

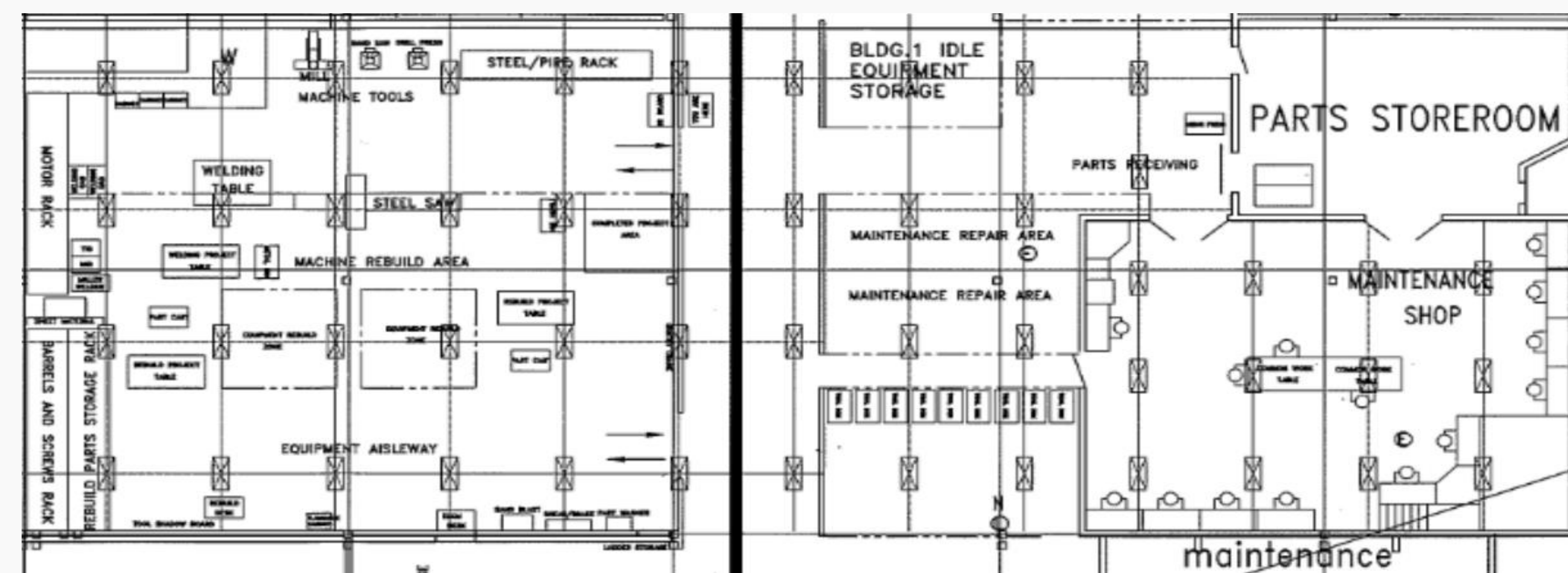
## Introduction

### Company Background

Engineered Profiles specializes in custom components and extrusions in materials ranging from wood composite to PVC. As a recognized leader in the thermoplastics industry, they have been manufacturing and supplying custom plastic profile extrusions for over 70 years.

