

Design of a Large-Scale Structural System for the 21st Century – Team 1



Overview

- Statement of the Problem
- Goals of the Project
- Organization of the Team
- Progress Toward Goals
- Cost Analysis
- Anticipated Challenges
- Questions/Requests

Problem

The former Michael Reese site, which was to have been the site of the Chicago 2016 Olympic Village, will now become the focus of a major future development.

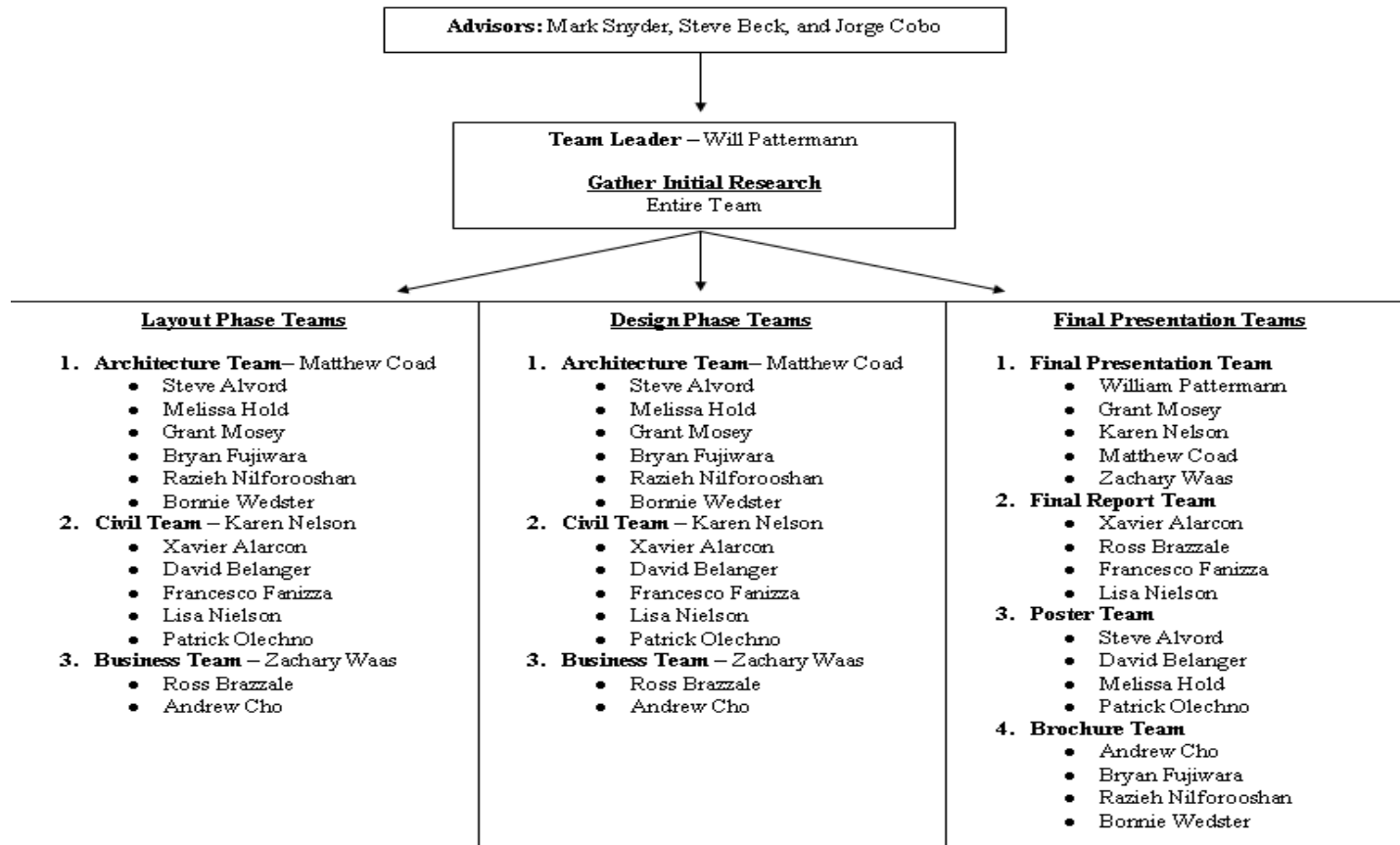
Statement of Problem • Project Goals • Team Organization • Progress •
Cost Analysis • Anticipated Challenges • Questions/Requests

Goals

- Focus on developing the former Michael Reese Hospital site.
 - Create a master plan for the site
 - Design an 'anchor' building complete with structural and architectural drawings
 - Develop a business plan

