



***USING THE 5S's  
TO DELIVER MORE VALUE  
WITH LESS WASTE***

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## LEARNING OBJECTIVES

- Reinforce Lean thinking, including value and the seven basic types of waste common to all work
- Learn how the 5S's can help your company be more competitive

Think Lean . . . . Do Lean

# Why Lean?



How big is your slice?

**Lean Thinking** is a shift in management's focus to *differentiate* between **Value** and **Waste** and to *deliver* more **Value** with **less Waste** to the **CUSTOMER.**

# What is Value?

**Transforms the product/service to what the CUSTOMER is actually willing to PAY for (USEFULNESS/COST).**

**Includes Functions, Features, Time & Price.**

**Is done right the first time.**

**Is the opposite of WASTE.**

Wastezilla is eating your profits



# 7 Basic Types of Waste (Muda)



- ❑ **Defects in products:** Rework & Punch Lists
- ❑ **Overproduction:** Fabricating or ordering more material than needed, sooner than needed or faster than the process can handle. *JIC thinking*. Ordering extra material because of poor quality or fit. *The mother of all other wastes!*
- ❑ **Inventory:** Material stored at site or yard, work in process, unused tools & parts, and stashes. *(Strategic and Excess)*

## 7 Basic Types of Waste (Muda)



- ❑ **Unnecessary processing:** Duplication of work steps, redundant or unnecessary reporting, checkers checking checkers, any non-value added steps.
- ❑ **Movement of people:** Treasure hunts: looking for material, tools, drawings, etc. Often caused by a poor layout of work area (ergonomics) **Movement Not = WORK!**
- ❑ **Transport of goods:** moving material, tools or parts, centralized tool storage & disposing of excess material
- ❑ **Waiting:** Crews waiting for equipment, plans, RFI's, field orders, or material. Also equipment waiting to fabricate.  
**Workers waiting for work or work waiting for workers.**



# Three Priorities of Lean Management in Construction

1. Keep the crews installing – *doing value added work*
2. Reduce inventory
3. Reduce other costs

## ***Lean Basics***

- Respect for People
- Go and See
- Do what works! *Work to the priorities and PDCA (Go and See)*
- Sweat the small stuff

