



PROMAT®

2015

McCormick Place South | Chicago
March 23-26, 2015
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Top 10 Reasons AGV/AGC's Are Transforming Material Handling

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Presented by:

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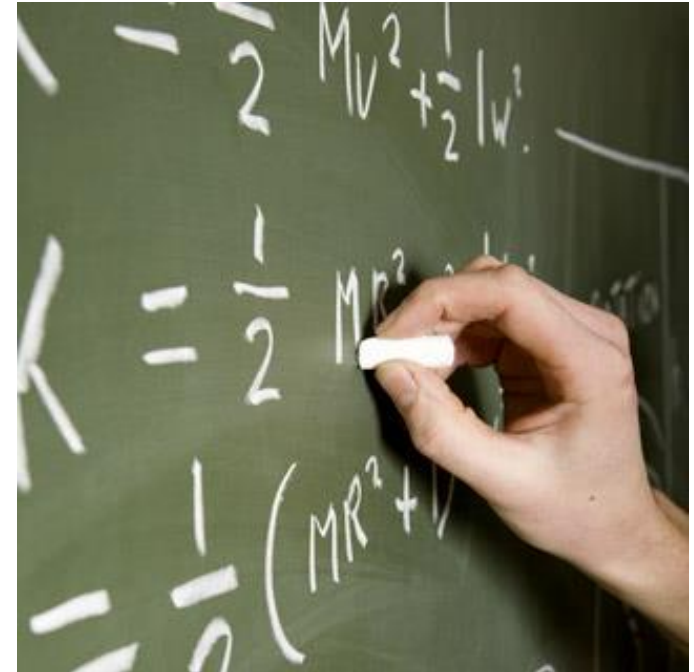
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What You Will Learn Today

- How AGV's provide affordable solutions to Material Handling problems both in Assembly and Warehouse Operations.
- A look at some real Case Studies and Why AGV's were the best Solution to these Operation Problems.



**FIND WHAT'S
NEXT.**

Traditional Material Handling Products



Tow Lines



Conveyor



Lift Trucks



Manual Labor



Tuggger

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Typical AGV Applications



Parts Delivery



Assembly Systems



Warehouse Material Handling Systems



***Finished Goods
Delivery Systems***



Top 10 Reasons AGV's Transform Material Handling

1. Lowest Cost of Ownership Over Other Systems
2. Solves Ergonomic Issues in Operations
3. Address all Safety Concerns Around Employees
4. Provides Unmatched Flexibility in the Process
5. Reduces Non-Value Added Labor
6. Eliminates Unnecessary Lift Trucks
7. Allows Easy Integration of Other Automation
8. Reduces Installation and Commissioning Time
9. Safely Moves Large and Heavy Products
10. Eliminates Monuments in your Operation

