Landscape Forms, Inc.
Project Update

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Outline

• Background
• Update
• Strategy
• Moving forward
Background

• Determining the scrap rate
  – 65% overall
  – Equivalent to $1,022,615 of purchased total of $1,573,254 (2010 figures)

• Woodshop layout re-design
  – Acquiring floor plans for Midlink
    • Occupied space
    • New leased space
  – Moving operations to Midlink
  – Determining optimal machine layout
Objective

• Moving justification
  – Wood-shop operations, from LF’s main facility to Midlink
  – Expansion of Custom-shop
  – Midlink serves as raw material and finished goods warehouse

• Waste assessment
  – Wood-shop’s supply chain and operations
  – Understanding overall process, tackle savings reducing waste
  – Current scrap rate: 65%
    • Unavoidable?
    • How much can we reduce it?
Moving to Midlink

• Expand the custom-shop, support its growth
  – Taking up the woodshop space at the main facility
  – Adding space to the main facility (building construction)

• Move woodshop operations to Midlink’s new leased space

• Facilities design
  – Proposed layouts, minimizing construction costs, guaranteeing process efficiency
  – Determining square footage needed for all personnel

• Monetary considerations
  – Initial investments
  – Costs avoidance
  – Annual savings
Space layout

80’ x 80’

40’ x 160’
Space layout

- 80’x80’ is the preferred layout
- Takes advantage of two walls, minimizes construction costs
- Disadvantage: blocks three doors
- Must consider additional layouts
  - Woodshop work efficiently with the existing operations
  - Maximizing flow of materials and workers
Machine layout

• **Systematic layout planning**
  – Tool used to arrange operations in a facility
  – Frequent and logically related activities close to each other
  – Quickest material flow, least amount of handling, lowest cost

• **Critical Path**
  – 50% of total quantity of products
  – Highest demand

• **Relationship Diagram**
  – Which processes need to be right next to each other?
  – Which are common for most or all products?
Machine layout: 80’x80’
Machine layout: 40’x160’
Personnel’s designated areas

• **Lockers: 234 sq-ft**
  - 26 employees, 26 lockers (13+13 back to back), 6sq-ft each

• **Restrooms: 129 sq-ft**
  - Urinal, sinks, toilets, entrance and aisle

• **Food services, break room: 221 sq-ft**
  - Sitting area and vending machines
  - Assuming not all employees will be dining at once

• **Health services: 100 sq-ft**
  - First aid, a bed and two chairs

• **Office: 1,125 sq-ft**
  - 6 full-time employees, work stations and aisles
Costs/Savings

• **First costs**
  – Expanding main facility: $200,250 (cost avoidance)
  – Preparing building at Midlink: $759,785

• **Annual expenses**
  – Cost of lease per year (5-year lease): $72,000

• **Annual savings**
  – Eliminate raw material handling and damaged material $42,744

Costs versus savings, decision?

**NOT MOVING WOODSHOP TO MIDLINK!**
Waste assessment

• **Storage**
  – Barn, main facility, holds enough lumber for a twice-a-week turnover
  – When full, lumber is kept outside; risk of damage
  – Excess of inventory, store at Midlink (mostly *Jarrah* and *Ipe*)

• **Recommendation**
  – Store all lumber in just one place, avoid extra handling
  – Always store lumber inside, avoid damages
  – Estimated savings: $25,300
Waste assessment (cont.)

• **Inventory**
  – Highest level: *Jarrah*
  – Certain types have irregular availability; must buy whenever available
  – Actual requirements often not taken into consideration
  – Purchased versus required lumber (2010 and 2011 records, 25% demand variability)
  – Taking *Jarrah* out of the equation...
  – Eliminating this waste: 46% reduction!
  – Hard to implement appropriate *kanban* systems, additional material handling and sorting becomes overwhelming

• **Recommendations**
  – Reduce inventory levels, control purchasing activity
Waste assessment (cont.)

• **Organization**
  - Can’t always order exact size needed; order longer/wider piece to work around it
  - If a certain size if not available, the next bigger size is used, generating waste

• **Example**
  - End of 2011 inventory, *Jarrah 4/4*, deficit of 9,060 BF
  - Other available sizes: 6/4 and 8/4
  - Borrowing half from each of the other sizes at $5.55/BF, resulting waste of $75,425

• **Recommendations**
  - Sort the wood, maximize its use
  - Match with actual requirements
  - Cut 2 or 3 pieces out of the longest size (17 to 18 ft)
Waste assessment (cont.)

- **Operations**
  - Most wasteful: up-chop, straight-line and molder
  - Up-chop and straight-line, getting the right blank to run through molder
  - Molder, “hit and miss” if the blank has quality issues
  - Overall waste of 65%, 25% dust, 40% rest of the operations
  - Feeding wrong sizes:
    - *Ipe* 3x8 at $8.02/BF, $130,330
    - *Jarrah* at $5.55/BF, $482,260
  - Root cause: wrong sizes

- **Target**
  - 46% reduction in excess of inventory
  - 16% reduction if sorting correctly
  - Total reduction independent events: 0.46*0.16=8%
Next phase

- Focus on *Jarrah*
- Optimize wood’s utilization
- Minimize spoilage due to bad storage or handling
- Strategy
  - Decide whether to open up all bundles to sort through the wood or keep current system in place
  - Design of Experiments approach
  - Measure scrap throughout the system and how much it decreased
- Deliverables
  - Describe improved condition
  - Develop material control system, determine new part numbers
  - Design picking/kanban system
Thank you for listening!

Questions?