

COMPETE: URBAN LAND INSTITUTE | GERALD D. HINES STUDENT URBAN DESIGN
COMPETITION

by

JOHN PERRY

B.S. South Dakota State University, 2005

A REPORT

submitted in partial fulfillment of the requirements for the degree

MASTER OF LANDSCAPE ARCHITECTURE

Department of Landscape Architecture, Regional and Community Planning
College of Architecture, Planning and Design

KANSAS STATE UNIVERSITY
Manhattan, Kansas

2009

Approved by:

Major Professor
Stephanie Rolley

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2009

Abstract

The Urban Land Institute / Gerald D. Hines Student Urban Design Competition offers teams of multi-disciplinary graduate students the opportunity to address a large scale site that presents complex challenges requiring practicable, innovative solutions reflecting responsible land use. Solutions must incorporate design, planning, market potential, market feasibility, and development. Some of the brightest students from universities across the United States and Canada compete annually, incorporating bold ideas, outstanding graphics, and great presentations in order to win the competition. The scale of the competition and the quality of entries makes it difficult to advance from the initial submission round to the final four entries selected for the final phase of the competition.

Entering the competition is a complex process requiring adherence to a multitude of rules and regulations about team formation, design solutions, financial information, presentation materials, and deadlines. This study documents the process of one student team entering the 2009 competition. Analysis of previous competition responses and principles of urban design theory informed an innovative design solution that incorporates sustainability, livability, and connectivity.

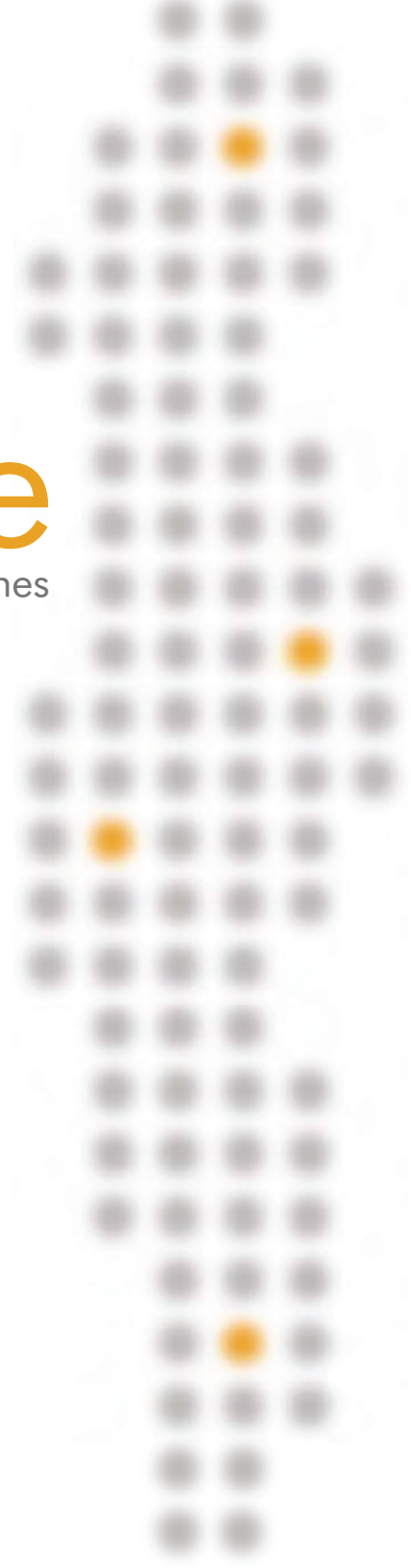
This project analyzes previous project entries, looking for patterns and indicators to guide the competition response. Combining the analysis and design philosophy, which utilizes specific sustainable landscape architectural principles, forms the framework of the design solution. The response focuses on process-driven design implementing sustainable frameworks that account for existing emergent ecologies, historical and cultural relevance, energy efficiency, hydrological patterns, and public transportation. Results of the study led to conclusions regarding team organization, teamwork, graphic composition, and presentation that will be beneficial for future competition entrants.



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Compete

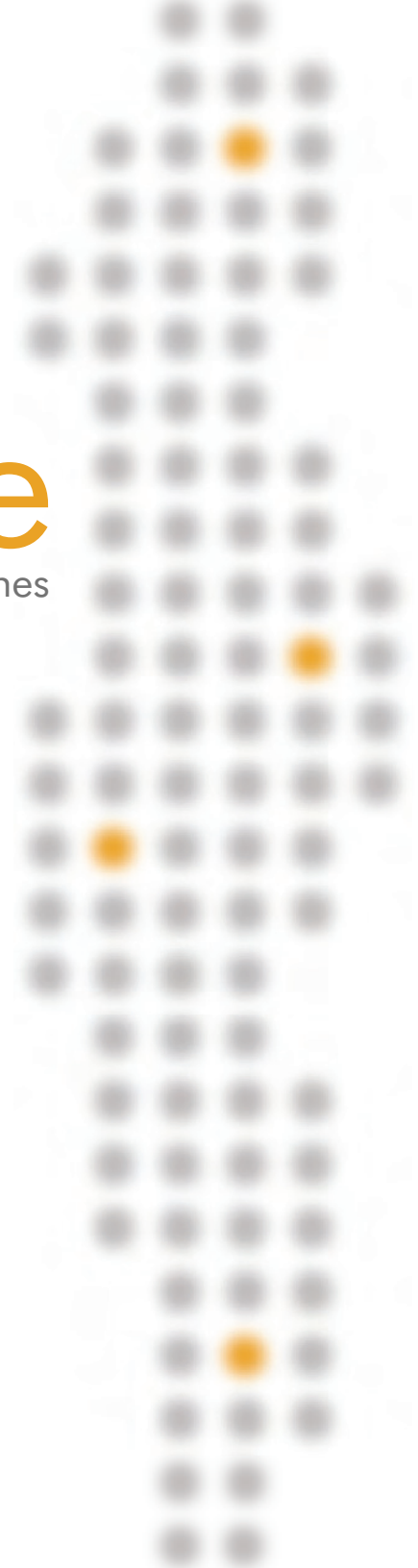
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John Perry

Kansas State University
Masters Project & Report
May 2009

Contents

6	Figures
13	Acknowledgements
14	Abstract

Chapter 1: Dilemma and Thesis

18	Introduction
19	Dilemma
19	Thesis

Chapter 2: Precedent: Cedars

24	The Site: Cedars
26	Initial Competition Brief
30	Finalist Competition Brief
32	Competitor Response Analysis
48	Master Land-use plan Analysis
49	Catalyst Development Site Analysis
50	Submission Comparison Matrix
53	Matrix Analysis Conclusions

Chapter 3: Methodology

58	Rapid Analysis Framework
60	Goals and Objectives: Competition
62	Goals and Objectives: Site Specific
64	Selection Process and Team Formation
66	Design Philosophy

Chapter 4: The Site Announced

72	Site Context
75	Existing Conditions
76	Competition Problem
80	2050 Initiative Analysis
81	Rapid Analysis Application

Chapter 5: Initial Response

88	The Vision
90	2050 Board
92	Initial Submission Board
94	Regional Systems
100	Development Site Response
112	Announcement / Critique

Chapter 6: Finalist Response

118	The Final Four
120	Site Visit
122	Finalist Round Response
124	Finalist Submission Board
126	Connect
128	Create
133	Sustain
136	Converge
138	Alameda Station / Merchants Park
144	Web Market District
150	Artist's Row
156	Financial Information
160	Presentation

Chapter 7: Reflection

168	Conclusions
-----	-------------

Appendix A: Analysis

176	Jury Questions
177	Final Jury Comments
178	Finalist Board Analysis

Appendix B: Process

184	Process Sketches
186	Daily Progress
202	Work Production Timeline
204	Graphics Procedure

Appendix C

207	Literature Review
212	Process Diagram and Timeline

Appendix D

215	Glossary of Terms
220	Sustainability Definitions
224	References

Figures

Chapter 2

- 2.1 Cedars Site Context Map (John Perry, adapted from Google Earth, accessed April 7, 2009)
- 2.2 Site Images (<http://udcompetition.uli.org/archive/2008>, accessed October 14, 2008)
- 2.3 Site Images (<http://udcompetition.uli.org/archive/2008>, accessed October 14, 2008)
- 2.4 Site Images (<http://udcompetition.uli.org/archive/2008>, accessed October 14, 2008)
- 2.5 Color Palette (John Perry)
- 2.6 U. of Michigan Initial Submission Board (<http://udcompetition.uli.org/archive/2008>, accessed October 14, 2008)
- 2.7 Block Analysis (John Perry, adapted from <http://udcompetition.uli.org/archive/2008>, accessed October 14, 2008)
- 2.8 Grid Analysis (John Perry, adapted from <http://udcompetition.uli.org/archive/2008>, accessed October 14, 2008)
- 2.9 U. of Michigan Final Submission Board (<http://udcompetition.uli.org/archive/2008>, accessed October 14, 2008)
- 2.10 Block Analysis (John Perry, adapted from <http://udcompetition.uli.org/archive/2008>, accessed October 14, 2008)
- 2.11 Grid Analysis (John Perry, adapted from <http://udcompetition.uli.org/archive/2008>, accessed October 14, 2008)
- 2.12 Color Palette (John Perry)
- 2.13 U. of Pennsylvania A Initial Submission Board (<http://udcompetition.uli.org/archive/2008>, accessed October 14, 2008)
- 2.14 Block Analysis (John Perry, adapted from <http://udcompetition.uli.org/archive/2008>, accessed October 14, 2008)
- 2.15 Grid Analysis (John Perry, adapted from <http://udcompetition.uli.org/archive/2008>, accessed October 14, 2008)
- 2.16 U. of Pennsylvania A Final Submission Board (<http://udcompetition.uli.org/archive/2008>, accessed October 14, 2008)
- 2.17 Block Analysis (John Perry, adapted from <http://udcompetition.uli.org/archive/2008>, accessed October 14, 2008)

- 2.18 Grid Analysis (John Perry, adapted from <http://udcompetition.uli.org/archive/2008>, accessed October 14, 2008)
- 2.19 Color Palette (John Perry)
- 2.20 U. of Pennsylvania B Initial Submission Board (<http://udcompetition.uli.org/archive/2008>, accessed October 14, 2008)
- 2.21 Block Analysis (John Perry, adapted from <http://udcompetition.uli.org/archive/2008>, accessed October 14, 2008)
- 2.22 Grid Analysis (John Perry, adapted from <http://udcompetition.uli.org/archive/2008>, accessed October 14, 2008)
- 2.23 U. of Pennsylvania B Final Submission Board (<http://udcompetition.uli.org/archive/2008>, accessed October 14, 2008)
- 2.24 Block Analysis (John Perry, adapted from <http://udcompetition.uli.org/archive/2008>, accessed October 14, 2008)
- 2.25 Grid Analysis (John Perry, adapted from <http://udcompetition.uli.org/archive/2008>, accessed October 14, 2008)
- 2.26 Color Palette (John Perry)
- 2.27 U. of Texas at Austin Initial Submission Board (<http://udcompetition.uli.org/archive/2008>, accessed October 14, 2008)
- 2.28 Block Analysis (John Perry, adapted from <http://udcompetition.uli.org/archive/2008>, accessed October 14, 2008)
- 2.29 Grid Analysis (John Perry, adapted from <http://udcompetition.uli.org/archive/2008>, accessed October 14, 2008)
- 2.30 U. of Texas at Austin Final Submission Board (<http://udcompetition.uli.org/archive/2008>, accessed October 14, 2008)
- 2.31 Block Analysis (John Perry, adapted from <http://udcompetition.uli.org/archive/2008>, accessed October 14, 2008)
- 2.32 Grid Analysis (John Perry, adapted from <http://udcompetition.uli.org/archive/2008>, accessed October 14, 2008)
- 2.33 Master Land-use plan Analysis (<http://udcompetition.uli.org/archive/2008>, accessed October 14, 2008)
- 2.34 Catalyst Site Selection Analysis (John Perry, adapted from <http://udcompetition.uli.org/archive/2008>, accessed October 14, 2008)
- 2.35 Initial Phase Submission Matrix (John Perry)

2.36 Finalist Phase Submission Matrix (John Perry)

Chapter 3

3.1 Rapid Analysis Framework Reference Sheet (John Perry)

3.2 Team Images (courtesy of team members)

Chapter 4

4.1 National Context Map (John Perry)

4.2 Site Context Map (John Perry, adapted from GIS Information Provided by ULI, accessed January 19, 2009)

4.3 Development Site Parcels (John Perry, adapted from GIS information provided by ULI, accessed January 19, 2009)

Chapter 5

5.1 Image (John Perry, adapted from ULI provided image)

5.2 2050 Vision Board (Team 3909)

5.3 Initial Submission Board (Team 3909)

5.4 Regional Connections Diagram (Team 3909)

5.5 Green Networks Diagram (Team 3909)

5.6 Site Strategy Diagram (Team 3909)

5.7 Study Area Master Plan (Team 3909)

5.8 Aerial Perspective (Team 3909)

5.9 Development Site Strategy Diagrams (Team 3909)

5.10 Development Site Master Plan (Team 3909)

5.11 Open Space Looking North to the "Forum" (Team 3909)

5.12 Phasing Diagram (Team 3909)

5.13 Master Land-use plan (Team 3909)

5.14 Architectural "Core" Concept Diagram (Team 3909)

5.15 Sustainable Systems Section (Team 3909)

5.16 Summary Pro Forma (Team 3909)

5.17 Initial Submission Student Feedback Worksheet from Jury (ULI)

Chapter 6

6.1 Site Visit Photographs (John Perry)

6.2 Finalist Round Presentation Board (Team 3909)

6.3 Nodes, Links, and Connections Diagram (Team 3909)

6.4 South Platte Corridor Regeneration and Timeline Diagram (Team 3909)

6.5 Strategic Connections Diagram (Team 3909)

6.6 Enhanced South Access Diagram (Team 3909)

6.7 Parking Strategy (Team 3909)

- 6.8 Sustainable Systems Model (Team 3909)
- 6.9 Architectural Typology Model (Team 3909)
- 6.10 Adjacent Neighborhood Demographics (Team 3909)
- 6.11 Alameda Promenade and Merchants Park Master Plan (Team 3909)
- 6.12 View Exiting Alameda Station (Team 3909)
- 6.13 Merchants Park Perspective Looking West (Team 3909)
- 6.14 Web Market District Master Plan (Team 3909)
- 6.15 Site Section (Team 3909)
- 6.16 Web Market District Looking North (Team 3909)
- 6.17 Artist's Row Master Plan (Team 3909)
- 6.18 Artist's Row Section / Elevation (Team 3909)
- 6.19 View East along Artist's Row (Team 3909)
- 6.20 Tenant Relocation Diagram (Team 3909)
- 6.21 Phased Buildout Chart (Team 3909)
- 6.22 Sources and Uses Diagram (Team 3909)
- 6.23 Construction Distribution Chart (Team 3909)
- 6.24 Financial Information (Team 3909)
- 6.25 Presentation Photographs (Grant Oakes, photographer, all rights reserved by ULI)
- 6.26 Presentation Photographs (Grant Oakes, photographer, all rights reserved by ULI)

Appendix A

- A.1 Kansas State Final Board (Team 3909)
- A.2 Kansas State Grid/Block Analysis (John Perry, adapted from Team 3909)
- A.3 MIT Final Board (<http://udcompetition.uli.org/>, accessed January 19, 2009)
- A.4 MIT Grid/Block Analysis (John Perry, adapted from <http://udcompetition.uli.org/>, accessed January 19, 2009)
- A.5 Miami Final Board (<http://udcompetition.uli.org/>, accessed January 19, 2009)
- A.6 Miami Grid/Block Analysis (John Perry, adapted from <http://udcompetition.uli.org/>, accessed January 19, 2009)
- A.7 Columbia Final Board (<http://udcompetition.uli.org/>, accessed January 19, 2009)
- A.8 Columbia Grid/Block Analysis (John Perry, adapted from <http://udcompetition.uli.org/>, accessed January 19, 2009)

Appendix B

- B.1 Process Sketches (Team 3909)
- B.2 Studio Process Images (Team 3909)
- B.3 Studio Process Images (Team 3909)
- B.4 Studio Process Images (Team 3909)

- B.5 Studio Process Images (Team 3909)
- B.6 Studio Process Images (Team 3909)
- B.7 Studio Process Images (Team 3909)
- B.8 Studio Process Images (Team 3909)
- B.9 Studio Process Images (Team 3909)
- B.10 Studio Hours Diagram (John Perry)
- B.11 Graphic Process Diagram (John Perry)

Appendix C

- C.1 Literature Review Map (John Perry)
- C.2 Process Diagram and Timeline (John Perry)

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Abstract

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Dilemma and Thesis



Introduction

The Urban Land Institute/Gerald D. Hines Student Urban Design Competition is a graduate-level annual competition that is intended to provide an interdisciplinary learning experience for real estate and design students in the United States and Canada. Self-formed student teams are asked to provide an urban design and a financial feasibility strategy for a large-scale, real life site that ULI has identified somewhere in the United States. Through the formation of multidisciplinary teams, the program encourages cooperation and teamwork among future real estate professionals and the many allied professions, such as architecture, landscape architecture, urban planning, historic preservation, engineering, real estate development, finance, psychology, law, and others.

The ULI/Gerald D. Hines Student Urban Design Competition is part of the Institute's ongoing effort to raise interest among young people in creating better communities, improving development patterns, and increasing awareness of the need for multidisciplinary solutions to development and design challenges.

There are several basic rules regarding team formation, judging, and eligibility of the competition. All teams must create a four-digit code that will be its identifier throughout the competition. This competition is judged anonymously; thus, this four-digit code must be the only identifying mark on any materials submitted except during the initial team application. Each team must have a faculty advisor from its university and has the option of using one outside professional advisor to provide a second area of expertise. The faculty advisor can be either from the design program or from the real estate/business program. Advisors can critique but cannot produce any work for the competition.

Once teams are formed and accepted in December, they must wait until late January for the project brief. From the time the project brief is released, teams will have 15 days to complete and postmark their proposal for submission. The submission must include a design and financial information about the project. The jury meets for one day to narrow the proposals to four.

Each of the four finalist teams will have another month to refine their design and address any additional criteria for the final submission. Unlike the initial submission, each team will present their final proposals along with their initial submission to the jury in the selected city in early April. The winning entry is selected following all four presentations. Finalist teams receive \$10,000 while the winning team receives \$50,000. (www.udcompetition.uli.org)

Dilemma

This competition is a complex urban design problem involving many factors and considerations within a successful design solution. The initial phase of the competition requires teams to produce a design response rapidly. It is a high-profile competition, drawing entries from some of the best universities and brightest students across America and Canada. A combination of strong graphics, bold ideas, and exceptional presentation skills are required to win. This study focuses on how to win the ULI/Gerald D. Hines Student Urban Design Competition.

Thesis

Use information gained through evaluation of previous successful entries to understand the competition's critical factors and submission composition. Respond to competition requirements and create a unique vision for urban design incorporating principles of sustainability, livability, and connectivity. Win the ULI/Gerald D. Hines Student Urban Design Competition and provide guidelines and principles for future competitors.

“If it were a really
there would be a

“good idea,
precedent.”

Precedent: Cedars



Introduction

The following information regarding the 2008 competition is a summary of the initial and finalist briefs received by each competing team. Contents of the two briefs are similar each year and becoming familiar with the rules and regulations of past competitions should give the team insight about what will be required for the 2009 competition. The full brief can be found at <http://udcompetition.uli.org/>. The purpose of this case study is not to evaluate the site and its context, but rather the responses of the four finalist teams to the questions and problems posed by the project program. Special attention is given to board layout, big ideas, graphic convention, and design decisions.

Title:

2008 Urban Land Institute/Gerald D. Hines Student Urban Design Competition

Location:

Cedars in Dallas, TX

Size:

464 Acres

Designers:

Student teams from:

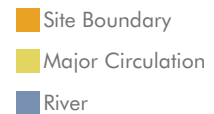
- University of Pennsylvania (2)
- University of Texas at Austin
- University of Michigan

Client:

Urban Land Institute

Design Problem

The site for the 2008 competition was the Cedars in Dallas, Texas. The site study area was 464 acres bounded by downtown Dallas to the north and the Trinity River to the southeast. Physical boundaries for the study area (Fig. 2.1) were Interstate 30 to the north, South Central Expressway to the northeast, a railroad right-of-way to the southeast, and South Austin Street to the southwest.



Right Fig 2.1 Cedars Site Context Map



Initial Competition Brief

Current Development within Cedars

The Cedars was not devoid of development activity. In fact, several development ventures were taking place at the time of the competition. Within the brief, each of these development sectors had its own link that provided in-depth information about its history and current/projected condition. These development opportunities included:

- Dallas Area Rapid Transit (DART)
- Cedars Tax Increment Financing (TIF) District
- South Side Public Improvement District (PID)
- City Police Department Headquarters
- Old City Park
- Gilley's
- Ten-Story Condominium Complex
- Sears Warehouse Conversion to Living Space

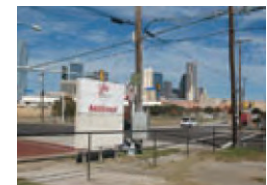
Each of these current development projects needed to be understood in-depth to create a successful competition entry.

City-Wide Infrastructural Proposals

Along with the current development projects occurring in the Cedars, three major public infrastructural projects were scheduled for implementation in the near future and were to be considered as potential opportunities by the competition teams. Again, links were provided in the brief to allow teams to gain more in-depth information about each of these infrastructural projects. Such projects played critical roles when design and development decisions were made. These projects included:

- Trinity River Corridor Project
- Trinity River Parkway
- Project Pegasus

Bottom and Right Bottom
Fig 2.2 Site Images provided
by ULI of the Cedars and
Surrounding Areas



Competition Problem

Very few, if any other student competitions contain the rules, regulations, or amount of complexity found in this competition. The following information outlines the problem, required scales of design, and judging criteria that successful teams must address. The brief calls for the planning, design, and development of a dynamic downtown edge which must incorporate four main design components. The first component is a master land-use plan proposal for the entire study area totaling 464 acres. Second, teams must assume the role of private developer and identify a development site within the study area for phased development implementation theoretically beginning in 2010. Third, teams must propose an urban design for the study area showing the neighborhood characteristics that create a singular identity for the site study area. Lastly, teams must propose a development plan and financial pro forma for the first ten years of development within their chosen development site.

Scales of Design

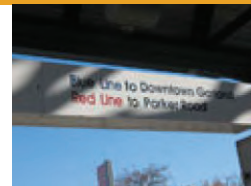
As with all projects, the design competition forces entrants to design across multiple scales, both in design and cost feasibility analysis. These scales of design include:

- Planning Context and Analysis
- Master Land-use planning
- Urban Design
- Development Site
- Development Schedule and Finances

Objectives for Study Area, Development Site, Urban Design

There are six primary objectives that must be accomplished to meet the requirements set forth by the competition. Much of the information is very technical, including percentages of affordable to market-rate housing and development feasibility. These six objectives are:

- Affordable Housing
- Infrastructure
- Placemaking/Public Realm
- Places of Commerce
- Financial Feasibility
- Sustainability/Climate Change



Assumptions

Several assumptions were provided within the competition brief that competing teams needed to adhere to. These assumptions were:

Zoning:

All parcels except the area within Old City Park and parcels owned by the city, county, state, and federal governments could be rezoned.

Acquisition:

All real estate acquisition costs were to be averaged at \$35 per square foot for improved and unimproved parcels. No additional transaction costs needed to be incurred.

Rights of Way:

Teams could choose to close and create public streets within their development site and anywhere inside the study area. Easements could be relocated but not removed.

Utilities:

Teams could relocate all local distribution lines for power, gas, water, and communications. Sewer and stormwater infrastructure could not be removed.

Infrastructure Costs:

Teams needed to account for all new public infrastructure costs, but these costs needed not be charged against project costs. Infrastructure on private parcels had to be charged to project costs.

Project Costs:

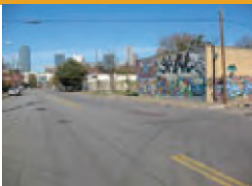
The development proposal was the only component of the submission that required a pro forma accounting.

Real Property Taxes:

Teams could assume that annual city and county taxes remained stable at the current 2.52% for residential and commercial real estate. There is no additional state of Texas property tax. For the competition, entrants applied the constant rate to valuations based on acquisition plus cost of construction.

Inflation Rate:

All costs were subject to an inflation rate compounded at 3% per year.



Judging Criteria

The competition brief clearly stated the five main judging criteria that each team’s submission would be evaluated against. The evaluation criteria were:

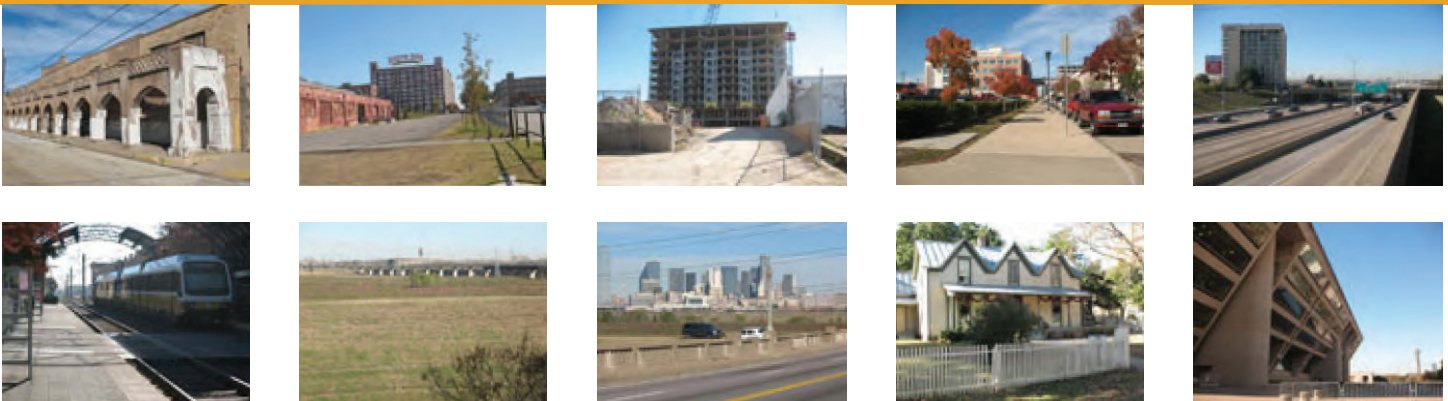
- Integrate Planning and Design Decisions with Economic Feasibility:
 - Public investments in infrastructure, public facilities, and public programs should have clear value for private investors and their proposed development
 - Private investments and development should have a clear value for the public planning goals that have been expressed for the study area
 - Planning and design concepts should support and reinforce public planning goals
 - Leveraging of Public investments to attract private investment
- Demonstrate awareness of design issues contributing to a workable, livable, sustainable configuration of development as specified

- Demonstrate attention to factors affecting the risks and feasibility of the project including development and construction costs, future expenses and revenues from operations and land sales, and the effect of project phasing on risks and feasibility
- Providing a means and a demonstration of integrating professional real estate disciplines to work together as a cohesive team
- Additional criteria added by the jury

Provided Information

ULI provided GIS data, information resources, and several site photographs (Fig. 2.2-2.4).

Left Bottom and Below
Fig 2.3 Site Images provided
by ULI of the Cedars and
Surrounding Areas



Finalist Competition Brief

The finalist competition brief included many of the same requirements, with one major difference. Each team was required to focus on a smaller area of development within the site study area as selected by the competition committee. Objectives of the finalist stage of competition included:

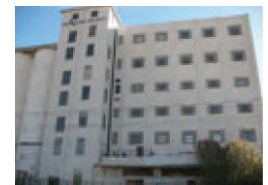
- Provision for affordable housing
- Sensible and appropriate infrastructure
- Recognition of the importance of placemaking and the public realm
- Catalyzing places of commerce with redevelopment
- Financial feasibility of all proposals
- Awareness of sustainability/climate change issues and innovative solutions at the community scale

The four finalist teams also needed to address these additional issues:

- Reintegration into the region through a master plan proposal demonstrating a sustainable vision of social, economic, and physical connectedness to adjacent neighborhoods and to the greater Dallas system of highways, railroads, greenways, public spaces, and the river
- Proposal for development around transit by assuming the role of a development firm that has assembled the 23.5

acre parcel adjacent to the Cedars DART station. Illustrate the development proposal at an appropriate enlarged scale that includes the essential elements of urban design such as building, building clusters, open space, landscape, and public amenities and facilities. Draw a section for the entire site, showing its internal relationships and its relationship to its environs.

- Business plan including a financing structure that will best advance the first ten years of the development scheme, phasing, key pro forma assumptions, and a summary pro forma
- Reuse the assumptions set forth in the initial competition brief.



Left Fig 2.4 Site Images
provided by ULI of the Cedars
and Surrounding Areas

Competitor Response Analysis

The following pages analyze boards of the four finalist teams from the 2008 competition, looking specifically for their approach and response to the problems posed in the initial and finalist briefs. Color schemes, board layout and composition, graphic programs used, and key concepts are evaluated for similarities and differences that gave insight into the proposal of a winning design. Each team's initial and final submissions were evaluated and from that a matrix was developed to categorize the information for quick and efficient analysis for the 2009 project.

Physical board layout is a critical, yet occasionally overlooked component of design presentation. The ability to craft an ordered, well-organized composition is important when dealing with competition entries. To better understand how competition boards are physically composed, each of the team's initial and final board grid system and block configuration for each type of component is graphically displayed and analyzed using author Kimberly Elam's book *Grid Systems*. Color palettes are also identified (Fig. 2.5-2.32)

University of Michigan

Team:

Deirde Groves, Master of Urban Planning
Michael Tchang, Master of Business Administration
Michael Johnson, Master of Urban Planning
Danielle Bober, Master of Urban Planning
Sarfaraz Momin, Master of Urban Design

Faculty Advisor:

Kit McCullough

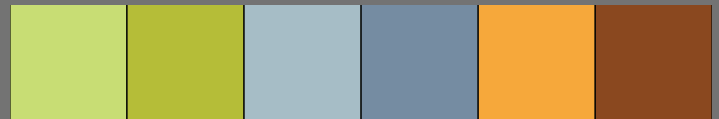
Design Concept:

"Redefining the Vista builds on current cultural and institutional assets of the Cedars with new vistas and view corridors of downtown Dallas and the Trinity River corridor. A re-orientation of streets around a new central plaza anchored by a gateway, a public fountain, and a mix of housing and retail creates a hub for employment, entertainment, artistry, and recreation and meets the region's unfulfilled demand for an affordable, easy-going neighborhood integrating both market-rate and affordable housing."
(udcompetition.uli.org)

Potential Graphic Programs:

Adobe Photoshop
Google SketchUp
Adobe Illustrator
ArcGIS
AutoCAD
Microsoft Excel

Color Palette

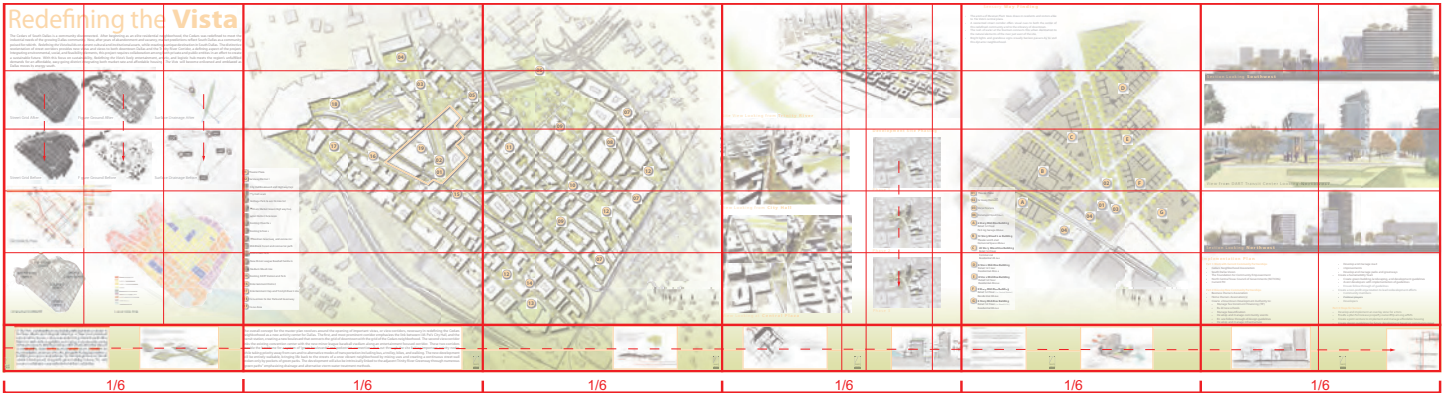


Above Fig 2.5 Color Palette
Top Right Fig 2.6 University of Michigan Initial Submission Board
Middle Right Fig 2.7 Block Composition Analysis
Bottom Right Fig 2.8 Grid Composition Analysis

Redefining the Vista



This layout is very tightly packed together, with an emphasis on plans and perspectives. Diagrams occur mainly on the left and bottom of the board, with financial information located on the far right of the board.



Order is achieved by dividing the board into six areas. Also, strong horizontal lines along the bottom help to unify the board. Strengthening the vertical grid could help create a more strongly unified board.

Redefining the Vista



Top Fig 2.9 University of Michigan Final Submission Board
 Top Right Fig 2.10 Block Composition Analysis
 Bottom Right Fig 2.11 Grid Composition Analysis



Plans, perspectives, and diagrams are fairly evenly distributed throughout the display board. Plans and perspective make up the majority of the composition with financial information again placed on the right side of the board.



A high degree of order is achieved through use of strong vertical lines. Diagrams read top to bottom, further strengthening the composition. Information is tightly packed onto the board, leaving very little white space for the eye to rest.

University of Pennsylvania A

Team:

Maritza Mercado, Master of City Planning
Carrie Ann Bergery, Master of Architecture
Hernaldo Mendoza Flores, Master of Architecture
Christina Szczepanski, Master of City Planning
Douglas Meehan, Master of Landscape Architecture

Faculty Advisor:

David Gouverneur

Design Concept:

“Interchange turns the word’s meaning from its car-centric, space-wasting, and neighborhood-dividing connotations to a holistic vision of cultural, economic, and ecological living and working environment. The intersecting axes of the DART line and major streets connecting downtown and the Cedars activate a new kind of interchange in which neighborhood-scale parks and pathways and commercial and residential components attract residents who value accessibility to transit and a sustainable urban lifestyle.” (udcompetition.uli.org)

Below Fig 2.12 Color Palette
Bottom Fig 2.13 University of Pennsylvania A Initial Submission Board
Top Right Fig 2.14 Block Composition Analysis
Bottom Right Fig 2.15 Grid Composition Analysis

Potential Graphic Programs:

Adobe Photoshop
Google SketchUp
Adobe Illustrator
ArcGIS
AutoCAD
Microsoft Excel

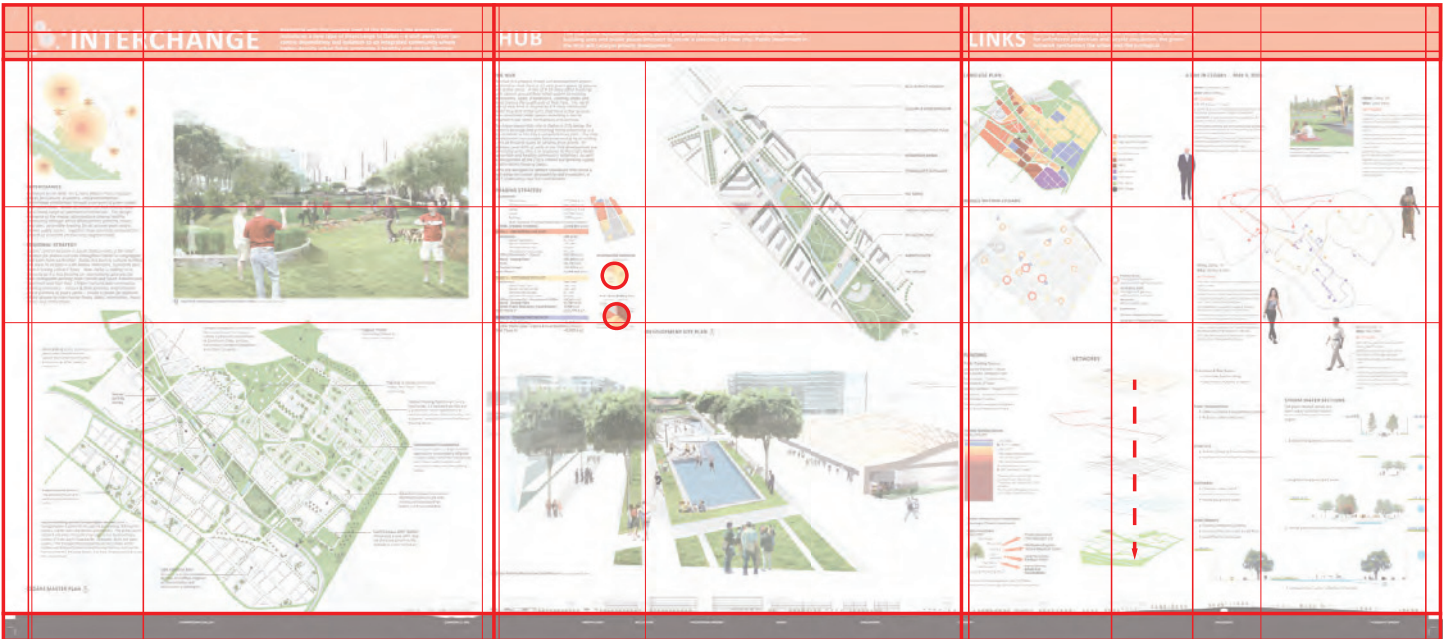


Color Palette





Much of the information is scattered throughout the composition with little thought about placement and adjacencies. As the board moves left to right, information becomes more scattered.



1/3

1/3

1/3

Initial board composition is ordered using the rule of thirds. However, beyond the overall proportions, there is little to unify the composition.

INTERCHANGE

Creating a Place



Block composition of this entry is very geometric with nearly all components placed using rectangular form. Perspectives dominate the composition, with all other elements supporting the depicted visual character.

Top Fig 2.16 University of Pennsylvania A Final Submission Board
Above Left Fig 2.17 Block Composition Analysis
Above Right Fig 2.18 Grid Composition Analysis

Integrating the Environment

Establishing a Market



Final grid composition is ordered using quarters horizontally and the rule of thirds vertically. All diagrams flow top to bottom. The main plan view is oriented in a way that leads the eye to the bottom of the page.

University of Pennsylvania B

Team:

Shachi Pandey, Master of City Planning
Tiffany Marston, Master of Landscape Architecture
Yunjia Wang, Master of Landscape Architecture
Wei Wang, Master of Architecture
David Anderson, Master of Business Administration

Faculty Advisor:

David Gouverneur

Design Concept:

"Desti-Station connects the downtown, the riverfront, and surrounding neighborhoods with new development and green spaces concentrated along the existing DART line. At its northern end a cap over the I-30 canyon will be a new park linking downtown to a new mixed-use corridor. At its southern end another large park, with open space corridors fanning out into the surrounding neighborhood will provide the framework for a continuous and revitalized public realm." (udcompetition.uli.org)

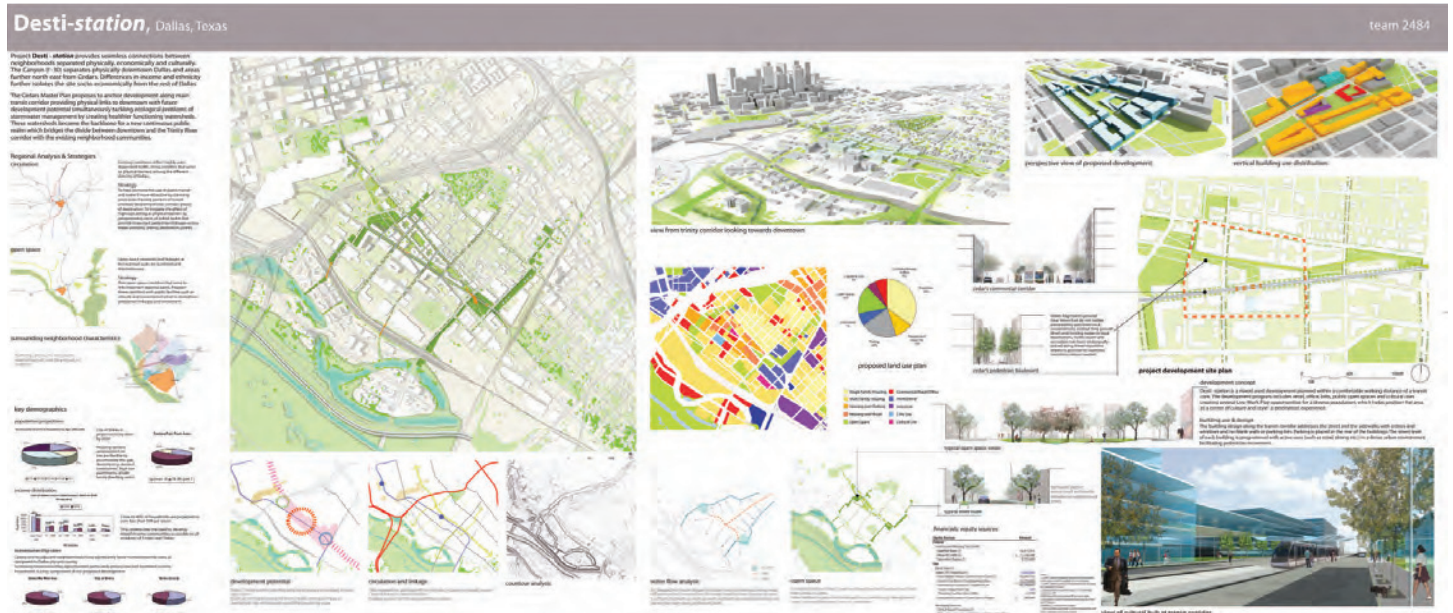
Below Fig 2.19 Color Palette
Bottom Fig 2.20 University of Pennsylvania B Initial Submission Board
Top Right Fig 2.21 Block Composition Analysis
Bottom Right Fig 2.22 Grid Composition Analysis

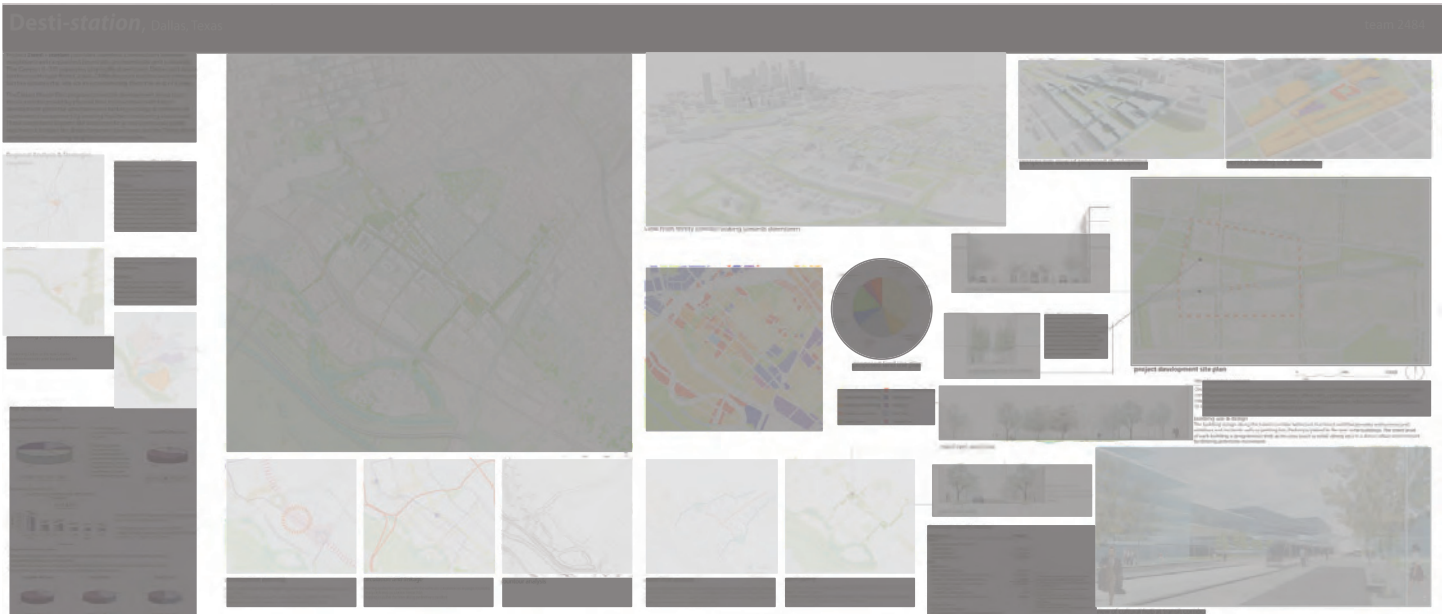
Potential Graphic Programs:

Adobe Photoshop
Google SketchUp
Adobe Illustrator
ArcGIS
AutoCAD
Microsoft Excel

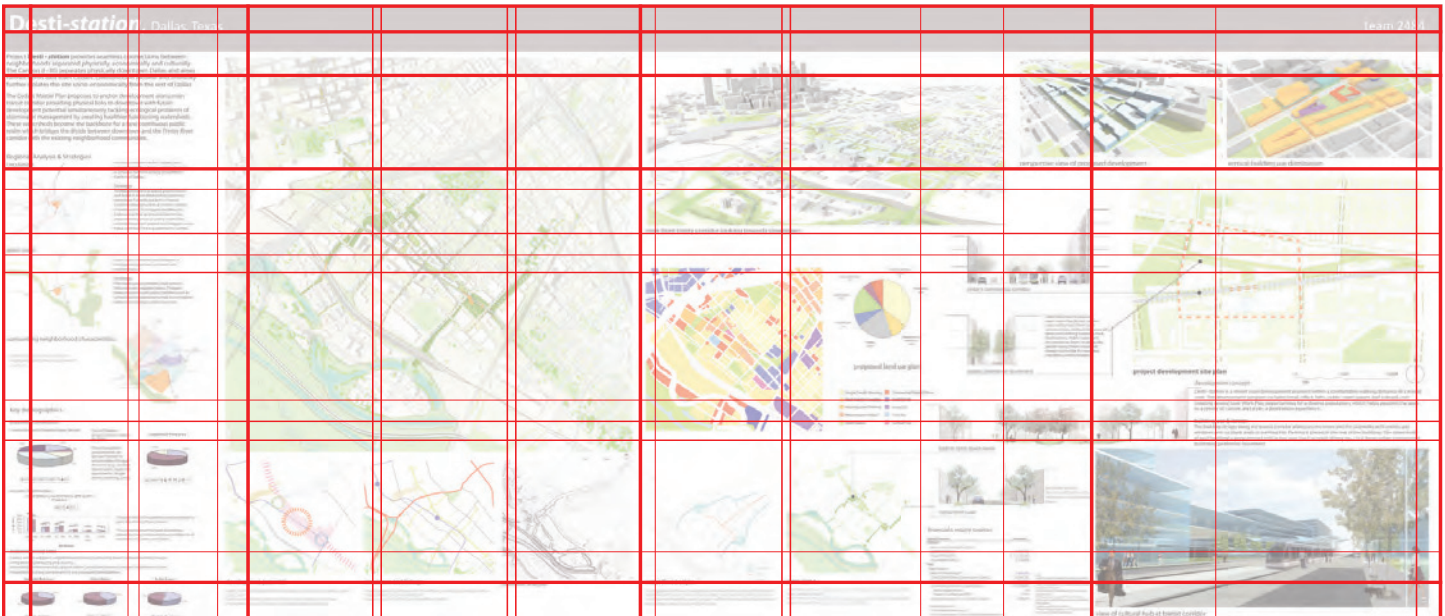


Color Palette





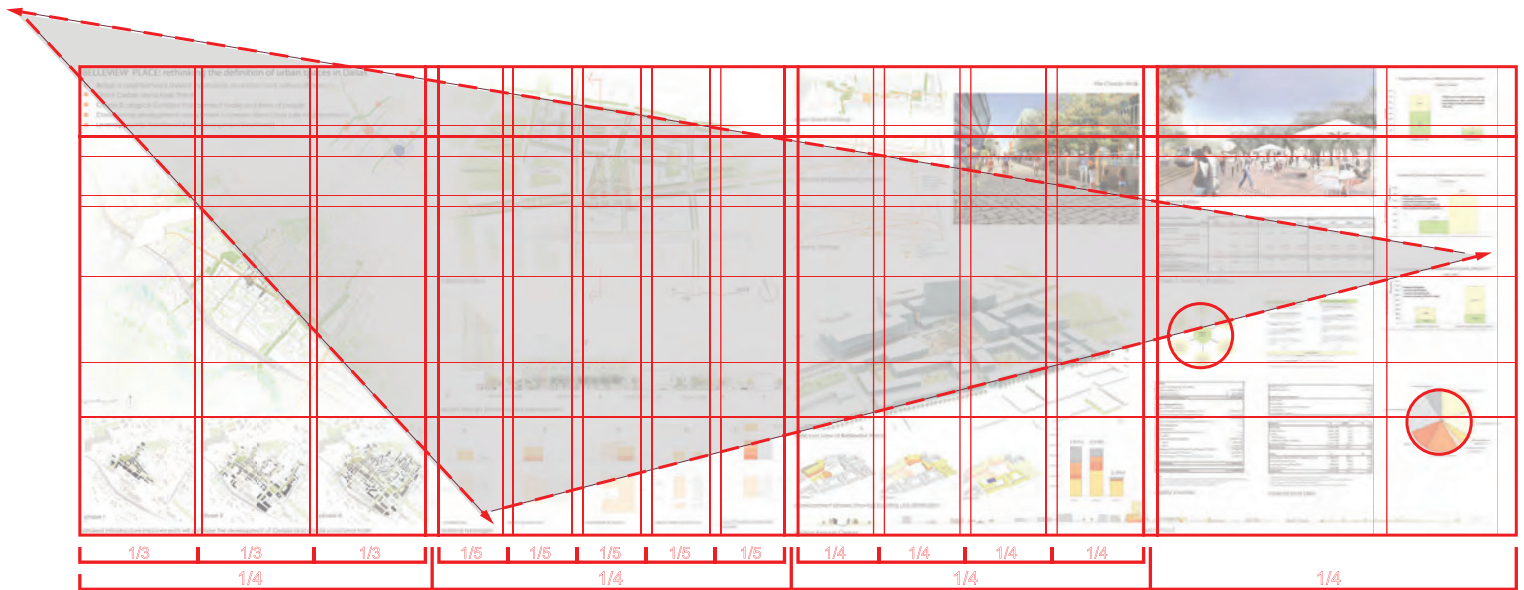
Emphasis of this board is placed on several smaller diagrams supporting large master plans. Hierarchy is established through size differential.