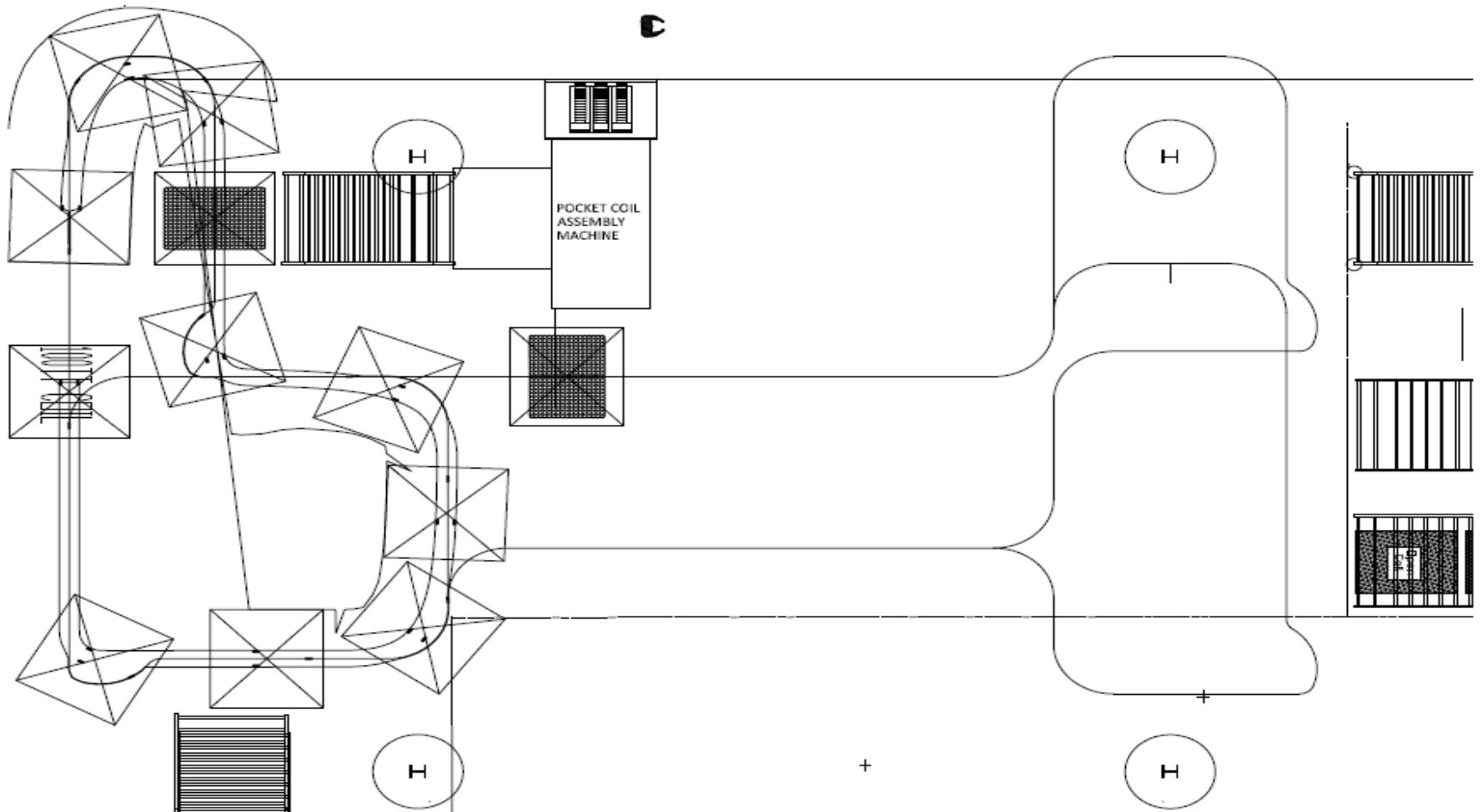
Case Study 1: Bedding Company

- **Problem**
 - Looking for Cost Reduction to Eliminate Non-Value Added Labor and Solve Ergonomic Issues
- **Original Solution**
 - Large Manual Push Carts/Racks
- **Possible Solutions**
 - Conveyor Types
 - AGV's
 - Tow Lines
- **Operations Requirement**
 - Less than 16 Months Payback

