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Bleeding Edge

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Memorial Stadium can be a better contributor to its environ’s. The stadium currently is the largest element on the University of Nebraska at Lincoln’s Campus; however, it is used the least. In the year 2009 it was used for 12 events most of which were Cornhusker football games. Other events include a Larry the Cable Guy comedy show and State High School tournament finals. The circulation around the stadium is dynamic in the sense that it has a high level of fluctuation in its traffic. The traffic is either high density or low. I call this being turned into a dead space. This also results in the anticipation of the event dropping off and being detached from the atmosphere. The ultimate goal is to explore different avenues to make the stadium circulate more efficiently both internally as well as connecting to the surrounding environs, extending the atmosphere and creating moments of anticipation.
3 Site Context: defining the campus

Site Considerations
- Social nodes on campus
- Flat surface parking
- Parking garages
- Student housing
- Concourse design
- Existing stadium
- Usual Scholastic day traffic
  - Cars
  - Pedestrians
- Game day traffic
  - Cars
  - Pedestrians
During game day it becomes obvious that the stadium is a product of many renovations. The circulation around the exterior has been given little to no thought and this prevents fluid movement to the event. Once one intersects that perimeter they are separated from the University entirely as though it is a completely different entity. The scale of the western facade dwarfs the pedestrian as they inhabit the ground level around it.
Crowd approaching from south
Site Context: documentation of campus

Circulation around the stadium as well around the Campus became an important element because it was apparent early on that this would be the main platform of design to integrate the stadium into the campus. The circulation diagram below depicts both car and pedestrian circulation.
Studying circulation on a pedestrian level the project started to take on a level of separating the car from the pedestrian and buffer of keeping the car on the exterior of campus to allow the campus to be opened for pedestrian movement. The circulation on both game days as well as normal scholastic days becomes safer and more enjoyable to experience. Also looking at the way pedestrians use the space during normal functioning hours can influence the choices throughout the design process.
The majority of the inflow on game day comes from the south. This is primarily due to the number of flat surface parking for tailgating but it is also due to the number of parking garages near the downtown region and the stadium's proximity to downtown. The downtown region houses a great number of bars as well. There is also housing to the east that allows a great amount of people to walk from their houses.
Goals & Expectations: how to make it better

- Extending the atmosphere
- Adding anticipation of the event
- Elevating the circulation vertically
- Bleeding the stadium into campus
- Create new interesting ways to experience the stadium even during non-active times

These should be achieved under a single formal gesture that brings the pieces of the project together and then helps them to become a part of the larger campus.
Research Goals
The stadiums were chosen to study the circulation around the stadium and the formal gestures made to enhance the experience of the event. This thesis is also interested in the effect the stadium has over the environment it is placed in, both experiential (as the pedestrian) and social (social being its ability to interact with its surroundings in a positive way and avoid being a dead relic during non-active times.)

Three main bullet points
- Interaction with environs
- Social implications
- Circulation qualities
The Bird’s Nest

The Bird’s Nest is an awesome spectacle and is surrounded by series of crossing paths that help extend the atmosphere of the 2008 summer Olympics. The stadium for the most part sits vacant sense the games. Memorial stadium is plagued with a similar problem in that it was only used 12 times throughout 2009. The dynamic structure allows and open skin allows for the connection and continuation of the environment from the site around to the inside of the stadium.

Main Points

• Connection from surrounding site through concourses
• Fluid circulation
• Dynamic structure
Solar Power Stadium

The Solar Power Stadium is completely covered by solar panels. When the stadium is not in use it funnels the power gained by the solar panels back into the surrounding community’s power grid. Its form acts as a glove that captures pedestrians coming from the south west.

Main Points

- Contributes to the surrounding community even when not in use
- Formally successfully captures pedestrians approaching from the south west
- Wraps the stadium
Gorgeous Incheon's Park- 2014 Asian Games Stadium Design

The Gorgeous Incheon’s Park in a sports park for the Asian games in 2014. It connects to the surrounding site through a series of winding paths. This reduces the scale of the buildings on site by bringing those paths over the buildings through a series of layers. The paths are separated from the car paths.

