characteristics create facilities that are isolated from the public and offer no benefits to the community during non-event periods.

Franchise owners, managers, cities and architects must adopt new design principles for stadia so that they can contribute to the community and cultural health of an area.

ENVIRONMENT

In addition to both the economic and social problems associated with stadia, the typology is one of the most unsustainable
fig. 2.4: University of Phoenix Stadium
fig. 2.5: Qualcomm Stadium
forms of architecture based on its resource to use ratio. New construction techniques have allowed for massive stadiums, capable of holding more than 100,000 spectators, to be built. By default, these stadia are massive resource sinks, requiring large amounts of material, often virgin, for construction. Additionally, these stadiums consume vast amounts of energy and water, and produce tens of thousands of tons of waste annually.

The modern stadium, especially in America, is becoming a venue for comfort rather than sport. Press and luxury boxes exist in every major stadium and require constant air-conditioning, adding to an already massive energy demand. Seldom used on non-event days, these spaces are under-utilized making this continual conditioning extremely wasteful. Further aggravating the situation is the growing trend to build roofs that completely enclose stadia in order to create a consistent viewing and playing environment in any weather condition. The amount of energy required to air-condition the millions of cubic feet inside an enclosed stadium is staggering and is seldom offset by renewable sources. Ironically, sustainable and regenerative technology, the most needed type of technology in stadia, is the one type that has rarely been included in stadium design. In addition to the demand on natural and otherwise resources, the site development of these stadia are often detrimental to the environment and surrounding neighborhoods. Most modern stadia, especially in America, are located in areas that force spectators to drive. As a result, hundreds of acres
fig. 2.6: Cowboy Stadium
fig. 2.7: Lucas Oil Stadium
of parking lots are built on the site to accommodate fans’ cars. Locating stadia near urban centers or major public transportation would allow fans to travel to events and prevent the construction of “seas” of parking.

Most sites for modern stadia also lack any form of sustainable development. It would be easy and relatively inexpensive for owners to add vegetation and bioswales, landscape elements placed in parking lots or other paved areas to remove silt and pollution from surface runoff water, around the site to mitigate stormwater runoff and reduce the urban heat island effect. Perhaps the most unsustainable characteristic of modern stadia comes from the social issues mentioned previously. Considering the amount of resources expended to construct and maintain these facilities and their lack of year-round use and benefit to the surrounding community, it is evident that significant changes to the design and planning of these facilities must be made in order to increase their positive impact on the surrounding community.
Chapter 3
Critical Theories

This section outlines a few critical theories that provide insight and a starting-point for the development of the ideas and goals of this project. Each theory is summarized, analyzed and related to the overarching thesis questions through the investigation of various precedents and stadium design issues.

In the book The Death and Life of Great American Cities, Jane Jacobs discusses the planning and building of modern American cities and offers her criticisms and perspectives. One of the primary arguments she presents throughout the book is the notion of the need for intricate and close-grained diversity of uses in a city that offer each other continuous support.¹⁶ She expands upon this by emphasizing that this diversity of use can differ tremendously, but that these uses must compliment one another in certain, set ways. For example, in the lower downtown tip of Manhattan, hundreds of thousands of people work at a number of corporations, law and insurance firms, and federal and state offices. This area also experiences high volumes of visitor activity, particularly during the weekdays, as people come in from out of town for business and personal reasons. These users create an enormous demand for daily meals, goods and services, both business and cultural. However, there is a glaring lack of supply to meet these needs despite an abundance of space, and businesses have moved from the area to other locations in the city that offer the required amenities as a result. Opportunities for diversity exist in an endless amount in this area, but the lack of appropriate

fig. 3.1: Diagram of annual use
planning and development has led to its decline.\textsuperscript{17}

Jacobs also discusses the notions of primary and secondary uses and their impacts on the urban environment. Any primary use on its own is ineffective as a generator of diversity within a city.\textsuperscript{18} If an area relies on a single primary use that attracts people during a specific time of day or day of the week then that area will suffer from a lack of use and diversity during other times or days. However, if a primary use is successfully combined with other uses that bring people to an area at different times then a stimulating environment for secondary diversity is created.\textsuperscript{19} Secondary diversity is a term for the programs and uses that grow in response to the presence of a primary use in an area that serve the people the primary use draws. If secondary diversity contains enough and flourishes along with the primary use, it can become a primary use in itself, drawing people to an area specifically to experience or use the results of secondary diversity. With a multitude of primary uses that accommodate different needs, an area can accommodate a number of different users at different times of the day and week, allowing for constant use and occupation. Jacobs also notes the need for multiple primary uses in a downtown urban setting to keep the heart of a city flourishing with activity and diversity.

The current design and planning strategies employed in stadia

\textsuperscript{17} Jacobs, 154-155.
\textsuperscript{18} Jacobs, 162.
\textsuperscript{19} Ibid.
fig. 3.2: Diagram of flexible, multi-use space for Nippert Stadium
are remarkably relatable to the issues and problems presented by Jacobs. Regardless of where a stadium is located, either near or far from an urban area, tens of thousands of people descend on the area for various primary events. However, most stadium complexes lack the supporting amenities to keep these masses around the area after a particular event or game. The stadium and the events it hosts can be considered primary uses, however, these events only last for a few hours at a time and generally only occur once or twice per week for a limited time each year. The lack of multiple primary uses and secondary diversity contributes to an area that is used for only a fraction of the year. As in the example of lower Manhattan, people converge on a site for one particular reason, and then disperse upon its conclusion because there are no other supporting programs in place to keep them in the area, creating negative, ineffective spaces. Jan Gehl discusses related concepts of public space in his book *Life Between Buildings*.