This grid composition displays a high degree of order that helps to unify the composition. Various elements, particularly the analysis components create repetition and rhythm across the composition.



Diagrams are relegated to the bottom and edges of the board while plans and main perspectives are the focus of the board layout. Financial information is located at the lower right portion of the board.



Final grid composition is highly ordered at multiple scales. Overall, the board is divided into quarters, with each quarter further subdivided into thirds, quarters, or fifths. Orientation of plans and perspectives lead the eye from the top left through the board before returning.

University of Texas at Austin

Team:

Alexander Kone, Master of City and Regional Planning
 Chad Gnant, Master of Architecture
 Ji Zhou, Master of City and Regional Planning
 Michelle Slattery, Master of Landscape Architecture
 Shawn Strange, Master of City and Regional Planning

Faculty Advisor:

Dr. Simone Atkinson

Design Concept:

“Cedars: Reconnect, Revitalize stitches together social, physical and economic connections from an earlier era. Medium and low-rise uses traverse the spine connecting the Cedars DART stop with Old City Park. A diverse mix of families, artists, and professionals form the core of a neighborhood already taking root. Central to the development theme is the proposed Natural Connections network of multi-modal and sustainable complete streets, greenways, and open space.”
 (udcompetition.uli.org)

Below Fig 2.26 Color Palette
 Bottom Fig 2.27 University of Texas at Austin Initial Submission Board
 Top Right Fig 2.28 Block Composition Analysis
 Bottom Right Fig 2.29 Grid Composition Analysis

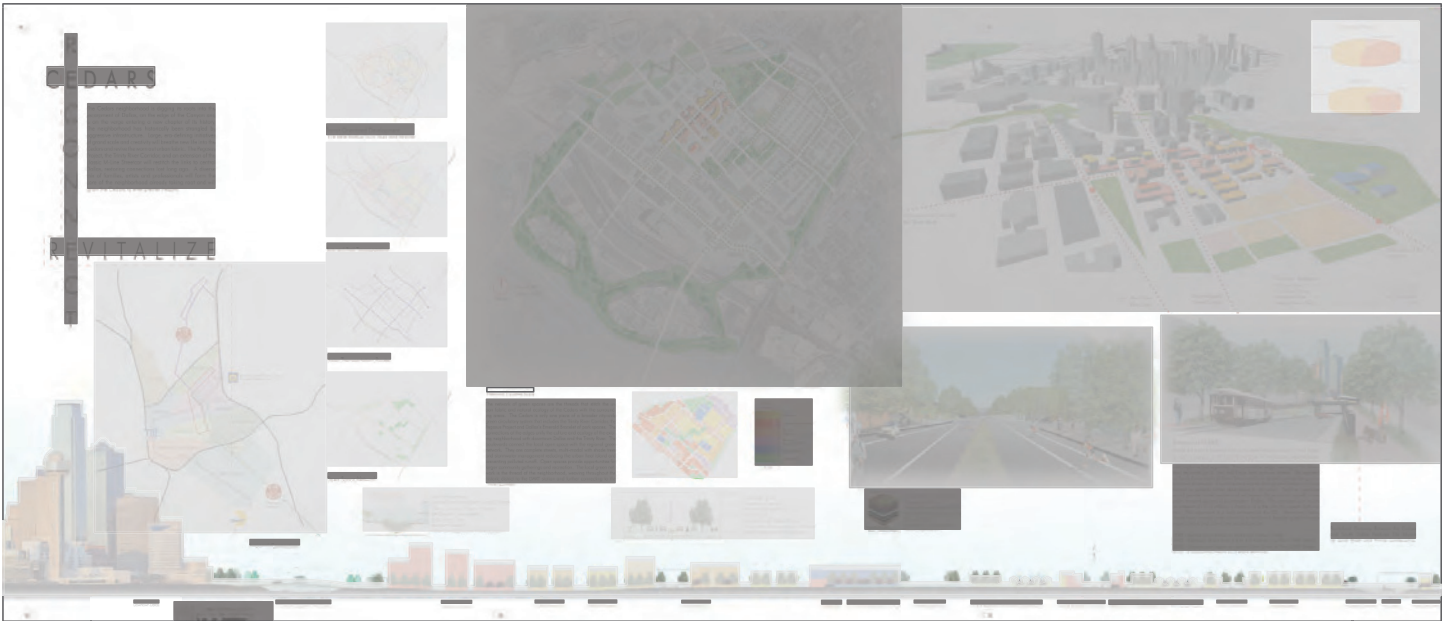
Potential Graphic Programs:

Adobe Photoshop
 Google SketchUp
 Adobe Illustrator
 Microsoft Excel



Color Palette





Elements are scattered across the board in a non-hierarchical manner. Diagrams are on the left and bottom of the page. Plans and perspectives are located in the middle and on the right side of the page.

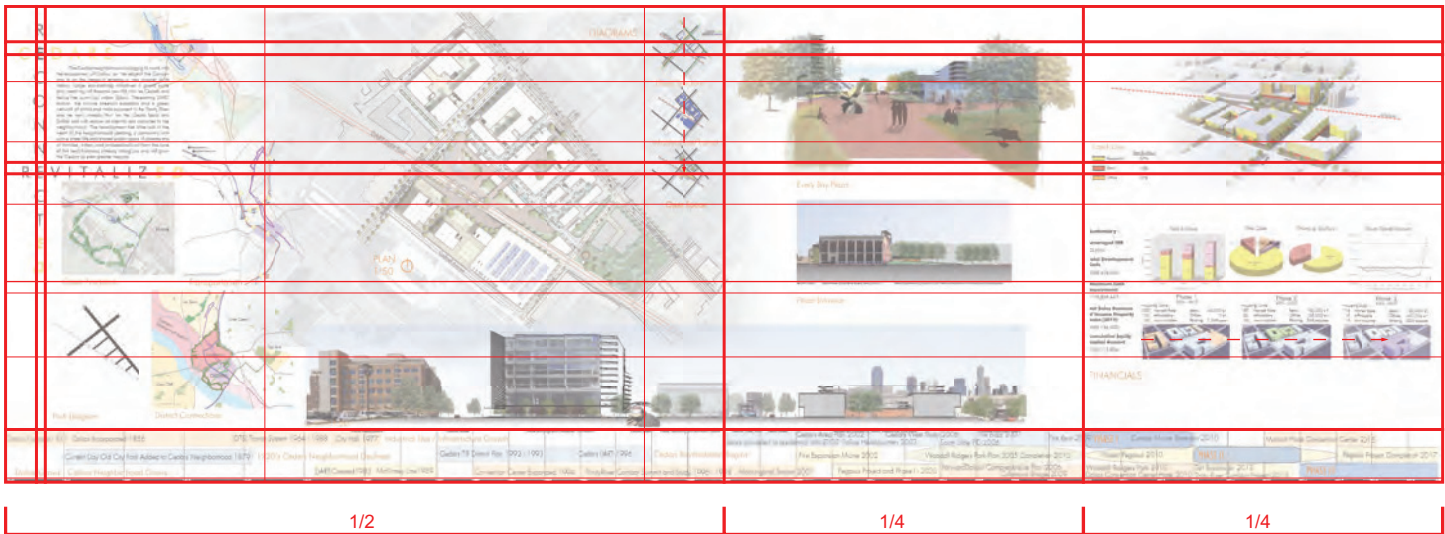


This board has a fairly poor grid structure, with no proportionality or symmetry considered. Both vertical and horizontal lines are weak and haphazard. There is little to unify the composition.



This board presents the most white space of all finalist boards. Text is placed across the bottom of the layout in thick, random fashion. Plan views and perspectives are not in proportion to one another with many overlapping images lacking clear border definition.

Top Fig 2.30 University of Texas at Austin Final Submission Board
 Above Fig 2.31 Block Composition Analysis
 Top Right Fig 2.32 Grid Composition Analysis



The major unifying element of this grid system is the division of the board into quarters vertically. Overall the composition lacks coherence or any sort of clearly defined edges vertically or horizontally. White space is scattered rather than unified, creating a cluttered and complex visual product.

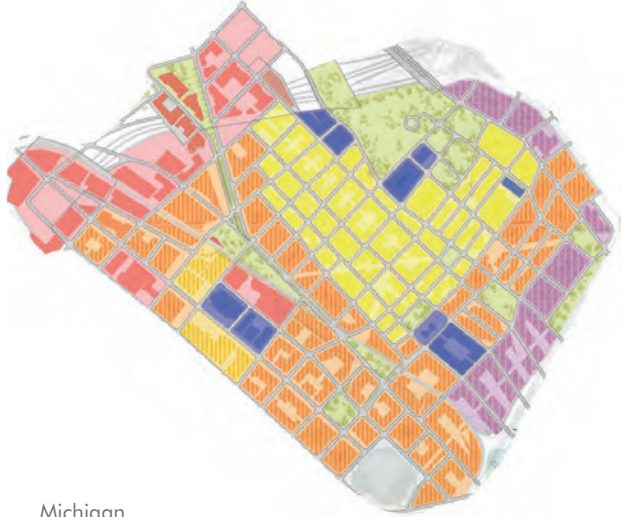
Board Analysis Conclusions

Well-crafted presentations are often a result of strong underlying grid systems. Each board analyzed from this competition deals with the simplest compositional style, the horizontal composition. Results indicate that teams with the more aesthetically-pleasing compositions have tighter and more regulated underlying grid systems. Most are composed primarily of vertical and horizontal lines, but the winning team from the University of Pennsylvania's final board also creates movement throughout the composition through placement and orientation of plans and perspectives. Although it is unclear whether this is intended or not, the pattern leads the eye from the title, through the board, and back again.

Grid systems are lacking and haphazard, with incoherent and overlapping elements on both the initial and final

boards from the University of Texas at Austin. Each team's presentation became more ordered from the initial to the final submission. This may have been due in large part to the extended amount of time teams had to compose their entry. Increased board size may have also been a factor.

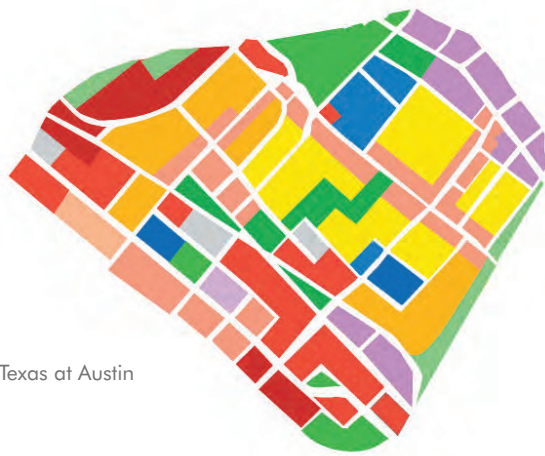
Overall, both University of Pennsylvania teams composed boards using the tightest grid patterns. Their board compositions are divided proportionally, and in some cases subdivided proportionally as well. The University of Michigan has well-composed boards, but the boards are also very full with content, leaving little white space for the eye to rest. Boards from the University of Texas at Austin lacked a unified ordering system.



Michigan



Pennsylvania A



Texas at Austin



Pennsylvania B

Master Land-use plan Comparison Analysis

The master land-use plan is a required piece for the initial submission proposal and each of the finalist team master land-use plans were evaluated for strengths, weaknesses, and for any identifiable themes. Figure 2.33 shows the master land-use plans for each finalist team for the 2008 competition. Several differences and similarities are found between the plans. Michigan's master land-use plan contains well-defined land use areas while Pennsylvania B and Texas at Austin have much more integrated plans containing more divisions and isolated areas within the site study area.

Though no two plans are the same, all four plans concentrate high density and mixed-use development along the existing DART rail as well as major vehicular circulation routes that bisect the site. This shows an emphasis on public transportation as a major driving mechanism for encouraging redevelopment within the site study area and provides insight about potential focus areas for the 2009 competition.



Michigan



Pennsylvania A



Texas at Austin



Pennsylvania B

Catalyst Development Site Comparison Analysis

Each team was required to identify a catalyst site within the greater site study area that would have the highest immediate impact for catalyzing new development throughout the site study area. The configuration of this area was not predetermined by the competition requirements, but the development site was to be a contiguous 12-block quadrilateral area no less than two blocks wide. It must be no more than 20 acres in total area.

All four teams' chosen development sites are in some way adjacent to the existing DART rail. However, it is important to note that Pennsylvania B, the eventual winning team, most accurately identified the catalyst site that was later chosen by the competition panel as the development site for the finalist stage of the competition.

Left Top Fig 2.33 Master Land-use plan Analysis
 Top Fig 2.34 Catalyst Site Selection Analysis

Submission Comparison Matrix

Team response to key required components gives insight into design decisions and included components on the initial and final boards. The chart identifies areas of focus and trends that will enable the team to create a development strategy that completes the requirements and attracts the judging panel's attention.

	University of Pennsylvania A	University of Pennsylvania B	University of Texas at Austin	University of Michigan
Master Land Use Plan				
Land Use Categories				
Shopping, Business, Trade Mixed Use, Retail				Included
Mixed Use, Residential	Included	Included	Included	Included
Mixed Use, Ind., Res, Ret.			Included	Included
Residential	Included	Included	Included	Included
Civic / Institutional	Included	Included	Included	Included
Industrial	Included			Included
Retail / Office	Included		Included	
Office	Included			
Retail / Hotel / Entertainment	Included	Included		
Travel / Movement				Included
Open Space	Included	Included	Included	
Percentage Breakdown		Included		
Urban Design				
Master Plan Components				
Plan View Scale	Not Defined	1" = 500'	1" = 600'	1" = 400'
Legend				Extensive Notation
Perspectives		One, Showing entire study area in relation to downtown	One, Showing entire study area in relation to downtown	One, Showing entire study area in relation to downtown
Text descriptions	Extensive descriptions of multiple spaces on master plan			
Development Site on Plan			Building designation with color	Outlined on plan
Building Use Diagram			Shown on plan and perspective	
Trinity River Inclusion		Extensive inclusion on plan view	Extensive inclusion on plan view	Minimal shown in perspective
Sections	Entire development site		Entire Development Site	
Development (Catalyst) Site				
Plan View Scale		1" = 200'	Shown in perspective only	1" = 150'
Street Character Sections	Combined with stormwater management	Delineating character of major and secondary streets	Minor, shown as part of development site section	
Road Realignment	Minimal road realignment	Moderate road realignment	Moderate Road Realignment	Extensive realignment

	University of Pennsylvania A	University of Pennsylvania B	University of Texas at Austin	University of Michigan
Master Land Use Plan				
Land Use Categories				
Shopping, Business, Trade				Included
Mixed Use, Retail				Included
Mixed Use, Residential	Included	Included	Included	Included
Mixed Use, Ind., Res, Ret.			Included	Included
Residential	Included	Included	Included	Included
Civic / Institutional	Included	Included	Included	Included
Industrial	Included			Included
Retail / Office	Included		Included	
Office	Included			
Retail / Hotel / Entertainment	Included	Included		
Travel / Movement				Included
Open Space	Included	Included	Included	
Percentage Breakdown		Included		
Urban Design				
Master Plan Components				
Plan View Scale	Not Defined	1" = 500'	1" = 600'	1" = 400'
Legend				Extensive Notation
Perspectives		One, Showing entire study area in relation to downtown	One, Showing entire study area in relation to downtown	One, Showing entire study area in relation to downtown
Text descriptions	Extensive descriptions of multiple spaces on master plan			
Development Site on Plan			Building designation with color	Outlined on plan
Building Use Diagram			Shown on plan and perspective	
Trinity River Inclusion		Extensive inclusion on plan view	Extensive inclusion on plan view	Minimal shown in perspective
Sections	Entire development site		Entire Development Site	
Development (Catalyst) Site				
Plan View Scale		1" = 200'	Shown in perspective only	1" = 150'
Street Character Sections	Combined with stormwater management	Delineating character of major and secondary streets	Minor, shown as part of development site section	
Road Realignment	Minimal road realignment	Moderate road realignment	Moderate Road Realignment	Extensive realignment
Phasing	Three phases delineated			Three phases delineated
Legend	Text and Leaders			Legend
Stormwater Management Strategy	Sections showing stormwater management plan	Combined with street character sections	Combined with street character sections	Extensive diagrams delineated all sustainability measures
Perspectives	Three, showing three views of catalyst development site	Two, aerial and street character perspectives	Three, aerial and two street character perspectives	Three, showing three views of catalyst development site
Building Use Diagram		Three dimensional diagram	Three dimensional diagram	
Development Schedule & Finances				
Amount of Information Presented		Financial equity sources		
Decking				
Percentage Used	Approximately 30%	Approximately 15%	Approximately 20%	Approximately 60%
Design Use	Large expanse of green space, continuation of city grid, moderate building use	Large expanse of green space, minor building use	Main use as simple pedestrian connections, minor building use	Large expanse of green space, heavy building use, pedestrian and vehicular connections

Below Fig 2.36 Finalist Phase Submission Matrix

University of Pennsylvania A	University of Pennsylvania B	University of Texas at Austin	University of Michigan
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Figure 36

FINAL SUBMISSION

Decisions On Use Of:				
IBM Operations	Maintained	Removed	Removed	Maintained
3 Level Parking Garage	Removed / Reconfigured	Removed	Removed	Removed
Federal Credit Union Building	Removed	Removed	Removed	Removed
15 Unit Townhouse Development	Maintained	Removed	Maintained	Maintained

Business Plan				
Financial Information Included	Summary proforma, residual value analysis, sources and uses summary, land distribution summary, rate of return summary	Summary proforma, equity sources, sources and uses, proposed market rate and affordable housing unit summary	Minimal summary proforma, phasing of house units	Market study, summary pro forma, affordable housing, and financing information, and summary provided

Previous Site Development Informatio				
Master Plan Phasing		Plan views of development in three phases		Plan views of development in three phases
Context Analysis	Plan showing development site	Analysis showing regional nodes and green networks	Transportation and district use analysis	Metro area and development area district character analysis

Catalyst Development Information				
Plan View Scale		1" = 100'	1" = 50'	1" = 40'
Legend				Corresponding to plan via key
Text	Labels delineating key elements	Labels delineating key elements		
Project Phasing	Three phases of development	Three phases of development	Three phases of development	Three phases of development
Shade Diagrams				Delineating morning, noon, and afternoon
Sustainability Information	Exploded axonometric showing sustainable networks overlays			Extensive sustainability diagrams, before and after
Circulation Plan		Vehicular and pedestrian circulation in plan view	Very minimal diagram	All forms of circulation, single three dimensional model
Open Space Network Plan	Shown on axonometric	Extensive plan view diagram	Very minimal diagram	Three dimensional model representation
Land Use Plan	Land use shown on section	Three dimensional land use plan	Three dimensional land use plan	Three dimension land use plan
Parking Plan	Shown on axonometric	Shown in two dimensional plan		
Sections	Substantial section showing detailed information across site	Two minimally detailed sections through catalyst site	Two minimally detailed section of catalyst development site	Minimally detailed section of catalyst development site
Perspectives	Six, showing multiple views of catalyst development site, incredible realism	Three, one showing aerial, two showing realistic views	Two, one showing entry plaza, one aerial showing land use	Five, four showing multiple views of catalyst area, one aerial
Building Typologies	Shown minimally in section	Extensive delineation of five typologies		
Land Use Percentage Distribution	Detailed description showing land use, program use, and residential diversity	Complete land use distribution diagram of entire site		Building square footage distribution of site, no overall land use percentages

Matrix Analysis Conclusions

Several trends and conclusions were drawn from the matrix evaluation (Fig. 2.35-2.36). The initial boards from the eventual winning team from the University of Pennsylvania had the most extensive analysis of the metropolitan area. It should be noted that the metropolitan context analysis was optional and the University of Texas and University of Michigan opted not to perform metro area context analysis of any kind.

A large component of the problem was circulation, and this was reflected in the responses of all four teams. Each team incorporated detailed analysis of existing circulation and proposed extensive vehicular, pedestrian, and public transit circulation designs. Three of the four teams also focused on open space networks and programming. The University of Pennsylvania teams incorporated the most comprehensive analysis into their board layout, possibly reflecting a teaching style that the University of Pennsylvania maintains.

Master land-use plans of all four entrants contained many similarities such as large amounts of residential zoning in the northeast quarter of the site study area, as well as increased commercial, mixed use, and high density development along the existing Dallas Area Rapid Transit (DART) rail line. Figure 32 shows this comparison in greater detail.

Master plan scales used ranged from 1" = 400' to 1" = 600'. Michigan's entry was the only entry to provide a legend identifying design elements. One of the University of Pennsylvania's teams included short summary statements identifying key areas of the master plan design solution. As part of the competition, teams were asked to select a catalyst development site within the site study area. Each team's shape and location are unique. However, the eventual winning team from the University of Pennsylvania most accurately determined the catalyst site that the finalist stage of the design competition would later define as the catalyst area.

Stormwater management clearly was identified as a critical issue for all four teams, as each related their strategy for sustainable stormwater management. Also, as was allowed in the competition brief, all four teams took advantage of the opportunity to realign roads within the site study area to promote more fluid circulation.

Matrix analysis of each team's final board also showed interesting trends. Within the finalist competition brief, each team was given the option to retain or remove four existing developments within the catalyst site. All teams removed at least two of the structures, while the winning University of Pennsylvania team was the only team to remove all four structures.

Financial information varied greatly across the entries, but the University of Texas at Austin was quite lacking in comparison with the other three entries as was their graphic presentation. Teams from the University of Pennsylvania once again showed extensive networks, parking plans, and building typologies. The winning University of Pennsylvania team produced the most sophisticated building typologies.

Overall it is clear that several pieces of the problem were addressed in depth by all teams. It is also clear that each team brought a unique idea and style for relating their proposal to the judges. The importance of a unique idea, as well as the detailed analysis and understanding of the social, economic, and sustainable problems within the site study area was understood by all four teams and must be considered for the 2009 competition.

Application

Team 3909 used the conclusions generated from the board submission comparisons as a framework to develop our competition entry boards.

How are you going to support
your team and what are you doing
in advance to prepare for
competition?

ng to develop
that will you do
prepare for the

Methodology



Inventory	Analysis Reasoning
Metro Area	
Circulation	
Vehicular	Determine current walkability in terms of street grid and block length
Public Transportation (bus)	Determine connection opportunities to other major nodes within the city
Public Transportation (rail)	Determine connection opportunities to other major nodes within the city
Open Space	Use for analysis for potential carbon sequestration, water detention, special civic use
Cultural Elements	
Demographics	Gain better understanding of the needs of the community
Home Ownership Rates	
Income Levels	Help to develop program to satisfy community needs
Neighborhoods	
Ecologies	
Topography	Determinant of building orientation, massing, and hydrology patterns
Hydrology	Watershed delineation
Green Corridors	Analyze wildlife habitat connections between community and metropolitan area
Economy	
Emerging Economic Trends	Create opportunities for connections to or incorporation of emerging trends on site
Educational Institution Opportunities	Potential addition to site, potential connection to educational institutions
Research Campus Opportunities	Potential addition to site, potential connection to research campus
Lending Opportunity	Determine necessity of addressing the current economic recession and its development implications
Unique Trends	
Metro Area-Specific Opportunities	Harness unique and specific potential of the project's metro area
Potential National Trends	Address current and emerging national development trends and concerns

Rapid Analysis Framework

Site inventory and analysis for this project must be completed rapidly while maintaining its relevance to the project. It is important to formulate a clear idea and direction for the inventory and analysis portion of the competition so that the resulting conclusions will promote a creative and viable design solution. The framework presented here was completed in preparation for the competition.

The rapid analysis framework (Fig. 3.1) breaks down key components of the metropolitan area and site study area into basic analysis categories. Also, it states the context and intent for each category of analysis based on the team's design philosophy. By understanding what elements need to be analyzed and the purpose of each analysis component, the team can move quickly through this phase of the competition and produce insightful information regarding the site that will guide the design solution.

Inventory	Analysis Reasoning
Site Study Area	
Cultural Relevance	
Historical Context	Connect with historic character and people of the place
Places of Interest / Congregation	Determine potential catalyst sites, potential connections to popular destinations adjacent to neighborhood
Significant Potential Areas / Nodes	Locate underutilized sites with potential to catalyze the neighborhood/district/region
Circulation	
Street Grid	Analyze effectiveness of current vehicular circulation and corresponding pedestrian circulation
Public Transportation Routes & Stops	Analyze existing ability to support transit oriented development
Architecture	
Mass Void Diagram	Analyze current street frontage, building massing, and orientation
Planning	
Land Use Analysis	Analyze current land use for potential catalyst development sites
Nodes of Development	Analyze as potential catalyst sites, if any
Ecologies	
Hydrology / Watersheds	Use as base for stormwater management design strategy
Topography	Watershed development, sight line evaluation, aesthetic opportunities
Slope Aspect	Analyze climatic factors involving building orientation, solar aspect
Soil Analysis	Carbon sequestration opportunities
Flora	Analyze for potential protection areas, wildlife corridors
Fauna	Analyze for potential protection areas, wildlife corridors
Climate	
Rainfall	Analyze for the most effective stormwater management practices
Temperature	Inform building type, orientation, open spaces, pedestrian corridors

Left and Top Fig 3.1 Rapid Analysis Framework Reference Sheet

Conceptual framework is formed from synthesis of metro area analysis and site study area analysis. Results from analysis combined with the team design philosophy and required presentation materials will form the base for the defining idea of the project response.

Synthesis of metro area and site study area analysis along with the team design philosophy and required presentation materials will make up the driving force of the design

response. It is important to note that special consideration must be given to the current economic recession and its implications on lending opportunities for developers. Part of the unique design solution may be to propose creative funding opportunities for development.

Goal 1

Create innovative and cutting-edge graphical representations of site analysis, plans, and perspectives.

Objective 1

Establish graphic conventions before the competition begins to create a smooth, seamless workflow process.

Objective 2

Use sophisticated software packages (AutoCAD Civil3D, ArcGIS, Adobe Creative Suite, SketchUp) within their optimal production limitations to produce the highest quality effect possible.

Objective 3

Delegate tasks between team members with different software capabilities to optimize speed, performance, and appearance.

Objective 4

Ensure that all graphic components are relevant to the success of conveying the project's intent to the jury.

Goal 2

Work cohesively as an interdisciplinary team to produce a creative, feasible, and highly-organized design solution capable of moving into the finalist stage.

Objective 1

Maintain communication between all team members before and during the competition with an emphasis on the planning and financial team members.

Objective 2

Allow for frequent critiques from advisors, students, and professionals in order to continually improve the design.

Objective 3

Develop a presentation order on the board in advance of final assembly to ensure a high degree of order and readability.

Objective 4

Make clear decisions and move forward with the design by assigning specific roles when necessary.

Two sets of goals and objectives were developed in response to the dilemma as well as the site competition analysis.

Competition specific goals and objectives focused on the unique set of competition requirements specific to the ULI competition. Site specific goals and objectives emphasized the actual design based on the project brief and the 2050 Initiative analysis. As the project progressed, some goals gained importance, while others became more secondary depending on the specific requirements put forth by the 2009 competition as well as the team's advancement into the finalist round of competition.

Competition

Goal 3

Present the material to the jury in a way that sells the design and the process of development.

Objective 1

Practice the presentation repeatedly until all members are competent in their own area of presentation as well as areas of other team members.

Objective 2

Ensure that all team members understand the rules regarding the presentation and the minimum speech requirements by each team member during the presentation.

Objective 3

Be prepared to answer very detailed questions posed by the jury regarding all phases of design and financial strategy.

Goal 4

Win the ULI/Gerald D. Hines Student Urban Design Competition.

Objective 1

Present the material in a clear, concise fashion during presentation to the jury.

Objective 2

Be fully prepared to answer a wide range of questions about design decisions, financial feasibility, and team cohesion.

Objective 3

Follow goals and objectives outlined above.

etition

Goal 1

Understand the metropolitan area as well as the site study area within the principals of sustainability, culture, and sense of place.

Objective 1

Analyze existing transportation systems in terms of effectiveness, location, patterns, and capacities.

Objective 2

Evaluate hydrology patterns based on topography and existing conditions.

Objective 3

Compare demographics, income levels, economic opportunities, and job types at national, regional, and neighborhood levels.

Objective 4

Analyze the flora and fauna of the region and neighborhood to identify potential preservation areas.

Goal 2

Develop a master land-use plan for the site study area, placing emphasis on connections, amenities, and significant areas.

Objective 1

Provide 10% housing units restricted to moderate income.

Objective 2

Provide equal size and mix of affordable housing as the market rate units.

Objective 3

Propose higher densities and mixed-use development at the core of development and along main transit routes.

Objective 4

Provide green networks linking existing green city infrastructure for both human and non-human movement.

Objective 5

Focus on minimizing the carbon footprint, reducing runoff, and increased density in accordance with the design philosophy.

Site Sp

Goal 3

Mesh sustainability techniques, cultural factors, and the historical context of the place together to provide a singular identity for the site study area.

Objective 1

Create public spaces where none currently exist.

Objective 2

Enhance existing and create new connections throughout the site development area including sustainable corridors.

Objective 3

Provide areas for human-human and human-nature interactions.

Objective 4

Create an encompassing water management system for the entire site study area.

Goal 4

Identify a catalyst development site within the study area.

Objective 1

Use rapid analysis results with an emphasis on sustainable corridors to identify the catalyst site..

Objective 2

Develop the catalyst with the highest density development incorporating a wide variety of uses to create a vibrant community.

Objective 3

Use the catalyst site as the defined center of the neighborhood as described in the sustainable neighborhoods portion of the sustainability definition.

Goal 5

Develop schedule and finances showing the financial feasibility of the design solution.

Objective 1

Develop a financial pro forma for the first ten years of the development site project.

pecific

Selection Process and Team Formation

Teams must be composed of five students, spanning a minimum of three disciplines that grant three different degrees, one of which must be a non-design-related discipline. Each student team member must be a currently enrolled full-time graduate student in a degree-granting program. Students from different institutions may form a team, as long as all other individual and team requirements are satisfied. Students enrolled in dual degree programs must designate which degree program they represent on the team. The only exceptions to the above formulas for team formation are at universities where the graduate degree itself is considered a multidisciplinary or interdisciplinary degree. Every team must designate one student member who will act as a contact person with ULI.

Team formation began by deciding which disciplines needed representation based on the project goals and previous successful team combinations. Though most teams had a maximum of two landscape architects, if any at all, I felt that there was a tremendous opportunity to place a strong emphasis on urban design focused on the landscape by using three landscape architecture students. I had worked with Anthony Fox and Chris Morton on studio projects and knew their unique strengths and talents well. They agreed to join me to form the first three members of Team 3909 (Fig. 4.1).

The easiest way for our team to generate interest among students from other disciplines was to speak with their professors, who then relayed the competition information to all of their students. Every finalist team from the 2008 competition had at least one team member from the planning discipline. Based upon this understanding Bryan Zundel, a planning student, was recruited to join the team.

At least one non-design oriented discipline must be represented on each team. Again, based on previous team composition analysis and the need to provide financial analysis for the project, a student was recruited from the Master of Business Administration program. Professor Dennis Law, Dean of the College of Architecture, Planning, and

Design contacted Dr. Jeff Katz, Director of Graduate Studies to meet and discuss potential team members from the MBA program. Interviews were conducted with interested candidates and Junbin Feng was selected as the fifth member of the team.

Though only one faculty member can be named to the project team, my masters project and report committee, major professor Stephanie Rolley and committee members Blake Belanger and Dan Donelin were heavily involved throughout the entire process and well before the actual competition began. Their foresight and encouragement allowed me to pursue the competition as my masters project and report. It was decided that Blake Belanger, assistant professor in the department of Landscape Architecture, Regional and Community Planning, and former winner of this competition would serve as our official faculty advisor. The Kansas City ULI chapter put us in contact with Dan Musser of Zimmer Real Estate Services in Kansas City, Missouri who served as our professional advisor.

Team:

John Perry:

Team Leader, Post-Baccalaureate Master of Landscape Architecture



Anthony Fox:

Non-Baccalaureate Master of Landscape Architecture



Chris Morton:

Non-Baccalaureate Master of Landscape Architecture



Bryan Zundel:

Post-Baccalaureate Master of Regional and Community Planning



Junbin Feng:

Master of Business Administration



Faculty Advisor:

Blake Belanger:

Department of Landscape Architecture, Regional and Community Planning



Professional Advisor:

Dan Musser:

Zimmer Real Estate Services



Top Fig 3.2 Team Images

3909
team

is an interdisciplinary team formed to address complex challenges facing today's cities. With sustainability, culture, and a sense of place as the guiding principles, we will explore a new vision for the future of cities in response to recent societal value shifts and lifestyle changes.

Rapid, thorough site inventory and analysis rooted in the guiding principles allows us to create a responsive design that will become a catalytic agent for positive change within the community.

Sustainable design is process-driven, using sustainable frameworks, existing ecologies, and historical context. A place is not static and ordered, but free and organic, a meshwork

of interrelated systems. It is the interaction between these systems and not the systems themselves that truly drive the place.

Response using the guiding principles will provide an alternative to rigid design rooted in permanence, oblivious to the fourth dimension. Instead, spatial design will reflect an understanding of temporality and flexibility, allowing for new and emerging uses over time. This innovative approach will create dynamic spatial relationships and encourage dialogue between people and place.

Through teamwork and collaboration, we will provide an innovative, practicable, and responsible land use solution while pushing the boundaries of conventional design.

“What’s most important
is understanding so
honest and mean
place and the pro

important is
something that's
meaningful about the
opposition."

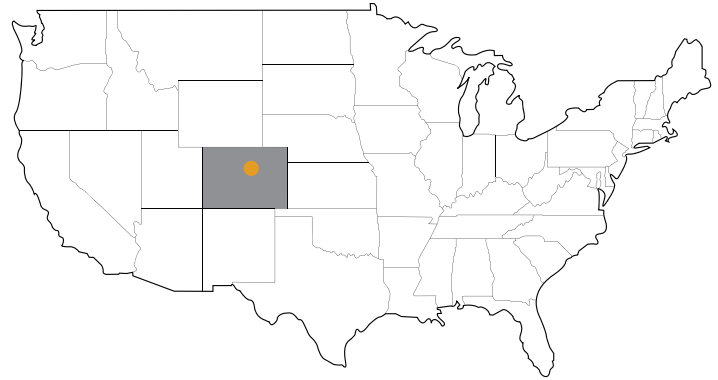
4

The Site Announced



Context

On February 19 at 9:00am the competition brief was released. The 2009 competition site is located in Denver, Colorado (Fig. 4.2). Denver has transformed from a small mining town into a thriving metropolis with 600,000 residents in the city proper and over 2.5 million in the metropolitan area. There is a diverse economy in Denver revolving around the local and federal government, defense, mining, telecommunications, and the movement of goods. There is projected growth in all sectors throughout the 21st century.



Regionally, vast sprawl results in extremely low-density development throughout the metropolitan area. Denver has begun to combat sprawl with extensive expansion of its FasTracks light rail system, adding over 120 miles of light rail infrastructure to the current light rail system. The city is primed for redevelopment and aims to use infill properties to increase density by four percent by the year 2030.

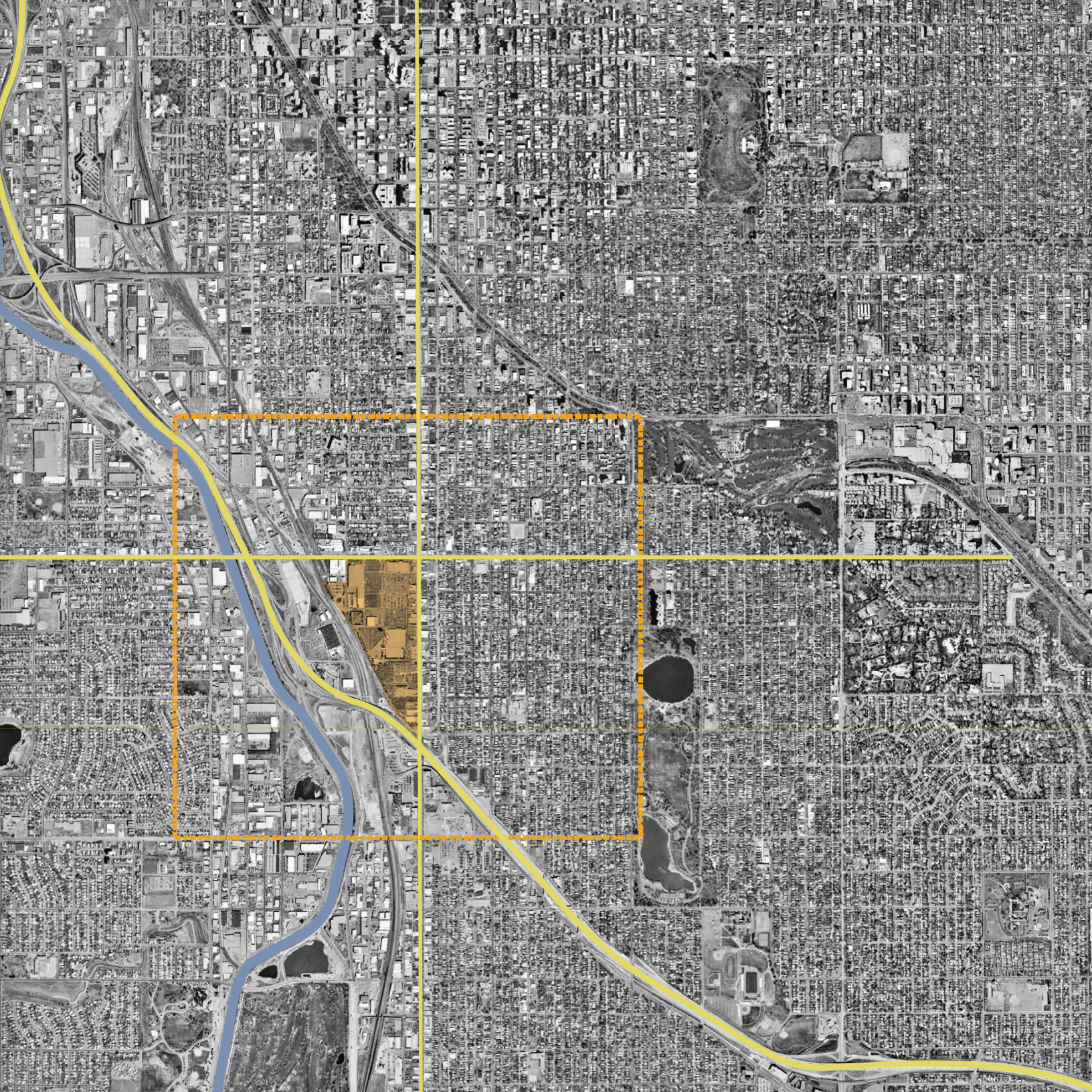
This year's site is a potential infill opportunity. A 75-acre site located just 1.5 miles south of the Central Business District (CBD), the Denver Design District sits within the greater competition study area (Fig. 4.3). The study area encompasses all of the area between West 1st Avenue on the north, South Lafayette Street on the east, East Louisiana Avenue on the south, and South Lipan Street on the west.

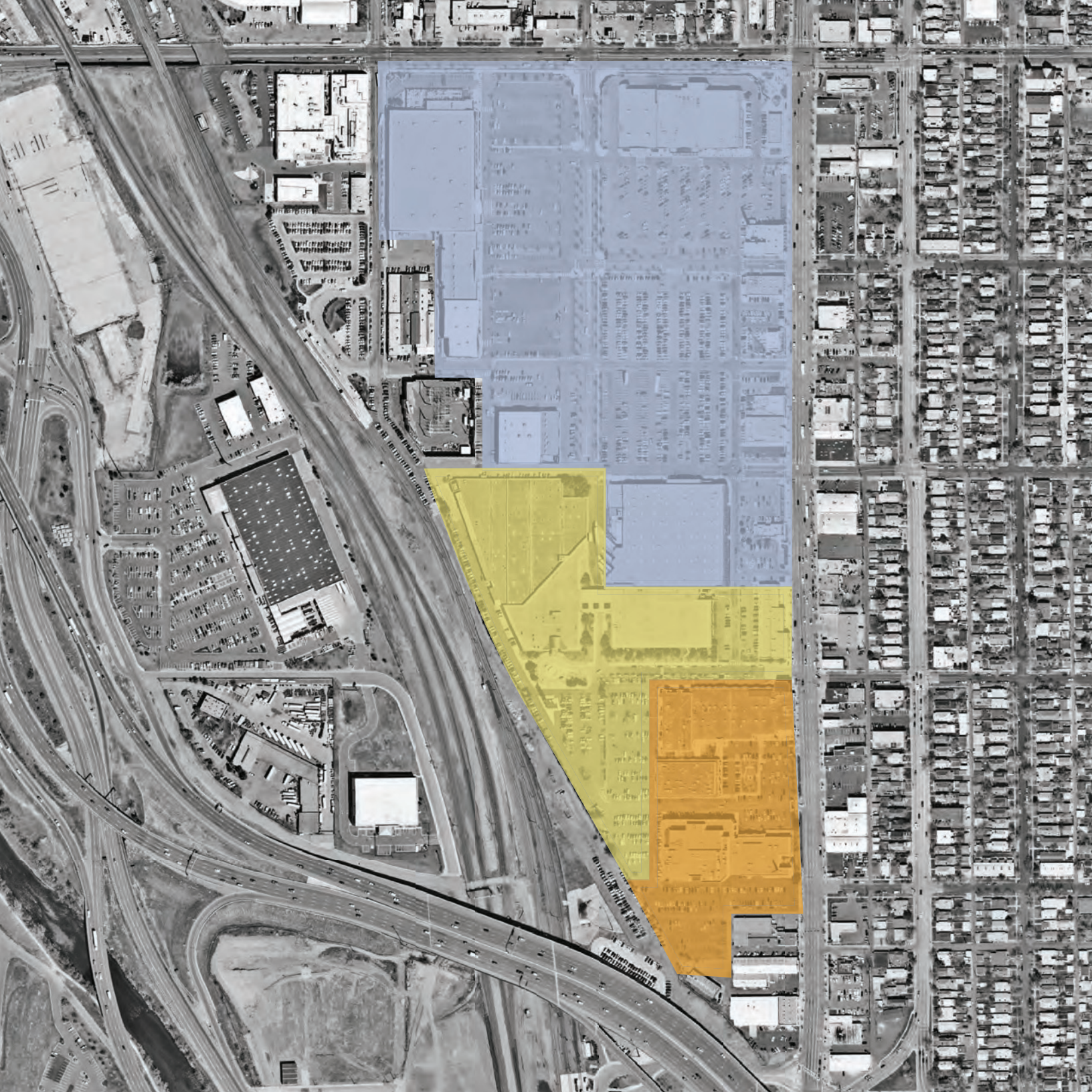
The development site itself is bounded by Alameda Avenue on the north, Broadway Street on the east, Interstate 25 to the south, and light rail tracks to the west. The site has more than an a half mile of frontage along Broadway Street, the major one-way southbound non-interstate vehicular artery from downtown, which provides incredible visual and vehicular access to the site. Alameda Avenue is a major east/west service artery along the northern edge of the site that provides substantial vehicular access to the site.