*If you are not doing  
the 5S's you are **not**  
**doing Lean!***



Masaaki Imai

## The 5 S's

- 整理 Seiri
- 整頓 Seiton
- 清掃 Seiso
- 清潔 Seiketsu
- 躰 Shitsuke

## The 5 S's

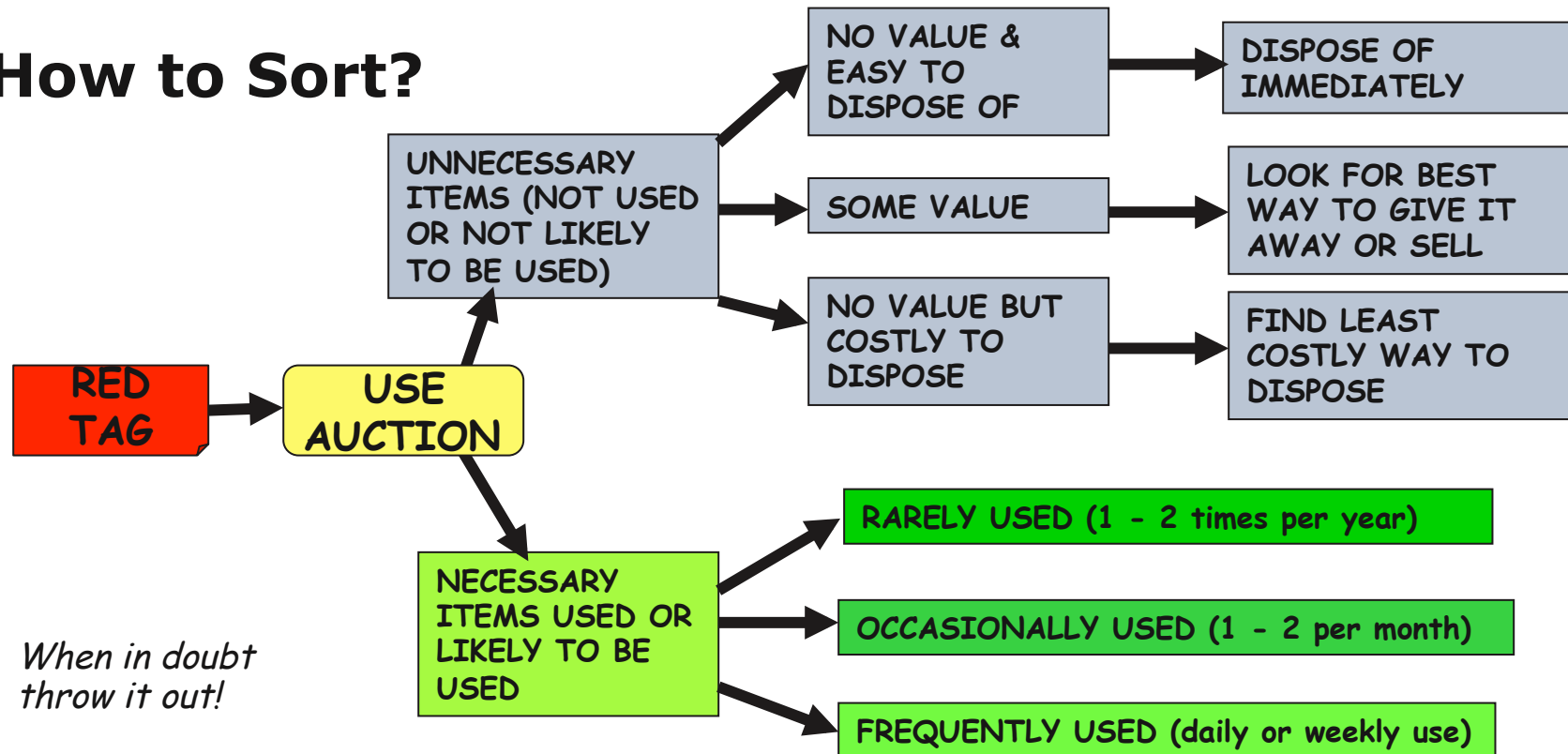
- S**orting
- S**implifying
- S**weeping
- S**tandardize
- S**elf-discipline

# SORTING

Sort out the **necessary** from the **unnecessary**, discard the **unnecessary**.