Gehl emphasizes that his book is not about special events or solely busy streets and urban centers. Rather, it is an investigation of ordinary, every day activities and their specific demands on our environments.²⁰ Gehl posits that activities in public spaces can be divided into three categories: necessary activities, optional activities, and social activities.²¹ Necessary activities are comprised of those that are required in everyday life, including going to work and school, running errands, and

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²¹ Gehl, 11.
eating. These activities remain relatively independent from the physical framework of the environment in which they occur, and will take place throughout the year under nearly any condition. Optional activities occur when people have a desire to take part in them, if time and place allow, and if the conditions for the activities are optimal. These activities, including recreational activities and outdoor relaxation, are directly dependent on exterior physical conditions. If conditions are either poor or not optimal for a given activity, only the former; necessary activities, will occur. In streets and spaces where this is the case, people hurry through and human activity and interaction is held to a minimum. However, if an environment and its conditions are considered good, then a variety of activities and interactions are possible. Social activities – those that depend on the presence and activity of others in a space – include social gatherings, conversations and community activities. The character of this type of activity varies immensely and depends entirely of the context in which they occur. In places where people share common interests or backgrounds, such as at schools or in places of work, these activities can be comprehensive. In larger, more public settings, these activities will typically be more superficial, as individuals cannot relate directly to one another. While the physical framework of a space does not have a direct impact on the quality and content of these interactions, these spaces can be designed and planned to encourage human interaction and encounters that can lead to a stronger communal and urban fabric, and can become places of interest and frequenting.\textsuperscript{22} Gehl, I.S.
fig. 3.3: Necessary activity, class
fig. 3.4: Optional activity, studying
fig. 3.5: Social activity, organizations
Gehl continues by stating that people and human activity are the greatest objects of attraction in a space. Essentially, people are more likely to gather and interact with one another in a space that either has a number of people gathered already or one that can facilitate these interactions. Places with people are more attractive than almost any other attraction on its own.23

Stadia on their own are rather dull and lifeless forms of architecture. It is when tens of thousands of people gather to cheer and celebrate that the environment within and around the stadium itself becomes energetic and exciting. Unfortunately, as has already been noted, the events that draw people to stadia occur only a few times throughout the year, leaving a massive, lifeless building that is inaccessible to the public for the rest of the time. However, if the stadium and the site around it could be reimagined and redesigned to allow for alternate, outside public and private uses, people could gather and use the facility on non-event days, which would create a dynamic, exciting and beneficial environment for the community.

Quentin Stevens describes thresholds as “point[s] where the boundary between inside and outside can be opened; space loosens up, and a wide range of perceptions, movements and social encounters become possible”.24 He also cites Norburg-
fig. 3.6: Arrowhead Stadium, full
fig. 3.7: Arrowhead Stadium, empty
Schulz as stating “the opening is the element that makes the place come alive, because the basis of any life is interaction.” These two points demonstrate the idea of the threshold acting as a transition between spaces (e.g. public and private, inside and outside, open and closed), and that a space needs to become occupied by people and must foster and encourage interaction between these people in order for the space to be considered successful. Because of these in-between characteristics and the requirement for human interaction, thresholds can be locations where space loosens and allows for a number of activities and possibilities. Thresholds can act as restrictive spaces that channel, slow, or filter the flow and movement of people between spaces, focusing their attention and placing them in close contact with one another.

Stevens notes the thresholds around public facilities such as cinemas, theatres, nightclubs and churches, noting that people converge and interact with one another while they wait for the programmed event to begin. After the event, people have the ability to leave but it can be observed that more often than not, they choose to stay together, socializing about what they just saw or participated in. It is in these typically unprogrammed, loose spaces surrounding programmed, fixed spaces, that these rich interactions between people occur.

Stevens expands upon this last point further by citing the Galeria Kaufhof in Berlin. People often gather around the upper balcony of the Galeria, which is a threshold space that

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25 Ibid.
26 Stevens, “Betwixt”, 75.
allows people to experience and be a part of a public event occurring in the plaza below while remaining separate from it simultaneously.27

Thresholds around modern stadia are typically closed and generally do not allow for interactions or activity between spaces. Rather than creating places that encourage activity both inside and outside the stadium, today’s strategies render these spaces inaccessible to the public on non-event days. This project seeks to investigate the possibility of blurring the boundary between the stadium and surrounding urban environment so that public program and human activity can occur year-round. One possible activity includes public gathering in areas around the stadium to watch live streams of events occurring inside the stadium so that the public and individuals outside of the actual event can still take part. This could be strengthened further if part of the stadium is open to the surrounding area so that sounds from the game or event can be heard from outside the stadium, blurring the boundary between the inside and outside of the stadium. An area like this could also provide a space to watch away games and other major televised events, including sports games and political events. Referencing Jane Jacobs, these newly imagined primary events could eventually lead to types secondary diversity and other primary events, further increasing the use of the stadium throughout the year:

Similarly if the thresholds of various programmatic elements

27 Stevens, “Betwixt”, 85.
within the stadium can be opened, the stadium's accessibility to the public and other functions is increased again. For example, the press, luxury suite and club levels in a stadium provide several opportunities for use during the offseason but are not currently being utilized in such a way in most modern stadia. Various events, such as conferences, business meetings, weddings, receptions, fundraisers and parties are programs that could occur successfully in these spaces. Furthermore, if planned and designed correctly before the construction of the stadium, the luxury suites and press spaces could be converted to alternate programs, like hotel rooms or offices, when not being used for larger events.

