



**CKGP  PW**

*& ASSOCIATES, INC.*

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# **Materials Planning and Logistics Services**

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Revised 2006

## **CORE SERVICE**

- Project Management
- Manufacturing Process Planning
- Materials Planning and Logistics (MP&L) Engineering
- Conveyor and Equipment Design
- Industrial Engineering / Productivity Improvement

## **GENERAL CORPORATE INFORMATION**

- Established in 1978
- Full Complement of Engineering Expertise ( Conveyors and Equipment, Industrial, Materials/Logistics, Facilities and Electrical Engineers
- Supporting Automotive OEM's, Automotive Suppliers and Fortune 500 Manufacturing Companies

## **KEY CORPORATE CHARACTERISTICS**

- Committed to improving clients' productivity
- Successfully completed over 3500 individual projects

## WAREHOUSE OPTIMIZATION

### LAYOUT EFFICIENCY

- Cost per Sq./Ft.
- Storage Density
- FIFO
- Storage Utilization
- Material Flow

### LABOR EFFICIENCY

- Operational Analysis
- Direct and Indirect Labor
- Pick/Pack Efficiency

### *Typical Deliverables*

- *Facility Consolidation & Optimization Studies*
- *Greenfield Site Planning*
- *Manpower Utilization Studies*

### INVENTORY CONTROL

- Min/Max Development
- Inventory Turns
- Seasonal Adjustments

### EQUIPMENT SELECTION

- Pallet Racking
- Fork Truck Utilization
- Conveyance Systems
- Cranes
- Material Handling Equipment

- *Equipment Specifications*
- *Program Launch Support*
- *Process & Material Flow Optimization*

## PRODUCTIVITY IMPROVEMENT

### MANUFACTURING PROCESS ANALYSIS

- Value Stream Mapping
- Process Documentation
- Line Balancing
- Process Simulation
- Layout Optimization

### MACHINERY & EQUIPMENT

- Cycle Time Studies
- Predictive Maintenance Program Development
- Set-Up Reduction Studies
- Troubleshooting

### *Study Deliverables*

- *Manufacturing Feasibility*
- *Cost Reduction*
- *Work-In-Process Reduction*
- *Manpower Utilization*