# How to Sort?





## Needs Sorting

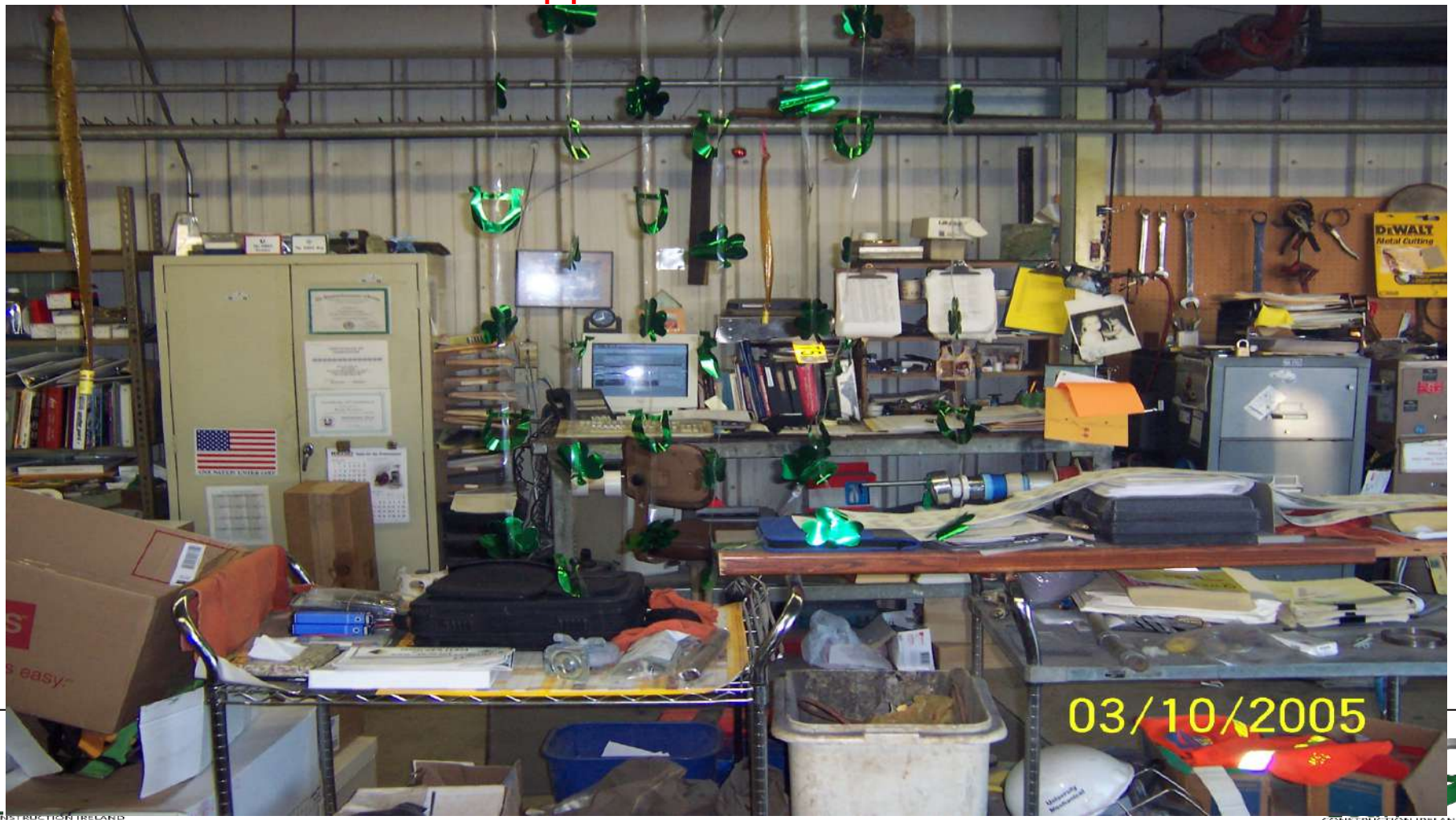




## Opportunities to Sort



# Opportunities to Sort



# Opportunities to Sort



**What do you see?**





## Opportunities To sort



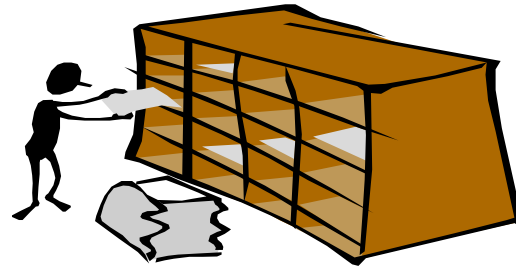
## Opportunities to sort



*Where are your  
opportunities to  
Sort????????????*

# SIMPLIFYING (*SET IN ORDER*)

Create and identify a place for everything based on how often we use it.





## **Simplifying Steps:**

**1. Review all frequently used items and put those used most often closest to the work area, those used less often, further away.**