Main Points
• Reduces scale
• Separates cars from people
• Connects to site
• Pulls buildings into the site and connects them to the surrounding community
2014 Asian Games Stadium Design
Movement of Stadium concept

The movement around the stadium should catch the pedestrian traffic from the south and assist in the movement around the stadium to the north. Pedestrian movement then acts as an interactive glove that wraps the stadium to allow for fluid entry and interaction with the bowl of the stadium. This is to activate the bowl during non active times as well as extending the exterior atmosphere into the bowl during events. The design should separate that car from the pedestrian where possible. Currently in some areas the car and pedestrian are forced to cross paths which results in dangerous environments. This ultimately reduces the atmosphere to almost a fearful mind set. Gathering people should not be reduced to this fear when partaking in the atmosphere that is a Cornhusker game day.
Skin/Movement relation model

The concept model was to start thinking about how the movement of elements can start to influence the way the skin takes shape. Movement is fluid and I wanted the skin to be a reflection of that. There are fixed portions of the project that the skin would have to react to and this is similar to the frame that holds the edges of the skin in the concept model. The skin is morphed but wires that are hidden beneath the cover of the skin and this morphing reflects movement within the structure. This reflection gives a physical reaction that can then be studied. Studying this physical reaction can then become informational to the gestures made on the final form.
Circulation Wire

The main gesture of the circulation is to connect the wester edge of campus back to the rest of the University as well as capture the inflow of people from the south. Once the circulation wire and the other fixed portions of the project are established then the way the skin starts to influence this movement can be studied. Establishing the remaining fixed portions of the project is important because they will influence the way the skin begins to wrap the stadium as well as the way this circulation wire starts to translate into physical circulation.
wire movement to campus
Defining Edge of Campus

Defining the western edge of campus become the way to think about how to transform it into an active place as opposed to the dead space that it currently becomes when there is not an activity going on inside the stadium. Once the game or event is over the western area of the campus is transformed into this desolate area with very little activity. The stadium’s location partially encourages this because of it’s size and disconnection from the rest of the university.
Bleeding Edge

Bleeding the edge of campus allows the project to become about the movement around the stadium and activating the those dead areas around the stadium. Breaking these areas into different gradient levels allowed me to study the elements that currently inhabit them and how my formal gesture will inhabit them.
DIVIDING GRADIENT
Defining Hard Edge

Expanding the existing garage allows for the ability to house more parking, removing the strain on the campus for parking as well as providing an area where tailgating can occur on an open green space on the top level. This also provides a new location for the Champions Club. This would provide an elevated green space that shrinks the scale of the west facade of the stadium, while still allowing for it’s dominant view from a distance. It also allows for the treatment of the street side as a hard edge because there is very little to no pedestrian traffic.
Elevating circulation

Elevating the concourses and walk ramps allow for the continuation of the atmosphere through the entire stadium. Using long ramps to connect the different levels allows for a vertical connection between the different levels. From different vantage points you are given different visual connections to different levels as well as inside the bowl of the stadium that enhance the level of anticipation. The northern Beltway concourse allows for a connection between the east and west concourses that was not there previously.
Connecting to expanded garage

The connection to the expanded garage was meant to act as this infrastructure that welcomes pedestrians not only to the stadium for specific events but also to the University. This was meant to act as a public face for the University that would be able to house exhibits and campus events. It becomes a place that activates the dead space that used to consume the surround elements of the stadium. Putting grass on the roof of the expanded garage allows for outdoor events that can be flexible in its use. It lays the framework that can then be directed by the user.
Connecting to campus

Elevating the concourses and walk ramps allows for a fluid connection to the east stadium and then the rest of the campus. This is where the skin of the concourses is the most important in its gestural form. The skin helps move one around the north concourse and spill them in the eastern part of the stadium that will be developed into an open green space. This skin also covers portions of the green space to disperse people into campus as well as pull people into the stadium.
ARROWS RELATION TO FORMAL GESTURE
East relations

The green space was developed from a series of paths that were based on how people will traverse through the area when the parking lot is gone. Where those paths cross as well as the entrances into the buildings surrounding the green space I placed nodes that could potentially serve as a place of rest or conversation. Later in the design process the green space was reevaluated to see which paths made the most sense and how it could start to function for the stadium as well as the campus.
Beginning gesture

After looking at how the main elements start to work together it became important to think how this skin would start to function as this glove that wraps that stadium to grab incoming pedestrians as well as disperse into the campus. I started by thinking of the south west entrance as a tall vertical entrance that has a clear point of entrance. It then flows onto the green roof of the expanded garage that reduces that scale of the skyboxes and has a longer entrance that connects with the majority of the green roof. I then wanted it to flow with the circulation around the stadium and then spill out into the east green space. The initial form was too timid in its ability to spill out into that space however. In the final design it spills into the green space to have a visual connection with the other communal spaces on campus.
Scale reduction

One of the main goals was to bring the scale of the stadium down to a more personal level so that one did not feel dwarfed by the stadium. This also helps it to shed its statuesque posture on campus and become an interactive entity on the campus. The height difference came from the idea of the stadium bleeding into campus. Having the stadium bleed into the ground conceptually allows the design to reference the pedestrian on campus. The west side of the stadium is relatively quick pace traffic so the need for a one to one intimate relationship is not as needed.
Relation to gradient