### Maintenance Repair Area

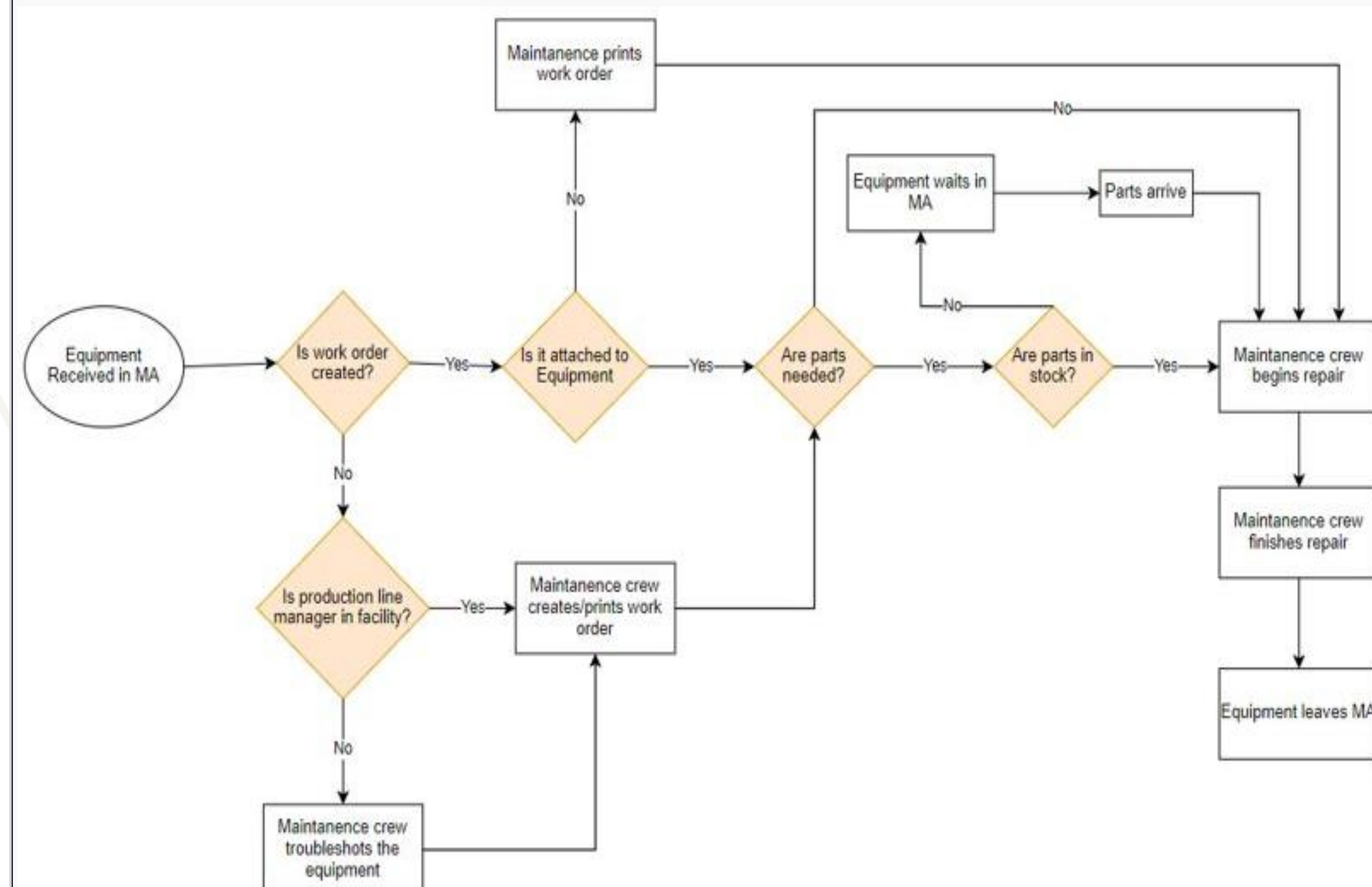
Equipment from production lines that need maintenance are sent to the repair area. The types of repairs that are seen in the maintenance area are preventative maintenance, safety, and equipment repair.



## Process

### Current State Process Map

The current process in the maintenance area involves many if statements.



## Project Description

### Problem Statement

Engineered Profiles has an issue with the maintenance process on the work floor. When equipment gets taken to the maintenance area to be fixed it is unorganized, there are no labels or indicators, poor communication amongst staff, and ultimately there is not a standard process in place.

### Project Goal

Create an integrated system to improve the maintenance processes at the Engineered Profiles LLC.