Denver's light rail line runs north/south along the western edge of the property. Alameda Station is located on the DDD property while Broadway Station lies just to the south.

- Site Boundary
- Major Circulation
- River

Top Fig 4.1 National Context Map
Right Fig 4.2 Site Context Map





Existing Conditions

The Denver Design District (DDD) is a valuable midtown parcel comprised of three properties, Broadway Marketplace, Denver Design Center, and the Collection (Fig. 4.4). Broadway Marketplace is a 387,000 sf. power center including a Sam’s Club, K-Mart, Albertson’s, and Office Max. Denver Design Center is 233,300 sf. of high-end wholesale interior design showrooms and the largest design center within an eight-state area. The Collection is a 251,000 sf. extension of the Denver Design Center and also includes Quest Diagnostics, Wells Music, and the Art Institute School of Culinary Arts. We were to assume that we own all private parcels within the development site’s boundaries while city-owned sidewalks, streets, and other rights-of-way remain city-owned space. We had the option of purchasing these spaces for \$50 per square foot.

The current tenant roster on-site is quite profitable, but big-box development and large expanses of parking inhibit pedestrian movement and produce an unappealing pedestrian environment. An exception to the typical big-box development appearance on site is the 85-foot tall, bright yellow concrete Herbert Bayer Sculpture, an iconic art piece in the city of Denver. This sculpture is the symbol of the Denver Design Center and cannot be removed or relocated.

Surrounding the site to the north is Baker neighborhood, an historic single-family residential neighborhood, the oldest in Denver. West Washington Park neighborhood is located to the east of the site and includes Washington Park, a major open space in Denver. South of the site lies the vacant, 80-acre former Gates Rubber Plant, slated for massive redevelopment. Farther to the west, the South Platte River plane encompasses a wide swath of light industrial activity. Denver Tech Center, a major commercial park is located six miles to the south. (udcompetition.uli.org)

- Broadway Marketplace
- Denver Design Center
- The Collection

Left Fig 4.3 Development Site
Individual Parcels Diagram

Competition Problem

The charge is to redevelop the 75-acre DDD parcel from its current program into a landmark, transformative mixed-use community. This is a complex issue involving an intense list of rules, regulations, and requirements that must be dealt with while creating an innovative, sustainable, vibrant, financially viable design solution. The following information was obtained from the competition website www.udcompetition.uli.org

2050 Framework

The Urban Land Institute recently released “City in 2050,” which paints a vision for the future of cities replete with massive demographic, climate, and financial changes that will affect the built environment. It also poses a question: With so many unknown variables potentially affecting cities in the future, how can we create sustainable communities in today’s context while providing the ability to adapt to unforeseen change in the future? This book focuses on longevity and sustainability, requiring new approaches to design of the built environment. Along with the standard rules and regulations that have remained unchanged from previous years, this year teams were asked to apply the 2050 framework to the project in five specific areas. The response must:

- Understand the social, historical, demographic, political, and economic forces in the Denver metropolitan area and analyze the larger South Denver study area in relation to the smaller development site. This analysis will take into account the context of the development site’s surrounding neighborhoods and take into consideration land use, circulation, infrastructure, demographic, site forces, etc.
- Propose a master land-use plan for the development site that accounts for land and building uses, blocks, streets, transit lines, connectivity, etc.
- Propose an urban design scheme for the development site that focuses on typology, architecture, sustainability, and overall design characteristics for the site.

- Propose a development program and financial pro forma for the development site that takes into account phasing as well as a ten-year hold.
- Identify the first phase within the development site and devise a detailed master plan for phase one that includes building footprints, streetscapes, elevations, sections, and renderings showing the intended characteristics of the development proposal.

Additionally, all tenants within the three parcels of the DDD must maintain their current business operations throughout the entire redevelopment process so that tenant cash flow is not interrupted. Redevelopment must occur strategically in phases to make uninterrupted service a reality on site. There is a substation located on the west side of the development site directly south of Alameda station. The substation cannot be removed or relocated and requires an innovative solution to integrate it with the site.

Rules and Regulations

Two zoning policies that greatly impact redevelopment strategy for the DDD are:

- Main Street Zoning: This zoning applies to Broadway Street. (<http://www.denvergov.org/Default.aspx?alias=www.denvergov.org/MS>.)
- View Plane Preservation: A protected view plane corridor to preserve mountain site lines from Washington Park. (http://www.denvergov.org/Default.aspx?alias=www.denvergov.org/View_Planes.)

Objectives

There were nine objectives that needed to be taken into account for the DDD plans. These objectives include:

- **Affordable Housing:**

Allocate 10% of all housing units, both for sale and rental, as affordable (households earning no more than 80% of AMI). The remaining housing may be market rate. The size and mix of the affordable units must be the same as the market-rate units, their development cost differential may be no more than 5% less, and they must be dispersed throughout the project. These requirements apply to every phase of development.

- **Open Space:**

The City of Denver requires that 10% aggregate of the development must remain as open space. The 10% must be non-city-owned spaces (city-owned spaces would include streets and sidewalks), must be unroofed, and open to the sky. This 10% open space must be accessible to the public, directly from city-owned space, and may be hardscaped or green.

- **Infrastructure:**

Show all new infrastructure improvements such as green infrastructure and access to the light rail stations.

- **Placemaking/public realm:**

Redevelopment of the DDD should consider how the site affects the urban fabric and encourages interaction with the public realm.

- **Tenant retention:**

Long-term leases that the DDD has with its tenants require that they be accommodated during any redevelopment period. Pay special attention to how they are accommodated through phased development. Please use the square footage and gross lease rates provided earlier in the brief. The entire center does not need to be relocated at once (e.g., all 387,500 sf. of the Broadway Marketplace), but the key is that the tenants remain in operation throughout the process. Of note, all newly created commercial or office space can be leased at any

rate deemed appropriate for the current market, but all extant tenants are locked in at their current rates.

- **Financial feasibility:**

Although we have provided a simplified pro forma that might not reflect real world complexity, we do expect the development proposal to rely upon financial feasibility. Use your land basis as the equity contribution and adhere to a ten-year hold.

- **Sustainability/climate change:**

Consider the carbon footprint of the project and the role it will play in contributing to a more sustainable Denver.

- **The City in 2050:**

During development of the urban design, keep in mind some basic principles of the City of 2050 and the overarching ULI priorities of mixed-income housing, infrastructure, and sustainability.

- **Herbert Bayer Sculpture:**

The 85-foot tall yellow sculpture is a landmark for Denver and for the Design Center. Its mounting and cultural landmark status prevents relocation to any other portion of the site. There are other pieces of public art such as the sculptural plaza at the corner of Alameda and Broadway that may be removed.

Assumptions

There are also nine assumptions that must be taken into consideration.

- **Zoning:**

With the exception of the Main Street zoning and the view plane easement, teams may rezone all areas within the development site.

- **Rights of way:**

Teams may choose to close and create public streets within the development site.

- **Utilities:**

Teams may relocate all local distribution lines for power, gas, water, and communications. Teams may not move stormwater and sewer infrastructure.

- **Infrastructure Costs:**

Teams must account for all new public infrastructure costs, but they need not be charged against project costs. Infrastructure on private parcels must be charged to project costs.

- **Project Costs:**

The development proposal is the only component of the submission that requires a pro forma accounting for a ten-year hold.

- **Real Property Taxes:**

Denver employs a dynamic tax formula that relies upon the actual property value, a set assessment rate that differs for residential and commercial properties, and a mill levy. Please use the official Denver rates and procedures found at: <http://www.denvergov.org/Assessor/CalculatingYourPropertyTaxes/tabid/378142/Default.aspx>, accessed January 19, 2009.

For the purposes of this competition, please apply the current Denver mill levy rate of 66.897 for year 0 and then escalate it 1.5 per year. For the residential and commercial assessment rates of 7.96% and 29%, respectively, please apply those for year 0 and then escalate each by 0.5% each year.

- **Inflation Rate:**

All costs are subject to an inflation rate compounded at 3% per year. Start of Development: Year 0 is 2009/10 and the start year is 2011.

- **Start of Development:**

Year 0 is 2009/10 and the start year is 2011.

- **Land Basis:**

For the financial valuation, assume the team's basis in the project at the beginning of year 0 is \$140 million for the entire 75-acre parcel in its current form.

Presentation Requirements

In development and representation of the proposal, six key areas must be represented to give the jury enough information to make a decision regarding the proposal in a very short amount of time. These six key areas are:

- **Planning Context and Analysis:**

This should be illustrated with an overall annotated plan and/or diagram drawn at a scale that describes overall patterns and concepts for regional issues the team considers relevant. These might include, for example:

- Land use
- Circulation (pedestrian, vehicular, transit, etc.)
- Open space
- Environmental and sustainability considerations
- Image and character of the area
- Social and economic concerns
- Community planning and infrastructure concepts
- Private-sector development concepts

- **Master Land-use plan:**

The land-use planning drawings must show:

- Land and building uses
- Blocks and streets
- Location of transit line(s) and stops/terminals
- Other public infrastructure
- Connections to neighboring blocks
- General concepts for landscape and open space

Note: Use APA's Activity-Based Classification Standards for color coding. For mixed-uses, use a technique such as cross-hatching to signify overlapping uses.

• Urban Design:

The urban design for the development site must show:

- Transit, power lines, and similar infrastructure
- Greenways and open spaces
- Paths, bikeways, pedestrian connections, and other means of access to the neighborhood
- Environmental, sustainability, and aesthetic values
- At least one each of: plans, elevations, sections, and relevant details

• Development Site:

The proposed development should include annotated drawings similar to a project schematic design. They will include plans, elevations, sections, and other renderings, all emphasizing the public space aspects, connections, and interrelationships within the project and to the neighborhood beyond the project. The phases should be clearly identified.

• Development Schedule and Finances:

Include a sheet comprising a development pro forma in executive summary form that will fit on a single 11"x17" sheet. All totals on this executive summary sheet will be used only to verify that they support the proposal and that they display an internal logic. They will not be used to compare one team's proposal against another's.

The sheets should also incorporate statements describing site design and development concepts, public infrastructure within the site—including circulation and open space—investments, and market options and strategies. Text—in the form of charts, graphs, matrices, spreadsheets, timelines, etc.—should analyze the costs for infrastructure, buildings, open space, and the value that they will create. Drawings—in the form of plans, sketches, and collages—should describe the architectural and other design concepts for the public and private realms. When including written material, make it as succinct as possible, using bullet points where possible.

• The City in 2050:

In this year's competition we are asking teams to produce a board that looks at their proposed development in the context of the City in 2050. The board illustrates what it would be like to be living in the community in 2050, a day in the life of a resident of the community. This can be a freeform narrative told through images or sketches with text. It can be an abstraction. Students can produce images that are meant to be evocative or provocative rather than conventional. The images could take many forms. They could be an iconic representation; they could be a collage of elements. They could be an abstraction or a representation. But they must provide the viewer with a visual representation of a sustainable future.

The design must fit onto six (6) 11"x17" sheets, forming a unified presentation. The executive summary of the development pro forma is a seventh board separate from the first six. The City in 2050 board is another stand-alone board intended to be viewed separately from the first six. The eighth board is new to the competition this year. Maps, plans, and drawings may be at any scale; indicate scale used.

Provided Resource Information

Resources available from ULI:

- Competition Brief
- Pro Forma template in Excel
- Resources: Files of relevant studies, demographics, and a list of web resources
- GIS files
- Context photos

(udcompetition.uli.org)

2050 Initiative Analysis

Unique to this year's competition, each team received a copy of Urban Land Institute's "The City in 2050: Creating Blueprints for Change." This book evaluated global sustainable trends now and into the future. Overall the main question that it posed was how cities and communities can be shaped to meet present needs while empowering future generations to meet theirs. Several specific sustainable areas are discussed and needed to be evaluated within the context of the site design for the 2009 ULI competition. Analysis of the book discovered eight main points of emphasis. Within each point there are several specific sub-points. The following outline along with the previous competition analysis and design philosophy formed the underlying structure of the design response.

• **Natural Assets: Give Form to Growth**

- Reclaim leftover urban spaces, become coveted destination.
- Leverage investment to create green jobs and increase social equity.
- Reconnect people to nature and each other.
- Create large parks financed by urban development.
- Cities will compete for highest quality of life.

• **Infrastructure: Community Lifelines and Networks Redefined**

- Water: Low impact development leads to water recycling, reduced irrigation, green roofs, and bioswales.
- Telecommunications: Interactive networks, performance-based outcomes
- Transparency: Smart meters, real-time adjustment, smart networks
- Sources: Diversified power sources, buy and sell energy, power generation and urban development will find synergies and revenue opportunities.
- Material Recycling: Methane, organic waste, urban agriculture

• **Metro Competition**

- New Rewards: Embrace innovation and change, deliberate investments.
- Adaptation: Market preferences inform consumer choices, redefine lifestyle preferences and definitions.
- Workforce: Must have capacity to care for, train and invest in citizens.
- Government success dependent on fiscal responsibility, consistency, and transparency.

• **Whole Buildings**

- Zero-Net energy buildings: Buildings must keep up with changing land uses and be easily modified with innovative retrofits.
- Reuse existing materials: glass, concrete, steel
- Superior air quality, natural daylighting, user-controlled environments
- Create spaces for reuse over destruction.
- Flexible technology and use
- LED lighting, thermal recovery, variable translucent glass, etc.

• **Transportation: Greater Mobility, More Choices**

- Increased publicly and privately-funded transit options equals added value.
- Smaller cars and electric motors redefine service center, mobility, and zoning.
- Metro areas must offer efficient transportation to stay connected.
- Fixing existing transportation infrastructure reduces risk and generates returns on past investment.
- Mixed-use, compact solutions reduce transportation costs, shifting spending to high-quality housing.

• Full Spectrum Housing: Beginning to End

- Smaller lots and homes means increased public space use.
- Multi-use neighborhoods have mix of age, income, preferences.
- Housing location with easy access to destinations increases value for mobility-oriented communities.
- Design diversity: Assisted living, small-lot town houses, rental and starter units, live/work lofts, extended layouts
- Housing to integrate accessory amenities: Ag gardens, fitness centers, guest apartments.

• New Generation of Master Developers

- Whole-system thinking promotes sustainability and reduces costs.
- Value sharing: State-of-the-art technology, new forms of financial return
- Forging innovative partnerships equals new sources of capital.
- Multiple transportation choices lead to increased access and value (high speed rail).

• Framing the Marketplace

- Transform streetscapes into unique, marketable experiences.
- Intellectual capital is key: health care and education at the heart.
- Shopping trips remain, but with twists. Remote access drives choices.
- Value chain of market deliveries becomes more complex.
- Large format retail becomes a mixed-use neighbor.
- Big-box stores will continue to blur at the urban edge.
- New Cities must serve the travelling middle class.

(The City in 2050, ULI)

Rapid Analysis Application

The team applied the rapid analysis framework to the DDD site to quickly draw meaningful conclusions about the site. At the metro area scale several conclusions were drawn. Alameda Avenue is a busy two-way street running east to west along the northern boundary of the site but it is more a transport rather than a destination street. Broadway Street is a destination street with a distinct identity and positive potential. There are several research and science centers in the Denver area and there is a great opportunity to connect and collaborate with those sectors on the site. Demographics transition sharply from a largely Caucasian neighborhood with above average income east of the site, to a largely Hispanic neighborhood with below average income west of the site. The site must be flexible and programmable to accommodate both populations.

At the site scale, Alameda station serves as the main non-vehicular node on the site and must be addressed as the catalyst for site redevelopment. Connection from the site to Broadway station is nonexistent and must be created for pedestrian access. The current street grid is weak and must be strengthened. Increased access points across rail infrastructure and Interstate 25 to the west are necessary to encourage pedestrian movement between communities and to the South Platte River corridor. The site slopes six (6) feet east to west, draining to the South Platte River. In the state of Colorado, it is illegal to collect rainfall or reuse greywater, so runoff must be allowed to infiltrate back into the soil. The market indicates that there is a need to provide multiple housing types at all price ranges.

By the time 2050
all of its dynamic
challenges, what
be with the reside
Denver?

arrives, with
changes and
will your legacy
ents of metro

Initial Response



Response

Using results from the 2050 Initiative and rapid analysis, project goals, and design philosophy, team 3909 formulated a proposal for the Denver Design District. The response started with a vision for the site in 2050 displayed on the eighth board (Fig. 5.2) and worked down to the detailed site level, addressing all necessary rules, regulations, and issues at multiple scales and levels of the design. The result was a cohesive, unified board (Fig. 5.3) displaying thorough understanding of the site and an optimal design solution.



Right Fig 5.1 Site Image



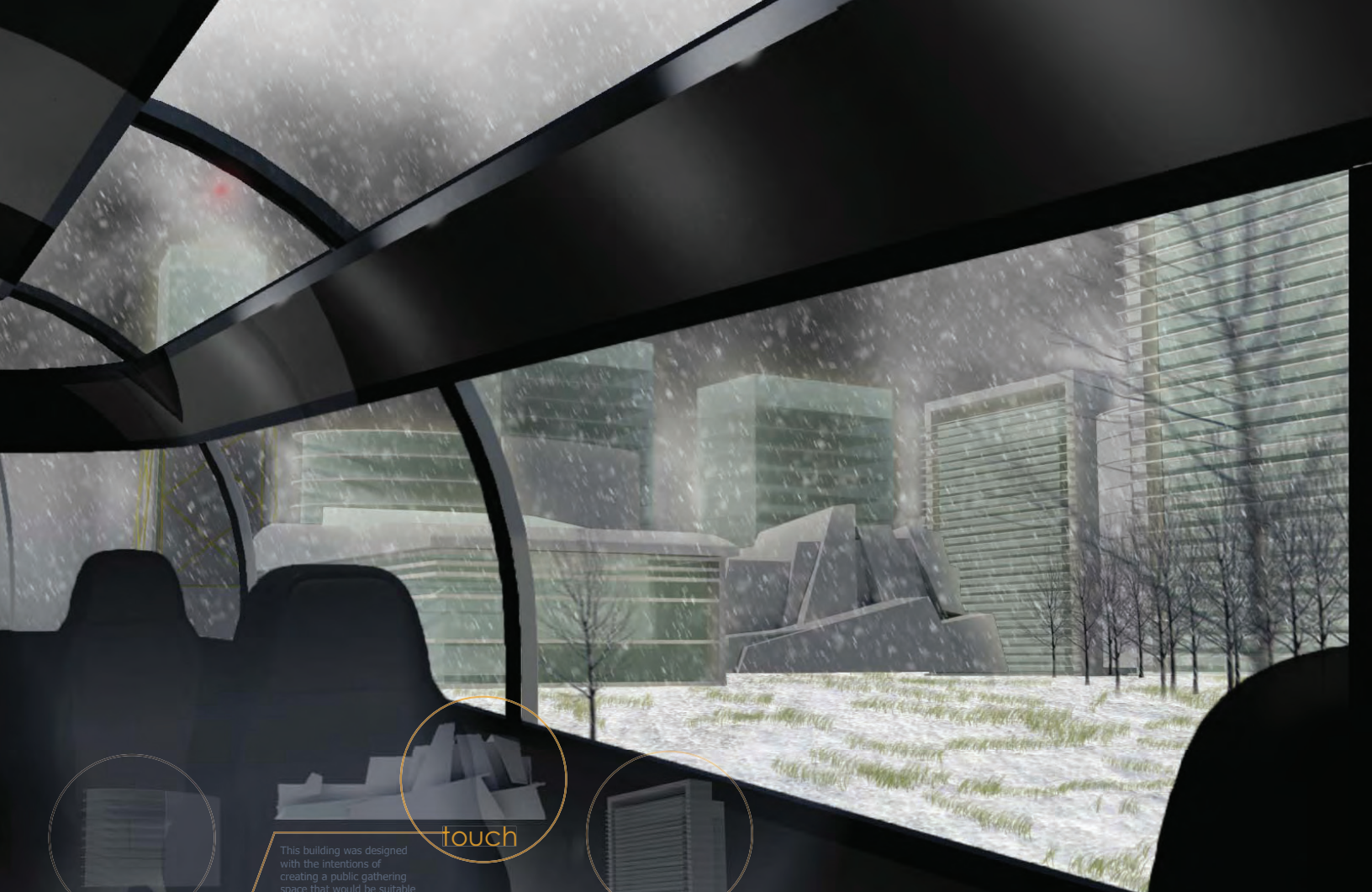
touch

The Denver Design District **touch** proposal converges culture, enterprise, and lifestyle to create a verdant, livable, community-focused urban atmosphere. The district's current big-box development, which serves the prototypical car-centric suburban model, is transformed into one of Denver's most distinctive neighborhoods.

touch establishes new methods of interaction and collaboration through multi-modal transit connections, vertical integration, increased density, and open space to create an engaged and vibrant lifestyle.

Linked through Alameda Station and unified by connective landscape, the district serves the broader Denver region as a destination for events, leisure, and gathering. The vision utilizes its local and regional resources in response to a new generation that demands unprecedented integration of activity, technology, culture, diversity, and choice.

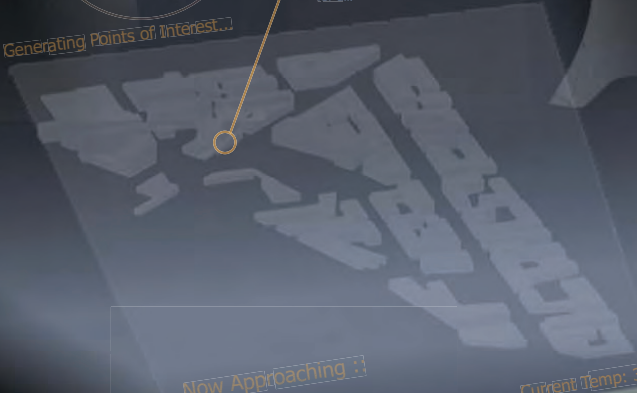
Adaptive, connective and livable, touch creates an enduring urban community for the 21st century and beyond.



touch

This building was designed with the intentions of creating a public gathering space that would be suitable for all.

Generating Points of Interest...



Now Approaching :

Alameda Station

Current Temp: 31°



Almost home. Thick white streams of winter snows paint the sky and the landscape beyond blurs through the frosted windows of the train car. But who could mistake the great peaks of the old Forum there in the distance, even through the snow. A masterpiece. Steady like the mountains, it speaks of what will always remain cherished, even amidst the perpetual adaptation of this unique city. Almost tangible are the sounds, laughter and joy at the ice rink, recalling why this place captures the essence of home.

Just last evening you were at the Forum, experiencing the annual winter children's musical and afterward, catching up with old friends over drinks in the Market District. Tomorrow you will wake early in the morning and witness the orange sunrise illuminating the Rockies, then greet smiling faces from across the world as you leave your parking-structure-turned-loft.

As the landscape passes by your train window, you can almost see them: a woman walking her dog, children in puffy snowsuits creating a great host of snow angels, business commuters zipping by, your neighbor cross-country skiing to the riverfront corridor; nature and city seamlessly joined.

The community is strong and connected, humming with opportunities for memorable experiences with others. Yesterday, you were captivated and inspired as you traveled the sinuous walkways through the park, cheers and excitement of a kids' pick-up football game echoing across the frosted lawn. There is a great togetherness – a feeling of place and permanence.

This is a place where different backgrounds, races, incomes, and values come together, working for industries that strive to have meaningful impacts on the world. Interactions between people are numerous, both face to face and from half the world away. The research and innovation, along with the partnerships in Technology and Bioscience with the Tech Center and University of Denver infuse the community with optimism.

Snow falls harder now as the train nears the Alameda station. The soft light of your GLO, a hand-held holographic media center, turns on to illuminate the characteristics of the place. One of many new technological advances in recent years, the GLO was developed here in collaboration with Tech Center entrepreneurs. Remarkably intelligent, the device provides real-time feedback showcasing the myriad of options for the rest of your day. Who will you meet? Where will you go?

Home now. Snow is still falling, diffusing the moonlight. You emerge from the station and walk amidst your friends, your co-workers, your neighbors, evoking the interconnectivity that creates this immutable character of place, establishing a vibrant community. The Forum is just ahead now, its peaks shearing the winter sky – a symbol of the culture, people, and place, begging the question: what will you

touch

Left Fig 5.2 2050 Vision Board (8th Board)

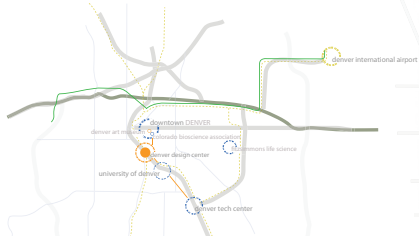
touch

The Denver Design District TOUCH proposal converges culture, enterprise, and lifestyle to create a verdant, livable, community-focused urban atmosphere. The current big-box development of the district is concentrated on the automobile and suburban lifestyle in a location that can be transformed into a highly connective society.

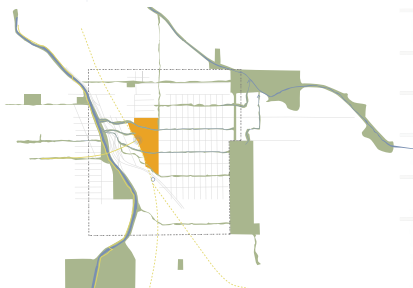
Seeking to create an enduring community, TOUCH establishes new methods of interaction and collaboration through vertical integration, higher densities, multiple transportation options and open space to create an engaged and vibrant lifestyle.

The vision utilizes its local and regional resources in response to a new generation that demands unprecedented integration of activity, technology, culture, diversity, and choice.

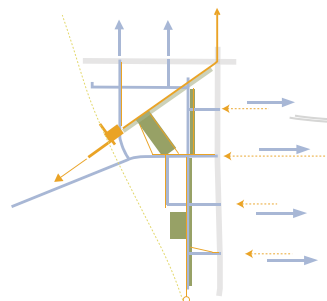
Adaptive, Connective and Livable, TOUCH creates an enduring urban community for the 21st century and beyond.



Strategic Connections | Partnerships and Collaboration:



Strategic Connections | Partnerships and Collaboration:
Establish green networks. Hydrology will seek to slowly filter stormwater through systems allowing controlled movement to the river. Habitat corridors allow the movement of water, wildlife, and pedestrians to and from open spaces within the urban fabric.

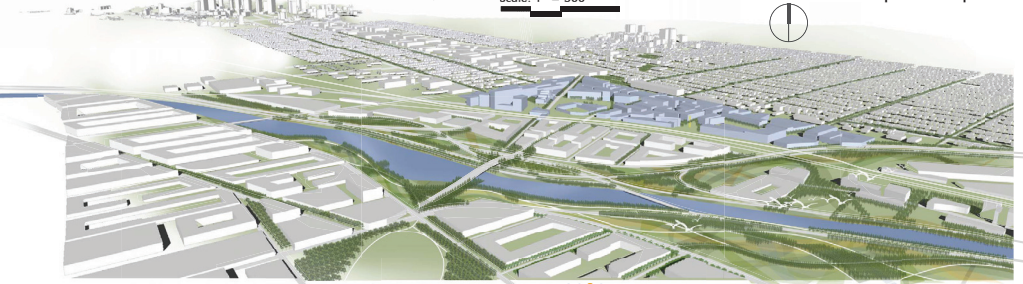


Site Strategy | Open Space and Circulation:



Scale: 1" = 500'

Potential Development Projection



Phase O
Phase 1 of development core that will...
Alameda Station...
the Denver...
cultural event...
constructed...
University of...
economy and...

Phasing I
Phasing is occ...
tenants into...
service for ex...

Core Cor
Architectural...
The core of...
flexibility to...
adaptive skin...
it can be adap...
integrity of the...

Development:
 development focuses on establishing a vibrant
 catalyze development as the site unfolds from
 on. Expansive open space is created, making
 Design District an immediate destination for
 %, entertainment, and exploration. The newly
 science facility forms partnerships with the
 Denver and the Tech Center, driving the
 creating a need for increased residential units.



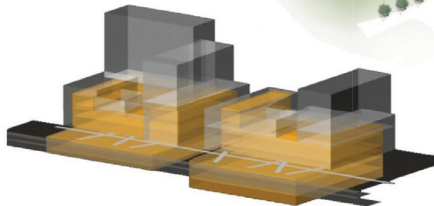
Master Plan:

- 1 Alameda Multi-Modal Transit Station
- 2 Neighborhood Energy Distribution Plant
- 3 Programmable Green Space
- 4 The Forum
- 5 "Web" Market Street
- 6 Major Axial Access Promenade
- 7 Bio-Science Industry
- 8 Hotel / Convention Center
- 9 Gateway Plaza
- 10 Denver Design Center
- 11 Connection to Broadway Station

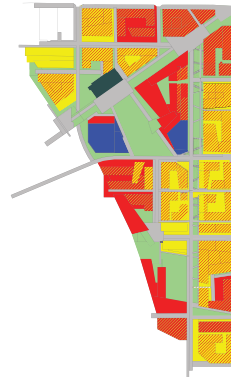
Scale: 1" = 200'

Diagram:
 achieved by the strategic construction and movement of existing
 new spaces. The strategic movement maintains uninterrupted
 existing tenants while new spaces are being created.

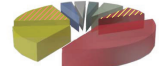
Concept:
 design is based on flexible core construction and an adaptive skin.
 the building follows simple geometries, allowing the building
 accommodate multiple programs. Wrapping the core is a dynamic
 Because the skin is not a critical part of the building infrastructure,
 tied to new technologies, needs, or preferences without rusing the
 core. Results are increased lifespan and seamless repurposing.



View across green space to The Forum



- Residential - 7%
- Mixed Use Residential - 39%
- Shopping, Business or Trade - 15%
- Mixed Use Retail/Office - 20%
- Institutional or Infrastructure Related - 4%
- Mass Assembly of People - 4%
- Leisure - 7%



Sustainable Strategy Section:

Photovoltaic Energy:
 Solar panels placed strategically on rooftops provide a renewable resource alternative.

Brownroofs:
 Roofs covered with recycled substrate materials are allowed to colonize naturally, increasing biodiversity while helping to reduce the heat island effect.

Flexible Buildings:
 Living feedback systems and easily accessible infrastructure reduce energy waste and allow seamless integration of new performance-enhancing technologies as they are developed.

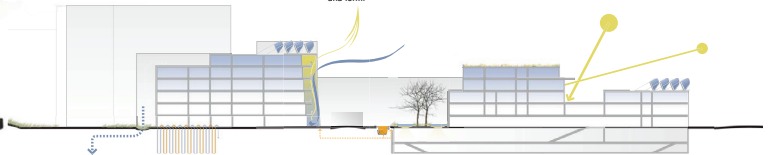
Adaptable "Skin":
 Buildings are wrapped with high-performance exteriors without attaching to its core. This promotes adaptive reuse and greater flexibility in appearance and form.

Daylighting:
 Natural daylight provides passive heat and reduces need for electricity.

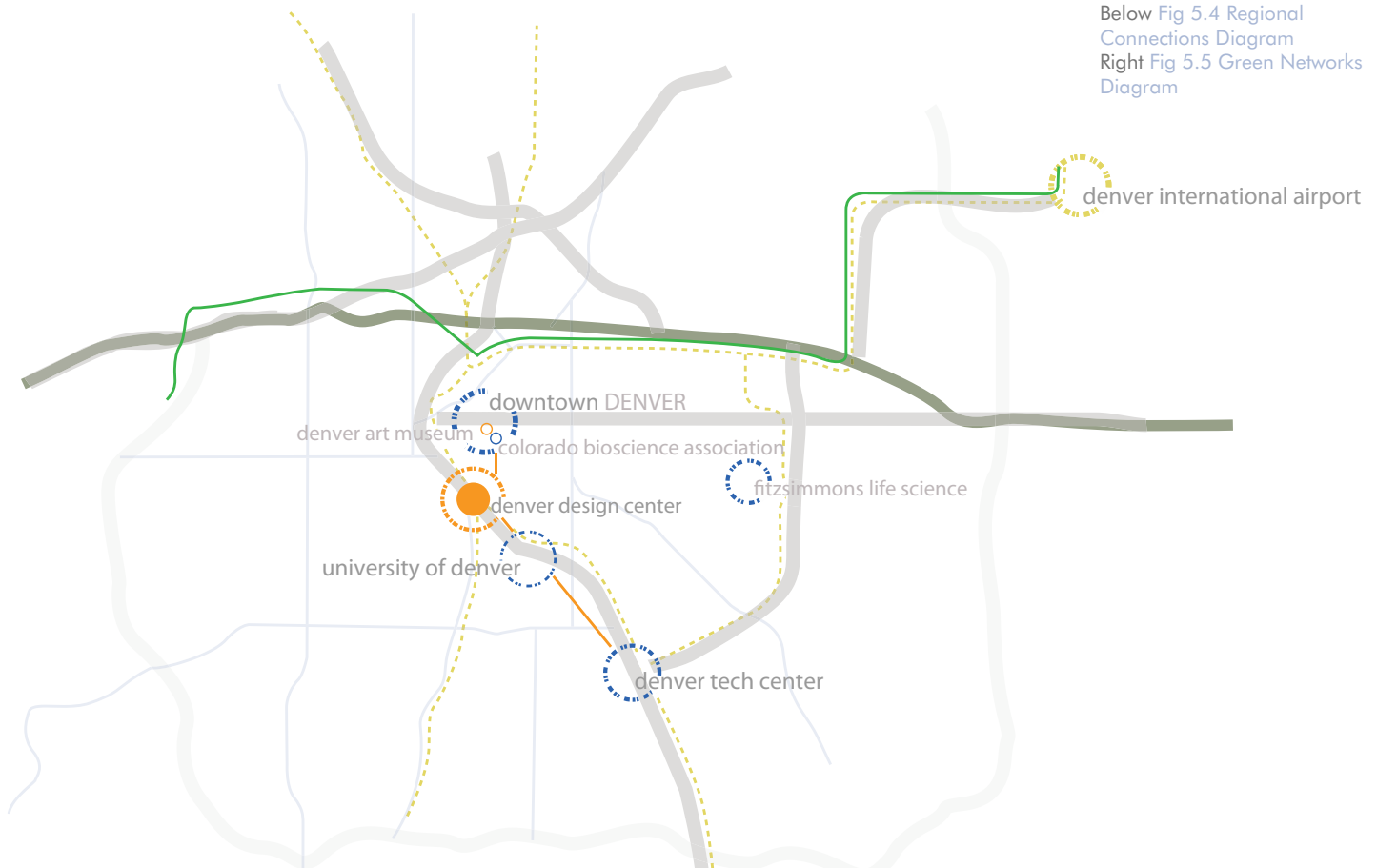
Infiltration Bio-Swale:
 Swales collect, filter, and slow water runoff while increasing habitat and creating new green connections. Water is allowed to return to the soil, recharging groundwater supply.

Complete Streets:
 Bundled infrastructure increases maintenance accessibility while multi-modal transit lanes promote alternative forms of transportation.

Geothermal Heating:
 Ground source heating uses the soil's temperature to generate cost-effective structure heating and cooling solutions.

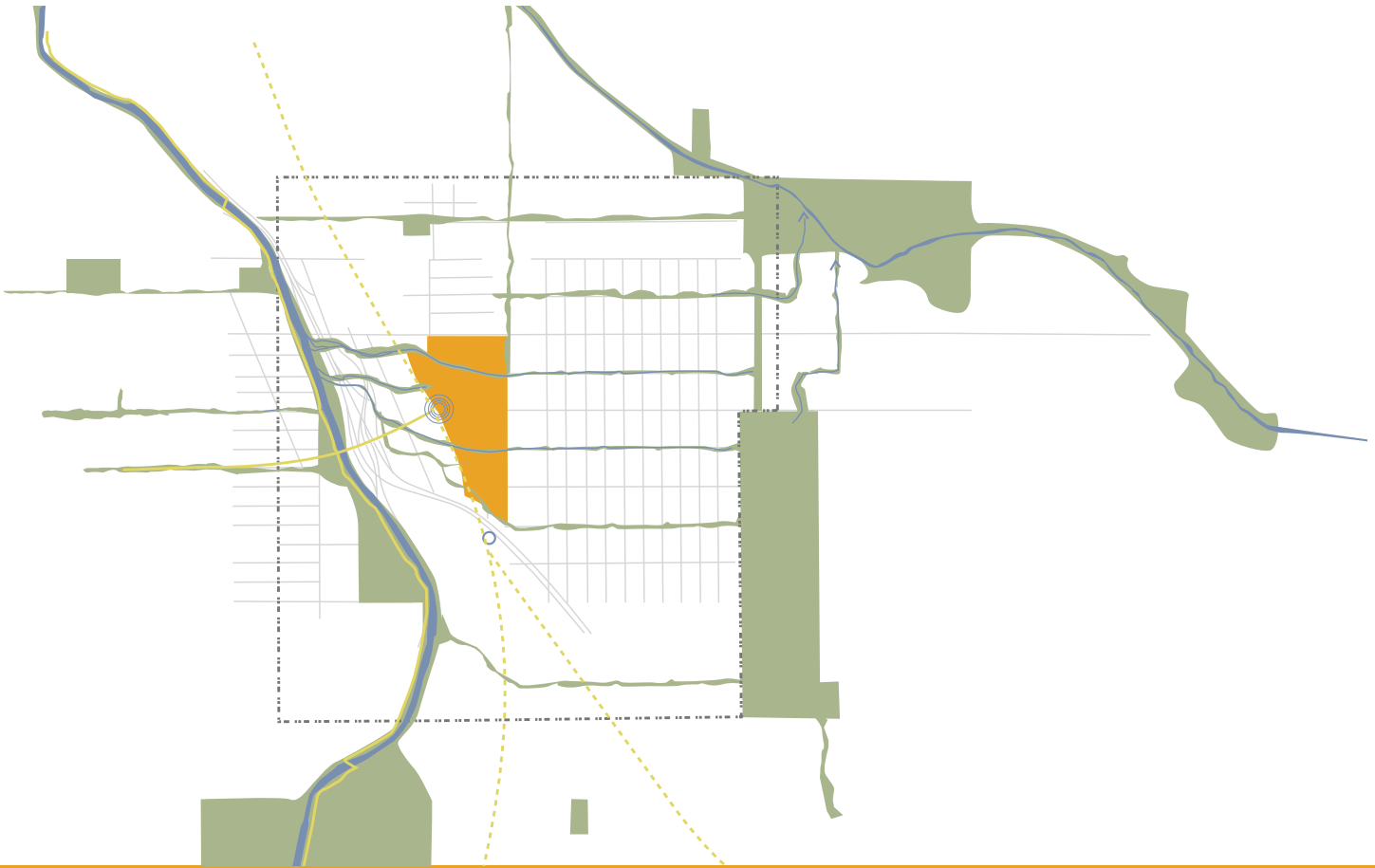


Below Fig 5.4 Regional
Connections Diagram
Right Fig 5.5 Green Networks
Diagram



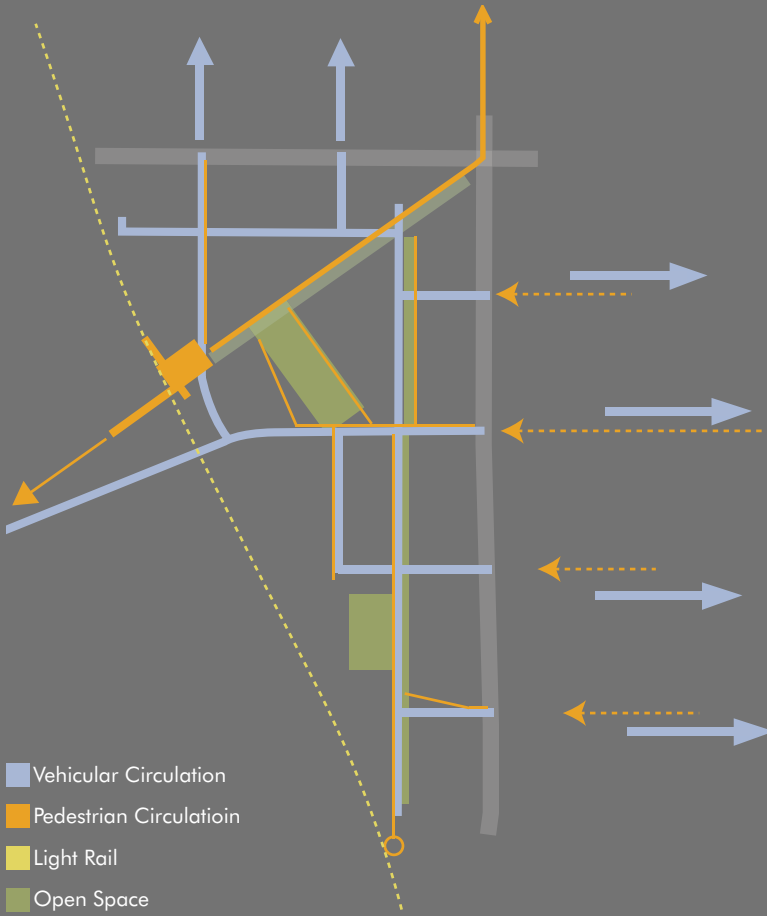
At the regional scale, the design works to maximize the connective potential (Fig. 5.3) of the light rail station to significant areas of Denver. The light rail provides an incredible opportunity for commuters working downtown or at the Denver Tech Center to live on site. Also, its position between Auraria campus, a 55,000-student campus composed of the Community College of Denver, Metro State University, and the University of Colorado at Denver, to the north and the University of Denver, approximately 10,000 students, to the south, makes it an ideal location for students to live, work, or come for entertainment.

Bioscience is one of six industry clusters targeted by the city of Denver for growth and economic diversification. Locating a major bioscience research center on site provides a substantial economic base for the site and creates opportunities for partnerships and collaboration with existing infrastructure such as the Denver Tech Center and Fitzsimmons Life Science Center. It also creates potential research and educational partnership opportunities with the University of Denver and Auraria Campus.



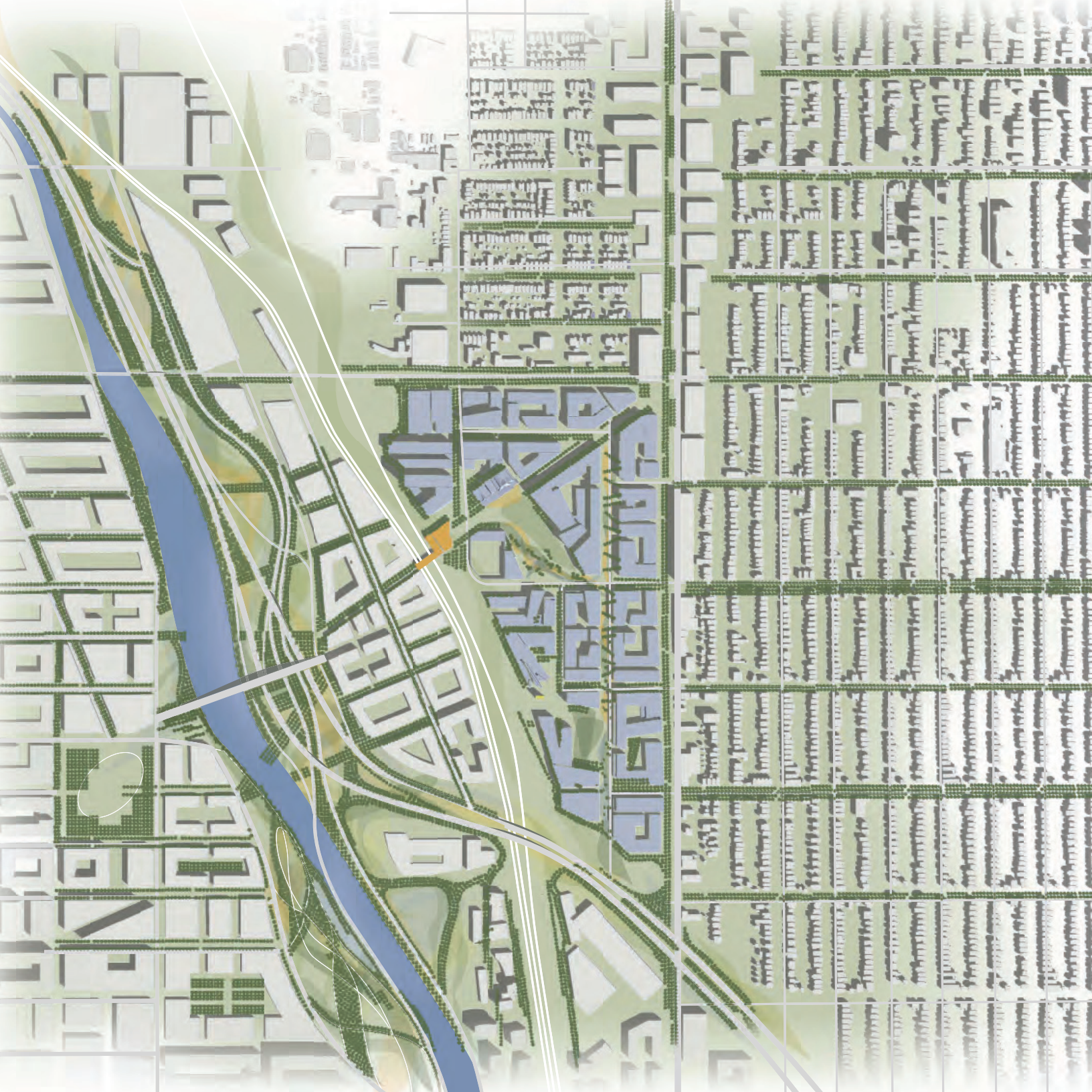
Several open spaces currently exist, with a rapidly-improving green network (Fig. 5.4) along the South Platte River corridor. Washington Park, the major open space east of the community is an invaluable resource for the redevelopment proposal. Missing is the link between the site, Washington Park, and the river corridor. The proposal addresses this issue by providing “green” links, pedestrian and nature-oriented corridors along the existing street grid focused on natural process and wildlife habitat. Improved water infiltration and water table recharge result from increased permeability along these corridors.

