

## **2021 AGC ACE Awards**

**Category 7:** Best Building Project – Specialty Contractor (Over \$10 Million)

**Specialty Contractor:** Sturgeon Electric Company, Inc. (Sturgeon)

**Project Name:** Children’s Hospital North

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### **Children’s Hospital North - *Building a place of healing for tomorrow’s generation***

Emergency, urgent care, behavioral health, cancer center, pharmacy – with the exception of an outdoor sports therapy field, these are all traditional components of a hospital expansion.

Children’s Hospital completed a 200,000+ square foot expansion of its Broomfield campus in 2020 encompassing these normal and expected elements of a new buildout. So, what made this project different and unique? *The approach.*

They wanted a design and build team that was synergistic, aligned and industry changing; a team that was enthusiastic and innovative; a team that embraced a contracting method that included equally shared risk/reward. They chose an *Integrated Project Delivery* (IPD) method and along with it and first on board, Sturgeon Electric.

Our history with building “IPD-light” projects is well known in the industry. We have a long-standing, successful relationship with this Owner. We have openly shared our Lean journey and continuous improvements with the community. These very important ingredients combined at the right time making us a natural choice for this project. It is with great pride that we were selected by the Owner to provide electrical services and to help guide the required behaviors for an IPD project.

The IPD contracting method requires a highly collaborative, co-located team with heavy engagement between the client and design team. This sounds great on paper but in reality, is very challenging. IPD projects require behaviors that pull people out of their comfort zones, siloes and ‘traditional means.’ These types of projects start with huge amounts of enthusiasm but deteriorate as trades move away from the transparency and candidness of Lean behaviors. Children’s relied on Sturgeon to drive the IPD process, to keep trades engaged, and to promote the Lean behaviors that would make this project successful. Through this method, Sturgeon,

alongside the project stakeholders, guided informed decisions that positively impacted the facility, employees, and patients.

***“Sturgeon has really embraced lean initiatives which helped push the team to think about better ways to deliver the project for the Owner that reduced waste and added value.”***

-Nicole Paugh, Associate, RMH Group

**Solutions: *Innovation, imagination, and ingenuity abound***

Sturgeon is familiar with providing creative solutions for project challenges and the Children’s Hospital expansion required some innovation. Challenges included:

- Proximity to an active operating room suite
- Outdated fire alarm code
- Short 14-month schedule which spanned two winter seasons
- Precise target value budgeting
- Partners who were unfamiliar with the IPD approach

The project team diligently addressed the needs and challenges of the project. Solutions included weekly trainings about helpful Lean practices, such as the Last Planner System, to ensure all partners were on the same page with the IPD approach.

With the short schedule, crews built in real-time as the project was modeled and designed. Building Information Modeling (BIM) occurred as the design was approved for certain areas and floors. By using isolating dampers, Sturgeon was able to finalize the design, construction, and completion of rooms and floors while construction activities continued nearby.

Another significant challenge was the installation of the underground infrastructure for the Central Utility Plant during the middle of winter. By utilizing ground-thawing equipment, Sturgeon did not lose any time to weather delays and kept pace with the schedule.

**Approach: *Striving for excellence while keeping the kids at our core***

***“...the IPD method was a success. The team was able to bring the project in under budget, with a tight construction schedule, while also releasing funds to add scope to the project.”***

-Nicole Paugh, Associate, RMH Group

Achieving project excellence together, through the IPD delivery method, project partners removed the traditional silos and emphasized collaboration for mutual success. This extensive collaboration was apparent during the pull planning meetings. With buy-in from all project partners, field crews, and leadership, the team was able to adjust project activities quickly and efficiently.

***“Having this collaborative environment across all project partners and leadership levels made it easy to shuffle the schedule while still staying on track.”***

– Brandon Landis, Project Manager, Sturgeon Electric

COVID-19 presented some unique challenges. Vigilant planning and creative staffing were essential to the project’s success. Working in a sensitive hospital environment required proactive efforts from all parties. By staggering crew schedules, rotating through work areas with each trade partner, and proper protection, we completed the project without a single COVID-related lost-time incident.

