



6 floors
197,000 sq ft
\$100 million
6 months ahead of schedule
\$25 million saved

How We Saved \$25 Million and Six Months

CONE HEALTH WOMEN'S AND CHILDREN'S CENTER AT MOSES CONE HOSPITAL

IPD EXCELLENCE

Brasfield & Gorrie's Cone Health Women's and Children's Center at Moses Cone Hospital project was delivered using an integrated project delivery (IPD) contract and Lean methods. The six-floor, 197,000 sq ft facility was delivered for \$25 million less than the original budget and six months ahead of schedule. This project is a striking example of the benefits of IPD and the principles that are critical for IPD success.

A FOUNDATION OF TRUST

True IPD changes behavior, but trusting relationships between contractual partners are essential for IPD to succeed. Brasfield & Gorrie, Cone Health, and other partners had to come to the table daily to determine the path to innovation and efficiency. Cone Health initiated the IPD process and was an active partner. They sought innovative approaches for their major construction projects and brought IPD forward as a new approach for the healthcare system. Cone Health believes innovation is essential for the healthcare industry to thrive, and they recognized the potential for IPD to succeed based on teams who would change their approach to traditional construction roles and processes. Many of the partners had worked together on a previous Cone Health project, and these relationships made communication more forthcoming on the later project. As the team prepared initial budgets, partners were comfortable sharing historical data they wouldn't detail under a traditional contract.

INCENTIVES

Brasfield & Gorrie's approach to IPD incorporates Lean practices throughout the project to increase safety, cost, quality, and schedule benefits. With \$3.5 million of profit at risk, the team constantly challenged the status quo, assessing ways to innovate and build more efficiently while maintaining high quality standards.

TRUSTING RELATIONSHIPS, GAINED EFFICIENCIES

Mutual trust contributed to better and quicker solutions, and the project benefited from expertise gathered on previous project. For example, the success of the chilled beams on Cone Health's Moses Cone Memorial North Tower project made them an easy choice for the Women's and Children's project.

Without competing priorities, the partners were motivated to seek efficiencies for the greater team's benefit. For example, the architect, realizing that the usual practice of dividing drawings into smaller pieces for portability can create challenges for team members in determining which portion of the building is being depicted, created 60- by 72-inch drawings so that the team could easily determine what was important about the design. The engineer contributed by color-coding the supply, return, and exhaust ducts on the drawings to make it easier for all trade partners to quickly differentiate them. Similarly, the electrician ran electrical systems using prefabricated racks immediately after the slab was poured, saving about \$400,000 in labor. By opting to run the piping for the MEP systems

straight rather than offset it, the team saved \$1.2 million.

TIME MANAGEMENT

The flattened chain of command in an IPD contract eases communication and reduces the number of approvals required before action can be taken. As partners in the IPD contract, the major parties approached each other directly, logging fewer than 200 RFIs versus 1,500 for an average project of this scale. The number of change orders was estimated at half the number for similar projects. Partners respected each other's time because each hour billed cost everyone, and the project saw 20 percent fewer billed hours than comparable projects, increasing efficiency and the team's profits.

LEAN MANAGEMENT

A3s were used to weigh options on big decisions, and the Plan-Do-Study-Adjust cycle was used to foster continuous process improvement. Open books allowed partners to challenge each other when there were labor overages. The team also used the Last Planner® System, with pull planning functioning as a living document that held the partners accountable for meeting their agreed-upon deadlines. The Lean process also informed the way design-assist was employed, determining the level of assessment and ensuring that the process provided value. Clinician user groups provided feedback on design options, which helped Cone Health consider solutions to operational challenges and directly affected the final design. These Lean practices required more owner input but ultimately led to operational efficiencies.

CONCLUSION

The Cone Health Women's and Children's Center project showcased the best of what IPD can be. The relationships between partners were critical in maximizing expertise and creating efficiencies from the start. The project's time and cost savings resulted from the strength of the team and the delivery method, and Cone Health is building its next IPD project with many of the same team members.