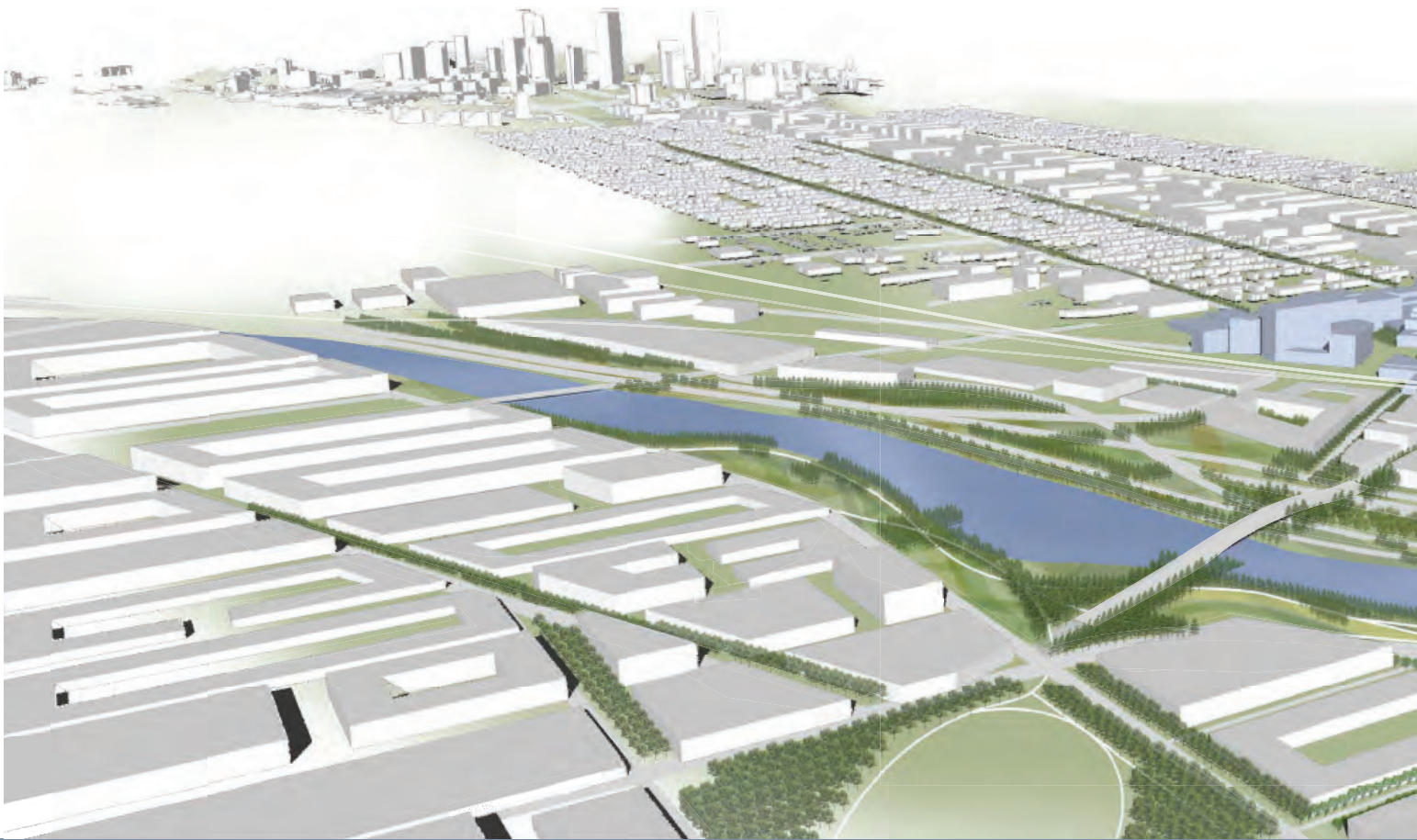
There is a tremendous opportunity for the DDD redevelopment to catalyze the entire river corridor to redevelop from its current light industrial use to an integrated mix of open space and dense mixed-use development. Enhanced pedestrian connection both north/south and east/west from the site throughout the region (Fig. 5.5) promotes a vibrant and diverse economic and cultural mix.



The site links across rail infrastructure to proposed TOD development sites west and south of the site. The South Platte River corridor is enhanced as development reorients along it, providing a unified green network from downtown Denver, past the site, and beyond (Fig. 5.6,5.7). Existing neighborhood connections are strengthened, and new connections are forged.

Top Left Fig 5.6 Site Strategy Diagram
 Right Fig 5.7 Site Study Area Master Plan
 Following Fig 5.8 Aerial Perspective





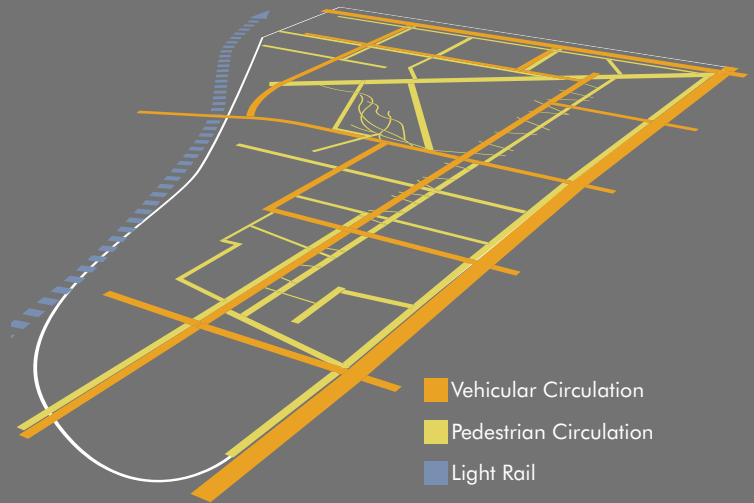
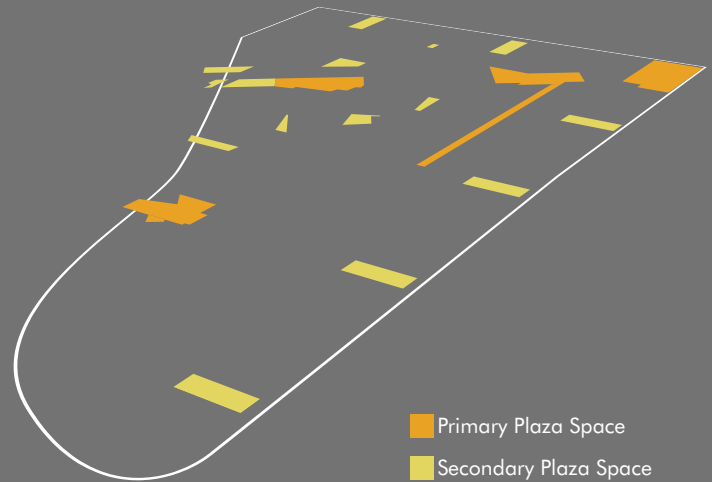
There is an incredible opportunity to catalyze development along



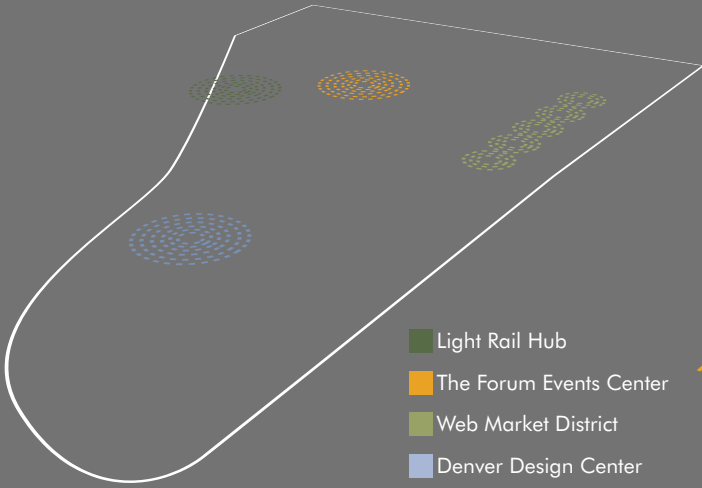
ty for the Denver Design District the South Platte River Corridor

Circulation focuses pedestrian and multi-modal transit, relegating vehicular movement to the site's periphery. Circulation is simple, conforms to the city grid, and provides complete and efficient movement throughout the site.

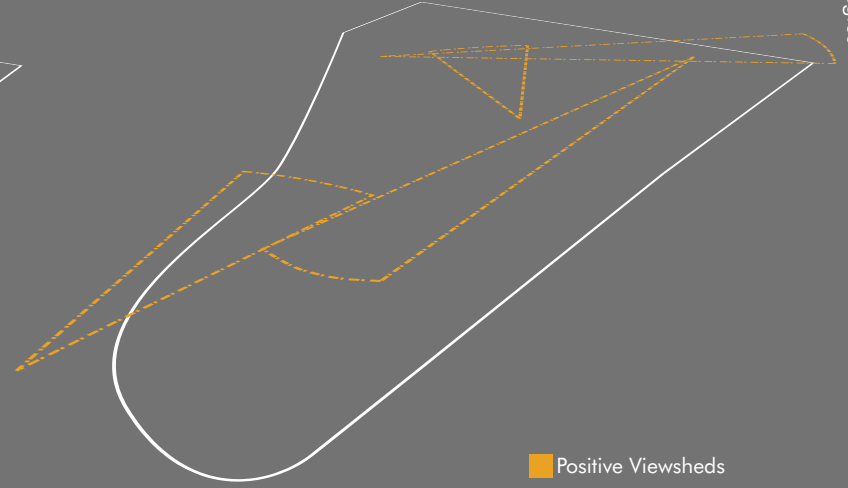
Increased permeability allows maximum water infiltration back into the water table. Nodes, webs, and networks joined together form a cohesive and innovative development strategy that maximizes the site's potential while addressing its constraints. Critical viewsheds throughout the site are protected and enhanced, while a mix of hardscape and green spaces provide necessary infrastructure for multiple programs, events, and activities (Fig. 5.8).



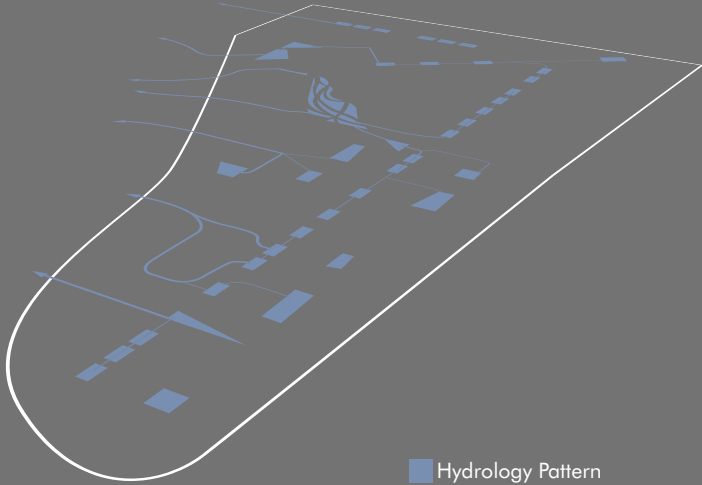
Right Fig 5.9 Development Site Strategy Diagrams



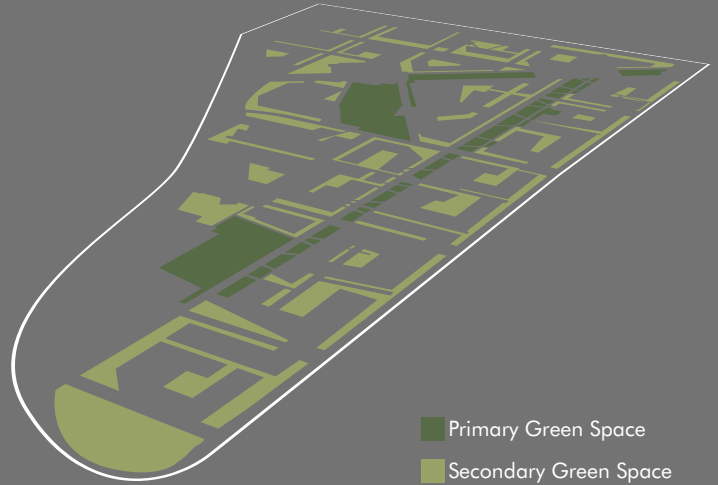
- Light Rail Hub
- The Forum Events Center
- Web Market District
- Denver Design Center



- Positive Viewsheds



- Hydrology Pattern



- Primary Green Space
- Secondary Green Space

The site (Fig. 5.9) focuses on Alameda station transforming from a simple light rail stop into an iconic structure that acts as the gateway for the DDD. A wide array of activities greet visitors and residents as they disembark from the station and enter the site. A wide pedestrian promenade cuts through the site, creating a direct pedestrian link between Alameda Station and the high-volume corner of Broadway Street and Alameda Avenue. To the north of the station is a hotel/conference center, taking advantage of the easy access to and from downtown Denver as well as Denver International Airport via the light rail system.

Development is oriented around a central green space adjacent to Alameda Station (Fig. 5.10). The Forum, a cultural events center and plaza sits at the north end of the green space. The Forum's architecture resembles the great Rocky Mountains to the west, while the shortgrass prairie that accounts for approximately sixty percent of the central green space resembles the prairie landscape to the east. The Bioscience research center is located on the eastern edge of the central green, with commercial/retail space on the ground level and residential units on the top two floors with spectacular views to the central green and Rocky Mountains to the west.

Along Broadway, increased density provides a dynamic mix of retail, commercial, office, and residential use while adhering to height and street frontage requirements set forth by the Main Street Ordinance. The Web Market District runs north/south adjacent to Broadway Street. This area is the primary restaurant, retail, and entertainment corridor on site. The Web Market District combines two recognizable archetypes in retail: the main street storefront and the outdoor mall. By combining transparent storefronts with a beautiful linear green space with a dense overhead tree canopy for shade, the Web Market District is transformed into a destination.

In response to the need to provide housing for people from all walks and in all stages of life, housing types on site range from studios to artist live/work lofts, to three and four bedroom apartments and condominiums for families.

Amenities on site also allow for a wide range of interests and tastes. The southern portion of the site provides recreation and living opportunities well suited for family living. A second green space provides opportunities for both passive and active recreation. Youth sports leagues, festivals, and cultural events can be held on this open space. Dense residential development lines the east side of the open space, while the Denver Design Center envelopes the south and west side.

The proposal enhances Denver Design Center's current program to become a more holistic art and design district. While maintaining its regional significance as a custom furniture center, the program expands to include many forms of art and design across a wide price range, increasing the potential audience for the area. Its location on site remains largely unchanged, as the architectural form of the Design Center wraps and amplifies the importance of the Herbert Bayer sculpture, the Denver Design Center's iconic logo.

Office space and marketing information in the form of logos and advertisements are placed on the southern portion of the development, maximizing the site's visual accessibility from Interstate 25. A mix of office and residential units take advantage of immediate multi-modal access provided by Broadway Station which is both a light rail stop and a major bus terminal. Landscape and open space provide the connective fabric linking individual elements and districts together, while architectural and street-level character identifies different districts as unique places within the site.

Right Fig 5.10 Development Site Master Plan
Following Fig 5.11 Open Space Looking North to the "Forum"



- 1 Alameda Multi-Modal Transit Station
- 2 Neighborhood Energy Distribution Plant
- 3 Programmable Green Space
- 4 The Forum
- 5 Web Market Street
- 6 Major Axial Access Promenade
- 7 Bio-Science Industry
- 8 Hotel / Convention Center
- 9 Gateway Plaza
- 10 Denver Design Center
- 11 Connection to Broadway Station



Scale: 1" = 200'







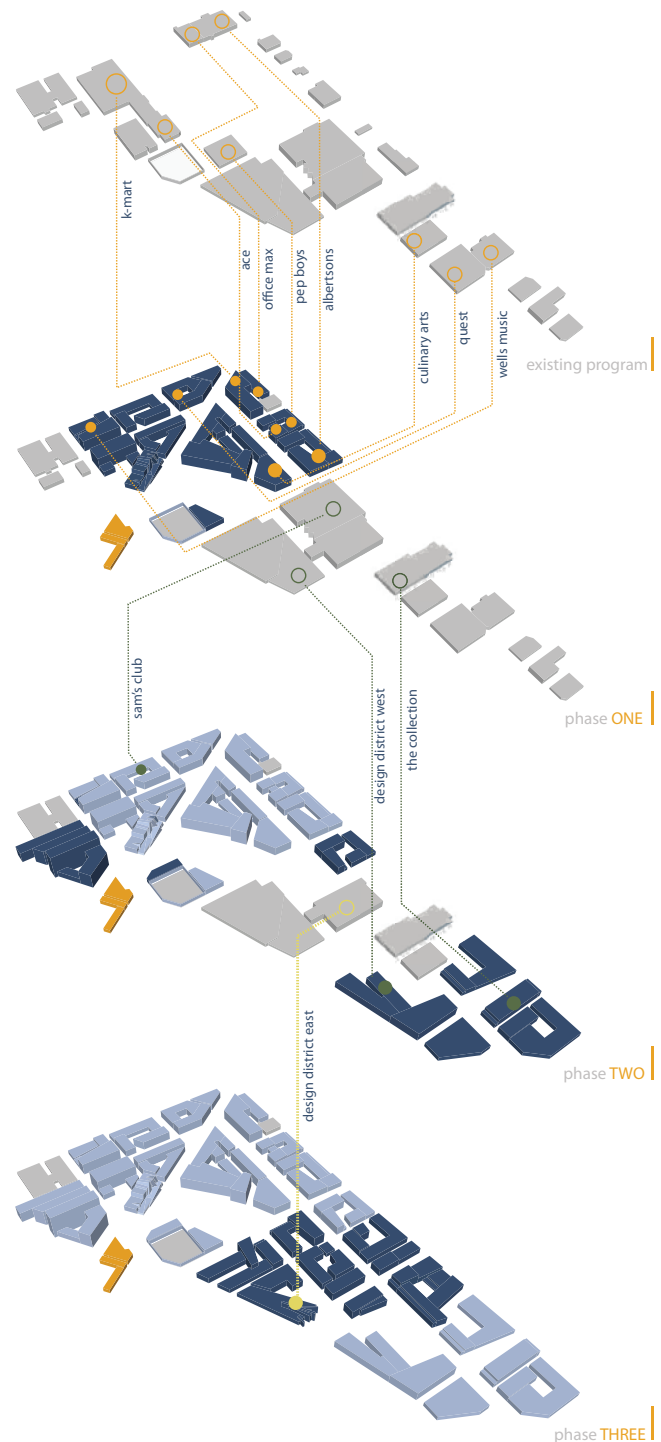
Phasing and tenant relocation are important parts of the success of the design proposal (Fig. 5.11). All tenants with Broadway Marketplace, the Denver Design Center, and The Collection must be accounted for throughout the redevelopment process. Site redevelopment is completed in three phases. There is a need to create new spaces for existing big-box development so that those tenants can be relocated before reconstruction on existing big-box sites.

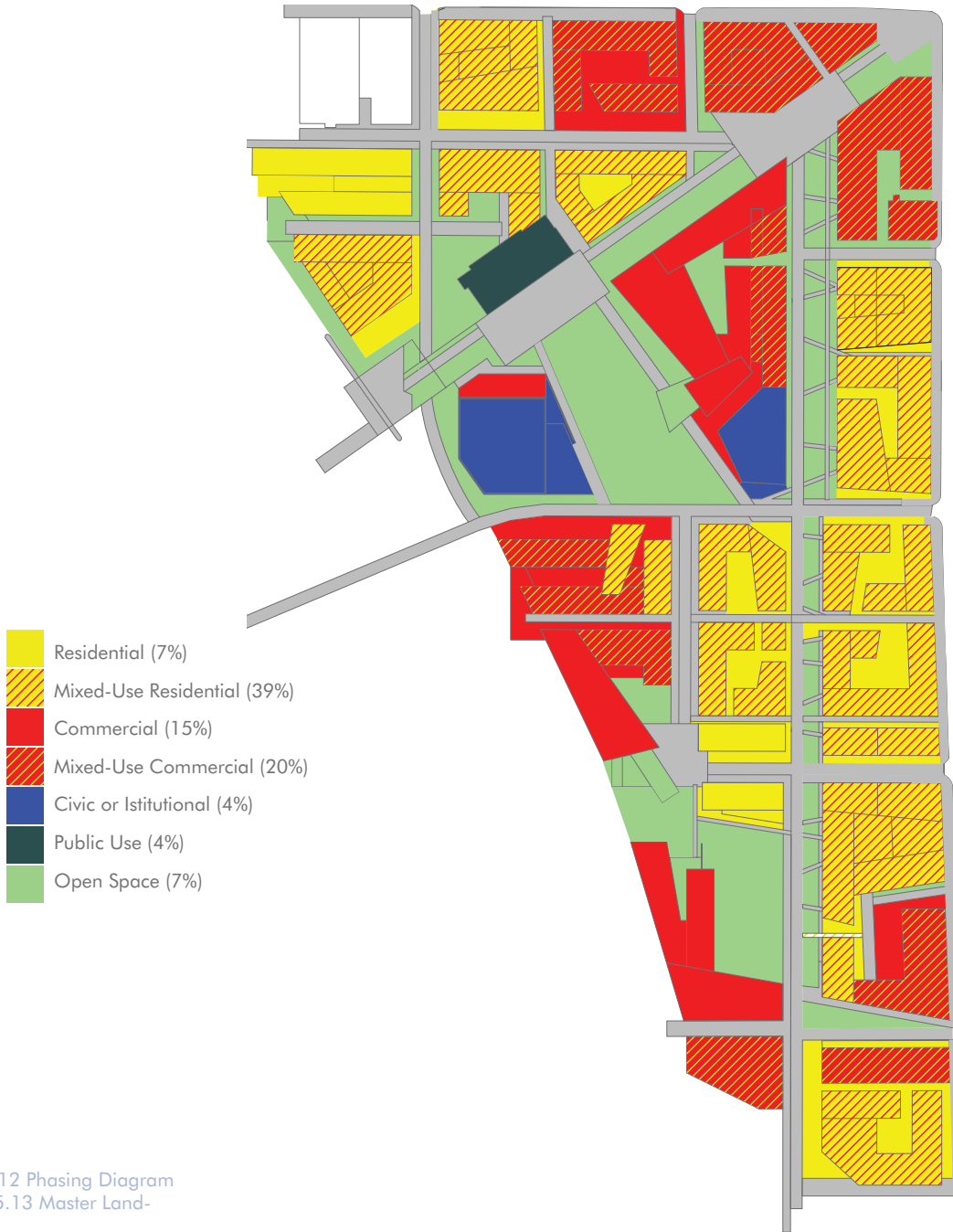
Phase one takes advantage of the vast area currently devoted to parking on site. By developing heavily in this phase, the site becomes an immediate destination and stand-alone project that can support itself if following phases do not occur. K-Mart, Office Max, Pep Boys, Albertson's, and Ace Hardware are relocated along Broadway Street and Alameda Avenue to provide improved vehicular access to these stores while keeping main vehicular circulation to the periphery of the site. Alameda Station and the Forum are developed in phase one through public-private partnerships. The Bioscience Research Center is privately developed, creating an immediate economic base for the site.

Phase two focuses heavily on residential and office space, taking advantage of the value added in phase one. The Denver Design Center restructuring begins in this phase with the western half of the Design Center moving south into newly created office space. The southern connection to Broadway Station is addressed with the addition of office and residential units with easy access to the light rail.

Phase three completes the Design Center and creates the connection between phase one and phase two. It is important to note that the most critical aspect of phasing is achieved by maintaining uninterrupted service for existing tenants while creating new spaces.

The master land-use plan (Fig. 5.12) provides a visual representation of the integration of different uses on site. Much of the site provides the opportunity for housing above retail, commercial, and office.





Left Fig 5.12 Phasing Diagram
Right Fig 5.13 Master Land-Use Plan

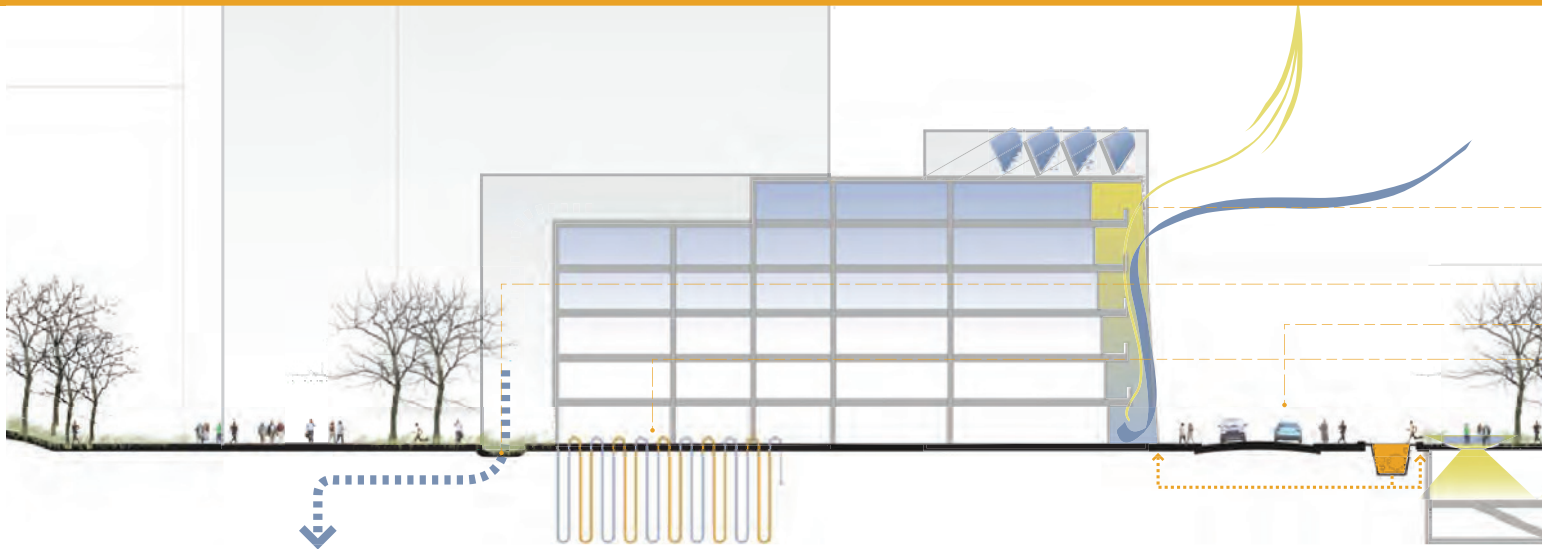
New strategies for sustainable architecture and site design are important for the future of urban site development as carbon footprint and operational efficiency concerns continue to grow. As a model, the site employs a core architectural concept (Fig. 5.13). Architectural design is based on flexible core construction and an adaptive skin. The core of the building follows simple geometries, allowing the building flexibility to accommodate multiple programs and business types. Wrapping the core is a dynamic adaptive skin. Because the skin is not critical to the building's load-bearing infrastructure, it can be adapted to new technologies, needs, or preferences without ruining the integrity of the core. Results are increased lifespan and seamless repurposing.

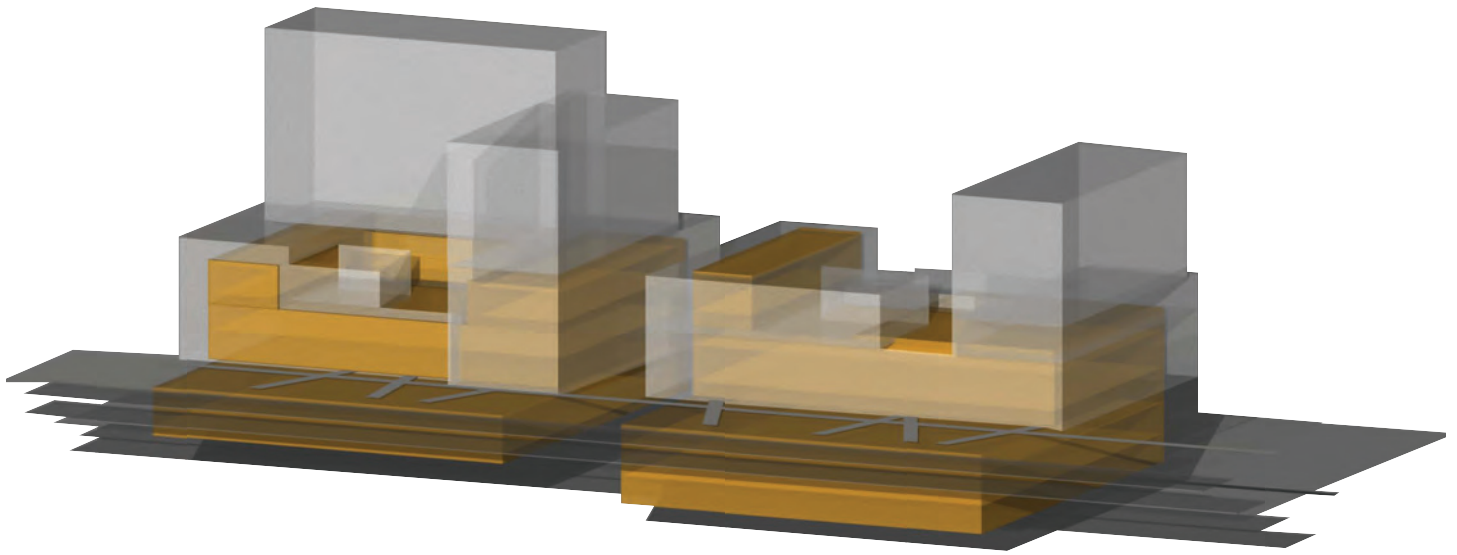
Denver is located in an arid climate, receiving only 15 inches of precipitation annually and only 10 inches of rainfall (intellicast.com, 2009). Therefore, the most important natural resource in the city of Denver is water. Water is protected through the Proprietary Water Doctrine, which states that it is illegal to catch and store rainfall or reuse greywater on site (CMG Fact Sheet, 2009). All water must be used only once before being allowed to enter back into the system for others to use downstream. Wind speeds are

not adequate in Denver to provide a feasible wind power supply source (noaa.gov, 2009). However, there are over 300 days of sunshine in Denver per year, making it an ideal location for both photo-voltaic and solar thermal power. Geothermal power is another viable option on site and can provide heating and cooling mechanisms for buildings.

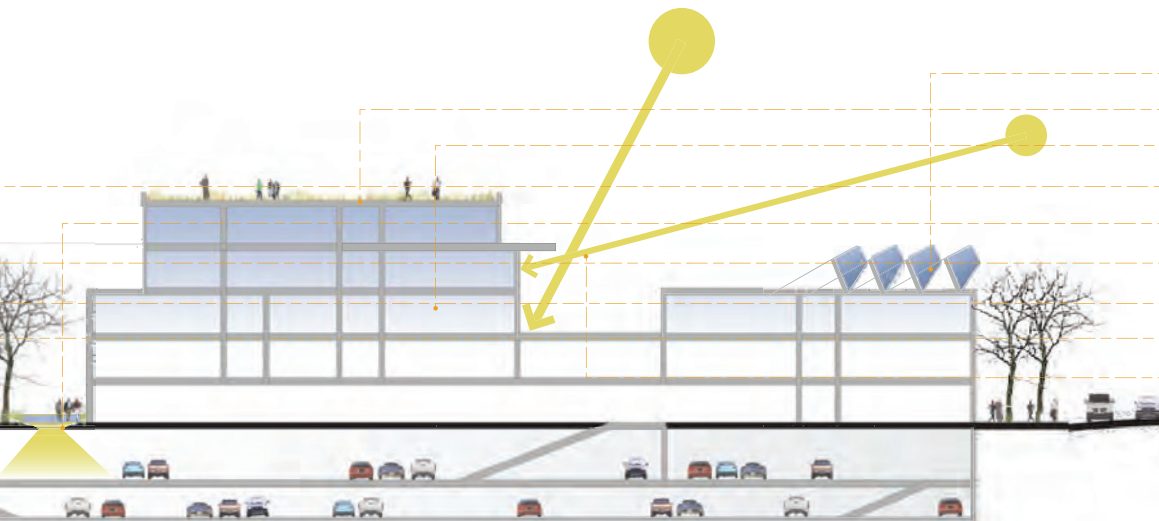
Again due to the arid climate, greenroofs are not a sustainable roof treatment type. Brownroofs are roofs covered with recycled substrate materials and allowed to colonize naturally, increasing biodiversity while helping to reduce the heat island effect (blackredstarts.org, 2009). Also, brownroofs use the substrate such as old asphalt and soil waste created during infill redevelopment, providing a sustainable alternative to dumping. Brownroofs are implemented on site for these reasons.

Buildings have live feedback systems and easily accessible infrastructure, reducing energy waste and allowing seamless integration of new performance-enhancing technologies as they are developed. Natural daylight provides passive heat and reduces need for electricity. Complete streets bundle infrastructure, increasing maintenance accessibility while multi-modal transit lanes promote alternative forms of transportation (Fig. 5.14).



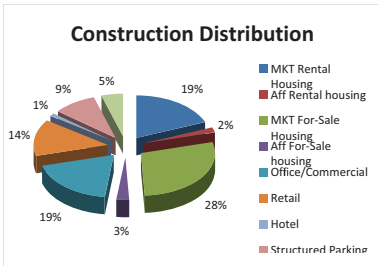


Top Fig 5.14 Architectural
 "Core" Concept Diagram
 Below Fig 5.15 Sustainable
 Systems Section



- photovoltaic energy
- brown/greenroofs
- flexible buildings
- adaptable architectural "skin"
- daylighting
- infiltration bio-swale
- complete streets
- geothermal heating
- solar orientation

1. Summary Pro Forma													
		Year 0			Phase 1			Phase 2			Phase 3		
		2009-10	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	
Net Operating Income (in thousand)													
Market-rate	Rental Housing		\$1,385	\$2,845	\$4,400	\$6,037	\$7,777	\$9,607	\$11,549	\$13,590	\$13,998	\$14,417	
	For-Sale Housing		\$28,565	\$29,283	\$30,161	\$31,066	\$32,150	\$32,958	\$33,947	\$34,965	\$0	\$0	
Affordable	Rental Housing		\$140	\$289	\$446	\$604	\$779	\$965	\$1,161	\$1,359	\$1,400	\$1,442	
	For-Sale Housing		\$2,635	\$2,591	\$2,668	\$2,748	\$2,831	\$2,916	\$3,003	\$3,093	\$0	\$0	
	Office/Commercial		\$2,728	\$6,091	\$9,411	\$11,832	\$13,978	\$16,454	\$19,066	\$21,820	\$22,475	\$23,149	
	Retail		\$2,190	\$4,512	\$6,971	\$8,816	\$10,354	\$12,188	\$14,123	\$16,163	\$16,648	\$17,147	
	Hotel		\$0	\$0	\$0	\$989	\$2,037	\$2,098	\$2,161	\$2,225	\$2,292	\$2,361	
	Structured Parking		\$3,825	\$7,879	\$12,174	\$15,048	\$18,084	\$21,288	\$24,669	\$28,225	\$29,072	\$29,944	
	Surface Parking		\$284	\$585	\$903	\$1,487	\$2,105	\$2,759	\$3,450	\$4,182	\$4,308	\$4,437	
	Other		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Total Net Operating Income			\$41,752	\$54,075	\$67,135	\$78,228	\$90,095	\$101,233	\$113,129	\$125,623	\$90,192	\$92,897	
Development Costs (in thousand)													
Market-rate	Rental Housing		\$4,425	\$4,933	\$7,629	\$12,128	\$13,485	\$16,658	\$20,025	\$23,563	\$24,270	\$24,998	
	For-Sale Housing		\$34,627	\$35,458	\$36,522	\$37,961	\$38,746	\$39,908	\$41,105	\$0	\$0	\$0	
Affordable	Rental Housing		\$3,275	\$240	\$248	\$2,769	\$263	\$270	\$279	\$271	\$0	\$0	
	For-Sale Housing		\$150	\$0	\$0	\$248	\$0	\$0	\$0	-\$4,038	\$0	\$0	
	Office/Commercial		\$18,940	\$17,013	\$10,514	\$12,153	\$11,154	\$11,489	\$11,834	\$0	\$0	\$0	
	Retail		\$12,276	\$10,777	\$6,660	\$7,851	\$7,066	\$7,278	\$7,496	\$0	\$0	\$0	
	Hotel		\$112	\$0	\$11	\$134	\$0	\$0	\$0	\$0	\$0	\$0	
	Structured Parking		\$9,682	\$8,724	\$5,395	\$5,556	\$5,723	\$5,895	\$6,055	\$0	\$0	\$0	
	Surface Parking		\$934	\$546	\$1,010	\$1,536	\$1,071	\$1,103	\$1,140	\$0	\$0	\$0	
	Other		\$9,500	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
	Total Infrastructure		\$21,322	\$0	\$0	\$8,197	\$0	\$0	\$0	\$0	\$0	\$0	
Total Development Costs			\$115,244	\$77,692	\$67,988	\$88,532	\$77,508	\$82,601	\$87,935	\$19,796	\$24,270	\$24,998	
Annual Cash Flow (in thousand)													
	Net Operating Income		\$41,752	\$54,075	\$67,135	\$78,228	\$90,095	\$101,233	\$113,129	\$125,623	\$90,192	\$92,897	
	Total Property Taxes		\$2,815	\$4,083	\$5,392	\$6,530	\$7,741	\$8,797	\$9,919	\$11,100	\$9,244	\$9,522	
	Total Asset Value	10%	\$4,175	\$5,407	\$6,713	\$7,823	\$9,009	\$10,123	\$11,313	\$12,562	\$9,019	\$9,250	
	Total Costs of Sale	5%	\$2,088	\$2,704	\$3,357	\$3,911	\$4,505	\$5,062	\$5,656	\$6,281	\$4,510	\$4,645	
	Total Development Costs		\$115,244	\$77,692	\$67,988	\$88,532	\$77,508	\$82,601	\$87,935	\$19,796	\$24,270	\$24,998	
Net Cash Flow			-\$76,307	-\$27,700	-\$6,244	-\$16,834	\$4,847	\$9,835	\$15,275	\$94,728	\$56,677	\$58,378	
Net Present Value		10%	-\$1,317										
Leveraged IRR Before Taxes			10%										
2. Multiyear Development Program													
		Phase 1			Phase 2			Phase 3					
		2011	2012	2013	2014	2015	2016	2017	2018	2019	2020		
Project Buildout by Development Units													
Market-rate	Rental Housing	1420 (units)	178	355	533	710	888	1065	1243	1420	1420	1420	
	For-Sale Housing	1690 (units)	212	423	634	845	1057	1268	1479	1690	1690	1690	
Affordable	Rental Housing	142 (units)	18	36	54	71	89	107	125	142	142	142	
	For-Sale Housing	169 (units)	22	43	64	85	106	127	148	169	169	169	
	Office/Commercial	1,345,717 (s.f.)	224,286	448,572	672,858	807,429	942,000	1,076,571	1,211,142	1,345,717	1,345,717	1,345,717	
	Retail	1,007,430 (s.f.)	167,905	335,810	503,715	604,458	705,201	805,944	906,687	1,007,430	1,007,430	1,007,430	
	Hotel	200 (rooms)	0	0	0	100	200	200	200	200	200	200	
	Structured Parking	3,738 (spaces)	623	1,246	1,869	2,243	2,617	2,991	3,365	3,738	3,738	3,738	
	Surface Parking	1,869 (spaces)	156	312	468	748	1,028	1,308	1,588	1,869	1,869	1,869	
Project Buildout by Area													
Market-rate	Rental Housing	1,349,000 (s.f.)	169,100	337,250	506,350	674,500	843,600	1,011,750	1,180,850	1,349,000	1,349,000	1,349,000	
	For-Sale Housing	2,028,000 (s.f.)	254,400	507,600	760,800	1,014,000	1,268,400	1,521,600	1,774,800	2,028,000	2,028,000	2,028,000	
Affordable	Rental Housing	134,900 (s.f.)	17,100	34,200	51,300	67,450	84,550	101,650	118,750	134,900	134,900	134,900	
	For-Sale Housing	2,028,000 (s.f.)	26,400	51,600	76,800	102,000	127,200	152,400	177,600	202,800	202,800	202,800	
	Office/Commercial	1,345,717 (s.f.)	224,286	448,572	672,858	807,429	942,000	1,076,571	1,211,142	1,345,717	1,345,717	1,345,717	
	Retail	1,007,430 (s.f.)	167,905	335,810	503,715	604,458	705,201	805,944	906,687	1,007,430	1,007,430	1,007,430	
	Hotel	75,000 (s.f.)	0	0	0	37,500	75,000	75,000	75,000	75,000	75,000	75,000	
	Structured Parking	672,858 (s.f.)	112,140	224,280	336,420	403,740	471,060	538,380	605,700	672,840	672,840	672,840	
	Surface Parking	336,429 (s.f.)	28,080	56,160	84,240	134,640	185,040	235,440	285,840	336,420	336,420	336,420	
	Other	0 (s.f.)	0	0	0	0	0	0	0	0	0	0	
Total		(s.f.)	999,411	1,995,472	2,992,483	3,845,717	4,702,051	5,518,735	6,336,369	7,152,107	7,152,107	7,152,107	
3. Unit Development and Infrastructure Costs													
Commercial Development Unit Costs	cost per s.f.	Unit Cost before Contingency	including 10% Contingency										
Market-rate	Rental Housing	100	95,000 (\$ per unit)	\$104,500									
	For-Sale Housing	120	144,000 (\$ per unit)	\$158,400									
Affordable	Rental Housing	95	90,250 (\$ per unit)	\$99,275									
	For-Sale Housing	115	138,000 (\$ per unit)	\$151,800									
	Office/Commercial		65 (\$ per s.f.)	\$72									
	Retail		55 (\$ per s.f.)	\$61									
	Hotel		90 (\$ per room)	\$99									
	Structured Parking		12,000 (\$ per space)	\$13,200									
	Surface Parking		3,000 (\$ per space)	\$3,300									
Infrastructure Development Costs													
Commercial Infrastructure													
near Feet of Infrastructure	9,250	feet	Other Infrastructure Improvements										
Average Street Width	35	feet		\$9,500,000									
Total Square Footage	323,750	s.f.	Total Infrastructure Costs										
Infrastructure Cost per SF	35		\$20,831,250										
Subtotal	11,331,250												
Other Infrastructure Improvements													
Park/Landscaping	9,500,000												
Total Infrastructure Costs	\$20,831,250												



Left Fig 5.16 Summary Pro Forma

While the program and site design synthesize many complex factors, producing a financial plan for the development creates yet another level of complexity and need for team collaboration. The executive summary pro forma (Fig. 5.15) sums up all financial costing for the development of the project in three phases over a ten year time period. Net operating income breaks down estimated income per year for each development type such as housing, retail, or parking. Development costs break down the same categories and show how much it will cost each component in each year to develop. Net operating income totals minus total development costs produce each year's net cash flow. The summary pro forma shows that the development proposal will see its first positive net cash flow in year five of development.

The Internal Rate of Return (IRR) is the critical percentage used by investors to determine whether or not a project is a feasible investment. While it varies with the size of the project, a positive IRR ranges between nine (9) and eleven (11) percent. For the DDD, the leveraged IRR is estimated at ten

(10) percent, indicating that the project is in fact a profitable investment opportunity.

The multiyear development program indicates the total buildout of all units and square footages on site and breaks down each year's development. Assumptions were gathered from market research and used to provide unit development and infrastructure costs for each development unit type. Infrastructure, landscape, and commercial development all needed to be considered within the development costs. Construction distribution specifies the percent land allocation to each development type on site. Housing and office/commercial comprised the majority of development, while open space was five (5) percent of total square footage buildout. Development assumptions were made using (CB Richard Ellis 4th Quarter Market Outlook, 2008).

While the summary pro forma was the only printed portion of financial information given to the jury, there were several spreadsheets that fed into the summary.

Announcement / Critique

On the fifteenth day, with all work complete and all materials packaged, the **touch** proposal was submitted to ULI in Washington D.C. for judging and the team was left to wait for news.

On March 19, four days before the official announcement was to be made, I received a phone call from the Urban Land Institute informing me that the **touch** proposal had been selected out of 91 completed proposals as one of four teams selected for the finalist round of the competition.

In the days that followed, we were provided with a jury critique of our design (Fig. 5.16), indicating areas of strength and weakness. Our financial score rated 2.78 out of 5 overall, a low score. The low score was due in large part to our failure to provide equity sources for our development. Strengths included analysis at the regional, neighborhood, and market levels as well as our ambitious design plan and allocation of open space. Areas of concern included the aforementioned equity source issue and the need for enhanced connection to Broadway Station to take better advantage of the light rail.

STUDENT FEEDBACK WORKSHEET

Team #: 3909

Jury Team #: 2

Submission Title: touch

	Weak		Strong			Notes
	1	2	3	4	5	
FINANCIAL REPORT						
Internal logic of proforma	<input type="radio"/>	<input type="radio"/>	✓+	<input type="radio"/>	<input type="radio"/>	debt to ratio not stated
Feasibility/Phasing	<input type="radio"/>	<input type="radio"/>	✓+	<input type="radio"/>	<input type="radio"/>	
Equity sources	✓	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Overall Financial Rating (1-5)	2.78		Overall Comments:			

	Weak		Strong			Notes
	1	2	3	4	5	
ANALYSIS						
Regional context	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="checkbox"/>	<input type="radio"/>	Does a good job jumping outside project boundaries
Neighborhood context	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="checkbox"/>	<input type="radio"/>	
Market analysis	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="checkbox"/>	<input type="radio"/>	
PLANNING						
Land use plan	<input type="radio"/>	<input type="radio"/>	<input checked="" type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	
Massing and scale	<input type="radio"/>	<input type="radio"/>	<input checked="" type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	
Connectivity	<input type="radio"/>	<input type="radio"/>	<input checked="" type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	
DESIGN						
Urban design	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="checkbox"/>	<input type="radio"/>	Ambitious plan
Open space	<input type="radio"/>	<input type="radio"/>	<input checked="" type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	Allocation of open space is well done
Architectural character	<input type="radio"/>	<input type="radio"/>	<input checked="" type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	Greenway by tracks less useful
DEVELOPMENT						
Development plan	<input type="radio"/>	<input type="radio"/>	<input checked="" type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	
Tenant accommodation	<input type="radio"/>	<input type="radio"/>	<input checked="" type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	
Affordable housing	<input type="radio"/>	<input type="radio"/>	<input checked="" type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	
Infrastructure	<input type="radio"/>	<input type="radio"/>	<input checked="" type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	
PRESENTATION						
Evidence of interdisciplinary approach	<input type="radio"/>	<input type="radio"/>	<input checked="" type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	
Organization of content	<input type="radio"/>	<input type="radio"/>	<input checked="" type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	
Graphics and communication	<input type="radio"/>	<input type="radio"/>	<input checked="" type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	
CREATIVITY AND VISION	<input type="radio"/>	<input type="radio"/>	<input checked="" type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	
THE CITY IN 2050	<input type="radio"/>	<input type="radio"/>	<input checked="" type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	

Overall comments on submission

Could improve connection to south station to better take advantage of light rail.