Project partners also got creative around their supplies and installation schedule due to material shortages and delays. For example, the internal components for surge protection devices were on significant backorder but the external housing units were immediately available. To maintain project progression, collectively, the project team decided to install the housing units first and then double-back with the internal components once they arrived weeks later.

### **Innovation – the adult version of imagination**

As an IPD project, several Lean practices were employed leveraging the strengths of the Trade Partners and allowing the needs of the project to come first:

- **Choosing by Advantage (CBA):** A process whereby decisions are made based on the advantages provided by the choices and then weighed against the cost.

- **Big Rooms:** Project stakeholders gather together to make immediate decisions, ultimately encouraging collaboration and reducing waiting times – one of the eight wastes. Big rooms facilitate high levels of collaboration because people collectively work on design, problems, and countermeasures. This also supports an effective *Plan, Do, Check, Act* process.
- **Last Planner System:** A process that enhances accountability and productivity by promoting stakeholder input on the Critical Path Method, phasing plans, pull planning, lookaheads, and weekly work plans with percent plan complete (PPC).
- **5S+1 behaviors:** Sort, Set, Shine, Standardize, Sustain, + Safety
- **Just in Time Deliveries, prefabrication, and kitting:** The contract allowed for no more than 1-2 weeks of inventory on site. These practices helped us live within these curbs.

Procurement of large ticket items such as roof top units, boilers, chillers, generators, and automatic transfer switches utilized the Choosing by Advantages (CBA) tool. In addition, the CBA process was used to accomplish the Target Value Design (TVD), ensuring the best final product that addressed value, maintenance, longevity, and functionality. Several meetings were required, but in the end, the owner received the best product. As an IPD team, CBA was also used to select other trade subcontractors and an equipment rental company to provide shared lifts across the project partners.

The value of the Big Room came to light when a significant design issue occurred in the main electrical room. Our BIM team modeled the main switchgear tight against the wall causing an accessibility problem. We missed this in our review of the shop drawings. When the gear arrived, there was no rear access. The IPD team was immediately engaged. Within 20 minutes, and by working together, the team made the decision to remove the block behind the gear and install a fire rated access door. (photos)

**Safety: *Knowledge is Power and Sharing is Caring***

Safety for ourselves and others is of vital importance. Consequently, all Sturgeon personnel and craft workers assigned to this project completed our Healthcare University Training. This was particularly important considering much of this project was built during COVID-19. This training, freely shared with other project partners, provided:

- An understanding of infection prevention methods
- Expectations for etiquette
- Infection Control Risk Assessment (ICRA) measures/implementation
- Proper donning/doffing of Personal Protective Equipment (PPE)
- Best practices for working within sterile or isolated areas
- Use of Methods of Procedures (MOPS)
- Understanding Life Safety and critical systems
- Working with mobile containment units
- Significance of fire-rated wall integrity
- Healthcare-Associated Infection awareness

COVID-19 posed significant schedule impacts due to potential quarantines. To combat this and to ensure our workflow efficiency was minimally impacted, we guaranteed additional, fully-trained, crew members available to step-in if necessary. Overall, our top-tier safety protocols and processes helped us to achieve zero accidents during the 73,300-man hour project.

**Community: *A meaningful project with a meaningful outcome***

Sturgeon takes pride in giving back to the communities we impact - putting smiles on people's faces and in their hearts. Following in the footsteps of our founder, Dwight D. Sturgeon, we illuminated a patient's holiday season by hanging Christmas lights on their home. This three-year tradition is typically coupled with a Children's Hospital *Kid of the Quarter* event. In 2019, Sturgeon sponsored a site tour of the hospital expansion and a special painting event for the child ambassador, Lillian.

Sturgeon is honored to have been part of a dedicated team (*G. H. Phipps Construction Company, TreanorHL, U.S. Engineering, The RMH Group, KL&A, ISEC Inc., ICI, Design Studio Blue and Olson Plumbing and Heating*), who worked tirelessly, meticulously, and passionately to overcome multiple hurdles as a team, in order to deliver a state-of-the-art healthcare facility: one worthy of consideration for the Associated General Contractors award for *Best Building Project – Specialty Subcontractor (over \$10M)*.









