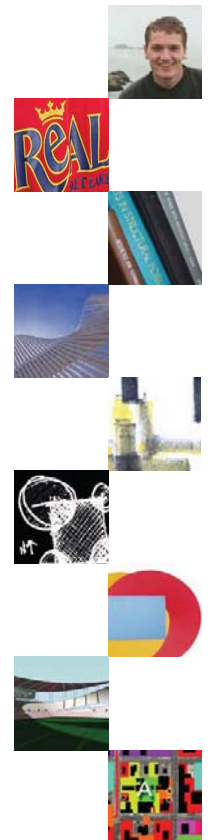


Real Salt Lake Soccer Stadium Dynamic Structural Expression in Downtown Salt Lake City

Master's Project by
Rob Bouwhuis

2006



thanks

A special thanks to all those who helped in the completion of my graduate school and my master's project.

Especially to my wife, **Korinne**, who supported me all the way through, who helped me with my models and other tasks as needed, giving my projects that extra touch that made them look much more finished and presentable (she made more trees than I think I ever did). She was also always there for me, giving ear to my frustrations and offering the comfort and love that sustained me through the whole process. Thank you my love!

Also thanks to **Scot Woodbury**, the director of operations at Real Salt Lake, for his help with making the project more complete and fitting to the needs of Real Salt Lake.

And to the faculty at the University of Utah College of Architecture and Planning. **Mimi** and **Julio** with their general guidance and especially **Ryan Smith** for his interest in the project and his encouragement and consultations which helped make the project more exciting and explorative.



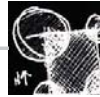
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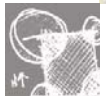
Downtown Salt Lake

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introduction

bio
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book



Bio

Rob Bouwhuis was born in 1978 and grew up in Clearfield, Utah. He was the tenth of eleven children of David and Phyllis Bouwhuis. Growing up, his interests included playing soccer and enjoying the outdoors. He continues to pursue these interests as recreation. In his schooling he developed an interest in science, math, and architecture and as a high school student was able to explore each of these areas in greater depth.

Rob lived in northern Italy for two years from 1997 to 1999 as a missionary for his church. While there he was able to gain a greater appreciation for the great historic architecture found in Italy and also encourage his interest for the game of soccer.

In 2003 Rob received a Bachelors of Science in Civil Engineering from Utah State University where he pursued an emphasis in structural design, always with plans to continue his education in architecture. He also worked brief periods on various construction sites in order gain knowledge and experience relating to the building process.

Rob has been an architecture graduate student at the University of Utah, College of Architecture and Planning since May 2003. He has been on the "3+" graduate track since his undergraduate studies were not in architecture. Design projects that he has worked on while in school include: an inter-

faith retreat center, public market adaptive reuse of a historic building, high-rise in Argentina, artist retreat center, public art center, library, conference center, and housing projects. Rob's areas of interest for architecture have led him to do as much of a focus on them as possible in his coursework. They include: structural design as a major part of the aesthetic and design, urban planning, historic architecture, and sustainability in design. He plans to continue studying these areas during his architectural career. Also while in school Rob was able to gain valuable working experience at a small office in downtown Salt Lake City.

Rob married Korinne Knowlton in August, 2000 and they moved to Logan, Utah where he pursued his studies in engineering while she attended graduate school for Marriage and Family Therapy. She was raised in Bountiful and Farmington, Utah and has been the best thing to ever happen to Rob. The love and support that she has given him has been an enormous blessing in the six years they have been together. Following her graduation she continued to support Rob in his studies for the final



year at Utah State and then as he attended graduate school at the University of Utah.

Rob and Korinne enjoy spending time together in the outdoors any opportunity they get – mountain biking, hiking, camping, downhill and cross-country skiing, and many other activities. They also enjoy traveling and seeing new places. They have traveled many places in the United States and southern Canada and in 2004 were able to spend a month in Italy together.

In May 2005 they had their first child, Tressa Korinne Bouwhuis. She is truly a great joy to them and they look forward to many great times ahead as a family, especially upon completion of Rob's graduate school.

Project Selection

Real Salt Lake Soccer Stadium
Dynamic Structural Expression in
Downtown Salt Lake

The selection of his Master's Project stemmed out of the interest in more deeply exploring the structural design of a project to go along with his undergraduate studies, his passion for soccer (and Real Salt Lake), and urban planning. His proposed project of the soccer stadium for Real Salt Lake in downtown Salt Lake City afforded him the opportunity to explore each of these areas. The initial phases of site selection gave him an opportunity to explore a process he developed for selecting a site that would be most beneficial for the downtown area. The design phase, or second semester, was driven by an emphasis on the exploration of the structural system and how it could be used to enhance the energetic and exciting atmosphere around the game of soccer at a professional level. With approval of my advising faculty, this structural emphasis was undertaken knowing that the scale of the project would make it impossible to deeply explore all aspects of the design with a single semester of a master's project.

Book

This book is intended to give a basic overview of the process that was involved in the completion of this master's project. In no way does the information contained in this book represent a complete summary of the research and/or design work that was accomplished throughout the process.

introduction



proposal

project proposal + goals



Project Proposal + Goals

Real Salt Lake Soccer Stadium Dynamic Structural Expression in Downtown Salt Lake

Professional sports have played an important role in public life in cities across the country and around the world. The recent arrival of the Real Salt Lake soccer team to Salt Lake City is helping to create another dimension of public life within the city. The team has been welcomed by a strong fan base with excitement and energy. They now need a place to call home, a permanent venue to showcase the new organization. This creates a significant opportunity to add new life and vitality to the urban environment through the showcase of Major League Soccer games and other outdoor events. The design and structure of the new Real Salt Lake stadium should reflect the energy it will bring to the environment within Salt Lake City.

A soccer-specific stadium for Real is important to the success of the organization and is something the strong fan base here warrants. Salt Lake has given Real one of the highest attendance rates this year in Major League Soccer and has led them to be voted the best fans in league history, despite this being their first year (Nierman 2005). Logistically, their current home at Rice Eccles Stadium is not very ideal with field dimensions and sightlines that often do not work well for soccer. Additionally, when Rice Eccles Stadium re-

ceived public funding for construction, this was done with a stipulation that prohibited permanent use of the facility by any professional sports team (B. K. Wade, personal communication, August 20, 2005). Consequently, it is impossible for Real to remain there long-term.

As sites are being considered both in Salt Lake City and in surrounding cities, we must realize the capacity this type of venue has to revitalize the city's core. For many years, downtown Salt Lake City has been an area of concern for many planners, city officials, and residents both in the city and along the Wasatch Front. The livelihood and vibrancy of the area has diminished, struggling to survive a shift of the retail and business market from the city center to the suburbs. Recent efforts have been made to bring back the economic and social life to the city and progress is being made. For example, the Delta Center was built downtown and has since given the area added life and diversity with the activity of people attending Jazz games, concerts, and other events. The new stadium would have a similar effect, functioning not only as a home for Real, but also as a major outdoor venue for other events. Such an outdoor venue would be unique within the downtown area. The combination of soccer games, music concerts, cultural festivities, and other sporting events will make the stadium both a hub and a catalyst that will spur on economic and social activity in downtown Salt Lake City. Across the country, many cities have recently

relocated their sports stadiums near the city core to help revitalize the downtown areas (Chapin 2004; Miller 1999; Braun 1999; Linn 1996). Salt Lake City must utilize and build upon these examples. When located near the core of Salt Lake City, the attendance and participation in the stadium's attractions will encourage the cultural and economic well-being of the area.

The success of the stadium will hinge upon proper siting within the fabric of downtown. Issues such as transportation, accessibility, visibility, available land, and urban context and connections are among the many which will need to be studied and addressed in selecting the precise location. Other issues to be considered will include the debate over whether or not public funding should be used to help finance the project.

The stadium will have significant influence on the makeup of the city due to both the physical size of the project and the activity levels of the people attending events. This influence supports the design of the stadium as one with energy and impact. The structural system employed in its design should not be plain and ordinary but exciting and extraordinary. In my research I will explore different aspects of using structure as the driving force of design, building upon my background studies in structural engineering. When discussing the technology or structural elements of a design, Pier Luigi Nervi stated,

There does not exist, either in the past or in the present, a work of architecture which is accepted and recognized as excellent from the aesthetic point of view which is not also excellent from the technical point of view. Good technology seems to be a necessary...for good architecture (Nervi 1965: 2).

I believe that the architectural expression should be one that is derived from the elements of the structure, both in the materials with which it is built and in the form that it takes. Furthermore, I also believe that inspiration of form should be derived from the energy exhibited by the game of soccer. As was said of the recent update of Soldier Field in Chicago, "The architects have developed a design empathetic with the sport, evoking the physics of the game" (Giovannini 2004: 120).

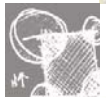
This opportunity to build a stadium in the core of Salt Lake City must not be overlooked. Locating the new home of Real Salt Lake downtown has a unique potential to revitalize and strengthen economic and social activity in the area. The dynamic structural design of the architecture will enhance the visual aesthetic of the city and reflect the energy and enthusiasm of Real fans. A new excitement and dimension will be given to the heart of downtown Salt Lake with the new home for Real Salt Lake soccer.

proposal



.research

research summary
annotated bibliography



Research Summary

During the research phase of the project a lot of effort was made to explore different aspects of stadium development, from the social, political, and economic aspects to the structural and stadium design. Some of the research was theory based while a good portion was also based on case-studies of stadiums and some other similar building types. A great deal of insight was obtained through this process on how these issues could be addressed in both the planning and design phases of the project.

Due to some time constraints, no overall summary of all important things that were learned was made. Nor was any specific direction as far as theory was set forth

for the project. Considerations from the research continued to arise throughout the planning and design phases of the project and references were often addressed multiple times and the large research base proved helpful.

The annotated bibliography shows a basic overview of the sources that were used in this phase of the project. Along with the reference and the general notes on the sources, notes were made when the source had specific relevancy to the project. Keywords were assigned to each of the sources to facilitate use of the references. Keyword categories are: Stadium Design, Structural Design, Urban Planning, Economic Aspects, Social Aspects, Political Aspects, and Sports Franchise.

Annotated Bibliography

Braun, B. (1999, September). Sports Stadiums Downtown: Are downtown arenas catalysts for urban revitalization? *Urban Land*, 58(9), 144. **Keywords:** URBAN PLANNING. *A brief look at the arguments that have been made stating that sporting arenas have helped redevelopment in downtown areas and also those who disagree. Broun finds that, based on short-term effects, the stadiums do help with revitalizing city cores.*

Chapin, T. S. (2004, Spring). Sports Facilities as Urban Redevelopment Catalysts. *Journal of the American Planning Association*, 70(2), 193-209. **Keywords:** URBAN PLANNING, ECONOMIC ASPECTS, POLITICAL ASPECTS. *Chapin looks at Sports facilities in city centers to question whether or not they are successful at being urban redevelopment catalysts. He also writes to translate the literature of sports facilities into the language of planning professionals. He looks at Baltimore's Camden Yards and Cleveland's Gateway in depth for his analysis. He gives a brief review of the financial aspects involved when public money is used for the construction costs. He concludes that they can be helpful tools for redevelopment but states that the study does not necessarily mean that such projects are efficient*

ways to use public money.

Effects of Sporting Activities on the Built Environment: A Little Exercise. (1995, December). *The Architectural Review*, 198(12), 4-5. **Keywords:** SOCIAL ASPECTS.

Extreme Textiles: Designing for High Performance. Smithsonian Institution: Cooper-Hewitt, National Design Museum, Smithsonian Institution. (2005). **Keywords:** STRUCTURAL DESIGN. *An overview of what is to be shown on exhibit at the National Design Museum at the Smithsonian Institution that was held April 8, 2005 to January 15, 2006.*

Faust, F. (1997, April). St. Louis's Newest Downtown Sports Facility. *Urban Land*, 56(4), 18, 21-22. **Keywords:** URBAN PLANNING, ECONOMIC ASPECTS. *St. Louis built a new stadium to get the Rams football team and built a convention center as part of it.*

Filion, P., Hoernig, H., Bunting, T., & Sands, G. (2004, Summer). The Successful Few: Healthy downtowns of small metropolitan regions. *Journal of the American Planning Association*, 70(3), 328-343. **Keywords:** URBAN PLANNING. *With increasing suburbanization over the last fifty years or so, most small metropolitan regions have experienced a decline in the downtown regions (Salt Lake City would be an example). This article talks about the characteristics of those areas in the U.S. which still have successful downtown areas. The article states, "planners should focus on the retention and enhancement of the distinct physical characteristics that clearly distinguish downtowns from suburban environments." In my opinion the Stadium for Real would be one of those characteristics that will help distinguish the Salt Lake City downtown area from the surrounding suburbs.*

Football Stadium in Barakaldo. (2004, July/August). *Detail*, 44(7/8), 822-27. **Keywords:** ECONOMIC ASPECTS, STADIUM DESIGN. *Review of a 7,960-seat soccer stadium in Barakaldo, a suburb of Bilbao. It is part of a large-scale redevelopment effort to help reverse the effects of an economic decline in the region.*

Football Stadium in Braga. (2004, July/Aug). *Detail*, 44(7/8), 828-33. **Keywords:** STADIUM DESIGN.

Freeman, A. (2004, October). Sundays in the Park with Bears: New landscape speaks to the aerial forms of Chicago's Soldier Field stadium. *Landscape Architecture*, 94(10), 97-103. **Keywords:** STADIUM DESIGN. *Soldier Field is surrounded by a park setting. While this project is much larger than what would be done in Salt Lake, some of the features and characteristics of this project may be learned from and applied in the site*

research



plan of Real Salt Lake's stadium.

Frosdick, S., & Walley, L. (1997). *Sports and Safety Management*. Oxford: Butterworth-Heinemann. Keywords: STADIUM DESIGN. A study of the safety issues surrounding stadium design from the perspective of soccer in England.

Giovannini, J. (2004, May). Boston Architects Wood + Zapata stir up controversy at Chicago's Soldier Field, inserting a Modern stadium into a Classically styled arena. *Architectural Record*, 192(5), 114-21. Keywords: STRUCTURAL DESIGN, STADIUM DESIGN.

Grogan, B. C. (1999, May). Stadium 2000. *Urban Land*, 58(5), 28-33. Keywords: STADIUM DESIGN. Written one year prior to the Sydney 2000 Summer Olympics, the article discusses the main Olympic stadium and other venues prepared for the games. The Sydney Olympics were considered by many to be the "green" Olympics with many environmentally friendly considerations used throughout the design of the venues. These considerations will be important to consider in the design of the stadium.

Hoyt, C. K. (1996, August). Kiel Center Arena: St. Louis Missouri. *Architectural Record*, 184, 114-17. Keywords: ECONOMIC ASPECTS, SOCIAL ASPECTS, POLITICAL ASPECTS, STADIUM DESIGN.

The Ins and Outs of Stadiums. (1990, January). *Architectural Record*, 178(1), 27. Keywords: STADIUM DESIGN, URBAN PLANNING.

Jean Prouvé. (1971). *Jean Prouvé: Industrial Architecture* (B. Huber & J.-C. Steinegger, Eds.) (A. Lieven, Trans.). Switzerland: Les Editions d'Architecture Artemis Zurich. Keywords: STRUCTURAL DESIGN. A review of projects designed by Jean Prouvé. His architecture was designed to be manufactured in a factory and assembled on site. As such he made interesting variations to the structural system and elements in order to facilitate the manufacturing process. His innovative ways to look at the structural forces and translate them into design is inspirational.

Jewell, D. (1992). *Public Assembly Facilities* (2nd ed.). Malabar, FL: Krieger Publishing Company. Keywords: ECONOMIC ASPECTS, POLITICAL ASPECTS, SOCIAL ASPECTS, STADIUM DESIGN.

John, G., & Sheard, R. (2000). *Stadia: A Design and Development Guide* (3rd ed.). Woburn, MA: Architectural Press. Keywords: STADIUM DESIGN, URBAN PLANNING. A comprehensive design guide which discusses the stadium building type, planning considerations of location, and many aspects of the form and layout design.

Keegan, E. (2003, October). Revamped Soldier Field draws praise and ire in Chicago. *Architectural Record*, 191(10), 30. Keywords: STADIUM DESIGN.

Keeney, G., & Warson, A. (2000, May). Stadium Parade Goes on with Montreal, San Diego Designs. *Architectural Record*, 188(5), 47. Keywords: STADIUM DESIGN, URBAN PLANNING. Montreal and San Diego join the many North American cities to boost downtown renewal through the building of new stadiums (baseball).

Koerble, B. (1994, July). Double Play. *Progressive Architecture*, 75, 21,25. Keywords: STADIUM DESIGN, URBAN PLANNING. The author compares two new baseball stadiums - the suburban Texas Rangers stadium and the Urban stadium for Cleveland Indians. She talks of the contrasting movements between the traditional urban setting and the suburbs.

Komendant, A. E. (1975). *18 Years with Architect Louis I. Kahn*. Englewood, NJ: Aloray. Keywords: STRUCTURAL DESIGN. Komendant explains the relationship he had with Kahn and how the structural systems were devised and developed in many of their major projects together.

Linn, C. (1996, August). Coors Field: Denver Colorado. *Architectural Record*, 184, 110-13. Keywords: ECONOMIC ASPECTS, SOCIAL ASPECTS, POLITICAL ASPECTS, STADIUM DESIGN.

Linn, C. (1996, August). Opportunities on the Sidelines. *Architectural Record*, 184, 108-09. Keywords: ECONOMIC ASPECTS, SOCIAL ASPECTS, POLITICAL ASPECTS, STADIUM DESIGN. Linn describes how it may be difficult to find hard evidence that supports the public funding of stadiums and arenas as a good investment in and of itself. The real potential that is involved is in the surrounding area that may be helped by such an addition. They should be a part of an overall development strategy. Also he states that much of the benefit of the facilities comes from intangibles such as quality of life, diversity of activities, and image of an area.

Madlener, T. (2004, July-August). The White Arches of Athens - the Olympic Site Shortly Before the Summer Games, 2004. *Detail*, 47(7/8), 786. Keywords: STADIUM DESIGN. Discussion of Calatrava's design for the stadiums in Athens and how the venues fit together as part of the Master Plan.

Mainstone, R. J. (1998/1975). *Developments in Structural Form* (2nd ed.). Boston: Architectural Press. Keywords: STRUCTURAL DESIGN. Describes the loads and their effects as well as the internal actions of the many structural systems used in buildings. It analyses and looks at

research



the history of the main types of systems and looks at how they relate to construction and form.

Mark, R. (1990). *Light, Wind, and Structure: The Mystery of the Master Builders*. Cambridge, MA: The MIT Press. **Keywords:** STRUCTURAL DESIGN.

May, H. (2005, 7 September). Utahns are against paying for stadium, but want it in SLC. *Salt Lake Tribune (Salt Lake City, UT)*, sec. Sports: Real Salt Lake.. **Keywords:** SPORTS FRANCHISE, ECONOMIC ASPECTS. A poll conducted for the Salt Lake Tribune found that the public is against taxpayer money going to the stadium but nearly a majority feel it should be in Salt Lake City. 31.5% like the Fairpark site, 17% would like it more downtown, 17.8% like Sandy, 13.8% for Murray and 20% are undecided.

Miller, T. K. (1999, May). Downtowns Get a Sporting Chance. *Urban Land*, 58(5), 22-23. **Keywords:** ECONOMIC ASPECTS, URBAN PLANNING. Sports stadiums are helping to revitalize downtown areas across the country. Examples are given for Phoenix, Dayton, Louisville, Dallas, and Denver.

Nervi, P. L. (1965). *Aesthetics and Technology in Buildings* (Robert Einaudi, Trans.). Cambridge, MA: Harvard University Press. **Keywords:** STRUCTURAL DESIGN. The Charles Eliot Norton Lectures presented with Harvard University for the year 1961-62. Nervi brings together his observations and ideas about architectural design. He puts forth that the aesthetic of "good architecture" is achieved when the building technology (structure) is correctly applied and expressed in the design. He discusses the relationship between building technology and architectural aesthetic and how it has been applied, to varying degrees of success, through major periods of architectural history. He also reviews many of his projects and discusses how he applied his ideas in their design.

Nierman, J. (2005, June 24). RSL fans voted No. 1 in league poll. **Keywords:** SPORTS FRANCHISE. RSL fans were voted the best in Major League Soccer history despite the team's short history according to MLSnet.com, the league's official web site.

Noll, R. G., & Zimbalist, A. (1997). *Sports, Jobs, and Taxes*. Washington, D.C.: Brookings Institution Press. **Keywords:** ECONOMIC ASPECTS, SOCIAL ASPECTS, POLITICAL ASPECTS. An examination of the economics, finance, and politics of the stadium boom in the United States.

Pastier, J. (1999, August). The Sporting Life. *Architectural Record*,

198(8), 111-113. **Keywords:** URBAN PLANNING, STADIUM DESIGN. A discussion of the increased building of new sports facilities across the U.S. and the world. Because of the increase in construction many more architects are designing stadiums and the overall architectural design has improved dramatically after decades of postwar stadiums that were built as "straightforward utilitarian examples of engineering." Pastier also discusses how newer stadiums are being built in the downtown areas of the cities to help revitalize the urban environment.

Pastier, J. (2004, July). Pet Project: The San Diego Padres's new stadium has achieved previously untried possibilities. *Metropolis*, 23(11), 150, 152, 154. **Keywords:** URBAN PLANNING, STADIUM DESIGN, ECONOMIC ASPECTS, POLITICAL ASPECTS. Pastier looks at the new stadium designed by Antoine Predock and HOK Sport + Venue + Events. It was built as the focal point of a 26-block redevelopment project. The design of the stadium is also looked at closely and how the stadium relates to its surroundings. The author claims that this project, more than any other, addresses more issues in the design and planning arenas than ever previously.

Pearson, C. A. (1991, June). Cracker Jack Palace. *Architectural Record*, 179, 60-67. **Keywords:** STADIUM DESIGN. Description and images of the new design for Comiskey Park (baseball) in Chicago.

Pedersen, M. C. (2004, January). A new Jets Stadium will create a building that accommodates more than football. *Metropolis*, 23(5), 96. **Keywords:** STADIUM DESIGN. A brief look at the proposed design for the Jets's new stadium. It looks at the idea of flexibility of functions in a way unprecedented in the U.S.. The design was modeled after the Saitama Super Arena in Japan and would convert from a 75,000-seat stadium to a 20,000-seat arena and 100,000 square-foot convention center.

