

# Soil Department Automation Opportunities



*Presented by:*

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# Presentation Agenda

- Benefits of automation
- Review soil automation opportunities
- Advantages and disadvantages
- Hands-on exercise
- Conclusion
- Q&A

## Why should you automate?

### Primary Benefits:

- Reduce costs
- Increase capacity
- Improve quality



*Just the tip of the iceberg*



# Why should you automate?

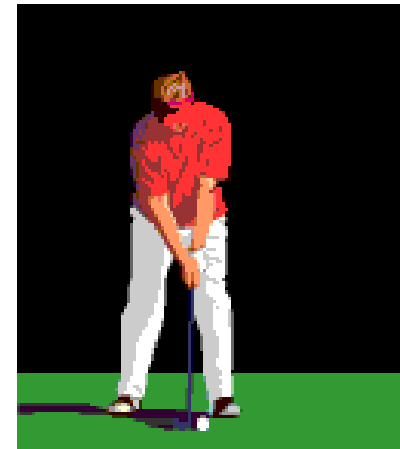
## Secondary Benefits:

- Work is easier to do
- Work is easier to learn
- Reduce employee injuries
- Improve employee morale
- Improve employee retention
- Reduce insurance claims
- Reduce insurance costs
- Reduce WIP inventory
- Reduce inventory costs
- Balance production flow
- Improve accuracy
- Decrease plant space

# Why should you automate?

## #1 Reason = Simplify the production process

- Eliminate exceptions
- Improve standardization
- Increase rate of repeatability
- Maximize results



*Processes must be simple & repeatable.*

# *Soil Department* **Customer Bag System**



## **How it works:**

- Customer bags are unloaded from delivery vehicles and stored using an overhead rail system.
- Bags are scanned at loading point and automatically stored by customer classification.
- Bags are automatically delivered to stations for soil counting.



*Soil Department*

## **Customer Bag System**



### **Advantages:**

- Increases usable floor space
- Decreases cart traffic
- Eliminates decision making
- Improves ergonomics

### **Disadvantages:**

- Provides limited labor savings

# *Soil Department* **Vacuum Count System**



## **How it works:**

- Discharge customer bag contents onto table.
- Select customer and product categories.
- Place individual soil items into vacuum tubes.
- Capture accurate soil count data instantly.
- Soil items are automatically delivered to soil sorting.



*Soil Department*  
**Vacuum Count System**



**Advantages:**

- Increases speed
- Improves accuracy
- Provides accountability
- Instant data collection

**Disadvantages:**

- Requires overhead space
- Increases electrical usage

# Soil Department Unloading/Sorting System



## How it works:

- Sort soil items into chutes by product classification.
- When product chutes reach predetermined weights, they automatically discharge into slings.
- Soil slings are delivered to monorail storage.



*Soil Department*

## Unloading/Sorting System



### Advantages:

- Increases unloading speed
- Reduces labor
- Organizes the process
- Accurate sorting
- Accurate weighing
- Improves ergonomics

### Disadvantages:

- Takes up floor space
- Permanent location

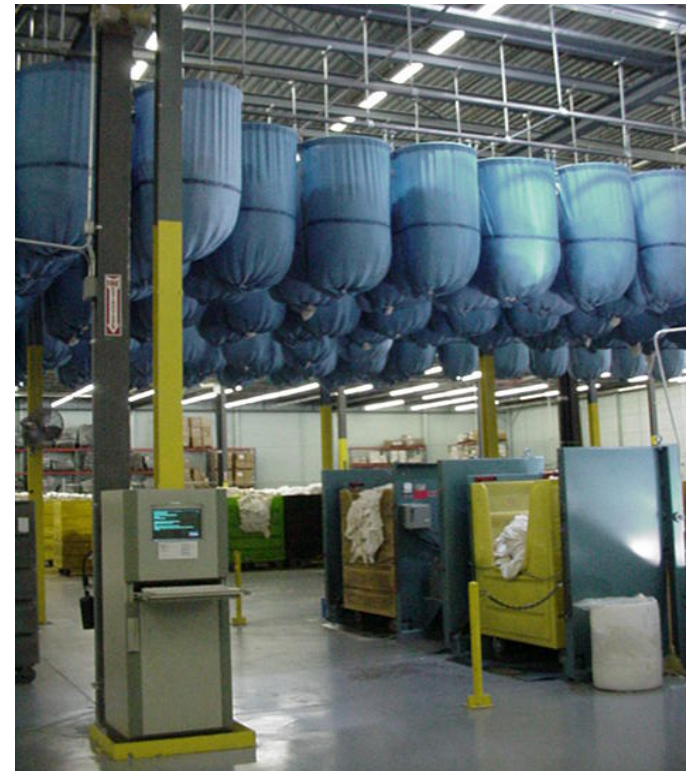
*Soil Department*

## Automatic Monorail Storage



### How it works:

- Slings are stored by product classification.
- System automatically selects products to be washed based on a predetermined production schedule.
- Slings are delivered to the washroom and discharged into the washers.