Thunder Stadium, a proposal for a professional women's soccer stadium and hotel designed by Office dA, demonstrates these ideas of open and mixed uses. The pressbox and suites for the stadium are integrated with a hotel than can be used during both event and non-event days, increasing the use of the stadium. Portions of the stadium are open to either the street or to other programmatic areas within the building, opening the playing field to the public.

A stadium’s capacity is defined by the number of ticketable seats within the facility. While constraints and regulations like revenue, marketing and record-keeping prevent this formal definition from being altered, it could still be possible for an organization to increase the number of people viewing a particular event that creates a strong connection to the
fig. 3.8: Thunder Stadium proposal
fig. 3.9: Thunder Stadium proposal
community and individuals around the stadium. An example of this idea is Wrigley Field in Chicago. Located in the heart of the Lakeview neighborhood, Wrigley features one of the most unique and informal capacity strategies. Over the years, people in the neighborhood began to realize that you could watch a baseball game from the rooftops around the stadium. This created forms of secondary diversity, as the owners of the buildings began selling food, beverages and souvenirs to people that came to watch the games, and eventually led to other primary uses as non-baseball events began to take place in the buildings and on the rooftops, benefitting the economy and sociocultural health of the neighborhood and city. Nippert Stadium itself has experienced similar outside-the-stadium viewing of events. For home football games, crowds of people gather along Backstage Drive, located on the southwest end of the stadium, to catch glimpses of the action. This occurrence, while not intended or necessarily encouraged by the university, can have immeasurable positive impact on the event, along with future events and the university and athletic department. As previously noted by Stevens, people tend to converge and assemble where there is activity and gathering of other people. The viewing areas around Nippert allow for these crowds to gather, creating the possibility of attracting even more people to watch the game. While the university and athletic department do not profit directly from this, a more exciting atmosphere is created for the game or event, more individuals within the university and surrounding community are exposed to the energy and of Cincinnati football, and
fig. 3.10: Wrigley Field rooftops
fig. 3.11: View from Wrigley Field rooftops
future ticket sales may increase if individuals in the crowd are excited enough to want a better view of the action. These two examples demonstrate the possibility that could arise from the blurring of the threshold between a stadium and the area and community in which it is located. Furthermore, they lend to an additional notion of smooth, loose space.

In *Urban Slippage: Smooth and Striated Streetscapes in Bangkok*, Kim Dovey and Kasama Polakit describe looseness of form as a multitude of “loose” parts that are able to move around and be reconfigured with a high level of flexibility. Looseness of function and program refers to the ability of one space to accommodate several functions either at the same time or different times.28 These separate functions have the ability to slip into one another, and buildings and space slip between defined categories and forms and fold into each other.

Dovey and Polakit compare ideas of striated space, or space defined by “hierarchical social control with identity and authority clearly demarcated”, and smooth space, or space where identity and authority are blurred.29 Ideas of oppositions such as public and private, temporary and permanent, and inside and outside as folding onto and merging with one another emphasize a framework that allows things to exist and interact within it, but in a loose, flexible manner rather than a strict, rigid one. This attempt to create an integrated,
A prime example of this idea of programs and functions merging in one space or a sequence of spaces is Samsen Road in Ban Pathom, Thailand. In the morning, the shops located along the street remain closed from the previous night, but breakfast, pastry and coffee vendors set up and sell their goods from 6am to 9am. Around 10am, these breakfast stalls are replaced by others serving beverages and snacks, while the shops open to the public. From 5pm to 10pm, the serving stalls are replaced by dinner restaurants and stalls while the shops remain open to serve drinks throughout the evening. The shops close their formal doors and smaller tables and serving spaces are wheeled out from storage to keep the activity visible and a part of the streetscape. Because of the slight function changes, the street always remains busy, drawing even more passersby into the narrow, bustling area. The layering of functions does not end here, however, as the necessary activities required to operate the shops and food stalls also share the street space. Vendors use the gutters for washing and cleaning food, food preparation and serving space.\(^\text{30}\)

**Most modern stadia are comprised of a highly structured,**

\(^{30}\) Dovey and Polakit, “Urban Slippage”, 122.
fig. 3.14: Samsen Road, morning
fig. 3.15: Samsen Road, afternoon
fig. 3.16: Samsen Road, night
traditional arrangement of programmatic spaces, within a closed, restrictive, isolating shell that segregates the stadium from the rest of the surrounding community. Depending on the size of the stadium, there are one or two concourse levels located around the field under the stands. Along these concourse levels are located associated programmatic spaces like concessions, restrooms, team stores and information stands and displays. This typical configuration limits both the form of the stadium and its function, as the spatial requirements for each of these programmatic elements limit their arrangement, particularly given their standard placement under the seating tiers. Rather than assuming this accepted solution, this thesis seeks to investigate possibilities that make these traditional functions flexible while allowing for the folding, overlapping and integration of both stadium program and outside, public program. This flexibility of program within the stadium could lead ultimately to further blurring of the threshold between the stadium and the city as functions, program and events slip in and out of the two.

