LIQUOR DISTRIBUTION BRANCH

2625 VISITOR'S REGISTER

(Please Print Clearly)

DATE: NOV 13 2013

NAME	COMPANY NAME OR BCLS	VEHICLE LICENSE PLATE	EMPLOYEE VISITED	BADGE	TIME IN	TIME OUT
Alfonso Vega	TOR		Mark Long	01	8:50	1009
SUSANNA KAN	STL		TORRY TRINH	02	9:30	10:30
Christina Flanigan	Praxis		Christina Hall	03	10.00	11:22
DAVID LEUNG	WRITBANK		CHRISTINA HALL	04	10:00	1:22
F. PAONANI	DSI		ADELE.	01	10:30	1:13
S. RODDICK	PURE GLOBAL		ADELE	02	10:30	11:13
Stacey Jennings	Diageo		Adele	05	10:55	12:14
Heather Turner	BCLDB		Jonathan	01	11:23	1203
Donna Brooks	B.C. Liquor		Johathan	02	11:25	1203
C.J.E.F. NICK	BZLDBI		ADELE SHIELD	01	2:00	3:45

s.22

Not Responsive

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LIQUOR DISTRIBUTION BRANCH

2625 VISITOR'S REGISTER

(Please Print Clearly)

DATE: NOV 14 2013

NAME	COMPANY NAME OR BCLS	VEHICLE LICENSE PLATE	EMPLOYEE VISITED	BADGE	TIME IN	TIME OUT
BRENDAN ALEXANDER	LDB		BLAINE	01	8:30	12:00
Alan Ohashi	IBM		NTYMO	02	9:00	1:37
MICHAEL UGOR	IBM		NORM TYMO	03	9:30	12:23
Paddy Bradley	BCPSA		LR EMY	04	9:40	2:00
Matt Couldwell	Velosys		Kim Giesbrecht	05	10:30	11:42
CRAIG PRENTICE	MUSICIA		" "	06	10:30	1:40
Norm Eng	Velosys		" "	07	10:30	11:40
DOROTHY BUDDEN	STILE	s.22	Barbi Philip	08	10:55	11:30
CARMEN DIONOFRIO	STILE		"	09	10:55	11:30
BEATRICE LANDINI	F/UITICCIO		"	10	10:55	11:30
Lisa Hill	Taylor Hill		Paulette Parry	11	10:55	1:00
Wendy Austin	SWS		Adele	12	10:55	12:18
Chris Hoffmeister	SWS		Adele	13	10:55	12:18
MARCO BERTAGNI	BERTAGNI CONSULTING INC		Adele	01	10:40	2:00
DE BUDDEN	STILE		Adele	03	1PM	2:00

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(Please Print Clearly)

DATE: NOV 14 2013

NAME	COMPANY NAME OR BCLS	VEHICLE LICENSE PLATE	EMPLOYEE VISITED	BADGE	TIME IN	TIME OUT
Dorren Plewes	C Brands		Bill + Paulette	005	1pm	3"
Megan Moyle	"		↓	006	1pm	3"
Rich Fortin	"			007	1pm	3"
Cindy Fortier	"	s.22		008	1pm	3"
Dinesh Nair.	"		"	09	1pm	3"
LeNisha Dunsmore	"		"	10	1pm	3"

Not Responsive

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2625 VISITOR'S REGISTER

(Please Print Clearly)

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		Not Responsive				

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DATE: NOV 13 2013

LIQUOR DISTRIBUTION BRANCH

3200 REGISTER

(EMPLOYEE, VISITORS and CONTRACTORS)

NAME	COMPANY NAME OR BCLS #	VEHICLE LICENSE PLATE	EMPLOYEE VISITED or PURPOSE OF VISIT	BADGE CODE & No.		TIME IN	TIME OUT
Not Responsive							
Shannon Verwey	208			CO	07	8 00	1525
SIGRID BOURIEL.	167						1530
COLLEEN PRATCH	135			CO	09	800	1530
CHUA, JAMES	076		s.22	CO10		8:15	1530
Perm Bains	H.O.			ST	07	8:15	5:05
Susan Moreira	083			CO	11		1530
Kristi Boucher	203 GL.S.			CO	12	8:20	1525
STEVE TODERIAN	EATON	s.22	UPS SERVICE	CO	05	1330	1405

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LIQUOR DISTRIBUTION BRANCH

3200 REGISTER

(EMPLOYEE, VISITORS and CONTRACTORS)

NAME	COMPANY NAME OR BCLS #	VEHICLE LICENSE PLATE	EMPLOYEE VISITED or PURPOSE OF VISIT	BADGE CODE & No.		TIME IN	TIME OUT
Jeff Mueller	Sedlak		Ken McDonnell	SV	04	8:21	1415
George Swartz	↓		↓	SV	06	↓	1415
Dan Carty	↓		↓	SV	05	↓	4:28
Rob Baker	↓		↓	SV	03	↓	4:28
Scott Gallik	Sedlak		Ken McDonnell	SV	02	8:21	4:28
Natalie Corkery	217			CO	13	9:22	1525
Lovetta Walker	212			CO	14	922	1525
Melissa Christian	#0480		s.22	CO	15	8:22	1530
Jeffrey Nguyen	GLS #123			CO	16	8:25	1530
Adriano Ribeiro	GLS #123			CO	18	8:26	1525
Brent Stannar	BCLS #665			ST	09	0855	1200
Brande Klyne	BCLS 160		Donna Gibney	LO	19	8:55	1200
Carmen Tenkin	#94		Donna G.	SV	07	9:10	1210
Dave Bauer	193	s.22	"	SV	08	9:00	12:01
STU PATERSON	GLS 153		MGR MEETING	SV	09	9:12	12:08

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NAME	COMPANY NAME OR BCLS #	VEHICLE LICENSE PLATE	EMPLOYEE VISITED or PURPOSE OF VISIT	BADGE CODE & No.		TIME IN	TIME OUT
Tony Fernandes	Ironwood		Training	C	14	8:30	1245
Darcy Austin	247		Course	C	15	8:35	1245
KAREN MUIRHEAD	LEVELTON	—	MLWG	SV	02	845	1015am
STEVE PARKS	ENVIRO-VAC	—	" "	SV	03	8:45	0949
Calvin Han	Levelton	161 DJS	Grey Makuch	CON	09	8:55	9:20
SHARLENE OLSEN	AMBIUS	N543L	PLANT SERVICE	BL	—	1106	353
s.22	LDB		Kumar Bandyo	SV	04	11:05	12:00
Brett Carter	AirMaster	Van	Service	Ocean		11:45	1:45
Tyler Artle	#160		Course		C03	1pm	1322

Not Responsive

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DATE: 14 NOV, 2013

LIQUOR DISTRIBUTION BRANCH

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NAME	COMPANY NAME OR BCLS #	VEHICLE LICENSE PLATE	EMPLOYEE VISITED or PURPOSE OF VISIT	BADGE CODE & No.	TIME IN	TIME OUT
Not Responsive						

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NAME	COMPANY NAME OR BCLS #	VEHICLE LICENSE PLATE	EMPLOYEE VISITED or PURPOSE OF VISIT	BADGE CODE & No.		TIME IN	TIME OUT
Bob Kay	CDB		ITL.	ST	06	930.	