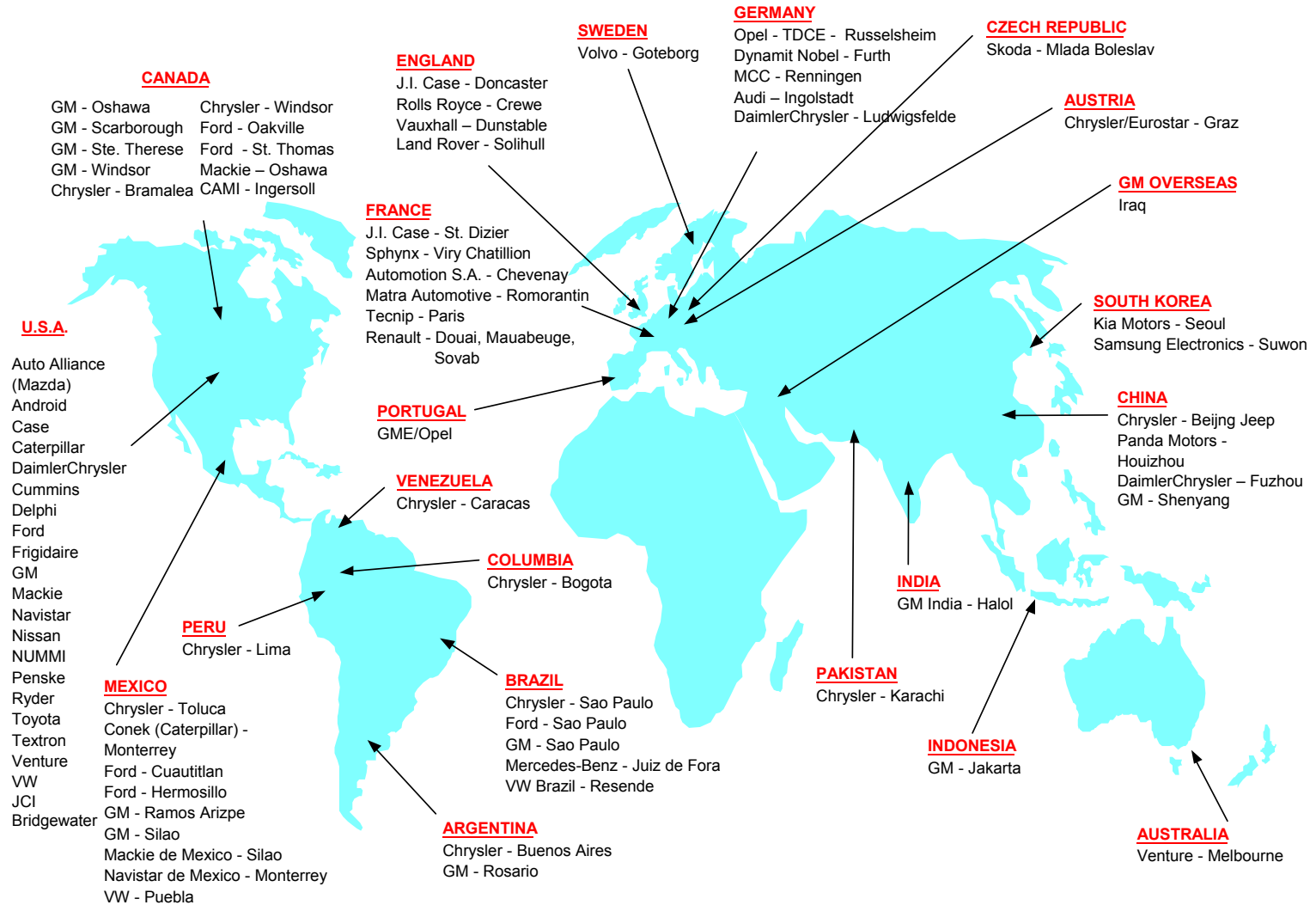
### WORK MEASUREMENT

- Standard Data Studies
- Work Sampling
- Value Added VS Non-Value Added
- Ergonomics Assessment

### MATERIALS

- Indirect Labor Analysis
- Fork Truck Utilization
- Storage Reduction
- Kanban Systems Development
- Work-In-Process Reductions
- Material Flow Simulations

- *Throughput Optimization*
- *Set-Up Reduction*
- *Process & Material Flow Optimization*



## Sequencing, Sub Assembly and Cross Docking Operations

### Support Services

- ◆ Proposal Development & Support
- ◆ Feasibility Studies & Process Planning
- ◆ Plan for Every Part Development (PFEP)
- ◆ Spread sheet analysis for PFEP groupings
- ◆ Industrial Engineering and Material Flow Simulations
- ◆ Layout Development and Optimization
- ◆ Facilities Engineering
- ◆ Manpower Planning
- ◆ Direct and Indirect Labor Studies
- ◆ Material Handling System & Equipment Specifications
- ◆ Plant Communications Systems (RF Network, Ethernet Network, Modular Controls, Etc.)
- ◆ Operations Support / Continuous Improvement Studies

## Sequencing, Sub Assembly and Cross Docking Operations

- ◆ 3<sup>rd</sup> Party Logistics Co. Facility Design and Program Management
- ◆ 3<sup>rd</sup> Party Logistics Co Facilities Design and Project Management
- ◆ Tier 1 Supplier Greenfield Facility Design
- ◆ 3<sup>rd</sup> Party Logistics Co Sequencing Facility Design
- ◆ Tier 1 Supplier Feasibility Study for Australian Facility
- ◆ Tier 1 Supplier Seat Sequencing Facility for DaimlerChrysler
- ◆ 3<sup>rd</sup> Party Logistics Co Facility Design and Program Management
- ◆ Automotive OEM Productivity Improvement Study for Romulus Facility
- ◆ Automotive OEM In Line Vehicle Sequencing Program Management
- ◆ Automotive OEM Design and Management of Texas
- ◆ Commercial Truck Co. 10 JPH Sequencing Facility in Mexico
- ◆ 3<sup>rd</sup> Party Logistics Co. Miscellaneous Projects