In the design for the Munich Olympic Stadium, by Frei Otto and Gunther Behnisch, the stadium’s programs and structure spill into the surrounding Olympic Park, creating a unified, open experience for the visitors. Rather than building a large stadium and isolating it from other events and venues within the park, one side of the stadium is left completely open, allowing spectators to come and go freely. Furthermore, stadium program is dispersed around the main structure,
fig. 3.17: Munich Olympic Stadium
fig. 3.18: Munich Olympic Stadium section
fig. 3.19: London Olympic Stadium
fig. 3.20: London Olympic Stadium programmatic pods
allowing it to serve both the stadium’s crowds and other people throughout the park.

London’s Olympic Stadium, built for the 2012 Olympic Games, also exhibits flexible design strategies and innovative design solutions. The biggest criticism of Beijing’s Olympic Stadium is that the 90,000 facility has hosted only a handful of events since the 2008 Olympics. The stadium was built at a cost of $411 million and requires $11 million per year to maintain, all the while not receiving support from a permanent tenant.31 Organizers for the London Games made it a primary goal of planning for London stadium’s legacy. After the Games, at the will of the city and the surrounding community, the upper bowl of the stadium can be disassembled to be reduce from a 90,000 seat stadium to a permanent 25,000 seat facility for local football clubs and public use. Additionally, designers faced the challenge of a small and awkwardly shaped site that made a traditional stadium programmatic arrangement impossible. The supporting programs, including concessions, restrooms, retail and storage that are traditionally placed around the outer edge of the stadium had to be reimagined in London’s scenario. Because of the size and site restraints, these elements were placed in open spaces scattered around the site, allowing for all of the required program to be included despite the constrained site. These supplementary programmatic “pods” can also be moved around and reprogrammed based on future needs of the city and community. This arrangement also

allows for various public events and functions to occupy these open areas around the bowl, blurring the boundary between what is open public space and the stadium.

This proposal for Nippert Stadium will attempt to create loose boundaries and thresholds both in and around the stadium in order to generate a solution that is truly integrated with campus. As the design will highlight in Chapter 7, the athletic plaza will become an emphasized and sloping element that will act as both the cover for interior programmatic space and vertical circulation for the upper seating deck. By utilizing this landform building strategy, the boundaries between the campus, the plaza, the programmatic building and the stadium become obscured.

While they are separate theories developed by different individuals, the ideas discussed in this section all contribute related concepts that will contribute to the reimagination of the stadium. From multiple primary and secondary uses, to types and characteristics of public space, and thresholds and loose space, stadia have the potential to be transformed from one of the most closed, isolated and seldom-used architectural typologies to integrated, multi-use facilities that contribute to the sociocultural health of the surrounding community.
Part II

Site + Context
Chapter 4
Site History + Preservation

In 1889, a collection of colleges, including the Cincinnati University, merged and, in order to accommodate all the programs and required buildings, were moved to a site situated at the southern end of Burnet Woods Park. The site for the future campus was well situated geographically, located between the city center and the surrounding suburbs and on a hill providing unobstructed views of the surrounding valley and hills. In 1894, six architects submitted plans for the proposed campus plan and the next year, Samuel Hannaford won a competition to design the campus’ first building, McMicken Hall. Hannaford was subsequently commissioned for the construction of a couple of new buildings that created a linear plan along Clifton Avenue. As the new University began, athletics became popular with the student population and a lowland region in the park east of the academic buildings provided a natural location for a stadium. At first, a small set of wood bleachers was constructed and later rows of concrete bleachers and then a full stadium bowl. As the campus continued to grow, the stadium was positioned to become the heart of the University. In 1910, a power plant was built to provide electricity for the expanding campus. The Dieterle Vocal Arts Center was constructed later in 1910 at the south end of the stadium, following the strong axis created by the power plant and the length of the stadium. As the campus continued to expand, new buildings were constructed to meet both academic and housing needs, pushing the edge

33 Campus Heritage Plan, 33.
fig. 4.1: University of Cincinnati campus map, 1895.
fig. 4.2: University of Cincinnati campus map, 1930.
of the academic complex east towards the stadium bowl.

The east side of the campus was drastically altered with the construction of French Hall dormitory and the 8,000-seat Allen Armory fieldhouse in 1954. With the completion of these projects, the nature of building on campus took on a new direction as open space became defined as the leftover areas between buildings, instead of being enclosed by a group of buildings, as was traditional throughout American campuses. A number of projects in the following decades led the campus in a direction that Joseph A. Steger, who became President of the university in 1984, found dissatisfying. With the support of the administration, Steger launched a search for a visionary planner to take the image of the campus and university in a new direction. George Hargreaves was selected to design the campus master plan and developed a concept that sought to replace underutilized open space and parking lots with a series of designed open street and green spaces that would activate the campus and create places where students and faculty could gather and partake in social and academic activities. The new buildings were to be designed by “signature” architects, in collaboration with Cincinnati-based architectural firms, in order to further enhance the image of the university and the character of the campus. It was a number of these buildings, including the Campus Recreation Center, designed by Thomas Mayne of Morphosis, the Richard C. Lindner Center, designed by Daniel Libeskind, the Joseph A. Steger Student Life Center, designed by Moore Ruble Yudell,
fig. 4.3: Hargreaves Master Plan
fig. 4.4: Campus Recreation Center
and the renovation of Tangeman University Center, completed by Gwathmey Siegel Associates, that created such a strong and vibrant campus center along Hargreaves’ MainStreet corridor. The new architecture of the campus was intended to challenge the intellect of the university community and to work with the landscape of the Campus Master Plan to create a sense of movement through the campus while providing spaces and pockets for various activities to occur.\(^{35}\)