Petersen, D. C. (1988, September). Thinking About a Downtown Stadium for Baltimore. *Urban Land*, 47(9), 21-23. **Keywords:** URBAN PLANNING. This article was written before Baltimore built their new downtown stadium. They looked at other precedents of downtown stadiums in Cincinnati, New Orleans, and Indianapolis. As Baltimore is an important precedent for downtown stadiums and the urban renewal that has taken place around it, this was an important look to see what the ideas were prior to its being built.

Petersen, D. C. (1996). *Sports, Convention, and Entertainment Facilities*. Washington, D.C.: ULI-the Urban Land Institute. **Keywords:** SOCIAL ASPECTS, POLITICAL ASPECTS, ECONOMIC ASPECTS. This book presents a discussion of different types of public gathering venues. It provides guidelines for determining the need and impact for such facilities,

research



financing the project, selecting the site, and designing the venue. It also gives U.S. and International case studies.

Prowler, D. (1992, June). Baltimore Hits Home With New Baseball Park. *Progressive Architecture*, 73(6), 26. **Keywords:** URBAN PLANNING, STADIUM DESIGN. Prowler discusses what he terms as "arguably the most significant urban design intervention in America of the last decade." Baltimore's Oriole Park at Camden Yards has been a huge success and has been looked upon by many cities as a precedent of how downtown stadiums can boost downtown growth.

Rice, P. (1994). *An Engineer Imagines*. London: Artemis. **Keywords:** STRUCTURAL DESIGN. Peter Rice was the engineer on many famous projects with unique structural systems such as the Sydney Opera House and the Pompidou Center. He tells of his role and the development of the structural systems in some of his larger projects. He also has some chapters in which he tells of the influential role other structural engineers such as Ove Arup and Jean Prouvé played in his development as a structural engineer. He tells of how he thought that the structural engineer should play more of an innovative design role than what is traditionally done in most buildings. Rice believes that rather than simply hiding the structure within the architecture, the structural components should be an important part of the architectural expression of the building. His way of exploring different ideas for the structural components, especially the connections, is motivating to me and my design.

Schittich, C. (2004, July-August). Sports Stadiums as an Expression of Building Culture. *Detail*, 47(7/8), 779. **Keywords:** SOCIAL ASPECTS, URBAN PLANNING. The author discusses how traditionally sporting venues were built to impress other areas in the world with their architecture. In past years that has changed and the architecture of such buildings, e.g. stadiums, has changed to be simply multi-functional machines. Recently the trend has begun to shift back and greater architectural emphasis is being put into the design. They have also recently been used to spur urban development.

Shropshire, K. L. (1995). *The Sports Franchise Game*. Philadelphia: University of Pennsylvania Press. **Keywords:** SPORTS FRANCHISE, ECONOMIC ASPECTS, SOCIAL ASPECTS. A discussion of the Sports Franchise industry and the value of sports in our culture. He goes through impact studies and other quantitative analyses of sports franchises. He specifically reviews their role in different American cities including Philadelphia, San Francisco, Oakland, Baltimore, and Indianapolis.

Sirefman, S. (1999, September). Staten Island, New York City's Fifth Borough, Hosts a Series of Revitalizing Projects. *Architectural Record*,

187(9), 71. **Keywords:** STADIUM DESIGN, URBAN PLANNING. A baseball stadium for a Yankees' minor-league team is among many revitalization projects for Staten Island. Brief discussion of the goal of HOK Sports in the design "to connect the city to the site through a public sidewalk, arcade, and esplanade along the water." Stadium gives fans a clear view of Manhattan's dramatic sideline. Likewise it will be important for the stadium in Salt Lake to show the beauty of its setting in Downtown and the Wasatch Mountains.

Slessor, C. (2004, July). Sports Spectacle. *The Architectural Review*, 216(1289), 42-48. **Keywords:** STADIUM DESIGN, URBAN PLANNING, ECONOMIC ASPECTS. One of the best architectural designs out of many soccer stadiums built in Portugal as they hosted Euro 2004. The design stands out because of its siting and form - especially the roof structure which connects both sides and is held up by cables spanning across the stadium.

Utah Transit Authority. (2005). Draft of Final Environmental Impact Statement and Section 4(f) Evaluation (Weber County to Salt Lake City Commuter Rail). **Keywords:** URBAN PLANNING. Alignments and locations of the Salt Lake City Intermodal Transit Hub as well as Commuter Rail was obtained from this document. Images from this document showed the locations of future TRAX lines.

Wade, Blake K. (2005, August 20, 2005). . Farmington, UT. **Keywords:** POLITICAL ASPECTS, ECONOMIC ASPECTS. Blake explained how because of stipulations around the public funding of Rice Eccles Stadium that it would not be legal to house, on a permanent basis, any professional sports team. The current contract with Real would allow them to use the venue for two years. An extension may be possible for another year.

Woodbury, Scot (2005, numerous dates - August-December). Director of Operations, Real Salt Lake . Salt Lake City, UT. **Keywords:** SPORTS FRANCHISE, STADIUM DESIGN, POLITICAL ASPECTS. Scot helped me on numerous occasions to help direct me to know what the needs and desires were for the Real Salt Lake organization. He reviewed my program descriptions to see how well the allocated sizes of the various components would meet the needs of the club. We also discussed the ideas and visions that they had in what the stadium would mean to the organization, the surrounding city and region.

Webb, M. (2004, November). View from Chicago. *The Architectural Review*, 216(11), 38. **Keywords:** URBAN PLANNING. Discussion of Chicago's new Millennium Park, a gathering place within the city that features a concert pavilion designed by Gehry. The site is located near Soldier Field.

research

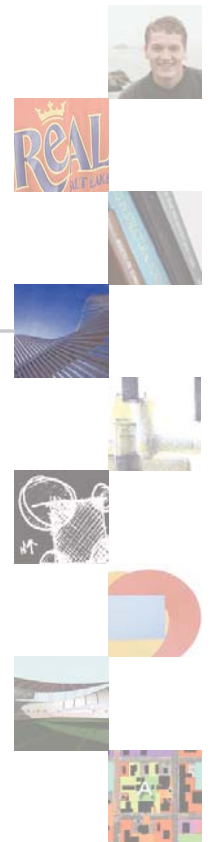


precedents

urban revitalization:
cleveland's gateway district

soccer stadium:
braga (portugal)

architect:
santiago calatrava





above (top to bottom): Jacob's Field - home of a major league baseball team. Gund Arena - home of a NBA team. Revitalized portion of the Gateway District. right: Expected direction of impact from the baseball field and basketball arena along with neighboring activity generators.

Precedent - Urban Revitalization: Cleveland's Gateway District

The Gateway in Cleveland was originally called the Central Market area after a popular market that was held in the area for over 100 years until the 1970's. Cleveland experienced, like so many other cities in America, a strong decline following WWII and the district suffered along with it.

Located just north of a confluence of interstates and serving as one of the major entrances into the downtown area, the Gateway dis-

trict was very visible to citizens and visitors of Cleveland alike. As it was, the district typified a blighted area and provided a poor image of the city. The Gateway Project was envisioned and a sports stadium was seen as the catalyst that could spur the area into revitalization.

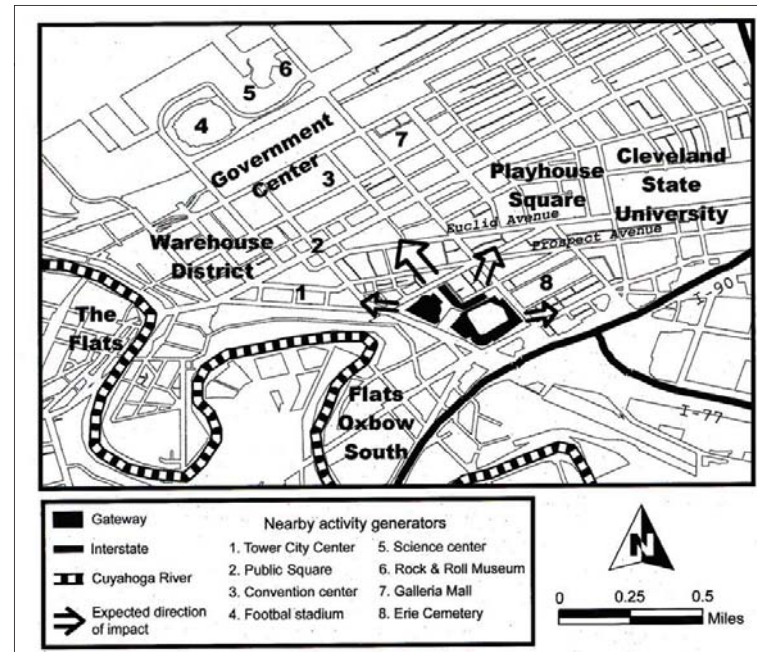
Originally the Gateway Complex was envisioned as a domed structure that would accommodate football and baseball, but instead they built Gund Arena for the Cavaliers and Jacob's Field for the Indians. Project master planning for the area emphasized creating links to the surrounding district. The connections emphasized were

not only visual connections but physical connections through constructed pedestrian pathways to other nearby activity centers.

Since the Gateway Complex has been completed numerous residential, hotel and commercial projects have been built. Residential projects have brought upper-middle-class residents into this portion of the city for the first time in decades. Several large new hotels have also found new homes in the district and many commercial projects have successfully located in the area. In the ten years following the project's completion in 1994, the district has seen additional redevelopment projects totaling more than \$250 million. Many of the projects were created from the renovation of vacant buildings. The newly renamed "Gateway District" has emerged out of what was a parking district for downtown into a very successful and healthy "place for Play" (Chapin 2004).

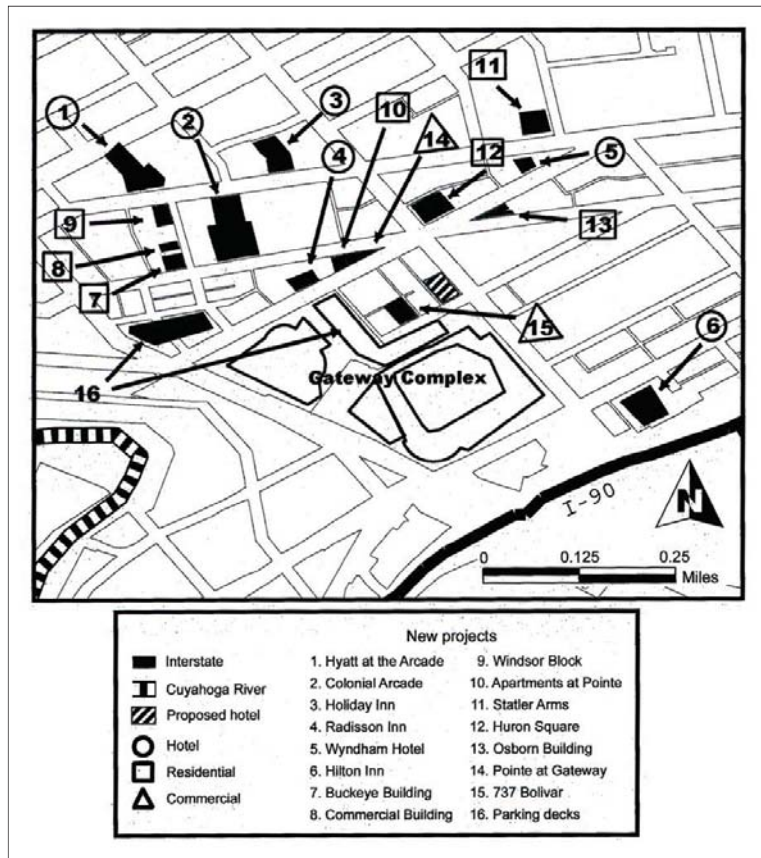
While it is believed that all the demand for different types of development in the district is not a direct result from the stadium and arena projects, their location within *this* district is seen as a result of the project. The successful revitalization of the district has improved the image of this area as well as the city as a whole. Timothy Chapin said in his article *Sports Facilities as Urban Redevelopment Catalysts* said:

As envisioned by the city's *Downtown Plan*, Gateway



precedents





has been the anchor and catalyst to an emerging downtown entertainment district. Although demand for new housing and hotels existed separate from the Gateway, this project provided a focal point for new development, leading to the establishment of a coherent and vibrant ur-

ban district where one did not exist (2004: 206).

The major similarities that exist between Cleveland's Gateway and the Proposed Real Stadium is in its location within a district with high visibility as one of the main entrances into the city's downtown area. When planned correctly and

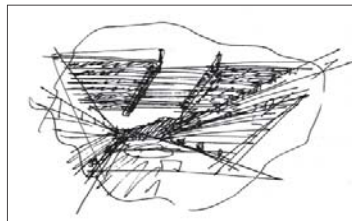
New projects brought by the revitalization of the Gateway District in Cleveland.

visual and physical connections are made between the stadium and its surroundings, the stadium has the potential to bring a revitalizing movement into the area which could transform the area into a strong and vibrant district.

Precedent - Soccer Stadium: Braga (Portugal)

Arch: Eduardo Souto De Moura

Designed for the 2004 Euro Cup, the 12th quadrennial European soccer championship, hosted by Portugal, this stadium stood out as a gem among new modern stadiums. De Moura takes an innovative approach to the stadium by challenging the standard. It is located in a new urban sports park planned on the northern slopes surrounding the city and its long-term role is to serve as an anchor for the city's northward expansion.



Architect's concept sketch.



Soccer stadium in Braga, Portugal.

De Moura leaves much of conventional ideas that have been common in stadiums for centuries and creates a gem among modern stadiums. In his first departure De Moura opens the field to the surrounding landscape by nestling it tightly into the granite cliffs and further reinforces the idea by creating corridors and open-air landings with views of the surroundings.

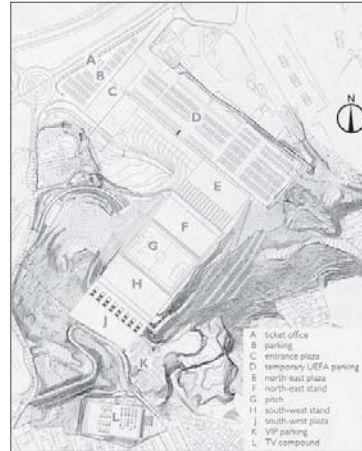
precedents



In a very rare move for a stadium of this size, De Moura removes all seating behind the goals and places 15,000 spectators on each side. The concrete stands rise steeply on each side and resemble a large piece of sculpture, especially when lit up for night games. He felt in removing the end stands that he would provide more people with optimal viewing conditions. "Football (soccer) today is entertainment," De Moura stated, "just like cinema, theatre and television. (Slessor 2004: 44)"



Each side is covered by a large suspended roof that is held up by high-strength steel cables which span across the playing field. The form was inspired by the rope structure of a Peruvian vernacular craft loom and the rope bridges of the Incas. This roof form is the first of its kind and makes a longer roof span possible and therefore gives greater coverage of the stands than would be possible using a cantilevered roof system.



The stadium is similar in size to the stadium needed for Real Salt Lake

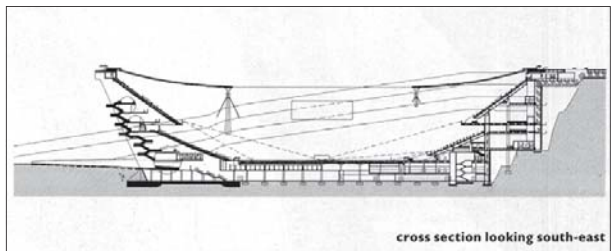


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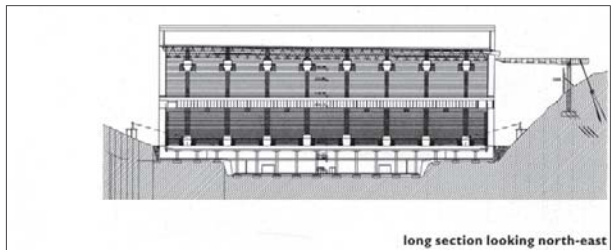




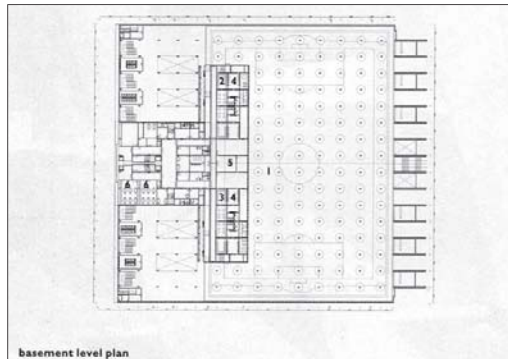
Soccer stadium in Braga, Portugal. clockwise from right: basement level plan, pitch level plan, lower stand/VIP plan, long section, cross section, view from circulation through structure.



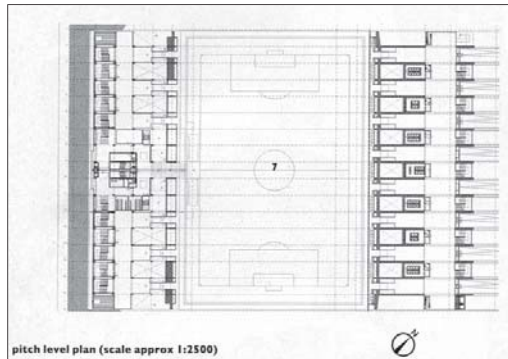
cross section looking south-east



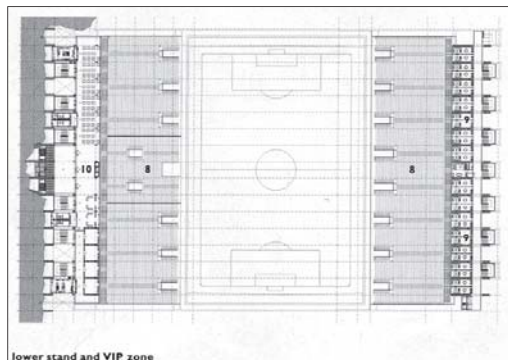
long section looking north-east



basement level plan



pitch level plan (scale approx 1:2500)



lower stand and VIP zone

Precedent - Architect: Santiago Calatrava

When Santiago Calatrava was awarded the AIA Gold Medal in February 2005 it was said that "he revealed in his speech the deep, even spiritual, passion for building that has helped him create one of the most notable bodies of work in contemporary architecture (Tzonis 2005: 163)." Calatrava was trained in the arts as well as the science and technology of building. He truly has become one of the greatest architects of the modern era to wed structure with design. In an essay on Calatrava's contribution to architecture Alexander Tzonis said:

Less that a generation ago, the split between construction technology and cultural expression in architecture appeared to be irreversible. With the exception of a few "high-tech" buildings, mostly of limited appeal to the broader public, the humanistic of art and science in design looked as if it was irrevocably lost. It is remarkable how fast and unexpectedly the situation has changed. Many factors and people played a role in this reversal; without a doubt, one of the most significant contributors was Santiago Calatrava (2005: 164).

precedents



Few architects are able to bring technology and structure so close to the artistic expression of architecture. Calatrava uses the structure of his designs to create his expression of form. His influence not only has brought science and technology closer to art, but conversely it has influenced engineering to bring design back to technology (Tzonis 2005).

His work is an inspiration of bringing the two worlds of design and structure together into elegant and strikingly powerful forms.

Of particular interest regarding this project in the Athens 2004 Olympic Stadium. Two arches

span the length of the stadium and support the roof which appears to float over the stands.

One aspect of Calatrava's work which I will explore in my design of the stadium is the method and derivation of many of his projects' forms. As a method of precedent study Calatrava looks to what real-life objects have to offer. He often uses analogies he finds within nature to inspire his forms. He has often found inspiration for his projects from his sketches of flying birds, bulls and particularly the human body (Tzonis 2005).

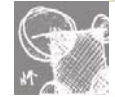
Many of his projects feature a state referred to as "dynamic

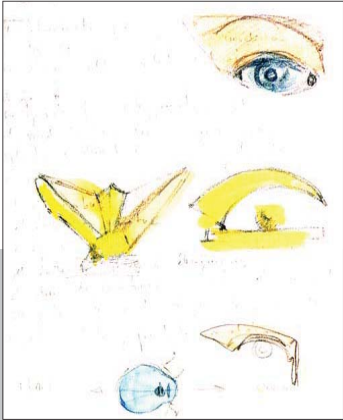
equilibrium," meaning a state which makes his forms seem to be on the brink of falling down or being frozen in mid-motion. They become engineering wonders in how they structurally work. Also a common feature in his work is building components that move to create animation within the design and can function to transform spaces around and within his architecture. These methods create an energy in his designs that would be very fitting in the soccer stadium. I will explore the use of these methods in my design process.

← Athens Olympic Complex and stadium.

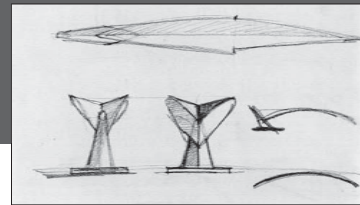
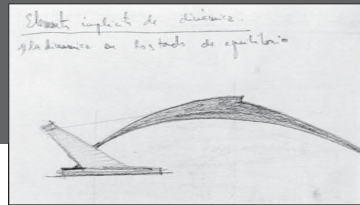
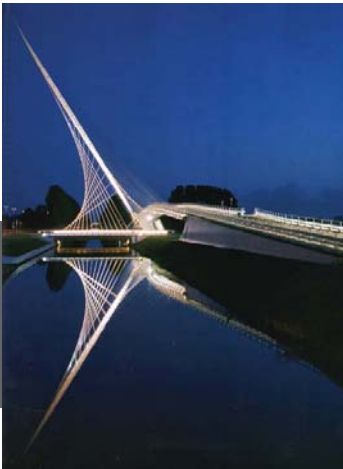
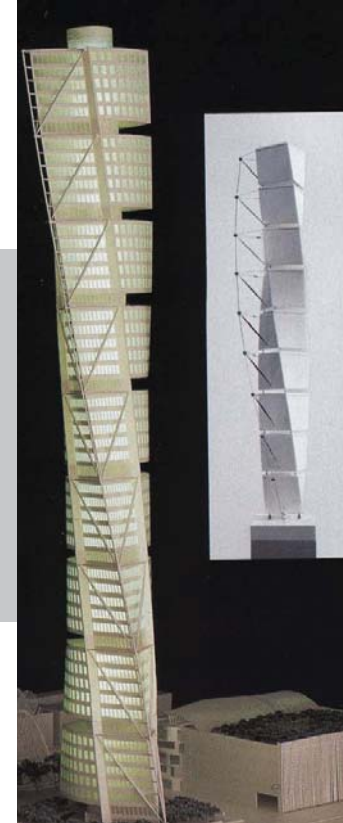
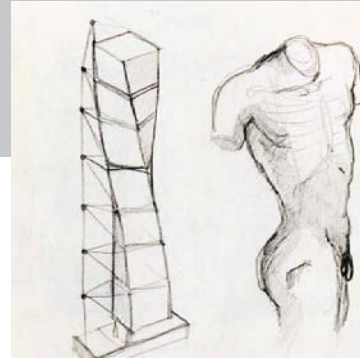
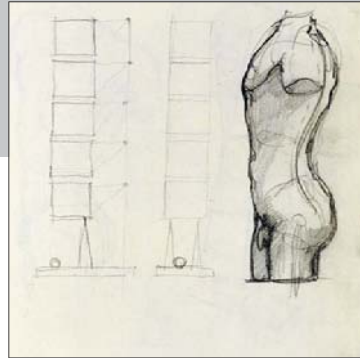


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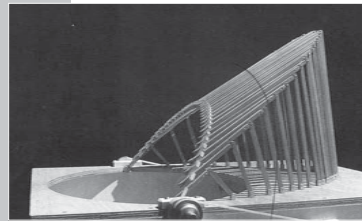
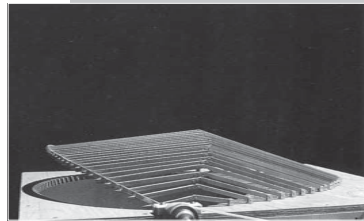
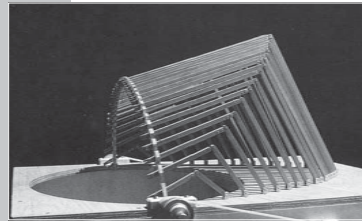
derivation of forms inspired by the human body.