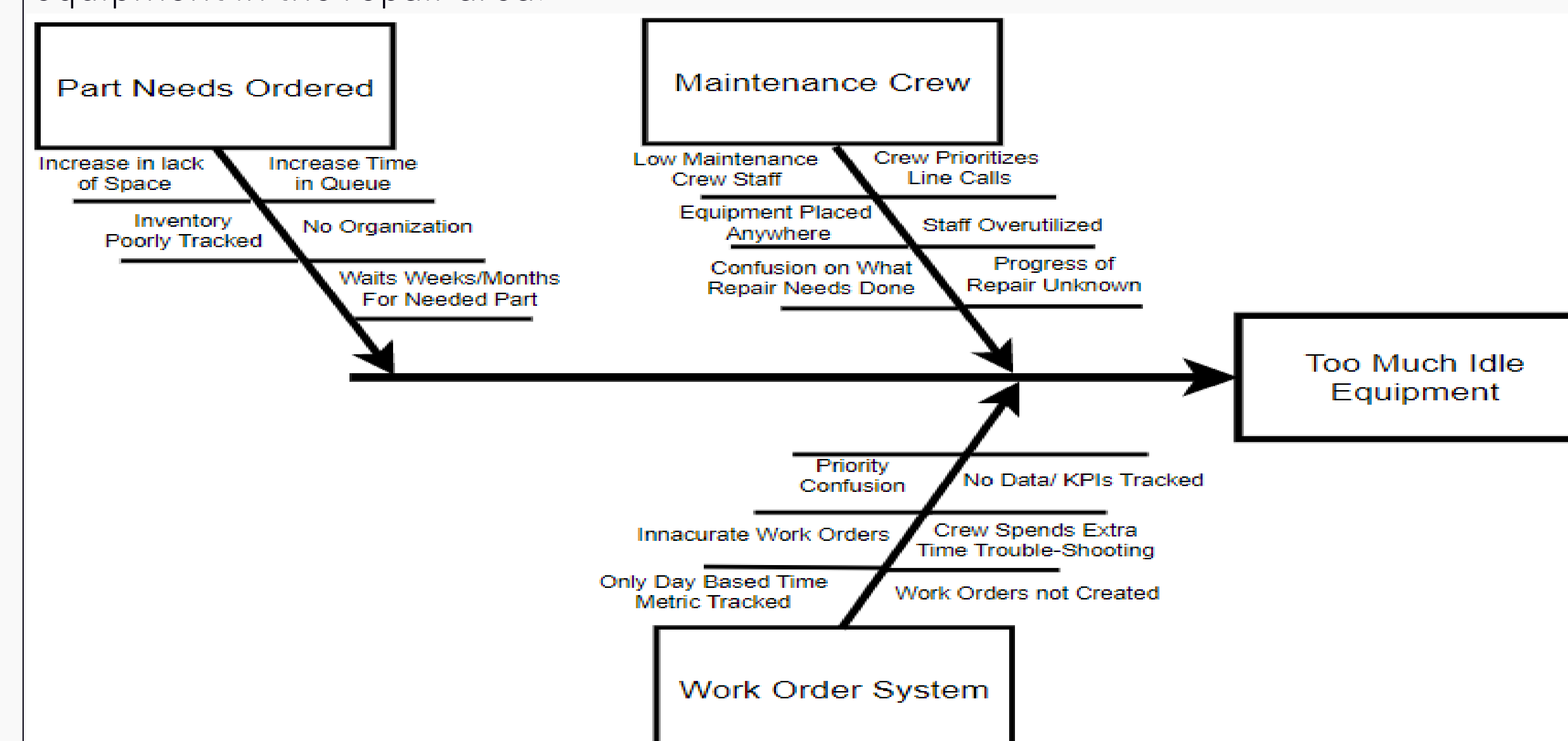
### Current Maintenance Floor Picture



## Measure and Analysis

### Root Cause Analysis

Our team has discovered that there are three main issues that lead to too much idle equipment in the repair area.



### PERT Simulation Analysis

Our team created a model that reflects the current state process used by Engineered Profiles while analyzing each repair grouped by priority. With the model, we are able to see the mean days to repair of each subgroup and suggest improvements that satisfies the company's standards.

