ENGINEERING SERVICES

One Source Engineering... Worldwide

Design Systems Canada Ltd.

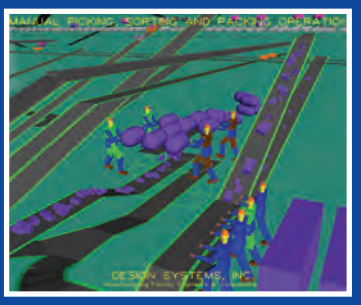
www.dsidsc.com

Airport Baggage Handling

Automotive

Food / Beverage

Heavy Equipment



Parcel Handling

DESIGN SYSTEMS CANADA LTD.

Mechanical Engineering

Concept Engineering
- System Layouts
  - High and Low Volume Facilities
- Capital Appropriation Layouts
  - Investment Analysis
- Phasing Layouts

Bid Package Engineering
- Conveyor Systems
- Process Equipment
- Equipment and Tool Installation
- Project Estimating
- FEA's
- Specialized Equipment Design

Detail Engineering
- Carriers
- Shop Fabrication
- Installation Engineering
- Bill of Materials
- 2D and 3D Software
  - CATIA
  - UGNX
  - Solid Edge
  - Factory CAD
  - Solid Works
  - 3D AutoCAD

Field Engineering
- Quality Control
- Specification Adherence
- Schedule Adherence
- Start-up and Training
- Infrared Survey
- Conveyor Equipment Health Survey
- Chain Pulls/Drive Design
- Conveyor and Equipment
  - Cycle Time Analysis
- Structural Modifications (Steel/Concrete)
- Punchlist Development and Tracking
- As-Builts
- Training

Material Handling Systems
- Conveyors - Overhead and Floor
- Air-bi-dip / Pendulum
- Skid and Pallet Systems
- Skillet Systems
- Transfers
- Bridges and Hoists
- AS/RS
- AGVS
- Facility Layout Development
- AMS
- Baggage Systems

Electrical and Controls Engineering

Design Engineering and Start-up Services
- Control System Architecture Design
- Control System Concept Development
- Information Systems Networking
- Power Distribution and Load Planning
- PLC Hardware and Software Design
- Emulation (Pre-Installation Check) of PLC Software
- Electrical Schematic Design and CAD
- PLC Programming
- Pneumatic and Hydraulic System Design
- Vendor Shop Testing
- Production Support and Training
- Error-proofing Systems Integration
- Plant Monitoring Systems Integration
- On-site Control System Debug and Testing
- On-site Installation Coordination
- As-Built Drawings

Consulting Services
- Control System Concept Development
- Bid Package Drawing and Specification Development
- Drawing Review
- Project Management
- Contract Monitoring
- Punchlist Development and Tracking

Facilities Support Services
- Facility Networking and Data Acquisition
- Andon/Quality Alert System
- Power Distribution Studies
- Load Planning
- Control Room Design
- Building Lighting
- Weld Water Systems
- Energy Management

Advanced Engineering Services
- PC-Based Control System Design
- Man-Machine Interface (MMI) Design
- Factory Information Systems
- Simulation Coordination
- Facility Optimization
- Cycle Time Reduction/Throughput Enhancement
- RFID System Design
- Vehicle Routing/Tracking Systems
- Emulation and System Verification

Manufacturing Engineering

General Service Engineering
- Facility Launch Readiness
- Master Planning Process
- Torque Validation
- Labor Studies
- Process Development
- Improve Manufacturing Process
- Downtime Analysis
- Material Flow Planning and Analysis
  - Part Plan
- Operational Assessments
- Work Cell and Station Layouts
- Value Stream Analysis
- 5-S Station Organization
- Process Mapping

Plan & Execute Successful Implementation
- Failure Mode and Effects Analysis
- Error Proofing
- Six Sigma
- Standardized Work
- Certified MOST, MODAPTS

Process Driven Operation Planning
- Visual Station Integration and Launch Readiness
  - Hierarchical
  - Multi-dimensional
  - Flexible
- TWC and Process Modules
- Material Flow Planning and Analysis
- Fixtures, Hand and Power Tools
- Station Layout with Parts and Production Aids
- Material Racks and Configurations
- Indirect Materials and Supplies