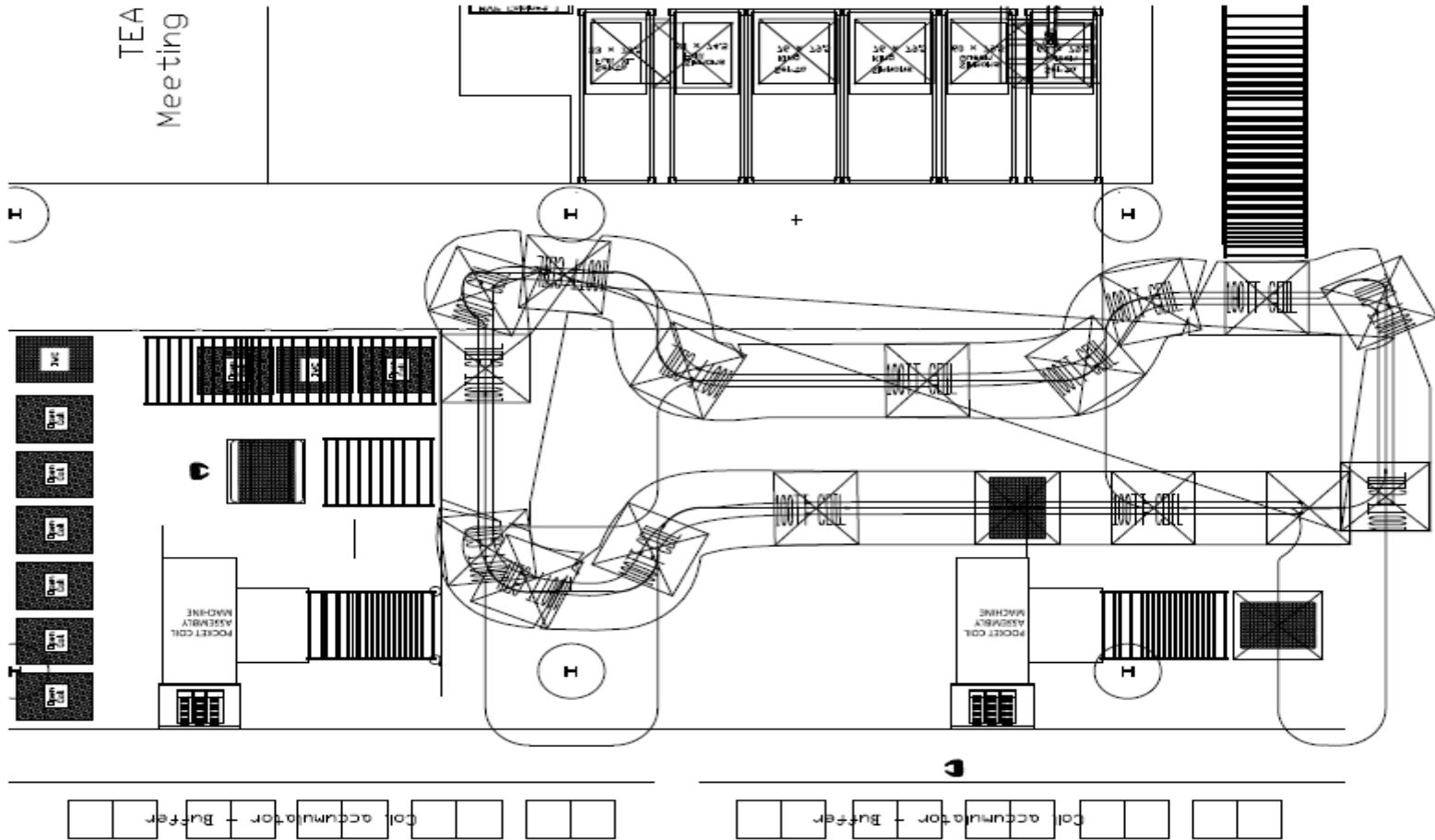


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Case Study 1: Bedding Company Coil Layout