It is this notion that is ultimately at the heart of this thesis proposal; to create an expansion of various university programs, including Nippert Stadium, and classroom and student meeting and study spaces, while adhering to the principle that the solution should work together with the existing landscape and provide additional spaces for activity to occur year-round.

The west campus at the University of Cincinnati features a diverse variety of architectural types and building styles, ranging from historical landmarks to modern, signature buildings designed by top architects from around the world. According to the Campus Heritage Plan, the university utilizes the United State’s Secretary of the Interior’s Standards for the treatment of historic buildings. More specifically, the Campus Heritage Plan references the Standard’s definition of Rehabilitation and uses this definition as a basis for the treatment of both significant historic and signature buildings on campus. The specific definition reads:\(^{36}\)

\(^{35}\) Campus Heritage Plan, 46.

\(^{36}\) Campus Heritage Plan, 75-75.
fig. 4.5: MainStreet and TUC
fig. 4.6: TUC
“Rehabilitation is defined as the process of creating a compatible use in a historic property through carefully planned minimal alterations and compatible additions. Often referred to as adaptive reuse, Rehabilitation protects and preserves the historic features, materials, elements, and spatial relationships that convey historical, cultural, and architectural values. In this context, new, expanded, or upgraded facilities should be designed to avoid impacts to character-defining historic elements. They should also be constructed of compatible materials. Retention of original historic fabric should be the primary consideration in undertaking a program of rehabilitation and adaptive reuse. Rehabilitation accommodates needed change and is the most appropriate treatment for most buildings and landscapes at UC”.37

While the university recognizes that change must occur on campus as times and needs change, an effort should be make when designing new buildings to respect and preserve the historical and signature characteristics of existing buildings.

Though this thesis will propose changes to a signature building, Tangeman University Center, it will attempt to respect significant characteristics found on the building. Furthermore, this project, it an attempt to reconsider traditional stadia design techniques, will respect other aspects of the campus and built environment. Significant view corridors exist throughout the campus, with several located around the edges of the current stadium. A traditional stadium proposal would likely

37 Campus Heritage Plan, 75
fig. 4.7: North endzone view corridors
fig. 4.8: East sideline view corridors
fig. 4.9: South endzone view corridors
fig. 4.10: West sideline view corridors
block these corridors, isolating the expanded stadium from the rest of campus. This project aims to not only maintain these corridors, but to enhance them by creating specific focal points around the stadium. This strategy, along with the preservation guidelines outlined in the *Campus Heritage Plan* will aid in the development of a stadium that is truly integrated with its surroundings.
Chapter 5
Current Problems + Needs

As the university’s football program has experienced recent success since the 2006 season, there has been a growing interest in expanding Nippert Stadium in response to the ever-increasing interest in the program. While this is a critical component of this proposal, there are other key drivers that will also contribute significantly to the project’s development and final solution. The needs of the following user groups and their potential impacts will be discussed further in this section, along with current programmatic problems that will be addressed by this project.

ATHLETICS

With the ever-changing landscape of college football conference alignments, schools and programs are pushing to move to prestigious conferences in order to receive more exposure and money. On November 20, 2012, the Atlantic Coast Conference (ACC) announced it was passing over the University of Cincinnati to the University of Louisville to its members. The move would have placed Cincinnati in a more prestigious conference with stronger resources and greater stability. However, the ACC selected Louisville for its quality facilities. At its current size and configuration, Nippert Stadium at the University of Cincinnati has a capacity of 32,643, which is the lowest for a stadium in the Big East conference.
fig. 5.1: Campus map and site
This capacity can be broken down further into the following specific locational capacities:

- Lower bowl: 24,598
- Reed Shank Pavilion (upper deck): 6,094
- North endzone: 1,759
- Pressbox: 192

The ultimate goal of the athletic department is to improve the quality of its existing facilities, particularly Nippert, and wants to increase the stadium’s capacity to 50,000, including suite and club seats. This increase in capacity would not only generate more revenue for athletics and the university during football games, but could also help to draw head-to-head matchups with large, prestigious programs, which could generate national primetime exposure of University of Cincinnati football. In 2010, as part of a one-and-one matchup (one game is played at each of the teams’ home stadiums), with the Oklahoma University Sooners, one of the winningest college football programs of the last decade, the two teams met at Paul Brown Stadium in downtown Cincinnati. The game was moved from Nippert Stadium to Paul Brown because the capacity of Nippert was too small to accommodate Oklahoma’s ticket allotment. With the proposed expansion, games such as this one could be played in the heart of the university’s campus, which would draw enormous crowds to the campus and create a significant source of revenue for both