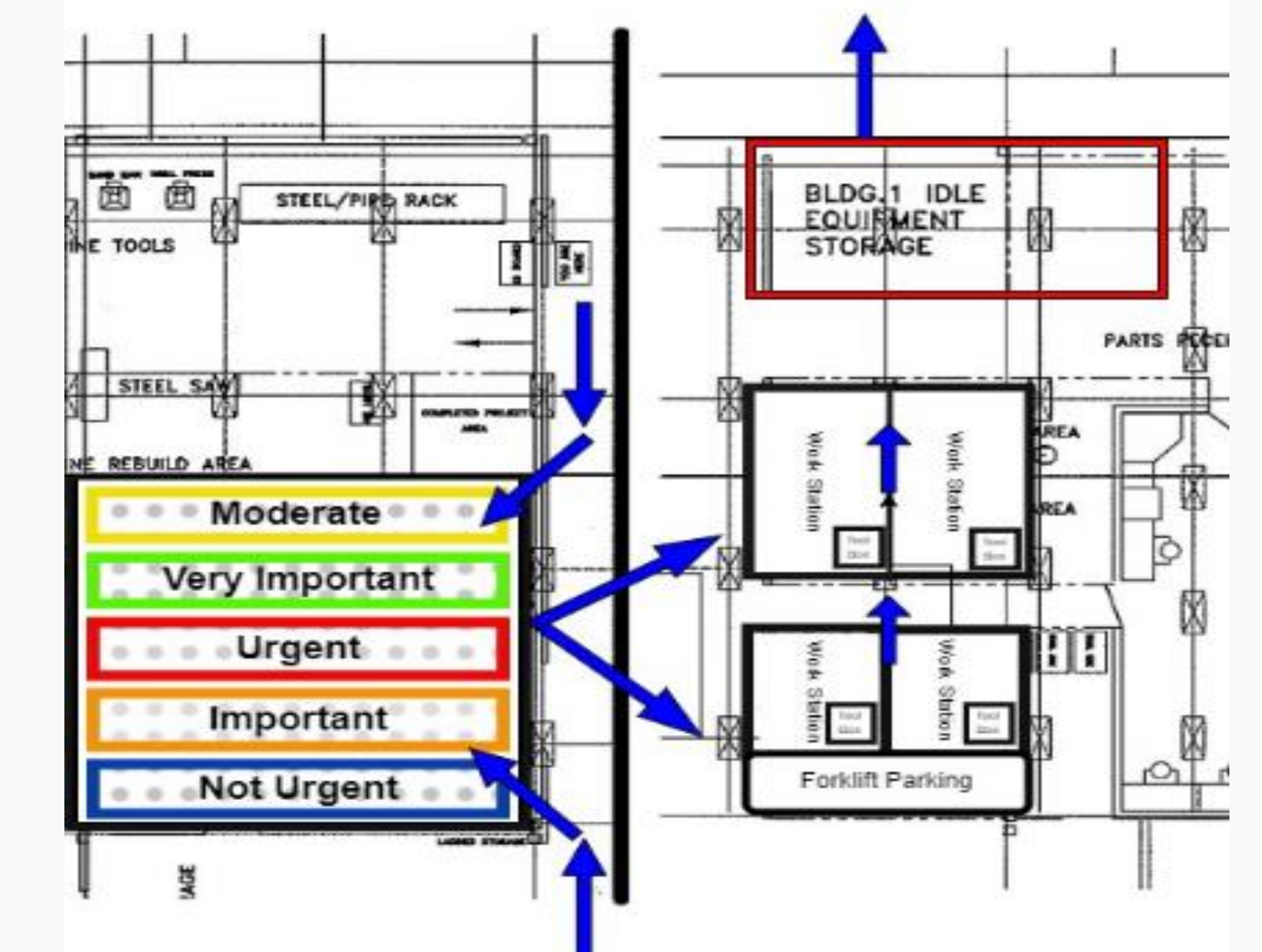
### Cost Analysis

With cost analysis, our team can present how much money the company loses from downtime caused by failing to complete repairs on time.

## Proposed Improvements

### New Flow with Designated Areas

Currently, there is no determined flow in the maintenance repair area or designated spaces for equipment or repairs. Our team has proposed a new floor set up and flow that effectively utilizes the space. When equipment is brought into the repair area, it is placed in the equipment receiving area where it is sorted by priority. It is then brought to the repair area cells when the crew can begin the repair.



### Implementing 6S and SOPs

6S is a lean methodology that aids in reducing waste and clutter in a workspace. The 6 Ss are sort, set in order, shine, standardize, safety, and sustain. The SOPs that our team has created for the proposed process will ensure that employees have the knowledge for success.

### Kanban Cards

When looking at the issues with the current work order system and communication, our team's plan is to implement a system of kanban cards that the workers will have attached to the machines where they can track the time that the equipment spends in each area. Engineered Profiles would benefit greatly from visual controls in the repair area.

### Worker Allocation

To fix the issue that Engineered Profiles has with the allocation of employees, our team will calculate the number of workers needed in the maintenance repair area to ensure the system flow.

## Control

### Audit Sheets

Our team will use audit sheets to ensure the tracking of improvements, the process is being followed, the 6Ss are being maintained, and evaluate employee's performance.

### Failure Mode Analysis

By doing a failure mode analysis on our proposed solution, our team can aid the company to prevent events that can cause issues with the system.