Having the previous conceptual section allows me to critically look at a more finalized section and see how it relates to the goals of the project. The garage becomes the hard edge of the project, the welcome concourse becomes the dense gradient, and the east concourse along with the east green space becomes the porous gradient that connects with the rest of campus.
dense edge
elevated green roof
dense gradient
welcome area/
beginning of circulation
porous gradient
integration into campus
skin closed to
define movement
tree canopy takes over skin canopy
porous skin canopy is greater than tree canopy
posous skin canopy is equal to tree canopy
tree canopy takes over skin canopy
porous gradient
integration into campus
Production: final form in plan

Ground level plan

The ground plan shows how the lower drive is maintained as a place that houses busses and camera trucks as well as how the stadium connects to the east green space.
The shops that currently exist on the street level will be moved to the second level of the existing garage so that they can interact with the welcome concourse. They would also be able to be an integral facility with other events that would be housed in the welcome concourse. This plan also shows how the skin wraps to cover a portion of the east green space.
Second elevated level plan

This plan shows how the concourses are connected by the northern concourse. It also shows how the champions club that is on the far west portion of the garage interacts with the green roof.
Production: final form in plan

Third elevated level plan

This plan starts to show how the skin and ramps interact with one another. It also shows how one gets into some of the elevated seating in the stadium through these ramps.
Typical sky box plan

The sky boxes are given an atrium that opens to the bowl of the stadium. This atrium turns into another vertical move that continues the atmosphere into this area that is usually cut off from the rest of the atmosphere. This area can also be turned into a study atrium during regular scholastic days. It provides an open privacy that is nonexistent on the rest of campus.
1/256" = 1' TYPICAL SKY BOX PLAN
Experience

The following renderings are shown in a specific order to give the viewer a sense of what approaching the stadium from different vantage points is like. This rendering allows one to understand how the skin starts to take form as well as interacting with the east green space.
Production: experiencing final form

Experience
Experience

This rendering shows how the skin visually interacts with one as they look across this green space and it creates a sense of interest as to what is around the corner.
APPROACH FROM SOUTH NEAR THE BELL TOWER
Production: experiencing final form

Experience
approach from 12th street walkway
Production: experiencing final form

Experience
Experience

The skin on the east portion of the stadium allows for walkways that connect to a northern entrance that can only be reached from these walkways.
South east entrance onto skin walkway
Production: experiencing final form

Experience
Production: experiencing final form

Experience
NORTH EAST ENTRANCE FROM SKIN WALKWAYS
DIRECTLY INSIDE NORTH EAST SKIN ENTRANCE VIEWING SOUTH
Production: experiencing final form

Experience
Production: experiencing final form

Experience
Experience

The concourse is meant to be used in a variety of different ways. These renderings are meant to show some of its flexibility.
Experience
The north concourse has a direct view into the bowl of the stadium from the North West that allows for a moment of reveal of the event and then hides it again. This helps create that sense of anticipation.
North Concourses View of the Bowl of the Stadium
Production: experiencing final form

Experience
VIEW OF NORTH CONCOURSE FROM INSIDE THE STADIUM
Experience
Project reflection

Reflecting on the project I wish I would have had more time to experiment more with making the structure and the skin becoming a more integrated functioning element of the design. This would have allowed for a more cohesive design and movement around the stadium. This was one of the larger parts of the project that I failed on. More experimentation with the skins design would have been beneficial as well. A majority of the second semester was spent on the skin but I think that I should have tried to take it a lot further. This would have reduced the skitsofrantic geometry that appear to be disconnected from the overall design. This skitsofrantia prevents the design of the project from having a cohesive design. There should have also been more development in the programmatic layout of the project as well. Currently it sits as an infrastructure that allows for events to happen inside it but does not say what those events could be. This would appear as though little thought went into designing with event parameters and how they relate to the space created. My thesis however was more about the development of this skin and less about the program so not a great amount of time would have been needed.
Thesis experience

I started my thesis with the interest of applying robotics to the stadium to achieve a dynamic environment. It then morphed into a moveable stadium that could hide or rise out of the way to allow for a more friendly use its footprint with the surrounding environment. The project finally ended up looking at how revitalizing the circulation can make the stadium a more integrated entity in the campus. Finding this final goal took most of the first semester that reduced the amount of time for exploration on the final design. More clear and direct thinking during the first semester would have allowed me to get further along with my final design and made more finalized decisions. This could have also been helped by doing more exploration during the summer previous.
Information used in book

Bird’s Nest


Solar Power Stadium

Gorgeous Incheon’s Park- 2014 Asian Games Stadium Design