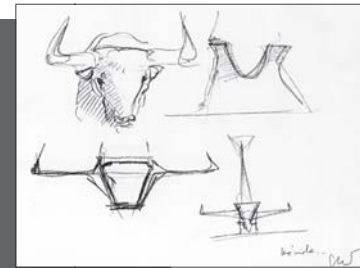
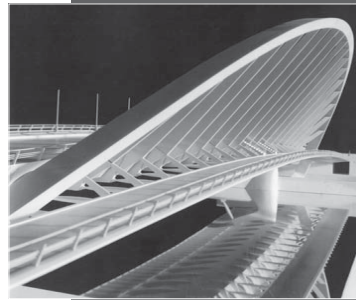
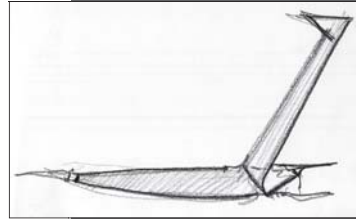
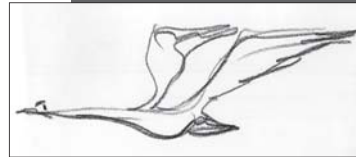
“dynamic equilibrium”.

precedents

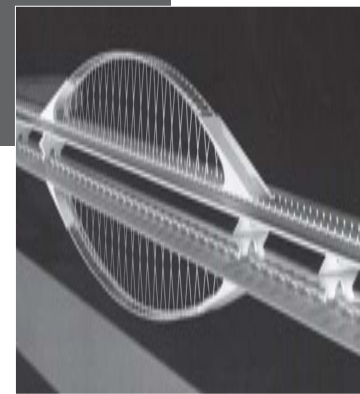
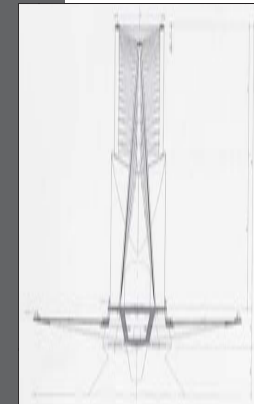




Calatrava motion in architecture.



inspiration from nature.



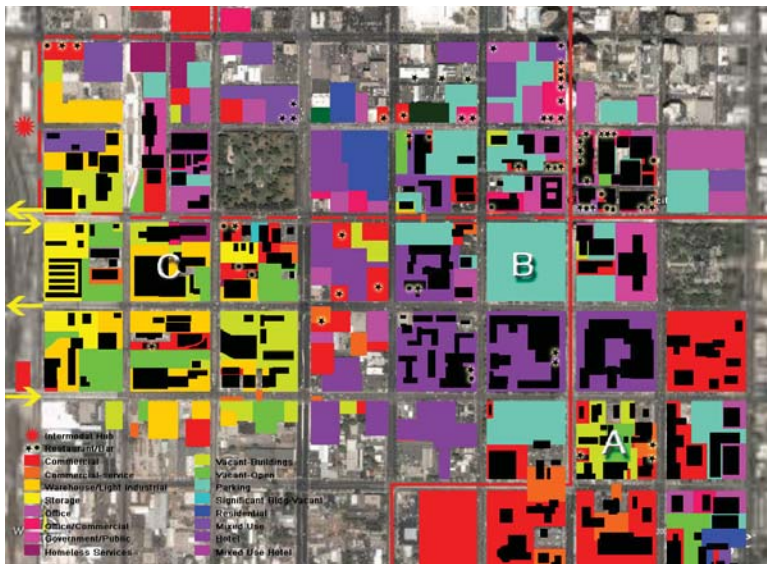
precedents



site

selection process
site selection
urban analysis: evaluation
criteria + site evaluation
site documentation





Selection Process

The first phase of the selection process was a search of the downtown area for possible sites. This was accomplished through a visual survey as well as a study of aerial photography of the city. Due to the size of such a program and the layout of city blocks in downtown Salt Lake City, virtually an entire city block would be needed. Only a couple of blocks currently exist without any structures presently on them. These were taken into consideration as well as any other which showed little use and a high rate of vacancy. Considerations were made regarding the current downtown structure and any projects that are currently planned. Each site was analyzed within this context for its possible contribution to the immediate surroundings and the downtown as a whole.

The possibilities were narrowed down to three blocks for a more in depth analysis. The selected blocks were initially labeled site A, B, and C. Site A is the block bounded by State Street and Main Street, and 600 & 700 South. The next block, site B, is between Main Street and West Temple and 400 & 500 South. And finally site C is located between 400 & 500 South and 400 & 500 West.

Each site is located south and southwest of the downtown core

top: The three site alternatives in downtown Salt Lake City. bottom: Urban Analysis (UA)-Composite image of the land uses in the blocks surrounding the three site alternatives.

and due to the relatively close proximity, the site analysis for the three was combined. A more in-depth visual survey was taken and the land uses were overlaid onto an aerial of the area. The uses of the land were broken into the following categories:

- Commercial—Retail
- Commercial—Service-oriented
- Residential
- Mixed Use—Residential
- Mixed Use—Hotel
- Hotel
- Office
- Restaurants
- Governmental—Public
- Parking
- Warehouse / Industrial
- Storage
- Developed Green Space
- Vacant—Built
- Vacant—Open

Maps were generated with the different uses indicated for the area. These maps were useful to visualize the different strengths and weaknesses for each site. Additional analysis was performed for the accessibility of the sites through studies on public transportation, vehicular access, parking, and pedestrian environment.

The perceived impact of each site on the downtown environment along with catalytic potential for redevelopment in the area was also analyzed. Issues such as visibility and connections to and from the existing downtown were addressed as well.

Each site was given a rating along

site



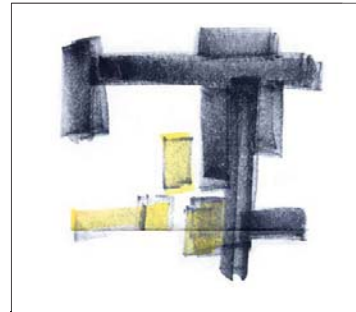
with its analysis for each criterion and the ratings were then compiled into a matrix for all three sites. They were rated on a scale from one to five positives (+), five being the best. This helped in seeing the overall strength and weakness of each site and in which particular areas they were better or worse than the others.

Site Selection

In review of all the analysis on the different sites it became apparent that sites B & C were the strongest, as seen in the Urban Analysis Matrix. Site A would be a good site but did not have any major advantages over the others, so it was removed as a possibility. Site B & C were both excellent sites yet

either would have a very different effect on the downtown area.

Site B can be seen as the strongest site for supporting the existing businesses and structure of downtown Salt Lake City. Its location would strongly support activity along Main Street. This would be significant because of the specific concern of many planners in the region of the need to support and bring more strength back to Main Street. Many restaurants are located near the site and existing parking would be able to handle the bulk of event attendees, while generating activity along the streets for the businesses. However, as it does show potential to strengthen the area, site B does not show a great deal of potential

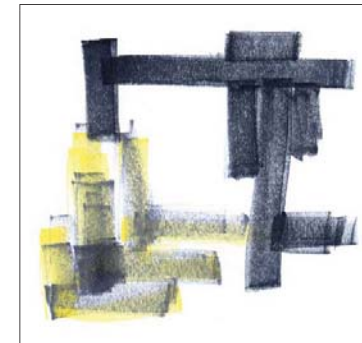


Concept Sketch—Site B. The perceived growth potential and the effect on downtown with the stadium on site B. Grey area indicates existing downtown core of Salt Lake City while yellow highlighted area indicates spurred redevelopment.

to spur redevelopment in the immediate surroundings. This is due to limited area that is available and a predominance of more permanent tenants in the immediate surroundings.

Site C was seen as the site with the greatest potential to spur redevelopment and bring new growth to the area. The site's immediate surroundings has a many vacant areas and buildings which could be developed into commercial, housing, mixed use, etc. The existing facilities such as restaurants and parking are not as plentiful as on site B but the potential is there due to the available land. The site is located near the transit hub which would further aid in the growth of the area. An improvement in this section of town would greatly enhance the image of the city by those who would be arriving into the downtown area by

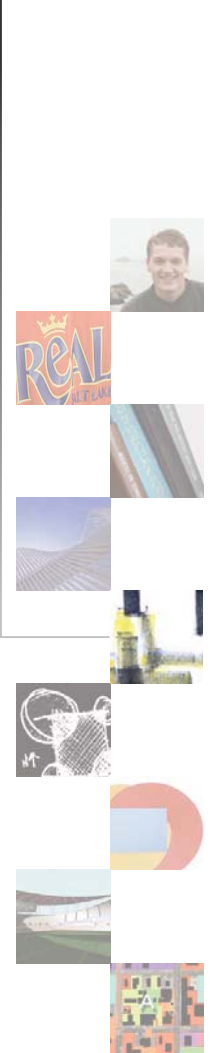
way of the freeway and the 600 South and 400 South exits as it is now a fairly blighted area for the few blocks closest to the freeway. The site also has very high visibility and accessibility being so close to the freeway which will again encourage this growth once it starts. Conceptually it is seen as having the potential to expand the downtown core and create a new successful district. It has the potential to "fill in the square" of downtown by creating a forth anchor for the corner. This site also has the unique potential of linking the site to as existing strong point for downtown, in this case The Gateway. The mid block street which runs north-south through the Gateway and in front of the Rio Grande creates a view corridor that would connect the stadium to the area. The stadium would serve as



Concept Sketch—Site C. The perceived growth potential and the effect on downtown with the stadium on site C. Grey area indicates existing downtown core of Salt Lake City while yellow highlighted area indicates spurred redevelopment.

<u>Urban Analysis Matrix</u>			
Criteria	Site A	Site B	Site C
1.2 Land Availability	++++	+++++	+++
2.1 Surrounding Redevelopment Potential	++	+++	+++++
3.1 Downtown Expansion Potential	++	+++	+++++
4.1 Supportive of Existing Downtown Overall	++	+++++	+++
4.2 Supportive of Existing Downtown Restaurants	++	+++++	+++
4.3 Supportive of Existing Downtown Retail	+	++	+++
4.4 Supportive of Existing Downtown Housing	++	++	+++++
4.5 Supportive of Existing Downtown Hotels	+++	++++	+++++
4.6 Supportive of Existing Downtown Attractions	+	++++	+++
5.1 Accessibility: Public Transportation	+++	++++	+++++
5.2 Accessibility: Automobile	+++	+++	+++++
5.3 Accessibility: Parking	+++	+++++	+++
5.4 Accessibility: Walkability	++	+++	+++
6.1 Visibility: From freeway and main city routes	++	+++	+++++
6.2 Visibility: From local view corridors	++	+++	+++++
7.1 Site Connections: Downtown	++	+++++	++++
7.2 Site Connections: Wasatch Mountains	++++	++	++++

site



a focal point at the southern terminus of this street. In addition to these points the increasing housing market in this area would give the area greater levels of continuing activity and mixed use. With less trafficked north-south streets there are possibilities of creating pedestrian links between the stadium and the new surrounding development.

With the main strength of site B being the supportive effect it would have on the existing downtown and Main Street and the strength of site C being the redevelopment potential and the creation of a new anchor which would "fill in the square" of downtown, Site C was selected. It was felt that the catalytic potential for developing new growth and expanding the downtown was more important to the downtown because its long term effects might spread over a greater area of the city.

Urban Analysis: Evaluation Criteria and Site Evaluation

Each site was analyzed for each criteria. The complete analysis for each site it included in the Appendix. This may be useful to understand the process better and may give some further insights into the strengths, and weaknesses, of the chosen site, through comparison of other good sites. Included here is the description of each criterion used in the analysis and the evaluation for the chosen site, site C, for each.

1. Land Availability

1.1. Land needed: Given the size and layout of the city blocks in downtown Salt Lake City the stadium will require nearly an entire city block. Given preferred solar orientation, a limited area on East and West sides would not be required – there is the possibility to incorporate these areas into project as complimentary uses such as retail. One city block is approximately 10 acres.

1.2. Relocation of existing users: As little displacement of existing businesses as is possible is the goal. The significance of the existing buildings and/or businesses to the surrounding neighborhoods and the city as a whole needs to

be studied. Negative impacts should be minimized. More vacant land or low use land on the site block is preferred as little demolition and negative impact on businesses would be required. Such uses include open spaces, storage areas, vacant buildings, and surface parking.

1.2 Site C: The block has some existing businesses. About 1/3 of the block is vacant. A couple significant businesses occupy the block. A large packaging plant occupies the Southwest portion of the block. They would need to be bought out and relocated. The Northeast corner of the block houses the Pamela Atkinson Homeless Service Clinic which has health and dental services for the

homeless. Numerous homeless service centers are also located in the area. The clinic would need to be relocated either in other vacant buildings or land near the other homeless service centers. Another possibility currently being debated locally involves consolidating all homeless service facilities and relocating them to a location further south in the city. A few other small industrial businesses are also located on the block. Rating: + + +.

2. Surrounding Redevelopment Potential

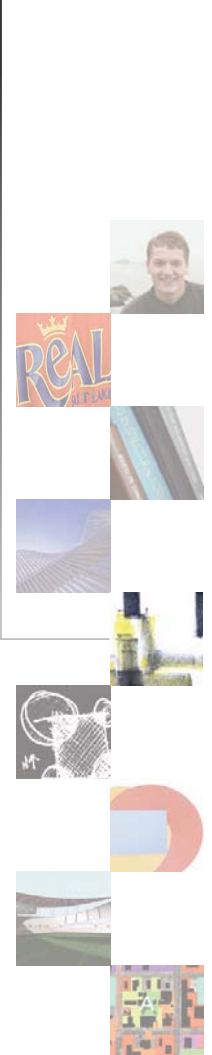
2.1. At least each surrounding block should be looked at for its redevelopment potential. The immediately surrounding areas that are within walking distance are radically more significant in their possible revitalization due to the presence of the stadium. Structures and/or businesses that might be affected by redevelopment in these areas needs to be assessed. The relationship between possible redevelopment areas and the site are important, especially pedestrian and visual connections. Areas to be redeveloped should be located along pedestrian paths to the site. The increased activity from the events would benefit any existing and new businesses in these areas.

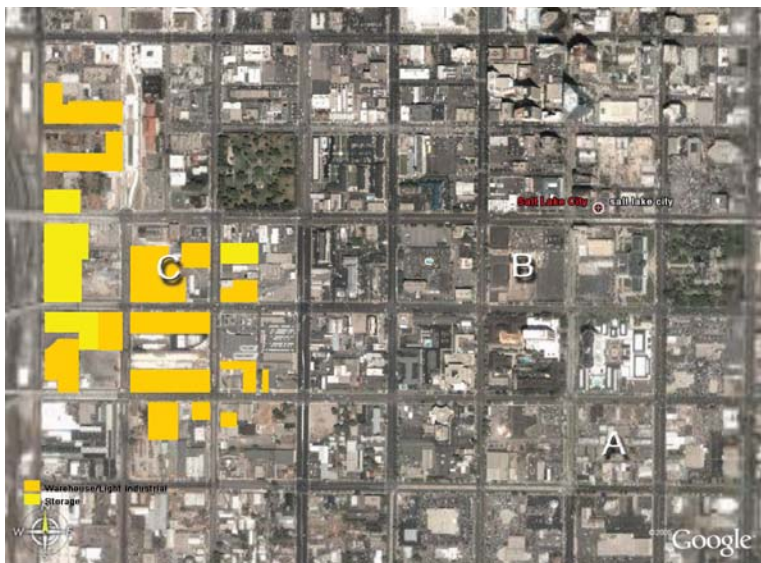
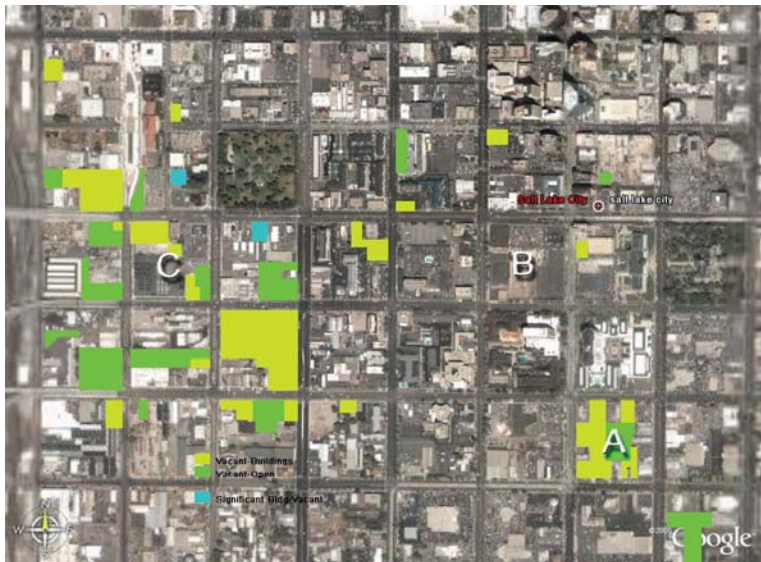
2.1 Site C: This site has by far the greatest potential for large scale redevelopment. Many of the



UA-Figure ground of site alternatives and surrounding blocks.

site





blocks have large portions of low use/vacant land that could be developed including the blocks east, southeast, south, southwest, west and northwest. The vast majority of the southeast block is currently used by the Newspaper Agency Corporation which is relocating to West Valley City soon, leaving the block available. The block south has a cereal processing plant which might be expensive to relocate due to the costs of the physical facilities. The block northwest is particularly significant because of its location between the Intermodal Transit Hub and the site. Currently efforts are being made to bring a public aquarium to a portion of this block, and another portion is being designed for mixed use residential. Mixed use and residential is an increasingly trend in this segment of town. This trend could open the doors to possibilities for this type of development around the site. Research suggests that mixed uses of the land around this type of facility is very beneficial. The block north of the site has many significant structures, mostly with historical character. A small portion of land is available for infill and a significant older structure is currently available for new occupation. The entire block northeast is Pioneer Park and would not be a redevelopment possibility. Rating: + + + + +.

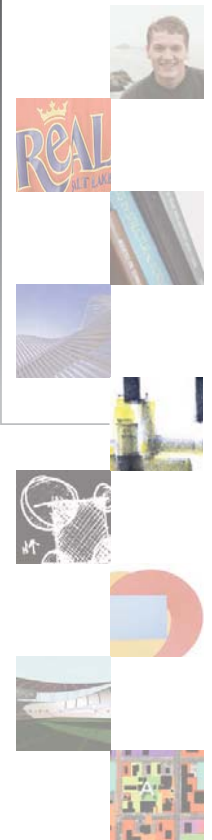
3. Downtown Expansion Potential

top: UA-Vacant land and structures.
bottom: UA-Warehouse and Storage.

3.1. The impact the new stadium would have on the downtown environment is critical to the site selection. The stadium would be a very significant contributor to the growth and traffic patterns. It has the potential benefit of providing businesses nearby with an increased activity level which would lead to additional business activity. Research has found that development directly adjacent to this type of facility would have the greatest benefit. This criteria is directly associated with the previous criteria (surrounding land availability for redevelopment), its location relative to the existing downtown core, and the current land use in the area that might encourage or inhibit further growth associated with the stadium. In my estimation and observation the strength of the downtown core currently has an L-shaped configuration running roughly east-west from the Gateway to Temple Square and extending south from Temple Square along Main Street and State Street to approximately 400 South at the City/County building and the new Salt Lake City Public Library. See concept sketch for a graphic demonstration of this.