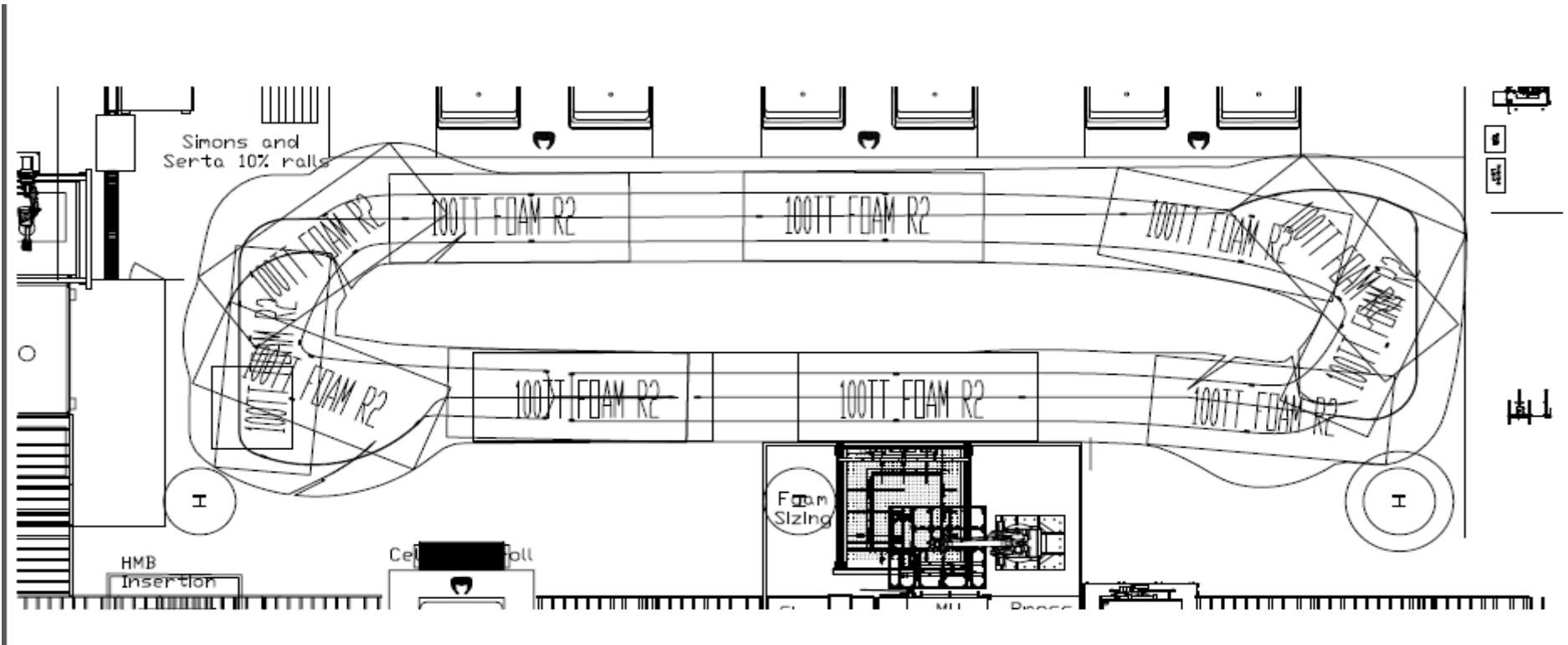


Case Study 1: Bedding Company Coil Layout



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Case Study 1: Bedding Company Foam Layout