*Soil Department*

## **Automatic Monorail Storage**



### **Advantages:**

- Increases throughput
- Improves scheduling
- Improves accuracy
- Eliminates decision making
- Provides balanced production flow

### **Disadvantages:**

- Provides limited labor savings
- Requires production management planning

## *Soil Department* **Automated Cart Wash**



### **How it works:**

- Empty soil carts are delivered (manually or automatically) to the cart wash entrance.
- Carts are conveyed through a wash tunnel where they are washed, sanitized and dried automatically.
- Clean carts exit the cart wash ready to be loaded.



*Soil Department*

## **Automated Cart Wash**



### **Advantages:**

- Maximizes throughput
- Increases repeatability
- Organizes the process
- Reduces labor
- Eliminates potential bottleneck

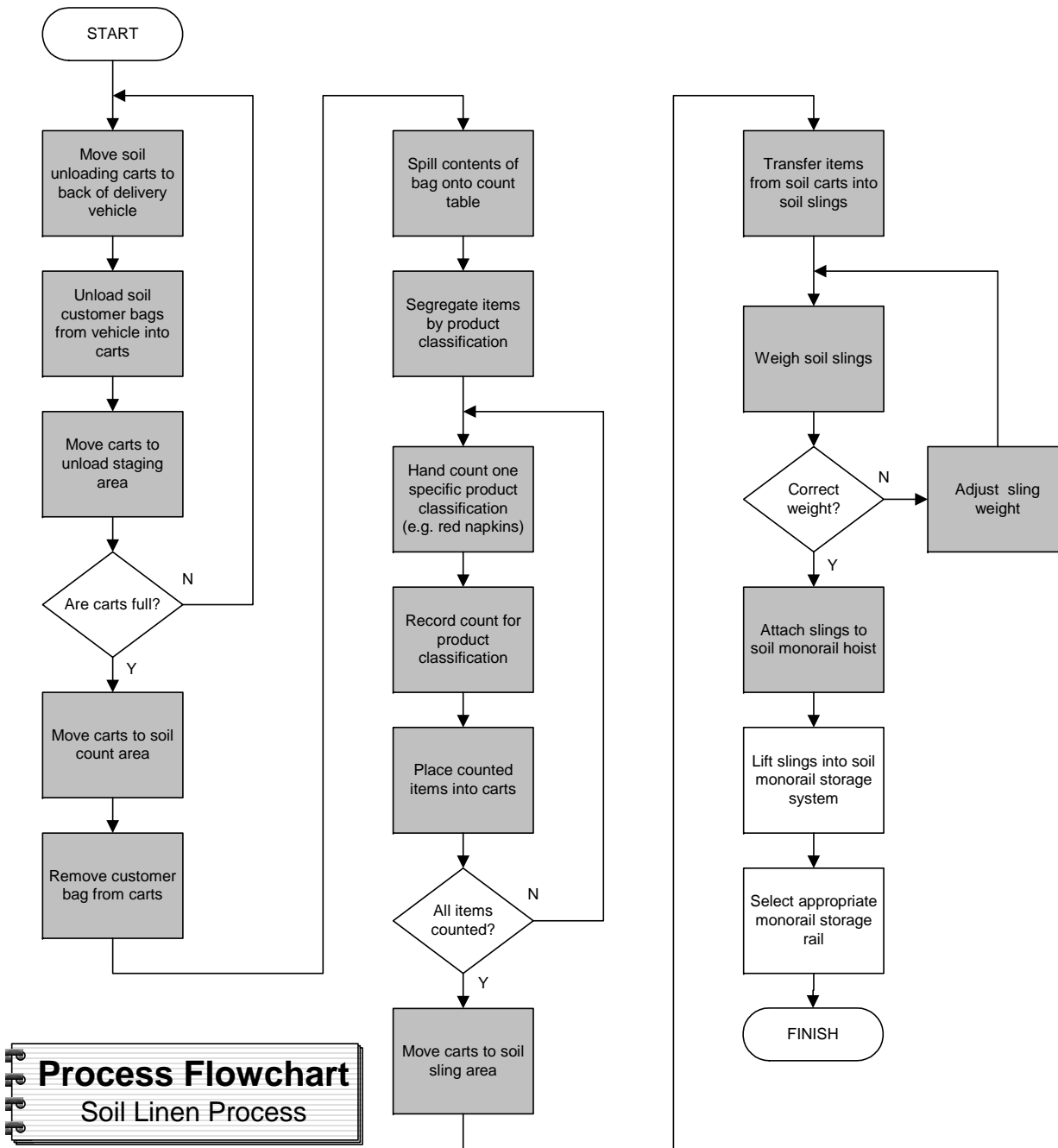
### **Disadvantages:**

- Relatively expensive
- Requires high volume

*Soil Department*  
**Automation Opportunities**



**Hands-on Exercise**



**Process Flowchart**  
Soil Linen Process

**Exercise:**

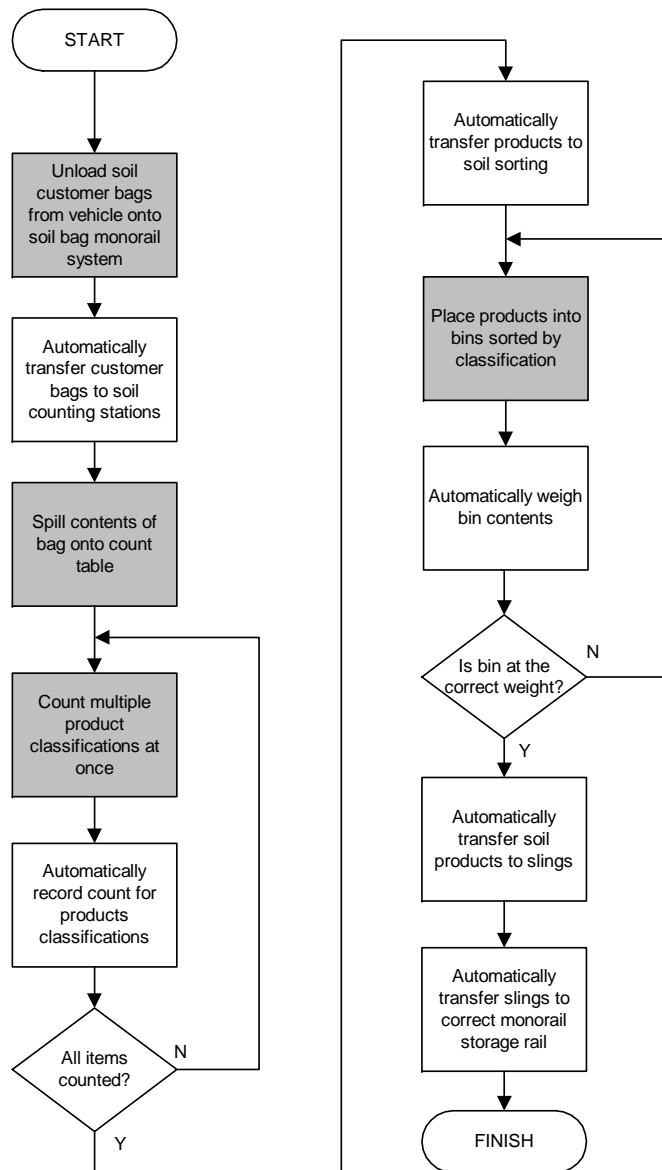
Improve the current process using the automated systems previously discussed.

**Goal:**

Simplify the process by eliminating steps and reducing touches.

**Note:**

All steps highlighted in gray are considered touches.



**Improved Process Flowchart**  
Soil Linen Process

## Results

The process was improved by installing:

- Customer bag system
- Vacuum count system
- Automated soil monorail system

Process steps: **20 ⇨ 12**

# of Touches: **15 ⇨ 4**

## *Soil Department* **Automation Opportunities**



### **Hands-on Exercise :**

- Cost of project: \$500,000
- Labor Savings: \$150,000/year
- Other Savings: \$250,000 (bldg addition, carts, etc.)
- ROI: 1.67 years
- Value Adds: Decrease vehicle unloading time, improve count accuracy, accurate washer loads, reduce employee injuries, balance production flow

## Conclusion

### Why you should automate the soil process:

- Soil sets the pace for the entire plant
- Soil scheduling is the key to clean delivery
- Working in the soil department is not fun
- Do more with less floor space
- Accurate and timely inventory control
- Improve quality

# Company Background



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## Who we are

Engineering services company with expertise in engineering, architecture, construction & operations.

## What we do

Provide facility planning and process improvement services for the laundry industry.

## Why we are different

Utilize multi-disciplined experience to provide the best solution for improving your plant operations.