3.1 Site C: This site has a much different potential impact on the downtown core than the other two sites. First of all its location is not along either line of the L-shaped downtown. It has great potential however to provide a large impact. It is located directly south of the Gateway and directly west of the City/County building and the library. The addition of another

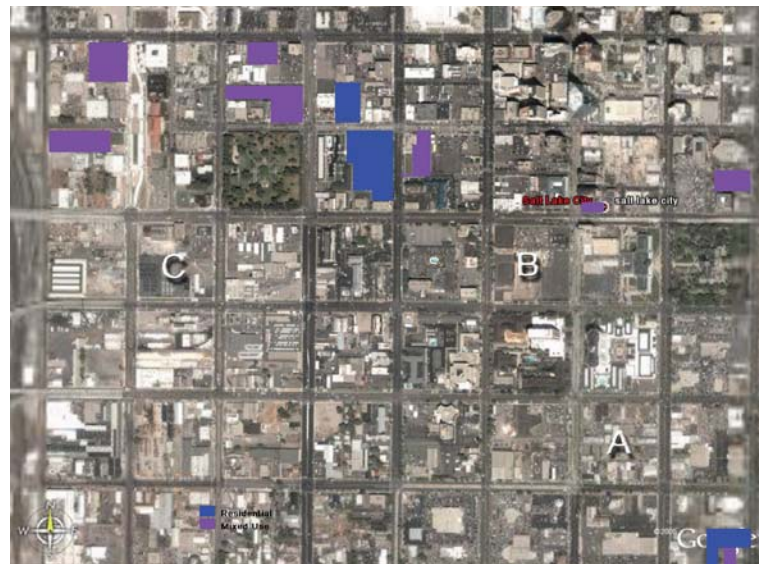
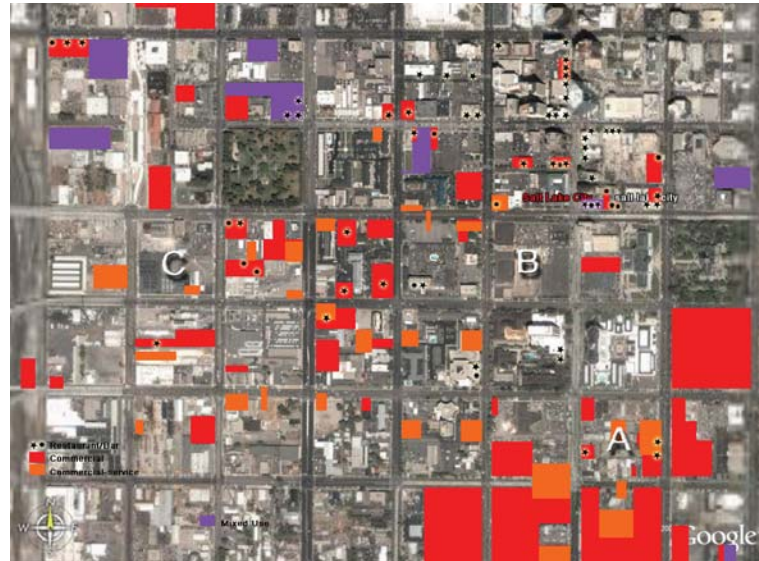
site



major point such as the stadium could influence connections from these other main downtown points. This could create four nodes to a roughly square configuration of an expanded downtown core. This remains an even more likely scenario because of the available land for possible redevelopment around the site. It would have a very easy connection to the Gateway along a path north of the site that in itself has experienced some recent growth and redevelopment. The stadium would reinforce this recent growth. As mentioned previously, this area has seen a recent trend of residential and mixed-use development. Strengthening this as a more mixed use downtown area would compliment the more business oriented portion of the current downtown core. Development of the blocks in this area would be welcomed by many as it is the path traveled by many who come into downtown from Interstate-15 along 600 South and 400 South. Currently after coming off I-15 one must travel a few blocks through mostly vacated and blighted areas before arriving in a more attractive area of downtown. See concept sketch for site C. Rating: +++++.

4. Supportive of Existing Downtown

4.1. Overall: This consideration is also a critical look at how the overall impact of the stadium would support the existing amenities and services that are currently located in the downtown area. Its adjacency to existing uses is



the largest determining factor for evaluation of this criterion. Different elements of this potential are looked at individually in criteria 4.2 to 4.6.

4.1 Site C: The existing downtown core would not likely see too much difference from the activity surrounding the game with the exception of the area around the Gateway. The Gateway and the area surrounding to the south would most likely see positive activity because of its proximity to public transit that would bring people to events which could draw people before or after the game. Rating: +++.

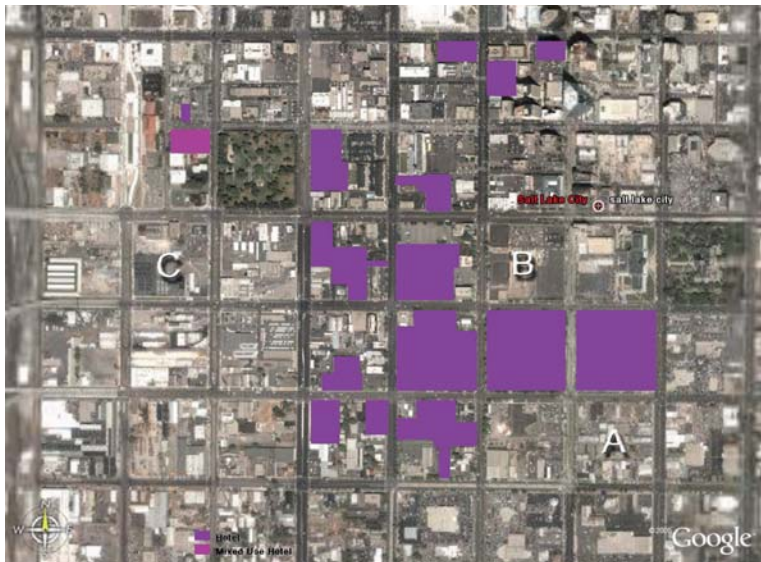
4.2. Restaurants: Eating establishments nearby the site will help to keep people in the area longer, thus increasing the revitalization potentials for the neighborhood. Restaurants within walking distance from public transportation stops, parking and the site are especially beneficial for the active atmosphere around the stadium.

4.2 Site C: A good number of restaurants are located within walking distance of the site. There is a wide variety of restaurant types in different price ranges. However, most are not located really close as most are between one and two blocks away. The location of the existing restaurants is in the direction of public transportation. The available land around the site

top: UA-Commercial (retail, service, restaurant, bar, and mixed-use. bottom: UA-Residential + mixed-use.

site





would likely lead to additional eating facilities around the stadium.
Rating: +++.

4.3. Retail: Existing retail near the stadium would help keep people in the area longer and events would most likely bring an increase in sales. Locations near public transit and parking are beneficial.

4.3 Site C: The Gateway area provides a lot of retail that is relatively close to the site. With public transit in this direction it would be a likely destination for people.
Rating: +++.

4.4. Housing: Housing near the stadium will help bring vibrancy to the area and would help to maintain human movement at all times to the area. Considerations may need to be made in the design to help minimize negative impacts such as excessive noise and lighting during events on residential areas.

4.4 Site C: As mentioned previously mixed use and residential developments are becoming a trend in the portion of downtown north of the stadium. Potential for further development of housing in the area around the stadium is a viable opportunity. With the transit hub, Gateway, and Pioneer Park nearby the possibility of drawing sustained human activity levels is

likely.
Rating: ++++.

4.5. Hotels: Easy access to area hotels is important. A range of hotel price categories would help to avoid catering only to certain demographics.

4.5 Site C: Again many hotels are in this area, from low, to high scale. The greater number high scale hotels are a bit farther, closer to sites A and B. In the mid to low range there are many more close to this site. A few newer hotels are being built in the area.
Rating: ++++.

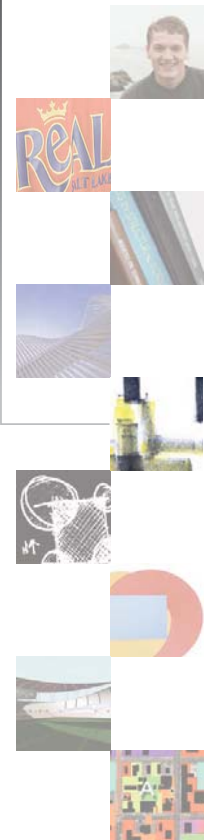
4.6. Other Attractions: Locations of other major attractions and their connections to the site should be looked at as well. There are greater possibilities of increased activity in the areas linking the site to these other attractions.

4.6 Site C: Near the site is the Gateway with a movie theater and planetarium. A performing arts center is also relatively close and an aquarium is proposed on the corner directly northwest of the stadium.
Rating: +++.

5. Accessibility

5.1. Public Transportation: Site must be accessible via the public transportation systems including TRAX (light rail), bus, and commuter rail. Existing and future systems should be looked at along with their connections to the site.

site



top: UA-Hotels. bottom: UA-Transportation (red line: TRAX, red dashed: future TRAX, red star: SLC Intermodal Transit Hub, yellow arrows: major automobile routes on/off freeway.

5.1 Site C: Currently TRAX does not have a stop near the site and current bus routes are limited in the area. However, the Salt Lake Intermodal Transit Hub is located one diagonal block northwest of the site. The TRAX lines will be extended to this location providing good access. The future TRAX line from the Salt Lake City International Airport will also terminate at this point. The Commuter Rail which is now under construction will bring people from the north, including Davis Weber and eventually even Box Elder Counties. This will allow easy access to the site from a much larger geographical area. It is also anticipated that bus routes will be redesigned in downtown to bring more routes into the intermodal hub. According to the proposal plans for the commuter rail lines, UTA indicates a TRAX line that would continue the 400 South tracks directly down to the transit hub. This would bring the line directly adjacent to the site, likely stopping at Pioneer Park. Rating: + + + + +.

5.2. Automobile: Automobile access should be easy and nearby roads should have direct connections to major routes such as the freeways. The site should have good accessibility from the most likely travel paths of cars from different directions. Minimal overloading of nearby routes is critical to help keep disruption of traffic flows low before and after events. Multiple access directions may be beneficial to help this. For all three sites the most likely path used by



people from the north will be the 400 South exit from the freeway and traveling east on 400 South. Return path would also likely be along the same route. Alternate routes from the north would include the Beck Street and 600 North exits and traveling 300 or 400 West. Again for all three sites people traveling from the east and west on Interstate 80 and from the south on Interstate 15 will most likely use the 600 South exit and travel on 600 South, a one-way street going east. The return trip would likely follow 500 South, one-way westbound, to get back on the freeway. An alternate for those traveling from east on I-80 or south on I-15 is the 900 South exit. This exit directs you northbound on West Temple Street.

5.2 Site C: Access to this site is excellent and very direct from all directions. The site is located much closer to the freeway exits and localized congestion would be limited to only the streets within a couple blocks of the site. The southbound alternate would work very well. The 900 South alternate would not be as direct as the other sites, but it would still likely be used by many. Rating: + + + + +.

5.3. Parking: Parking should be allowed within walking distance of the stadium with one stall per 2.5 to 3 spectators (as suggested by some articles, but this would need to be verified for the local conditions and requirements.) Sites

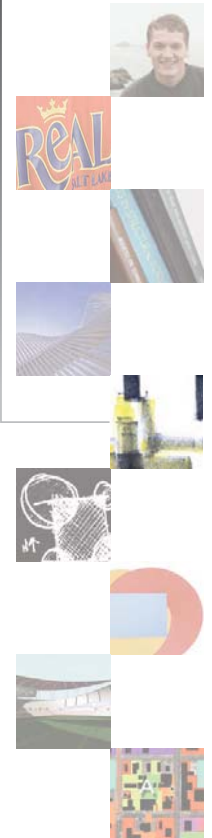
UA-Existing parking.

with less availability of the public transportation system will need more parking. If adequate parking is not available, land needs to be available to create the needed parking. Parking facilities would preferably be shared with other uses. Office spaces are especially beneficial for sharing parking since the normal hours of use complement each other and the parking spaces would be used more consistently.

5.3 Site C: There is limited existing parking in the area as it is now. Some nearby businesses and offices would be able to park people for events with smaller surface lots a couple structured facilities. Many additional parking lots are located to the north which are used for basketball games at the Delta Center. These would require a little more walking to get to the site as compared to the other two sites, but they are still within a reasonable distance. Up to 1000 stalls will be built near the transit hub by the city in the near future. It would also be anticipated that new developments located in the blocks adjacent to the site would provide the possibilities for additional parking spaces. Should any additional parking spaces be required, there are many sizable vacant areas in the surrounding blocks that could be easily adapted to facilitate event parking. Rating: + + +.

5.4. Walkability: Pedestrian friendly routes are needed which

site



connect the site to public transportation stops, parking and nearby housing. This pedestrian traffic flow should be taken into consideration along with the possible redevelopment areas to maximize the revitalization affects of the stadium. Walking distances between the site and the surrounding amenities and services is important. The design of the spaces is also important and efforts should be made to maintain an environment that is conducive to the pedestrian. For example street plantings and trees, buildings close to the street, and sidewalks in good condition help to make the area more pleasant and therefore more walkable.

5.4 Site C: This area has experienced recent improvements and shows a lot of promise to make it a pedestrian friendly area when development occurs, even though at the time there is not much pedestrian activity. The immediately surrounding area is not very well developed at this time with many vacant buildings and lots. On the blocks to all sides except the north and northeast, many of the occupied buildings currently show little pedestrian oriented design. However, the city has recently invested a lot in the pedestrian facilities of the area by fixing up the sidewalks and creating street plantings of grass and trees. The area to the north with many older well maintained buildings has a good pedestrian scale. The Gateway development located two blocks directly north has a very pedestrian oriented design. This could encourage

the expansion of this pedestrian friendly atmosphere to continue with the development around the site. The block to the northeast is Pioneer Park which hosts the Downtown Farmers Market on Saturdays throughout the summer. The streets on the north and south of the site, 400 South and 500 South, respectively, are high traffic streets with many lanes. All crossings of these streets are at the corners and are still easily crossed with signals. The streets to the east and west, 400 West and 500 West, respectively, are low traffic streets with large planted islands running down the middle of the streets. Mostly, they are currently just planted with grass but as they continue northward they are more developed with other plantings. On 500 West just north of the site the planted island widens to a mid-street plaza with places to sit. This is located along the most likely path for people coming to and from the transit hub. The corners of the site have signalized crossings and there is a promising potential to make a very pedestrian friendly streetscape on both the east and west side of the street with possible mid-block crossings which could link to and create a strong design link to future developments on both sides. For this category the rating does reflect this potential only partially as much of the potential discussed is speculative.
Rating: + + + + .

6. Visibility

6.1. From freeway and main

routes into city: The site must be analyzed for the impact that it may have on the visual makeup of the city as it is seen by passer-bys and those arriving into the city. How it relates to the surroundings is critical. The stadiums presence along or nearby traffic routes would add the presence it will have in the fabric of the city.

6.1 Site C: The site is located very close to Interstate-15. Views are excellent from some visual "windows" on the freeways but are hidden in some stretches due to the configuration of the freeway at this point. Its location is between 400 South right after you exit the freeway and 500 South just before entering the freeway. 400 South is a major inbound route for people coming from the north on Interstate-15 and going to the southern portion of downtown or to the University of Utah. 500 South is the major route from downtown traveling south on Interstate-15 or west on Interstate-80. Visibility is very good for those coming into town on 600 South. It would have a significant impact on the panorama of the city especially as viewed along 400 South. The stadium as well as any corresponding development would go far to improve this district of downtown which acts as a gateway into downtown for many people as it is located immediately after exiting the freeway.
Rating: + + + + + .

6.2. From local view corridors: Visual connections from nearby areas of increased activity

are important. Views along side streets should also be addressed in the design.

6.2 Site C: Visibility is greatest on this site. Views along 400 South and 500 South from the east, and 400 West from the south are the most important street views. Visual connections to the surrounding blocks provide a lot of potential to visually link the stadium with the surroundings. The View corridor from the mid-block street that runs north-south in the blocks to the north, running through The Gateway, is especially significant as the stadium would act as a visual terminus to this street. The pedestrian nature of the street in Gateway could be extended to the stadium. The blocks to the east and west of the stadium could be developed creating pedestrian corridors and visual links to the stadium. The block northwest between the site and the transportation hub could also be developed with a diagonal corridor that could link the stadium to the hub while creating a unique pedestrian space for Salt Lake City.
Rating: + + + + + .

7. Site Connections

7.1. Connection to downtown: The relationship between the site and the downtown core should be assessed. Closer connections to the city core would help the stadium to bring activity into this area. Visual connections between the site and the downtown may affect the atmosphere of the events. The direction and proximity to the

site





downtown buildings may provide opportunities to use the city skyline as a backdrop for spectators at various stadium events.

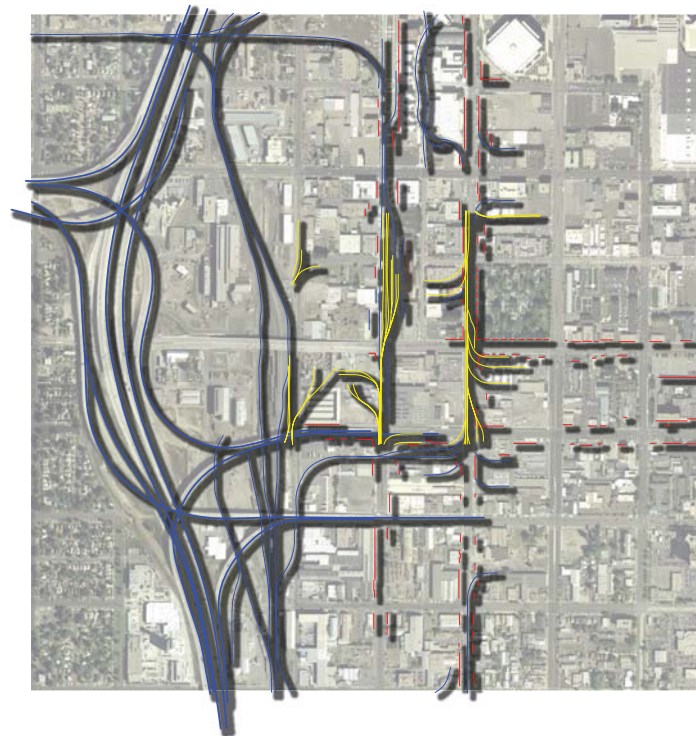
7.1 Site C: The site could have a good connection to the downtown skyline. The views would be to the northeast and would offer more of a panorama of the downtown skyline. The greater distance would make it less dominant than at site B.
Rating: + + + +.

7.2. Connection to local geography (Wasatch Mountains): Particular note should be made of the many remarks by the media covering games for Real Salt Lake during its inaugural season about the beautiful setting of the Salt Lake Valley with the mountains so close. Each site should be assessed for its ability to utilize the natural setting of the city as a background feature of the stadium. The principal view direction is to the east, with the southeast mountains being the most dramatic.

7.2 Site C: With the existing development there is little to block the views of the mountains (only minimal blocking of views by tall hotels southeast of the site which could be minimized with the design through the viewing levels).

A panorama is possible and the mountain views would be combined with the downtown skyline to create a dramatic connection to Salt Lake city as a "city in the mountains."
Rating: + + + +.

Site Documentation



above: Site's Wasatch Front context.
below: Urban curves and hard edges. Blue lines are existing curves. Yellow is the historic railway lines. Red is the existing building faces creating the current street front conditions. right (top to bottom): 400 S + 500 W - site on right; looking northwest off 400 W at site; Rio Grande Avenue looking south - terminus of street is site. Rio Grande Avenue looking south from The Gateway.



site





NE corner of site from above.



400 S and 400 W. Site is on left, Big D building on the right.



400 S looking south from Pioneer Park. Site is by intersection shown on the right.



Rio Grande building to the north of the site off 500 W. Site is located on the left of the image



400 W and 500 S to SE corner of site.

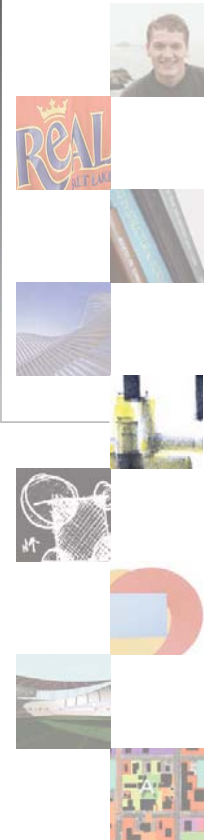


Pioneer Park by site.



400 W looking west from Pioneer Park. Site is by intersection shown on the left.

site



site



Panoramic of downtown Salt Lake City from the top of the bridge on 400 South approaching the site. Red shading indicates the selected site.



East elevation of the existing block.



North elevation of the existing block.



West elevation of the existing block.



South elevation of the existing block.



• program

proposed program
final program summary

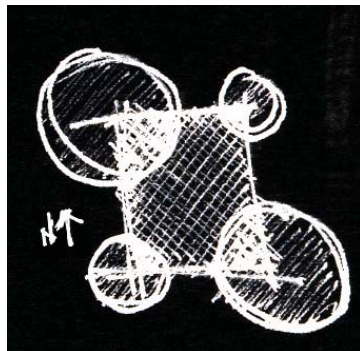


Proposed Program

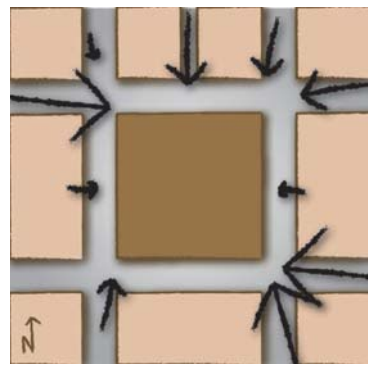
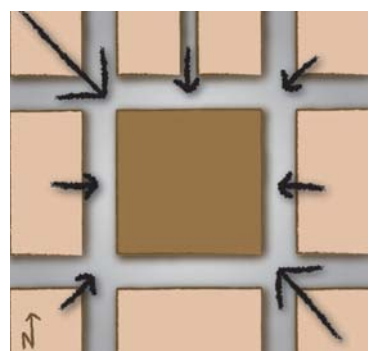
Locations will also affect the efficiency of circulation within the stadium. The program includes: Administration offices, media, locker rooms, VIP, playing field, press box, and general seating. The stadium should be located in a high-traffic area, such as the intersection of 400 S and 500 S, to ensure excellent viewing of the field.

Site layout:

Locations will also affect the efficiency of circulation within the stadium. The program includes: Administration offices, media, locker rooms, VIP, playing field, press box, and general seating. The stadium should be located in a high-traffic area, such as the intersection of 400 S and 500 S, to ensure excellent viewing of the field.



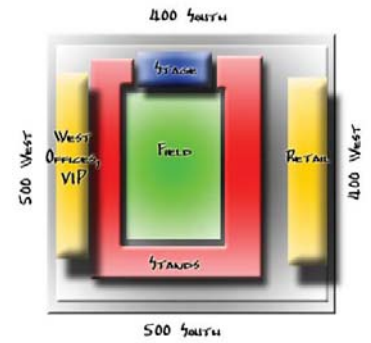
Locations will also affect the efficiency of circulation within the stadium. The program includes: Administration offices, media, locker rooms, VIP, playing field, press box, and general seating. The stadium should be located in a high-traffic area, such as the intersection of 400 S and 500 S, to ensure excellent viewing of the field.



left: Anticipated entrances by volume. above-top: Comparative anticipated approach directions by spectators. above-bottom: View corridors of site from immediate surroundings, comparative size by importance due to volume of viewers. right: General site organization.

Locations will also affect the efficiency of circulation within the stadium. The program includes: Administration offices, media, locker rooms, VIP, playing field, press box, and general seating. The stadium should be located in a high-traffic area, such as the intersection of 400 S and 500 S, to ensure excellent viewing of the field.

The general configuration of the site will consist of the stadium as well as the administration offices, media, locker rooms, and VIP. The playing field should be located on the south side of the stadium, and the press box should be located on the north side. The stadium should be located in a high-traffic area, such as the intersection of 400 S and 500 S, to ensure excellent viewing of the field.



User groups that must have excellent viewing of the field.

