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
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
Team Organization

Advisors: Mark Snyder, Steve Beck, and Jorge Cobo

Team Leader - Will Pattermann

Gather Initial Research
Entire Team

Layout Phase Teams
1. Architecture Team - Matthew Coad
   • Steve Alford
   • Melissa Hold
   • Grant Mosey
   • Bryan Fujiwara
   • Razieh Niforooshan
   • Bonnie Wedster
2. Civil Team - Karen Nelson
   • Xavier Alarcon
   • David Belanger
   • Francesco Fanizza
   • Lisa Nielsen
   • Patrick Olechno
3. Business Team - Zachary Waas
   • Ross Brazzale
   • Andrew Cho

Design Phase Teams
1. Architecture Team - Matthew Coad
   • Steve Alford
   • Melissa Hold
   • Grant Mosey
   • Bryan Fujiwara
   • Razieh Niforooshan
   • Bonnie Wedster
2. Civil Team - Karen Nelson
   • Xavier Alarcon
   • David Belanger
   • Francesco Fanizza
   • Lisa Nielsen
   • Patrick Olechno
3. Business Team - Zachary Waas
   • Ross Brazzale
   • Andrew Cho

Final Presentation Teams
1. Final Presentation Team
   • William Pattermann
   • Grant Mosey
   • Karen Nelson
   • Matthew Coad
   • Zachary Waas
2. Final Report Team
   • Xavier Alarcon
   • Ross Brazzale
   • Francesco Fanizza
   • Lisa Nielsen
3. Poster Team
   • Steve Alford
   • David Belanger
   • Melissa Hold
   • Patrick Olechno
4. Brochure Team
   • Andrew Cho
   • Bryan Fujiwara
   • Razieh Niforooshan
   • Bonnie Wedster

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

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

**Stagnant Bronzeville Infill**
- Does Not Respect Heritage
- Monolithic and Inflexible
- Economically Nonviable
- Low Occupancy / Density

**Vibrant Bronzeville Infill**
- Reveres Heritage
- Bright and Colorful
- Economically Strong
- High Occupancy / Density
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

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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
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
<table>
<thead>
<tr>
<th>HOTEL</th>
<th>VERTICAL FARM</th>
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<tbody>
<tr>
<td>Assumptions:</td>
<td>Assumptions:</td>
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<tr>
<td>▫ 70% Room Occupancy</td>
<td>▫ Production levels</td>
</tr>
<tr>
<td>▫ $210/Room/Night</td>
<td>▫ Prices compared with local retail</td>
</tr>
<tr>
<td>▫ 400 S.F. Rooms</td>
<td>▫ 100% Sales</td>
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<tr>
<td>▫ 6% Revenue on Food</td>
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<tr>
<td>and “Other” Income</td>
<td></td>
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<tr>
<td>Annual Revenue: $6,174,900</td>
<td>Annual Revenue: $9,130,000</td>
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</tbody>
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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
Questions?