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MAIN DISTRIBUTION CENTRE RELOCATION PROJECT

PHASE 1 KICKOFF MEETING

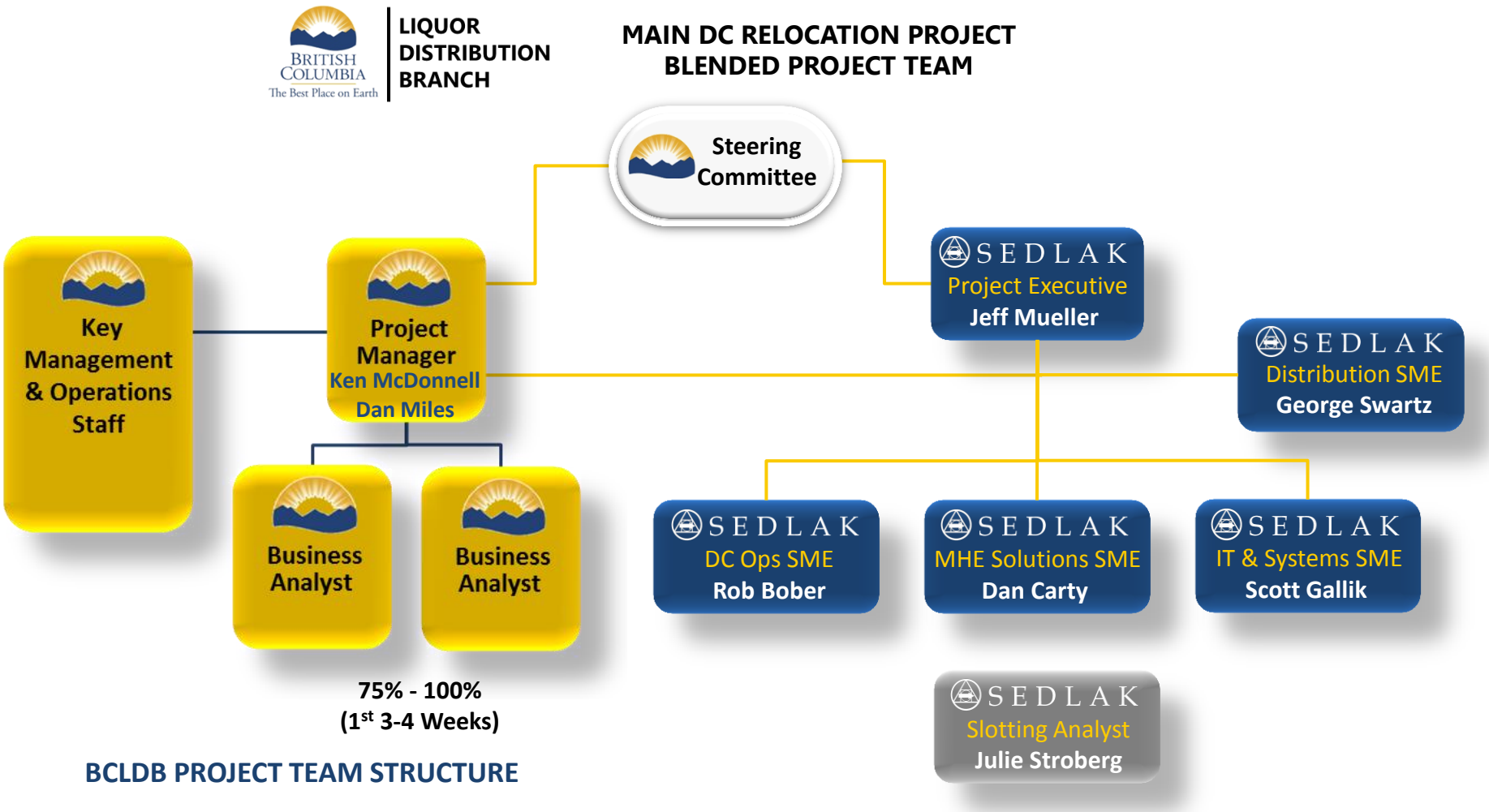
NOVEMBER 13, 2013

Presented to:

BRITISH COLUMBIA
The Best Place on Earth

LIQUOR DISTRIBUTION BRANCH

Introducing Your Sedlak Team



Introducing Your Sedlak Team

BRITISH COLUMBIA The Best Place on Earth | LIQUOR DISTRIBUTION BRANCH

Jeff A. Mueller, Vice President

- Jeff Mueller is Sedlak's information technology leader, providing executive level management for the success of all IT initiatives.
- Jeff has major responsibility for assessing clients' distribution and logistics challenges and leading information systems efforts. His broad background in s.22 s.22 results in the delivery of client specific business results. Jeff effectively leverages his experience in s.22 s.22 s.22 into an accomplished career at Sedlak (as well as throughout the consulting industry).

s.22

George Swartz, Practice Director

- George Swartz serves as Practice Director for Sedlak's Distributed Order Management (DOM) and Wholesale Distribution (WSD) Industry practices. He has 30+ years of Business experience, with 23 years spent in Management Consulting.
- George has extensive supply chain, logistics and distribution experience. He is skilled in order management & fulfillment, transportation management (all modes), inventory planning and management, warehouse operations and design, procurement, distribution channel design, multi-channel distribution network design, redistribution and flowpath inventory deployment design, 3PL outsourcing assistance, and strategic planning.
-

s.22

Introducing Your Sedlak Team

Scott Gallik, Manager

- Scott Gallik joined Sedlak in 1999 and was promoted to his present position in 2007. Scott's experience and expertise is in WMS design, implementation, and support. Additionally, Scott has a strong background in DC operations and facility planning and design.
- Previously, Scott spent two years as inventory department manager with American Built Equipment Co., a heavy machinery OEM in Irving, Texas. While attending graduate school, Scott was a research assistant with the Automation and Robotics Research Institute (ARRI) in Fort Worth, Texas. ARRI provides manufacturing consulting services to companies nationwide.
- s.22

s.22

Dan Carty, Senior Consultant

- Dan Carty s.22 returned in 2011. Dan returns to Sedlak bringing s.22 of experience in various distribution and manufacturing environments. His many responsibilities have included working in areas of

s.22

- s.22

s.22

Introducing Your Sedlak Team

Robert W. Bober, Consultant

- Rob brings 20 years of experience in supply chain optimization, productivity improvement and cost reduction in the manufacturing industry. His diverse supply chain operations background includes logistics, 3PL management, forecasting, inventory optimization, process improvement and KPI development.
- During the course of his career, Rob has been responsible for the development, consensus and execution of demand forecasting and optimizing safety stock in the industrial manufacturing sector. He has also managed supply chain strategy, advanced on-time delivery performance while expanding geographical scope of distribution operations, and orchestrated tactical planning to balance supply/demand/resources planning to result in the lowest-landed cost.
- Additionally, Rob has experience with SOP development, quality assurance and federal regulatory compliance management.

s.22

Our Understanding of The Situation

The British Columbia Liquor Distribution Branch (BCLDB) has been tasked with vacating its 250,000 sq. ft. facility in Vancouver and has selected Sedlak to assist with several key activities, including;

- Identifying, clarifying and documenting the requirements for the new DC (physical space and characteristics to meet distribution goals as well as corporate goals)
- Translating current business volume into a 10-year projection, accounting for growth and other potential business changes
- Site selection and alternatives comparison for the new DC
- Identification of DC Ops best practices that can be incorporated into the new DC
- Identification, assessment and recommendations for material handling solutions and automation that would enhance/improve DC operations and efficiency
- Facility layout and flow recommendations and conceptual design
- Facility organization and staffing recommendations
- Systems requirements and solution options to properly enable the new DC

3-Phased Program Approach

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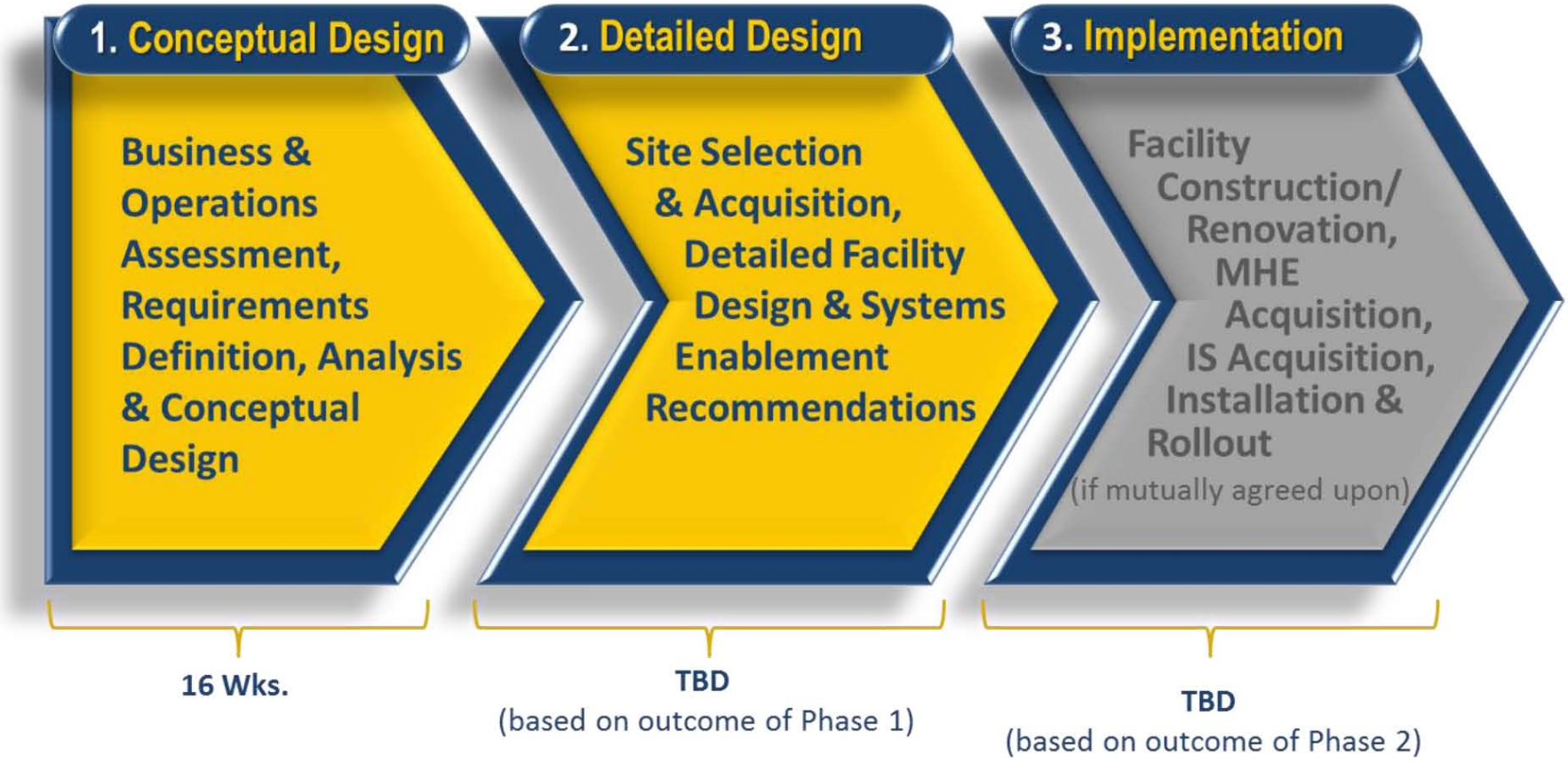
MAIN DISTRIBUTION CENTRE RELOCATION PROJECT
SUBJECT MATTER EXPERT (SME) APPROACH