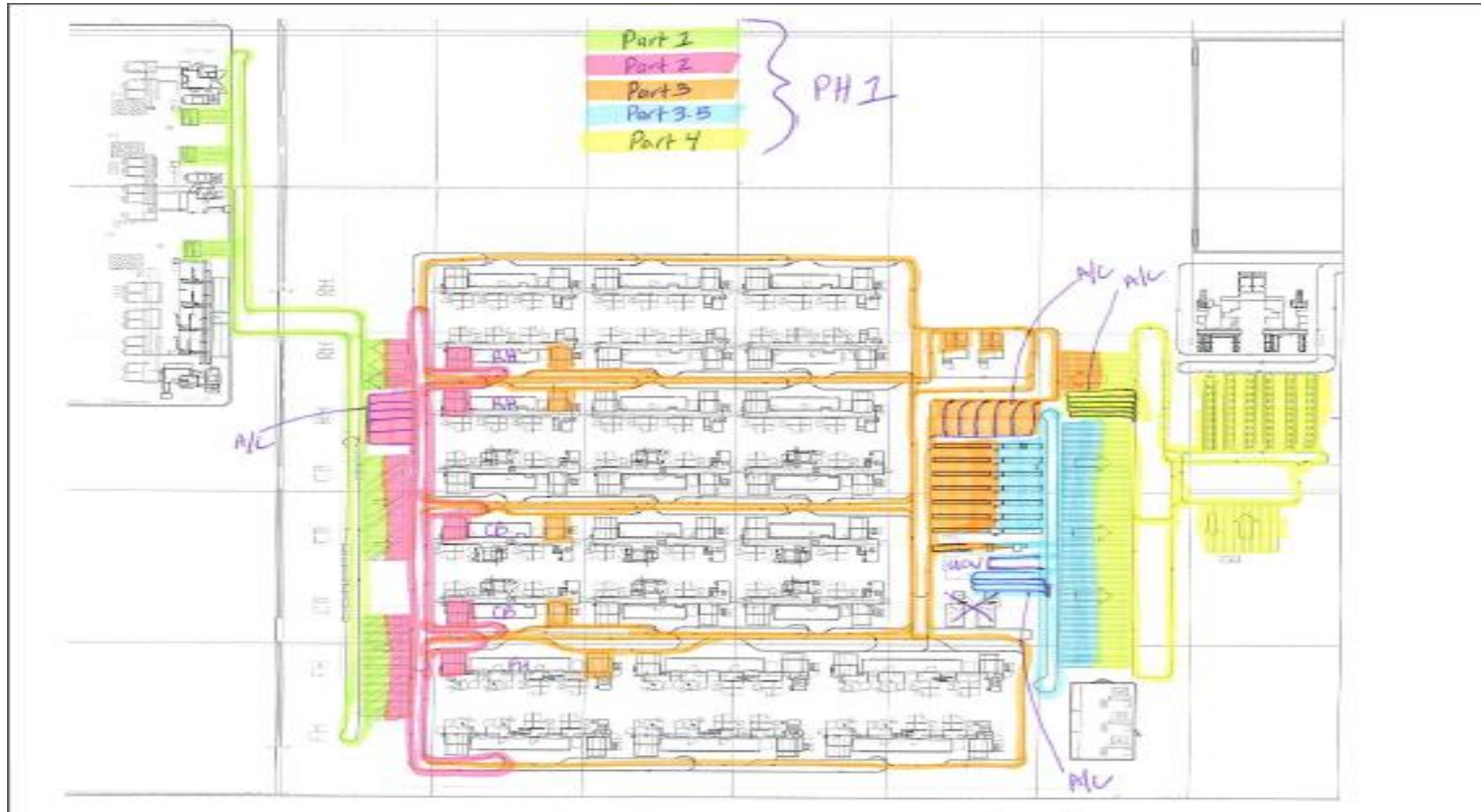
[PM Video 1 Foam Line](#)

