

Major Hospital Addition



Duke University Medical Center, in the process of planning a new Major Hospital Addition (MHA), wanted to add 160 new ICU and Intermediate Step-Down patient beds and 16 new ORs, in addition to numerous other services. To complete the project, Duke enlisted the services of ZGF and Perkins Eastman Architects to collaborate on a design to meet their needs.

The Perkins Eastman project team included St. Onge Company, a leading material handling consulting firm. St. Onge Company uses proven and practical data driven Industrial Engineering techniques to support and validate the creative and ground-breaking principles of cutting-edge Hospital design.

The Duke Medicine MHA layout development process included specific considerations to the delivery infrastructure, processes and operational requirements for material receipt and distribution, along with outbound material transportation. Beginning in the Conceptual Design phase and assisting through Schematic and Detailed Design, St. Onge provided engineering support to ensure the hospital layout enabled adequate space for material stream movement efficiencies, vital to the hospital operations.

Material Stream focus included:

- Materials Management Supply
- Clean Linen
- Sterile Processing Materials
- Food Service
- Pharmaceutical Supplies
- Parcel Deliveries
- Medical Gases
- Misc. Medical Equipment
- Soiled Linen
- General Trash
- Bio-Waste Materials
- Hot-Waste Materials
- Recycling

Specific Deliverables Included:

- Dock Evolution and Recommendations
- Materials Transportation Alternatives, Recommendations and Operations Narrative
- Campus Flow Deliverables
- Materials Management STAT Supply Room Design and Recommendations
- Sterile Processing Department Velocity and Inventory Projections
- Inventory Deployment Recommendations
- Pneumatic Tube Design Support
- Cancer Center Inbound Delivery Volume Support
- Transfusion Services Support

The objective of pursuing Supply Chain Excellence is to create a capability to respond to material needs and deliver the required materials to the customer in a highly effective manner. Throughout the design process, St. Onge Company adds value through engineered solutions, assisting in the design of Material Hub size, Dock Operations, staging space requirements, vestibule planning, elevator loads due to material deliveries, storage locations, and transport technologies such as pneumatic tube, AGV, powered cart assist devices, trash/linen chutes, and more. The ability to drive solutions is developed through our unique Value Stream Mapping process. Please contact us for more information on how we can assist your Hospital expansion or help you optimize current operations and infrastructure.