General Stadium:

- Playing Field: about 100 yards wide and 150 yards long. (actual dimensions of field are 70-80 yards wide and 110-120 yards long)
- The field should have excellent viewing from all sides
- The field should have excellent viewing from all sides
- The field should have excellent viewing from all sides

program



o r a r a i n w i n i r i o n
 f o r t h e S a l t L a k e v a l l e y i s f o r m t h e
 s o u t h - s o u t h a s s o s i n s h o u
 a o i a i n n w i t h h r a i -
 i n w i n i r i o n

o A l o n g o n e s i d e o f t h e f i e l d
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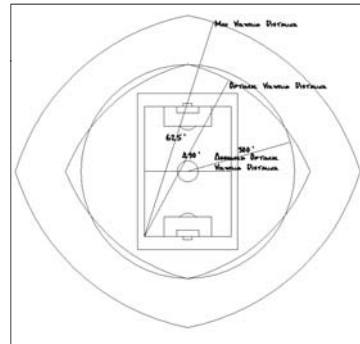
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o i s u r a s h o u b s -
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h o i s h b u r i n s o u i o n
 w h i c h r a i s e s t h e f i r s t r o w o f s e a t s
 5'-7' a b o v e t h e p l a y i n g f i e l d o r t h e
 h a - o a w h i c h h a s a s h a o w
 o a a n a o w n

- n r a s a i n b o u
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 s e a t s a n d 30% b e n c h e s . C o v e r e d
 s e a t i n g o v e r t h e l e n g t h o f t h e f i e l d
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h s a n s w i a s o b r i n
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 A m a x i m u m o f 28 r o w s s h o u l d b e
 s o u t h w i t h o u a o n o u r s

- Stage: A place on one end of the field is needed to stage concerts or other events. A harsh sun is shown on the North end of the field. A roof structure is shown over the stage area to provide shade. An overhang is shown on the North end of the field to provide shade for the stage.

- i o b o a r s h r s h o u
 b o n o r w o i s a b o a r s o -
 a o r h i w s o h a i -
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 • u b i r u a i o n h o n -
 o u r s a r a i s w h r h a n s a n

Maximum and optimal viewing distances for spectators.

o n r a w h n n o i n h i r s a s
 b o r u r i n a n a r h
 n h i s s a s h o u b a -
 u a s i n o r o i o r
 r s s a r n s a n i n r -
 n a u a i o n h i s s h o u
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- o n s s i o n s u i o -
 a i o n s o a h r o u h o u h
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 i s n s s a r h o s s i b i i o a -
 l o w i n g v i e w s o f t h e f i e l d w h i l e w a i t -
 i n i n i n s h o u b o o a

- R a i s h o s o r i s a n
 o r a b i a u i a n r o i n
 n o a i o n s a r n

- T o i l e t f a c i l i t i e s : L o c a t e d
 h r o u h o u s a n s w i t h a s a -
 c e s s . L a y o u t f o r f a s t t h r o u g h p u t
 i s n s s a r a i i i s o r r -
 s o n s w i t h i s a b i i i s w o u b
 s a r a a s w a s r o o s o r r -
 s o n s w i t h s a h i r n u i
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 s h o u l d b e l o c a t e d w i t h i n 200
 f e e t o f e a c h s e a t . S e p a r a t e t o i l e t
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 s u i s

- S t o r a g e :
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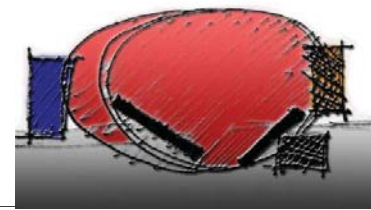
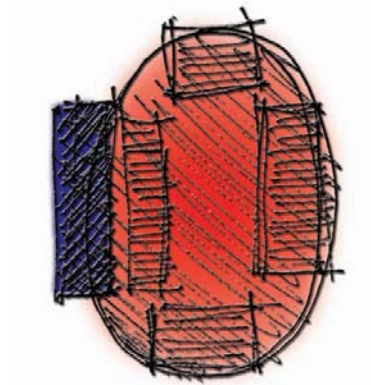
The "atmosphere" of the stadium should extend beyond the stands to include the surrounding circulation and concourse spaces.

o i n o s a r a s h a a n b
 s u r b u a o w o r h r a s
 l o n g - t e r m f l e x i b i l i t y .

- i a n s a a s s a s
 a s s o r i r o u i n
 a n d o t h e r g o o d s b o t h t o t h e f i e l d
 a n o h s a

Private viewing and facilities:

- Private suites: Between 20 and 25 suites each seating between 15-21. A range of sizes would be provided on the west side of the field for optimal



program



win an sun ori n a ion a h
sui wou on ain

- o Lounge area with comfort-
ab s ain an a ni i s su h
as a s a i h n an ri a
bar
- o n-air s a in or i w-
ing the field. A strong connection
o h a os h r o h s a i u
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inin
- o Large banquet/club room.
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other days. Separate access is
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Catering services:

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Should provide an excellent cen-
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of field needed).
- n ri w an r ss on r-
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field).

Players' Changing Rooms:

- our o r roo s o a o -
o a a oub h a r wi h a h
team having their own. Each 650
s ini u h us b -
sin r ni o a o o a
the professional players. A fifth
o r roo or a s ara han -
in roo a a h o h ho
a s o rs o a o o a
h r s r s a a h han in
roo shou ha
- o 20 Lockers: Lockers should
be 24"-36" wide and 48" deep to
a ow or a ua s ora an
han in s a a h shou ha
a b n h
- o 10 Showers
- o wash basin
- o 1 oo basin
- o 1 uii sin or boo an-
in
- o urina s oi s
- o 2 massage tables

- o 1 r ri ra or
- o 2 shaving points
- o 2 hair dryers
- o 2 wall mirrors
- a rs oun o a ow a -
rs o han ou b or h a
a a h or os asso ia wi h
h o r roo s h r a b
on wo o h s roo s wi h wo
o r roo s shar in on oun
i h r r sh n i h n is r -
rr
- in roo
- A first aid & medical exam
room (around 270 s.f.) is needed
a so an a b shar b w n
o r roo s his roo shou
b o a n ar h i h an en
route o h han in ar as
shou ha a a ina ion ab
24" wide and accessible on three
si s o in roo o aroun
175 s.f. needs also to be accom-
o a
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war -u swi h an ar a or wi h s
an r is s a b shar b -
w n wo o a our o rs
- ui n s ora ar a
- Laundry and clothes drying
a i i s a b shar
- ss ir a ss is r -
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a i i s an h s ri roa ou-
si o a ow or a bu an s an
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access to the playing field is also
n ssar r o n s a
s ara unn or a h o r
roo a hou h h a oin u
near the playing field. They fur-
h r r o n ha h n r
the field near the centerline on the
si o h bo r ss an
and administrative offices (west
si

- Location: same level as the
playing field is preferred.
- onn ions shou ha
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ia ar a a a inis r ai
offices, and if possible team di-
r or s sui orri or an oor
wi hs shou b n rous as h
ar bus o a ions on a a
(4'-5' preferred).
- Security: Entire area should
be secure from unauthorized ac-
ss ro ubi an ia
anish s shou b robus
an asi anab

Officials Changing Rooms:

- 270 s.f. minimum locker
roo a h shou a o o a
4 people and have:
- o Lockers 24"-36" wide and
48" deep with bench.
- o 2 showers
- o 1 wash basin
- o 1 urina 1 oi
- o 1 assa ab
- o 1 sha in oin
- o 1 hair r r
- o 2 wall mirrors
- o 1 ab
- Similar location, access to
field, and security as the players'
han in roo s

Administrative:

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oi an s uri shou
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ir orsan hos i ai roo s
an i win bo s
o ia a i i s
- o Team managers', officials',
an r r s a i i s
- o Parking for VIP and officials

program



with service road on the side

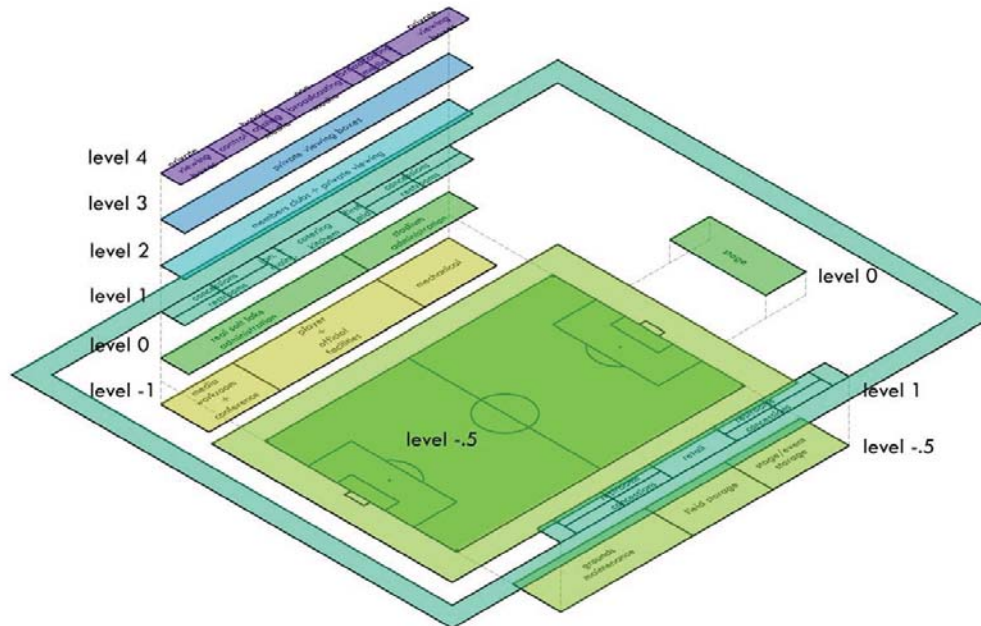
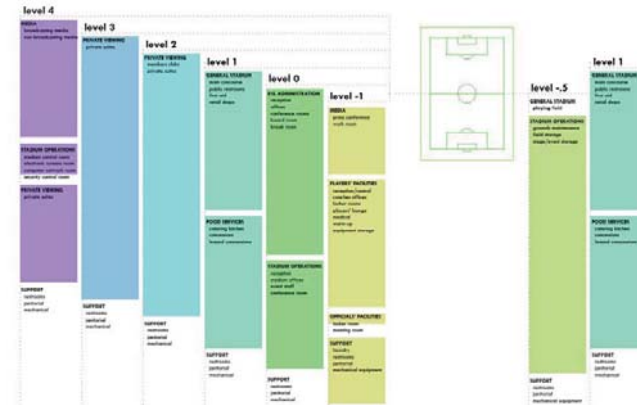
- aisles for seating
- Aisle width:
 - o Directors' offices around 200-225 s.f.
 - o Other staff offices around 130 s.f. each
 - o A board room around 450 s.f. should have refreshment bar and storage area
- Hallway on the roof (175-225 s.f.) must overlook the field, entire stadium, and video boards or benches. Large viewing window are needed. Location of office on the roof is necessary in - rations in as of - n
- Office on the roof should be 2-3 people to sit. Should be adjacent to office on the roof and have view of the stadium
- Office on the roof
- Police and security offices.
- Office for spectators (275 s.f. each). Must have access for emergency vehicles. Should have roof access for maintenance
- Office for maintenance
- Office for maintenance
- Office for maintenance

Service Road:

• building service road should be around 20' wide.

Parking:

- 50 stalls minimum for administration and staff
- Media parking: 75 stalls. for building is a



program



Program diagrams of the anticipated layout of the stadium, showing space estimates and adjacencies.

Actual Program area	# of spaces	size	
lower level			
lockers	4	6,100	s.f.
warm-up/gym	2	2,300	s.f.
media/interview	3	1,000	s.f.
coach/trainer office	3	1,000	s.f.
first aid/medical	1	460	s.f.
referee	1	350	s.f.
su or		81	s
mechanical	2	630	s.f.
field/event storage		11,200	s.f.
<u>grounds maintenance</u>		<u>8,000</u>	<u>s.f.</u>
total			s
ticketing administration			
lobby / VIP entrance	1	730	s.f.
ticketing / workroom	2	650	s.f.
employee lounge	1	560	s.f.
<u>administration</u>	<u>2</u>	<u>300</u>	<u>s.f.</u>
total			s
main concourse			
storage	4	1,200	s.f.
retail	4	1,520	s.f.
restrooms (6 m, 6 w, 2 f)	14	6,550	s.f.
concessions	6	2,840	s.f.
<u>first aid security</u>	<u>4</u>	<u>17,800</u>	<u>s.f.</u>
total			s
press viewing bo			
VIP/private viewing	16	6,020	s.f.
media broadcasting	6	1,600	s.f.
press viewing	1	600	s.f.
press lounge/exhibit	1	1,100	s.f.
security control	2	800	s.f.
circulation/exhibit		3,000	s.f.
<u>support</u>		<u>1,200</u>	<u>s.f.</u>
total			s
A			s

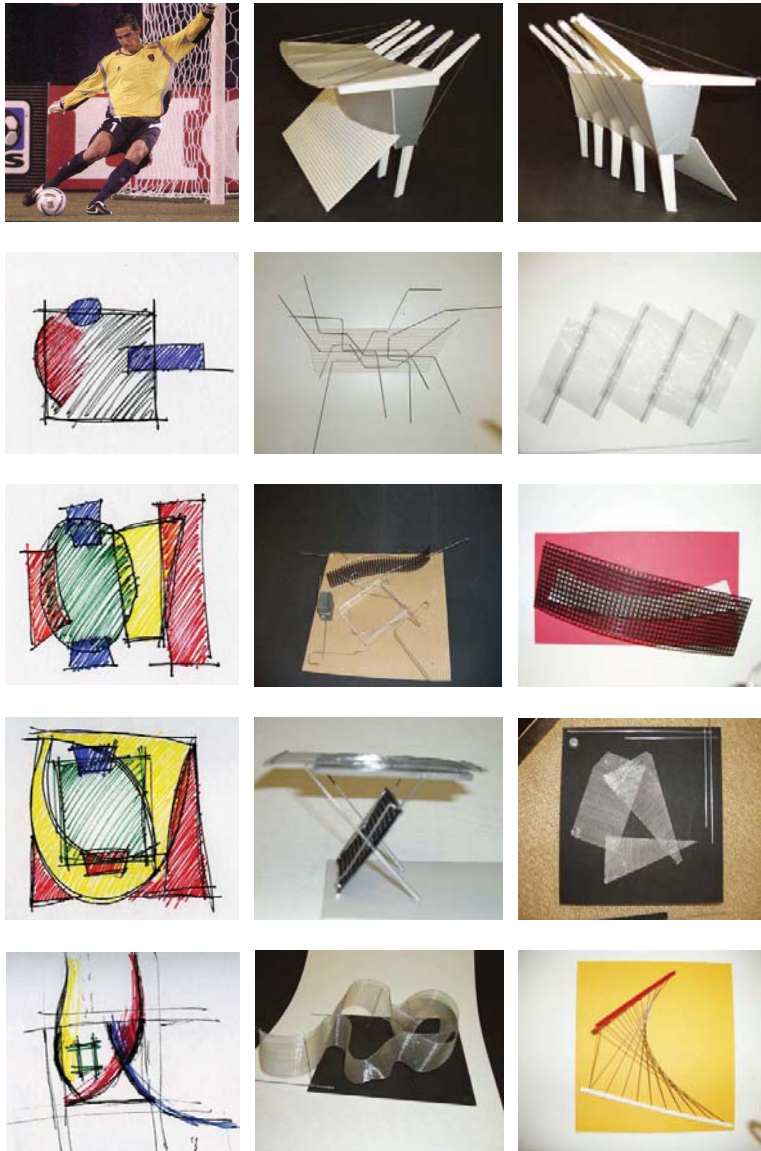
program



process

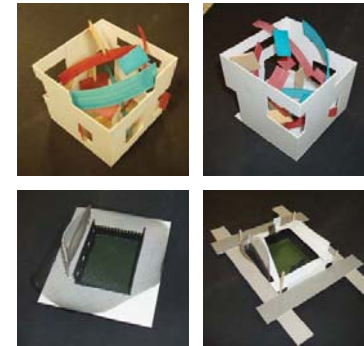
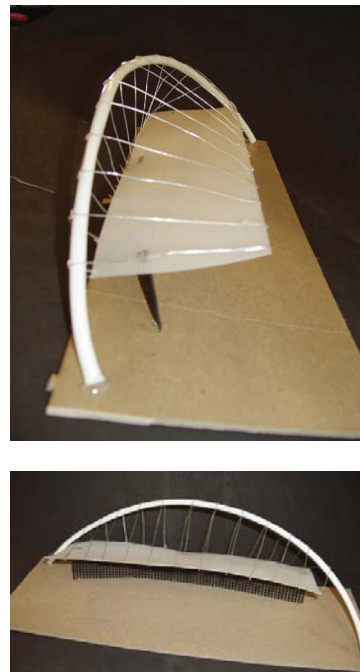
concepts + ideas
parti selection
schematic review





Concepts + Ideas

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process

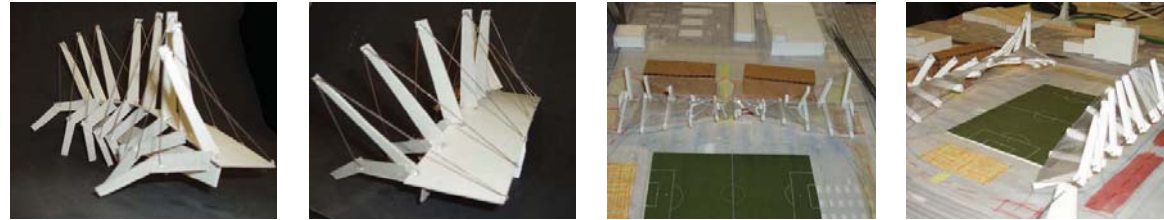


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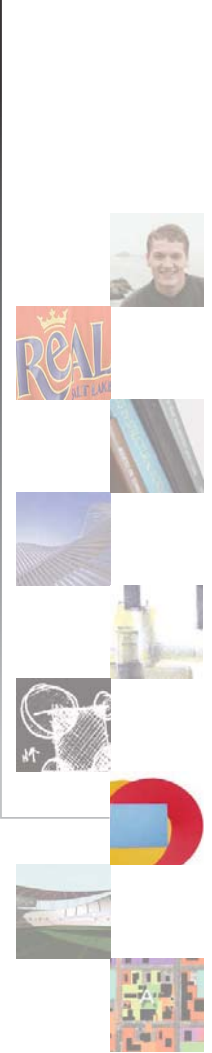
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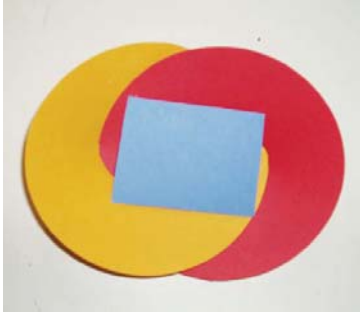


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process



Parti Selection

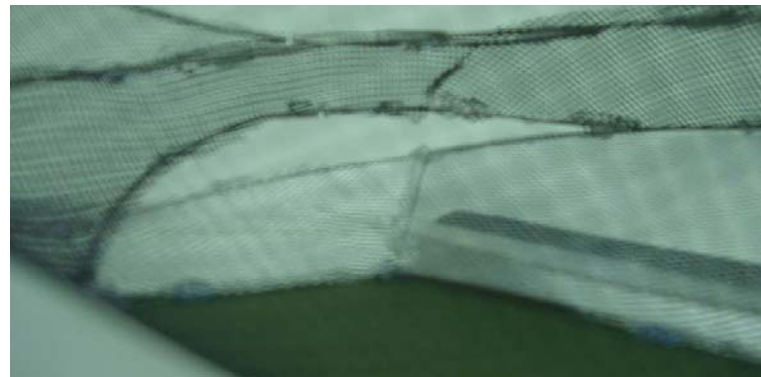
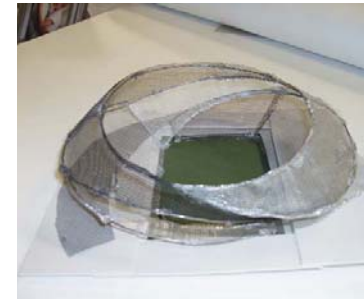


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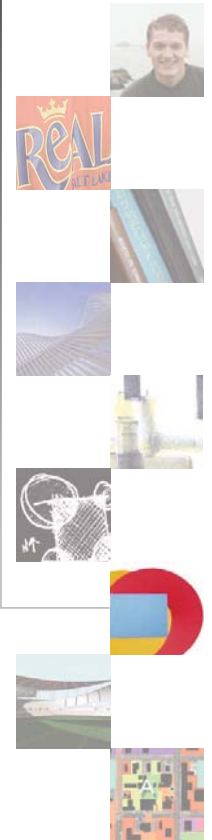
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process



Schematic Review

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s on on rn was how h
 form fit into its urban context. I
 ha ri o a r ss his hrou h
 different moves but it was difficult
 to fit in. I discussed how earlier in
 h sin ro ss wh n b an
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Schematic Review Presentation (o)

real structure

real excitement

real salt lake - major league soccer

soccer stadium

400 w 400 s - salt lake city

process

the jury's comments although it was never specifically mentioned. This was that the basic concept of how the stands on each side wrap around and become the roof of the other side did not read clearly. There needed to be better development of the form to give the visual separation that would clarify this concept.

All these issues would need to be addressed in the further development of the project.