Phase-1 Project Approach Overview

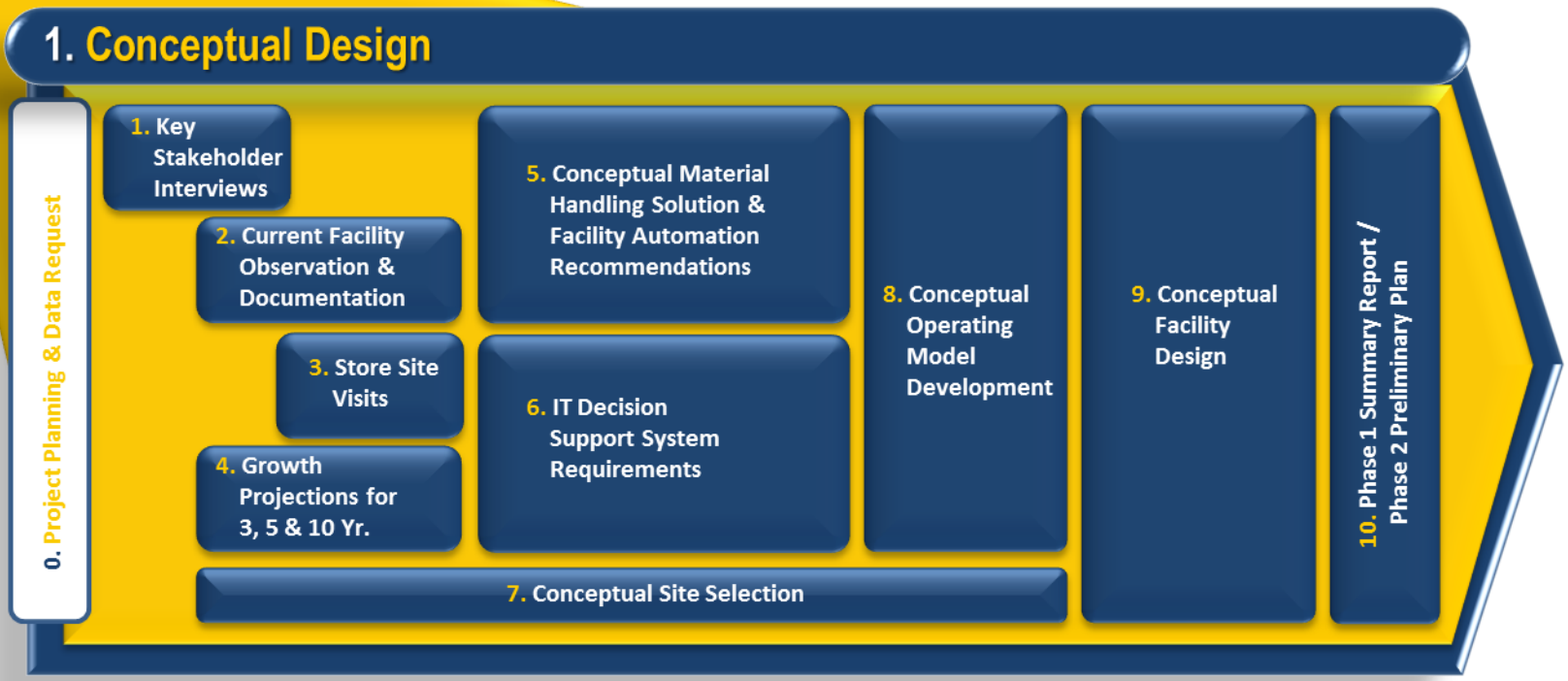
BRITISH COLUMBIA The Best Place on Earth | LIQUOR DISTRIBUTION BRANCH

1. Conceptual Design

Business & Operations Assessment, Requirements Definition, Analysis & Conceptual Design

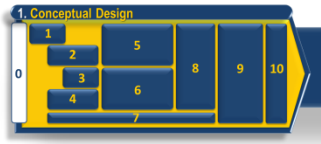
16 Wks.

The Phase 1 Project Approach is comprised of 10 key activities, some of which are sequential and some of which are concurrent



This phase focuses on detailed requirements definition, conceptual facility design and site selection strategy. This is accomplished through a series of structured activities, observations, analyses and interviews.

Phase-1 Project Approach Detail



Phase 1. Conceptual Design – Task 0

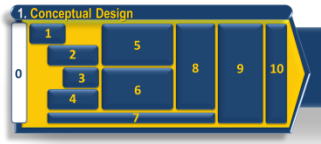
0. Project Planning & Data Request

Prior to arriving on site, we will outline specific historical and projected data requirements that will serve as the foundation for the analyses and evaluations that follow. This initial step greatly enhances the effectiveness of our on-site meetings. Types of information requested may include:

- Average and peak orders/day
- Average and peak lines/order
- Average and peak pieces/line
- Projected sales over the planning horizon in units
- Units/carton
- SKUs/month by category (spirits, wine, beer, etc…)
- SKU velocity by category
- Shipments per day – average and peak trucks, cartons, and units
- Facility layout of BCLDB East Broadway DC (preferably in AutoCAD)
- Direct labor in FTEs
- Hourly wages + benefits, overtime, temporary support, etc.

- This data will serve as the foundation for the analyses and evaluations that follow. As the effort progresses, additional information may be required.
- During project initiation, we will schedule site visits, interviews and review workshops.
- Then a project kick-off meeting with the project team will begin our on-site activities.
- The goals of this meeting are to define roles and responsibilities of each team member, establish lines of communication and determine the most efficient approach for gathering additional data.

Phase-1 Project Approach Detail



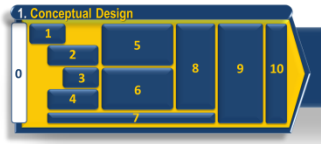
Phase 1. Conceptual Design – Task 1

1. Key Stakeholder Interviews

- Sedlak senior resources will spend time with key BCLDB management team members to discuss insights on strategic priorities and imperatives
- These discussions will focus on growth projections and industry trends
- The outputs from these discussions will be compared, contrasted and aggregated to understand the key drivers behind the BCLDB facility design.
- We will utilize these outputs to identify any discrepancies among the management team to ensure executive alignment.

Typically, these interviews include the CEO, President, CFO, COO, General Manager, VP Sales, VP Marketing, VP Store Operations, CIO/VP IT, VP Distribution and VP Supply Chain among others. During project initiation, we will jointly review the BCLDB organizational structure and determine who should participate in the interviews.

Phase-1 Project Approach Detail



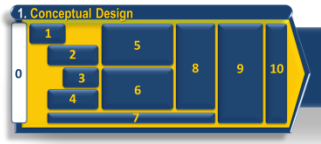
Phase 1. Conceptual Design – Task 2

2. Current Facility Observation & Documentation

Experienced Sedlak resources will spend adequate time in the current BCLDB facility to fully understand the scope and breadth of operations that need to be incorporated into the new distribution centre.

- Review pre-receiving, receiving, product inspection, product staging and putaway, letdown and efficiency transactions, order selection and picking, packing and shipment prep, outbound staging, transportation planning, shipping, inventory control and cycle counting, inventory reconciliation, returns processing and product disposition, recycling programs and general housekeeping processes
- Document all current material handling solutions and IT decision support tools (forecasting, demand planning, WMS, WCS, TMS, LMS, etc.) currently being utilized.
- “Staple-ourselves” to receipts, orders, transfers, change orders, shipping documents and any other relevant transactions
- Develop summary of the design criteria, product-handling characteristics, order profiles and operations procedures
- Reviewed data with BCLDB management for concurrence prior to proceeding

Phase-1 Project Approach Detail



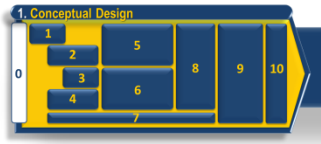
Phase 1. Conceptual Design – Task 3

3. Store Site Visits

Because the BCLDB DC's primary mission is the replenishment of BCLDB retail stores and wholesale customers, it is important to understand current store operations and their operational needs and incorporate them into the new DC design.