Case Study 2: Automotive Tier 1 Supplier

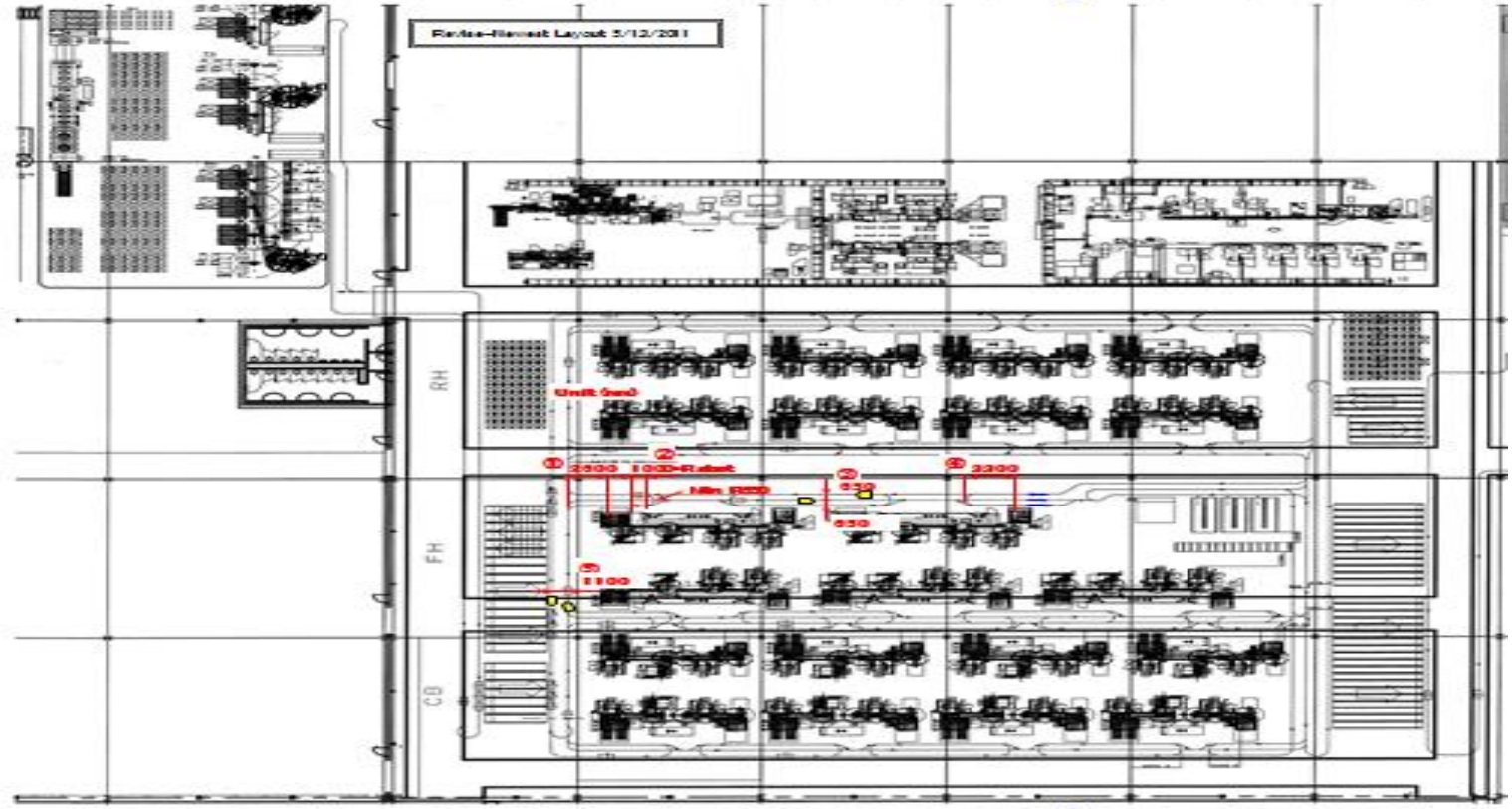
- **Problem**
 - Volume Expansion Within Existing Floor Space
- **Original Solution**
 - Manual Racks and Man Aboard Tuggers
- **Possible Solutions**
 - Conveyor Types
 - AGV's
- **Operations Requirement**
 - Less than 18 Months Payback



Case Study 2: Tier 1 Supplier Layout



Case Study 2: Tier 1 Supplier Layout



[View Video 2](#)

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Case Study 3: Drive Manufacturer





Case Study 3: Drive Manufacturer

- **Application:**
 - Assembly- HVAC drives, industrial automation drives, waste water drives
- **Old Method**
 - 4 Stations along side gravity conveyor line
- **Assembly Issues**
 - Fixed work stations
 - Moving large drives
 - Loading and unloading finished drives from carts
 - No easy method for increased volume in production
 - Parts delivery required forklifts
 - One operator per work station





Case Study 3: Drives Manufacturer

- **Challenges:**
 - 11 different sizes of drives
 - Solve ergonomic issues
 - Increase production volume
 - Flexible assembly process and line
 - New line had to be LEED compliant
 - ROI should be 18 months or better

Case Study 3: Drives Manufacturer

- **Possible Assembly Solutions**

- Tow line system
- Powered roller conveyor
- Powered air lifts
- AGC system
- Push carts