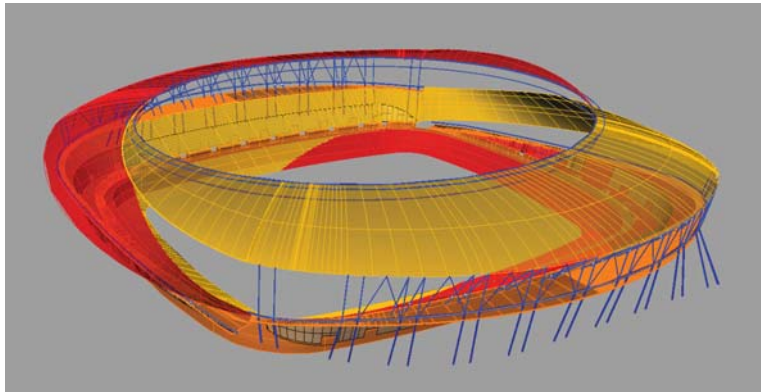
Schematic Review Presentation (2 of 2)

process

.solution

structure summary
drawings
experientials + renderings
models + presentation





structural diagram

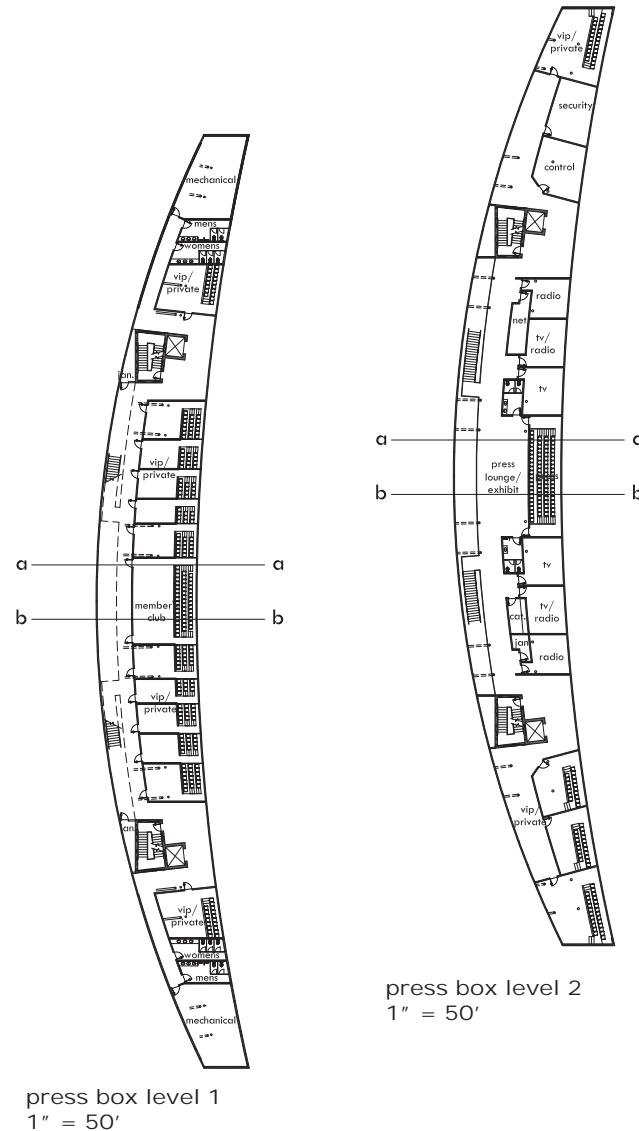
Structure Summary

The structure of the stadium is primarily steel. The two forms which interact with each other and come together in the center, is what gives the overall form strength. This design gives it an overall scheme similar to a compression ring system.

However, due to the disconnect of form on the north and south ends where the forms are wrapping around, it could not act as a pure compression ring system without significant additional structure connecting the forms. As this was not desirable the system was modified to transfer some of the loads differently. To accomplish

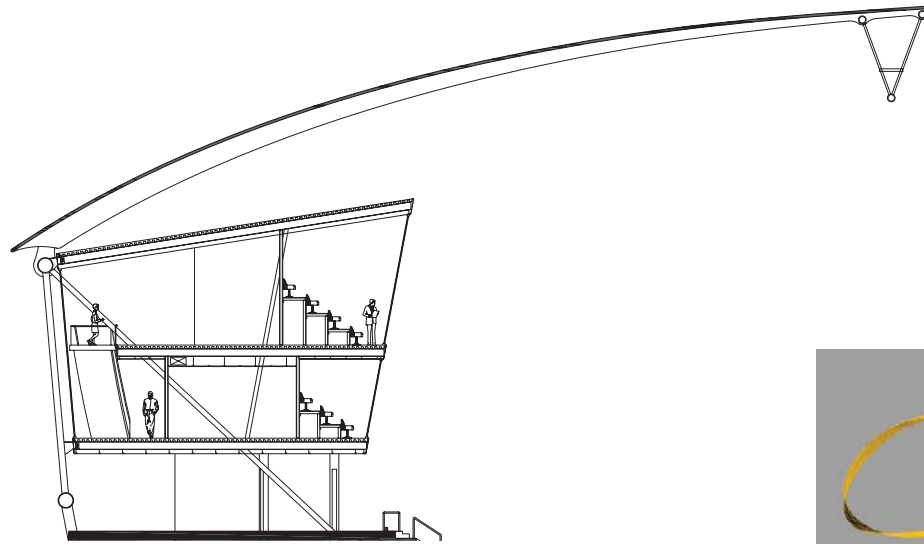
this the roof would have to have the capacity to transfer lateral loads to the outer ring. To accomplish this the structure of the roof would be made out of cast carbon fiber pieces. This was chosen because of its innovative use of the material and also to create a very thin roof. This would not be affordable with today's economy but as an exploration of a new idea of structure I chose to use it.

Special attention was given to how the structural members affect the human experience within the stands. This can be seen throughout the project, especially under the stands on the East and West side, along the ramp that goes along the outer rim of the stands, and in the back of the press box.



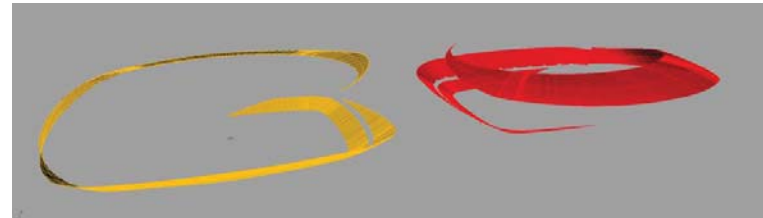
solution



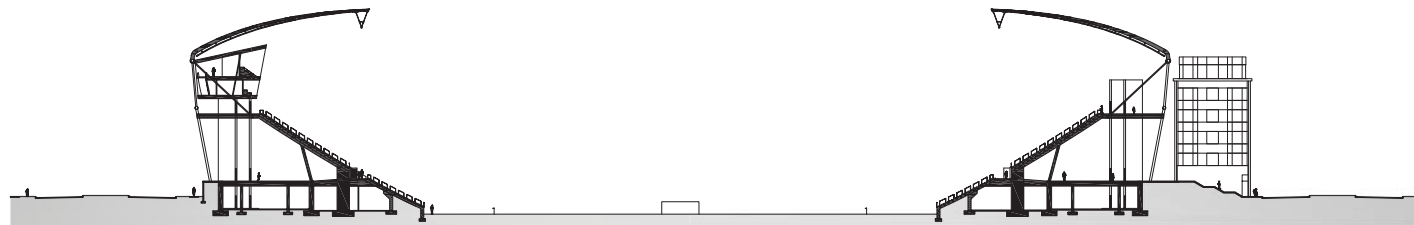


section b - press box

1/16" = 1'-0"



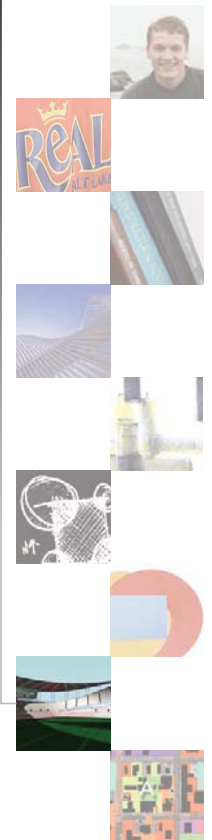
parti - pullapart

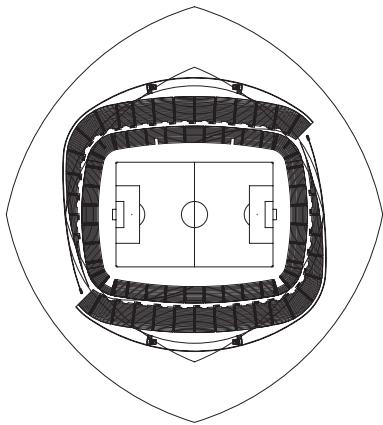


section a - east/west

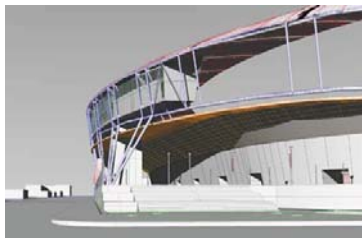
1" = 80'

solution

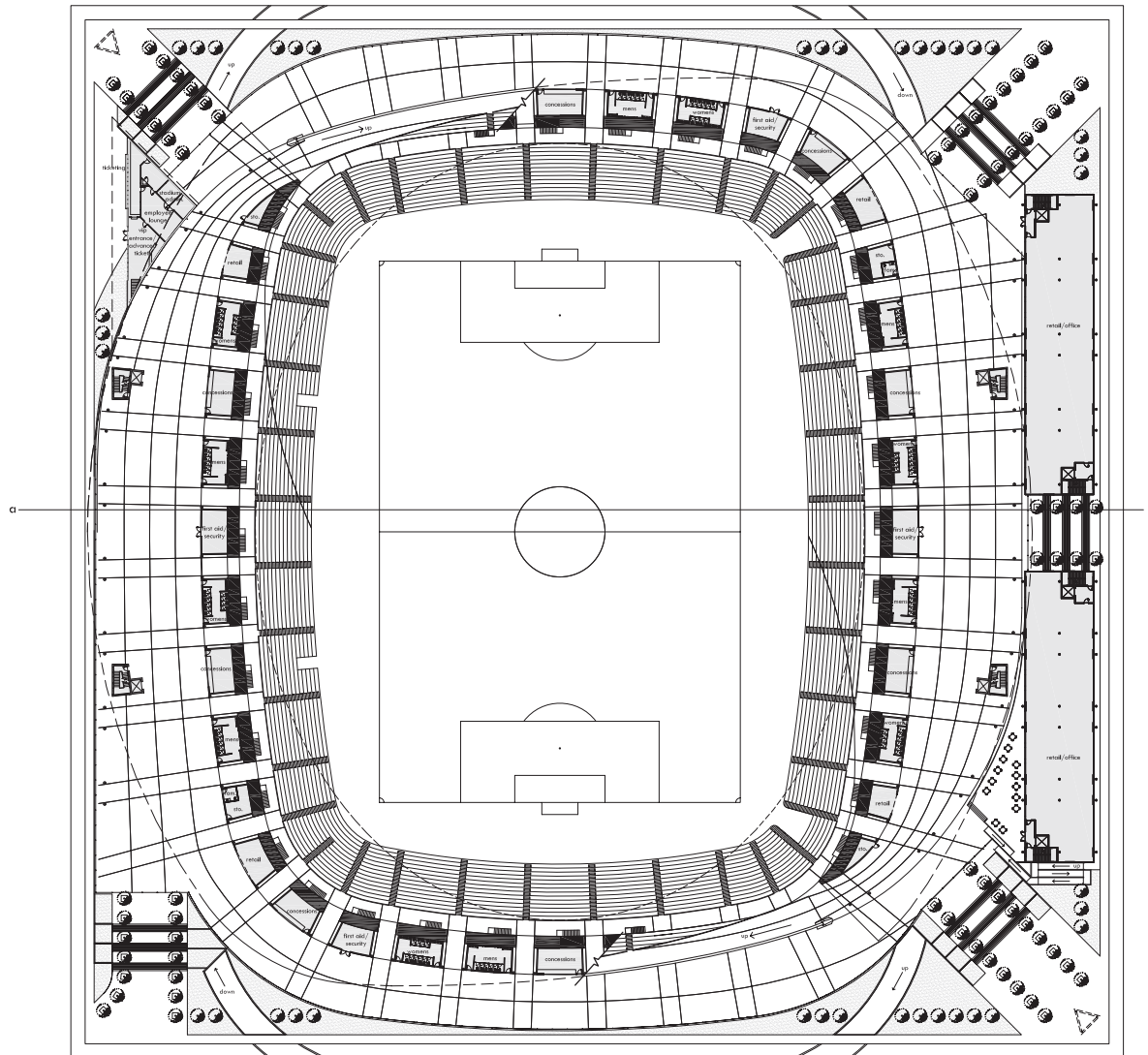




seating plan nts



sw approach off 500 west

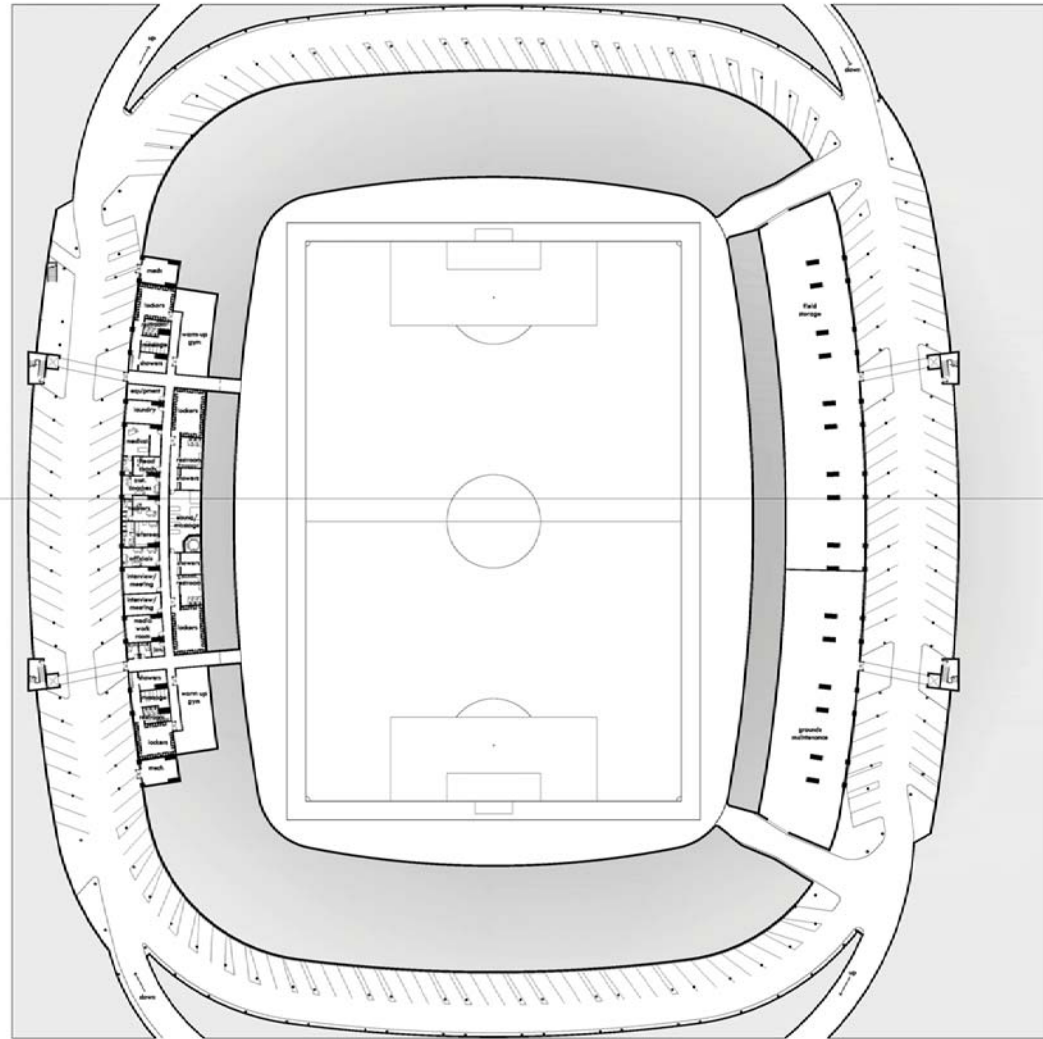


concourse level

1" = 80'

solution



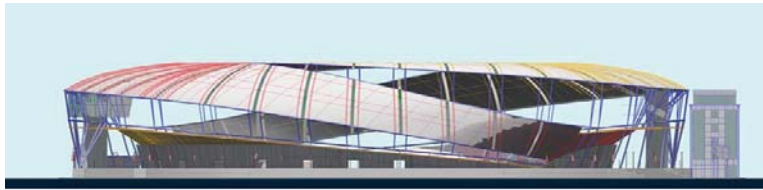


underground level

1" = 80'