“It must be a bold
some reality...if it
going to lose, if it
you’re going to lo

d vision based in
's meek you're
's stupidly bold
se."



Finalist Response



The Final Four

Joining our team in the finalist round were teams from Columbia, the Massachusetts Institute of Technology (MIT), and the University of Miami. Each team would now have an additional month to refine and enhance their original scheme before presenting to the jury in Denver.

Finalist Brief

Unlike previous years, this year's finalist stage of the competition did not select a small catalyst site for refined development. Instead, each team was asked to continue refining their original scheme for the entire site, specifically addressing what life would be like in the DDD at a very detailed level. Only two requirements were given for the finalist stage.

- **Revise** and expand the original scheme and pro forma based on team reflection, critique, and jury feedback. Along with expansion and revision, the jury asked the teams to address specific issues:
 - **Parking:** In general, the jury felt as if parking revenues were not based on market realities. Teams needed to address whether charging for parking is feasible and if so, decide how much could be charged.
 - Define how the public spaces work and why they are located where they are.
 - Architectural typologies
 - Linkages and edges
 - Bicycle and pedestrian infrastructure
 - Recreational amenities
 - **Human scale:** Address how the buildings and spaces relate to people and the building to side-walk relationship.

- Tenant relocation and product delivery
- Phasing
- Carbon footprint over time
- Overall operational efficiency in terms of energy
- Alameda Station: Define its role and function in the overall design.
- **Create** a comprehensive, street level, panoramic viewplane that captures the anchoring role and catalytic potential of Alameda Station while depicting the site at a scale and streetscape level of detail heretofore unseen. In other words, describe what the site looks like at street level, focusing specifically on the experience approaching and leaving Alameda Station. Articulate the choices for people around the station, the landscape, and land uses.

Presentation Requirements

All teams would travel to Denver to present both their originally submitted and the finalist stage boards to the jury in twenty minutes. Following up the presentation would be a twenty minute jury question and answer session. A simple six-slide PowerPoint presentation could be used and may include any financial information the team deemed necessary. However, any graphic elements shown on the PowerPoint must be part of the presentation boards.

Original boards needed to be enlarged 175-200% from their original size and finalist stage boards were required to be 30"x40". Final boards needed to be easily legible from 15'. The oral presentation must involve every member of the team, either during the presentation or to answer questions posed by the jury during the question and answer period.

(udcompetition.uli.org)

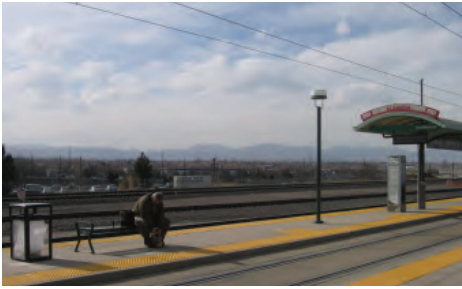


Columbia University

Massachusetts Institute of Technology

University of Miami

Kansas State University



Site Visit

On March 6, the Urban Land Institute held a site visit for the finalist teams in Denver. During the visit, the teams met with several organizations and individuals involved with the project and site to discuss the key issues and potentials for the site in greater depth. Following the meetings, teams rode the light rail from downtown Denver to the DDD for a walking tour of the site (Fig. 6.1). Walking the site helped develop new insights and confirm previous site analysis. Following the site walk, the group toured the adjacent neighborhoods and Denver metro area to better understand the

site's regional context and to discuss the character of the city and current development projects.

The last stop of the day placed the teams back in downtown Denver where we were able to meet with Mark Johnson, Founder of Civitas in Denver and former jury member, to discuss final presentations. We gained valuable insights as to what the jury is looking for, question types that will be asked, and strategies for final design solutions.



Final Response

Final response differs from the initial submission as the emphasis shifts from a blind judging competition to a presentation format. Because we were asked to expand on the entire original scheme rather than reconstructing a smaller portion of the site as the competition has requested in years past, the main vision and site concepts remained the same.

The challenge for the team was to articulate all of the information gathered, the opportunities and constraints discovered about the site, and how the team responded based on

our findings. Twenty minutes is a very short amount of time to adequately discuss the complexity of the site and proposal, so the information needed to be clear and succinct. Both the presentation and graphic representation of the final design solution boards (Fig. 6.2) needed to be very useful in helping the jury make their decision.

Right and Above Fig 6.1 Site Visit Photographs

touch

Create a unique, sustainable neighborhood within Denver focused on multi-modal transportation and a vibrant lifestyle.

Four principles comprise this vision:

CONNECT
CREATE
SUSTAIN
CONVERGE

touch connect create sustain converge



Housing for Education
 Industry Partnership
 and Educational Research
 Link Resources

Year	2004	2005	2006	2007	2008	2009	2010	2011	2012
Value	1,244	5,910	4,200	11,460	1,485	8,910	84,600	148,344	148,344
% Change	-	374.6%	-22.6%	188.9%	-74.6%	226.6%	100.0%	100.0%	78.9%
Value	45	29	147,025	5,319	569,443	569,443	569,443	569,443	569,443
% Change	-	-35.6%	1,827.8%	10.2%	100.0%	100.0%	100.0%	100.0%	100.0%
Value	9,761	44,200	44,200	4,200	4,200	4,200	4,200	4,200	4,200
% Change	-	352.5%	0.0%	-64.3%	-0.0%	-0.0%	-0.0%	-0.0%	-0.0%
Value	8,664	8,664	8,664	8,664	8,664	8,664	8,664	8,664	8,664
% Change	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Bridge Socio-Economic Divide



Initiate Corridor Regeneration



Alameda Station and Merchants Park Plan

- 1 Alameda Station and Pedestrian West Link
- 2 Retail / Commercial Wrapping Substation
- 3 Flexible Shade Structure
- 4 Hotel / Alameda Station Structured Parking
- 5 Ten-Story Residential Supporting Transit
- 6 Cultural / Recreation Center
- 7 Programmable Multi-Scope Event Space
- 8 Native Planting Area with Fallowing System
- 9 Eight-Story Residential Building
- 10 Bioregional Research Center / Rooftop Lofts
- 11 Elevated Interior Courtyard
- 12 Outdoor Cafes / Seated Seating Area



Phase 1 Tenant Relocation Program

Broadway/Merchants: 25,000 sq ft
 Two-Calendar: 117,000 sq ft
 Denver Design Center: 2011



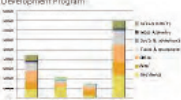
Phase 2 Tenant Relocation Program

Broadway/Merchants: 25,000 sq ft
 Two-Calendar: 117,000 sq ft
 Denver Design Center: 178,144 sq ft



Phase 3 Tenant Relocation Program

Broadway/Merchants: 25,000 sq ft
 Two-Calendar: 122,000 sq ft
 Denver Design Center: 42,022 sq ft



View Exiting Alameda Station 1



Merchants Park facing West 2



Parking Strategy



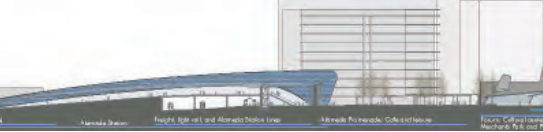
Broadway Station Connection



Network Link Synthesis



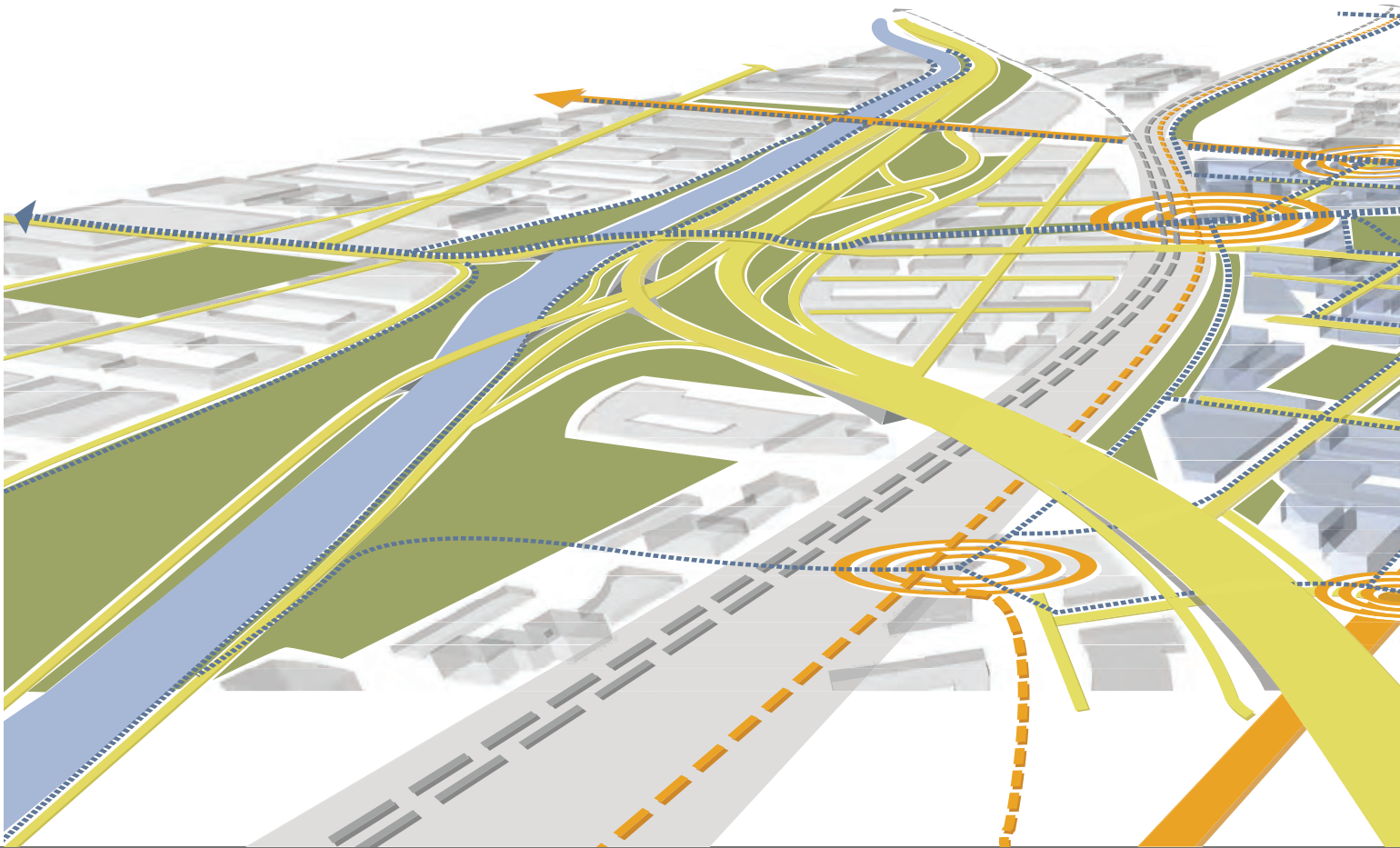
Section AA



Alameda Station



Above Fig 6.2 Finalist Round Presentation Board



Connect

Connect addresses the physical links to, from, and throughout the site (Fig. 6.3). At the regional scale, there is a great opportunity to enhance connections to existing Baker and West Washington Park neighborhoods north and east of the site and proposed transit-oriented developments south and west of the site. Respecting the current city grid on site provides this critical access from existing neighborhoods. New connections across the rail lines to the west and south are made via pedestrian bridges and vehicular roads.

Washington Park and the South Platte River Corridor are major open spaces in Denver. Currently the access to these two amenities is limited or nonexistent. Green corridors provide pedestrians and bicyclists uninhibited movement to these destinations from the site.

Along Broadway Street and Alameda Avenue, there is currently weak and disjointed architectural mass. The corner of Broadway and Alameda is a critical intersection for pedestrian, vehicular, and public transportation access onto the site. A strong link between Alameda Station and this intersection is created to enhance visual access and physical movement.

Below Fig 6.3 Nodes, Links, and Connections Diagram



Building mass along Broadway Street and Alameda Avenue is increased, as is the diversity of commercial, retail, office, and residential opportunities.

Denver's light rail system is the most critical component of the proposal as it allows development on site to move away from the current car-centric model which supports big-box development. Currently, Alameda Station is little more than an unused and unnecessary stop along the light rail, while infrastructure inhibits access from the site to Broadway Station. This proposal sees Alameda Station as the site's catalyst and responds by transforming it into an iconic

architectural piece, multi-modal transit hub, and gateway into the DDD from which the design unfolds. Access to Broadway station is enhanced through improved infrastructure and open space, welcoming pedestrians onto the site.

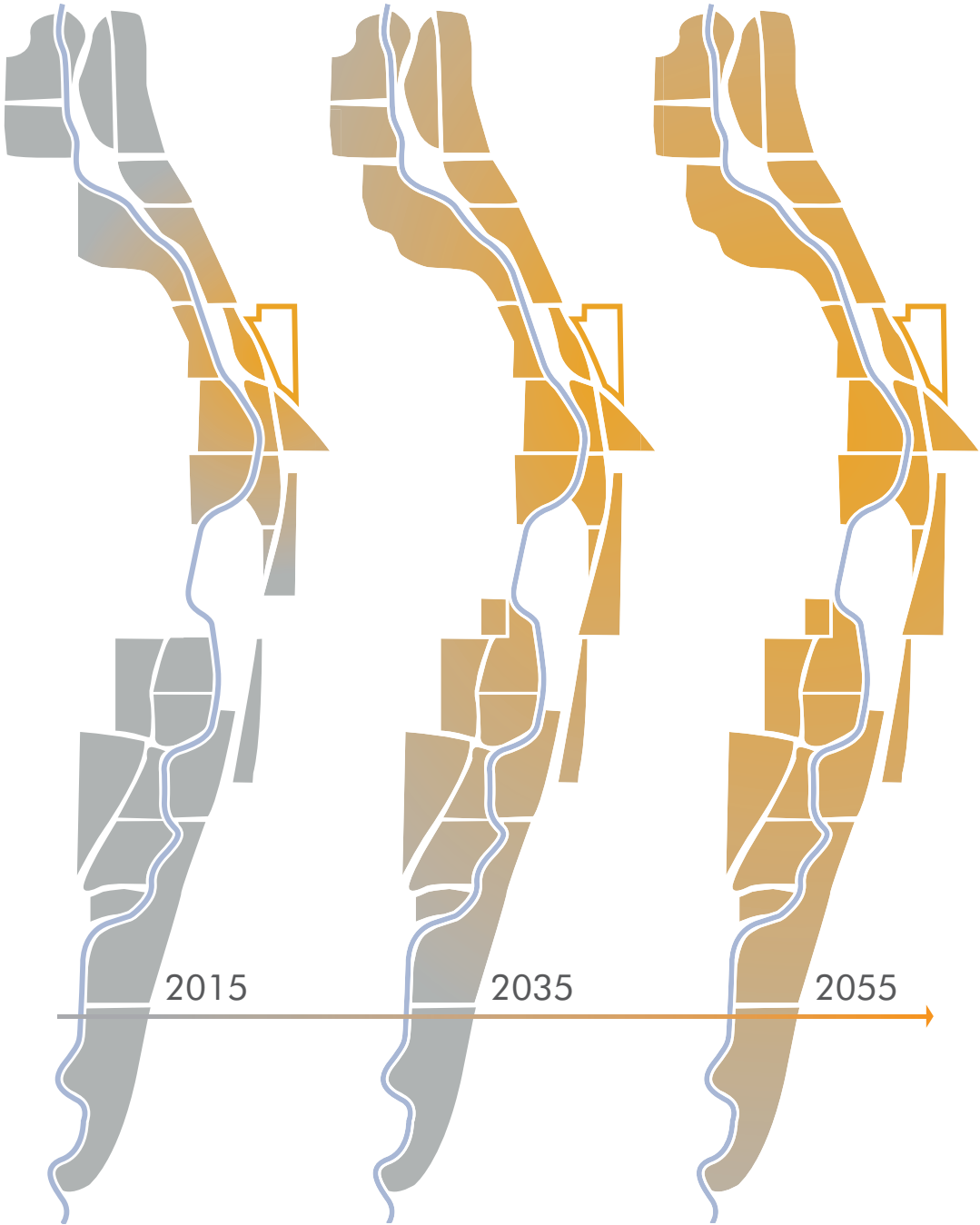
Circulation within the site is simple and clear, focused on the pedestrian experience and relegating vehicular traffic to the periphery. Bicycle path connections to adjacent development are increased through on-street bike lanes and a bike/running path along the western edge of the site.

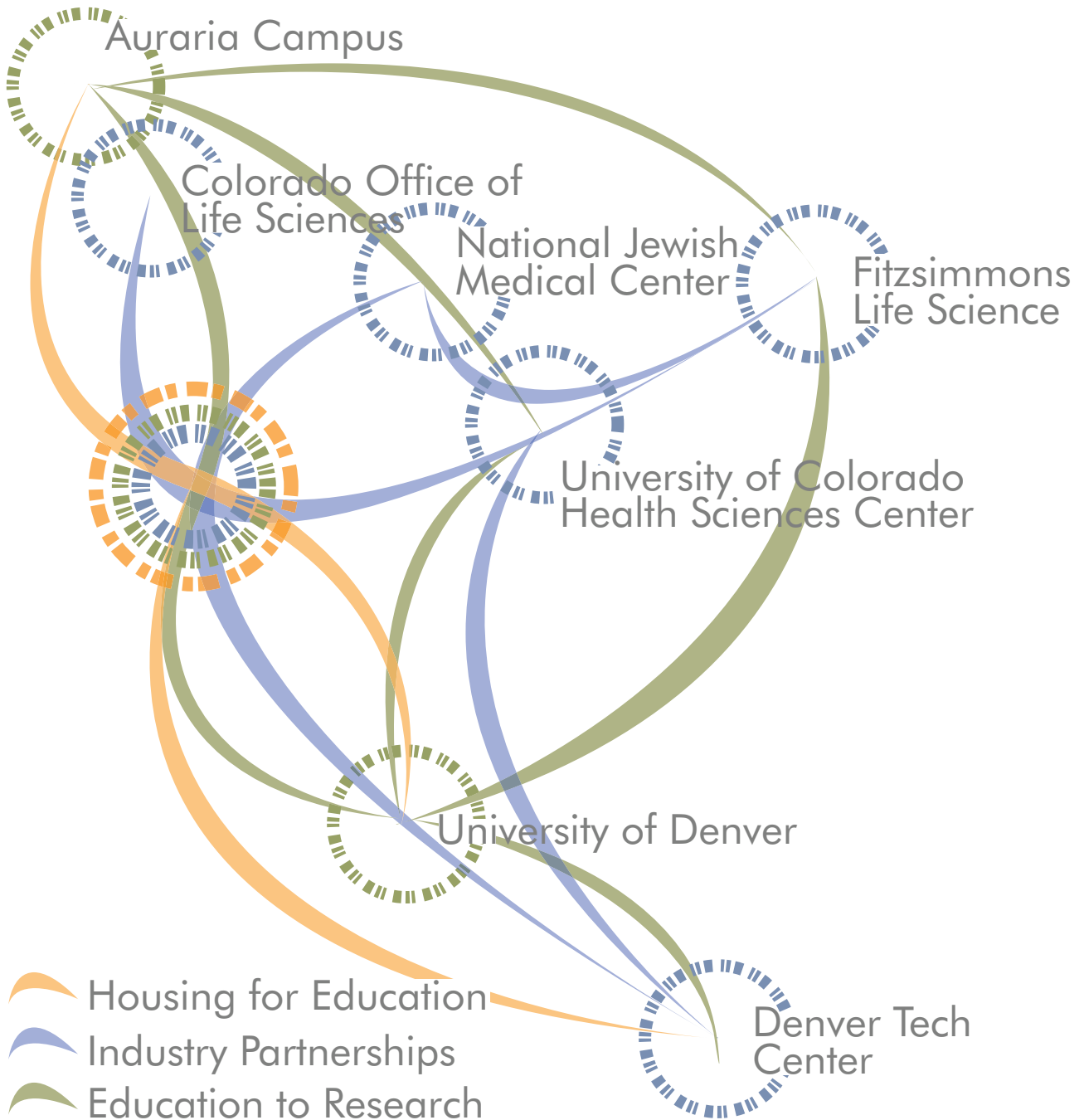
Create

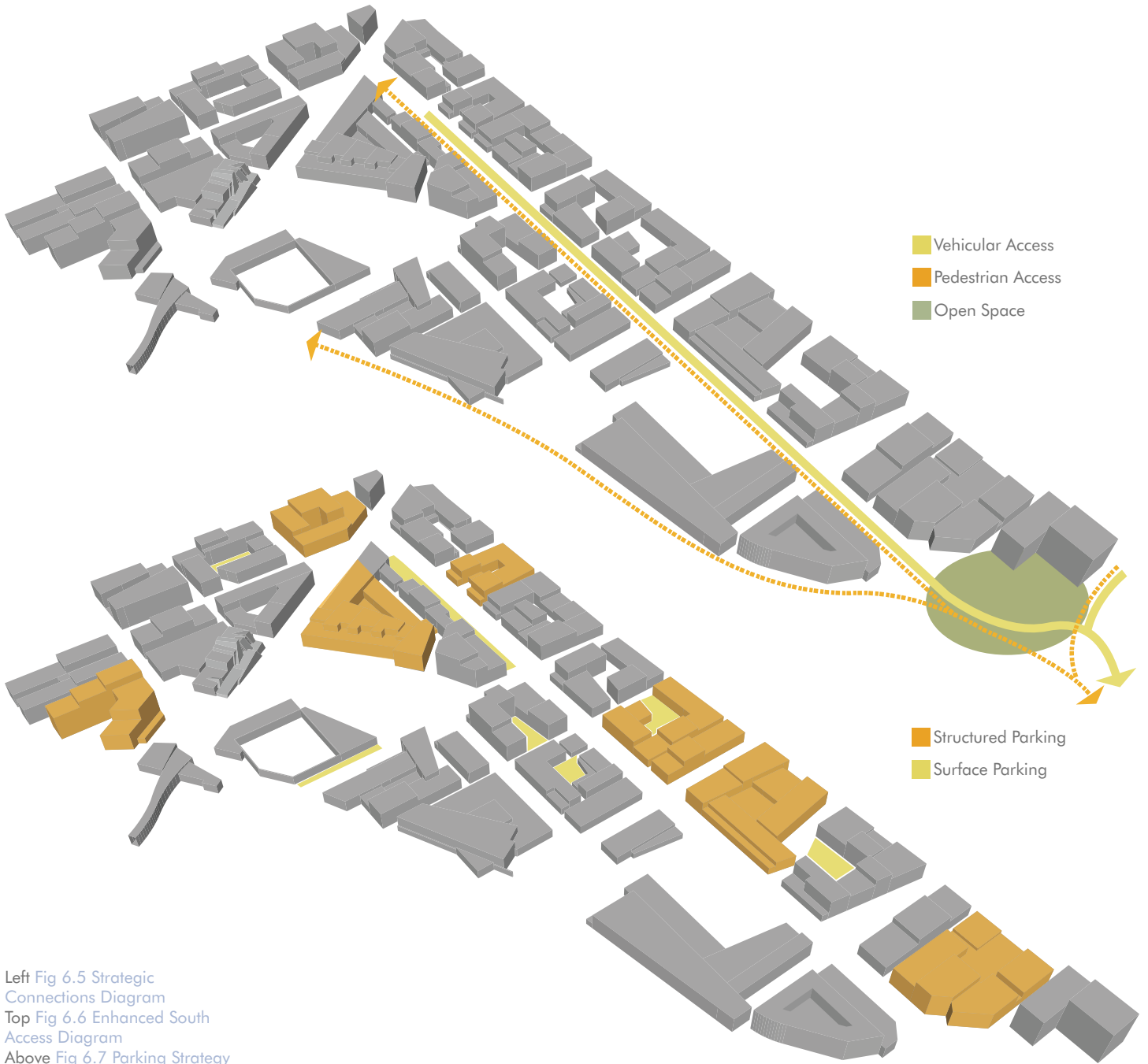
Create harnesses the potential for the DDD site to catalyze redevelopment along the South Platte River Corridor (Fig. 6.4). Current light industrial land use transforms into dense, vibrant, mixed-use development facing the river. The DDD is among the first of many redevelopment projects in the area as emphasized by the rezoning of adjacent land parcels for urban renewal.

With a diverse mix of housing, economy, retail options, and open space, the Denver Design District becomes an essential hub in Denver for a myriad of activities. Light rail access creates opportunities for business and education partnerships, specifically with Auraria Campus, Denver University, University of Colorado Health Sciences Center, Fitzsimmons Life Science Center, Denver Tech Center, and Denver's CBD (Fig. 6.5).

Structured parking replaces street-level parking, creating opportunities for dense development around beautiful open space (Fig. 6.6). The proposed parking strategy removes the vehicle as the preferred mode of transportation, placing emphasis back on the pedestrian experience (Fig. 6.7). Strategic redevelopment phasing maintains current tenants and incorporates new options for residents and customer.

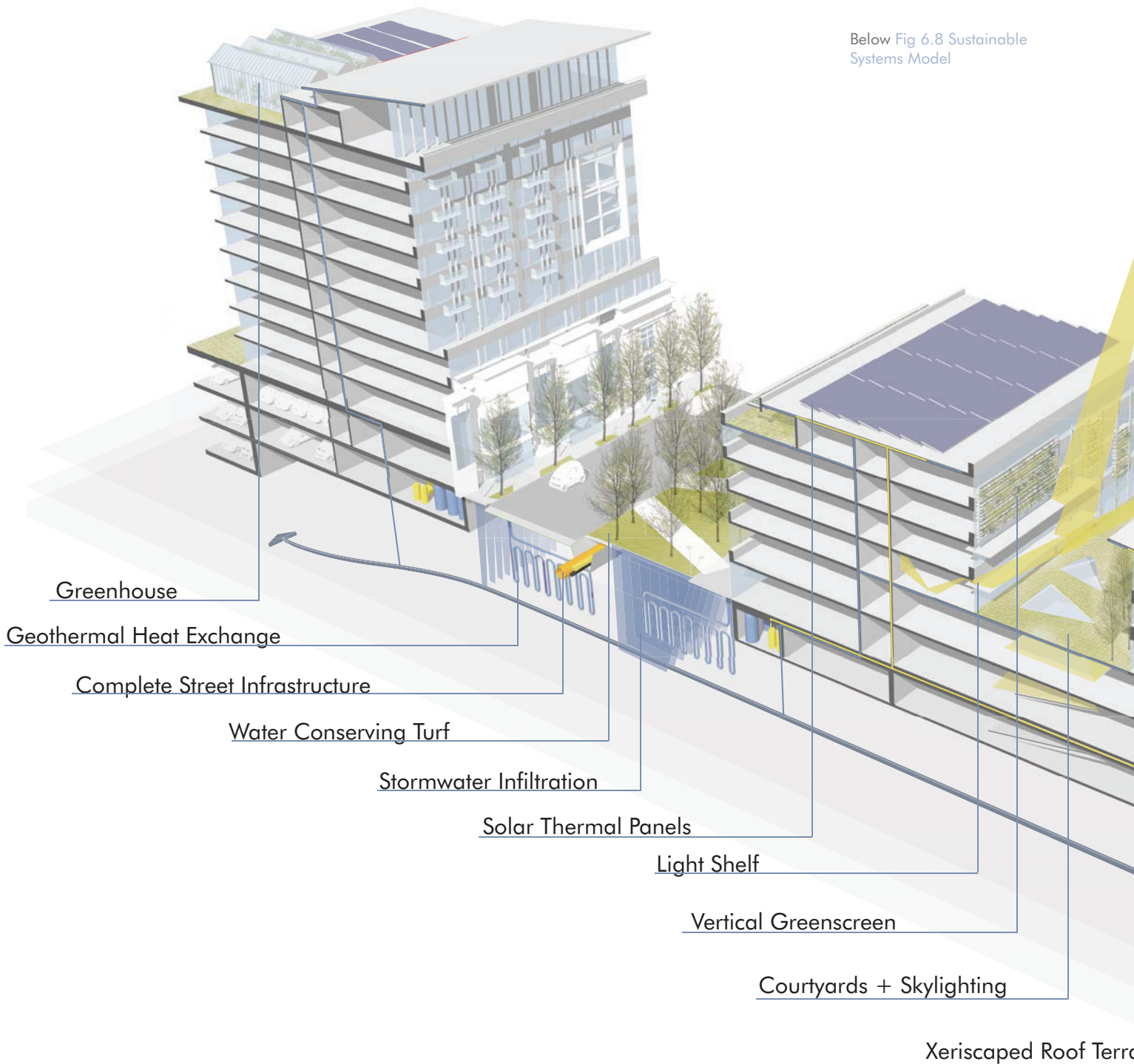


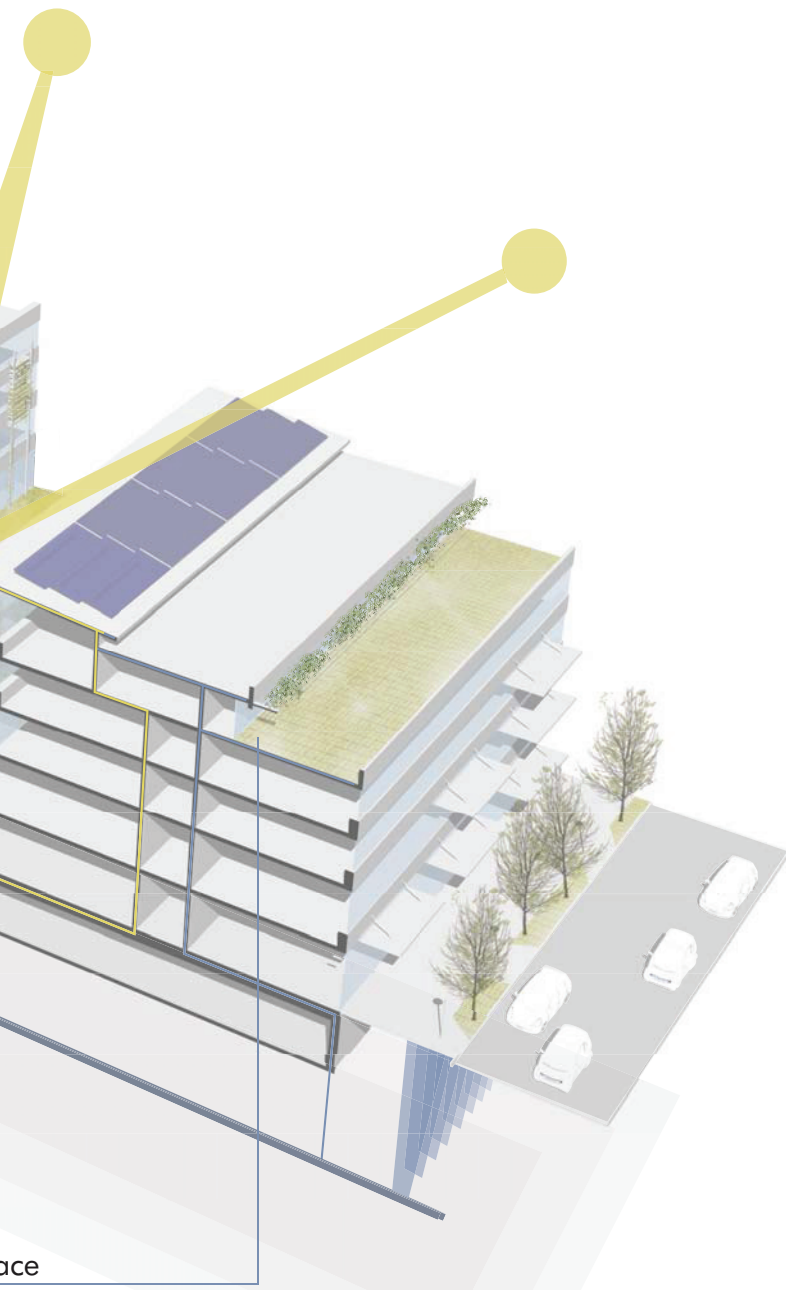




Left Fig 6.5 Strategic
Connections Diagram
Top Fig 6.6 Enhanced South
Access Diagram
Above Fig 6.7 Parking Strategy

Below Fig 6.8 Sustainable Systems Model





Sustain

Sustain focuses on a healthy population, environment, and economy now and into the future through smarter, more efficient energy and operational systems, and programmable structures and spaces (Fig. 6.8). Carbon footprint reduction is achieved through reduced vehicular transit, intelligent distribution of goods, and use of renewable energy resources on site.

As previously stated, water capture and reuse is illegal in the state of Colorado. As a model for the site, architectural elements are implemented that reduce the amount of water used per unit. Native plantings are used over much of the site, reducing the need for irrigation, and water is directed to permeable green space where it can then replenish the water table and ultimately flow back into the South Platte River.

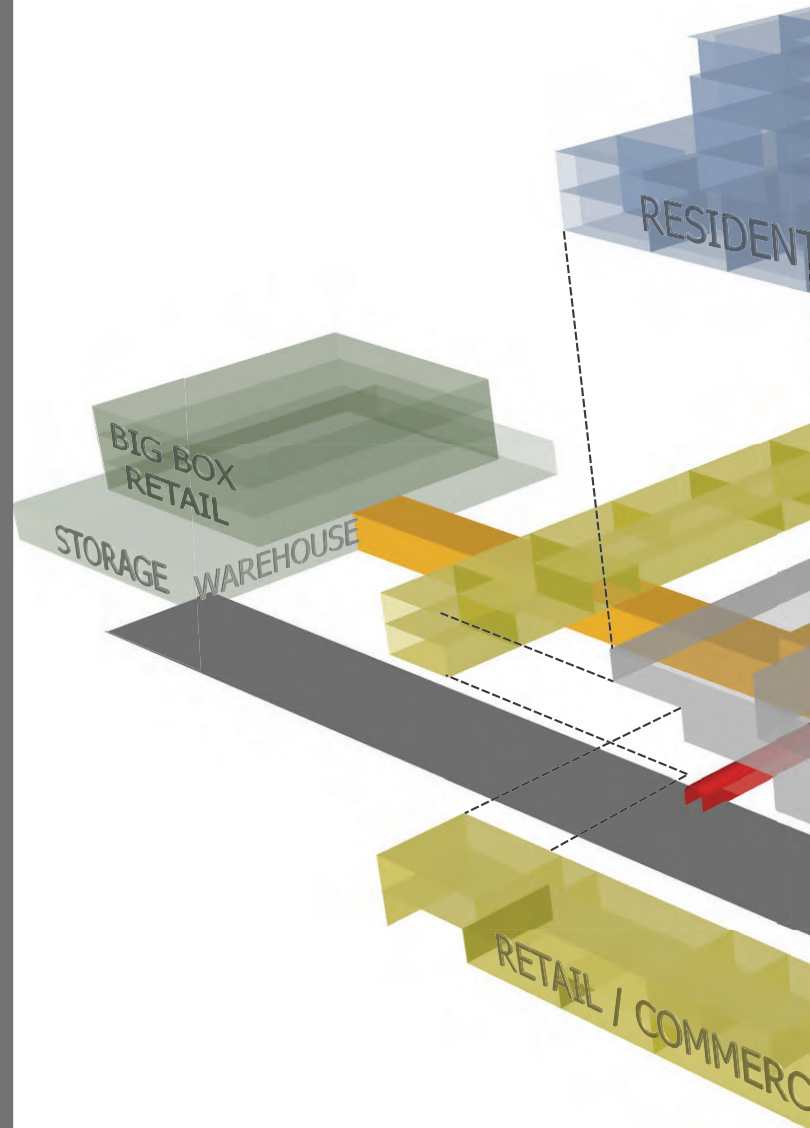
Energy is provided throughout the site through a combination of photovoltaic and solar thermal panels and the use of geothermal heat exchange. Architecture incorporates skylights and light shelves to allow passive solar heating in the winter, while waterless vertical green screens and brownroofs protect against direct summer sunlight, further reducing electricity requirements. Complete streets bundle infrastructure into a single accessible corridor allowing easier and more efficient maintenance. Bike lanes work with vehicular traffic seamlessly, providing more options for transit.

Because Denver is in an arid climate and temperatures are below minimum temperatures for crop growth four to five months of the year, outdoor urban farming is not a viable option. Instead, buildings are equipped with rooftop greenhouses that provide a place for community gardens that flourish year-round.

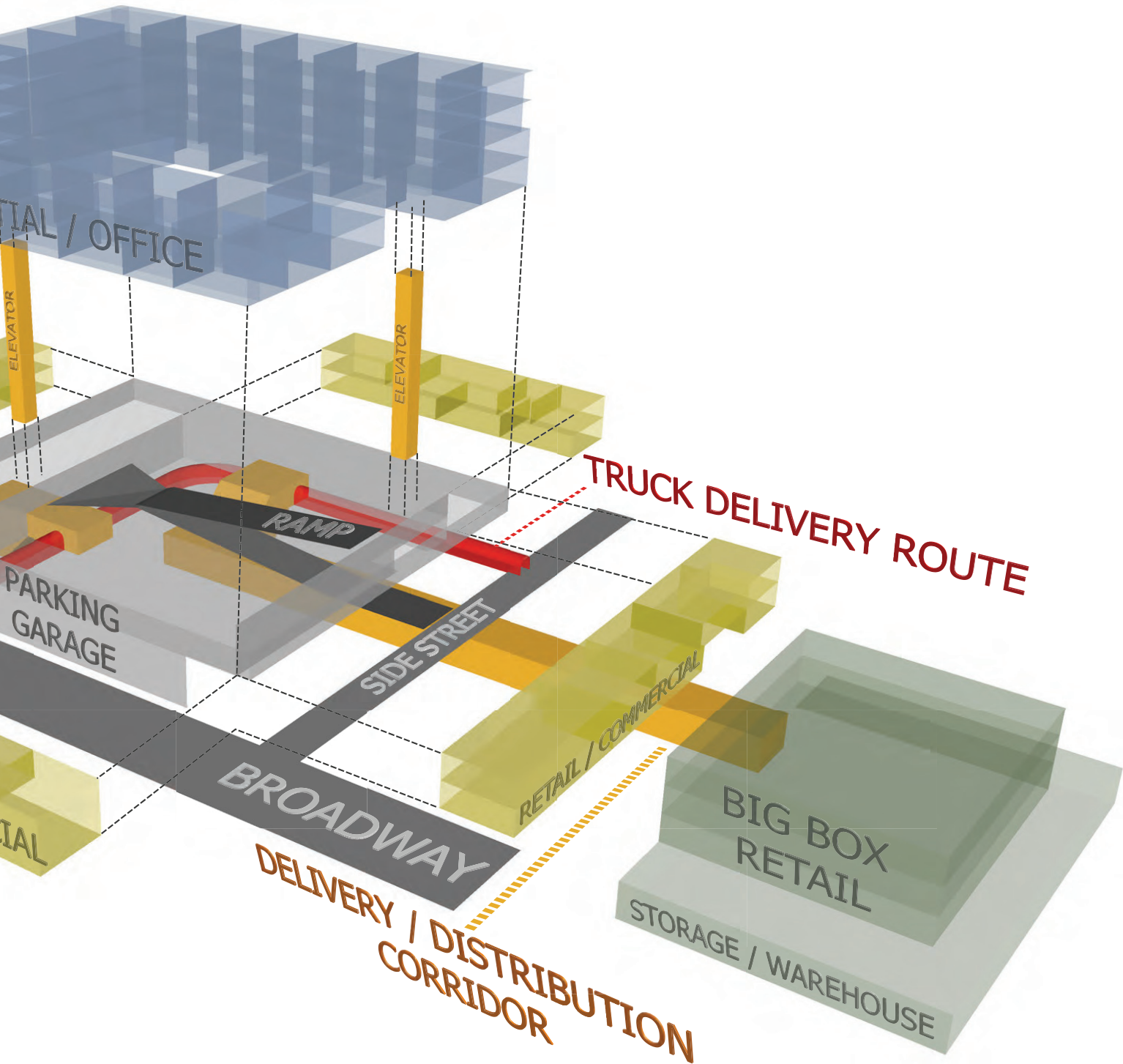
Efficient circulation and distribution of goods, with a particular emphasis on big-box retail, is critical to the success of the proposal. Parking, retail, and big-box development are rethought in response to the need for vertical integration of multiple uses in a single building (Fig. 6.9).

As a model, the parking structure houses vehicles and provides a delivery corridor that serves retail wrapping the parking structure and adjacent big-box retail stores. Big-box retail deliveries are unloaded in the parking structure and moved through corridors to underground storage/warehouses serving the store above. Rather than a massive single story, big-box stores are shifted upward into multiple levels, with retail and commercial wrapping the exterior. Above the parking structure is residential/office space. This model removes the impression of giant buildings, replacing them with a much more pedestrian-friendly street environment.

While it is impossible to predict changes in development, need, or preference in the future, providing flexible architecture and open, programmable spaces increases the adaptability of the site. The site can then respond to societal shifts and retain its viability into the future.



Above Fig 6.9 Architectural Typology Model

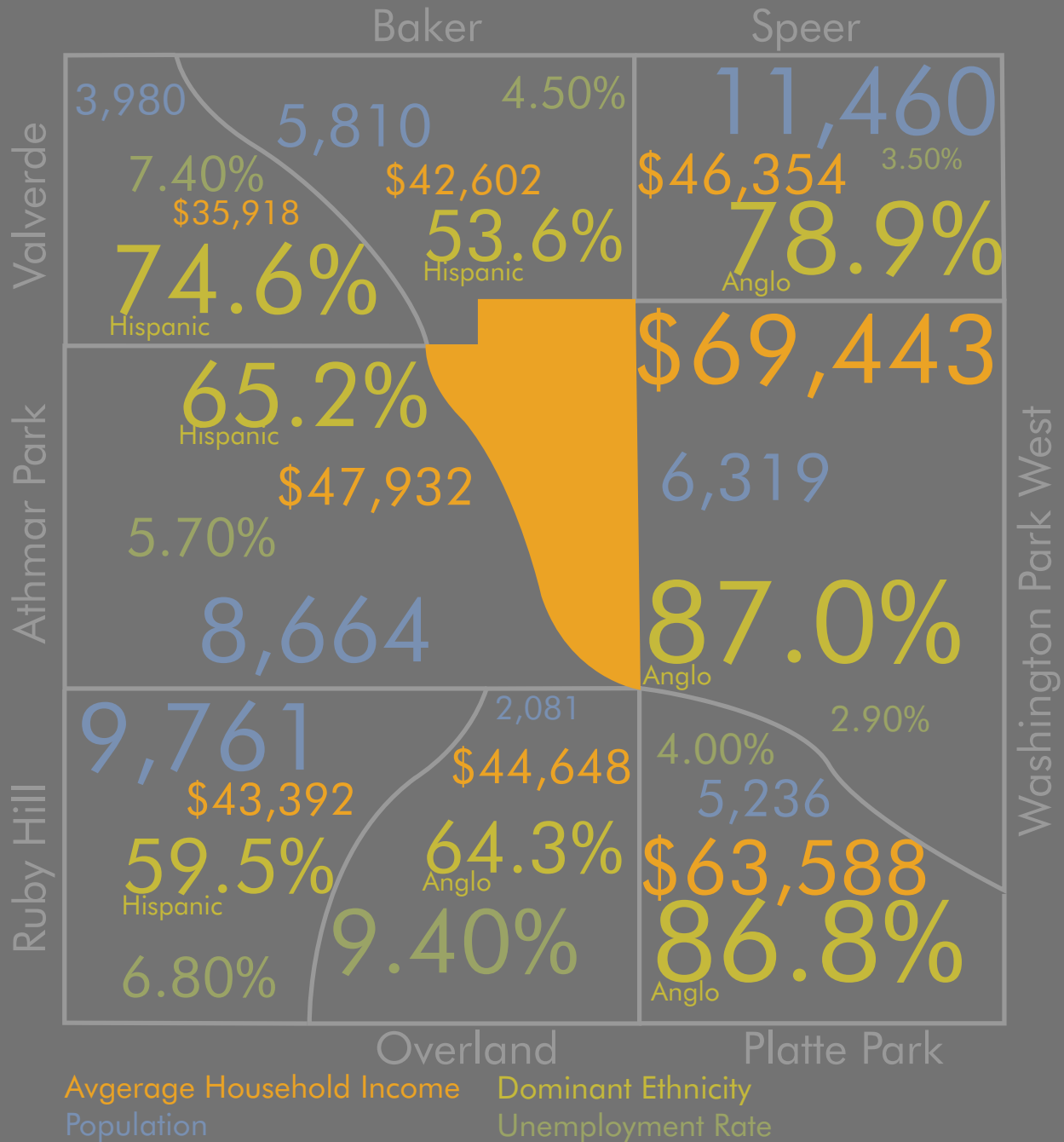


Converge

Converge brings people from all walks of life, backgrounds, interests, and needs together at the site through diverse living options, employment opportunities, a variety of recreation and entertainment options, and programming. Currently there is a socioeconomic divide (Claritas, 2008) east and west of the site, split by Interstate 25. Bridging the socioeconomic divide between Athmar Park, Valverde, and Ruby Hill neighborhoods to the west of the site, and Washington Park West, Platte Park, and Speer neighborhoods to the east of the site is a major concern for the site from a social context (Fig. 6.10).

Accommodating both east and west neighborhoods on site creates a cohesive, livable atmosphere. Specific, focused programming accommodates the needs and preferences of all site user groups. Programming may include farmers markets, arts festivals, public arts performances, and movie nights at Merchants Park, creating a vibrant public realm.

Connect, create, sustain, and converge woven together drive the site's design from the regional context down to the smallest detail.



Physical layout of the plan is an armature composed of three branches: Alameda Promenade, the Web Market District, and Artist's Row. Each branch creates a unique character providing a sense of place, while the landscape ties these three distinct areas together into a unified design.

Alameda Promenade (Fig. 6.11) unfolds from Alameda Station with its iconic blue wall cutting a ribbon through the center of the station. Large glass panels allow uninterrupted views along the promenade into the site as visitors and residents disembark from the station (Fig. 6.12). Many options are available immediately adjacent to the station. Small shops and cafes line the south side of the promenade, wrapping the existing substation. Crushed stone plazas hold seating tables and benches under bosques of shade trees. A hotel and convention center with structured parking sits directly north of the station. This structured parking is shared by the hotel and Alameda Station as a park-and-ride. Dense residential lies further north, taking advantage of its proximity to light rail and beautiful views to the mountains from the upper floors.