- Conduct site visits to 6-8 retail stores to observe, document and review current store operations processes, infrastructure and operational requirements.
- These stores should embody the best and the worst of the BCLDB retail footprint, and include representatives from the wholesale client base.
- The specific sites to be visited will be determined during project initiation.

Phase-1 Project Approach Detail

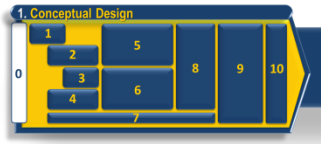


Phase 1. Conceptual Design – Task 4

4. Growth Projections for 3, 5 & 10 Yr.

- Utilize the inputs from the pre-project data collection, management interviews, historical data analysis and industry trends to calculate growth
- Calculate 3-, 5- and 10-year Growth Projections to be employed in developing the conceptual facility design, as well as assessing future material handling, staffing and transportation requirements.
- Review Growth Projections with BCLDB management and any necessary revisions will be made and documented.

Phase-1 Project Approach Detail

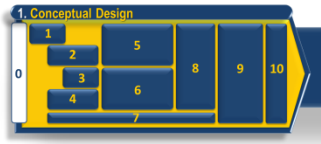


Phase 1. Conceptual Design – Task 5

5. Conceptual Material Handling Solution & Facility Automation Recommendations

- Identify, evaluate and document recommendations for potential improvements in material handling equipment and automation that could be incorporated into the new facility
- Could include, but is not limited to, racking/shelving types and configurations, lift trucks, pallet jacks, motorized conveyors, sorters, in-line scanners, labeling equipment, diverters, AGVs, ASRS applications, etc.
- Various solutions will be vetted based on applicability, feasibility, cost and impact.
- Review solutions with BCLDB management
- Refine and finalize selections to be included in the facility requirements.

Phase-1 Project Approach Detail

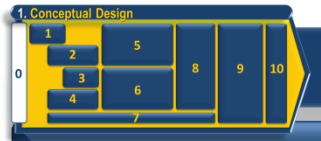


Phase 1. Conceptual Design – Task 6

6. IT Decision Support System Requirements

- Review current systems architecture and applications
- Identify processes and activities that would benefit from improved decision support systems and applications, e.g.;
  - Warehouse Management System (WMS)
  - Forecasting & Demand Planning tools
  - Transportation Management System (TMS)
  - Labor Management System (if not included with the WMS)
  - RF and paperless transactions
  - RFID applications
  - Warehouse Control System (WCS)
  - Yard Management System (YMS)
  - Fleet Mobility applications
- Identify the required systems and tools
- Document the requirements for the specific systems and applications
- Prepare a preliminary list of potential solution providers

Phase-1 Project Approach Detail

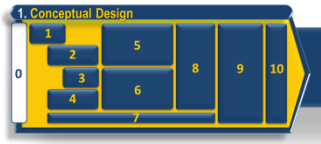


Phase 1. Conceptual Design – Task 7

7. Conceptual Site Selection

- Develop site selection criteria to screen potential sites for the new facility - screening criteria could include;
  - Cost
  - Proximity to customers
  - Access to highways
  - Necessary site prep or renovation required
  - Power requirements
  - Drainage
  - Access to parking
  - Staffing forecasts
  - “Green” opportunities
  - Others TBD
- Identify potential industrial and commercial properties that might be suitable sites, including existing industrial parks, pre-existing warehouse facilities and suitable plots of land
- Develop cost estimates for the various location options
- Develop recommendations on new construction, building purchase or building lease
- Include potential sites near metro-Vancouver

Phase-1 Project Approach Detail



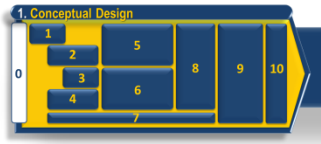
Phase 1. Conceptual Design – Task 8

8. Conceptual Operating Model Development

Utilize the requirements that have been defined during the previous activities and Sedlak's understanding of leading practices to develop the future state operating model for BCLDB's new Distribution Centre, including;

- Primary process flows for all key activities and transactions
- Refined product flows utilizing recommended material handling solutions and automation
- Revised organization and staffing structure to support the recommended operations
- Recommended systems and application architecture to support future state operations
- Key Performance Indicators (KPIs) and associated metrics that will be utilized to manage and continuously improve the new distribution facility

Phase-1 Project Approach Detail



Phase 1. Conceptual Design – Task 9

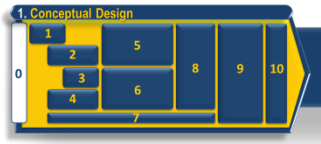
9. Conceptual Facility Design

Utilizing all of the inputs, analyses and recommendations from the previous activities, Sedlak will generate a recommended conceptual facility design for the new BCLDB Distribution Centre

- Document building requirements (building size, clear height(s), etc.) and proposed modifications
- Prepare physical space and characteristic requirements (e.g., power requirements, dock doors, office space, and refrigeration) for each functional area including material handling and storage concepts
- Evaluate material flow and interdependencies of each functional area to derive the best-fit solution to meet BCLDB objectives
- Develop AutoCAD layouts depicting the selected concepts and proposed facility layouts
- Quantify direct labor requirements by functional activity for the proposed operation
- Estimate total project economics for equipment, process control systems and labor costs

The design will include AutoCAD drawings and descriptions of the recommended facility.

Phase-1 Project Approach Detail



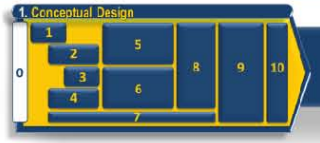
Phase 1. Conceptual Design – Task 10

10. Phase 1 Summary Report / Phase 2 Preliminary Plan

Upon conclusion of this effort, a detailed action list will be developed and presented in a Phase 1 Executive Summary Report. The list will contain a description of the areas assessed, followed by an implementation approach we believe would benefit BCLDB. As detailed in Tasks 1-5, our action list will address:

- Refined BCLDB Distribution Centre operating model
- Improvements to the existing distribution/fulfillment operations identifying any new material handling equipment and product flow
- A description of operations for the proposed systems and processes, including product flow and throughput capacities
- Layouts for the optimum facility layout, depicting all functional areas and material handling equipment concepts
- Listing of store operations improvements and retrofitting
- High-level definition of information system requirements needed to support the system design
- Capital investment estimates for all items above including store improvements, labor, material handling equipment and IT systems
- A transitional project plan/schedule for the execution and implementation of our recommendations (including our approach to change management), with defined project milestones and critical path activities for each stage of the project