solution





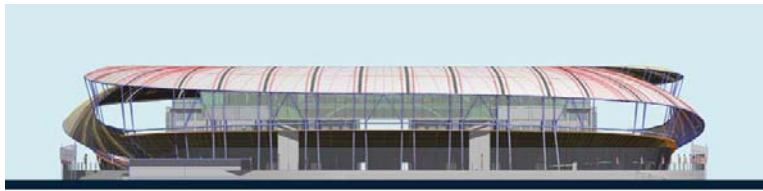
south elevation

nts



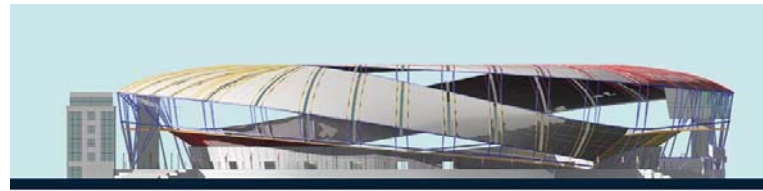
east elevation

nts



west elevation

nts



north elevation

nts



city elevation from 500 west looking east

nts



city elevation from 500 south looking north

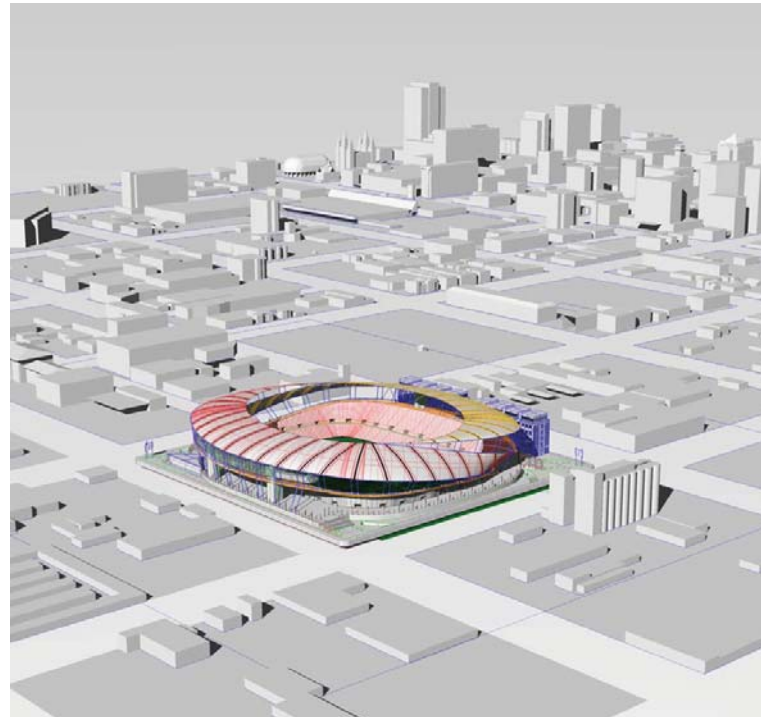
nts

solution

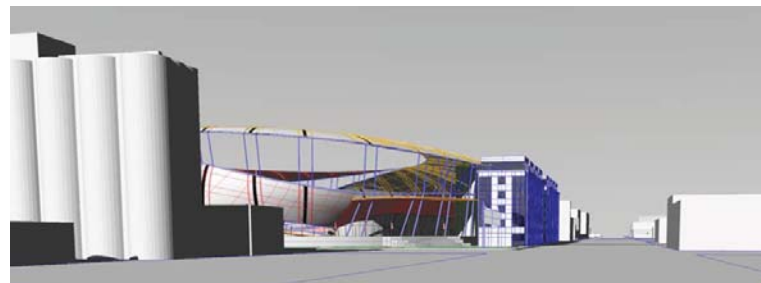




aerial with stadium nts

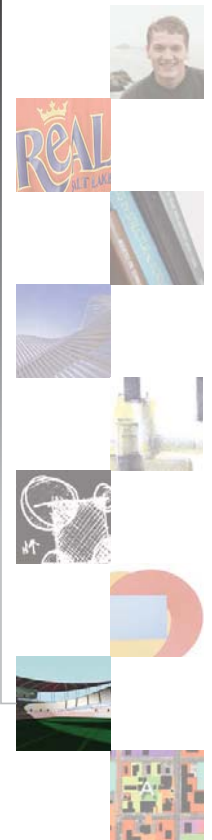


urban context

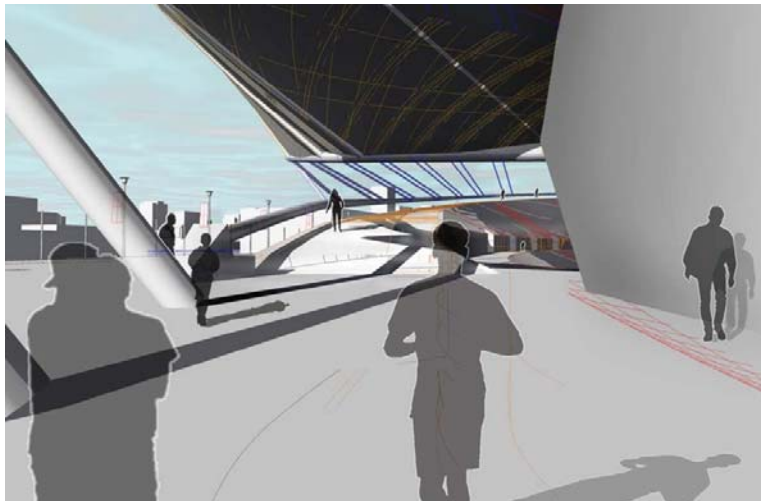


400 w approach to se corner

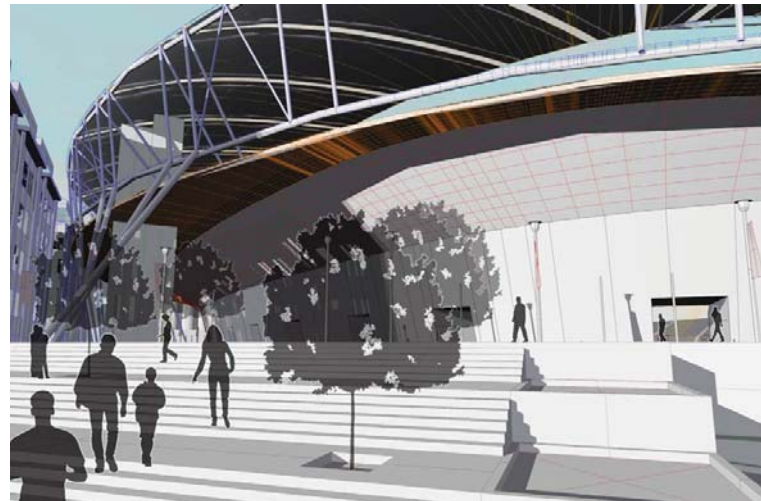
solution



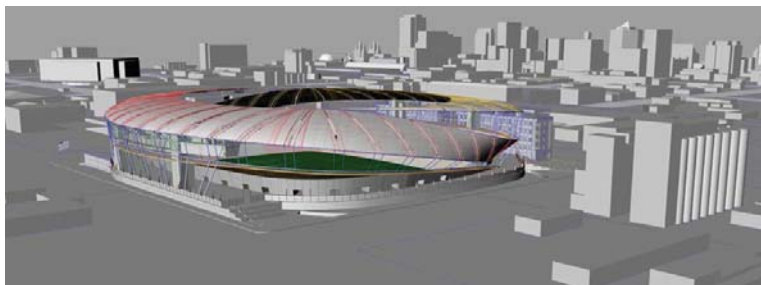
solution



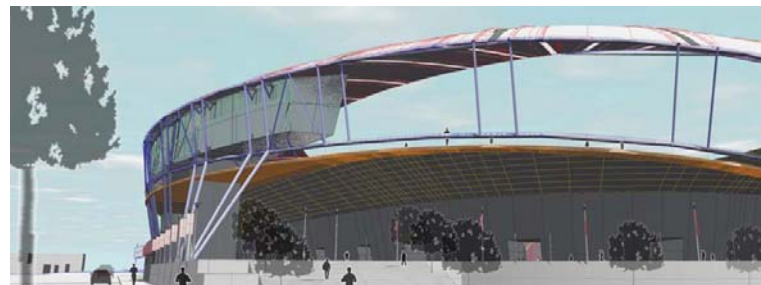
ramp approach into stands



ne entrance to stadium

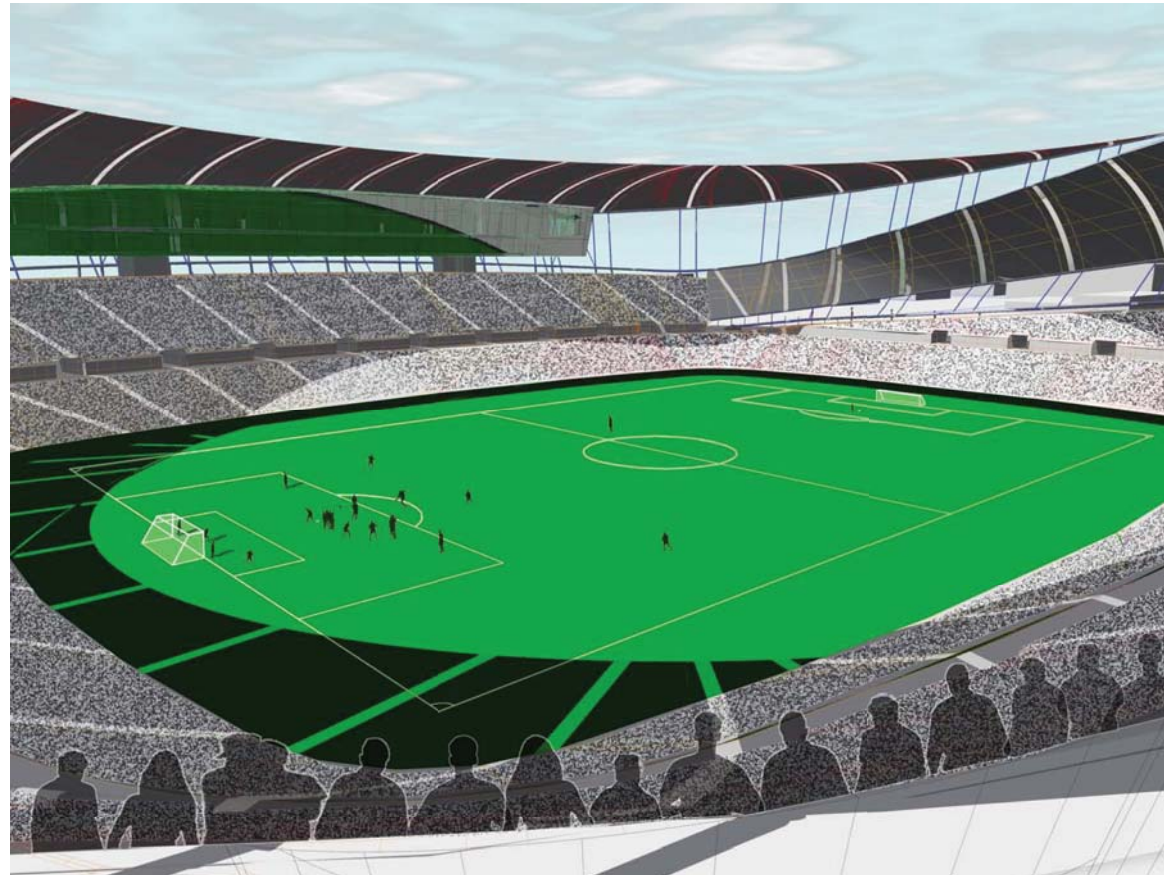
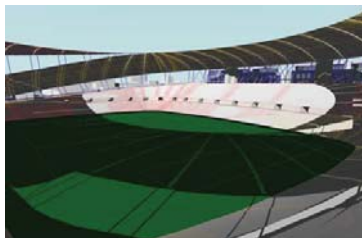
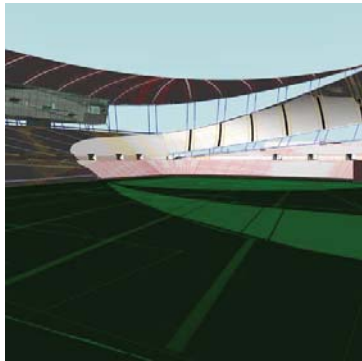


urban context



sw approach off 500 west

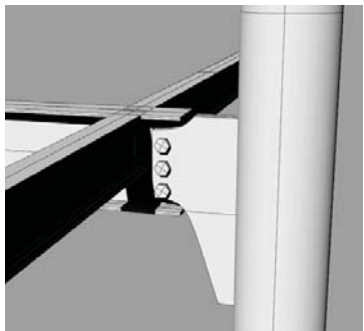
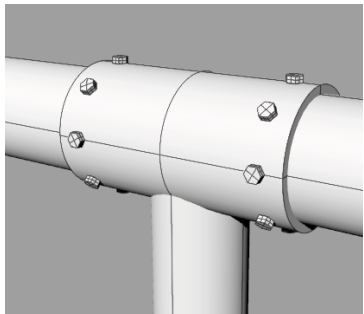




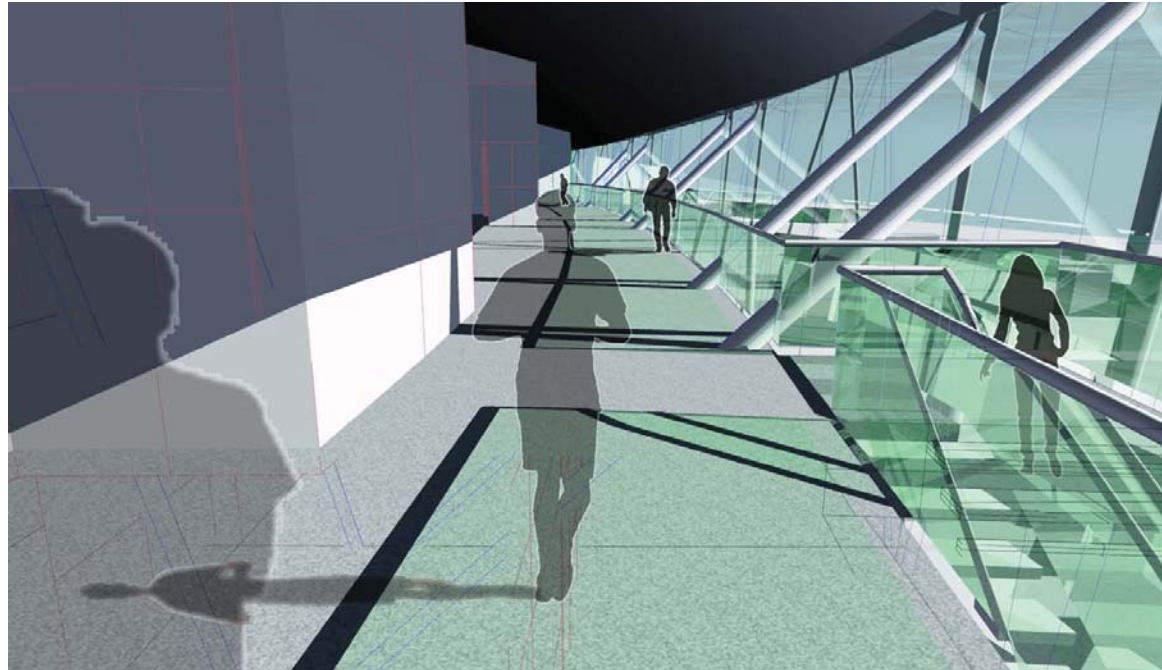
stadium interior perspectives

solution

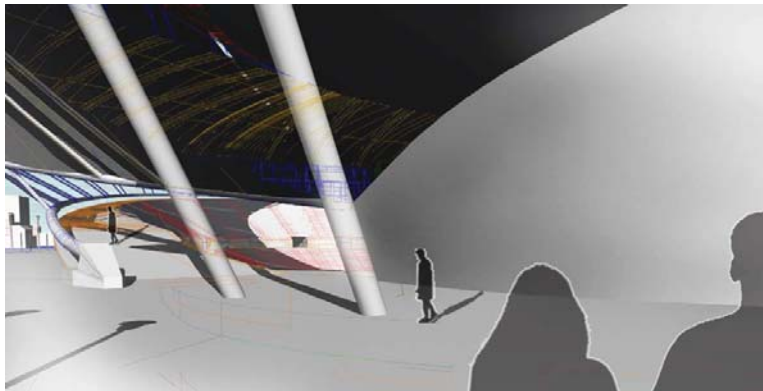




connection details



press box balcony

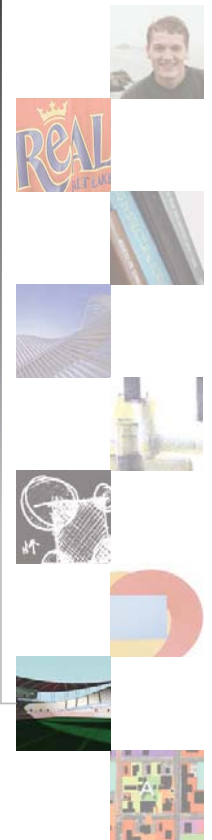


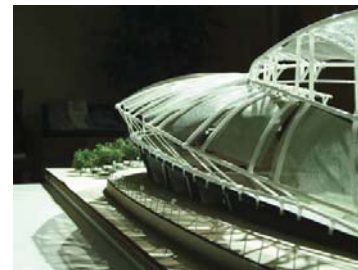
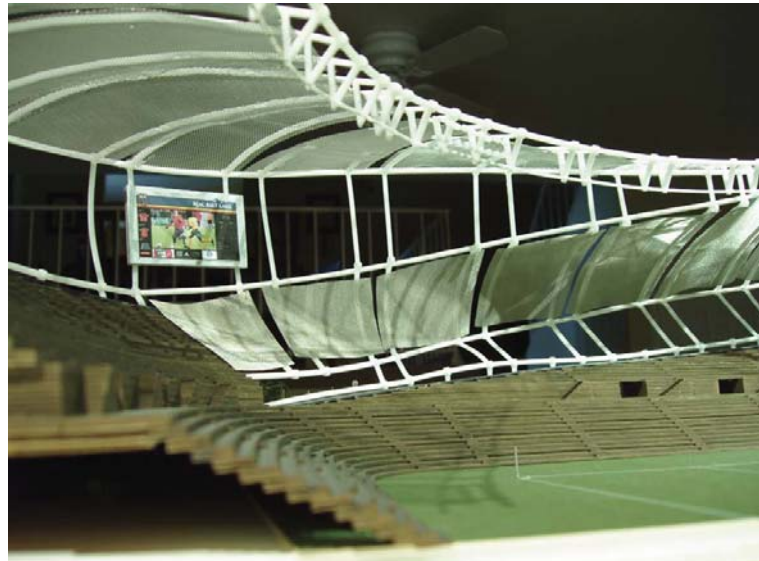
ramp approach from gate



press box

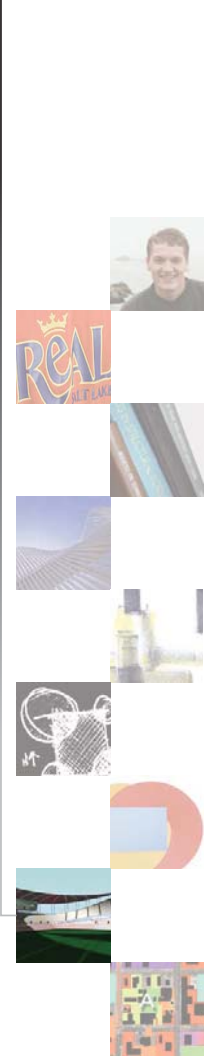
solution





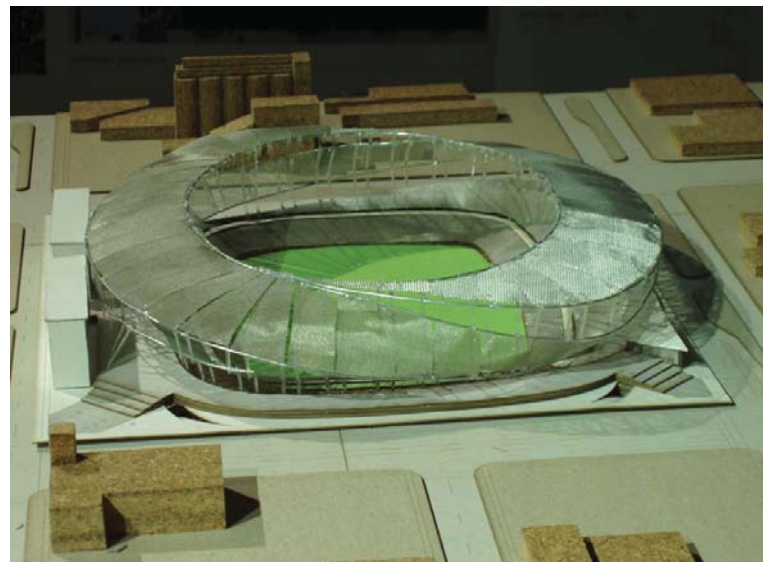
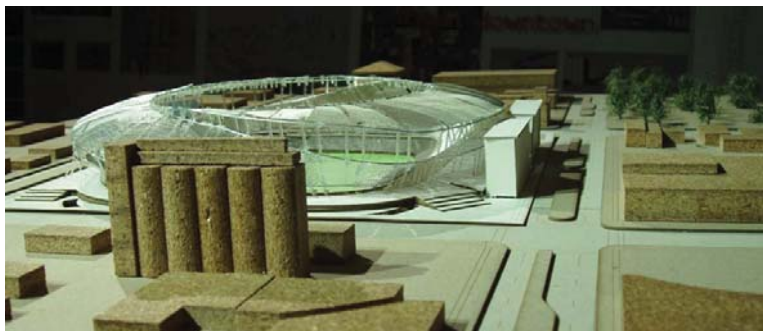
1/16" = 1' - 0" scale section model of south end of the stadium.

solution





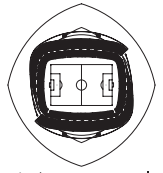
1" = 50' site context model



solution



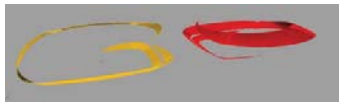
Final Presentation (1 of 2)



seating chart



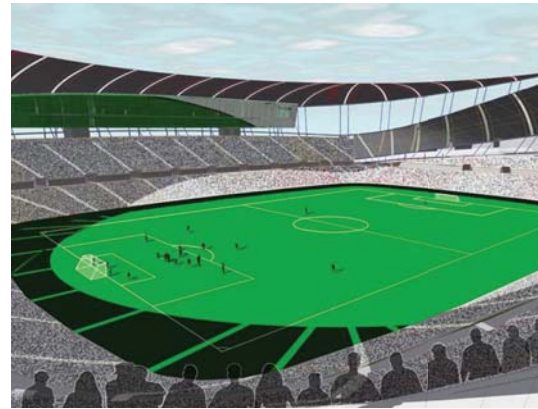
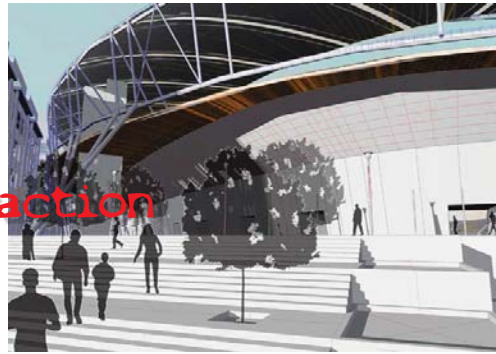
real interaction



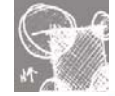
parti



section a



solution



urban site analysis

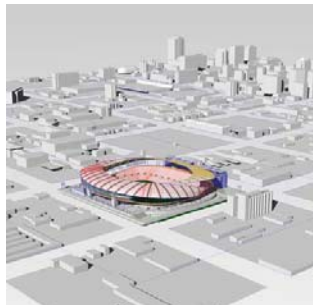
urban site selection matrix



urban vicinity lines



urban revitalization concept



downtown context



real downtown



southeast approach



downtown skyline looking east from 500 west street

downtown skyline looking north from 500 south street

real salt lake - major league soccer

soccer stadium

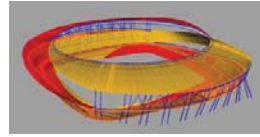
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Final Presentation (2 of 2)

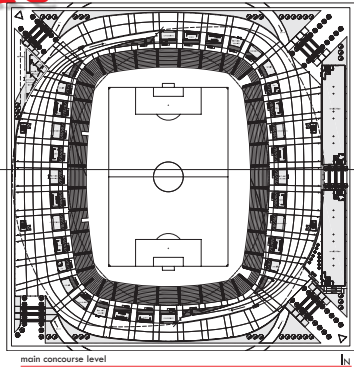


section b
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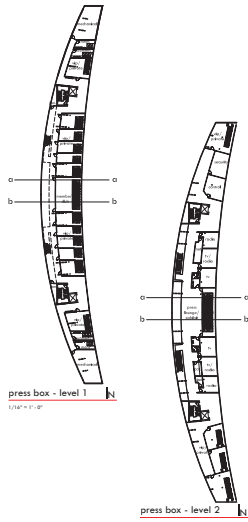
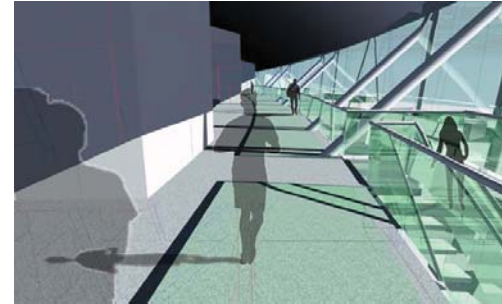
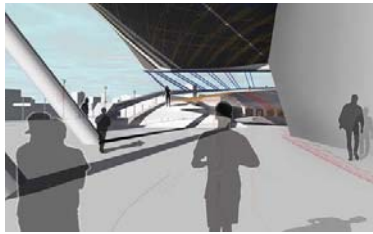
real structure



structural diagram



main concourse level
1:200



press box - level 1
1:200

press box - level 2
1:200



north elevation



east elevation

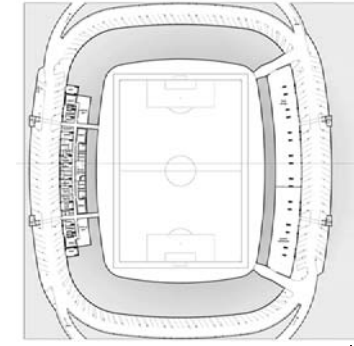


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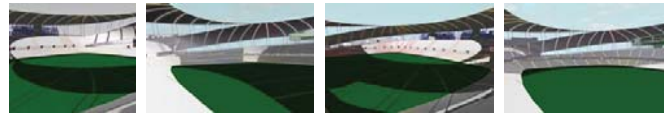


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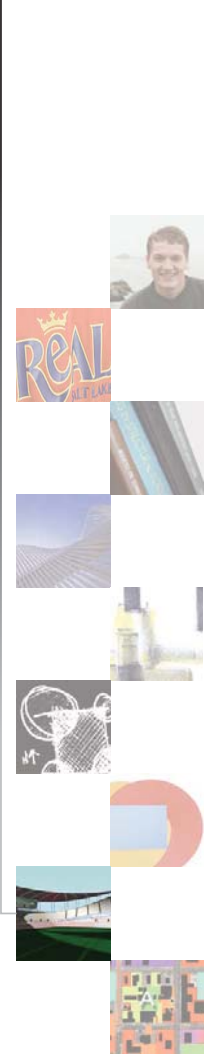
real energy



underground level
1:200

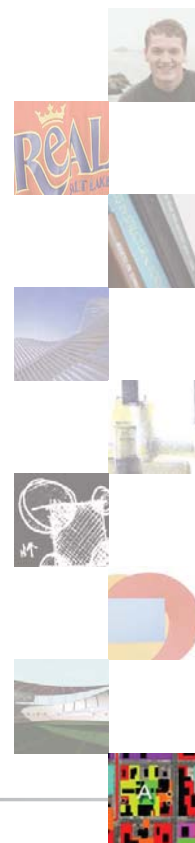


solution



.appendix

alternative site evaluations



Alternative Site Evaluations

1. Land Availability

1.1. Land needed: Given the size and layout of the city blocks in downtown Salt Lake City the stadium will require nearly an entire city block. Given preferred solar orientation, a limited area on East and West sides would not be required – there is the possibility to incorporate these areas into project as complimentary uses such as retail. One city block is approximately 10 acres.

1.2. Relocation of existing users: As little displacement of existing businesses as is possible is the goal. The significance of the existing buildings and/or businesses to the surrounding neighborhoods and the city as a whole needs to be studied. Negative impacts should be minimized. More vacant land or low use land on the site block is preferred as little demolition and negative impact on businesses would be required. Such uses include open spaces, storage areas, vacant buildings, and surface parking.

1.2 Site A: The block has some existing businesses, mostly around the perimeter and on State Street. Many buildings are currently vacant and the center of the block is mostly used for storage. All businesses are smaller commercial establishments consisting of retail, café, and service oriented commercial.
Rating: + + + + +.

1.2 Site B: The block is completely vacant of any structures and businesses. It is currently being resurfaced as a parking lot.
Rating: + + + + +.

1.2 Site C: The block has some existing businesses. About 1/3 of the block is vacant. A couple significant businesses occupy the block. A large packaging plant occupies the Southwest portion of the block. They would need to be bought out and relocated. The Northeast corner of the block houses the Pamela Atkinson Homeless Service Clinic which has health and dental services for the homeless. Numerous homeless service centers are also located in the area. The clinic would need to be relocated either in other vacant buildings or land near the other homeless service centers. Another possibility currently being debated locally involves consolidating all homeless service facilities and relocating them to a location further south in the city. A few other small industrial businesses are also located on the block.
Rating: + + + +.