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38 Interview with Mary Beth McGrew, University Architect, September 25, 2012.
<table>
<thead>
<tr>
<th>Team</th>
<th>Stadium</th>
<th>Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cincinnati</td>
<td>Nippert Stadium</td>
<td>30,643</td>
</tr>
<tr>
<td>UConn</td>
<td>Rentschler Field</td>
<td>40,000</td>
</tr>
<tr>
<td>Louisville</td>
<td>Papa John Scott Stadium</td>
<td>46,059</td>
</tr>
<tr>
<td>PITT</td>
<td>Heinz Field</td>
<td>52,454</td>
</tr>
<tr>
<td>Rutgers</td>
<td>High Point Solutions Stadium</td>
<td>65,050</td>
</tr>
<tr>
<td>USF</td>
<td>Raymond James Stadium</td>
<td>65,908</td>
</tr>
<tr>
<td>Syracuse</td>
<td>Carrier Dome</td>
<td>49,250</td>
</tr>
<tr>
<td>Temple</td>
<td>Lincoln Financial Field</td>
<td>48,333</td>
</tr>
</tbody>
</table>

fig. 5.2: Nippert Stadium
fig. 5.3: Big East stadium capacities
the athletic department and the university.

Another goal of the athletic department would be to increase safety measures around the stadium for both players and spectators. Because of the field's position within the stadium, the dividing wall along the south endzone is located just a few feet from the corners of the endzone, creating a significant safety hazard. Players moving at full speed do not have enough room to slow their momentum or change direction, should a play require them to break for these corners, which could potentially result in significant injuries. Furthermore, players moving at these speeds pose a safety hazard to the spectators themselves. In the 2010 season, Armon Binns, a wide-receiver for the University of Cincinnati made a play to one of these corners, was unable to slow himself, and ran into a boy sitting in one of the first rows, injuring him. By reconfiguring the lower bowl or repositioning the field within it, the space between the endzone and seating wall could be increased which would help to reduce these risks.

**UNIVERSITY**

In addition to addressing needs of the athletic department, this project also seeks to meet various spatial and programmatic needs of the university itself in order to create a solution that can be utilized year-round, rather than for just a few days each year. There is a significant shortage of classroom space on campus,
fig. 5.4: Proposed bowl configuration
making up just three-percent of the built space on campus.\textsuperscript{39} This shortage is compounded by the ongoing construction and building renovation projects around the university. As spaces require maintenance and upgrading, classrooms are closed and have to be relocated. However, given the lack of existing space, there are few places for these classes to move to. This proposal will address this issue by incorporating plans for both permanent and temporary classrooms that can be used by various schools and departments within the university. Similarly, there is a need for additional student study and both student and faculty meeting spaces and lounges. These vital programs will be incorporated in a flexible and overlapping manner with stadium program expansions. There is also a shortage of lecture halls on campus. This program could be strategically integrated with the project to provide yet another benefit to the university.

Additionally, the university lacks a developed entertainment space for students to use. While Catskellar, a bar and restaurant in Tangeman University Center offers a number of pool tables and a few other games and recreation activities, it is underutilized because of its basement-like environment. This project will propose a larger entertainment center couple with a restaurant and bar to generate another primary use for the stadium and to create an opportunity for secondary uses. This program can be used by students and faculty during the week and on weekends, and the bar and restaurant will experience

\textsuperscript{39} Interview with Mary Beth McGrew, University Architect, September 25, 2012.
SPECTATORS

Spectators attending an event at Nippert Stadium will be perhaps the most critical user group to be considered. If the conditions of the stadium are not optimal or comfortable, people will avoid attending, nullifying the need for a stadium expansion in the first place. Therefore, in order to accurately assess specific needs of these spectators, they must be broken down into the following sub-user groups: the regular ticket holders, the luxury suite holder, and the passerby.

Regular ticket holders can be described as spectators sitting in either the lower bowl or the upper deck during an event. These seats and ticket sales are the most common and comprise the largest percentage of seats in a stadium; in the case of Nippert Stadium, these seats account for 32,451, or 99.4-percent, of the 32,643 seats in the stadium. However, there are a number of issues with the current configuration of the lower bowl that could lead to an unpleasant experience for some of the fans in attendance. Over the years, as Nippert has undergone its renovations and expansions, the lower bowl has more-or-less remained the same. In order to maximize the stadium’s capacity, the seats continue from the concourse level all the way down to the field. Unfortunately, the 5-10 rows closest to the sidelines have significant sightline issues. Because they
- Consideration of UC’s heritage and campus plans
- Consideration of campus architectural, planning and experiential language

- Capacity (cur: 32,643; tar: 50,000)
- Safety improvements
- Increase distance between endzone + wall
- Multi-use field
- Football
- Lacrosse
- Men’s + women’s soccer
- Intramurals

- Average Joe
- Sightlines
- Easy, uncrowded stadium entry
- Easy, uncrowded concessions + restrooms
- View of score/video board

- Skyboxes
- Private access + entry to suite/club
- Comfortable surroundings
- Ability to access outside (or operate window)
- Immediate access to food + private restroom
- Unobstructed view of field + score/video board

- Passerby
- Access to key campus amenities + circulation corridors around stadium
- Ability to see the field?
- Ability to watch + cheer from outside the stadium
  (open plaza + video board)
are so close to field level, spectators in these rows cannot get an adequate view of the playing field and event due to the players, coaches, trainers and event staff that line each sideline. This condition can often lead to a very frustrating and unpleasant experience that could deter spectators from attending a future game or event. This proposal will address this issue by lowering the playing field in order to provide a clear view of the field for all spectators. Another problem with the current configuration of the lower bowl that this proposal would address is the changing stair riser dimension along the length of the lower stands. As one climbs the stairs from field level to the concourse level, the riser height changes from 4” to 5” to 9” to 11.5”. This inconsistency has led to a number of trips and falls, which presents a danger to all spectators. This project would address this issue by integrating a uniform riser height along the length of the bowl, making it safer for event attendees and both students and athletes using the stairs for exercise on non-event days.

