

Industrial/Storage Facilities Planning and Operations Improvement

We provide full-scope services regarding facilities planning and physical operations improvement. We provide assistance at all levels of physical planning and operations, from site selection and logistical planning to workplace design and layout planning. We have assisted in all aspects of cost reduction, cycle time reduction, quality improvement, and reorganizations. **Richard Muther & Associates**, which we represent and which was established in 1956, has international reputation on industrial management and engineering solutions, and is a renowned authority particularly in facilities planning and operations improvement.

We work on the principle of *helping our customers help themselves*. Our **Systematic Planning Methods** are known and used worldwide in various projects. We ensure our clients to achieve better results and continuous improvement by the help of our **experts** who experience them using our unique methods.

All equipment and systems specification is independent and unbiased. We sell or resell no software, hardware or equipment. Our role is to help our clients acquire and build the best facilities and systems for their needs. Our relevant services include the following:

- **Strategic and Capacity Planning:** To insure that corporate facilities support corporate strategies and business unit plans. Distribution and location analysis: number of sites, size and mission. Decision analysis: stay or move; open or close; modernize or build new; purchase or lease; subcontract or else. Long-term projections of capacity and space requirements.
- **Distribution and Logistical Planning:** Supply chain and value chain analysis, to insure that warehouse and distribution facilities are properly located and assigned. Decision analysis: stay or move; open or close; number of locations, size and purpose.
- **Location and Site Selection:** Providing confidential site search and evaluation of factors such as labor, transportation, real estate taxes, and environmental regulations. Estimates of capital investment, operating cost, and relocation expense. Relocation planning.
- **Expansion and New Site Planning:** Master site planning, process evaluation and automation studies. Materials handling analysis. Layout planning. Building programming and guidance to the architectural design team. Identifying short and long-range space requirements based on estimation, previous utilization patterns, and predicted changes on inventory management, operational practices, products and process technologies.
- **Manufacturing Layout Planning:** Estimating space requirements, and proper placement of activities, machinery and equipment. Evaluation of flow patterns: straight - line, U-shaped, L-shaped spine. Evaluation of conceptual arrangements: by product, by process, by fixed position, and in manufacturing cells.
- **Warehouse and Distribution Center Layout Planning:** To develop effective layouts, optimal handling patterns and storage plans. Short and long-range sizing of individual areas: Racks, shelving, automated systems, docks, staging, offices and support.
- **Office, Laboratory and Technology Center Planning:** Beginning with estimates of space required. Establishment of space and furniture standards. Layout studies for campus sites and multi-story buildings. Sizing and design concepts for new office buildings, laboratories and technology centers.
- **Materials Handling Analysis:** Visualization and analysis of movement patterns. Overall system design: Direct and indirect movements, simple and complex equipment, sizing of transport unit loads and containers, line feeding methods and effective utilization of conventional and automated equipment. Assistance in evaluating and selecting all types of materials handling systems and equipment.



- **Lean and Cellular Manufacturing:** Reduce cost and material flow time through manufacturing cells. Identify and reduce bottlenecks and delays in material preparation, process and orders. Increase direct and indirect labor productivity. Increase and balance capacity utilization. Combine multiple cells to achieve lean and continuous flow manufacturing. Physical modifications. Design and implementation, including procedural changes in scheduling, supervision, maintenance and cost accounting. Definition of cells for fabrication, machining and assembly.
- **Cell Planning:** Detailed layouts, material handling methods, and operating practices for cellular and continuous-flow manufacturing. Grouping of parts and equipment. Coupling of physical decisions to scheduling, job design, and other operating decisions. Design of quality systems.
- **Workplace Handling and Ergonomics:** Detailed planning of workplace handling and parts presentation. Also order-picking in storage areas. Identification of ergonomic problems and corrective solutions through better workplace layout and material handling equipment.
- **Baselining:** Independent, accurate quantification of current performance. Collection and analysis of information from work sampling, observational time study, data collection by employees, computer data, and management reports.
- **Warehouse Operations Improvement:** To achieve the highest productivity in order picking, stock replenishment, packing, shipping, receiving, inspection and administrative support. Detailed analyses of systems, procedures and equipment. Reduction of error rates and cycle times through both manual and automated solutions.
- **Inventory Controls:** Target inventory levels, safety stocks and replenishment quantities. Special techniques for low usage, hard-to-forecast items. Development of record accuracy and cycle counting programs. Physical inventory procedures.
- **Computer Systems and Controls:** Improved computer systems for data collection, activity management and control. Guidance in warehouse automation. Assistance in evaluating and selecting suppliers of computer systems and software.
- **Training:** See in-house training for Industrial/Warehouse Facilities Planning and Operations Improvement.



If necessary, Industrial/Warehouse Facilities Planning and Operations Improvement can be provided together with **our other services.**