## 3<sup>rd</sup> Party Logistics Supplier

### ◆ Project Management

- \* Master Schedule Development and Maintenance
- \* Liaison between Client and OEM

### ◆ Plant Layout

- \* Sizing of building
- \* Dock requirements
- \* Material flow analysis
- \* Cell locations
- \* Service area requirements
- \* Equipment Installation drawings

### ◆ Material System

- \* Developed parts list, usages, container sizes and lot sizes
- \* Central material areas, footprints, part address system
- \* Electronic pull and carton pull system, design, racking and operation methods
- \* Development of sequence containers
- \* Empty container sortation development
- \* Internal delivery routes developed

### ◆ Processing Operations

- \* Establish work elements
- \* Labor analysis
- \* Workstation design
- \* Tools and fixture specifications
- \* Material presentation
- \* Indirect labor analysis
- \* Mobile equipment requirements
- \* Plan for every part (PFEP)
- \* 5S and Standardized Work development
- \* FactoryFlow Simulation

### ◆ Operating Support

- \* Pilot supervisor personnel
- \* Start up supervisor personnel
- \* Process updates from product and schedule changes



## 3<sup>rd</sup> Party Logistics Supplier

### ◆ Project Management

- \* Master Schedule Development
- \* Liaison between Client and OEM

### ◆ Plant Layout

- \* Sizing of buildings
- \* Dock requirements
- \* Material flow analysis
- \* Cell locations
- \* Service areas
- \* Installation drawings

### ◆ Material System

- \* Managed part spreadsheet data
- \* Central material areas footprints
- \* Empty container sortation development
- \* Internal delivery routes developed
- \* Internal process flow optimization

### ◆ Processing Operations

- \* Establish work elements
- \* Labor analysis
- \* Workstation design
- \* Tools and fixture specifications
- \* Material presentation
- \* Indirect labor optimization
- \* Mobile equipment requirements
- \* Plan for Every Part (PFEP)

### ◆ Operations Support

- \* Start up supervisor personnel
- \* Process updates from product and schedule changes

*CKGP currently provides Engineering Resources and Services on an as required basis to support their Sequencing and Sub- Assembly Operations throughout North America.*

## Tier 1 Automotive Supplier

### ◆ Project Management

- \* Develop integrated project critical path schedule
- \* Vendor selection & procurement support

### ◆ Plant Layouts (Greenfield & Brownfield)

- \* Sizing of building
- \* Dock requirements
- \* Material flow analysis
- \* Conveyor Layouts
- \* Service area locations and sizing

### ◆ Material System

- \* Developed Plan for Every Part (PFEP), including, usages, container sizes, lot sizes and part address system
- \* Central material areas
- \* Internal delivery routes developed
- \* Internal process flow optimization

### ◆ Processing Operations

- \* Establish work elements
- \* Labor analysis
- \* Workstation design
- \* Material presentation
- \* Indirect labor development
- \* Mobile equipment requirements
- \* Process simulations
- \* Developed manufacturing wall process

### ◆ Construction/Process Management

- \* Building construction coordination
- \* Process equipment suppliers
- \* Conveyor Contractors
- \* Installation coordination
- \* Start-Up/debug/punch list support

## **Tier 1 Automotive Supplier**

◆ Services Provided:

- \* Design sequence delivery, sub-assembly operations to meet a 45 minute broadcast.
- \* Develop new door pad and instrument panel work cells.
- \* Design material flow, display and handling system for raw stock through JIT sequenced deliveries to OEM.
- \* Added new processes to existing facility without increasing building size.
- \* Created lean work cells that allowed Client to use existing manpower.
- \* Developed truck racking systems for full unit loads.
- \* Developed low cost assembly processes.