Moving further along the promenade from the station, the site opens up to beautiful Merchants Park, named after the minor league baseball field once located here. Winding paths cutting through shortgrass prairie while turfgrass provides opportunities for passive and active recreation. A large plaza, nearly an acre in size, provides a base for the Forum, a public events/recreational building adaptable for plays, theatre, and musical performances. The plaza is a venue for a myriad of programs such as farmers markets, art festivals, and outdoor concerts (Fig. 6.13).

The bioscience research center anchors Merchants Park on the east and employs several hundred residents and light rail users on a daily basis. Dense residential wraps the southern portion of Merchants Park, taking advantage of demand for the incredible open space views and multiple activity options close by.

- 1 Alameda Station and Pedestrian West Link
- 2 Retail / Commercial Wrapping Substation
- 3 Flexible Shade Structure
- 4 Hotel / Alameda Station Structured Parking
- 5 Ten-Story Residential Supporting Transit
- 6 Cultural / Recreation Center
- 7 Programmable Hard-Scape Events Space
- 8 Native Planting Area with Pathway System
- 9 Eight-Story Residential Building
- 10 Bioscience Research Center / Rooftop Lofts
- 11 Elevated Interior Courtyard
- 12 Outdoor Cafes / Shaded Seating Area



Right Fig 6.11 Alameda Promenade and Merchants Park Master Plan Following Fig 6.12 View Exiting Alameda Station



ALAMEDA STATION
WELCOME TO THE DEUNER DESIGN DISTRICT





noodles
company

Café Rio

CARIBOU
COFFEE

AUTOMATIC
CAUTION
DOOR

AUTOMATIC
CAUTION
DOOR

AUTOMATIC
CAUTION
DOOR

AUTOMATIC
CAUTION
DOOR



mercant park



Alameda Promenade intersects Web Market District at the corner of Alameda Avenue and Broadway Street (Fig. 6.14, 6.15). At this critical intersection, a large public plaza provides visual and physical access to the site. Bold, modern architecture signals the arrival from the intersection, enhancing the sense of place. Web Market District is a combination of the historic Main Street and outdoor shopping mall. Large, glass storefronts provide transparency to the district and create a comfortable human scale along the entire corridor. Smaller retailers wrap big-box retail, accessible at strategic points along the walk with housing/office space above.

Web Market District's name has a dual origin. First, crossing paths cutting through lush green space connect both sides of the street (Fig. 6.16). Second, stores employ new computer-based technologies, providing a personal shopping experience that allows each user to customize items to their specific tastes. A vibrant and unique mix of retail, dining, and entertainment make the Web a hotspot for nightlife and weekend excursions.

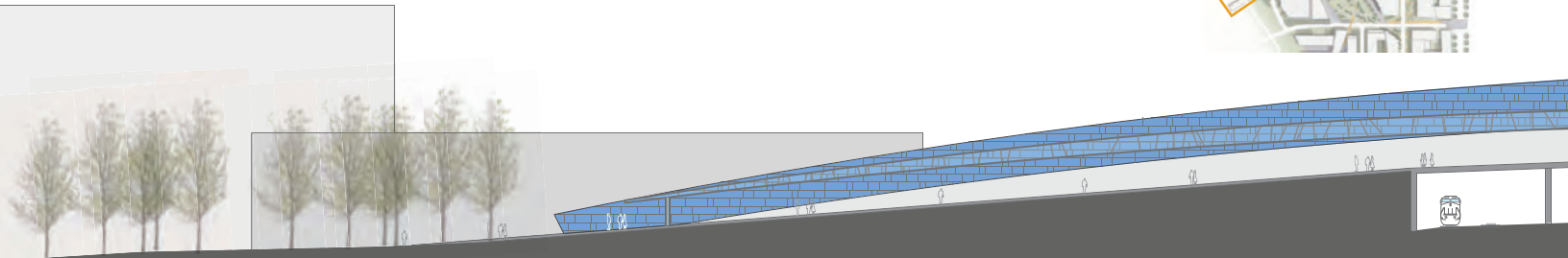
- 1 Entry Plaza at Broadway and Alameda
- 2 Major Pedestrian Link to Alameda Station
- 3 Historical Laundry Building Retained
- 4 Mixed-Use Development Buildings
- 5 Linear Open Space Lined with Retail, Shops, and Entertainment



Previous Fig 6.13 Merchants Park Perspective Looking West
Right Fig 6.14 Web Market District Master Plan



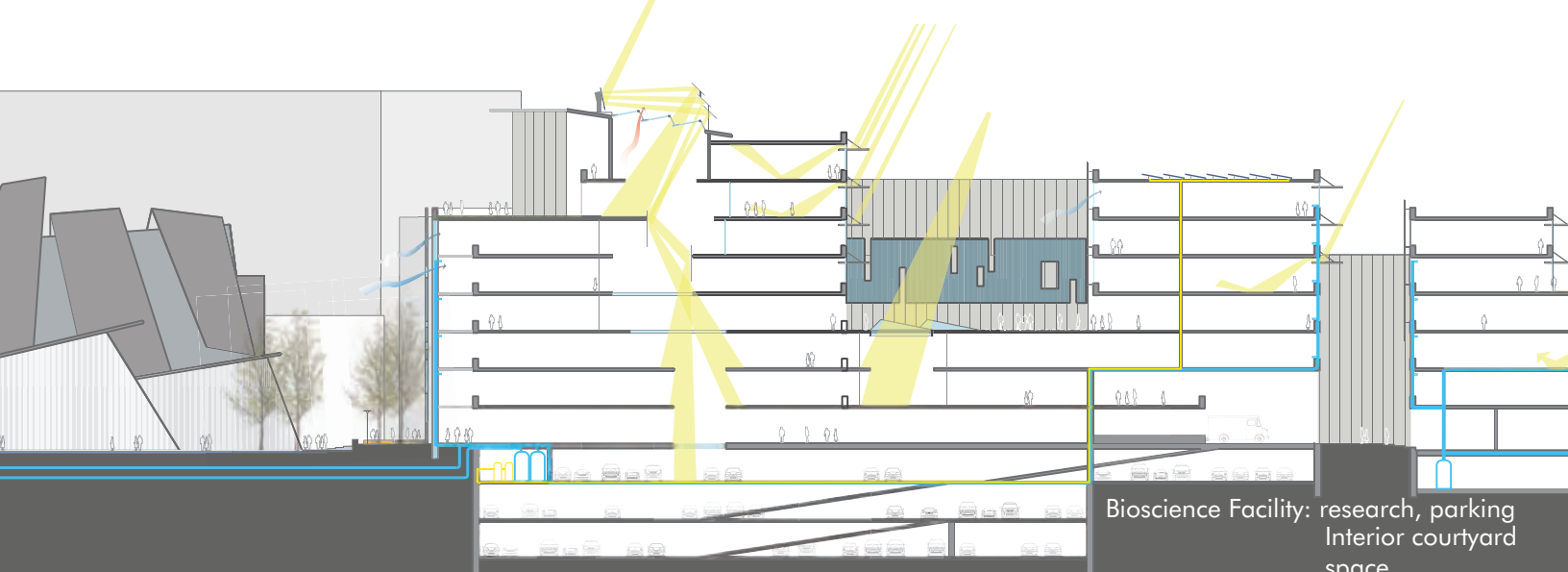
Below Fig 6.15 Site Section
Following Fig 6.16 Web
Market District Looking North



Pedestrian connection to Athmar Park neighborhood

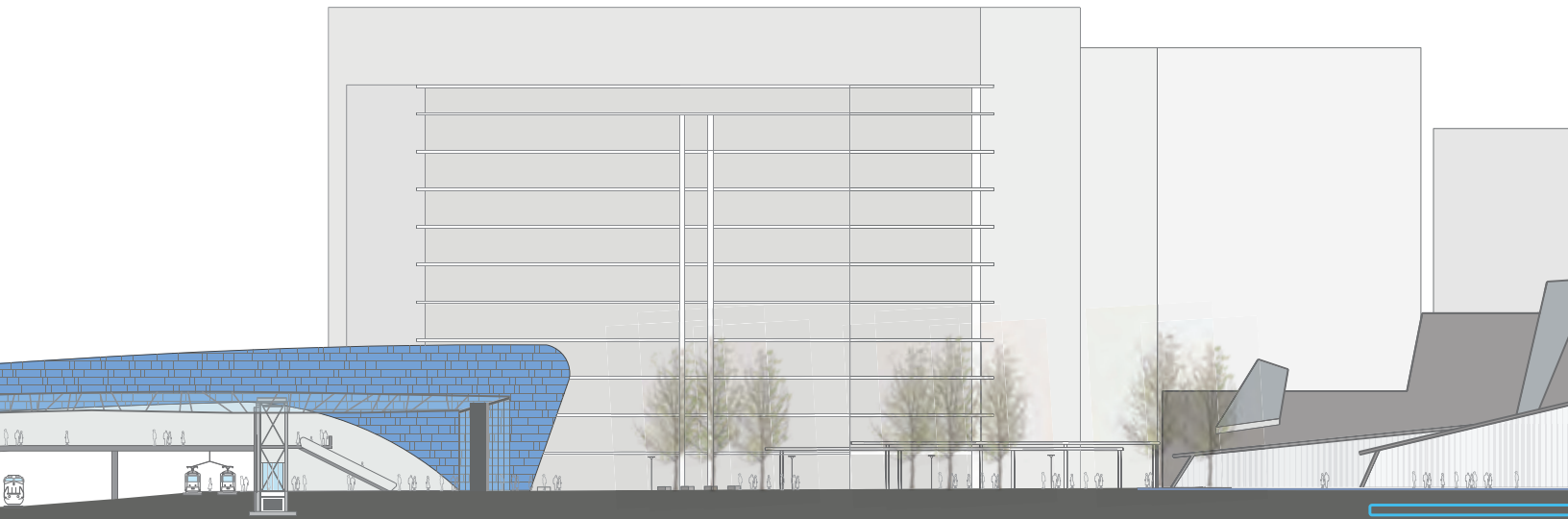
Alameda Station

Section AA'



Bioscience Facility: research, parking
Interior courtyard
space

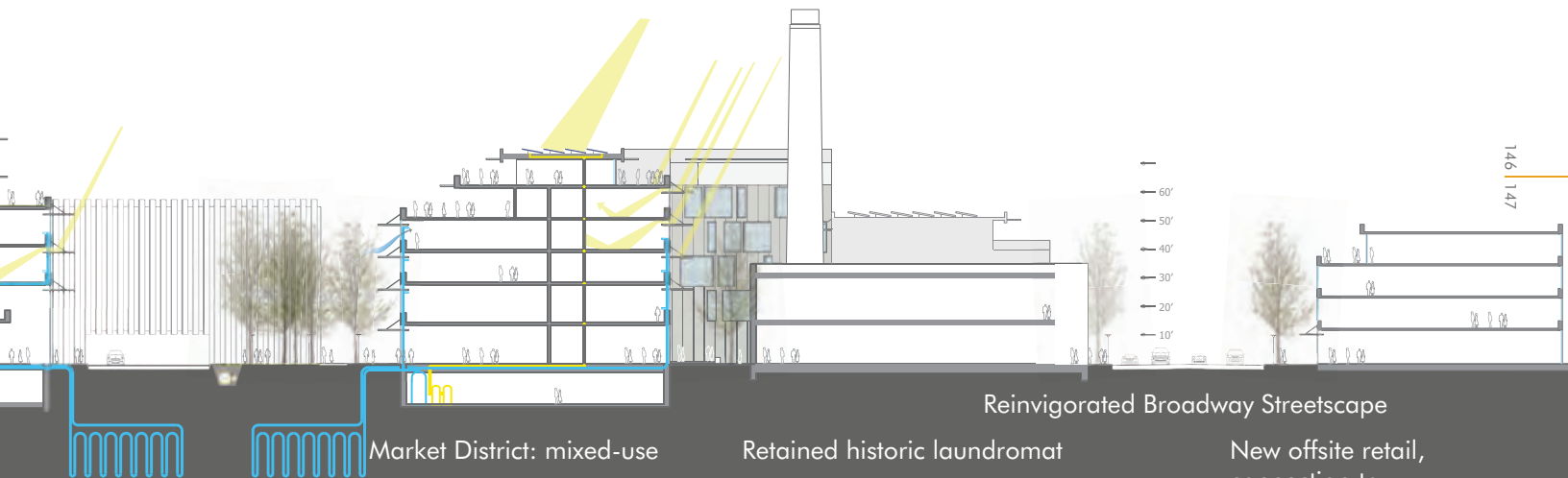
Section AA' Continued



Freight, light rail,
and Alameda Station lines

Alameda Promenade: cafe and leisure

Forum: cultural center, civic
space, recreational center
Merchants Park and plaza:
leisure, civic gathering, events



Market District: mixed-use

Retained historic laundromat

Reinvigorated Broadway Streetscape

New offsite retail,
connection to
Washington Park

146 | 147





Artist's Row (Fig. 6.17) intersects with the southern end of the Web Market District. Building on the success of the Denver Design Center, the arts and design program on site is expanded to incorporate local and national artists working in all types of media and in all price ranges. A major east/west street composed of linear stone banding pulls traffic off of Broadway Street into Artist's Row. A multi-leveled boardwalk with outdoor seating and sculptural art pieces lines the north side of the row. Columnar trees cut free-form into the boardwalk, juxtaposing the strong rectilinear forms of the wood and stone banding (Fig. 6.19).

Artist live/work studios line both sides of the street on upper floors, and furniture stores from the Collection have relocated to the southern side of the street. Artist's Row terminates in a sculptural courtyard/visitor drop-off at the entrance to the Denver Design Center. The courtyard is designed to accommodate outdoor art festivals and weddings, a frequent current use for the Denver Design Center. Just off the courtyard plaza sits the iconic Herbert Bayer sculpture. At-grade light bands span from the DDC entrance, across the courtyard, and past the base of the sculpture, creating a suggested platform on which the sculpture rests (Fig. 6.18).

East of the DDC, the Art Institute School of Culinary Arts provides educational opportunities for aspiring chefs. "Assignment," the school's restaurant, fronts the street, inviting visitors inside for a meal. A greenhouse on top of the school provides year-round fruits, vegetables, and herbs for the restaurant.

South of Artist's Row, dense residential/office units with ample outdoor terraces encircle a second large open space. This central green space acts as the new backyard for families living within the dense urban fabric created at the DDD. Youth sports leagues strengthen the sense of community and are just one of many programming opportunities for the space. South of the green space sits an elementary school. With over 5,500 projected residents on site, an elementary school is a necessary amenity for young families. This elementary school is unique because its playground is located on the roof of the building. Children playing will have views

to the South Platte River and downtown Denver and will be able to see first-hand the structure of the city from their rooftop.

- 1 Denver Design Center North
- 2 Denver Design Center South
- 3 Dropoff Plaza and Sculpture
- 4 Art Institute School of Culinary Arts
- 5 Field Turf Open Space
- 6 Bike / Pedestrian Trail Linkage
- 7 Elementary School and Rooftop Play Area
- 8 Solar Thermal Units on Rooftop
- 9 Studio Row Boardwalk
- 10 Broadway Entrance to Denver Design District
- 11 Artist Shops and Live / Work Studios and Lofts



Right Fig 6.17 Artist's Row Master Plan



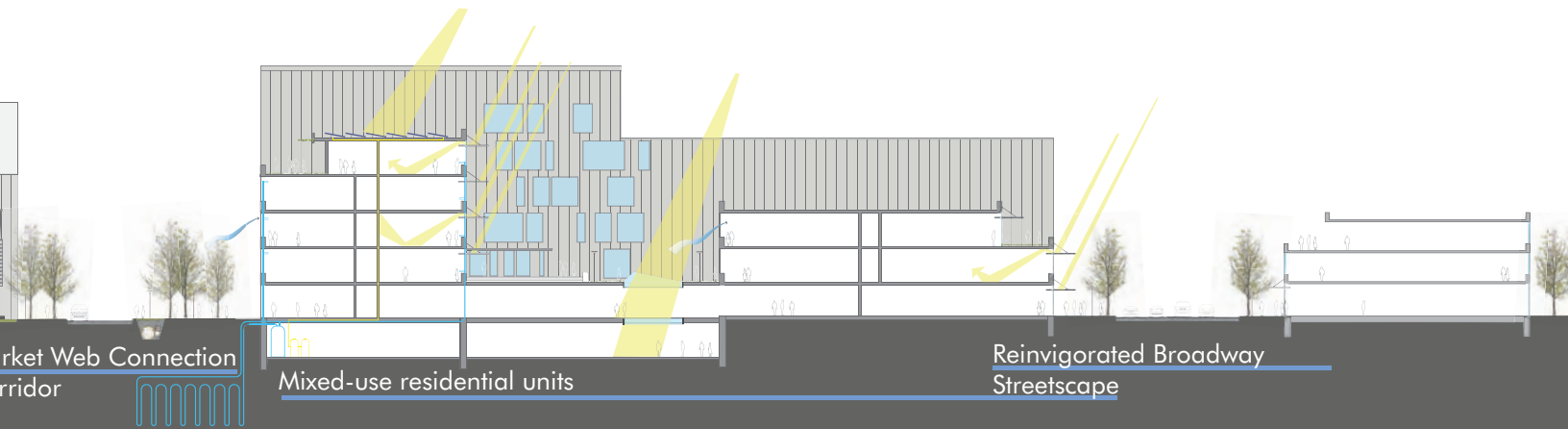


Trail system

Design District parking court and events plaza
Herbert Bayer iconic sculpture

Collection Gallery: Showrooms and gallery,
athletic recreational greenspace, recreation, leisure

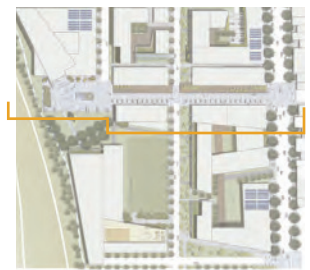
Ma
Co



Market Web Connection
Corridor

Mixed-use residential units

Reinvigorated Broadway
Streetscape



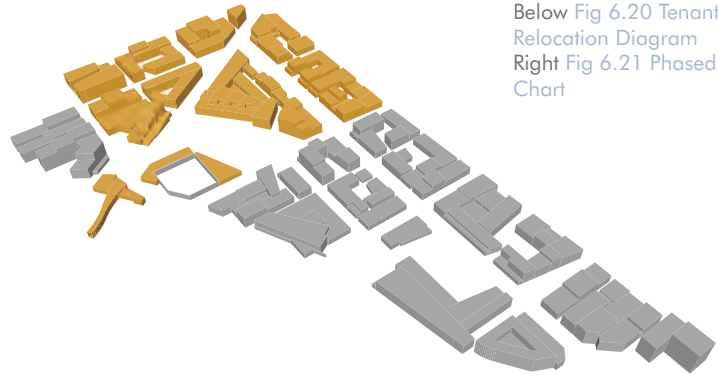
Above Fig 6.18 Artist's Row
Section/Elevation
Following Fig 6.19 View East
along Artist's Row





Phase 1 Tenant Relocation Program:

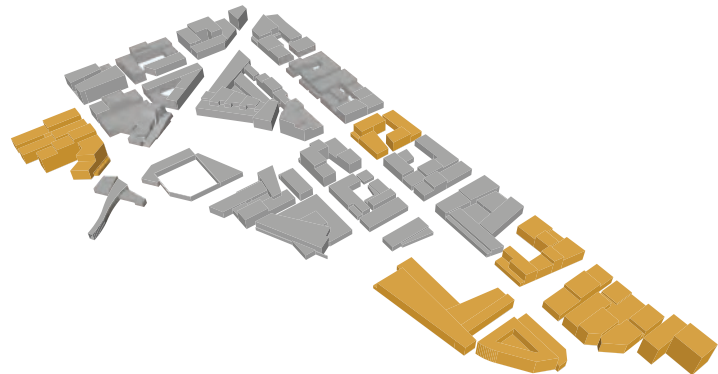
Broadway Marketplace: 387,500 sf.
The Collection: 117,701 sf.
Denver Design Center: 0 sf.



Below Fig 6.20 Tenant Relocation Diagram
Right Fig 6.21 Phased Buildout Chart

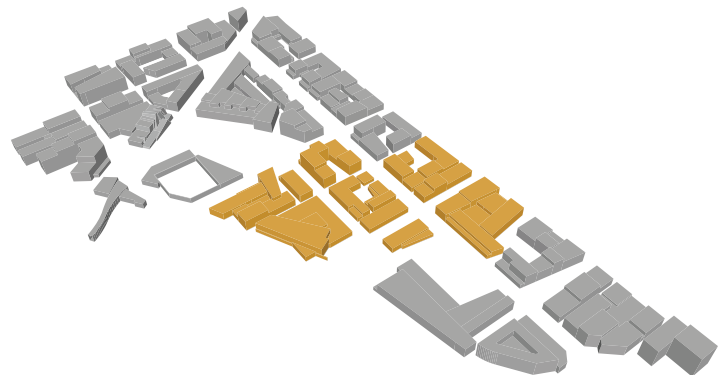
Phase 2 Tenant Relocation Program:

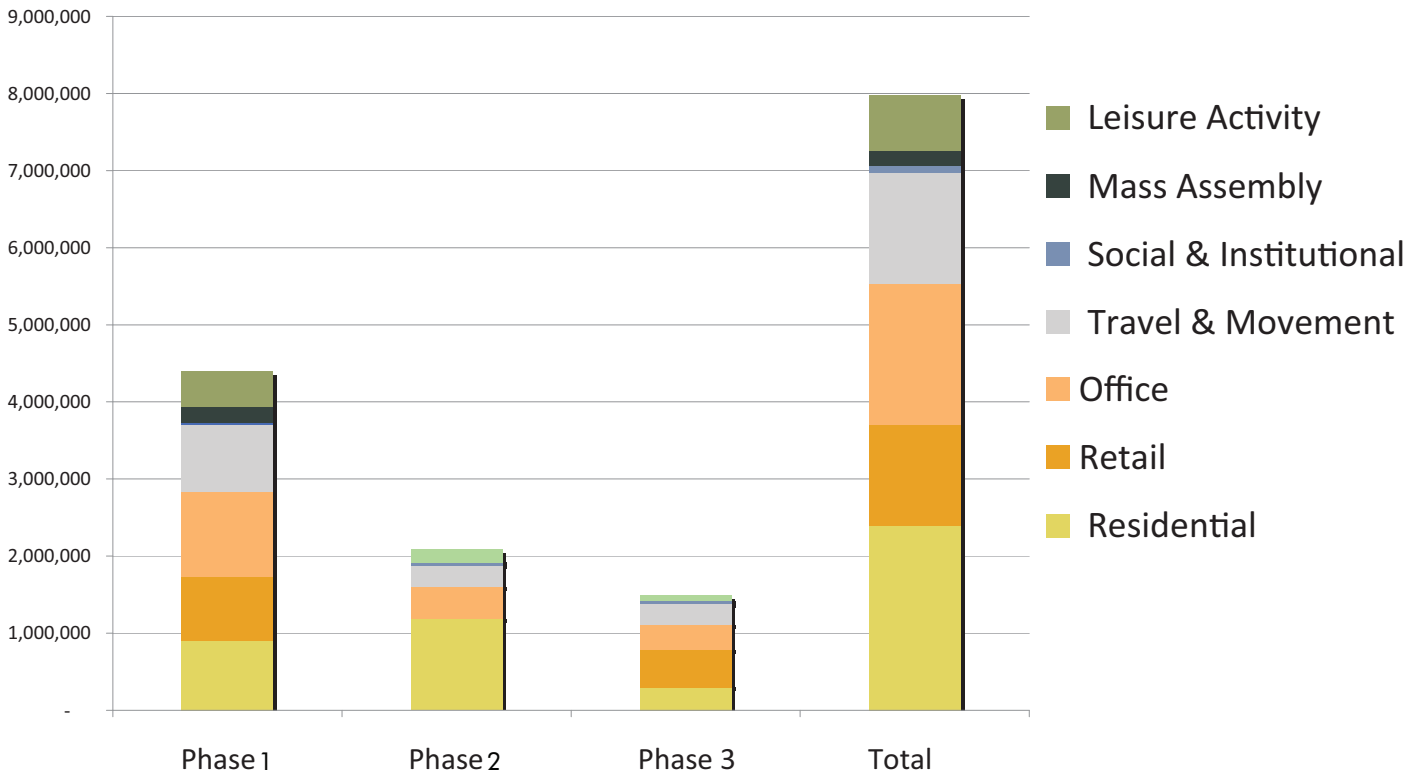
Broadway Marketplace: 0 sf.
The Collection: 0 sf.
Denver Design Center: 174,134 sf.



Phase 3 Tenant Relocation Program:

Broadway Marketplace: 0 sf.
The Collection: 133,299 sf.
Denver Design Center: 63,122 sf.





The phasing and tenant relocation program (Fig. 6.20) explained during the initial submission is expanded to provide relocation square footages for each development parcel on the existing site per each phase of development. Phase one development accounts for 49% of total development. Front-loading development assures that the project could stand alone if phases two and three do not continue. Also, all of the tenants in Broadway Marketplace are relocated during phase one, moving big-box development to the periphery of the site for visual and vehicular access. Housing and partial relocation of the Denver Design Center are the focus areas

of phase two. Value added in phase one of development creates the need for more people living on site. Therefore, a large percentage of total housing at the DDD is developed in phase two. Movement of part of the DDC is necessary in order to redevelop the portion of the site where the DDC was once located.

Development concludes in the first year of phase three, maximizing development revenue potential. Phase three focuses on expanding Artist's Row and completing relocation of the Collection and DDC (Fig. 6.21).

Without strategic phasing and a solid financial plan (Fig. 6.23,6.24), the redevelopment proposal would not be possible. The financial model created shows that the DDD proposal is an excellent investment opportunity. The net present value is \$248,000 and the leveraged internal rate of return (IRR) is 9.83%. An IRR between 9% and 11% is considered to be a positive investment opportunity.

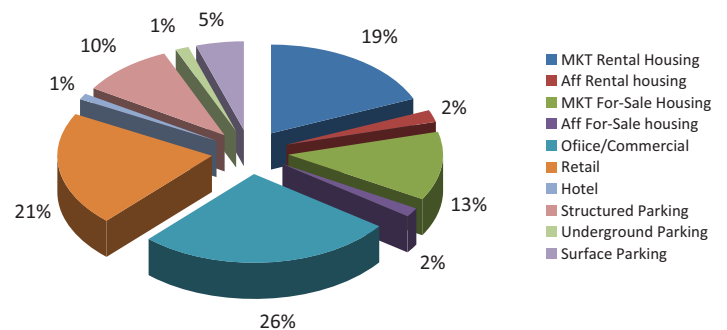
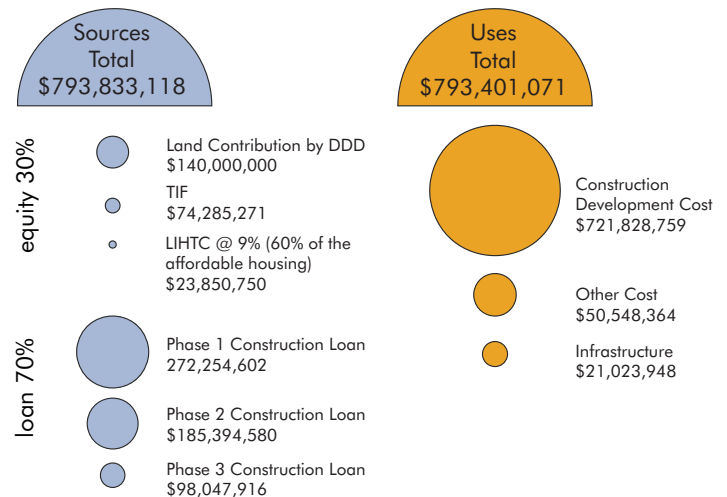
A total of 2913 residential units are created on site. Of those units, 10% are allocated as affordable housing. Approximately 35% of the units are for sale, while 65% are retained as rental units. Office/commercial space makes up the largest portion of non-residential use with 1,836,422 sf. of space. While this number is higher than typical development of this size, the effort to increase density and employment opportunities on site makes the high amount of office and commercial development feasible. Retail is also higher than typical development with 1,409,178 sf. of space, though existing tenants on site account for 871,500 sf. of that space. A 200 room hotel is located north of Alameda Station, taking advantage of the site’s potential for easy access by light rail to downtown Denver, the Denver Tech Center, and Denver International Airport.

Much of the parking on site is internalized in either above or below-ground structured parking. Structured parking accounts for 4,238 spaces while surface parking accounts for 1,869 spaces for a total of 6,107 spaces on site. The amount of parking spaces is intentionally lower than recommended for the amount of development square footage at the DDD to promote use of public transportation and pedestrian rather than vehicular movement.

Total development cost for the project including infrastructure, soft costs, and hard costs is \$793,401,071. Monetary sources for this development total \$793,833,118 and are split at 30% equity and 70% loan. Equity sources include the DDD’s land contribution valued at \$140,000,000 making up the largest equity component. Tax Increment Financing (TIF) is used for the site, generating \$74,285,271. Low Income Housing Tax Credits (LIHTC) is conservatively

estimated at 60% of the total affordable housing development cost creates another \$23,850,750 in equity for the project.

Construction loans for each phase of development account for the remaining funding necessary for project completion. Each loan is based on a 30-year term at an interest rate of 6.50%. Market research specific to the Denver area is used to develop hard and soft costs, vacancy rates, and development costs per square foot/unit (Fig. 6.22).



Proforma (in thousand)	Phase I			Phase II				Phase III		
Total Net Operating Income	\$79,408	\$44,485	\$45,848	\$74,832	\$69,913	\$75,736	\$88,680	\$117,510	\$104,230	\$103,727
Total Development Costs	\$40,332	\$7,794	\$41,367	\$47,544	\$44,446	\$129,583	\$155,325	\$26,336	\$24,979	\$25,728
Cash Flow before Debt Service	\$32,006	\$31,138	-\$1,252	\$19,778	\$18,131	-\$61,618	-\$76,217	\$78,121	\$66,751	\$65,124
Debt Service	\$0	\$0	\$0	-\$20,849	-\$20,849	-\$20,849	-\$20,849	-\$35,046	-\$35,046	-\$35,046
Net Cash Flow	\$32,006	\$31,138	-\$1,252	-\$1,070	-\$2,718	-\$82,466	-\$97,066	\$43,075	\$31,706	\$30,078
Net Present Value	10%	\$248								
Leveraged IRR Before Taxes		9.83%								

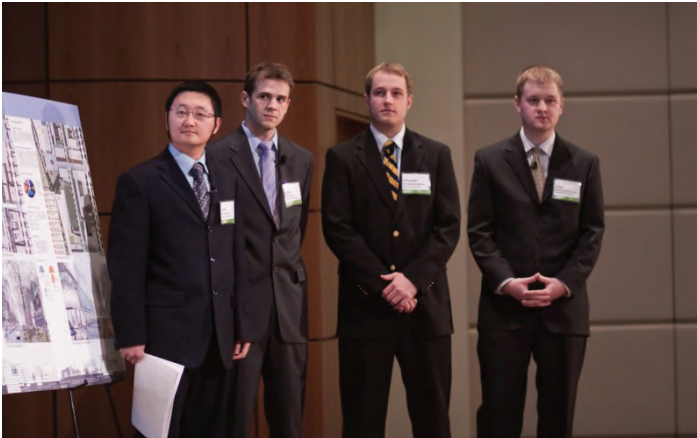
Project Buildout		Total Buildout		Phase I		Phase II		Phase III	
Development Units		Units or Spaces	Area(s.f.)	Units or Spaces	Area(s.f.)	Units or Spaces	Area(s.f.)	Units or Spaces	Area(s.f.)
Market-rate	Rental Housing	1,700	1,275,000	638	478,125	1,488	1,115,625	1,700	1,275,000
	For-Sale Housing	915	869,250	343	325,969	801	760,594	915	869,250
Affordable	Rental Housing	180	135,000	68	50,625	158	118,125	180	135,000
	For-Sale Housing	118	112,100	50	47,500	103	97,850	118	112,100
	Office/Commercial	-	1,836,422	-	1,100,652	-	1,507,434	-	1,836,422
	Retail	-	1,409,178	-	830,316	-	927,407	-	1,409,178
	Hotel	200	75,000	0	0	200	75,000	200	75,000
	Structured Parking	3,738	672,858	1,869	336,420	3,365	605,700		672,840
	Underground Parking	500	90,000	300	54,000	500	90,000	500	90,000
	Surface Parking	1,869	336,429	0	84,240	1,588	285,840	1,869	336,420
	Total		6,811,237		3,307,847		5,583,575		6,811,210

Infrastructure Development Costs		
Private Infrastructure	Infrastructure Cost/Linear feet	Total
Linear Feet of Existing Road Improvement (FT.)	\$30	\$223,830
New Road	\$90	\$585,090
Side Walk	\$30	\$892,230
Park/Landscaping (s.f.)	\$9	\$6,457,653

Public Infrastructure	Infrastructure Cost/s.f.	Total
Alameda Station	\$165	\$6,209,445
The Forum (Recreational Complex)	\$190	\$6,655,700
Total Infrastructure Costs	\$0	\$21,023,948

Loan Information			
	Terms	30	Interest Rate
	Construction Loan		Mortgage
Phase I	\$272,254,602	49.0%	-\$20,848,561
Phase II	\$185,394,580	33.4%	-\$14,197,043
Phase III	\$98,047,916	17.6%	-\$7,508,259

Left Top Fig 6.22 Sources and Uses Diagram
Left Fig 6.23 Construction Distribution Chart
Above Fig 6.24 Financial Information



Presentation

All of the project information needed to be relayed to the judges accurately and concisely during the presentation. After speaking with Mark Johnson, a former juror, and gathering insights on the presentation, we determined that rather than having all five team members give part of the presentation, three would present while Chris and Bryan would devote their focus to answering jury questions.

All necessary information in hand, the team boarded the plane for Denver to present the **touch** proposal to the jury. Before presenting to the jury on Thursday, the team needed

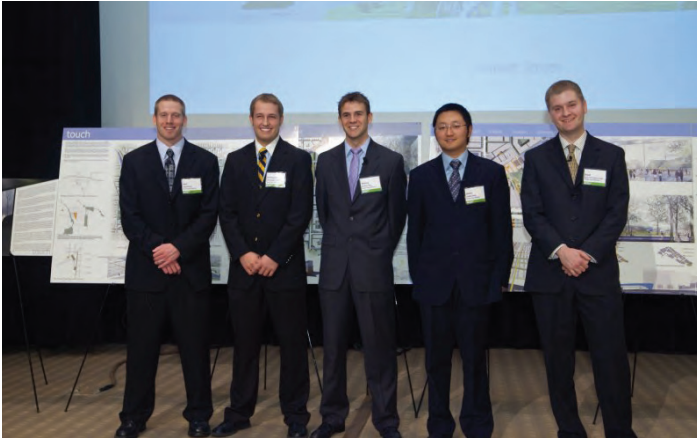
to present to a mock jury on Wednesday to ensure that the presentation met an acceptable level of professionalism. Our initial presentation addressed the character of the site in great detail and focused on the human element. However, the mock jury responded with over twenty-five minutes of financial and development-oriented questions with very little focus on the design or experience of place. This caused us to rethink our presentation strategy, resulting in a far more pragmatic presentation focusing on physical relationships and sound financial systems.



I began the presentation by introducing the team and articulating the vision and four principles that formed the **touch** proposal. Junbin followed, explaining the financial structure and investment opportunity the site presented. Anthony defined the sustainable models for the site, more deeply explaining each of the three site branches and their relationship within the overall site context. He then concluded the presentation.

Following the presentation, the jury asked a wide range of questions involving all aspects of the design and financial strategy. The questions were specific, to the point, and difficult. For the jury's specific questions for our team, refer to Appendix A. After the question and answer period concluded, the team could do nothing more than wait for the winner to be announced.

Above and Left Fig 6.25
Presentation and Team Photographs from Denver



Results

After all four teams had presented, the jury deliberated and decided on the winning submission. Before announcing the results, one jury member explained the strengths and weaknesses of each submission as discussed by the jury during deliberation. Following explanation, the jury announced that the team from Massachusetts Institute of Technology had won the 2009 ULI/Gerald D. Hines Student Urban Design Competition. There were several potential reasons that MIT's design was chosen over the others. Overall, their presentation was fluid, well-rehearsed, and effective. Also,

their financial information and phasing strategy were quite strong and thoroughly explained. Graphic analysis and specific jury comments and questions is located in Appendix A. While it would have been amazing to win, it was an incredible learning and exploratory experience.

Above and Right Fig 6.26
Presentation and Team Photo-
graphs from Denver



“The jury loved the
aspect of the beautiful
compelling image
really wonderful.”

the compelling
beautiful spaces, the
senses of the places...

Reflection



Conclusions

The project intent was to create a unique and innovative design solution that incorporated big ideas, strong graphics, and effective presentation, in hopes of winning the Urban Land Institute / Gerald D. Hines Student Urban Design Competition. It was also a study of the competition itself, to draw conclusions about the competition based on the experience and process. These conclusions provide excellent guidance and reference for future competitors.

Preparation Methods and Techniques

It is critical to maintain a highly detailed and ordered timeline throughout the entire process because there is so little time available to develop the solution, particularly during the initial submission stage of the project. Set specific progress and critique dates within the timeline and work hard to hit those dates. Following the timeline as closely as possible ensures that the team will make progress every day. Because the time commitment is so demanding, coordinate with professors and classmates well before the competition begins so that they will be more willing to work with your new schedule. This will allow the team to focus more completely on the competition.

Team Organization / Composition

Before developing a team, it is important to develop a design philosophy for the project response. Even though the specific site is not made available until the first day of competition, the general rules and principles remain largely the same from year to year. Understand the focus of the competition and develop a response based on that understanding. Next, find team members that understand and agree with the design philosophy and response strategy. Make it clear to each team member the time commitment involved throughout the process and importance of being in the studio with the other team members as much as possible.

It is mandatory that each team represent three disciplines at the graduate level and that at least one discipline is not design-related. It is imperative that your team have at least

one MBA student who, at the very least, understands real estate development. In addition, each team member must develop an understanding of the financial component of the design to display team collaboration to the jury.

Within the design disciplines, create a team with a variety of backgrounds and experience, but also individuals that work well together. Architecture, landscape architecture, and planning are all disciplines that could be very beneficial to the team and each should be considered. Once the team is selected, play to the strengths of the team when developing a design solution. Our team had three landscape architects, a fact that became very evident to the jury when they reviewed our plan and set our entry apart from the others. Graphically, having more individuals that can produce graphics will reduce board production time and increase the aesthetic appeal of the submission.

Studio Setup Process

Work flow and communication are much easier if the team is situated within an interdisciplinary studio. Our team moved into a separate studio space for the duration of the competition for this reason and it worked quite well. Make sure that there is ample room for process work and team meetings. It was critical for our team to be able to discuss ideas and develop process sketches and plans around a community table.

Communication / Teamwork

Communication between ULI and the team as well as in between team members is critical to the success of the project. Recognize that each team member brings unique experience, skills, and thought process to the project. Taking all input into account before making decisions strengthens the final product. Each team member must be clear about their role within the team and what is expected of them throughout the design process. Unclear roles and lack of communication can create holes in the design response and hurt the overall project.

While the team may want to begin developing plans and diagrams immediately after receiving the project brief, it is important to take time and care to really discuss the critical issues specific to the project and the team's vision for the response. Immediately beginning on graphic production can detract from a thorough thought process necessary for creative conceptual development.

Decisions were made by our team only after discussion and input was received from as many team members as possible. While there were occasional disagreements about design elements or strategies, these disagreements ended up strengthening the design. It was important for everyone on our team to understand that ideas could come from anyone and be challenged by anyone. It was also understood that, as the team leader, I would make the ruling on any controversial decisions that needed to be made to move the project forward. This way, if the result of the decision was poor, I would take the blame and the team would remain in healthy working condition.

Text and Graphics

Beginning with the narrative, it is important to accurately state the team's vision for the project clearly and succinctly, taking great care to give the jury an understanding of the intent. As concepts and themes are developed and diagrams or renderings are completed, take time to write the supporting text that will accompany the graphic on the board. Our team did not write anything for the initial submission until the final day and after being awake for thirty straight hours, it proved to be a daunting task.

When developing graphics, determine ahead of time the graphic styles, color palette, and development procedure. Also, keep in mind that while the original entry is composed on a series of 11"x17" boards, if selected as a finalist, these boards will need to be blown up to 175-200% of their original size. It is wise to create all graphics larger than they will be displayed in the initial submission. Another option is to make sure that all images created are high resolution

images that can be enlarged with very minimal distortion. During both submissions, while text is important and some components of the response require supporting information, let the graphics convey ideas and keep text to an absolute minimum, using bullet points where possible. Not only does this allow for greater compositional variety on the board, but it lets the jury focus on the thoughts and ideas represented graphically rather than on large uninspiring text blocks.

Concept

Successful entries are able to walk the fine line between reality and impossibility, providing a combination of innovative techniques and strategies with realistic concepts and financing. Develop the vision and align the concept and subsequent drawings with that vision. This strategy enables the team to present a fluid and well-articulated argument backed by research, graphic representation, and sound financial information. Be bold with design. Remember that it is an ideas competition and jurors are looking for new innovations and ideas, not just a standard development project.

Development Process / Financial Analysis

Our particular project, according to the jury, did not give enough financial support or phasing strategy information with our proposal. These are two very developer-oriented components of the design that hurt us during final deliberation. At least one MBA student with an emphasis on real estate development would be an extremely strong asset to the team. Also, all team members need to understand the financial information and work with the students working specifically on the financial components of the project.

Presentation

When presenting to the jury, clearly state the vision, the concepts, and thought process. Walk them through the boards and do not be subtle with any information. The presentation must be very clear and to-the-point. Narratives and presentations appealing to the emotions have their place, just not in this competition.

Our approach was to have three people speak during the presentation and have the remaining two members join in answering questions. We felt that this would give better flow to the presentation and was backed by information from Mark Johnson, a former juror. Given the opportunity to present again, we would have all five team members speak, because it frees up all individuals to answer questions that they are comfortable with. Each team member can focus on a smaller piece of the design that is more easily memorized and fluidly presented.

Most importantly, having each team member speak demonstrates to the jury that each member was highly involved in the project and that the team collaborated throughout the entire process. While our team collaborated well during the competition, the only exposure that the jury has to the team is the brief presentation and question and answer time, during which two team members were not able to get as involved as the jury would have liked.

Be confident and ready to defend all decisions to the jury. It is more important that you stand behind all of your decisions than that those decisions be entirely accurate. That said, be prepared to answer extremely detailed questions about your design, especially regarding technical components such as financing and the phasing strategy.

Final Thoughts

While it is important to understand the jury composition overall, it is not productive to develop a solution that you think the jury will like. Preference can change day to day, even within the same group of people. Develop a design that responds specifically to your site. Show the jury that you understand all of the complex factors about the site that make it unique, and respond to those unique factors with your design. Regardless of the jury, a design showing an understanding of the site and a strong vision backed by proven methods and techniques will get a positive response.

Perhaps the most important thing to remember throughout the competition process is to have fun. Hours are so long and the problem is so complex that unless you can keep

the mood light and enjoy your time, the project will suffer tremendously. A large part of the success of our team is that we were able to laugh and joke with each other, even when deadlines got close.

The Gerald D. Hines/Urban Land Institute Student Urban Design Competition is one of the premier student design competitions in the nation, with real-world complexity that requires a multidisciplinary approach. It draws some of the top students from the best programs all over the country. It is an intense process that pushes you to the limit, but can offer great reward. Above all it gives you the chance to compete.

Appendices



Appendix A: Analysis



Analysis completed prior to the 2009 competition provided valuable information about how to approach the project. Analysis of the 2009 final board submittals increases the depth of the board layout and composition study. All four boards are unique, yet all contain an underlying system that unifies them.

In addition to the board layout and composition analysis, this appendix provides the reader with the specific jury questions that our team was asked following our presentation. Additionally, the jury's final comments regarding the proposal relay the strengths and weaknesses of the project.

Jury Questions

Question 1

"Address the residential component. What kind of neighborhoods are you creating with your 1700 rental and condo units? There's a field for soccer, but what else is going on for the residents of this new development? Specifically address the building-uses diagram."

Question 2

"Describe where you believe the heart of the project is."

Question 3

"What are the dimensions of Merchants Park? How wide by how long?"

Question 4

"With a 10-year investment framework on this, almost over three-quarters of a billion dollars at risk, do you think a sub-10% IRR is enough to justify the risk?"

Question 5

"Touch on some of your assumptions about revenues, operating revenues during the project, revenue sources, your exit strategy, and then also whether or not you attribute any revenue to parking."

Question 6

"Explain the exit strategy that ultimately gets you the

projected IRR. Do you intend to hold this asset forever, or do you sell pieces of it off, or do you sell the whole thing at some point? What's your plan for the disposal of the asset, if any?"

Question 7

"Is Alameda Promenade a pedestrian-only place?"

Comment

"I very much support the idea of the "generous park" and I go back to known "central" parks, where they offer the opportunity for recreation and relaxation. I also like the idea of a pedestrian access from the corner and the fact that

vehicular access actually circulates around the edge but is not entering where it doesn't need to."

Question 8

"The retail street...I was wondering if you thought there was any issue with it being one block west of Broadway, which is currently sort of THE retail street, and how do you justify what might be kind of a competing street retail-wise from what conceptually has been THE retail street in the city? AND when I look at your phasing strategy, and I can see your phases very clearly, but I don't understand the phases. What I mean by that is it seems as if things are going back where they were, which means that they're out of commission for a fair amount of time while you rebuild whatever it is you are building...which, I don't necessarily read this all that carefully like other people on the jury will, but that would seem to have a major impact on the pro forma. One of the big issues through this was keeping these people in business while you do what you do, and when I hear the description of the design district and its new form and it's exactly where the current design district is, what happens in the couple years that you have to rebuild it?"

Question 9

"I like the way most of you emphasized a couple of times the neighborhoods around the project and you mentioned they had special problems and characters, and that this

project would contribute to solving the conflicts generated by these neighborhoods, but I don't understand exactly how it is that you will do it. Exactly what is it that you think the project can contribute to improving these neighborhoods and solving these problems? AND you mentioned a lot the station was the axis of your project, but when you were asked what was the center of your project, it was the park... please elaborate."

Question 10

"I have to confess I get real nervous when I see debt and then no interest payments...I typically get nervous about

that. Can you explain to me how your debt of the first phase - 272 million - gets paid for during your Phase One development? You're showing zero debt service during your Phase One pro forma."

Question 11

"Another question I have with regard to the numbers is what was your unleveraged IRR?"

