Aesthetic Design of an Urban Cell Tower

UNIVERSAL TOWERS

IPRO 344

ILLINOIS INSTITUTE OF TECHNOLOGY

Charles S. Hayes

Based in South Bend, Indiana, Charlie Hayes provides regionally based solutions for telecommunications infrastructure. With more than 20 years in the business he has built more than 40 sites located in Indiana, Michigan, Ohio, and Texas. He specializes in four types of towers including lattice, monopole, stealth, and guyed towers.

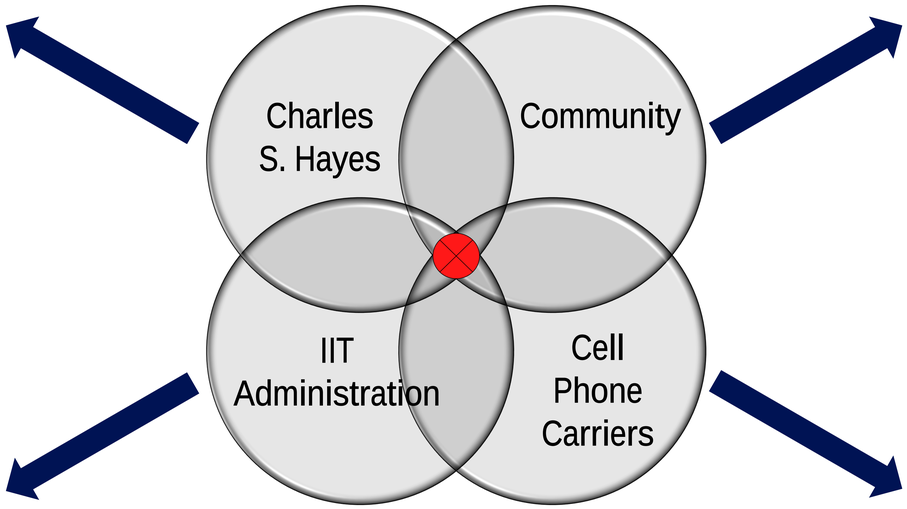
Services

- Site selection and acquisition
- Engineering, construction, operation and maintenance of tower.

Statement of the Problem

- With the use of cellular devices on the rise, the capacity requirements of dense urban areas are also increasing. Therefore, Chicago needs more cellular towers to respond to these increasing demands.
- The traditional cellular tower designs are not adaptable to the urban environment. They do not fit the space, zoning, and aesthetic constraints.

Four Stakeholders



Community

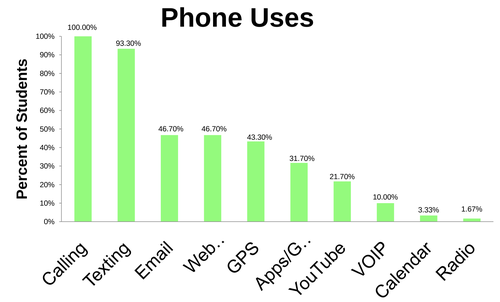
IIT STUDENTS

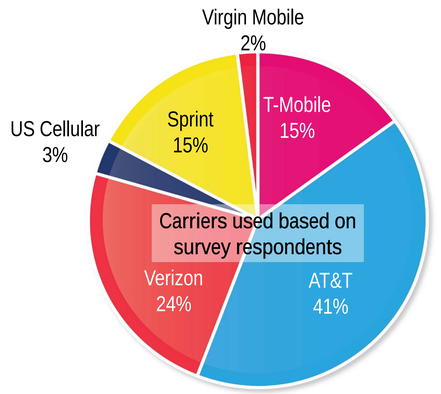
On the survey, students were asked to comment on the traditional monopole assembly.

- Negative Comments: too big, out of place, ugly
- Positive Comments: simple, functional, minimalistic

Suggested site of tower: Edges of campus

Largest issue: Downtime during White Sox games





IIT Administration

Donna Robertson, Dean of the College of Architecture
- Co-Chair of the IIT Planning Committee
- Discussed possible site locations

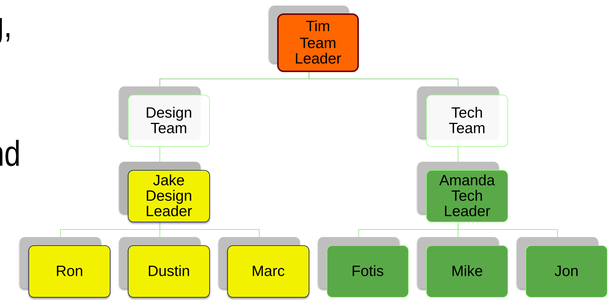
Terry Frigo, Vice President of Facilities
- Provided current information on antennas at IIT
- Recommended above ground design because of water table concerns

Ophir Trigalo, Chief Information Officer IIT
- Offered IIT Moffett Campus as potential site
- Advised on contract negotiations

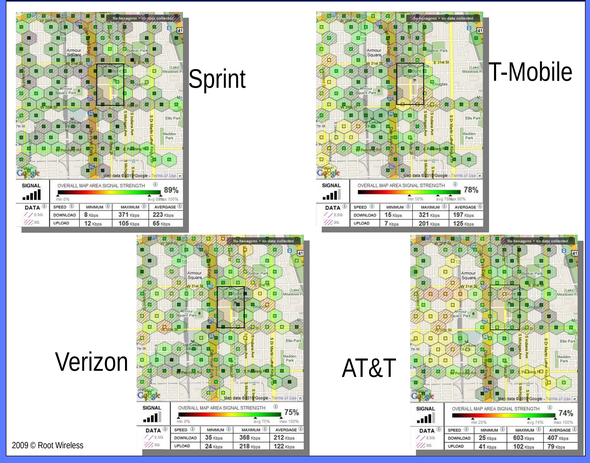
Team Organization

Design Team: Responsible for performing a site analysis on campus as well as creating, drawing, and modeling urban cellular tower designs

Technical Team: Responsible for identifying and interacting with the main stakeholders and researching zoning codes, existing towers, and alternative energy sources to power the tower



Cell Phone Carriers



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