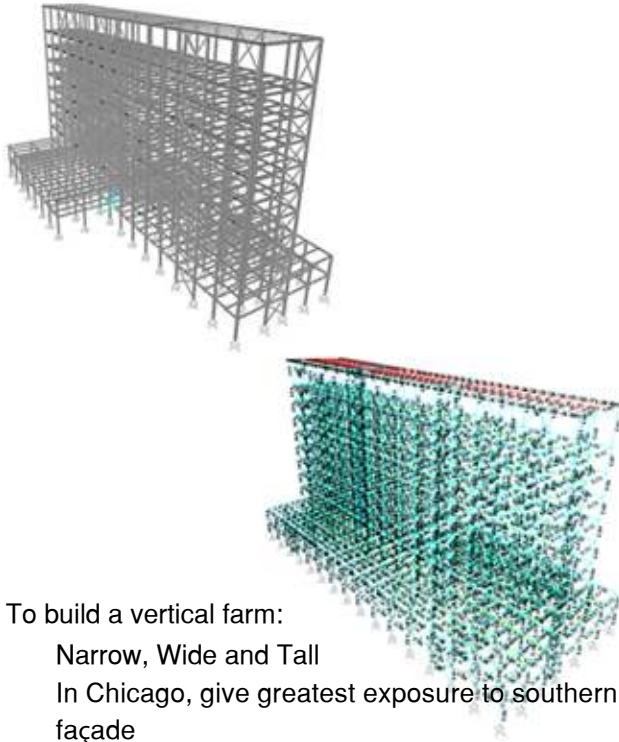


STRUCTURAL ANALYSIS



To build a vertical farm:

Narrow, Wide and Tall

In Chicago, give greatest exposure to southern façade

Uniform column grids gives continuity in design

Make it "LEED" certified

COST ANALYSIS

Cumulative financial impact to the developer/investor for entirety of phase 1 and 2: \$91,384,102

The present value of land developemnt:

-Entertainment \$ 818,586.62

-In-line Retail \$22,297,724.64

-Big-Box retail \$6,289,168.76

-Vertical farm \$120,659,197.42

Total NPV of development asuming 30-year hold:
\$172,277,034

Annual Rate of Return to developer asuming 30-year hold :
23.40%

CONCLUSION

Vertical farming is a profitable and economically viable venture. Renewable technology results in minimal costs, generating profits in an efficient manner. Funding is available in several markets from entities that have proven financial commitments to similar projects such as food production companies, venture capitalists and philanthropists, as well as government and university agencies.

ACKNOWLEDGMENTS

Throughout our research we will have periodic guidance from Eric Ellingsen MA MLA and hopefully from the father of the Vertical farm idea, Dr. Dickson Despommier Ph.D. These professionals have focused a large amount of their research in the last two years to the various elements of vertical and urban farming, and most of their findings and promising designs can be found on <http://www.verticalfarm.com/> which is maintained by Professor Despommier and can be considered a 100% reliable source. Conceptual designs have been made by various graduate students; "The Living Skyscraper" by Blake Kurasek, "Living Tower" by SOA Architects, "Eco-Laboratory" by Weber Thompson, "Pyramid Farm" by Ellingsen Despommier, "SkyFarm" by Gordon Graff, but no physical building has yet to be built.

Special thanks to:

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Professor Snyder

Professor Beck

Professor Cobo



VERTICAL INNOVATION

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OUR CHALLENGE

The redevelopment of the 37-acre Michael Reese site constitutes a major civil engineering project, considering several civil engineering aspects. Typical concerns include design of pedestrian bridges, residential buildings, hotel buildings, air traffic, transportation facilities, train or bus terminal stations, and other structures

PROJECT SUMMARY

- Selection of the type of structure to be used (steel or concrete)
- Structural analysis and design including proportioning typical girders, columns and foundations and a check of pertinent serviceability requirements (deflection, cracking, and floor and/or roof vibration)
- Study of parking around the structure (if the project involves a building)
- Design of the traffic flow capacity and transportation issues;
- Pedestrian accessibility as stated in the Americans with Disabilities Act
- Preparation of construction scheduling and detail drawings
- An estimate of the project cost.

OBJECTIVES

- Establish the market needs for the site and expected owner
- Develop an integrated approach to the project involving engineering, architecture, and sustainable cost/benefit that meets/exceeds the market needs for the site and expected owner
- Determine the benefits versus costs of the approach
- Compare benefits versus costs to comparable buildings near the site or elsewhere to show the project is a superior product as a business plan.

OUR SOLUTION

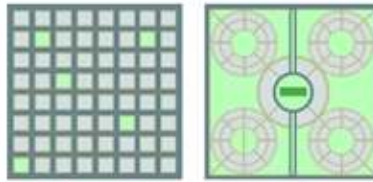


Stagnant Bronzeville Infill:

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

Vibrant Bronzeville Infill:

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



Typical Urban Condition

- Vehicle Oriented
- Unwalkable
- Paltry, Dijoined Green Space
- Geometrically Rigid and Unforgiving

"New Urban" Condition

- Pedestrian/Public-Transit-Oriented
- Highly Walkable
- Generous, Cohesive Green Spaces
- Geometrically Flexible and Adaptable



Vertical Farm Grow Systems:

- Hydroponics:
- Aeroponics
- Aquaponics



PHASED DEVELOPMENT



Phase 3

- 400 apartments
- 100 Condominium Units
- Requisite Parking
- Water Treatment Facilities



Phase 2

- 25,000 sq.ft of Entertainment space
- 154,000 sq.ft of in-line retail space
- 44,000 sq. ft. of big-box retail
- 190,000 sq. ft. Vertical Farm



Phase 1

- 400 Apartments
- 100 Condominium Units
- Requisite Parking