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Team Organization



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Bronzeville Concept

Stagnant Bronzeville Infill

- Does Not Respect Heritage
- Monolithic and Inflexible
- Economically Nonviable
- Low Occupancy / Density



Vibrant Bronzeville Infill

- Reverses Heritage
- Bright and Colorful
- Economically Strong
- High Occupancy / Density

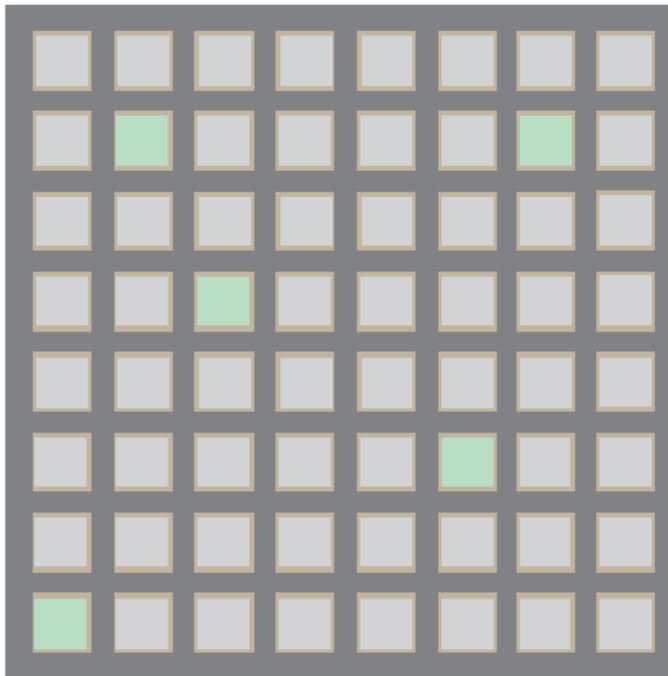


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Layout Concept

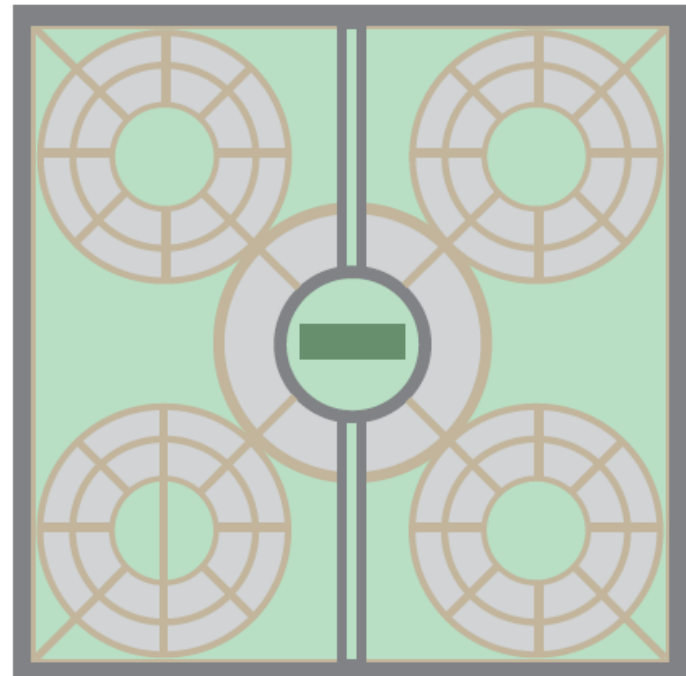
Typical Urban Condition

- Vehicle-oriented
- Unwalkable
- Paltry, disjointed green space
- Geometrically rigid and unforgiving



"New Urban" Condition

- Pedestrian / Public-Transit-Oriented
- Highly Walkable
- Generous, cohesive green spaces
- Geometrically Flexible and adaptable