Question 12

"I think you demonstrate a real urban sensibility, the way you place together these built environments with the landscaping, and I think you've done a very clear job of describing the qualitative aspect of the space. One thing I'm unclear about is the logic behind how these places are pulled back together. As I start to study the urban plan, I wonder how I even know the project is there? In a sense, Neil (juror) touched on one point that the commercial street is a street back and not necessarily perpendicular (which would allow you to view into the site), and when I look at the diagonal, Alameda promenade, I only notice it when I go south on Broadway or west on Alameda, so I was hoping you could describe the logic behind the framework, the road systems. Where are those key places in the plan? How do you arrive there, and what was your thinking for this, one might say fragmented, grid system?"

Final Jury Comments

Positives/Strengths

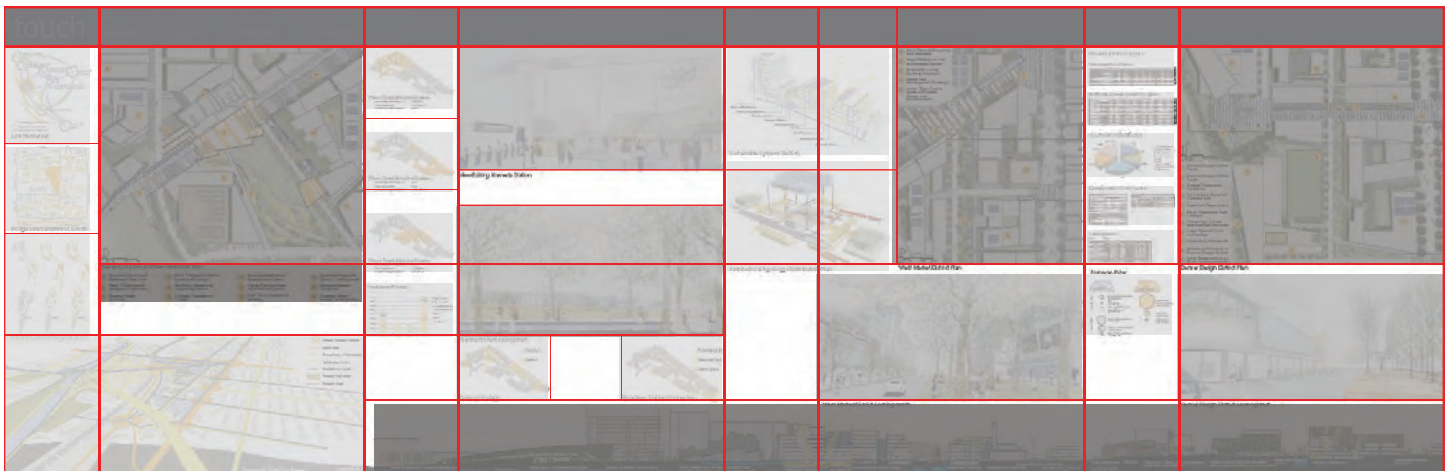
- Jury loved the compelling aspect of the beautiful spaces, the compelling images of the places...really wonderful
- Station area was the best of all the station area arrivals, and the sense of arrival...good use of the station area
- The altitude of getting up really high and looking at the regional issues of the area was very compelling, and probably the strongest of all the schemes, especially to the west, you get a vision of connectivity past the development site...this is an important attribute of all urban designers to be able to look beyond the boundary of the property lines and give a vision for what's further
- Great people environments, beautiful, spectacular
- Market Street as a compelling street, very nice solution
- Integration of the promenade and the park was very, very nice...looked to be some great neighborhoods
- Very sophisticated water strategy

Concerns/Challenges

- Market Street being parallel to Broadway might be a challenge, as opposed to perpendicular
- Struggles/challenges with angles
- Definitely need more work and team collaboration with financials
- Alameda promenade...big move with angle to the corner...was that the right move?
- Buildings on the park and on the street was an interesting concept, but maybe could have been taken further



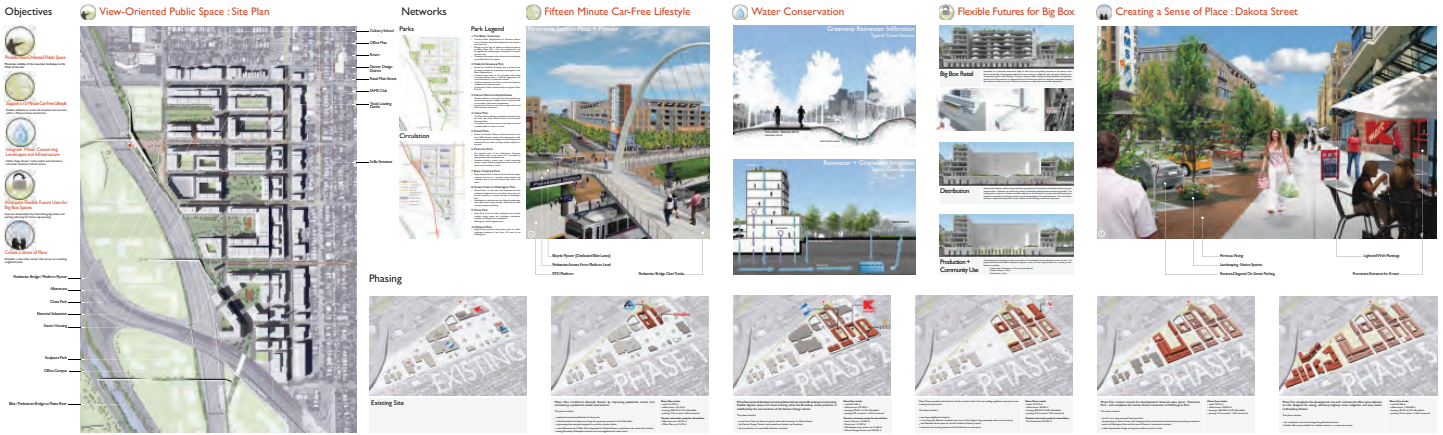
The grid system is organized into quarters, with each quarter further subdivided using a two-thirds/one-third composition. The main unifying elements are the vertical bands of graphics, while minimal strategic horizontal lines tie the composition together. Block analysis indicates a hierarchy from large plan view to smaller diagrams and text information. Potentially differentiating overall plan view sizes may have allowed for better flow, but the composition reads very well as a whole. This plan had the most white space of the four plans.



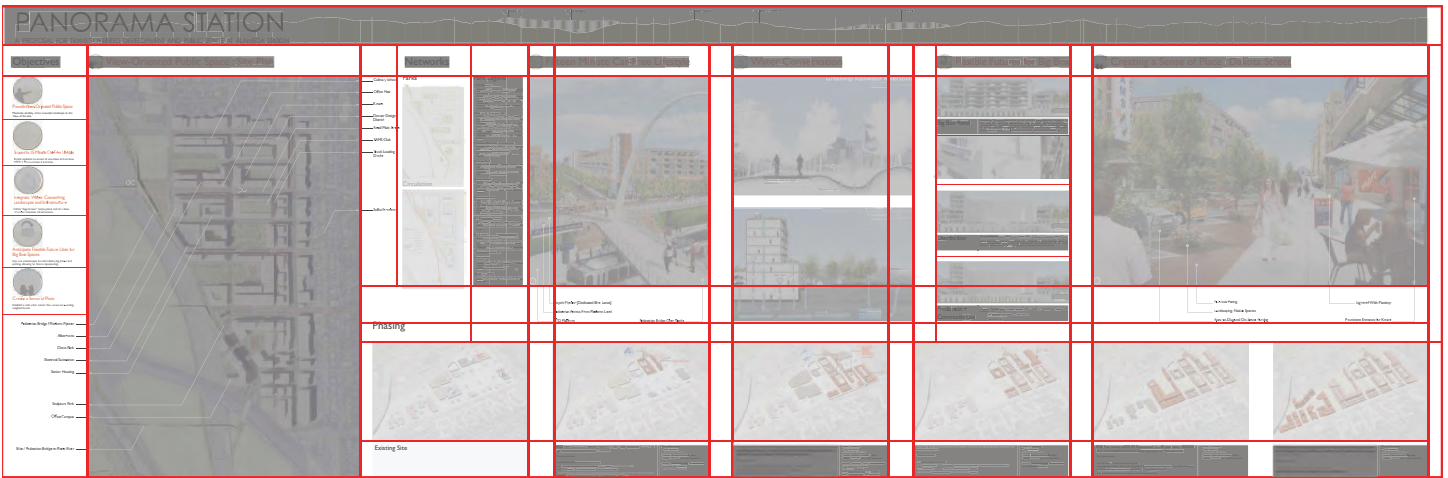
Top Fig A.1 Kansas State Final Board
 Above Fig A.2 Kansas State Grid/Block Analysis

PANORAMA STATION

A PROPOSAL FOR TRANSFORMED DEVELOPMENT AND PUBLIC SPACE AT ALAMEDA STATION



MIT's final board employs a highly ordered grid and block composition. The board is divided roughly into quarters and three of the four quarters are further divided into halves. A strong line two-thirds of the way down the board containing a series of phasing diagrams becomes the major horizontal unifier. Hierarchy is established by displaying the main plan view much larger than the rest of the components and placing it on the left side of the composition.



Top Fig A.3 MIT Final Board
Above Fig A.4 MIT Grid/Block Analysis

Using quarter divisions, the University of Miami's final board displays four unique grid systems. All four quarters are roughly divided into thirds with strong vertical lines. However, no strong horizontal unifier is present. Each quarter is almost completely covered with images, leaving very little white space. Also, many of the images are very similar in size and the plan view is represented eight times on the board, making it difficult to establish a clear hierarchy.

Columbia's final board maintains the least white space and the most unclear hierarchy of the four finalist boards. Also, the first board is placed vertically while the other three boards have a horizontal orientation, a technique never before used in this competition. Emphasis is clearly placed on three large perspectives, but there are no strong vertical or horizontal unifiers present. Of the four boards, the first has the greatest degree of order and contains the most text, but does not relate to the other three boards.

Top Left Fig A.5 Miami Final Board

2nd Left Fig A.6 Miami Grid/Block Analysis

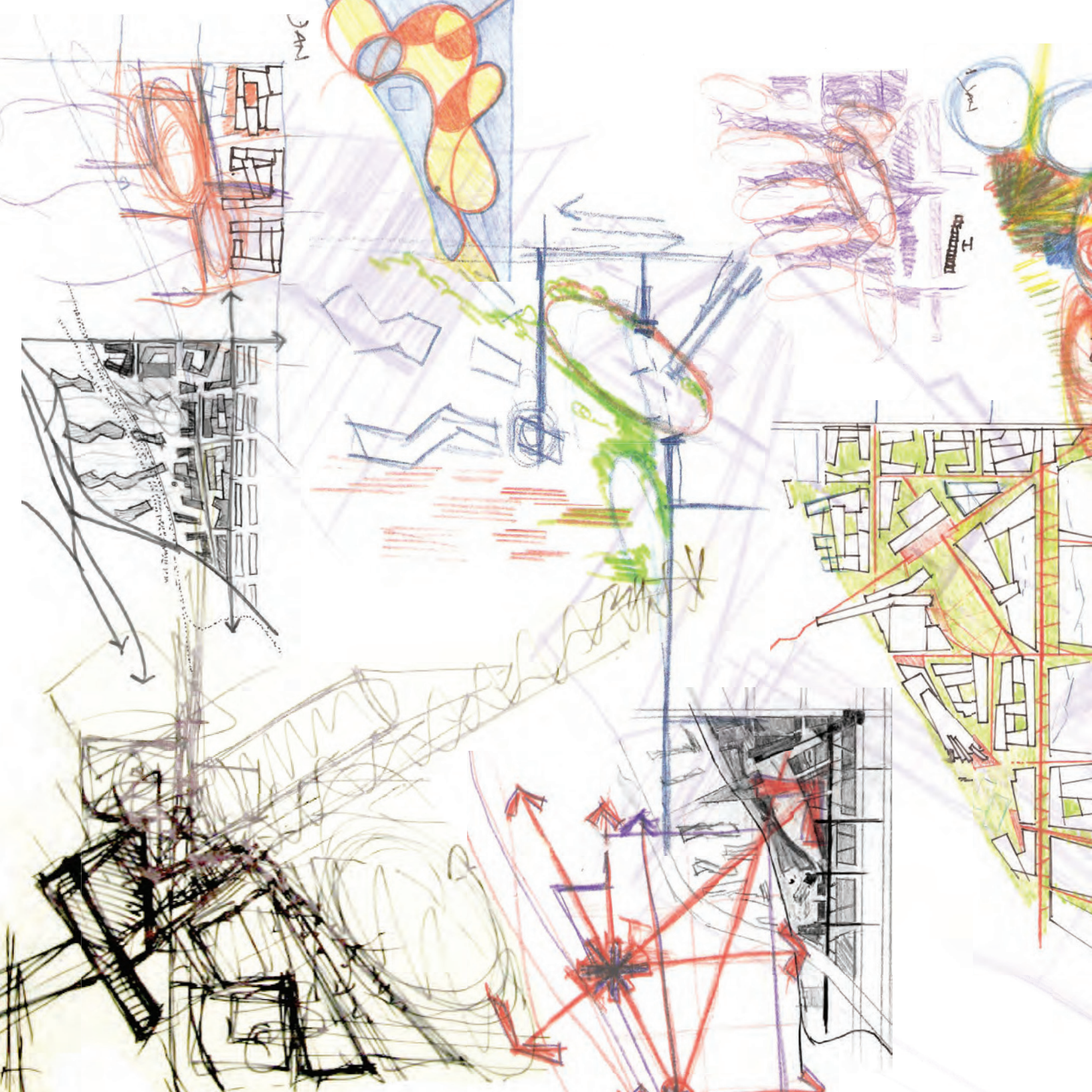
3rd Left Fig A.7 Columbia Final Board

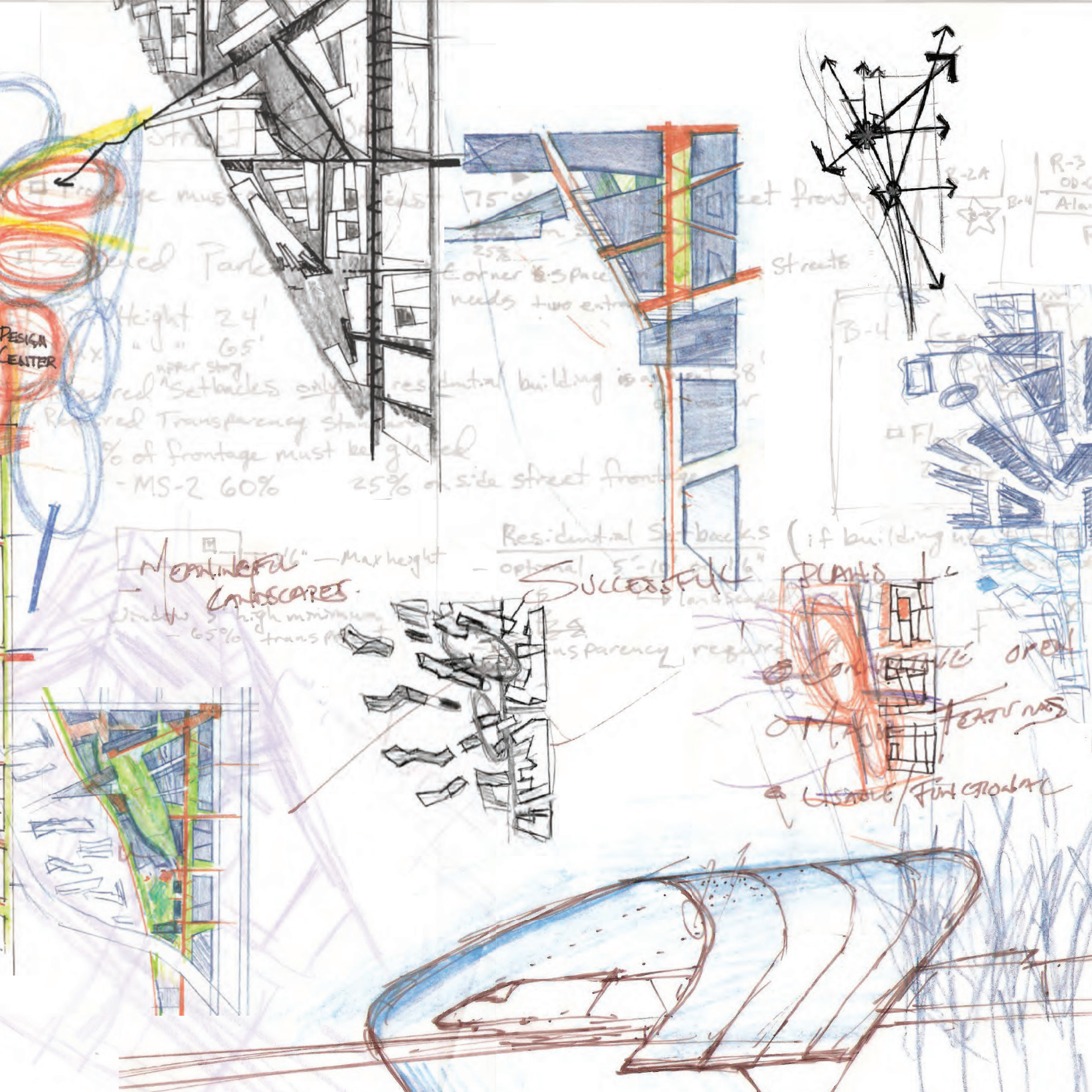
Bottom Left Fig A.8 Columbia Grid/Block Analysis

Appendix B: Process



It is easy to view the finished product and understand the design team's intent. However, what is unclear is how and when the team made decisions throughout the initial submission phase of the competition. Appendix B: Process provides an inside look at how our project developed day-by-day, the time commitment required, and the steps used to create the graphic components of the project.





Street

Height 24'
65'
Setbacks only

Required Transparency

MS-2 60%

75%
Corner space
needs two entrances

Street frontage

Streets

B-4

B-2A

B-4

R-3

OD

A-1

“Mountain View” - Max height
LANDSCAPES

widths 5' high minimum
65% transparent

Residential Setbacks (if building is residential)

optional 5'-10'

transparency requires

SUCCESSFUL PLANTS

OPEN

FEATURES

USABLE FUNCTIONAL

Day 1

Major Progress Areas

- GIS information downloaded from the server
- Printed materials downloaded from ULI for review
- Began hydrology concept
- Created the City in 2050 Outline
- Began preliminary site and project brief analysis
- Discussed pro forma assumptions
- Talked about the big moves and ideas
- Dissection of the 2050 initiative
- Scheduled a critique session for Thursday, the 22nd
- Built CAD base file from GIS information

Notes and Observations

- Long periods of discussion were critical to idea development.
- Redefining sustainable use could be a major driver for the project.
- Our team has a tendency to focus quickly on details, but we need to look more in-depth on the plan as the big picture.
- The team worked well delineating tasks for each team member.
- Discussion was intense (long) but positive.

Day 2 Expected Progress

- More conceptualizing at the larger site scale
- Outline specifics of the project brief
- More discussion about the big moves, begin to clarify definitions
- Meet with professors

Day 2

Major Progress Areas

- Gathered information and did a lot of background research
- The name “Transparent Shift” became the preliminary project title
- Site analysis was performed at the regional scale
- More research on financial information
- Long, intense discussion about potential new architectural paradigms
- Created the first SketchUp base map of the site’s existing conditions
- Trace paper analysis sketches
- Discussed major graphic conventions and phasing strategy

Notes and Observations

- Blake Belanger came in for discussion about project progress; the meeting lasted nearly three hours.
- Blake felt that the initial designs produced on trace for review may not be bold enough.
- The meeting at times became very detail-oriented, needed to maintain focus on the big picture.
- We developed a potential approach to the project by creating the eighth board first to better see the design’s future potential.

Day 3 Expected Progress

- Develop a concept without thinking about the site’s constraints, just explore the design potential of the site
- More clearly define the regional analysis
- Meet with Junbin about the financial information and its integration with the design

Previous Fig B.1 Process Sketches

Right Fig B.2 Studio Images



Day 3

Major Progress Areas

- Developed concepts concerning form and character
- Began detailed sketching for the first time
- Financial information with Junbin, increased financial understanding
- Long, intense discussions concerning the 2050 Vision
- Contacted various local printing agencies regarding lead times for print production
- Began collecting packaging materials for final shipment
- Analyzed specific zoning requirements, specifically regarding Main Street and View Plane ordinances
- Developed concepts for Thursday's critique
- Visited the library for inspiration about architectural form
- Talked about big ideas, approximately five hours of discussion
- Began looking at graphic examples for final board

Notes and Observations

- This was a breakthrough day for the project's big idea (or so we thought).
- We discussed how to set ourselves apart from the rest of the competition, our response would be based heavily on cultural factors.
- There is a strong component of culture change, and the concept of giving back now in the project.
- With the big idea started, the next question is: How do we build off of it?
- Had a good financial information meeting with Junbin, but we need to begin finding actual numbers for the pro forma.

Day 4 Expected Progress

- Critique day and continuing with the big ideas
- Metro area analysis
- Flesh out the concept vision for the 2050 board
- Create more form and detail on the current development concepts

Day 4

Major Progress Areas

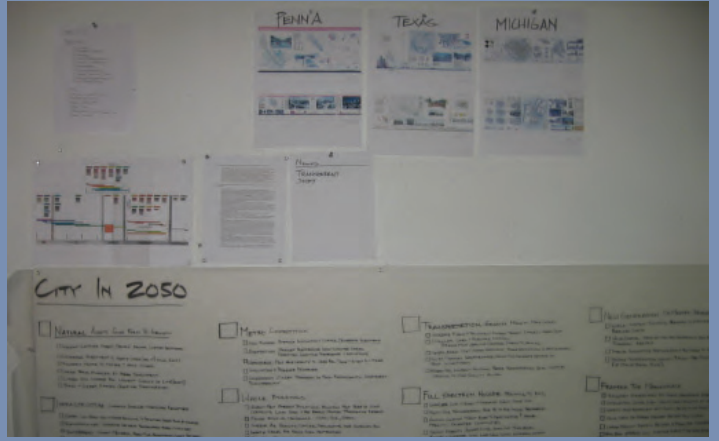
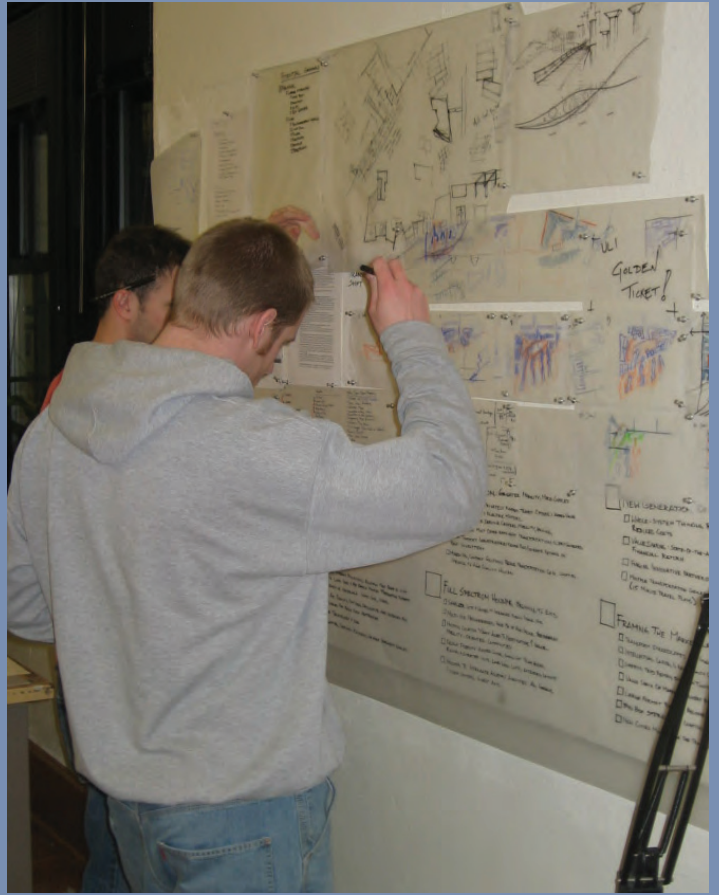
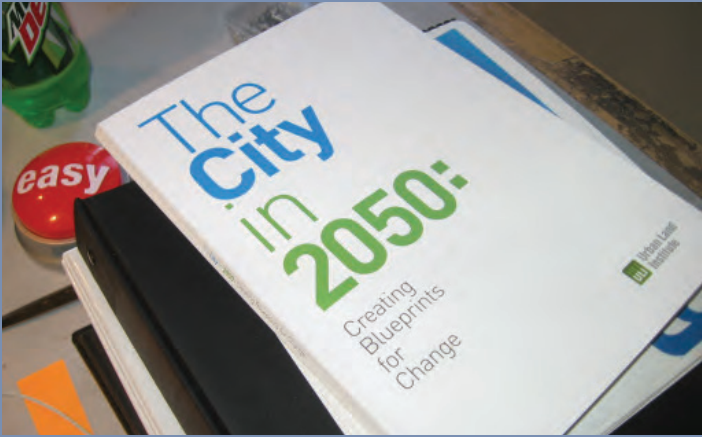
- Initial big idea embracing culture needs work based on the critique with Blake and Stephanie Rolley
- Junbin began developing cell links on the excel pro forma
- Began a program infusing the 2050 initiatives
- Brainstorming and intense discussion about what the place needs to be (big idea) as well as the pragmatic design solution
- Long discussion about the 8th board
- Developed a strong concept about the 8th board
- **touch** and **Health** were introduced as potential project titles

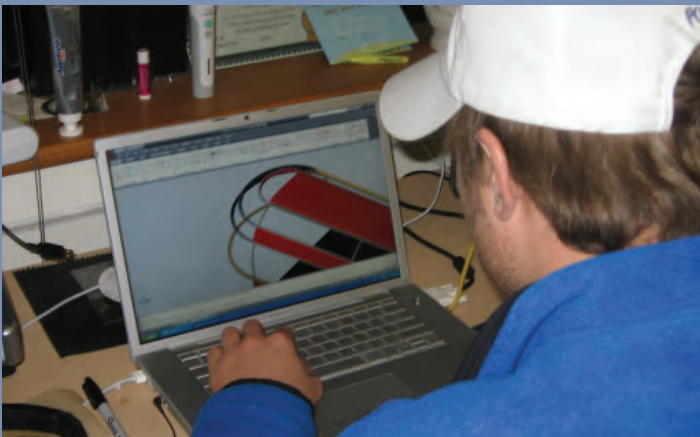
Notes and Observations

- Our concept using urban farming and culture needs to broaden its scope or go away altogether.
- 2050 board could be a very effective and provocative site piece.
- We had great discussion once again for four or five hours about the big ideas and potential graphics.
- Junbin is moving forward well with the financial information.
- The team is working very well together.
- Everyone seems anxious to begin forming more concrete ideas, but we need to stay as flexible as possible at this point.

Day 5 Expected Progress

- Intense conceptual design looking at actual plan development area
- Junbin and John continue to develop the pro forma with the design
- Bryan is working on financial assumptions





Day 5

Major Progress Areas

- Continued process diagrams
- Began preliminary layouts on design boards
- Discussed how to incorporate **touch** into the design
- Began preliminary programming on the phasing strategy
- Chris began rendering the 2050 Vision board
- One concept is showing promise and is moving into programming
- Set a guide for the work to be completed for the weekend

Notes and Observations

- We were hoping to get more done, but had more good discussion.
- Team feels good about the direction of the project, need to begin final graphics and make concrete project decisions.
- We need to develop one more solid concept that contrasts the concept already in development.
- MLA student Andy Meesmann gave helpful critique regarding planning and could be a good resource in future critiques as well.

Day 6 Expected Progress

- Develop two strong concepts for detail refinement
- Run through preliminary cost estimating scenarios

Day 6

Major Progress Areas

- Developed two design concepts
- Concept one sketched at 100 scale
- Concept two developed as a thumbnail
- Diagram for concept one completed
- Concept two discarded

Notes and Observations

- There was a lot of work in production and sketching today.
- Everyone was tired, beginning to work very late each day.

Day 7 Expected Progress

- Need to complete more concepts and concretely decide on the big project ideas

Day 7

Major Progress Areas

- Concept one completed, scanned, and brought into SketchUp; architectural character was explored
- Concept two completed, scanned, and put into SketchUp
- Financial information on the Excel spreadsheet linked together
- 3D Viz building concepts began
- Building massing explored at a more detailed level
- The big idea more clearly defined
- Aerial perspective begun, SketchUp model of downtown Denver started

Notes and Observations

- All of the pro forma information was linked by the end of today. This allowed us to begin developing financial scenarios with phasing and development.
- The team worked very well together, all people split off individually much of the day to work on separate project areas.

Day 8 Expected Progress

- Second critique and then finalize a concept to take into development

Day 8

Major Progress Areas

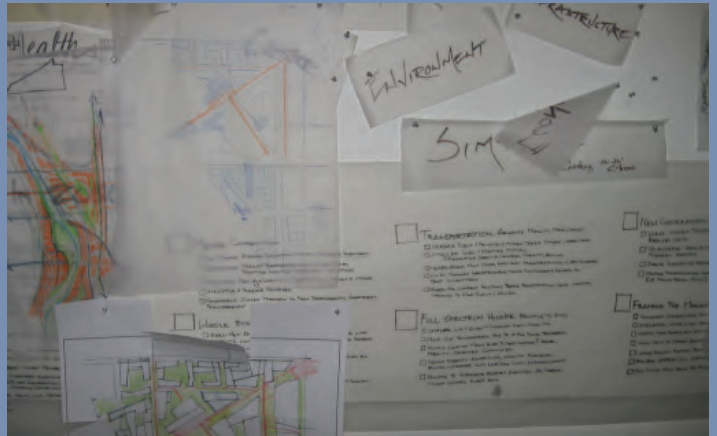
- Critique meeting with the professors went well
- Decided to continue with concept one, more bold and visionary
- Began working on computer for final renderings
- Pro forma meeting with Junbin
- Concept and vision approved
- 2050 vision board concept is continuing to evolve
- Main buildings created in CAD

Notes and Observations

- Need to make the big sustainable systems decisions.
- Everyone is getting very tired, but decisions are finalizing and we moved into production.

Day 9 Expected Progress

- Sustainability decisions
- Rework master plan



Day 9

Major Progress Areas

- Sustainable systems section diagrammed out
- Financial numbers beginning to take shape
- Develop the adjacent property along the South Platte River
- Corridor in CAD
- Continued to develop the SketchUp model for the site aerial perspective
- Reworked transit and park spaces
- Site plan put into CAD as a base

Notes and Observations

- We decided to scrap the figural buildings in favor of new, simpler forms.
- Pro forma and financial information is difficult to understand, but moving ahead.
- All of us are tired but the big final push is beginning.
- We were temporarily set back as we went in a new direction regarding the figural building forms, but the setback ultimately strengthened and simplified the design.
- We need to really start producing graphics and completing board segments.

Day 10 Expected Progress

- Complete site plan and put into CAD
- 3D site massing
- Preliminary phasing and land use master plan
- Preliminary board layout completed

Day 10

Major Progress Areas

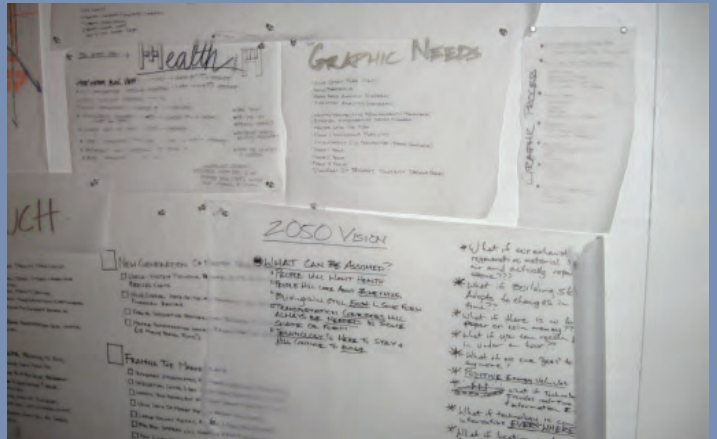
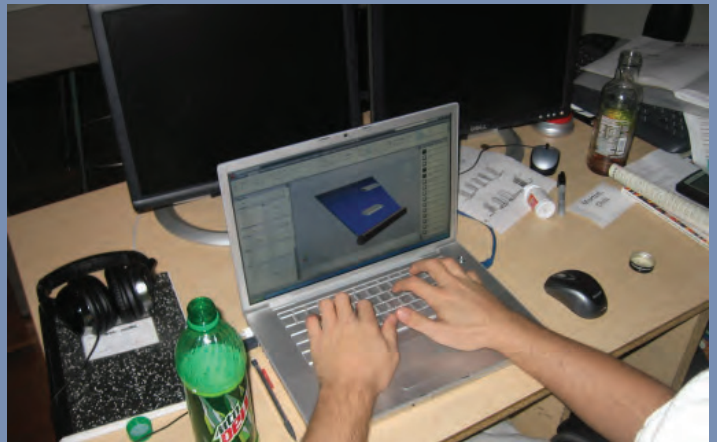
- Pro forma is nearly completed
- A lot of AutoCAD design work
- Plan was reshaped to make it more dynamic
- Phasing strategy was refined

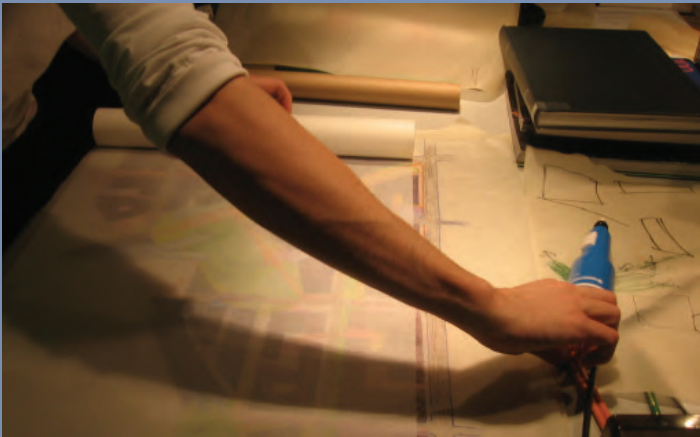
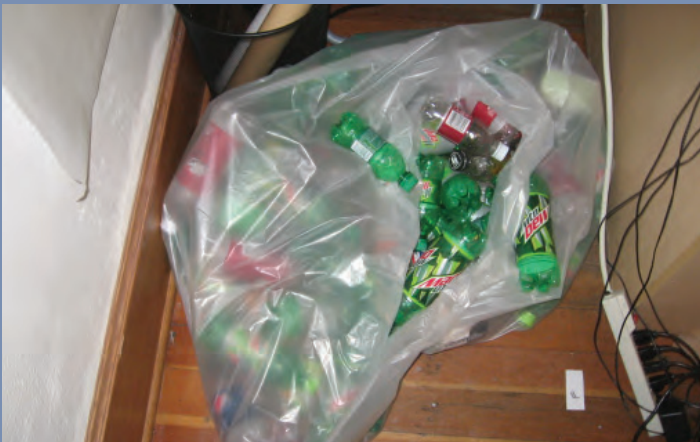
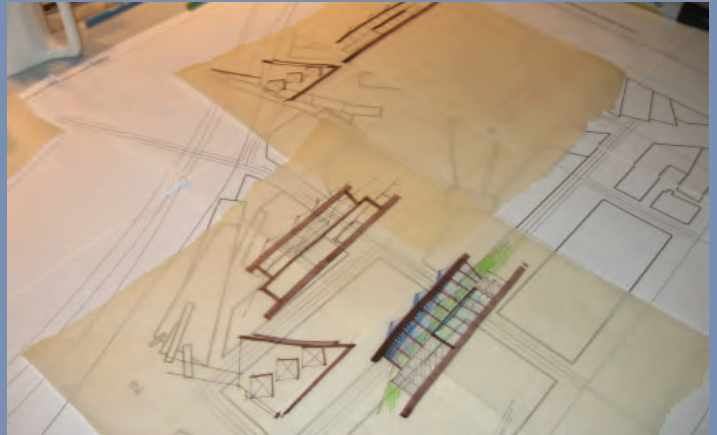
Notes and Observations

- Most of the main concepts, ideas, and thinking was completed by the end of today.

Day 11 Expected Progress

- Complete the pro forma
- Finish all work in AutoCAD
- Continue with board layout





Day 11

Major Progress Areas

- Wrote the initial draft of the narrative for the 2050 Vision board
- More AutoCAD work
- Most of the diagrams completed
- Began the master land-use plan

Notes and Observations

- We had incredible difficulty with nearly every computer program throughout the day. AutoCAD alone crashed more than 30 times between the three computers running the program. This hindered the work flow immensely.

Day 12 Expected Progress

- Fully completed all diagrams
- Complete the pro forma
- Make major progress on aerial perspective
- Begin site study area rendering
- Begin the sustainable systems section

Day 12

Major Progress Areas

- Finished CAD linework
- Began rendering the aerial perspective
- Completed the phasing strategy
- Completed the 2050 Vision board

Notes and Observations

- We have begun to make real progress on final graphics.
- The air mattress made its way into studio. We have started using it for short naps so we don't have to go home.

Day 13 Expected Progress

- Aerial perspective complete
- Site study area rendering complete
- Sustainable section complete
- Phasing diagram begun
- The first of two perspectives begun
- Development area rendering begun

Day 13

Major Progress Areas

- Site study
- Aerial perspective Complete
- Perspective one made progress

Notes and Observations

- The team is in full production mode.

Day 14 Expected Progress

- Phasing diagrams complete
- Master land-use plan complete
- Perspective one complete
- Development area master plan complete
- Board layout and text complete

Day 14

Major Progress Areas

- Progress was made on all remaining graphics
- Development site master plan completed

Notes and Observations

- We are in full production mode.
- Everyone is mildly delirious at this point from lack of sleep.
- I am slightly concerned that all of the components will not be completed on time.

Day 15 Expected Progress

- Print and send off to ULI



Day 15

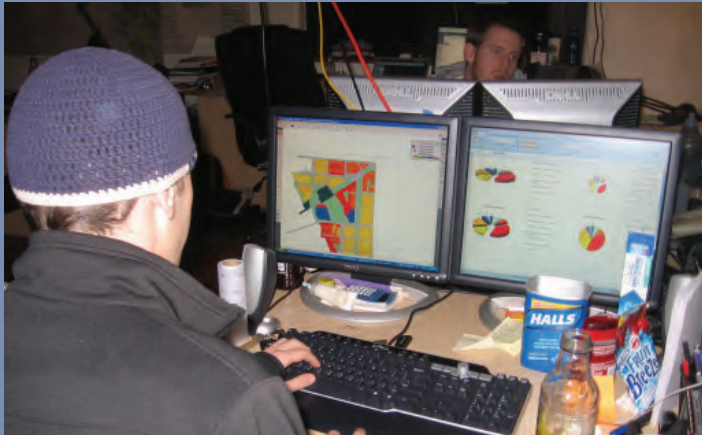
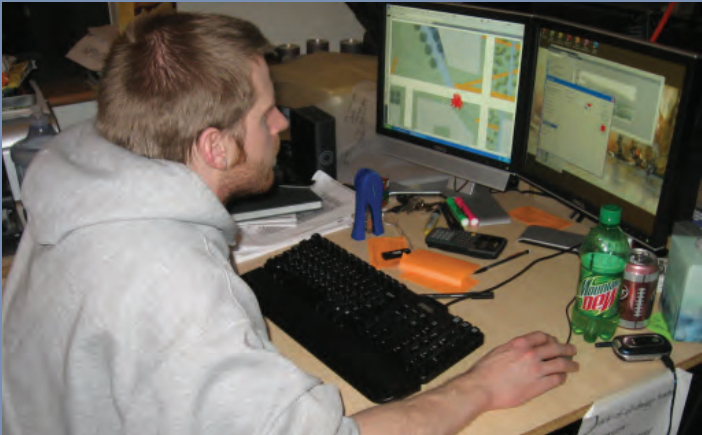
Major Progress Areas

- Completed all graphic components
- Finished all major text
- Printed and mounted boards at the Kansas State University Copy Center
- Created CDs of the boards and digital financial information

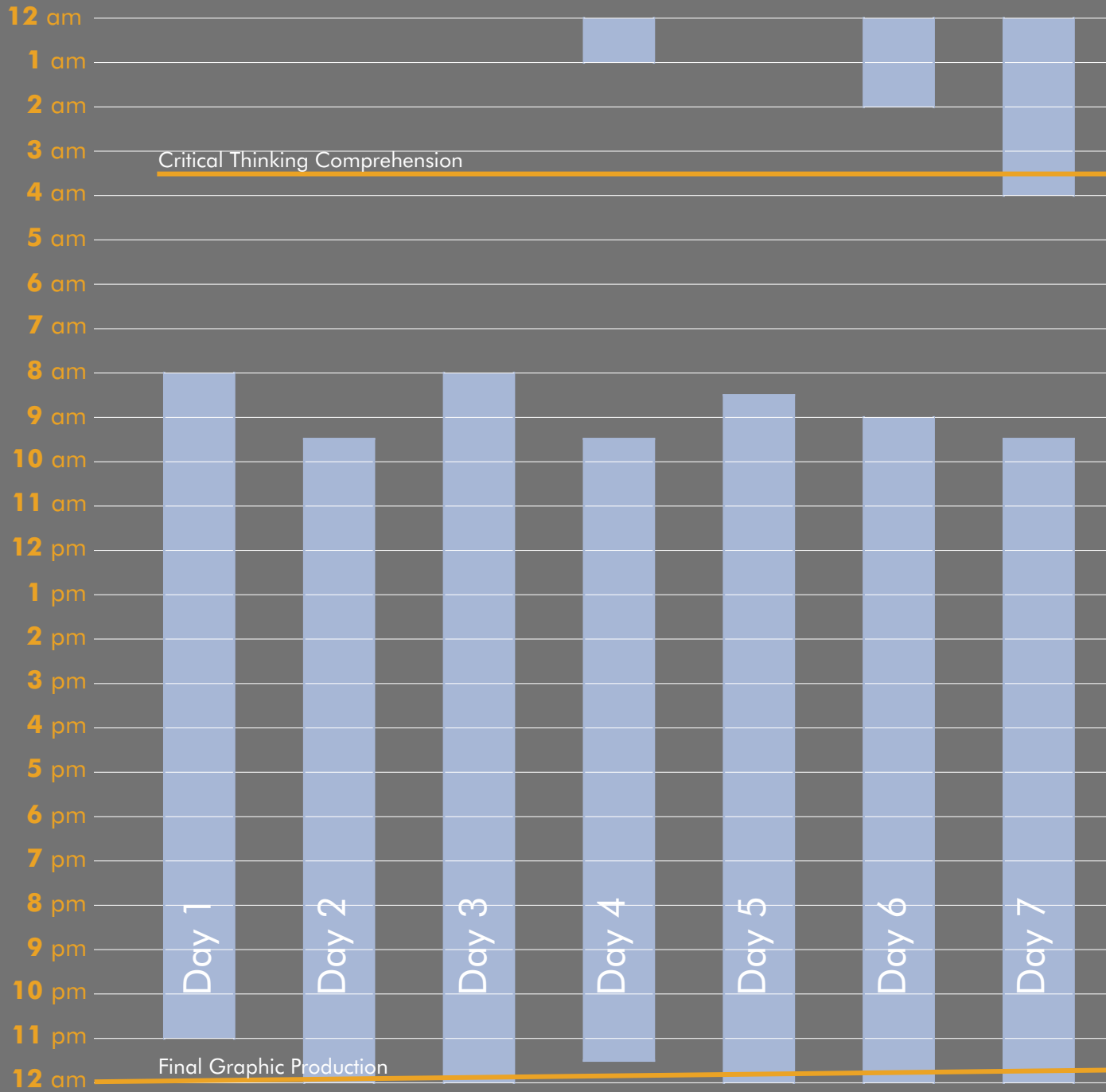
Notes and Observations

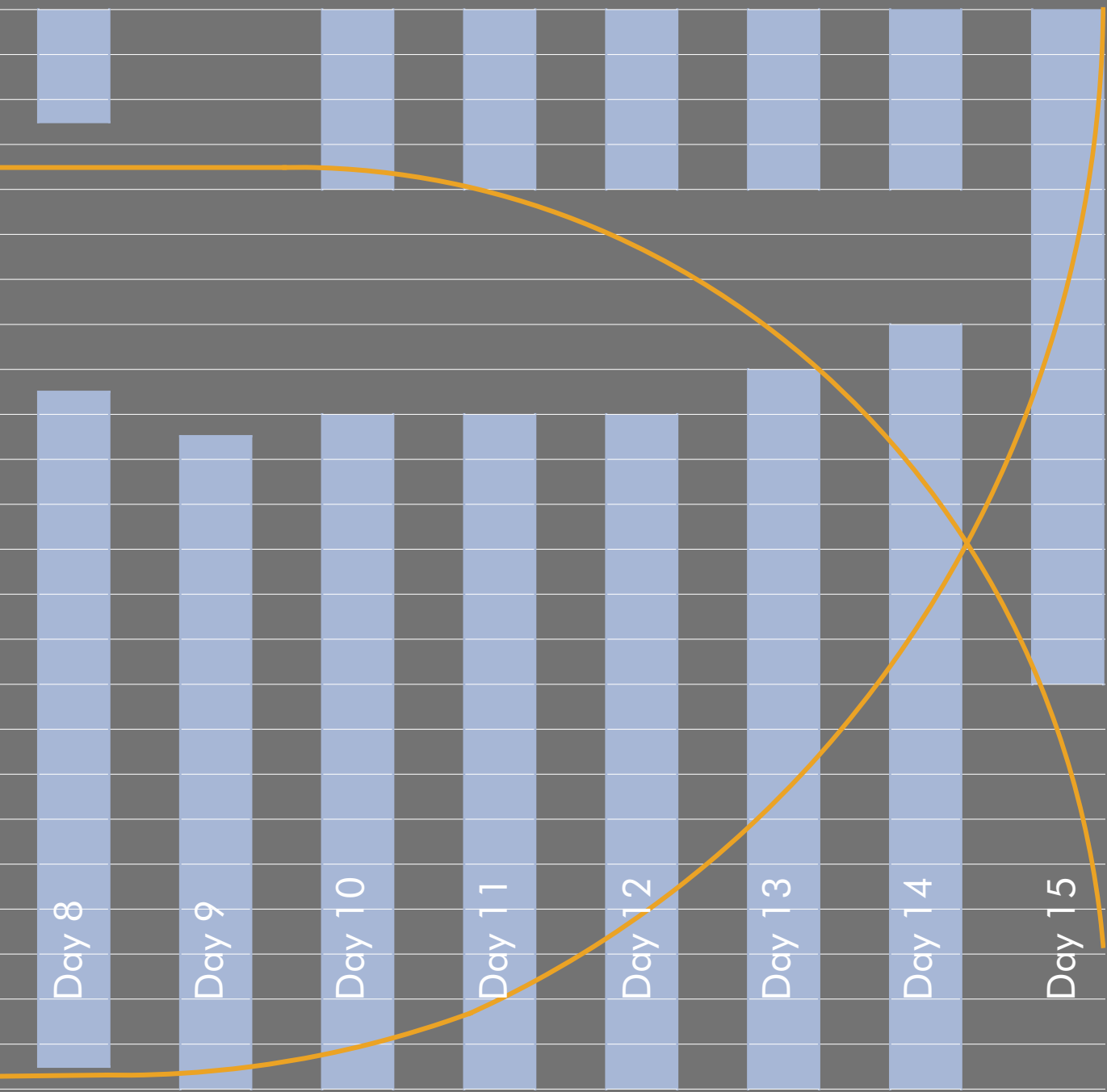
- We made the mistake of waiting until early Monday morning to write our text. At this point, we had been up for over 30 straight hours and could not develop the text needed to explain the project. It took nearly five hours to write the final narrative and text that supported the images. I would highly recommend writing the text for the images and the concept well in advance of the due date.