Product/Process Definition
- Process Documents
- Process Tools and Equipment
  - Work Elements
  - Time Standards
  - Product Complexity
  - Subassembly Operations
  - Preliminary Production Modules
- Material Usage
- Complexity of Product Build

Ergonomic Engineering
- Risk Factor Assessment
- Musculoskeletal Stress Survey
- Injury/Illness Survey
- Redesign of Work Cells
- Computer Tracking System

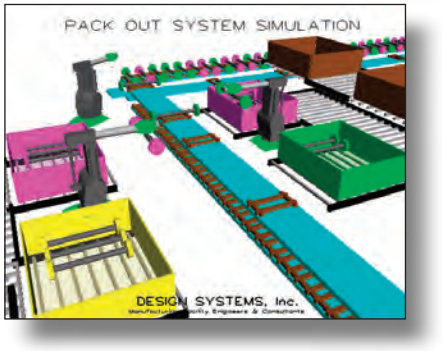
Containerization
- Container Logistics
- Develop Container Requirements
- Define Type & Quantity

Mechanical Engineering
Electrical and Controls Engineering
Manufacturing Engineering

ENGINEERING SERVICES

Simulation Engineering

- Over 400 Large Scale Models Developed
- Design Throughput Validation
- System Sensitivity Analysis
- Carrier Count Analysis
- Model Mix Experimentation
- System Complexity Experimentation
- Material Flow Analysis
- Material Handling Design Analysis
- Manufacturing Equipment
  - Uptime Analysis
- Software
  - AutoMod
  - Witness
- One of the largest holders of AutoMod seats in North America
- AutoCAD
- CATIA (cc: Plant)
- Training
- File Translation
- Engineering-based Staff
- Data Collection / Data Mining in the Field



Paint and Environmental Systems

General Services Engineering

- Sustainable Initiatives
- Quality Improvement
- Manufacturing Process Optimization
- Energy Management
- Field Project Management
  - Contractors Coordination
  - Bid Documents Conformance Verif.
  - Problem Solving
- Start-up and Launch Support
- Training
- Environmental Compliance
- Evaluation
- Overall Paint Shop Development
- Process and Materials Evaluation
- Environmental Systems
- Budget Cost Estimate
- Equipment Specifications
- HVAC Design & Coordination
- Asbestos Abatement

Paint Shop Bid Package Engineering

- Process Equipment Eval. & Selection
  - Pretreatment
  - Spray Booths
  - Ovens
  - Paint Circulation
  - VOC Abatement
  - Sludge Management
  - Ancillary Equipment
- Engineering Calculations
- Performance Specifications
- Estimation of Material Usage
- Estimation of Utilities Requirements
- Estimation of Waste Generation
  - VOC and Particulate Emissions
  - Paint and Industrial Waste Sludge

Process Engineering

- Conceptual Layouts Development
- Coordination with Architect
- Coordination with Authorities
- Conceptual Layout Selection
- Define Preferred Processes
  - Equipment
  - Materials
- Evaluate Projected Life Span of Eqmt.
- Complete Design and Engineering
  - Paint Shop
  - Utilities Systems
  - Environmental Systems
- Waste Handling Systems
- Pretreatment at Source
- Waste Consolidation and Reduction
- Post Treatment for Recycling

Structural Engineering Group

AMIR Engineering, Inc.
MMBDC Company

- PE Certified
- FEA's
- Structural Analysis
- Structural Header Steel Design
- Structural Carrier Design Analysis
- Concrete Pit & Foundation Engineering
- Conveyor Support Steel Design
- Service Platforms and Catwalk Design
- Truss Kip Load Evaluations
- Structural Inspection
- Building Evaluations
- Specifications and Bid Package

General Services

Bid Package Engineering

- Layouts
- Cross Sections
- Flow Diagrams
- Specific Details
- Specifications
- Schedules
- Corporate Codes and Requirements
- Plant Codes and Requirements
- Terms and Conditions
- Local and Federal Code Requirements

Field Engineering

- Field Engineering
- Site Supervision
- Quality Control
- Specification Adherence Analysis
- System Commissioning
- Start-up Debug
- Safety Audits