Vehicular Way



Pedestrian Way



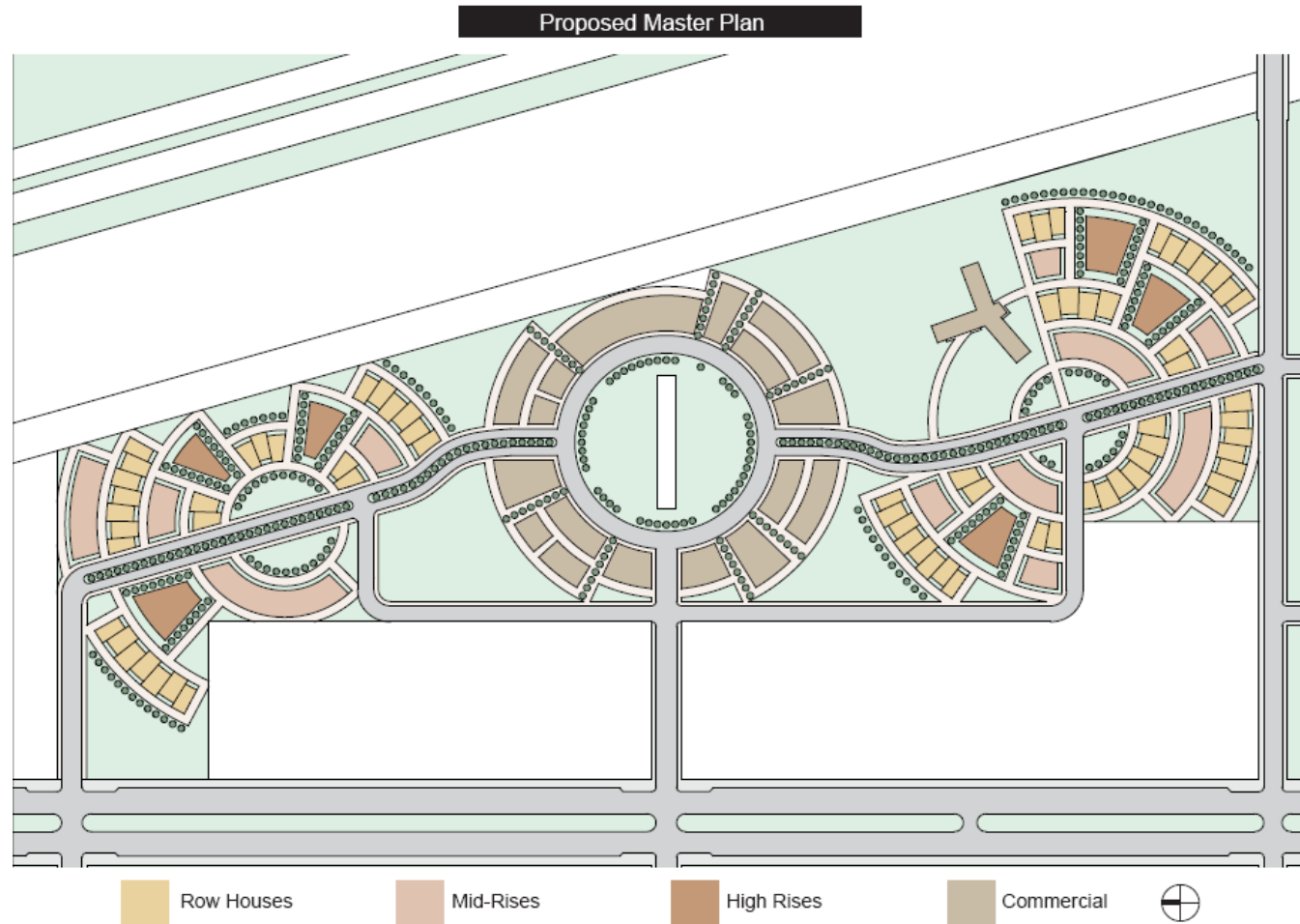
Buildings



Green Space

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Master Plan



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Vertical Farm Analysis

- Revenues

- Prices for produce based on local competition
 - \$5.00/lb for strawberries in winter
- Yields determined by “out of the box” equipment
 - Sustainable growth, up to 12 crops/yr

- Development Costs

- Growing and Propagation Equipment
 - \$253/SF of grow space
- Parametric estimate
 - Standard 8-10 story structure
 - Lighting and water tradeoff to lack of living space fixtures

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Residential/Commercial Analysis

- Revenues:
 - \$25.00/SF for Entertainment, In Line Retail, Big Box Retail
 - \$700.00/space for parking
 - \$10,000/room/year for 2BR apartments
 - \$12,000/room/year for 3BR apartments

- Development Costs
 - Parametric Estimate
 - Including markups for location
 - Site Work
 - Over entire site, despite phasing

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Vertical Farm vs. Hotel

HOTEL

- Assumptions:
 - 70% Room Occupancy
 - \$210/Room/Night
 - 400 S.F. Rooms
 - 6% Revenue on Food and “Other” Income

Annual Revenue:
\$6,174,900

VERTICAL FARM

- Assumptions:
 - Production levels
 - Prices compared with local retail
 - 100% Sales

Annual Revenue:
\$9,130,000

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Challenges Ahead

- Phasing the Project
 - Locations of development
- Further evaluation of effect on the surrounding area
- LEED aspects in the building design
- Building detail development
- Support spaces and service spaces

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Questions?