Phase-1 Project Approach Timeline

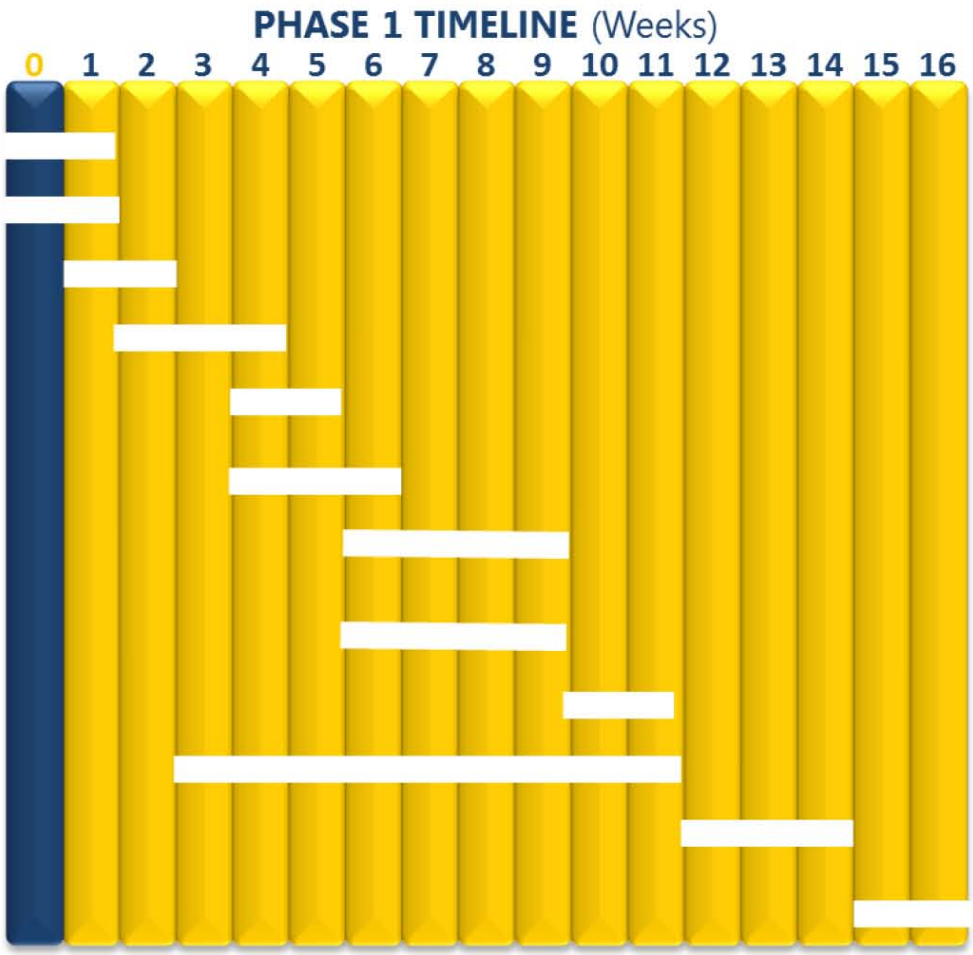


Phase 1. Conceptual Design – Timeline

BRITISH COLUMBIA The Best Place on Earth | LIQUOR DISTRIBUTION BRANCH

MAIN DC RELOCATION PROJECT

- Submit Data Request, Review Initial Data Returned
- Conduct Project Planning & Develop Project Schedules
- Conduct Key Stakeholder Interviews
- Observe & Document Current Facility Operations
- Observe & Document Select Store Operations
- Develop 3, 5, & 10 Year Growth Projections
- Develop Conceptual Material Handling Solution & Facility Automation Recommendations
- Identify & Document IT Decision Support System Requirements
- Develop Conceptual Operating Model
- Conduct Conceptual Site Selection
- Create Conceptual Facility Design
- Develop Phase 1 Summary Report & Phase 2 Preliminary Workplan



Questions?

Thank You!

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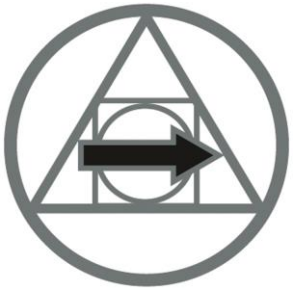


‘Big Ideas’ Brainstorming Workshop

December 18, 2013

Presented to:

BRITISH COLUMBIA
The Best Place on Earth

LIQUOR DISTRIBUTION BRANCH

AGENDA

- Workshop Purpose & Ground Rules
- Systems & Information Technology Ideas
- Material Handling Equipment & Automation Ideas
- Next Steps

The 'Big Ideas' Workshop

Present, Discuss, Brain-Storm, & Add/Eliminate…,

Ideas, Concepts, Solutions, Best Practices and Strategies…,

‘Big Ideas’ Workshop – Ground Rules

- This ‘Brain-Storming’…, be ‘pragmatically creative’
- We critique Ideas & Concepts…, Not Individuals
- Be respectful of your Teammates
- Don’t be afraid to get up and walk around…, draw on the whiteboard or flip charts…, keep the creative juices flowing

Systems – Overview

- **Typical Warehousing / Distribution Systems**

Systems – Essential Warehouse Applications

- **Warehouse Management Systems (WMS)**
  - The WMS is an important piece of supply-chain software. Its main functionality is to control the movement and storage of products within a warehouse and process the accompanying transactions: receiving, putaway, picking, and shipping. *Consider for initial implementation*.
  - Typical WMS IT and systems components:

Systems – Essential Warehouse Applications

- **Warehouse Control Systems (WCS)**
  - The WCS is a software application that directs the real-time activities within distribution centers. It provides a uniform interface to a wide range of material handling equipment such as conveyor systems, sorters, palletizers, AS/RS, carousels, etc. *Consider for initial implementation.*

- **Labor Management Systems (LMS)**
  - LMSs are used by distribution operations to manage and track labor activities. This includes real-time interaction with WMS and WCS systems to collect data on what workers are doing, how many locations they have visited, what equipment they have used, what paths they have traveled, and what inventory they have handled. *Consider for future implementation.*

Systems – Supplemental Warehouse Applications

- **Slotting Applications**
  - Slotting tools use SKU order velocity to calculate and rank items. This information is then used to map the warehouse and the determine where individual products should be assigned to create the most efficient picking operation. *Candidate for initial implementation*.

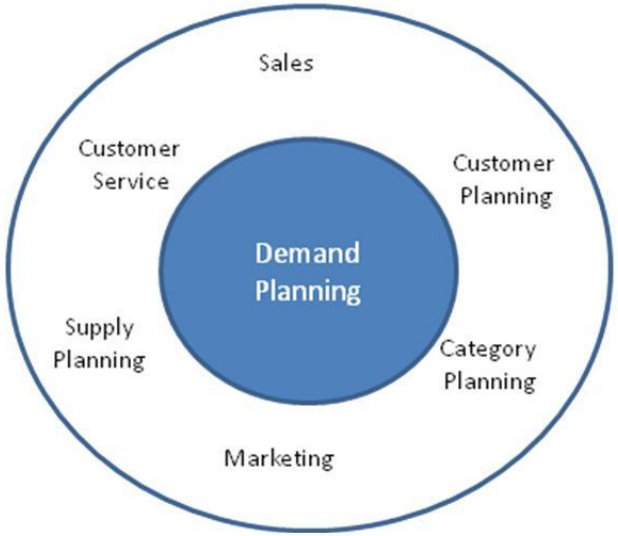
- **Yard Management Systems (YMS)**
  - YMSs serve as the bridge between the WMS and transportation. They control yard activities and schedule arrivals and departures at the dock doors, which reduce traffic issues and truck waiting times. *Candidate for initial implementation*.

Systems – Supplemental Warehouse Applications

- **Transportation Management Systems (TMS) / Routing Software**
  - TMS and routing software is used to develop outbound loads and stop sequence loading instructions. Typical functionality can include Planning and decision making, Transportation Execution, Transport follow-up, and Measurement. *Candidate for initial implementation*.

Systems – Forecasting and Demand Planning

- **Forecasting and Demand Planning System**
  - **Typically outside the scope of fulfillment center activities. These systems direct inventory buying strategies and ensure in-stock availability at stores and other sales channels. New system for BCLDB is being considered and a replacement project is suggested.**



Picking Technology – Radio Frequency (RF)

- Radio Frequency (RF)
  - Wearable
  - Pistol
- Label / UPC Scan

Picking Technology – Voice Picking

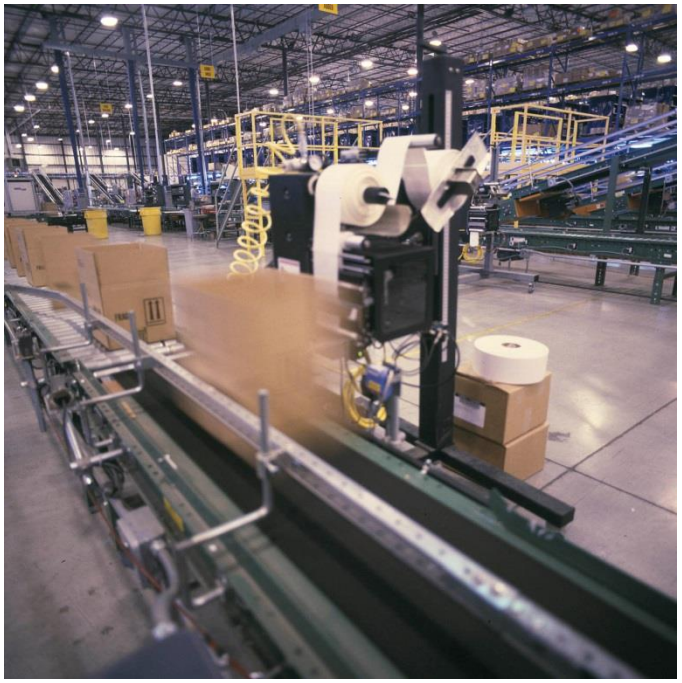
- **Voice Picking**
  - **Voice systems provide hands free lifting and transport of goods without burden of carrying IT/RF related equipment by associates. Device can be trained for different languages and dialects.**

Picking Technology – Pick to Light (PTL)

- **Pick to Light (PTL) – Typically used for piece picking (or putting) activity. Can be considered for loose bottle pick functions and case pick activities.**

