



## SYNCHRONOUS MATERIAL FLOW DESIGN AND LAYOUT OPTIMIZATION

### ***Achieve Operational Excellence with SMFD&LO!***

*Synchronous Material Flow Design and Layout Optimization (SMFD&LO) is a systematic process that determines how to combine, integrate and synchronize material handling systems, manufacturing processes and information systems with the proper facilities layout.*

### ***Your Bill of "Rights"!***

*Productivity Engineering Services LLC (PES) will analyze material flow processes, people, equipment and systems to create a customer oriented "pull" system. The result: the right amount of the right material at the right place at the right time in the right sequence in the right position using the right method and at the right cost.*

### ***A Scientific Approach to Synchronous Material Flow***

PES applies a scientific approach that will achieve your objectives in the most practical, sensible and cost effective manner:

#### **Material Flow Strategy**

Develop a common approach to converting from a mass production material flow strategy to a synchronous material flow strategy (i.e. one that is consistent with the overall business strategy).

#### **Plan For Every Part (PFEP)**

Establish PFEP database, which includes collecting data on part, packaging, volume/mix, and routings for every part in the area being analyzed. This spreadsheet/database is the foundation for developing realistic material planning processes and fosters controlled inventory reduction.

#### **Workplace Design**

Determine material display devices and workplace layout needed to present parts in an operator-friendly fashion. Design "a place for everything and everything in its place" to eliminate waste and facilitate control of the operation by sight.

#### **Small Lot Flow**

Rightsize containers/pack quantities to maximize the value-added productivity of the operator and handler and reduce inventory, lead time and floor space requirements. Consider sequencing and kitting where appropriate.

#### **Material Flow Analysis**

Conduct detailed current state and future (optimized) state material flow modeling starting with the production operator, then working back through the pipeline to the supplier with the goal of eliminating waste and supporting the operator.

#### **Materials Markets Design**

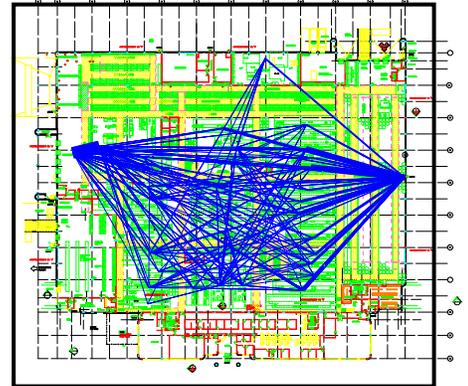
Develop layout plan for Small Lot Marketplace and Bulk Material CMAs to maintain controlled levels of incoming parts (e.g., accommodate FIFO and Min/Max inventory management).

#### **Delivery Routes and Methods**

Design efficient material delivery routes for transporting parts from the Marketplace to the operator's fingertips. Determine the delivery frequency, whether the route is coupled or decoupled, labor requirements and delivery method, such as tuggers and trailers.

#### **Pull Signals**

Create a system that controls inventory by allowing operators to pull what they need while focusing on producing value for customers. Calculate the appropriate number of kanbans needed based on the type of route and delivery frequency.





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### *Proven Benefits*

It's a competitive world where maximum productivity can sometimes be the difference between profits and losses. The SMFD&LO services offered by PES have proven to maximize profitability through increased quality, lower costs and reduced product time to market.

PES provides these SMFD&LO benefits:

- *Reduces inventories and lead times and increases turns*
- *Improves material flow and control*
- *Enhances production flexibility*
- *Promotes ease of maintenance and good housekeeping*
- *Provides for effective utilization of people, equipment, space and energy*
- *Eliminates waste and minimizes non-value added activities*
- *Increases employee communications, job satisfaction and safety*
- *Eliminates bottlenecks and improves throughput*
- *Improves operational efficiency*
- *Reduces material handling and labor costs*
- *Increases profitability*



### *About PES*

Established in 1991, Productivity Engineering Services LLC is an independent industrial engineering and operations management services firm specializing in the planning, design and implementation of lean manufacturing, warehousing and supply chain operations. PES is dedicated to helping manufacturers achieve operational excellence through the successful design, improvement and installation of integrated systems of people, material, information, equipment and methods.

### *The Next Step!*

Learn more about how SMFD&LO can streamline your operations, and ultimately improve your bottom line! Contact PES at (734) 425-3904 today!

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