Warehousing/Distribution

- Racks
- Lift Trucks
- Stretchwrappers
- Unitizing
- Sortation
- Scales

Torque Validation Surveys

- Torque Testing Prior to Launch
- Repeatability Testing
- Dynamic Torque Measuring

Site Safety Standardization

- Flexible Tracking & Reporting
- Increases Safety Awareness

CONCEPT THROUGH COMMISSION

Program Management

Phase One — Definition and Planning

- Gather / Organize Product, Process and Production Assumptions
- Define Project Implementation Plan
- Develop Conceptual Facilities Layouts
  - Develop Conveyance Methodology
  - Develop Macro Scroll
  - Develop Process Foot Print
  - Develop Conveyor Path Layout
  - Develop Material Handling Requirements
  - Perform Material Flow Analysis
  - Perform Throughput Analysis
- Develop Utility Loading Studies
  - Mechanical
  - Electrical
- Develop Program Cost Roll-ups
- Develop Macro Level Project Timing Schedules

Phase Two — Design and Engineering

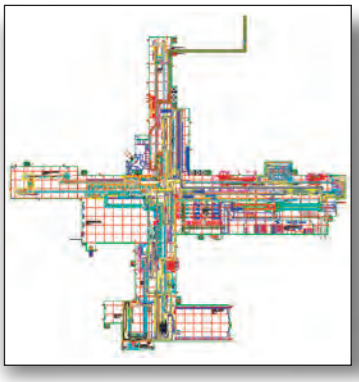
- Project / Contract Management
- Initiate Project Control System
- Develop Detailed Level Project Timing Schedule
- Define Schedule Change Procedure
- Perform Emulation Studies to Validate PLC-programs
- Skilled Trades and Production Operator Training
- Set-up Procedures for Layout Control - DSI provides an FTP Site for Managing Layouts
- Detailed Scroll and Layout Development
- 3-D Carrier Development and Modeling
- Supplier Selection
- Develop Bid Packages for Contractor Procurement
- Bid Review and Contract Award
- Prepare and Issue Facilities Requisitions
- Engineering Drawing Review and Approval

Phase Three — Implementation

- Site Logistics
- Resource Planning
- Initiate and Manage Site Safety Program
- Coordinate and Monitor Equipment Tear-down and Ship
- Coordinate, Chair, and Document Contractor Progress Meetings
- Monitor Adherence to Specifications for Construction, Installation and Schedule
- Provide Cost Control — Bulletins and Field Order Procedures
- Manage Detailed Level Project Timing Schedule
- Provide Contractor Supervision
- Perform Station Readiness
- Coordinate Construction, Conveyor and Equipment Construction Activities
- Develop, Coordinate and Approve Construction Contractor Punch-lists
- Assist Equipment Conveyor Debug Activities
- Assist and Document Equipment Validation
- Work Station Optimization for the Production Operator

Phase Four — Commissioning

- Coordinate / Assist with Pilot Program
- Provide Post Launch Support
- Re-Scroll/Man Assignment Adjustments
- Document and Track Launch Issues
- Burst Build and Downtime Tracking
- Continuous Improvement
- Receive, Review and Approve "As-Built" Layouts
- Receive, Review and Approve Maintenance Manuals
- Coordinate Spare Parts Program
- Closeout Contracts
- Construction Site Decommissioning



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Our next twenty years

As you read this, we are planning the "Next 20." Our plans are driven by your contributions and input. We know that we must not be content to maintain status quo, but need to continuously improve, constantly change and relentlessly pursue opportunities on a global scale. We look forward, with you, to the future.

- *Privately owned and operated*
- *Founded in 1990 – Celebrating 20 years service*
- *Focus on long term relationships with over 85% repeat client business*
- *Strategic office locations to serve the global market place*
- *75 engineering and support personnel*
- *ISO 9001:2008 certified*

20 years and counting...

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DESIGN SYSTEMS
CANADA LTD.

Design Systems Inc, Mission Statement

Design Systems is committed to providing World Class Engineering services through:

- **D**edicated personnel to achieve the highest level of quality in each of their respective specialized disciplines.
- **S**atisfying each of our clients, resolving to exceed expectations
- **I**mproving continuously to compete successfully in a world marketplace

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