Right Fig B.9 Studio Images
Following Fig B.10 Studio Hours
Diagram

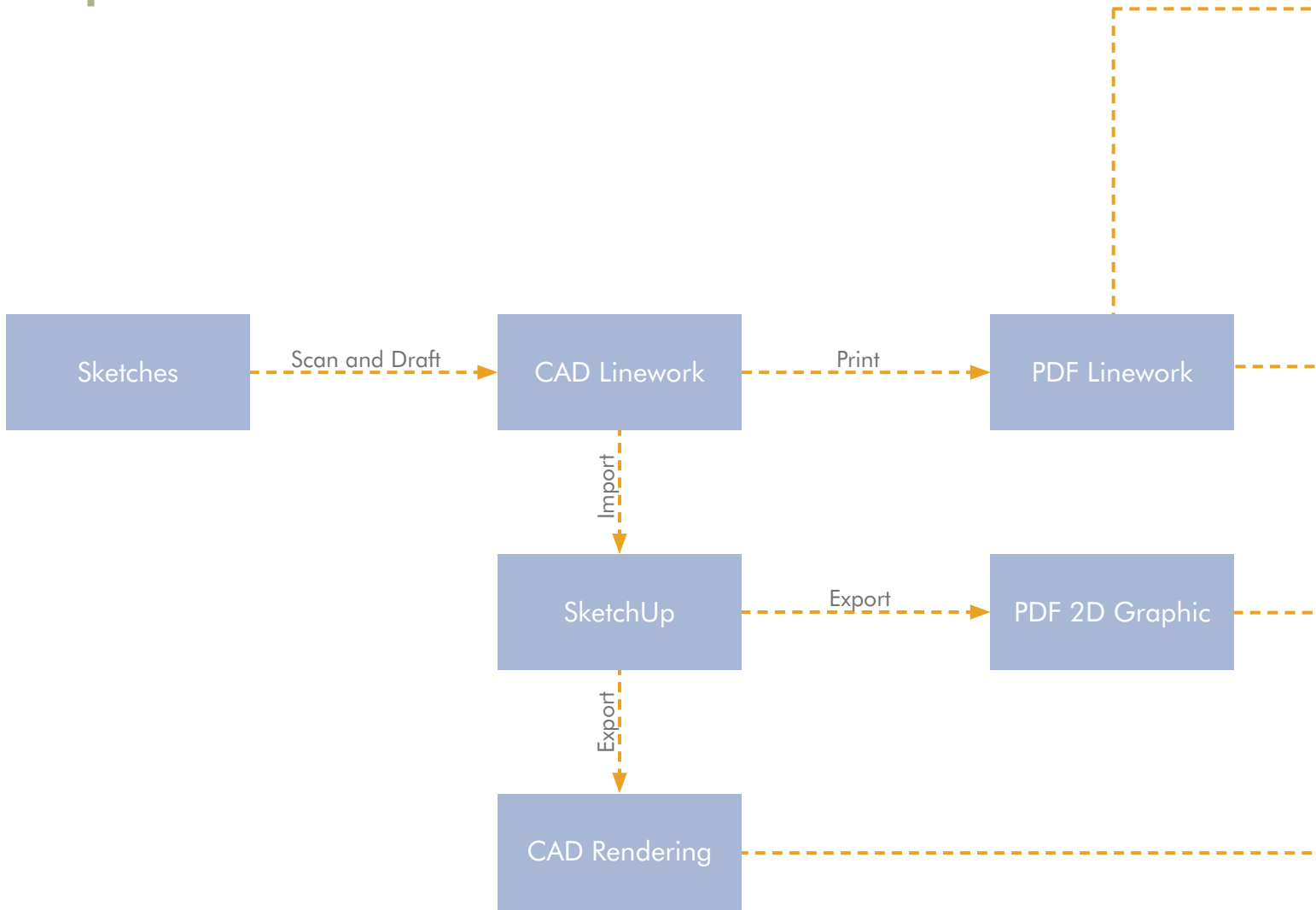


Studio Hours: 255

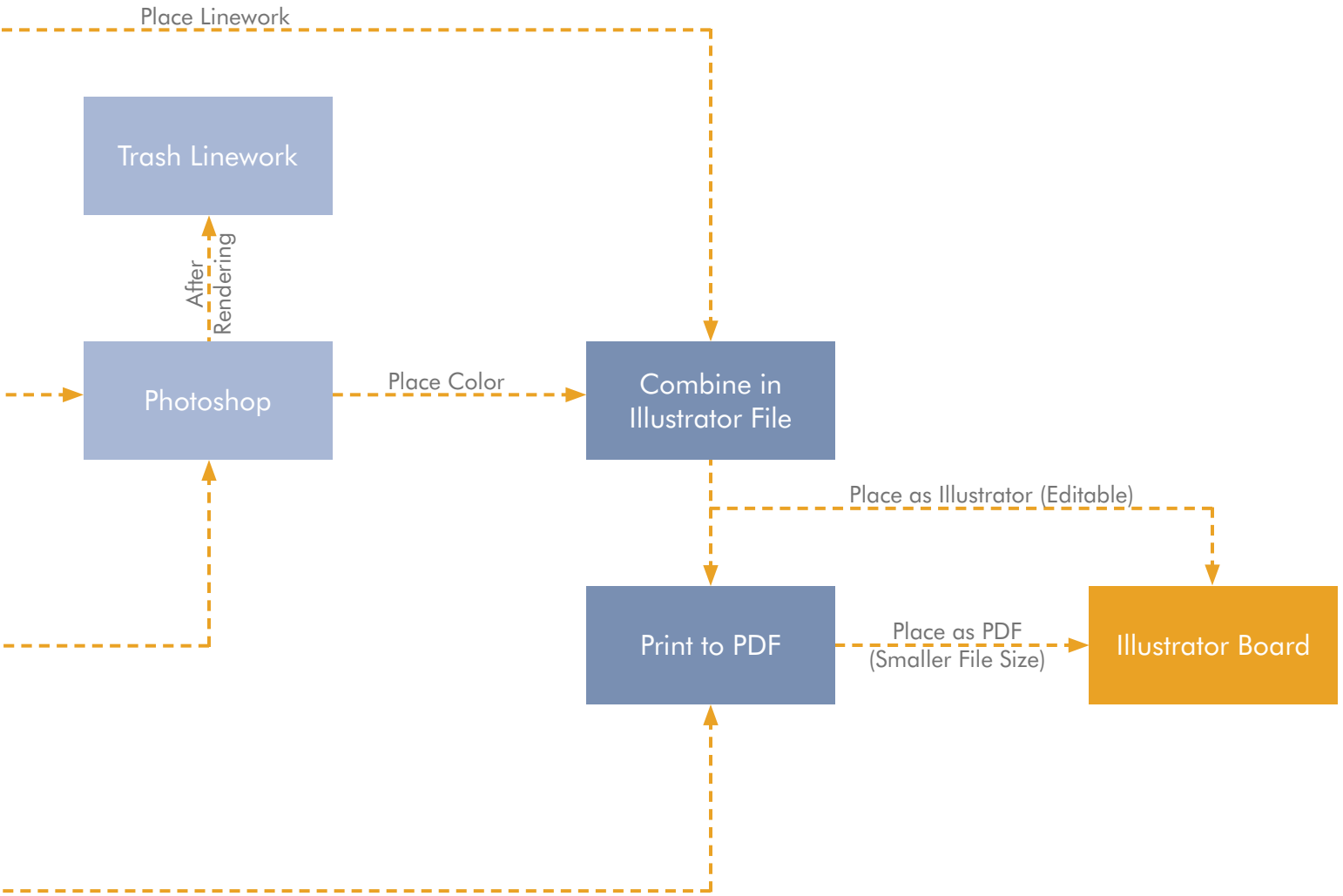




Graphic Production Process



Above Fig B.11 Graphic Process Diagram



Appendix C



Literature Review

The focus of the literature review and diagram (Fig. C.1) is to provide information on a wide variety of potential topics supporting the competition entry with a primary emphasis on sustainability, urban design, competition-specific literature, economics, natural systems, and landscape urbanism. Selections within the literature review address some aspect of these three main topics, providing both technical and theoretical information relevant to the project. Each review is a short summary of main points most relevant to the project.

THE CITY IN 2050: CREATING BLUEPRINTS FOR CHANGE

The Urban Land Institute

The City in 2050 is a recent publication put out by the Urban Land Institute focusing on sustainability as it may be defined in the year 2050 and beyond. The book focuses on eight categories: Capital Markets, Climate Change, Infrastructure, Water, Energy, and Demographics. Each category is discussed in terms of its potential to shape the world as it moves through the 21st Century.

Graphs, charts, and figures statistically display each focus category, depicting some of the most challenging issues we will face in the future. The City in 2050, by ULI's request, is critical literature to draw competition response ideas from for the 2009 competition.

SUSTAINABLE URBANISM: URBAN DESIGN WITH NATURE

Douglass Farr

Foreword by Andres Duany

Sustainable Urbanism at its core is defined as a walkable and transit-served urbanism integrated with high-performance buildings and high-performance infrastructure. Sustainable urbanism is composed of, but not limited to three essential elements: neighborhoods, districts, and corridors.

There are five main attributes within the three essential elements, which include: definition, compactness, completeness, connectedness, and biophilia. In order for sustainable urbanism to be effective, centers and edges of communities must be clearly identifiable. Having clearly defined centers and edges promotes walkability as well as responsibility of the residents for the neighborhood.

Sustainable urbanism cannot be accomplished at density less than seven (7) dwellings per acre. Therefore, compactness is critical to successful design. Increased density increases transit opportunities as well as the frequency of transit stops. Also, increasing density increases opportunities to integrate infrastructure, such as energy systems, and can reduce carbon generation by as much as 30 percent.

Completeness refers to creating a neighborhood where all normal daily needs can be met on foot. A necessity for completeness is a wide variety of dwelling types, which promotes diversity. Services within a complete neighborhood must be highly varied. A wide variety of available services increases citizen independence.

One key component of connectedness is integrated transportation and land use. Sidewalks must be provided on both sides of the street to reduce vehicle/pedestrian interactions. Also, intersections should occur at short intervals, between 300 and 400'. Street speed limits should remain between 25 and 30 miles per hour and streets should be kept to two-lane traffic. There must also be sustainable corridors, which are essentially public transit corridors surrounded with enough properly distributed density along the corridor to support a high level transit service.

Finally, sustainable urbanism developments must contain biophilia, connecting humans to nature. Vegetative cover reduces ground temperatures and can increase land values surrounding open space. Inclusion of biophilia provides wildlife habitat and increases human awareness to the non-human natural environment.

Along with the five main attributes of sustainable urbanism, two other main concerns are the inclusion of high performance infrastructure and high performance buildings. High performance buildings are essentially defined as LEED certified buildings operating 25-30% more efficiently than conventional buildings. High performance infrastructure combines the smart growth concern about the financial burden imposed by new infrastructure needed to support greenfield development, the desire for pedestrian-friendly design, and resource and consumption efficiencies.

Design philosophy for approaching the problem posed by the Urban Land Institute | Gerald D. Hines Student Urban Design Competition is pulled primarily from this book. As stated by the competition brief, design response must provide a workable, livable, sustainable environment for the proposed redevelopment area, which follows very closely with the core principles of sustainable urbanism. Furthermore, this book should continue to act as a decision-making guideline for the duration of the design competition.

PUBLIC PLACES URBAN SPACES: THE DIMENSIONS OF URBAN DESIGN

Matthew Carmona, Tim Heath, Taner Oc, Steve Tiesdell

Review from this book focuses mainly on Part Two, Chapter Six: the social dimension of urban design. There are five key aspects of urban design: relationship between people and space, interrelated concepts of the public realm and public life, notion of neighborhoods, safety and security issues, and the issue of accessibility. Each aspect has definable characteristics that promote feasible implementation into urban design.

Relationship between people and space holds to the theory that the physical environment determines human behavior and that design matters, but not absolutely. Ultimately, the user still must make the decision about how he/she will use the space. An urban design should be an activity that

provides people with choices rather than denying them choice, it is preferable to offer opportunity and then manage its use.

Interrelated concepts of the 'public realm' and public life speak to the fact that the public realm has physical space and social dimensions. Public spaces act as a neutral or common ground for interaction between individuals. Successful public spaces convey a sense of history, act as an arena for diverse groups to engage one another, and are accessible to and used by all. Many believe that increase in vehicular activity has facilitated the decline of the public realm.

Notion of neighborhoods, like many urbanism design philosophies, is essential to successful development. Neighborhoods are seen as providing identity and character. Also, neighborhoods provide a pragmatic process for planning, designing, and implementing urban areas. Essentially, neighborhoods can provide design implementation with manageable and financially feasible development components. As a rule, neighborhoods should be self-sufficient and should create areas of greater social interaction. Clear boundaries and centers enhance neighborhood identity and create social relevance and meaning.

Safety and Security are critical components to successful urban design. Gating communities acts only to further segregate the community without solving the problem. Solution concepts are simple: avoid creation of dark alleys, deserted areas, and situations that create anxiety. The 'situational approach' uses techniques that make areas less attractive for committing offenses (adequate lighting, high public use). Providing visual access into a space either symbolically, physically, or both is important for creating successful urban spaces. Spaces should be accessible to a wide variety of users and must contain programming for these users upon entering the space.

Public Places Urban Spaces will help define the key qualities and components necessary for successful design solutions to issues posed by the competition brief. The book will also serve as a source for programming opportunity identification and guidelines.

Pro Forma 101: GETTING FAMILIAR WITH A BASIC TOOL OF REAL ESTATE ANALYSIS

Wayne A. Lemmon

Pro forma 101 is a quick guide to understanding the basic elements of financial feasibility analysis from a developer's point of view. As a main element of the design competition, the design's financial feasibility plays a crucial role in the ultimate success of the project. Though another member of the team will be in charge of performing financial analysis, it is important as project leader to understand the pro forma process.

A pro forma is, at its most basic definition, a go/no-go analysis for developers to decide whether or not to go forward with the design from a financial standpoint. There are several parts, or steps to the pro forma. The first step is to understand what is being proposed. The developer must determine what is actually being built on the site (the program). Next, the developer must determine what revenue will be generated from the project. The developer will perform a market analysis for this step. Gross sales minus commission fees results in projected revenues.

Actual cost to build the project is the next determination. Typical costs include land acquisition, planning design and approval, site work and building construction, amenities and off-site costs (plazas, fountains, etc.), and management overhead. One key thought to remember at this stage is that the costs of building construction are often less than half of the total project cost.

Finally, and often most importantly for the developer, the net return on project development must be calculated. Several factors must be weighed to determine net gain. A cash flow analysis, a schedule of when revenue and expenses are expected to be incurred, shows the impact of time on project feasibility must be completed. Financing interest usually accrued through a land purchase loan and short-term project financing is accounted for. Completing the spreadsheet determines the rate of return. Generally, 12-20% rates of return are viable and the developer will move forward with the project.

Pro formas are also used to quickly test alternative scenarios. Common tests include higher costs, impacts of time, and project density alternatives. Time delays are often the most costly profit detractors, while increasing project density, even slightly, can have significant positive impacts on overall profits.

GRID SYSTEMS: PRINCIPLES OF ORGANIZING TYPE

Kimberly Elam

Reviewing this book is not to better understand the landscape architecture or urban design, but rather to understand graphic representation regarding the physical placement of text and graphics on the final presentation layout. Several fundamental rules are explained and demonstrated in this book, including proportion and grouping of elements, use of negative space, and perimeter edge and axial relationships.

Grouping of elements permits an element to have an immediate visual relationship with another element. Grouping reduces the number of elements, simplifies composition, and increases white space. Elements that are grouped also create larger, less complex white space. Elements should contact all four edges of a design in order to activate all negative space. As another rule, stronger axial alignments are located in the center of the composition.

The book touches on three main forms of composition: horizontal, vertical, and diagonal. Horizontal composition is the simplest form of composition and is the main compositional form employed by past design competition entrants. Therefore, study of this book will focus on horizontal composition. The law of thirds is also discussed in terms of its role in leading the eye through a composition. Text legibility and format is examined as well.

Rules and examples from this book will help form the basis for case study board composition comparisons. Also, principles from Grid Systems will be employed during final competition board construction.

2009 STUDENT URBAN DESIGN COMPETITION WEBSITE: COMPETITION BRIEF

www.udcompetition.uli.org

This website serves as the informational hub for the upcoming design competition. Application information, competition problem, essential criteria, deadlines, and resource links are found at the competition site in full. All relevant information is posted on the website, and during the competition teams post questions that are answered by the committee if clarification is needed. All posted questions and answers are available for viewing by all participating teams.

RECOVERING LANDSCAPE: ESSAYS IN CONTEMPORARY LANDSCAPE ARCHITECTURE

James Corner

This book is a collection of essays relating not only to landscape architectural practice, but also to the theory, history, and meaning of landscape architecture. However, it is more theoretical than pragmatic, and provides valuable insight about creative new ways to see 'landscape.' Each essay focuses on different areas of landscape architecture and will hopefully be a good source for providing innovative techniques to frame and analyze the competition problem.

LIVING SYSTEMS: Innovative Materials and Technologies for Landscape Architecture

Liat Margolis, Alexander Robinson

This book focuses on the various living systems and their applications within today's cities as applied by landscape architects. It also focuses on the merging or blending of architecture and landscape architecture as a singular entity. There is a focus on several key terms: Launch, Stratify, Fluid, Grooming, Digestive, Volatile, and Translate. Each term is given context through representative samples of landscape architecture and architectural work. This book should be helpful in both creative design solution as well as providing information about potential implementation opportunities using innovative sustainable techniques.

CRADLE TO CRADLE: Remaking the Way We Make Things

William McDonough, Michael Braungart

Cradle to Cradle takes the principles of ecology and environmental issues and takes them in a completely new direction. One of the main points of the book is that while we have been striving to do less harm for the environment, there has been little or no thought as to how we can actually improve the environment while at the same time making a living for ourselves. The book looks at way to not reduce, but eliminate waste altogether.

One of their main terms is "eco-effectiveness," which is a redesign of the current trends from the ground up that focuses on eco-safety and cost efficiency. This book may prove helpful as a concept book for innovative ways to think progressively about waste and cost-effectiveness of the proposed design solution for the competition.

Process and Timeline

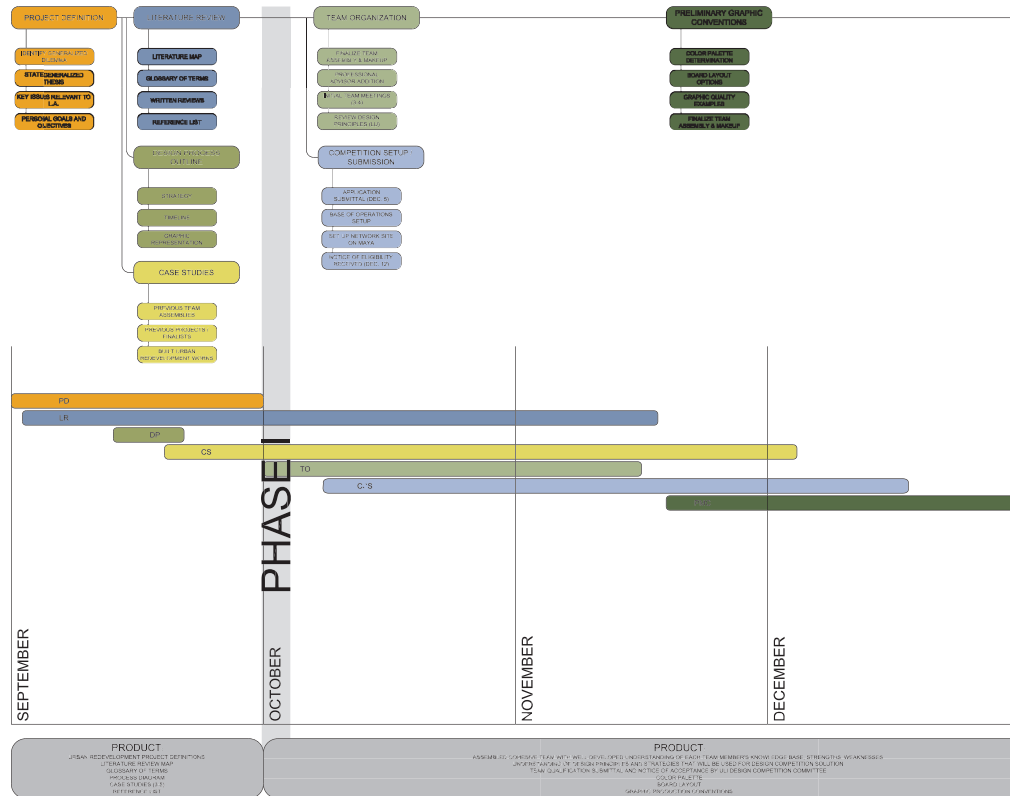
This process diagram (Fig. C.2) follows a very strict and linear path for project organization completion in May 2009. The linear process is in part due to my personal project completion method and way of thinking, but is mainly due to several strict deadlines required by the competition process.

Phase One focuses mainly on team formation, competition application submission and qualification, and preliminary graphic conventions. Prior to and during phase one, literature reviews and case studies of previous competition entries have been conducted.

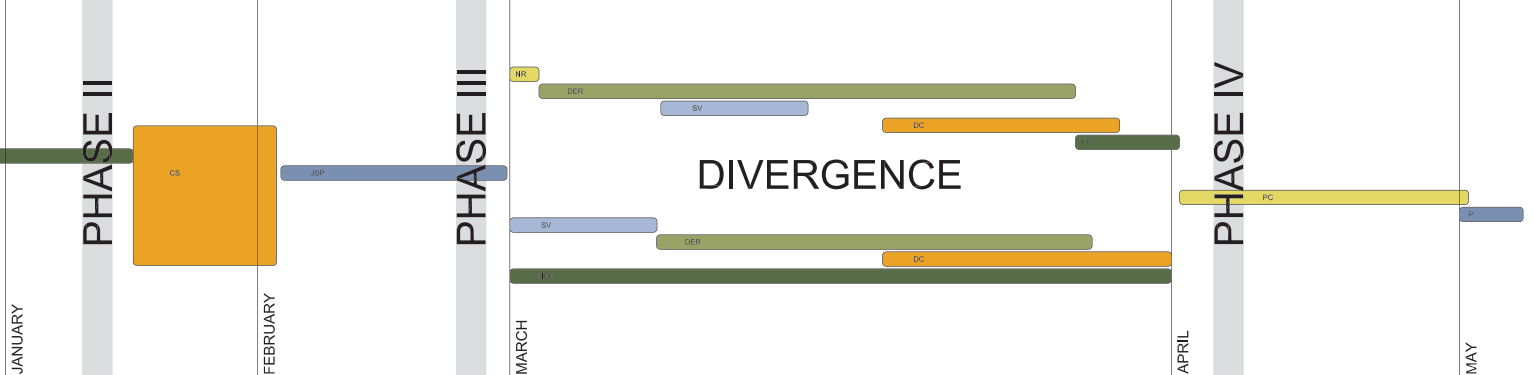
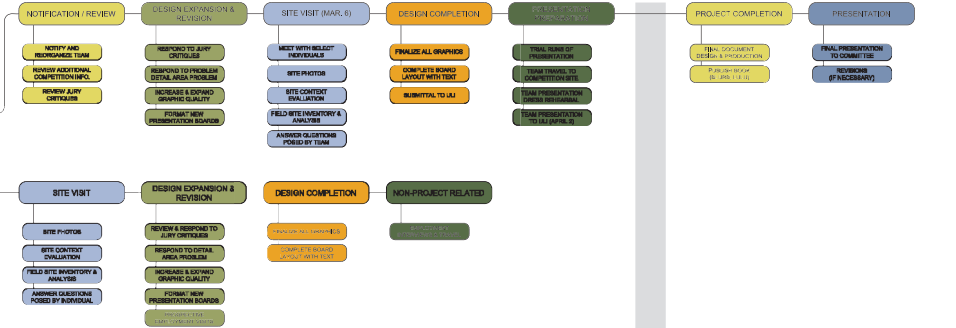
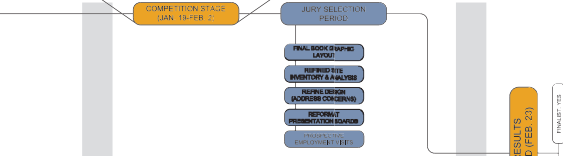
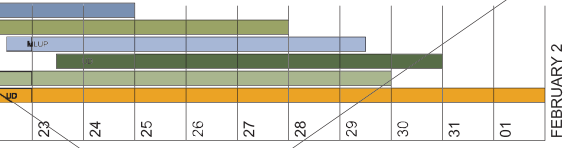
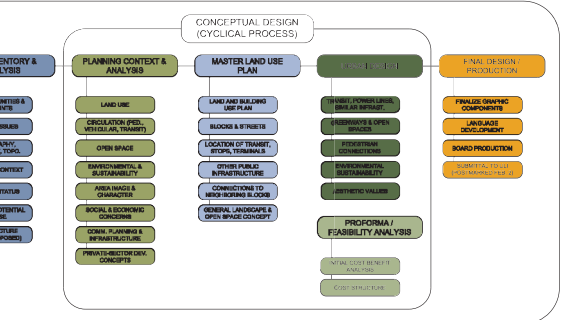
Phase Two is where the initial competition submission is developed, from January 19 to February 2. That two-week period requires its own timeline process as work must be completed rapidly.

Phase Three contains two scenarios, one involving finalist acceptance for the competition and the other if the project fails to make the finalist cut.

Phase Four is essentially production of the final booklet and related documents necessary for project completion.



Right Fig C.2 Process Diagram and Timeline



PRODUCT

2-3 DAY EXHIBITION JANNING CONCEPT ANALYSIS MASTER PLAN USE PLAN AND URBAN DESIGN SCALES PLANS SECTION, ELEVATION, ASSESSMENTS OF DESIGN SOLUTIONS, PHOTOS AND VISUALIZATION WITHIN PROPOSED DESIGN AREA, HIGH QUALITY GRAPHIC REPRESENTATION OF ALL ELEMENTS OF DESIGN, COMPLETION DESIGN BOARD (20' X 70")

PHASE III FINAL CONSTRUCTION DESIGN RESULTS (20' X 70") CO-CONTAINING ALL DESIGN SOLUTION INFORMATION AND GRAPHIC REPRESENTATION

PRODUCT

FURTHER DEVELOPMENT AND REFINEMENT OF PREVIOUSLY DEVELOPED DESIGN SOLUTIONS, INFORMATION AND SETBACKS TO EXTEND PRESENTATION TO DESIGN SOLUTIONS IN-DEPTH BY TOP AND ANALYSIS COMPLETED WITH THE AID OF SITE VISITS AND EXTENDED REVIEW TIME

TOP QUALITY GRAPHIC REPRESENTATION OF ALL DESIGN SOLUTIONS, PHOTOS AND VISUALIZATION WITHIN PROPOSED DESIGN AREA, HIGH QUALITY GRAPHIC REPRESENTATION OF ALL ELEMENTS OF DESIGN, COMPLETION DESIGN BOARD (20' X 70")

PHASE IV FINAL CONSTRUCTION DESIGN RESULTS (20' X 70") CO-CONTAINING ALL DESIGN SOLUTION INFORMATION AND GRAPHIC REPRESENTATION

PRODUCT:

PROFESSIONAL BOOK DISPLAY AND PROPOSAL FROM DESIGN EVALUATION DEVELOPED OUTGOING PRODUCT PRESENTATION FOR COMMITTEE AND OTHER INTERESTED PARTIES PRESENTATION BOARD (LAWYER REVIEW) FINAL DESIGN SOLUTIONS

Appendix D



Glossary of Terms

A

Annum: In or for each year

[1981. New Webster's Dictionary of the English Language. The Delair Publishing Company, Inc.]

Axial Relationship: Two or more elements aligned along an axis.

[Elam, Kimberly. 2004. "Grid Systems: Principles of Organizing Type." Princeton Architectural Press.]

B

Best Management Practices (BMP): Refers to the practice considered most effective to achieve a specific desired result for protection of water, air, and land to control the release of toxins.

[Farr, Douglas. 2008. "Sustainable Urbanism: Urban Design with Nature." John Wiley & Sons, Inc.]

Biofilia: The name given to the human love of nature based on an intrinsic interdependence between humans and other living systems.

[Farr, Douglas. 2008. "Sustainable Urbanism: Urban Design with Nature." John Wiley & Sons, Inc.]

Brownfields: Real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of hazardous substance, pollutant, or contaminant.

[United States Environmental Protections Agency. Brownfields Cleanup and Redevelopment. www.epa.gov/brownfields/glossary.htm. (accessed September 6, 2008)]

C

Capital Improvement Program (CIP): A community's plan for matching the cost of large-scale improvements – such as fixing roads and water and sewer mains – to anticipated revenues, such as from taxes and bonds.

[Farr, Douglas. 2008. "Sustainable Urbanism: Urban Design with Nature." John Wiley & Sons, Inc.]

Cash Flow Analysis: A schedule of when revenues and expenses are expected to be incurred.

[Lemmon, Wayne A. 2007. Pro forma 101: Getting Familiar With a Basic Tool of Real Estate Analysis. Planning Commissioners Journal. 65: 8-17.]

Catalyst: An agent that provokes or speeds significant change or action.

[1981. New Webster's Dictionary of the English Language. The Delair Publishing Company, Inc.]

Character: The image and perception of a community as defined by its built environment, landscaping, natural features and open space, types and style of housing, and number and size of roads and sidewalks.

[Farr, Douglas. 2008. "Sustainable Urbanism: Urban Design with Nature." John Wiley & Sons, Inc.]

Context Sensitive Design (CSD): A collaborative, interdisciplinary approach that involves all stakeholders to develop a facility that fits its physical setting and preserves scenic, aesthetic, historic, and environmental resources. CSD is an approach that considers the total context within which a project will exist.

[Farr, Douglas. 2008. "Sustainable Urbanism: Urban Design with Nature." John Wiley & Sons, Inc.]

Corporate Overhead: The allocation of central corporate costs (administration, office expenses, and central administrative services) among the various projects underway.

[Lemmon, Wayne A. 2007. Pro forma 101: Getting Familiar With a Basic Tool of Real Estate Analysis. Planning Commissioners Journal. 65: 8-17.]

D

Datascaping: Implies that the creative and critical operation of design is redirected from visual and ideological determinations, toward more attentive mapping of interrelated

social, political, and economic dynamics that manifest themselves in any given place.

[Weller, Richard. 2006. "An Art of Instrumentality: Thinking Through Landscape Urbanism." In *The Landscape Urbanism Reader*. ed. Charles Waldheim, 197-217. New York: Princeton Architectural Press.]

Downzoning: A change in zoning classification to less intensive use and/or development.

[Farr, Douglas. 2008. "Sustainable Urbanism: Urban Design with Nature." John Wiley & Sons, Inc.]

E

Envisage: To have a mental picture of, especially in advance of realization.

[1981. *New Webster's Dictionary of the English Language*. The Delair Publishing Company, Inc.]

Extensive Greenroof: Vegetated roof with drought-tolerant species requiring little or no inputs for vegetative maintenance. Typically three to four inches of growing medium, depending on vegetation.

[Farr, Douglas. 2008. "Sustainable Urbanism: Urban Design with Nature." John Wiley & Sons, Inc.]

F

Fiscal Impact Analysis: The analysis of the estimated taxes that a development project would generate in comparison to the cost of providing municipal services demanded by that project.

[Farr, Douglas. 2008. "Sustainable Urbanism: Urban Design with Nature." John Wiley & Sons, Inc.]

Financing Interest: Finance and investment that covers project costs until sales or rents are able to be collected.

[Lemmon, Wayne A. 2007. *Pro forma 101: Getting Familiar With a Basic Tool of Real Estate Analysis*. *Planning Commissioners Journal*. 65: 8-17.]

Floor Area Ratio (FAR): The total floor area of all structures on a lot divided by the total area of the lot.

[Farr, Douglas. 2008. "Sustainable Urbanism: Urban Design with Nature." John Wiley & Sons, Inc.]

G

Green Complex: Parks and green open spaces, accompanied by the belief that such environments will bring civility, health, social equity and economic development to the city.

[Corner, James. 2006. "Terra Fluxus." In *The Landscape Urbanism Reader*. ed. Charles Waldheim, 22-33. New York: Princeton Architectural Press.]

Greenway: A linear open space; a corridor composed of natural vegetation. Greenways can be used to create connected networks of open space that include traditional parks and natural areas.

[Farr, Douglas. 2008. "Sustainable Urbanism: Urban Design with Nature." John Wiley & Sons, Inc.]

Gross Sales: Total revenue before development costs are subtracted.

[Lemmon, Wayne A. 2007. *Pro forma 101: Getting Familiar With a Basic Tool of Real Estate Analysis*. *Planning Commissioners Journal*. 65: 8-17.]

H

High-Performance Infrastructure: An emerging field that combines many strains of reform: the smart-growth concern about the financial burden imposed by new infrastructure needed to support greenfield development, the new urbanist's desire for humane, pedestrian-scaled infrastructure design, and the green building movement's focus on resource "greening" and consumption efficiencies.

[Farr, Douglas. 2008. "Sustainable Urbanism: Urban Design with Nature." John Wiley & Sons, Inc.]

High-Performance Building: Per-capita-based mandatory performance standards set by public or private codes, that are covenants and restrictions, at levels well above

conventional codes.

[Farr, Douglas. 2008. "Sustainable Urbanism: Urban Design with Nature." John Wiley & Sons, Inc.]

I

Impact Fees: Costs imposed on new development to fund public facility improvements required by new development and ease fiscal burdens on localities.

[Farr, Douglas. 2008. "Sustainable Urbanism: Urban Design with Nature." John Wiley & Sons, Inc.]

Infill Development: A type of development occurring in established areas of a city.

[Farr, Douglas. 2008. "Sustainable Urbanism: Urban Design with Nature." John Wiley & Sons, Inc.]

Infrastructure: Water and sewer lines, roads, urban transit lines, schools, and other public facilities needed to support developed areas.

[Farr, Douglas. 2008. "Sustainable Urbanism: Urban Design with Nature." John Wiley & Sons, Inc.]

Intensive Greenroof: Vegetated roof with a wide range of vegetation, including grasses, shrubs, and even trees. May require irrigation and fertilization. Typically eight inches and deeper growing medium, depending on vegetation.

[Farr, Douglas. 2008. "Sustainable Urbanism: Urban Design with Nature." John Wiley & Sons, Inc.]

Internal Rate of Return: Financial analysis system incorporating all of the cash flows initially going out (investment) and then coming back in (returns), and the exact timing of each.

[Lemmon, Wayne A. 2007. Pro forma 101: Getting Familiar With a Basic Tool of Real Estate Analysis. *Planning Commissioners Journal*. 65: 8-17.]

L

Land Development Code (LDC): Rules, regulations, and ordinances that govern how and where certain types of development may occur.

[Farr, Douglas. 2008. "Sustainable Urbanism: Urban Design with Nature." John Wiley & Sons, Inc.]

Landscape Urbanism: A disciplinary realignment currently underway in which landscape replaces architecture as the basic building block of contemporary urbanism.

[Waldheim, Charles. 2006. *The Landscape Urbanism Reader*. New York: Princeton Architectural Press.]

Leverage: The use of credit to enhance one's speculative capacity.

[1981. *New Webster's Dictionary of the English Language*. The Delair Publishing Company, Inc.]

M

Mixed-Use (MU): A development that combines residential, commercial, retail, and/or office uses, either in a vertical fashion (in a single building) or a horizontal fashion (adjacent buildings).

[Farr, Douglas. 2008. "Sustainable Urbanism: Urban Design with Nature." John Wiley & Sons, Inc.]

P

Performance Zoning: Establishes minimum criteria to be used when assessing whether a particular project is appropriate for a certain area; ensures that the end result adheres to an acceptable level of performance or compatibility.

[Farr, Douglas. 2008. "Sustainable Urbanism: Urban Design with Nature." John Wiley & Sons, Inc.]

Perimeter Edge: Alignment of elements near the top and bottom edges of a composition to ground the composition and eliminate the white space squeezing the elements.

[Elam, Kimberly. 2004. "Grid Systems: Principles of Organizing Type." Princeton Architectural Press.]

Planning: The process of setting development goals and policy, gathering and evaluating information, and developing alternatives for future actions based on the evaluation of the information.

[Farr, Douglas. 2008. "Sustainable Urbanism: Urban Design with Nature." John Wiley & Sons, Inc.]

Pro forma: A set of calculations that projects the financial return that a proposed real estate development is likely to create.

[Lemmon, Wayne A. 2007. Pro forma 101: Getting Familiar With a Basic Tool of Real Estate Analysis. Planning Commissioners Journal. 65: 8-17.]

R

Reclamation: The process or industry of recovering usable substances from waste matter or the like.

[1981. New Webster's Dictionary of the English Language. The Delair Publishing Company, Inc.]

Redevelopment: The conversion of a building or project from an old use to a new one.

[Farr, Douglas. 2008. "Sustainable Urbanism: Urban Design with Nature." John Wiley & Sons, Inc.]

Rule of Thirds: A rule that suggests that when a rectangle or square is divided into thirds vertically and horizontally, the four intersecting points within the composition are the points of optimal focus.

[Elam, Kimberly. 2004. "Grid Systems: Principles of Organizing Type." Princeton Architectural Press.]

S

Socio-cultural: Of, relating to, or involving a combination of social and cultural factors.

[1981. New Webster's Dictionary of the English Language. The Delair Publishing Company, Inc.]

Sustainability: A concept and strategy by which communities seek economic development approaches that benefit the local environment and quality of life.

[Farr, Douglas. 2008. "Sustainable Urbanism: Urban Design with Nature." John Wiley & Sons, Inc.]

Sustainable Urbanism: Walkable and transit-served urbanism integrated with high-performance buildings and high-performance infrastructure.

[Farr, Douglas. 2008. "Sustainable Urbanism: Urban Design with Nature." John Wiley & Sons, Inc.]

T

Tax Increment Financing (TIF): No clear definition found to date.

Traditional Neighborhood Design (TND): A basic unit of the new urbanism containing a center that includes a public space and commercial enterprises, an identifiable edge that is ideally a five-minute walk from the center, a mix of activities and variety of housing types, an interconnected network of streets (usually in a grid pattern), and a high priority on public space, with prominently located civic buildings and open space that includes parks, plazas, and squares.

[Farr, Douglas. 2008. "Sustainable Urbanism: Urban Design with Nature." John Wiley & Sons, Inc.]

Transit-Oriented Development (TOD): A form of development that emphasizes alternative forms of transportation other than the automobile - such as walking, cycling, and mass transit - as part of its design. Transit-oriented development locates retail and office space around a transit stop. This activity center is located adjacent to a residential area with a variety of housing options, such as apartment, townhouses, duplexes, and single-family houses. It is similar to a traditional neighborhood development.

[Farr, Douglas. 2008. "Sustainable Urbanism: Urban Design with Nature." John Wiley & Sons, Inc.]

U

Urban Land Institute (ULI): A nonprofit research and education organization supported by its members to provide leadership in the responsible use of land and in creating

and sustaining thriving communities worldwide.
[Urban Land Institute: Connecting the Global Real Estate Community. <http://www.uli.org/LearnAboutULI.aspx> (accessed September 6, 2008)]

Urban Land Institute | Gerald D. Hines Student

Urban Design Competition: A graduate-level annual competition that is intended to provide an interdisciplinary learning experience for real estate and design students in the United States and Canada.

[Urban Land Institute. <http://udcompetition.uli.org/> (accessed September 6, 2008)]

W

White Space: Space within a composition not occupied by compositional elements.

[Elam, Kimberly. 2004. "Grid Systems: Principles of Organizing Type." Princeton Architectural Press.]

Z

Zoning: The classification of land in a community into different areas and districts. Zoning is a legislative process that regulates building dimensions, density, design, placement, and use within each district.

[Farr, Douglas. 2008. "Sustainable Urbanism: Urban Design with Nature." John Wiley & Sons, Inc.]

Sustainability Definitions

Sustainability has several definitions, making it difficult to concretely define. For the purposes of the project, sustainability is defined as the creation of a walkable neighborhood conducive to public transit with vibrant and connected edges, including a holistic stormwater management plan, sustainable corridors, sustainable architecture, high-performance infrastructure and most importantly, cultural relevance.

Because sustainability is one of the guiding principals for the design, it is important to define the types of sustainable practices that will be evaluated and potentially employed on the site. Also, it is important to articulate how each sustainable technique could be employed. The following text loosely defines each type of sustainable practice and the context within which it will potentially be implemented on this project.

Cultural Relevance

Though it is difficult to graphically depict cultural sustainability, it is perhaps the most critical component to development of a sustainable community. Cultural aspects including historical context, regional influence, and social needs must guide design solutions that embody the people's sense and definition of place. The people interacting with the design daily must see it as relevant in order for it to be a successful space as programs and needs change with the progression of time.

High-Performance Buildings

Building orientation and massing are the major considerations when dealing with sustainable architecture for this project. Materials used, passive solar heating and cooling, and housing profiles will also play a role in architectural development. The goal is to reduce both the internal and external energy loads on all building units, thereby decreasing energy consumption (Farr, 178).

Sustainable Energy

Several distinct forms of sustainable energy will be tested as possible energy providers for the neighborhood. Among those will be solar, geothermal, wind, and biomass power. The concept of large district energy systems will be evaluated. Large district energy systems produce electricity, steam, and hot and chilled water at a central plant and distribute it through underground pipes to the neighborhood. Not only can the plant use fossil fuels, it can use a combination of other sustainable methods for energy production. The effect is a more efficient distribution method than that of a central power plant (Farr, 178).

Stormwater Management

Stormwater management aims to reduce disturbance on natural hydrologic patterns and increase water quality. Several cost-effective design solutions are available for implementation on the project site. Team 3909 aims to take a holistic approach to stormwater management by implementing techniques when, linked together form a stormwater network addressing water quality and infiltration issues from rooftops and hardscapes through reentry into the water table.

Building Density

Recent studies have shown that increasing density from one dwelling unit per acre to eight reduces runoff rates by approximately 74 percent. Also, at equal housing numbers, high density housing developments produce less runoff and provide less impervious surface than low density development (Farr, 109).

Bioretention Raingarden

Raingardens are typically used at the residential site scale, and are capable of holding and infiltrating all water from an individual site. Generally, the raingarden should be 10%-15% of the surface area of the site's impervious surface (Farr, 178).

Bioretention Swale

Swales, much like raingardens, collect water and slowly reintroduce it into the water table. The key difference is that this management technique is implemented at the edge of paving and in medians (Farr, 178).

Naturalized Detention

At the larger scale, a naturalized detention pond with shallow slopes and native wetland and prairie vegetation serves as a collection point for stormwater runoff (Farr, 178). Overflow from raingardens and swales is collected here to be slowly released back into the water table.

Greenroofs

Both extensive and intensive forms of greenroofs collect, use, and purify water before it ever reaches the ground. Overflow from roofs moves into raingardens, swales, and detention areas where it is further purified before reentering the soil.

Sustainable Agricultural Techniques

Agriculture within the urban context promotes sustainability by providing the city with an opportunity to meet its own consumption demands. Opportunities for this type of sustainable development exist on both private and public land, at ground level and on rooftops. Locally grown agricultural products can easily be sold locally, reducing fossil fuel consumption required to transport produce.

Sustainable Corridors Transportation

Sustainable corridors speak to transportation corridors with adjacent development dense enough to support mass public transit. In order for an area to be sustainable using the project definition, public transport must be prevalent and highly accessible in the area.

Biodiversity

Along with transportation corridors, biodiversity corridors are critical to healthy, diverse ecologies of flora and fauna. Current development patterns often fragment or destroy wildlife habitat. Biodiversity corridors are most effective when they are large, of high quality, interconnected, and contain high diversity. Also, wide and vegetated buffers are optimal to maintain stream quality and reduce edge effects on habitat (Farr, 178).

Sustainable Neighborhoods

Identity and walkability are main components of sustainable neighborhoods. A neighborhood should have a singular identity so that an individual can easily identify its edges. Also, one should be able to easily identify when the center of the neighborhood has been reached. Another idea common to sustainable neighborhoods is that special sites within the neighborhood are reserved for civic spaces such as landmark buildings, parks, squares, and plazas (Farr, 178).

High-Performance Infrastructure

Douglas Farr's book "Sustainable Urbanism: Urban Design with Nature" outlines high-performance infrastructure. He discusses several aspects of high-performance infrastructure applied to public right-of-ways. The following guidelines are pulled from his work.

Component optimization is when standard details or specifications are improved to optimize performance, minimize environmental impact, reduce construction costs, or extend lifecycles.

Multifunctional optimization recognizes differing uses within close proximity to one another which could lead to component damage or degradation over time. Multifunctional optimization looks to separate conflicting uses and promote synergies where possible leading to long-term savings, increased performance, and increased returns on investment.

Integrated design is a systems-oriented approach that aims to improve the performance of the roadway system as a whole. This design approach promotes environmental benefits, provides substantial potential cost savings, and comprehensive performance improvements (Farr, 178).

Carbon Footprint

Combining the aforementioned sustainability techniques will help reduce the overall carbon footprint of the project site. Increasing public transit opportunities reduces vehicular emissions and using high-performance building techniques can greatly reduce energy consumption. Renewable energy use also reduces emissions.

Carbon sequestration is another option to reduce the carbon footprint for the site. Forest and soil both act as carbon sinks and the use of prairie grasses pull carbon from the air and sequester it in the soil.

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