**2. Develop a way to label or show where everything goes. Consider:**

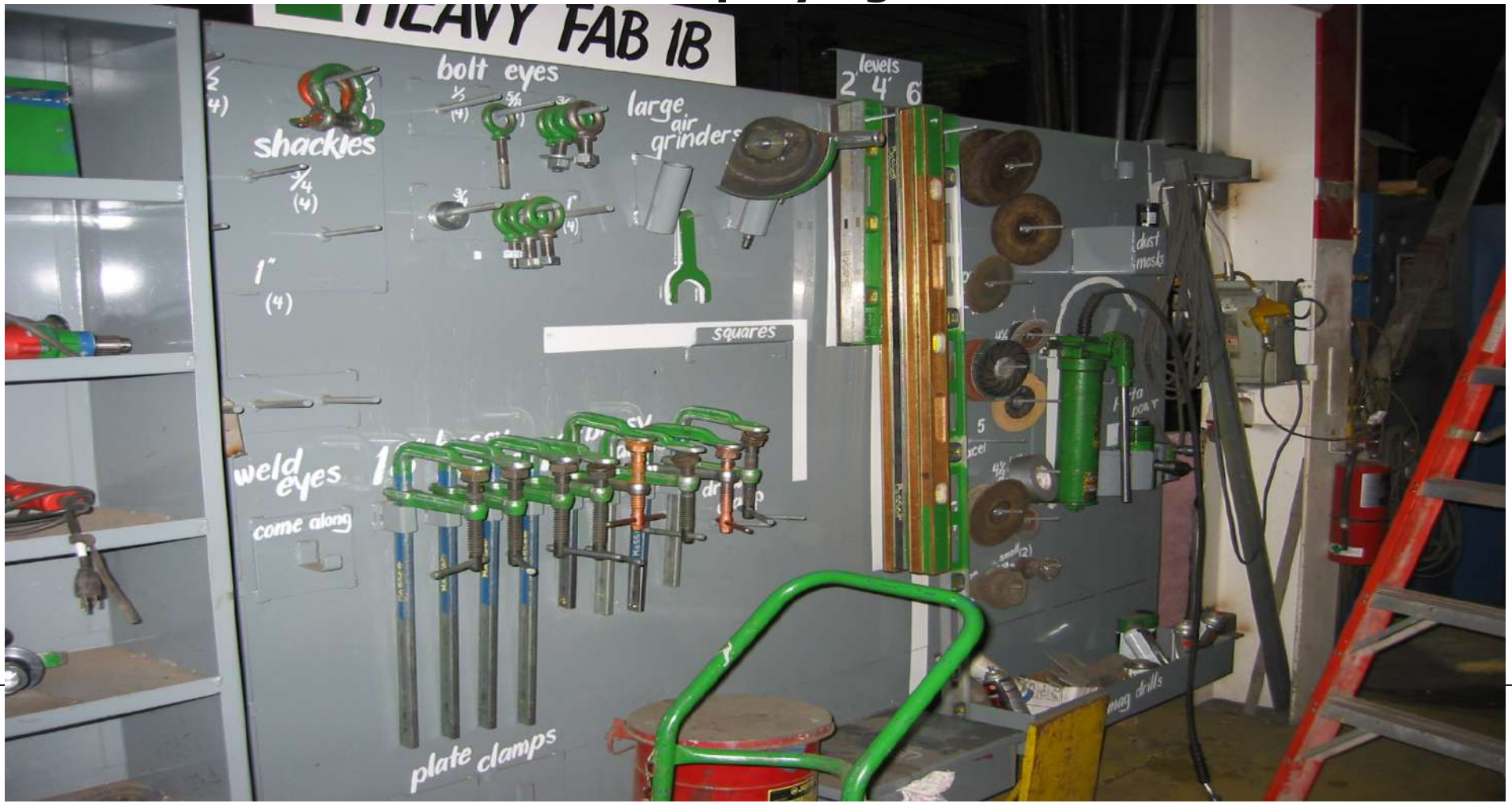
- Shadow boards
- Marking the item and the location
- Color-coding
- Labels on drawers with list of contents inside