## Tier 1 Automotive Supplier

◆ Services Provided:

\* Process and Facility Optimization Study:

- Evaluated current Operations and Processes
- Identified areas for improvement
- Provided alternative layouts and cost data for proposed process improvements
- Recommended and implemented optimum layout for resequencing of seats
- Improved loading and transportation methods

## 3<sup>rd</sup> Party Logistics Supplier

◆ Services Provided:

- \* Eliminated picking problems through error proofing techniques.
- \* Build manifest update to OEM standards.
- \* Provided Troubleshooting and enhancements to the IT systems.
- \* Work elements and job descriptions development.
- \* Preventive maintenance program defined.
- \* Torque data strategy developed.
- \* Misc. process and quality enhancements.
- \* Indirect labor optimized.
- \* 5S, error proofing and standardized work refinements.

## Automotive OEM

◆ Services Provided:

- \* Measured work content of each new OEM seating system,
- \* Established output capability for seat manufacturing operations.
- \* Established work flow improvements.
- \* Rebalanced work stations for mix and volume changes.
- \* Established proper manpower flex levels for OEM's schedule changes.
- \* Provided basis for product costing, new product estimating and future cost savings Initiatives.

## Automotive OEM

- ◆ Project management and design responsibility for ILVS (In Line Vehicle Sequencing) Program. This Program encompassed 11 North American Assembly Plants. Automated Storage and Retrieval Systems (ASRS) were designed and installed in each of the 11 Assembly Plants. The stackers are the backbone of the ILVS Process.
- ◆ ILVS was a huge success for the OEM. It has attributed to substantial reductions in WIP (Work in Process) and vast improvements in throughput. The OEM provides a firm 5-day broadcast to local and non-localized suppliers. This program conservatively saves \$2,000,000 per facility, annually. CKGP/PW continues to be an engineering support source for updating and preparing miscellaneous studies and scenarios for the assembly operations.

## **Automotive OEM**

### **◆ Texas Operations**

- \* Developed bid packages for subassembly, sequencing and kitting resourcing (central material area and all major subassemblies which include, but are not limited to, door pads, headliners, carpets, instrument panels, front struts, axles, exterior moldings, etc.)
- \* Developed criteria for resource bid evaluations.
- \* Assisted purchasing with bid evaluations.
- \* Developed approach for business case evaluations.
- \* Conducted pre-bid meetings.
- \* Assisted with layout development.



## Commercial Truck Manufacturer

### ◆ Mexico

- \* 10 JPH plant and logistics center in Escobedo, Mexico
- \* Design and and Project Management of all sequenced JIT material racks
- \* The commodities include exhaust pipes, axles, engine covers, mirrors, seats, radiator fans and miscellaneous engine components.

## 3<sup>rd</sup> Party Logistics Supplier

- ◆ **Michigan Operations.**
  - \* Layout consolidation and process improvement analysis.
- ◆ **Michigan Operations.**
  - \* Advanced planning and facility layout support for 1.7 Million SQ/Ft. sequencing, sub-assembly and metered parts to support two assembly operations.
- ◆ **Ontario CA Operations**
  - \* Costing analysis for cross docking and container management operations
  - \* Layout development for proposed optimized facility
- ◆ **Tampa Florida Operations**
  - \* Process optimization analysis for two (2) building products warehouses.
- ◆ **Charlotte NC. Operations**
  - \* Process optimization analysis for warehousing, sequencing and sub assembly operations.
- ◆ **Richmond Virginia Operations**
  - \* Feasibility and cost analysis for additional content requested by OEM.

### ◆ Experienced Engineering Staff

- \* 12 Years of Sequencing and Sub Assembly Design Experience
- \* 27 Years of Automotive Industry Experience

### ◆ Full Service Resource

- \* Full Compliment of Engineering Disciplines
  - \* Industrial Engineers
  - \* Mechanical / Electrical Engineers
  - \* Tooling and Equipment Specialists
  - \* Materials and Containerization Specialists
  - \* Facilities Engineers
  - \* Factory Communications Specialists
  - \* Simulation Specialists
- \* In-House CAD Design and Plotting Services
- \* In-House Process and Material Flow Simulation Support



### ◆ Services are contracted on an “As Required” Basis

- \* Clients don’t have to search for and hire additional engineering resources to support spikes in activity.
- \* Our experienced engineers “*hit the ground running*” with minimal supervision.

### ◆ Experience in Automotive OEM and Supplier Operations