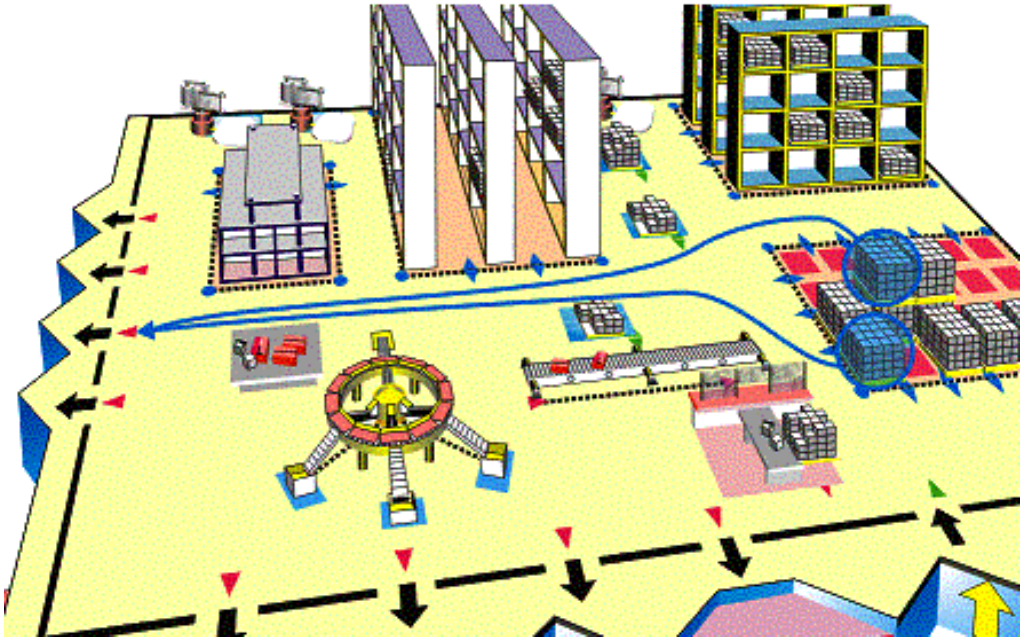
Other IT Opportunities

- Barcode receiving at the stores (Scan and locate to floor)
- Eliminate chimney stacking and utilize full cube pallet build with RF pick confirmation and/or RF pallet building.
  - Option: Automatic pallet building as seen in Durham.
- Label picking and UPC scanning. Loose label with manual application or PandA (Print and Apply) systems.



Other IT Opportunities

- **Facility operating strategy**
  - **Pick orders in real-time, waved (batched) by store/customer loading sequence**
  - **Outbound staging areas vs. direct to trailer fluid loading**
  - **Amalgamation and WMS consolidation points**



Material Handling Equipment

The following MHE solutions are proven. However, this is not a concepts review. The concepts will depend on the data that identifies and drives the facility process. These ideas do take into account that land value is expensive and we expect to use vertical options when applicable.

Finally, these ideas address both carton and pallet handling methods that aren't currently be used in the Vancouver facility.

Manual Pick Carts

Pick Carts can be ideal for split-case and small item applications. Pick Carts are a good solution for operations with a large number of SKUs that are small in size, and have a relatively low pick rate per SKU. Rolling carts can be custom designed to hold multiple containers. Each container holds a different order, so operators can batch pick multiple orders on a single trip through the pick module. The Pick Cart systems are often managed using voice or lights directed software, as the pick directive software communicates to each Pick Cart in the system using a wireless Local Area Network (LAN).

Pick Cart Features

- Custom-Designed Cart Configuration for Each Application
- Ideal for Split-Case and Small Item Applications
- Batch-Style Picking from a Wide Range of SKUs
- Economical for Large Numbers of Slow-Moving Items

Pick Module

Multi – Level Pick Module

The goal of Pick Module Storage Rack Systems is optimum product flow. Pick modules utilize pallet and carton flow racks through a storage rack system to expedite the order-fulfillment process. Pick module system designs may include push-back, gravity flow, selective pallet rack and other storage methods and conveyors to optimize product flow. Traditional process flow of merchandise is to send totes to zones within the module, pick portions of the order and pass to the next zone for pick completions.

Pick Module

Multi – Level Pick Module

Advantages

- This flow-through concept allows distribution operations to lower fulfillment costs.
- The pick module system provides the most efficient use of space and labor possible by utilizing every square inch of premium warehouse area cost-effectively and delivering an organized flow of products being readied for shipment to customers.
- High SKU traffic, high throughput.

Pick Modules in use at LCBO

London

- picks 2,000 cases / 7 hr. (per person) shift from the pick module

Sortation Systems

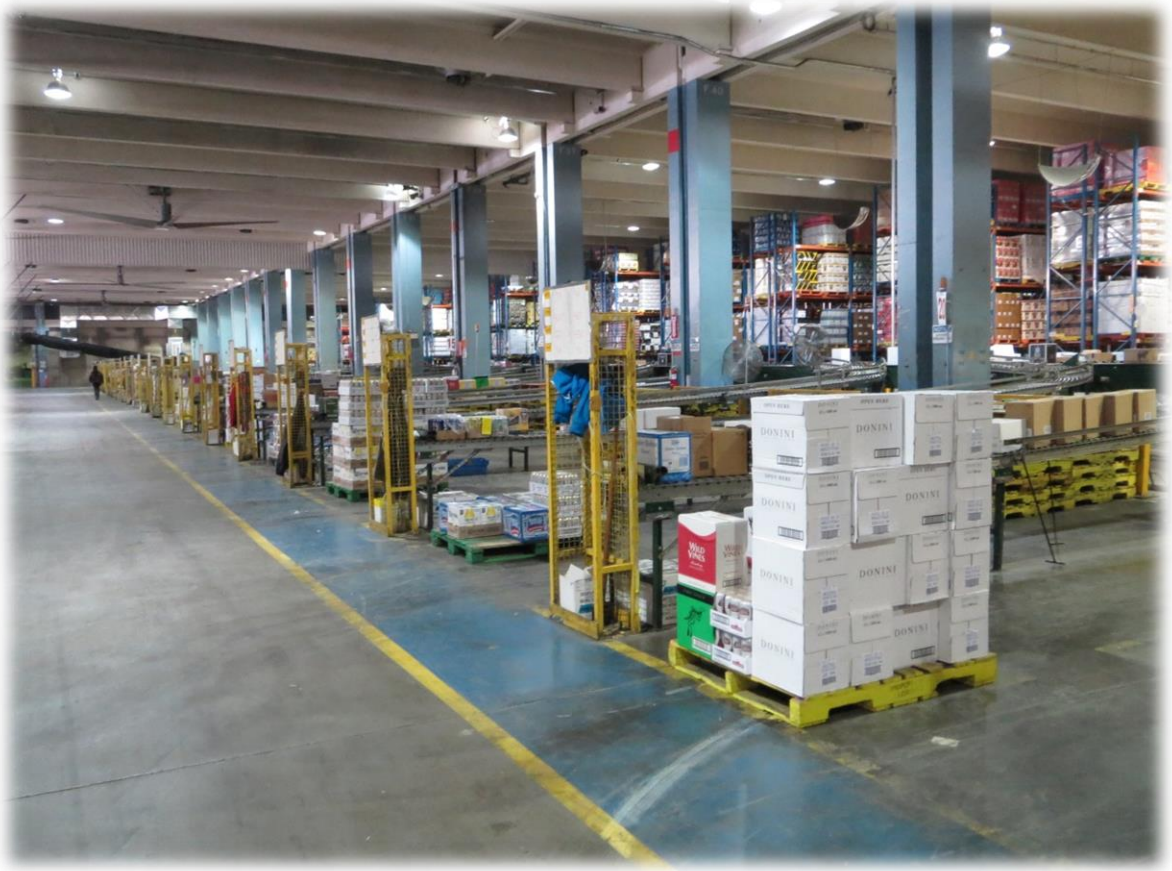
Sortation Systems are designed for diverse product handling and high throughput. A variety of manufactures offer a comprehensive line of sortation systems designed for the diverse product handling and high throughput requirements of today's warehousing and distribution centers. Standardized controls and software optimize warehouse operations and provide supply chain visualization.

High-rate sortation systems with advanced levels of user control feature advanced control systems that include visualization and functional control of the merge, induct, and sortation subsystems. The controls systems provide advanced levels of user control for management of merge to sortation hardware, visualization, diagnostics, and performance monitoring.

Sortation Systems in use at LCBO

London

- Dematic's Rapid Sort Conveyor System
- Annual throughput of 26M Cases
- 36K case average / shift, Peak 38K / shift



Palletizers

Palletizers provide efficient use of automation and allows for easy consistent build of pallets. Palletizers are high-capacity, high-throughput systems that keep up with the flow through of the distribution process. Palletizers offer the freedom of on-floor operation, clean, open profiles and high or low level case feed.

Palletizing solutions for automated and manual mixed case palletizing systems at the end-of-process lines are high-performance systems for building mixed-product pallets with high productivity and accuracy. Some systems include AMCAP, which is an ultra-high performance palletizing system for automatically building mixed-products pallets, ErgoPall, which is a high performance palletizing system allowing operators to ergonomically build mixed product pallets and End-of-Processing-Line Palletizing Systems, which may be designed to handle individual cartons or full pallet layers of goods.

