

# PRODUCTION SERVICES



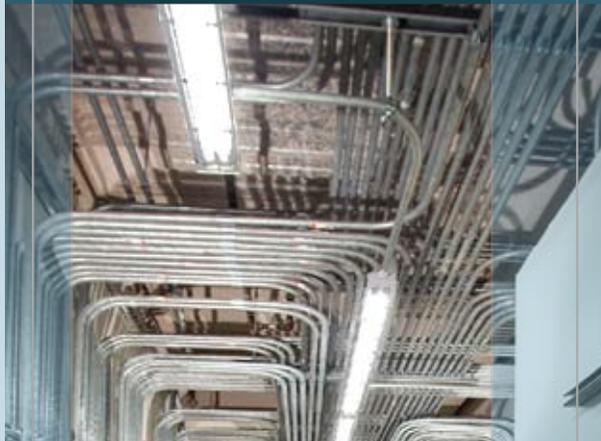
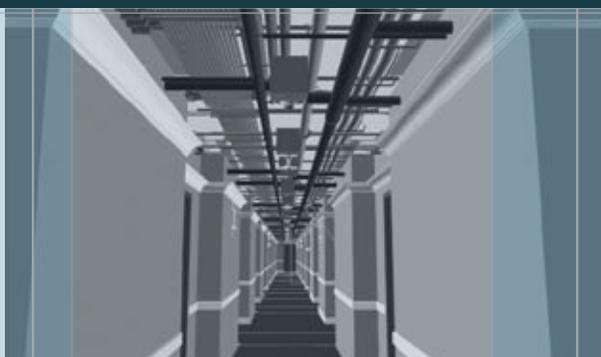
*Our extensive Production Services department spearheads and manages every element of the preconstruction process. Through their expertise, Neal Electric provides a comprehensive roster of preconstruction offerings with emphasis on maximized efficiency, quality, and safety. The result is resounding satisfaction for our customers from the very start.*

## THE PRODUCTION SERVICES PHILOSOPHY

Neal Electric Production Services proactively seeks to keep every project on time, on budget, and running efficiently. We take quality control and consistency seriously—keeping all parties involved and informed and intercepting potential problems before start of construction. Working closely and communicating with customers and field team members from the inception of every job, we can help reduce costly conflicts and streamline workflow processes.

## CORE CAPABILITIES

- Engineering and Design
- Design Build/Design Assist
- Best Practices Assurance
- Preplanning and Detailing
- MEP Coordination
- Prefabrication
- “Total Station” Survey and Layout





## CORE CAPABILITIES

---

### Engineering and Design

The Engineering and Design department within Production Services was borne from the increased need for cost-effective design-build project delivery and construction phase AutoCAD drafting services. This specialized group provides engineering and design services for facility maintenance and construction. Our services include:

- Lighting, power, and signal system design for new construction coordination, renovation, and service upgrade projects
- Interior and exterior lighting calculations
- Title 24 lighting calculations
- Distribution system and voltage drop studies
- Short circuit protection
- Due diligence assessment of existing building lighting, power, and signal systems



### Design-Build/Design-Assist

- Engineering and design services from the ground up
- Project managers, engineers, and designers collaborate with the Neal Production Department at set intervals for peer reviews of the design process
- Meetings allow all team members to stay current; upon design completion, construction is unilaterally on track to start

### Best Practices Assurance

- An ongoing effort to improve our processes, products, and productivity
- A collective evaluation of ideas to develop the best solutions for typical installations
- Focusing on quality-control and consistency across all projects



### Preplanning and Detailing: “Plan the Work & Work the Plan”

- Methodical, thorough preplanning to discover and resolve project constructability issues that can increase costs and impact schedules
- Utilizing CAD renderings, we coordinate with engineers and other trades at an early stage to avoid conflicts prior to installation
- This allows for efficiency in installation and an accurate set of as-builts for the end user

## MEP Coordination

- Cutting edge coordination utilizing the 3D NavisWorks® collision detection program, collaborating with “BIM” and “REVIT” models
- MEP coordinators graphically “walk” through the building prior to construction to resolve potential conflicts
- 3D drawings from MEP trades are overlaid and digitally projected on a 7-foot screen at our central meeting facility
- All team members assess and then adjust their individual trade installation drawings
- Upon completion of final adjustments, drawings are signed-off by all MEP trades, certifying them as “clash-free”
- Building commences without risk of coordination disruptions and with a smoother schedule flow