**3. Develop ways to replace usable (consumable) items.**

# Simplifying



# Simplifying



## Opportunity to Simplify



# Simplifying



# Simplifying





Welding rods storage  
**Before**

**After**



## Example of Simplifying



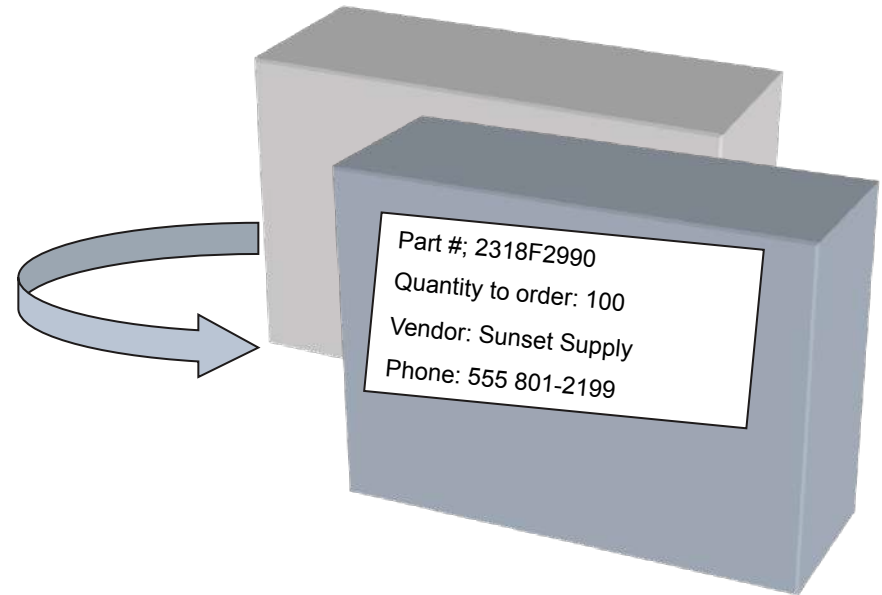


# Kanban Systems

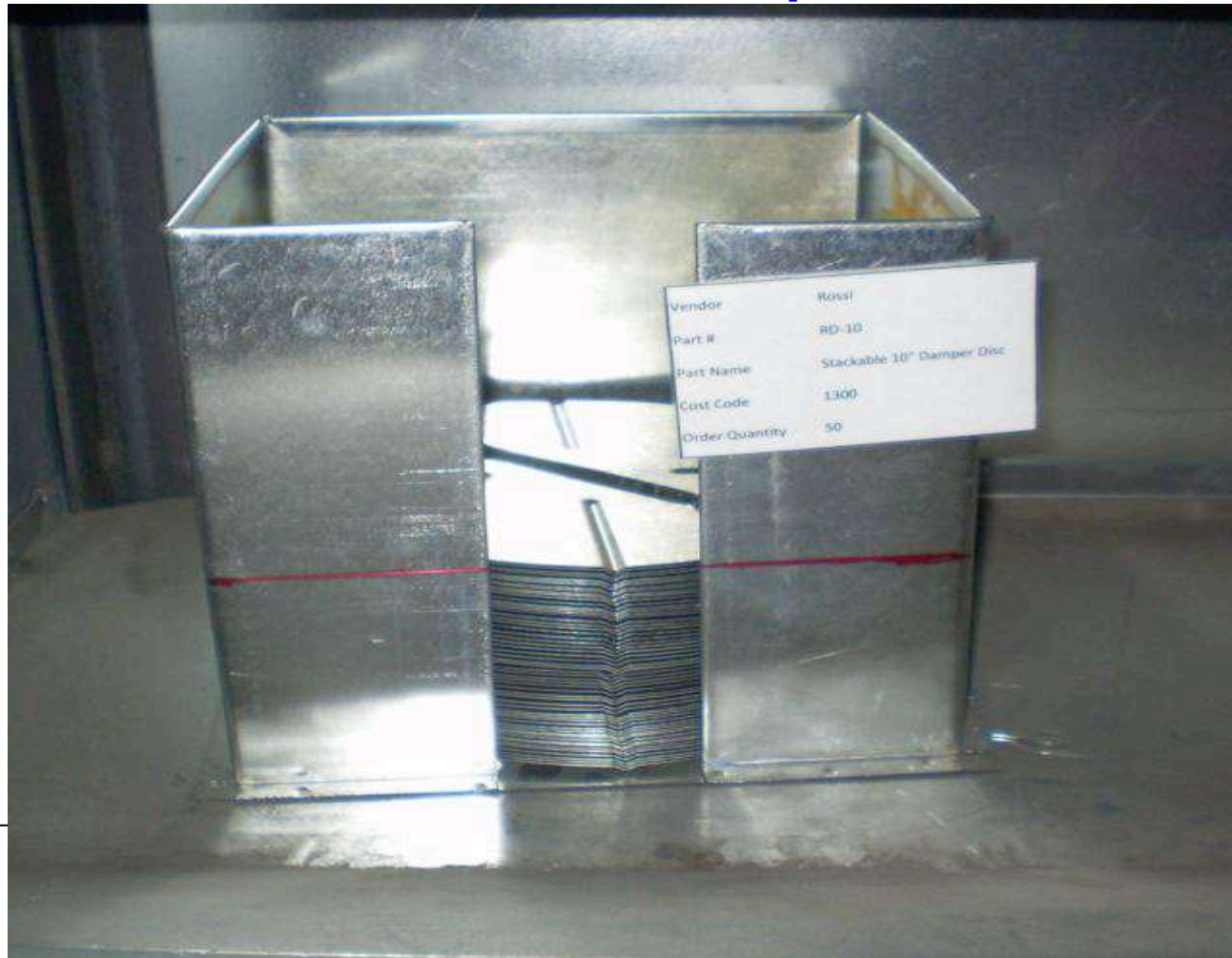
>>>Signal to Replace

Dual Bins

Min/Max



## Kanban Example



# Kanban Example



*Where do you  
need to  
Simplify?*

# SWEEPING

Physical and **visual** control of the work area



## The true value of Sweeping:

- **Cleaning is inspection** - *is it ready for future use?*
- **Identifies problems you aren't aware of**
- **Helps prevent future failures**
- **Promotes good maintenance practice**

# Eliminate the Clutter in the Field, Shop and Office

In a recent study by Harvard University, students were given tasks to perform while working in cluttered and uncluttered workspaces.

Those with the cluttered workspaces were focused for **11 minutes without interruptions.**

Those with uncluttered workspaces stayed focused for **18.5 minutes without interruptions.**

*Source: USAToday, Motley Fool 01/12/19*

# STANDARDIZING

is creating standard ways to keep the work areas organized, clean and orderly and documenting agreements made during the 5S's.





# Standardize:

- Labeling
- Tools & equipment
- Forms
- Gang boxes layout
- Yard Layout
- Trailers
- Have clear instructions for people who deliver goods or materials to the site. Clearly mark and post where the material, tools & equipment are to be placed.

# Welding Machine Expectations



What welder should look like

**END OF DAY:** Cords & other items put away on labeled hook.



What welder should not look like

## A place for everything

- PPE (On top of bottles)
  - Welding Hood
  - Welding Jacket
  - Welding Gloves
- Welding Equipment
  - Ground cord
  - Power cord
  - Whip
  - Bottle caps