These spectators would also have a need for open, uncrowded concourses and an appropriate number of restrooms and concession stands so as to avoid long lines and uncomfortable circulation spaces. Similarly, an increased number of entrances around the stadium would help to reduce the lines and entry time currently experience at Nippert. This proposal will propose a wider concourse on the west side of the stadium and a separate concourse for the upper deck. This strategy will reduce the volume of spectators using the concourse along
fig. 5.7: Current and proposed sightlines
the east side, which will help to make it feel wider.

Spectators holding tickets for either luxury suites or club seats will expect a much different experience. It will be critical to provide both a high-end, comfortable experience for these users, and to offer a larger number of these seats, as they generate significant amounts of revenue for the university. While the current club seats at Nippert provide the expected comfort and amenities, the overall experience has the potential to improve drastically, which could entice more spectators to purchase these tickets. Currently, club seat holders are required to wait in long lines to enter the stadium. This proposal will create private entrances for these high-paying customers, which will not only improve their experiences, but will also reduce the number of people using the public stadium entrances.

The passerby adds a new concept of the user/spectator in stadia. The passerby could be defined as a user that stops to watch a portion of an event before continuing his or her business. These users could also gather in areas around the stadium to be included in the overall atmosphere of an event without being provided direct or complete views of the action. While these spectators would not be a source of revenue for the athletic department or university, they still have the potential to generate a positive impact on both the event itself and athletics and the university. Passersby could contribute to the atmosphere of an event through cheering and celebrating,
and some of these users could choose to purchase tickets for a later event. This concept also has the potential to generate additional interest in games and other events and could lead to an increase in the fan-base of the university’s athletic programs. A gathering and viewing space outside of the stadium’s bowl will also be incorporated. This space will be a place the university community can use for a number of loose, undefined activities. One of these may be watching televised sporting events. The University of Cincinnati’s football team plays between four and seven games away from campus and the stadium sits empty during these events. This activity would allow students and other fans to gather around the stadium to watch away games and cheer for the Bearcats, recreating the environment and atmosphere of a home football game. This space would also be used for small concerts and performances, particularly those put on by the university’s College-Conservatory of Music. Considering this user group during the design and planning of Nippert would respond directly to Jan Gehl's hypothesis that spaces become active and lively when there is an abundance of human activity that occurs within them, and would add a unique experience to the stadium and event-day experience.

While the needs addressed above will act as significant factors during the design and development of this project, they will always work in conjunction with the key theories mentioned previously in order to develop a solution that provides additional programmatic space for the university community.
fig. 5.10: Conceptual rendering of game-watching plaza
Part III
Proposal
Chapter 6
Design Principles + Methodology

Nippert Stadium has been home to the University of Cincinnati Bearcat football team since 1902 and has witnessed a number of renovations and changes to both itself and the buildings and sites surrounding it. The development of MainStreet along the northwest edge of the stadium, in conjunction with the construction of the Campus Recreation Center, Steger Student Life Center and the renovation of Tangeman University Center has created an open, dynamic “heart” for the campus where students gather to converse, study, relax, and where student groups and organizations can set up informational displays. The stadium is one of the most unique in college football because of its integration and connection with and location in the center of campus. As a result of the recent success the football program has experienced since the 2006 season, there has been a growing interest to increase the capacity of Nippert Stadium, which would be the first major expansion of the stadium since 1992, when the upper deck was renovated and the existing pressbox was constructed. However, if the expansion is strictly capacity- and revenue-driven, the result has the potential to isolate the stadium from the surrounding buildings and campus, which would have a severely negative impact on the campus center.

This proposal seeks to be not only an expansion of Nippert Stadium, but also both an expansion and enhancement of university program and the existing urban campus conditions. The critical theories outlined in the previous section will remain at the heart of all design decisions. This strategy will be key in
fig. 6.1: University of Cincinnati campus
developing a solution that is truly multi-use and integral to the entire campus. A number of other factors and drivers will also be considered and addressed by this project, including needs of the university, athletic department, students, faculty, and event spectators. The specific needs and goals of these user groups will be outlined and discussed further in the following pages. These factors will be balanced with each other along with various other guidelines, such as those presented in the Campus Heritage Plan and Campus Master Plan, to create a solution that holds true to the character and comprehensive goals of the University of Cincinnati.

The ultimate goal of this proposal is to create critical expansions of both the capacity of Nippert Stadium and programmatic requirements of the university that overlap and interact with each other, creating flexible, multi-use spaces that blur the thresholds between the stadium and the rest of campus and allow for the stadium to become occupied and active year-round.