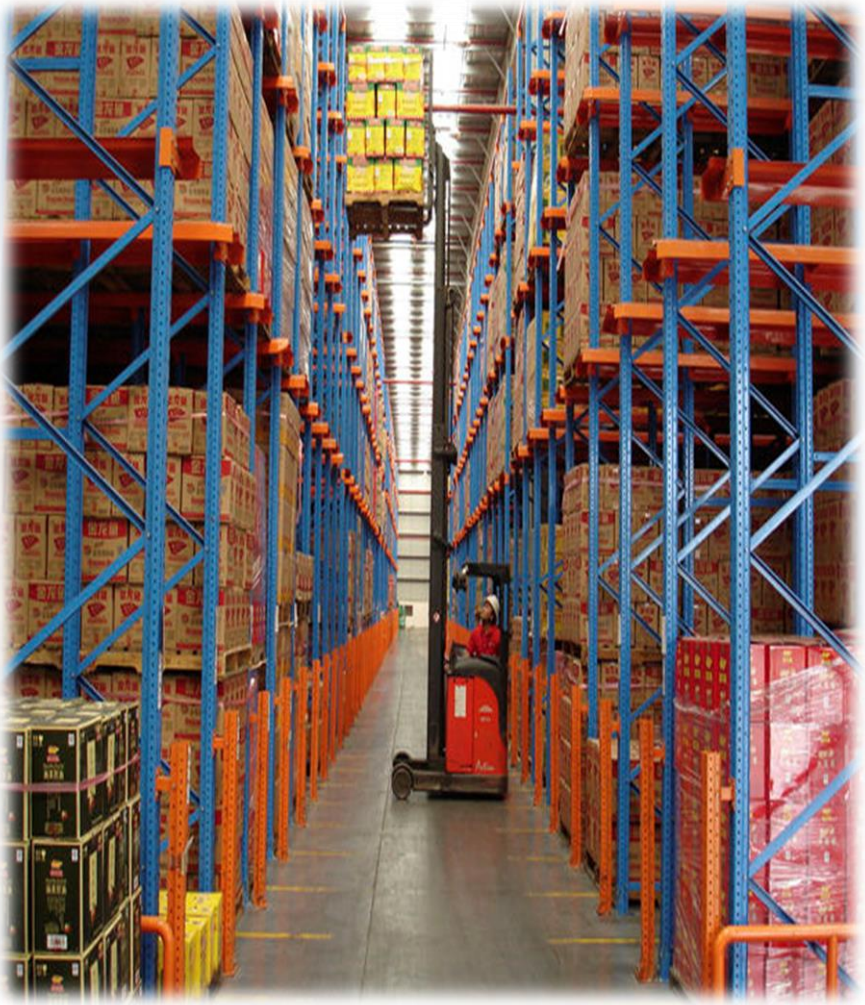
Palletizers in use at LCBO

London & Durham

- MPL (Manual Pallet Load) stacked at 240 cases per man per hour
- APL (Automated Pallet Load) 1000 cases per hour – 20 cases per minute
  - Virtual pallet build
  - $1.5M / pair
  - Patent
  - 4.5 year return on investment
  - Hytrol Conveyor for incoming cases

Drive-In/Drive-Thru Pallet Racking

Drive-in/Drive-Thru Pallet Rack is ideal for stocking large quantities of relatively few product types. It can reduce overall square footage requirements by 35 percent or more compared to a standard Selective Rack configuration. With roll-formed Drive-In/Drive-Thru racks, products are stored several pallets deep and the lift equipment enters the structure to store or retrieve items. A Drive-In pallet rack system uses the same entry and exit point for each storage bay, providing last in, first out (LIFO) access. A Drive-Thru pallet rack system is loaded on one side and unloaded from the other for first in, first out flow (FIFO).



Drive-In/Drive-Thru Pallet Racking

Drive In / Drive Through Pallet Rack

Advantages

- LIFO/FIFO (last in, first out/first in, first out) configurations
- Reduces space, cuts cost, and holds more loads with its deep lane storage
- High volume, low SKU
- Eliminates the need for multiple aisles
- Provides control over entry and exit
- Favors density as opposed to the selectivity of Selective Pallet Rack
- Designed specifically to suit your pallets and forklifts

Carousels

Vertical Carousel enhances productivity, increases security and storage density; all while having product delivered quickly and efficiently to the operator. Vertical carousels can save up to 70 percent of valuable floor space, minimize dependence on forklifts and ladders, and provide an ergonomic environment for employees. Fully enclosed system of trays and an extractor/elevator mechanism is controlled by an automated management system. This system allows for a relatively large inventory of goods to be quickly accessible to a picking station while being stored safely and securely. During order fulfillment, the operator selects the desired product on the computer screen located at the ergonomic workstation. The warehouse management software locates and sends the extractor mechanism to retrieve the tray of stored items.

Carousels

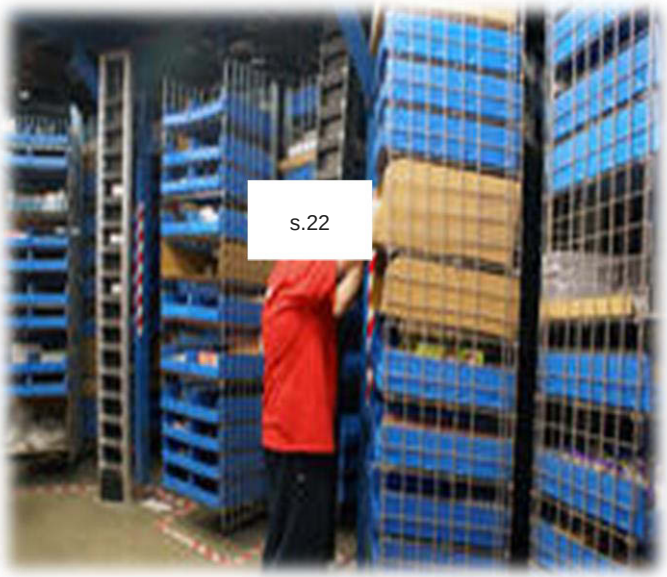
Vertical Carousel

Advantages

- Utilizes the entire height of the warehouse.
- Enclosed system protects goods from dust, debris and theft.
- Minimizes operator movement during order picking increases efficiency.
- Traditional gross weight capacity up to 12,000 lbs with storage capacity up to 1,200 lbs per position.
- Heights available from 8’7” to 24’ and widths from 4’ to 20’.

Carousels

Horizontal Carousel consists of an oval track with rotating bins containing shelves that deliver items to the operator. Often used in integrated workstations of carousels called a "pod." This allows an operator to pick from one active carousel while the others are pre-positioning to be picked the moment the operator is ready. All carousels use one of the many pick-to-light technologies to indicate the active carousel, shelf level and quantity of items to pick, making batch picking simple, fast and easy.



Advantages

- Horizontal Carousels can provide 90% faster picking and 72% labor reduction
- Can result in 58% less floor space

Fluid Loading / Unloading (Destuffing)

Fluid unloading provides efficient use of manpower and allows for easy build for pallets. The Destuffing Platform (DSP) is an ideal solution for distribution centers that utilize conveyors in moving packaged goods. This innovative new material handling equipment is an accessory for conveyor systems designed to reduce worker injury due to back strains and improve efficiencies in the unloading of packaged goods from truck trailers.

The DSP attaches to an existing conveyor system with a flexible telescopic conveyor link. Associates control the deck height and left to right conveyor position relative to the changing level of boxes stacked in the trailer. During the unloading process, the associate drives the DSP further into the trailer to position the unit close to the packaged goods. Manual handling of the packages onto the conveyor is optimized with workers positioned in an ergonomically correct posture.

Advantages

- Ergonomics
- Labor Efficient
- Reduced Damage

Fluid Loading / Unloading (Destuffing)

Unloading Destuffing Platforms in use at LCBO

London

- Destuffing by Engineered Lifting Systems Elmira, Ontario

Durham

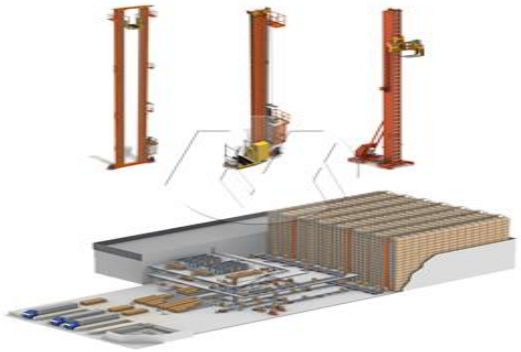
- Mathews extendable for offloading – 425-450 cartons / man / hour

Automated Storage & Retrieval System (ASRS)

Pallet ASRS

Unit Load automated warehouses maximize available space in existing structures and minimize storage space by up to 40 percent as compared to traditional storage solutions. Stacker cranes designed to work in narrow aisles nearly 100 feet off the ground, provide high density storage and automated operation.