- Note: Nothing else on top of welder (ex: Rags, soda cans, tools, consumables, papers, and any other materials)

aster, together

*What do you see that our supplier does not deliver daily?*



# STANDARDIZED TOOL BOXES



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# 5S's in the Office



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# 5S's/Lean Communications Boards

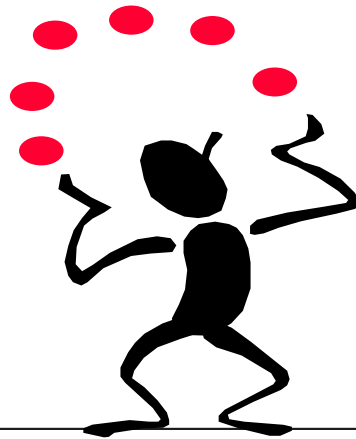
- Use to keep everyone informed
- Post Scores
- Before and after photos
- Spaghetti diagram
- 5S News
- Have short update meetings by the board

- > Put in a convenient location
- > Keep it current!



# SELF-DISCIPLINE/*SUSTAIN*

Follow through with the 5S's agreements.



# Self Discipline often includes an Self Audit/ Score Card

#	Checklist Area	Done	In Progress	Not Started	Action
1	Are work benches, trailers, gang boxes and the area free of unnecessary items and are items present used on at least a monthly basis?				
2	Are walk areas unobstructed and marked?				
3	Are lay down areas easily identified for material, mobile carts, tool boxes, lifts, etc.?				

## Do 30 second test!



Supply Room - Before





Supply Shop After 5 S' s

# Tool Crib Before 5S's



03/10/2005

# Tool Crib After 5S's



# Everything mobile



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# Van # 144 Plumbing

**Before**

**After**





**Before**



**After**



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CONSTRUCTION TRENDS

# Reduce Waste – Material Management Plan

1. No work can take place on the floor. Prefab before
2. All materials and tools must be *on moveable cart or other wheeled device.*
3. Material Deliveries must be scheduled and only 3 days materials in the work area (JIT).
4. All packaging materials to be removed by end of shift.
5. All job boxes must be kept in an organized manner to *pass the 30 second test.*
6. Cord management will be enforced.
7. Daily clean-up shall be done as you go.