HARGREAVES CAMPUS MASTER PLAN

The Hargreaves Campus Master Plan from 1991 provides a connective strategy for the University of Cincinnati that links the past to the future. As program and building needs change and expand, the university will be required to construct new facilities and renovate existing ones. In order to establish a framework to create this connection,
Combination of primary uses that allow people to occupy and utilize a space at different times

Classrooms
Student meeting rooms
Student study spaces
Faculty meeting rooms
Conference rooms
Labs
Offices
Food court expansion
Entertainment space
Relocation of kitchens
Open public space
New press level
Improved sport field
Additional seating
New luxury suites
New club levels
Additional Restrooms
Additional concessions
New retail/team shops
Game viewing spaces
Facility connection
Open rally space
Even bowl steps
Improved sightlines
Wider concourses
Additional concessions
Additional entrances
Improved video display
Improved seats
Increased capacity
Additional suites
Additional club seats
New press area
Multi-sport field
Additional retail
Classrooms
Study spaces
Meeting spaces
Assembly spaces
Expanded food court
Additional entertainment
New alumni center

Necessary, optional, social Gathering, assembly and activity are an area's main attractor
Programmatic slippage/looseness allows for multiple uses to overlap and share a same space
The opening of thresholds allows for a space to come alive through interaction and opens programmatic possibilities

Fig. 6.2: Design drivers and guidelines
Hargreaves identified key campus force fields, which are defined as, “three dimensional spatial characteristics generated by buildings, landforms, and vegetation, projected into space along particular alignments or axes”.\textsuperscript{40} It is the goal of the master plan to use these force fields as a framework for generating new buildings and spaces around campus. By doing this, familiar forms and axes will be present throughout campus, relating various built environments to each other while simultaneously linking past and present projects. This project recognizes the significance of this existing framework and will use select, critical force fields as form generators for the proposed expansion. By doing this, the project will not only advance the goals established by Hargreaves, but will also help to create a unified facility that becomes an integral, seamless part of campus.

The diagram to the right shows the force fields and their positioning overlaid on top of the campus map. It also highlights specific force fields that have been identified as critical to this project, and it is these select fields that have been used to set the edges of the buildings.

**CRITICAL VIEW CORRIDORS**

One of the most interesting and powerful characteristics of the University of Cincinnati’s campus is the ability to see across large expanses to buildings and spaces on other sides

fig. 6.3: Critical site force fields
of campus. This creates visual connections that complement and build upon the connective framework established by Hargreaves. Due to the unique, crowded site conditions around the stadium, a traditional expansion would likely block some of the critical view corridors that exist around Nippert Stadium in order to increase the capacity. This project investigates strategies that balance the needs of all stakeholders in order to create a solution that generates the capacity increase desired by the athletic department while maintaining important characteristics of the campus and university.

The diagram to the right highlights these critical view corridors, which will be used to create slices through the building in order to allow the views to be maintained. This framework will integrate the stadium with the rest of campus further, as the ability to see from one part of campus to another will be maintained while still increasing the capacity of the stadium.

The guidelines established by using force fields and view corridors will be used to create a proposal that is truly an extension of the campus rather than a separate entity, as would be the case with a typical, modern stadium expansion.
fig. 6.4: Critical view corridors
Chapter 7
Design

01. Typical solution
   _ Limited-use
   _ Isolating
A traditional proposal would expand the capacity of the stadium, but would isolate it from the rest of the campus. This type of solution would lack the ability to create programmatic space for other campus requirements, limiting both its annual use and value to the University.

02. Connect and slope
   _ Multi-use
   _ Threshold + boundary
   _ Flexible space
   _ Site
Connecting the press box to TUC would create opportunities for multi-use space for members of the University community. Sloping the plaza would provide access to the upper concourse while uniting the stadium with campus, blurring the traditional hard-edge boundary created by modern stadia. The resulting space underneath the new plaza is activated by various program that contributes to the needs of the University while creating a stadium that can be used year-round.

03. Extend and cut
   _ Site
Extending the edges of the press box increases the luxury seating capacity, generating revenue for the athletic department and the University. The existing view to the Lindner Center is maintained by using the force fields outlined in the Campus Master Plan to cut the sloped plaza.

04. Raise and cut
   _ Site
The edges of the press box are raised to maintain critical view corridors existing on-site. Additional corridors are maintained creating additional cuts through the sloped plaza. These strategies also generate new ways of experiencing and viewing events occurring in the stadium.

05. Push and Pull
   _ Multi-use
   _ Flexible space
   _ Site
Portions of the new plaza are elevated and lowered to create stages and viewing areas for the University community. This strategy allows for a number of uses, both primary and secondary.
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The edges of the press box are raised to maintain critical view corridors existing on-site. Additional corridors are maintained creating additional cuts through the sloped plaza. These strategies also generate new ways of experiencing and viewing events occurring in the stadium.

Portions of the new plaza are elevated and lowered to create stages and viewing areas for the University community. This strategy allows for a number of uses, both primary and secondary.
fig. 7.6: Site plan
fig. 7.7: Level 01
fig. 7.8: Level 02
fig. 7.11: Level 05
fig. 7.12: Section 1
fig. 7.13: Section 2
fig. 7.14: Exploded program axonometric
fig. 7.15: Program and use schedule
fig. 7.16: Aerial
fig. 7.17: TUC view corridor
fig. 7.18: MainStreet view corridor and amphitheatre
fig. 7.19: Lindner view corridor I
fig. 7.20: Lindner view corridor II
fig. 7.21: Dieterle and CCM view corridor
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