## Prefabrication

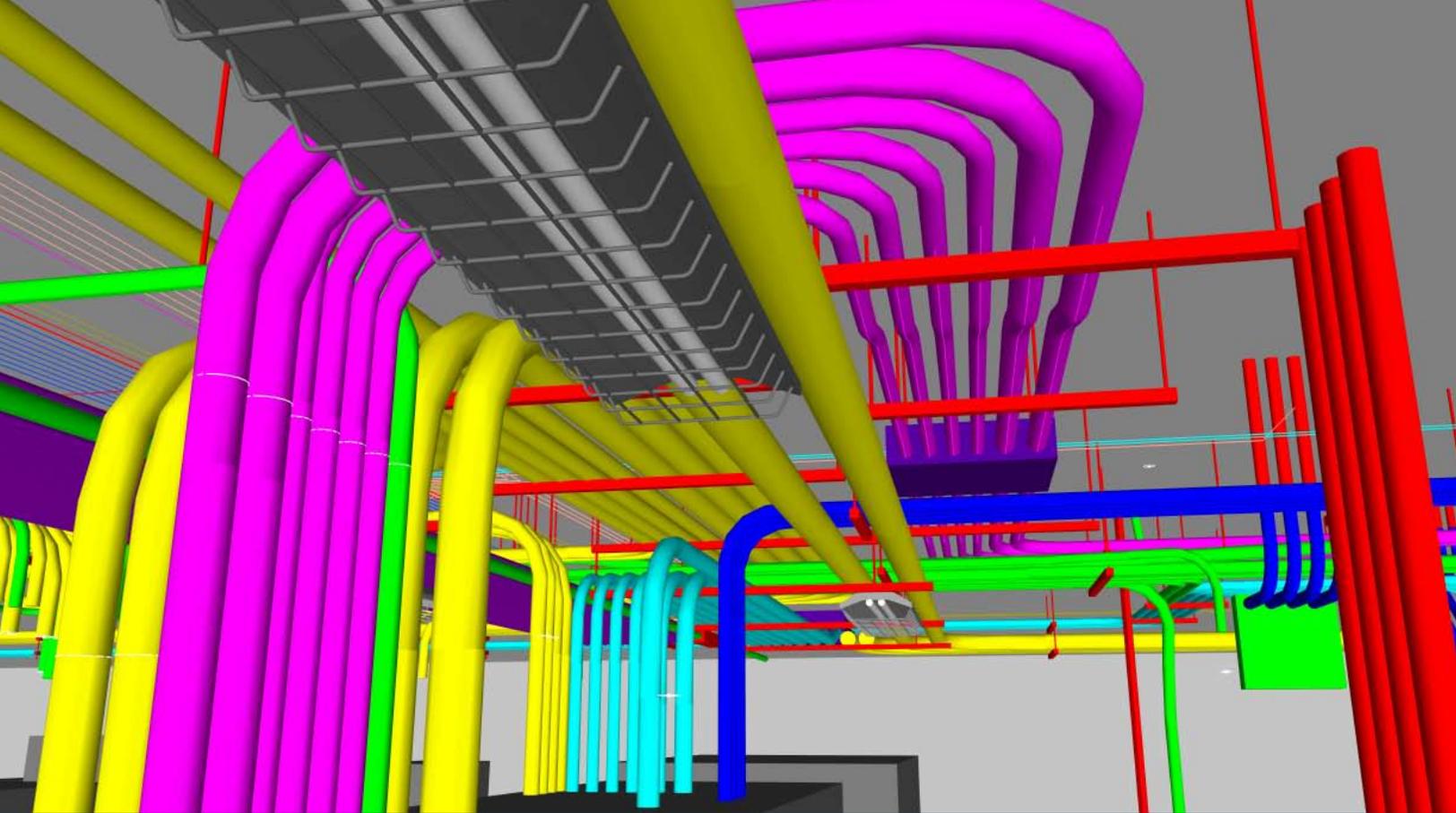
- After design, planning, and 3D coordination, prefabrication starts utilizing the electrical building model
- With direction from the preplanning group and foremen in the field, our prefabrication department provides a consistent and cost-effective product
- Assemblies are constructed offsite, which condenses assembly time, minimizes on-site storage needs, and reduces required installation time
- Collaboration among the project manager, foreman, and integral team members adds cohesion for the team and a higher level of quality service for our customers

## Total Station Survey & Layout: From Computer to Installation

As part of our overall coordination, planning and installation process Neal Electric is capable of performing their own “In House Surveying and Lay Out”

- Once the installation is coordinated with other utilities and the Civil plans, Neal Electric “Survey & Layout CAD Drawings” are developed
- Survey points are then programmed into our own “Robotic Total Station” surveying equipment
- Points are precisely laid out in the field so that our installations go in exactly as planned and coordinated with other project partners
- Accurate “As-Built” record drawings are the result for future reference by our customers





**FROM PLANNING TO INSTALLATION**