**Using these rules saved \$75,000 in site clean up costs**



# Causes of 5S' s not being sustained





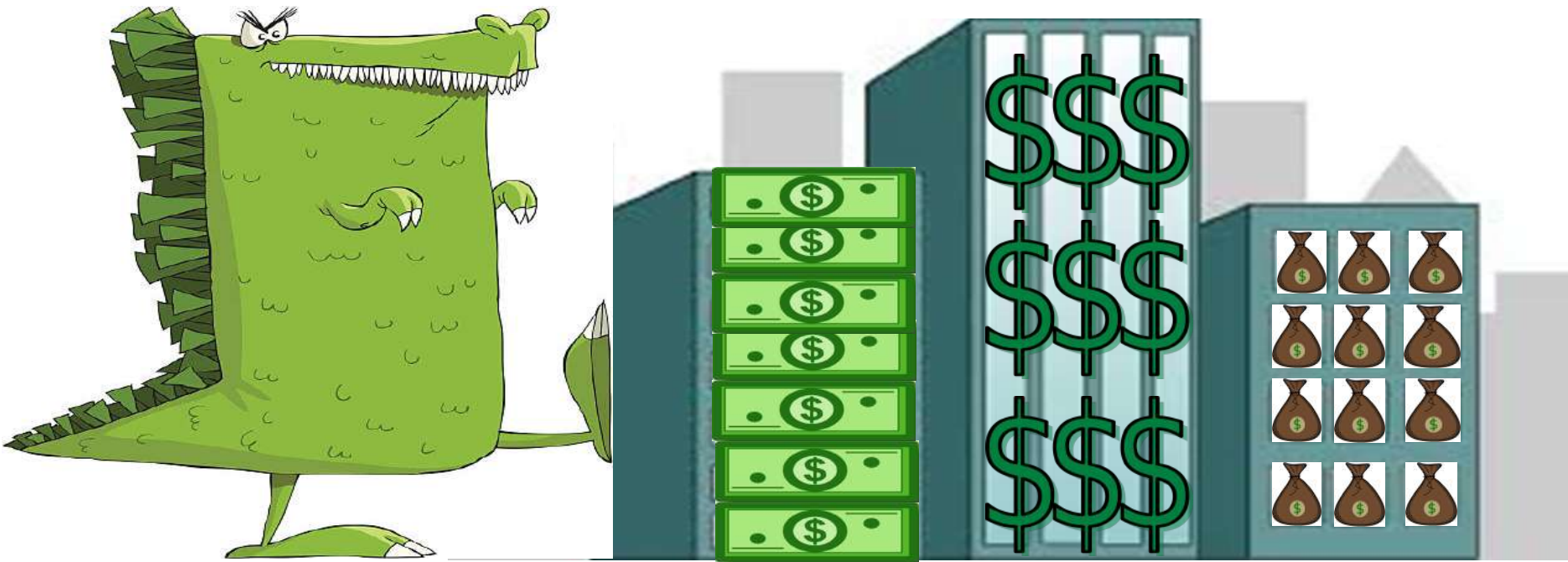
**This not 5S's!**



# Another view of 5S' s



# Wastezilla is eating your profits



## When you implement the 5S's:

1. Your employees will love working in such a clean and bright environment.
2. Because you keep the equipment and your work area in such great shape, you will have fewer injuries, fewer equipment breakdowns and less treasure hunts. **That means greater productivity and lower costs.**
3. Your Customers will see your organization and want to engage your services.

**But if your employees start doing things their own way, then things will start to get missed and conditions will slowly deteriorate!  
AND YOUR CUSTOMERS WILL NOTICE THIS DETERIORATION!**

# ***How to Start?***

## **Start Sorting**

- Decide on what to keep (use auction)

## **Do Simplification**

- Decide on what to put where
- Determine visual identification
- Implement Kanban replace methods

## **Define the Sweeping processes**

*Tip: Take before & after pictures*

## Summary

- ✓ **Customers want Value.**
- ✓ Workers doing *Treasure Hunts* are not delivering Value.
- ✓ Organizing the workplace using the 5S's will reduce treasure hunts!

*What's keeping you from attacking Waste?*

Are you too busy for improvement?  
Frequently, I am rebuffed by people who say they are too busy and have no time for such activities. I make it a point to respond by telling people, *'Look, you'll stop being busy either when you die or when the company goes bankrupt.'*

—Shigeo Shingo, Toyota Production System author



# Contact LCI



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