REIMAGINING A RESILIENT CAMPUS

LEVERAGING 5D TECHNOLOGY

5D is an integrated process for the planning and managing all business processes in the construction of real estate.

- Building is modeled and built virtually before ground is broken, reducing change orders, cost and time.
- All stakeholders are engaged up front to provide input during virtual planning stage.
- Cost and schedule implications of design and programming choices can be estimated and assessed at the beginning of the design phase.

5D CASE STUDY: BROCK INDOOR FOOTBALL PRACTICE FACILITY

- PROJECT WAS COMPLETED IN 40 WEEKS!
- Model exported directly to fabrication equipment.
- Zero field conflicts.
- Engineered erection plan integrated with model.
- Model used to evaluate erection plan and sequence.
- Digital review saved time and money-no paper reviews needed until final approval.

Using Predictive Technology and Data Analytics to Manage Costs and Drive Efficiencies

WHERE CAN THIS LEAD?

Full integration, leveraging “big data” and partner networks:

- Use predictive 5D tools to simulate, manage, and deliver projects.
- Utilize supply chain management to deliver “Just In Time” equipment.
- GIS-tag and digitally render all assets and equipment.
- Develop and optimize full operational and maintenance lifecycle plans.
- Integrate sensors to create “continuous self-aware” solutions.
- Explore possibilities of 3D-printing solutions and parts for unique technology-enabled / integrated housing solutions to test market.

MONITORING A SMART CAMPUS

By partnering with Institute researchers from the Aerospace Systems Design lab we are aggregating and analyzing hundreds of thousands of utility data points to make informed investment decisions.

SMART CAMPUS CASE STUDY I: TRACKING IMPROVEMENTS

- Efficiency was seen to have degraded in a large “fresh air breathing” research building that was consuming too much chilled water flow.
- Once notified of the issue, Facilities O&M teams made a series of changes that resulted in significantly improved performance over three years.

SMART CAMPUS CASE STUDY II: EVOLVING EFFICIENCY

- Continuous upkeep: system intelligence enabling on-going commissioning.
- Technology infusion and strategic portfolio planning.

SMALL CAMPUS CASE STUDY III: CREATING THE NEXT

- Data-driven bench marking and comparison of portfolio-wide building performance.
- Deep data analysis and understanding of utility distribution supports district energy capacity planning.
- Virtual Forecasting: Visualizing data-driven forecasting models of alternative campus scenarios for utility capacity AND resiliency.

FOR MORE INFORMATION, VISIT GATECH.EDU