Pallet AS/RS machines automatically handle pallet loads. Pallet handling machines use lifting carriages with telescopic forks and cabs. Single or double deep loads can be accommodated. Alternatively, pre-engineered extraction/insertion devices are available to suit product type and size.



Faster than narrow aisle forklift trucks, AS/RS machines economically handle your throughput requirements in aisles only 200 mm wider than the load. Machines can be designed to handle loads of up to 1,800 kg in DCs up to 45 m tall, achieving throughput rates of 60 double cycles per hour depending on load weight, system height and aisle length.

Automated Storage & Retrieval System (ASRS)

ASRS for Pallets

Advantages

- Total control over inventory management.
- Fully automated entry and exit of products.
- Integrated management software coordinates all warehouse movement

Automated Storage & Retrieval System (ASRS)

ASRS in use at Wirtz Beverage – Chicago, IL

Westfalia's ASRS provides Wirtz Beverage with the ability to store up to 10 pallets deep while maintaining a balance of inventory and movements across the system. The 42 foot tall building is equipped with five high storage racks with three tandem Storage and Retrievel Machines (S/RM). Using the Satellite® system, storing and retrieving loads in Wirtz Beverage's high density configuration significantly increases storage capacity and reduces the footprint of the system. The Satellite® system also provides triple support so the load weight is distributed evenly and more reliably in the rack.

WIRTZ BEVERAGE ILLINOIS

Capacity: 5' high storage in 42' clear traditional building
Top 780 SKU's are stored and picked
736 dedicated pick/64 cluster pick
22,470 pallet positions/1,300,000 C's capacity
200 pallet moves per hour
1.3 million cases stored in a 110K sq. ft. system

Functionality: 3 tandem cranes
8 integrated pick to belt modules
Savanna.NET WMS

Automated Storage & Retrieval System (ASRS)

ASRS for Pallets in use at LCBO

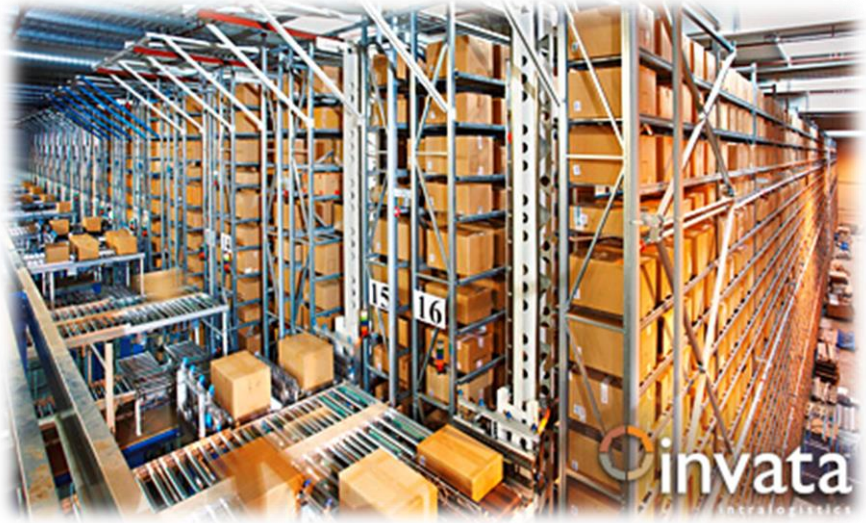
Durham

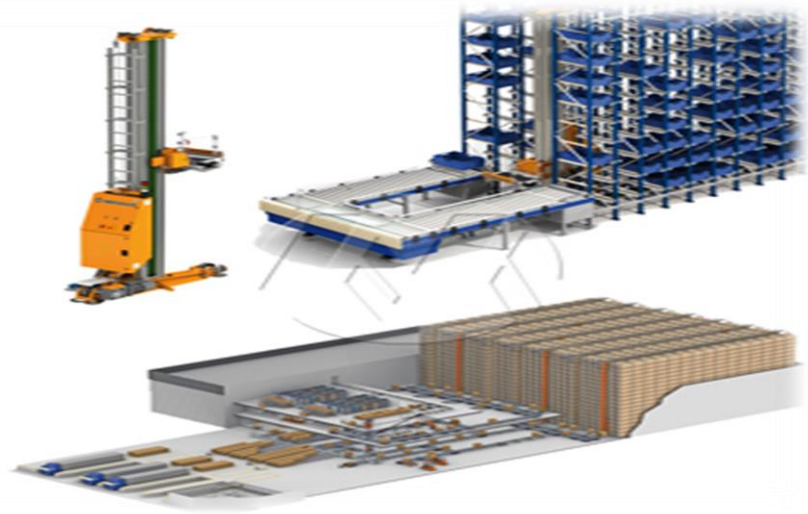
- AS/RS slow low volume picks
- High Bay 63K Slots
- 5,064 pick slots
- 3-5 cases per hit

Automated Storage & Retrieval System (ASRS)

Carton ASRS

The Mini Load automated warehouse for boxes is an extremely dense storage system designed to move at high speeds for increased productivity in a compact footprint. Utilizing stacker cranes, the mini load system has a standard horizontal speed of 590 feet per minute and a standard vertical lifting speed of 328 feet per minute which improves picking times and operator efficiency. The mini load system is primarily used for the storage, movement and order fulfillment of small or irregular goods in boxes. In addition to providing the optimum method for handling pick boxes, it is also designed with the basic ergonomic and safety equipment need to perform work and maintenance operations as simply as possible.





Automated Storage & Retrieval System (ASRS)

Carton ASRS

Fast pick-up and delivery, dense storage, and quiet operation

- Designed for optimum performance, when handling cartons, delivering them to and from operators or transportation systems with a travel speed of up to 6 m/sec, a maximum travel acceleration of 5.5 m/sec^2 and an average acceleration of 4 m/sec^2. Pick-up and delivery stations and interfacing transportation systems are designed specifically for your operation. AS/RS machines offer fast pick-up and delivery, dense storage, and quiet operation.

Special Features

- Carton AS/RS can be equipped with different load handling equipment that makes it possible to place cartons of varying in sizes from 200 to 650 millimetres wide into storage up to four-items deep. Depending on the device type, it is also possible to use multiple load carrying devices in different designs (above or next to one another). This provides another component for maximum flexibility and optimum throughput in carton storage.

Lightweight Design and Maximum Energy Efficiency

- Another striking feature is the availability of lightweight designs in combination with drive technology using maximum energy efficiency. Innovative, mast designs, with intelligent articulated connection offers weight-reductions of 20 percent over older more traditional rigid mast connection storage and retrieval devices. Optimum mass distribution with the deepest possible center of gravity ensures maximum stability and dynamics.
- When selecting compact design and optimized dimensions, an AS/RS achieves outstanding space and footprint utilization. The use of energy recovery units also provides both financial and environmental benefits.

Automated Guided Vehicles (AGVs)

AGVs Automated warehouse and material movement solutions when space is premium, flexibility is critical and operational efficiency is imperative. Laser guided vehicles handle a wide range of load weights, heights, aisle widths and load types (including multiple loads) and can include High Reach Counterbalance Forked AGVs and Very Narrow Aisle Counterbalance Fork AGVs.

Advantages

- The unmanned forklift is compatible with mobile rack and pallet rack transfer. Most feature a lifting height of 4.2 meters and is able to move in small spaces at a travel speed of up to 90 m/min.
- Using System Navigation enables the optimum route to the target destination to be selected and followed automatically. Easy map creation minimizes additional construction and is compatible with layout changes making introduction of new facilities easy.
- 360 degree turning
- Minimum turning radius 1.2m
- Minimum path width 2.6m
- +/- 10mm stopping accuracy
- Maximum load weight is 1 ton
- Lift height of 4.2m
- Maximum traveling speed of 90m/min
- Distance sensor for incoming shipment accuracy
- Built-in long-life Lithium-ion battery
- Three built in safety laser scanners monitor in all directions, stopping vehicle if an obstacle is detected
- Available up to -25C (-13F) degrees

Stretch Wrappers

Stretch wrapping machines help you protect your valuable product. Semi and fully automatic models in turntable, rotary tower, and orbital configurations are available.

Trash Compactors

Industrial waste compaction systems are machines designed to provide service 24/7 and give you the power to handle the largest loads. Built with thicker steel plates, more supports, and the best components, the typical life span of these machines is 10 to 20 years when properly maintained. Industrial compactors come in a variety of sizes and force rates to meet your needs. From 2 cubic yard to 13 cubic yards charge chambers, these systems can handle up to 742 cubic yards per hour.