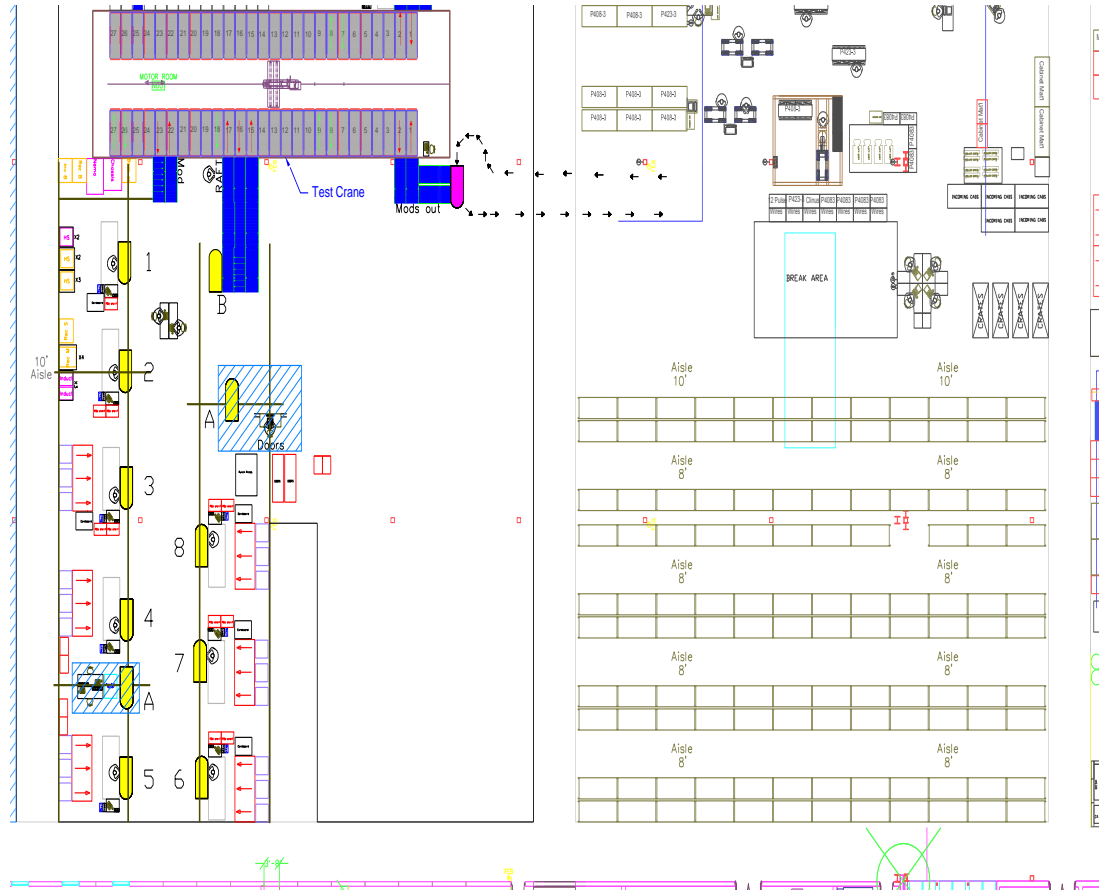
- **Ultimate Solution**

- AGC assembly line

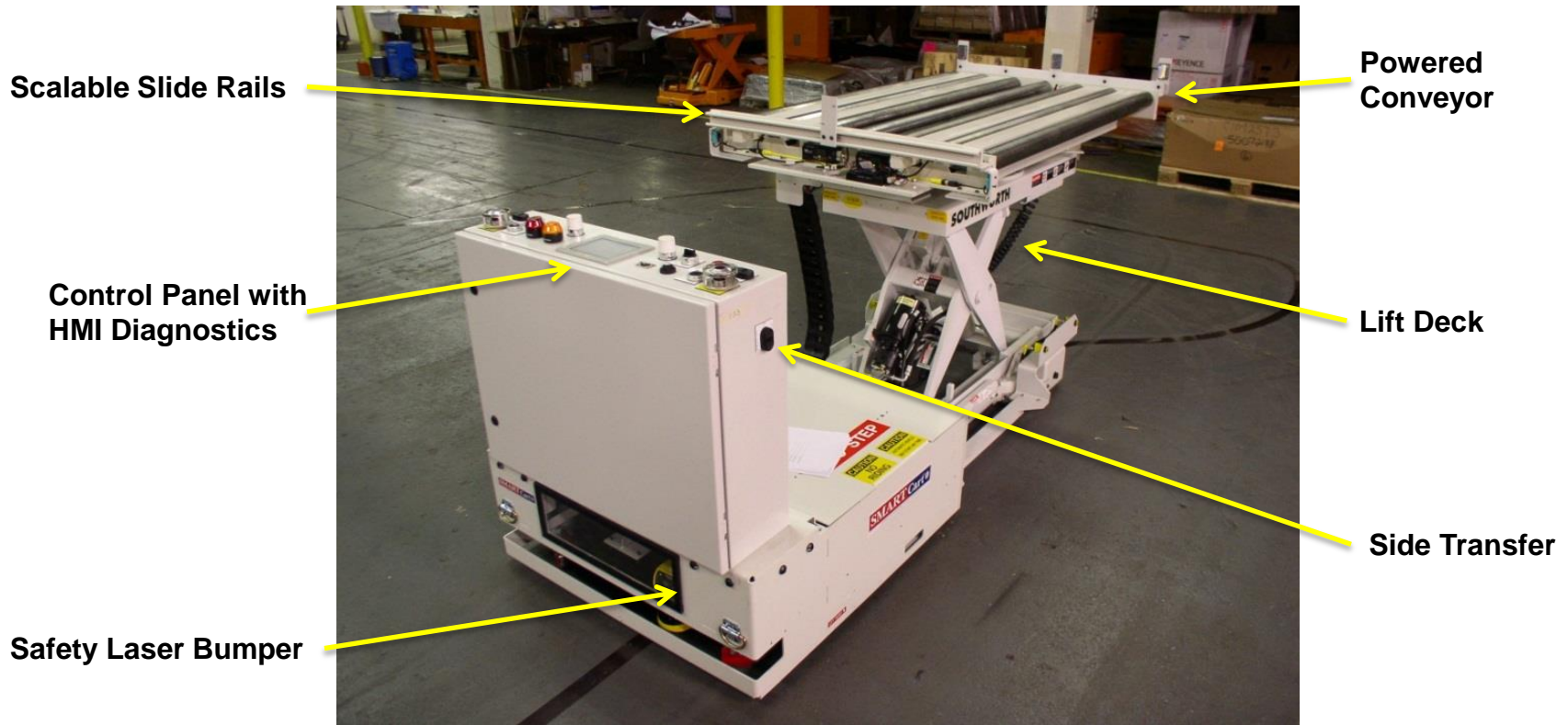


Case Study 3: Drives Manufacturer Layout

- AGC Line Layout
- Results
 - Lean parts delivery
 - Line handles 3X unit volume production
 - No ergonomic issues
 - No lift truck traffic in assembly area
 - 12-14 months ROI
 - Flexible space
 - No non-value added product moves



Case Study 3: Drives Manufacturer AGV Features





Case Study 4: New Warehouse System

- **Application:**
 - Tier 1 Supplier Builds New Warehouse
- **Old Method**
 - Fork Trucks
- **Project Requirements**
 - Implement Automation to connect Assembly with Warehouse
 - No Fork Trucks
 - Reduce Existing Fork Truck Fleet
 - Must Achieve 24 Month Payback

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Case Study 4: New Warehouse System

[Video 3 T Intersection Mfg Plant](#)

[Video 4 Mfg to Warehouse](#)

[Video 5 Unloading in Warehouse](#)

[Video 6 Loading in Warehouse](#)



Case Study 4: New Warehouse System

- **Results**

1. Achieved 14 Months ROI
2. Eliminated 30 Fork trucks on Three Shifts
3. Used existing Floor Space and Doubled Throughput
4. Addressed Employee Safety Issues with Traffic Control

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