2. Surrounding Redevelopment Potential

2.1. At least each surrounding block should be looked at for its redevelopment potential. The immediately surrounding areas that are within walking distance are radically more significant in their possible revitalization due to the presence of the stadium. Structures

and/or businesses that might be affected by redevelopment in these areas needs to be assessed. The relationship between possible redevelopment areas and the site are important, especially pedestrian and visual connections. Areas to be redeveloped should be located along pedestrian paths to the site. The increased activity from the events would benefit any existing and new businesses in these areas.

2.1 Site A: Little land directly adjacent to the site is available for redevelopment. The blocks northwest, north, northeast and southwest show little sign of immediate redevelopment due to the occupying businesses. The blocks east, southeast, and south have only smaller portions of land currently vacant or of low use that could be redeveloped. Some strips of smaller commercial buildings along State Street could have redevelopment potential. The block directly west of the site has surface parking for nearly half of the block. This land shows the greatest potential for redevelopment.
Rating: + +.

2.1 Site B: Limited land is available for redevelopment in the adjacent blocks. The blocks north, northwest, and west, in relative order, have land that is vacant or low use such as surface parking that could be developed. The other buildings on these blocks have some historical character which would create a diverse building environment with new infill development. Little to no land is available

on all the other adjacent blocks for redevelopment.
Rating: + + +.

2.1 Site C: This site has by far the greatest potential for large scale redevelopment. Many of the blocks have large portions of low use/vacant land that could be developed including the blocks east, southeast, south, southwest, west and northwest. The vast majority of the southeast block is currently used by the Newspaper Agency Corporation which is relocating to West Valley City soon, leaving the block available. The block south has a cereal processing plant which might be expensive to relocate due to the costs of the physical facilities. The block northwest is particularly significant because of its location between the Intermodal Transit Hub and the site. Currently efforts are being made to bring a public aquarium to a portion of this block, and another portion is being designed for mixed use residential. Mixed use and residential is an increasingly trend in this segment of town. This trend could open the doors to possibilities for this type of development around the site. Research suggests that mixed uses of the land around this type of facility is very beneficial. The block north of the site has many significant structures, mostly with historical character. A small portion of land is available for infill and a significant older structure is currently available for new occupation. The entire block northeast is Pioneer Park and would not be a redevelopment possibility.
Rating: + + + + +.

appendix



3. Downtown Expansion Potential

3.1. The impact the new stadium would have on the downtown environment is critical to the site selection. The stadium would be a very significant contributor to the growth and traffic patterns. It has the potential benefit of providing businesses nearby with an increased activity level which would lead to additional business activity. Research has found that development directly adjacent to this type of facility would have the greatest benefit. This criteria is directly associated with the previous criteria (surrounding land availability for redevelopment), its location relative to the existing downtown core, and the current land use in the area that might encourage or inhibit further growth associated with the stadium. In my estimation and observation the strength of the downtown core currently has an L-shaped configuration running roughly east-west from the Gateway to Temple Square and extending south from Temple Square along Main Street and State Street to approximately 400 South at the City/County building and the new Salt Lake City Public Library. See concept sketch for a graphic demonstration of this.

3.1 Site A: The site could extend the north-south portion of the downtown core a little further south to the site. However due to limited likely redevelopment of the immediately surrounding ar-

reas this possibility is weakened. The large hotels north of the site could possibly have the affect of creating a virtual wall of separation between the stadium and the existing downtown core. Especially if the block of site B remains a parking lot for and extended amount of time, there would be a two block section between the site and downtown that is not very active and pedestrian friendly. See concept sketch for site A. Rating: ++.

3.1 Site B: The site would help extend the north-south portion of downtown. Its immediate location at the end of the stronger core of downtown would make this very likely. The redevelopment potential around the site would help widen this corridor at the end. However further extension south would not be very likely as a direct result of the stadium on this site because of the virtual wall to further growth that the adjacent large hotels to the south would likely create. Other development on the opposite side of the hotels (on sites such as site A and the parking lot directly west of it) could bring further southward growth which could link to the stadium and extend the downtown core. See concept sketch for site B. Rating: +++.

3.1 Site C: This site has a much different potential impact on the downtown core than the other two sites. First of all its location is not along either line of the L-shaped downtown. It has great potential

however to provide a large impact. It is located directly south of the Gateway and directly west of the City/County building and the library. The addition of another major point such as the stadium could influence connections from these other main downtown points. This could create four nodes to a roughly square configuration of an expanded downtown core. This remains an even more likely scenario because of the available land for possible redevelopment around the site. It would have a very easy connection to the Gateway along a path north of the site that in itself has experienced some recent growth and redevelopment. The stadium would reinforce this recent growth. As mentioned previously, this area has seen a recent trend of residential and mixed-use development. Strengthening this as a more mixed use downtown area would compliment the more business oriented portion of the current downtown core. Development of the blocks in this area would be welcomed by many as it is the path traveled by many who come into downtown from Interstate-15 along 600 South and 400 South. Currently after coming off I-15 one must travel a few blocks through mostly vacated and blighted areas before arriving in a more attractive area of downtown. See concept sketch for site C. Rating: +++++.

4. Supportive of Existing Downtown

4.1. Overall: This consideration

is also a critical look at how the overall impact of the stadium would support the existing amenities and services that are currently located in the downtown area. Its adjacency to existing uses is the largest determining factor for evaluation of this criterion. Different elements of this potential are looked at individually in criteria 4.2 to 4.6.

4.1 Site A: Its distance and separation from the existing downtown core limit the impact the stadium on this site would have on the existing downtown. Rating: ++.

4.1 Site B: This site has the greatest potential of contributing to the continued strength of the existing downtown because of its close connection to a wide variety of current uses. Activity surrounding events will be very likely to support many of the different businesses and the activity would be likely to spill out before and after the games into the downtown area along Main Street. Rating: +++++.

4.1 Site C: The existing downtown core would not likely see too much difference from the activity surrounding the game with the exception of the area around the Gateway. The Gateway and the area surrounding to the south would most likely see positive activity because of its proximity to public transit that would bring people to events which could draw people before or after the game. Rating: +++.

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4.2. Restaurants: Eating establishments nearby the site will help to keep people in the area longer, thus increasing the revitalization potentials for the neighborhood. Restaurants within walking distance from public transportation stops, parking and the site are especially beneficial for the active atmosphere around the stadium.

4.2 Site A: Only a few restaurants are located within walking distance of the site. The few that are located in the vicinity are either fast food or expensive.
Rating: ++.

4.2 Site B: Many restaurants are located in the area and include all types including small cafes, ethnic establishments, fast food, and sit down restaurants in a full range of price categories.
Rating: +++++.

4.2 Site C: A good number of restaurants are located within walking distance of the site. There is a wide variety of restaurant types in different price ranges. However, most are not located really close as most are between one and two blocks away. The location of the existing restaurants is in the direction of public transportation. The available land around the site would likely lead to additional eating facilities around the stadium.
Rating: +++.

4.3. Retail: Existing retail near the stadium would help keep people in the area longer and events would most likely bring an increase

in sales. Locations near public transit and parking are beneficial.

4.3 Site A: Little retail is located near site A. A big box retail store is located on the block south.
Rating: +.

4.3 Site B: Little retail is around the site. The free zone of Trax links the site easily to downtown retail areas.
Rating: ++.

4.3 Site C: The Gateway area provides a lot of retail that is relatively close to the site. With public transit in this direction it would be a likely destination for people.
Rating: +++.

4.4. Housing: Housing near the stadium will help bring vibrancy to the area and would help to maintain human movement at all times to the area. Considerations may need to be made in the design to help minimize negative impacts such as excessive noise and lighting during events on residential areas.

4.4 Site A: There are a few residential apartment buildings in the block southeast of the site. There is a lot more residential east of the site in apartment, condominiums, and single family houses. As the area becomes increasingly residential beyond this point. Little sustained pedestrian activity is likely from these residences as State Street acts as a barrier to there activity westward without anything to draw them across.
Rating: ++.

4.4 Site B: A few mixed use establishments exist in the area close to the site. For most of them further development would be needed to draw them regularly to walk around the stadium site.
Rating: ++.

4.4 Site C: As mentioned previously mixed use and residential developments are becoming a trend in the portion of downtown north of the stadium. Potential for further development of housing in the area around the stadium is a viable opportunity. With the transit hub, Gateway, and Pioneer Park nearby the possibility of drawing sustained human activity levels is likely.
Rating: +++++.

4.5. Hotels: Easy access to area hotels is important. A range of hotel price categories would help to avoid catering only to certain demographics.

4.5 Site A: Many hotels are located to the north and west within walking distance of the site. Those in closest proximity are expensive, luxury hotels and the lower price range hotels are a few blocks away.
Rating: +++.

4.5 Site B: Again, many hotels are in this area. Those immediately around are mid to higher scale hotels. A greater number and range of hotels are close to the site than to site A.
Rating: +++++.

4.5 Site C: Again many hotels are in this area, from low, to high scale. The greater number high scale hotels are a bit farther, closer to sites A and B. In the mid to low range there are many more close to this site. A few newer hotels are being built in the area.
Rating: +++++.

4.6. Other Attractions: Locations of other major attractions and their connections to the site should be looked at as well. There are greater possibilities of increased activity in the areas linking the site to these other attractions.

4.6 Site A: Not many other attractions are located around the site. It is important to note the existence however of many large care dealerships in the area which occupy many block almost entirely.
Rating: +.

4.6 Site B: The site is relatively close to a number of downtown attractions on or near this portion of Main Street. These attractions include a number of theaters. The Salt Lake public library is only a two-block walk from the site.
Rating: +++++.

4.6 Site C: Near the site is the Gateway with a movie theater and planetarium. A performing arts center is also relatively close and an aquarium is proposed on the corner directly northwest of the stadium.
Rating: +++.

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5. Accessibility

5.1. Public Transportation: Site must be accessible via the public transportation systems including TRAX (light rail), bus, and commuter rail. Existing and future systems should be looked at along with their connections to the site.

5.1 Site A: A TRAX stop is located 1 ½ blocks north of the site. The connection path to the site goes between two large luxury hotels. A few bus routes along State Street stop by the stadium and many more stop 2 blocks from the site coming from all directions across the Wasatch Front.

Rating: + + + .

5.1 Site B: A TRAX stop is located directly adjacent to the site on Main Street at mid block. This provides excellent direct access from areas south and east in the valley. Many park-and-ride lots are located along the south line. TRAX has good connections to bus routes throughout the valley as well. Many bus routes come into downtown on State Street just over a block away from the site. Current time schedules for busses would provide only limited service for weekend and evening events. UTA could provide added services for major events.

Rating: + + + + .

5.1 Site C: Currently TRAX does not have a stop near the site and current bus routes are limited in the area. However, the Salt Lake Intermodal Transit Hub is located

one diagonal block northwest of the site. The TRAX lines will be extended to this location providing good access. The future TRAX line from the Salt Lake City International Airport will also terminate at this point. The Commuter Rail which is now under construction will bring people from the north, including Davis Weber and eventually even Box Elder Counties. This will allow easy access to the site from a much larger geographical area. It is also anticipated that bus routes will be redesigned in downtown to bring more routes into the intermodal hub. According to the proposal plans for the commuter rail lines, UTA indicates a TRAX line that would continue the 400 South tracks directly down to the transit hub. This would bring the line directly adjacent to the site, likely stopping at Pioneer Park.

5.2. Automobile: Automobile access should be easy and nearby roads should have direct connections to major routes such as the freeways. The site should have good accessibility from the most likely travel paths of cars from different directions. Minimal overloading of nearby routes is critical to help keep disruption of traffic flows low before and after events. Multiple access directions may be beneficial to help this. For all three sites the most likely path used by people from the north will be the 400 South exit from the freeway and traveling east on 400 South. Return path would also likely be along the same route. Alternate routes from the north would in-

clude the Beck Street and 600 North exits and traveling 300 or 400 West. Again for all three sites people traveling from the east and west on Interstate 80 and from the south on Interstate 15 will most likely use the 600 South exit and travel on 600 South, a one-way street going east. The return trip would likely follow 500 South, one-way westbound, to get back on the freeway. An alternate for those traveling from east on I-80 or south on I-15 is the 900 South exit. This exit directs you northbound on West Temple Street.

5.2 Site A: Access would be fairly simple and direct for people from all directions. The 900 South alternate for this site would be excellent. As the site is only one block off of West Temple and only a few blocks north of the exit. For those from the north the site is a little less accessible as they would have to travel farther through downtown. The alternate route for these travelers would be less feasible but still likely to be used by many. This could increase the level and area of localized congestion in the city.

Rating: + + + .

5.2 Site B: Access is very similar to that of site A and specific conditions are basically the same as listed for that site.

Rating: + + + .

5.2 Site C: Access to this site is excellent and very direct from all directions. The site is located much closer to the freeway exits and localized congestion would be

limited to only the streets within a couple blocks of the site. The southbound alternate would work very well. The 900 South alternate would not be as direct as the other sites, but it would still likely be used by many.

Rating: + + + + + .

5.3. Parking: Parking should be allowed within walking distance of the stadium with one stall per 2.5 to 3 spectators (as suggested by some articles, but this would need to be verified for the local conditions and requirements.) Sites with less availability of the public transportation system will need more parking. If adequate parking is not available, land needs to be available to create the needed parking. Parking facilities would preferably be shared with other uses. Office spaces are especially beneficial for sharing parking since the normal hours of use complement each other and the parking spaces would be used more consistently.

5.3 Site A: There are a few surface parking lots available near the site including one directly west that is nearly one-half block in size. Site B, one block away, is entirely covered by a parking lot. Other parking is located farther north but walking distances are increased. Two parking structures are located a block east of the site, both of which are used for office functions. A "big box" store is located the block south of the site, lending the possibility of sharing part of its parking lot.

Rating: + + + .

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5.3 Site B: Site B has the most existing parking facilities close by. In addition to those of site A to the south of the site, many parking opportunities are a short walking distance north from the site. These facilities are both surface and some structured, many of which are mostly used during business hours. It is likely that no more public parking would need to be added spectators. These parking facilities are also located near many restaurants and other downtown amenities which would encourage many people parking here to come early for events or remain in the area longer after in order to patronize the area businesses.
Rating: +++++.

5.3 Site C: There is limited existing parking in the area as it is now. Some nearby businesses and offices would be able to park people for events with smaller surface lots a couple structured facilities. Many additional parking lots are located to the north which are used for basketball games at the Delta Center. These would require a little more walking to get to the site as compared to the other two sites, but they are still within a reasonable distance. Up to 1000 stalls will be built near the transit hub by the city in the near future. It would also be anticipated that new developments located in the blocks adjacent to the site would provide the possibilities for additional parking spaces. Should any additional parking spaces be required, there are many sizable

vacant areas in the surrounding blocks that could be easily adapted to facilitate event parking.
Rating: +++.

5.4. Walkability: Pedestrian friendly routes are needed which connect the site to public transportation stops, parking and nearby housing. This pedestrian traffic flow should be taken into consideration along with the possible redevelopment areas to maximize the revitalization affects of the stadium. Walking distances between the site and the surrounding amenities and services is important. The design of the spaces is also important and efforts should be made to maintain an environment that is conducive to the pedestrian. For example street plantings and trees, buildings close to the street, and sidewalks in good condition help to make the area more pleasant and therefore more walkable.

5.4 Site A: The existing area is adequate but not excellent for the pedestrian. Not many places are located adjacent to the site that would encourage walking around much. The design of the area is mostly parking on the street edge with buildings set back from the street. Some street plantings are in the area. The path to the TRAX stop is pedestrian friendly as well as the area north of the stop along Main Street. 600 South on the north and State Street on the east are major high traffic streets and Main Street and 700 South are low to medium traffic city streets. Signalized crossings are located on all

corners.
Rating: ++.

5.4 Site B: The area to the north along Main Street and into downtown is very pedestrian friendly. The scale of the streetscape is designed well for the pedestrian. This area makes a good pedestrian connection to other nearby establishments. Other surrounding streets are pretty good for walking except the area is dominated by larger businesses and hotels whose scale is not too favorable. 400 South on the north and 500 South to the south are high traffic streets while Main Street and West Temple are medium volume. All crossings are located at the corners and are signaled.
Rating: +++.

5.4 Site C: This area has experienced recent improvements and shows a lot of promise to make it a pedestrian friendly area when development occurs, even though at the time there is not much pedestrian activity. The immediately surrounding area is not very well developed at this time with many vacant buildings and lots. On the blocks to all sides except the north and northeast, many of the occupied buildings currently show little pedestrian oriented design. However, the city has recently invested a lot in the pedestrian facilities of the area by fixing up the sidewalks and creating street plantings of grass and trees. The area to the north with many older well maintained buildings has a good pedestrian scale. The Gateway development located two blocks directly

north has a very pedestrian oriented design. This could encourage the expansion of this pedestrian friendly atmosphere to continue with the development around the site. The block to the northeast is Pioneer Park which hosts the Downtown Farmers Market on Saturdays throughout the summer. The streets on the north and south of the site, 400 South and 500 South, respectively, are high traffic streets with many lanes. All crossings of these streets are at the corners and are still easily crossed with signals. The streets to the east and west, 400 West and 500 West, respectively, are low traffic streets with large planted islands running down the middle of the streets. Mostly, they are currently just planted with grass but as they continue northward they are more developed with other plantings. On 500 West just north of the site the planted island widens to a mid-street plaza with places to sit. This is located along the most likely path for people coming to and from the transit hub. The corners of the site have signalized crossings and there is a promising potential to make a very pedestrian friendly streetscape on both the east and west side of the street with possible mid-block crossings which could link to and create a strong design link to future developments on both sides. For this category the rating does reflect this potential only partially as much of the potential discussed is speculative.
Rating: +++.

appendix



6. Visibility

6.1. From freeway and main routes into city: The site must be analyzed for the impact that it may have on the visual makeup of the city as it is seen by passer-bys and those arriving into the city. How it relates to the surroundings is critical. The stadiums presence along or nearby traffic routes would add the presence it will have in the fabric of the city.

6.1 Site A: The site would have some limited visibility from the freeway. The stadium would not have a large impact on the panorama of the downtown because it would be mostly hidden by nearby large hotels. It is located along 600 South which is a major route for inbound traffic by people traveling from the south, east, or west, but not before traveling multiple blocks.
Rating: ++.

6.1 Site B: The site would have only limited visibility from the freeway. Its location would give a more important impact on the downtown panorama from the west. It is located along 400 South a major inbound route for people coming from the north on Interstate-15 and going to the southern portion of downtown or to the University of Utah. It is also along 500 South which is a major one-way road for those exiting the southern portion of downtown.
Rating: +++.

6.1 Site C: The site is located

very close to Interstate-15. Views are excellent from some visual "windows" on the freeways but are hidden in some stretches due to the configuration of the freeway at this point. Its location is between 400 South right after you exit the freeway and 500 South just before entering the freeway. 400 South is a major inbound route for people coming from the north on Interstate-15 and going to the southern portion of downtown or to the University of Utah. 500 South is the major route from downtown traveling south on Interstate-15 or west on Interstate-80. Visibility is very good for those coming into town on 600 South. It would have a significant impact on the panorama of the city especially as viewed along 400 South. The stadium as well as any corresponding development would go far to improve this district of downtown which acts as a gateway into downtown for many people as it is located immediately after exiting the freeway.
Rating:++++.

6.2. From local view corridors: Visual connections from nearby areas of increased activity are important. Views along side streets should also be addressed in the design.

6.2 Site A: View corridors for the site are limited to the corners along the streets running along the site. The most important views would be for those traveling east on 600 South and along State Street. The view from the north on Main Street is also important because of the

location of the TRAX stop but the view window is limited with the large hotels and landscaping that are along the street.
Rating: ++.

6.2 Site B: View corridors are limited on this site to the corners as well with the surrounding blocks being mostly closed. Important views are on 400 South and 500 South from the east, as well as Main Street from the North.
Rating:+++.

6.2 Site C: Visibility is greatest on this site. Views along 400 South and 500 South from the east, and 400 West from the south are the most important street views. Visual connections to the surrounding blocks provide a lot of potential to visually link the stadium with the surroundings. The View corridor from the mid-block street that runs north-south in the blocks to the north, running through The Gateway, is especially significant as the stadium would act as a visual terminus to this street. The pedestrian nature of the street in Gateway could be extended to the stadium. The blocks to the east and west of the stadium could be developed creating pedestrian corridors and visual links to the stadium. The block northwest between the site and the transportation hub could also be developed with a diagonal corridor that could link the stadium to the hub while creating a unique pedestrian space for Salt Lake City.
Rating:+++++.

7. Site Connections

7.1. Connection to downtown: The relationship between the site and the downtown core should be assessed. Closer connections to the city core would help the stadium to bring activity into this area. Visual connections between the site and the downtown may affect the atmosphere of the events. The direction and proximity to the downtown buildings may provide opportunities to use the city skyline as a backdrop for spectators at various stadium events.

7.1 Site A: The large hotels to the north of the site create a barrier to the downtown skyline. Some visibility remains but it is limited.
Rating:++.

7.1 Site B: The site would have a very strong visual connection to downtown. The skyline could serve as a backdrop to the north stands and stage area.
Rating:+++++.

7.1 Site C: The site could have a good connection to the downtown skyline. The views would be to the northeast and would offer more of a panorama of the downtown skyline. The greater distance would make it less dominant than at site B.
Rating:+++++.

7.2. Connection to local geography (Wasatch Mountains): Particular note should be made of the many remarks by the media covering games for Real Salt Lake during its inaugural season about

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the beautiful setting of the Salt Lake Valley with the mountains so close. Each site should be assessed for its ability to utilize the natural setting of the city as a background feature of the stadium. The principal view direction is to the east, with the southeast mountains being the most dramatic.

7.2 Site A: This site could offer great views of the mountains with little to no interruption by outside obstructions. No large buildings block the views and not a lot of potential is seen for new development to do such.
Rating: + + + +.

7.2 Site B: The views to the mountains are partially blocked with the large courthouse to the east and the large hotel to the southeast. Some view corridors might be possible but the buildings are very limiting and make a panorama not possible.
Rating: + +.

7.2 Site C: With the existing development there is little to block the views of the mountains (only minimal blocking of views by tall hotels southeast of the site which could be minimized with the design through the viewing levels). A panorama is possible and the mountain views would be combined with the downtown skyline to create a dramatic connection to Salt Lake city as a "city in the mountains."
Rating: + + + +.

appendix

