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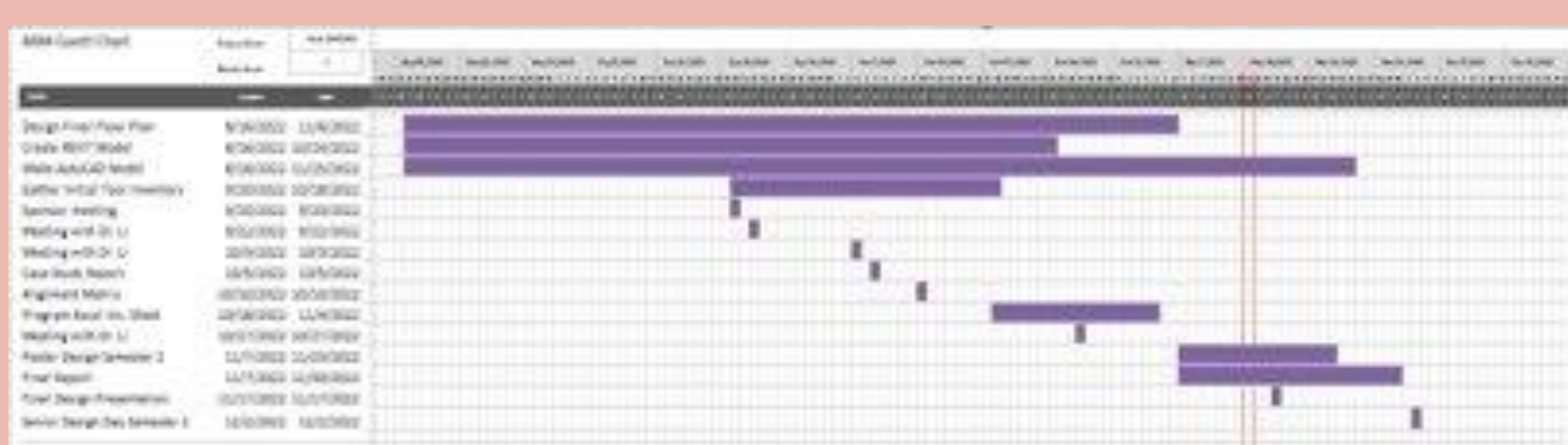
Problem Statement

- Due to being understaffed and having increased flow of recycled metal at Monterrey Iron and Metal, there is a concern of tool accessibility and safety within the Monterrey Iron and Metal facility.
- The creation of an organized tool inventory spreadsheet and the optimization of shelf and tool placement will help to minimize concerns and improve company efficiency.

Objectives

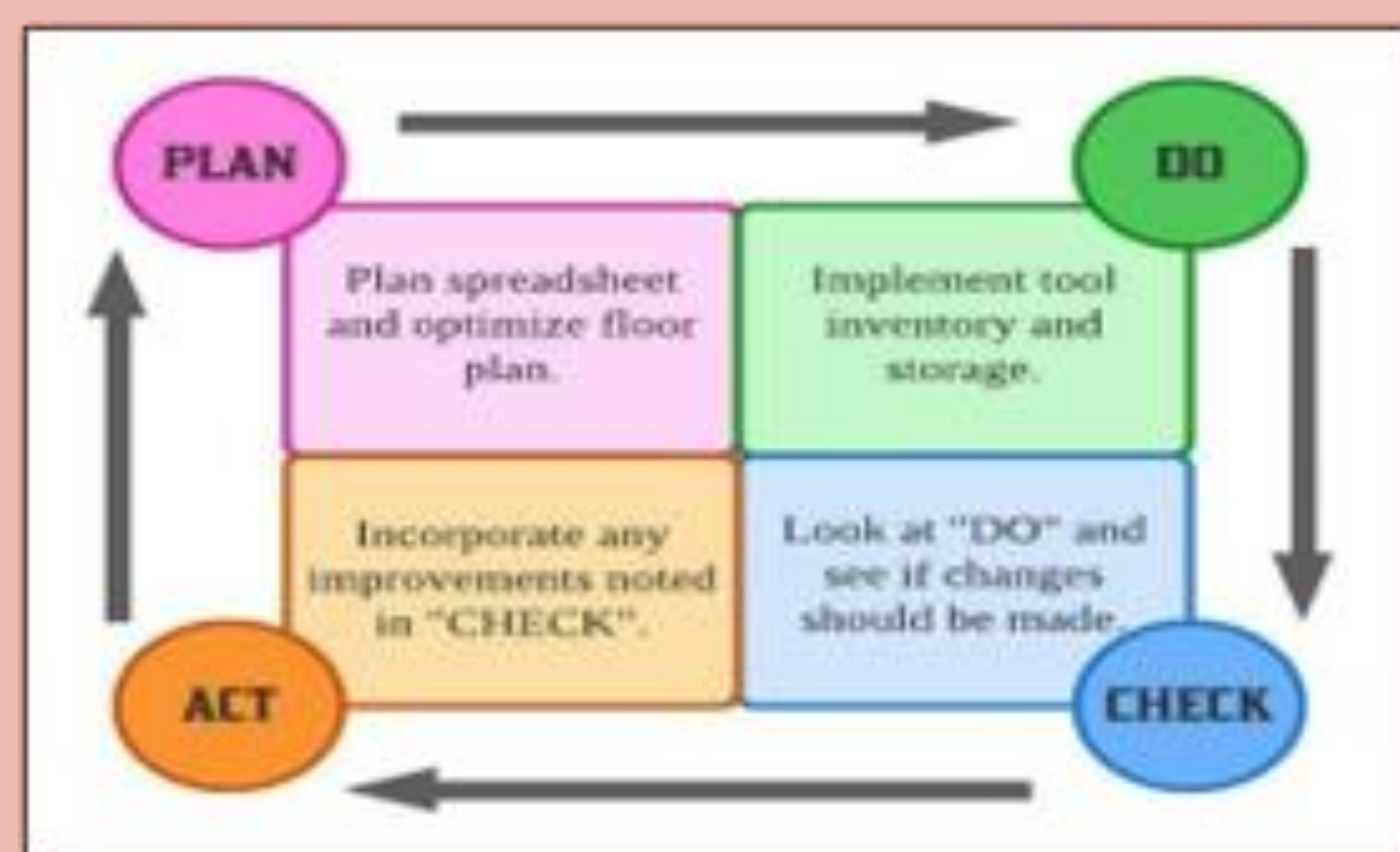
- Optimize a floor plan for tool accessibility and walking space within storage sheds for easy accessibility using two prioritization matrix comparing 5 different layouts for small shed and 3 different layouts for large shed.
- Implement a spreadsheet for company's current tool and part inventory.
- Create a tool check in/out system for inventory spreadsheet.

Schedule



Methodology

Plan-Do-Check-Act

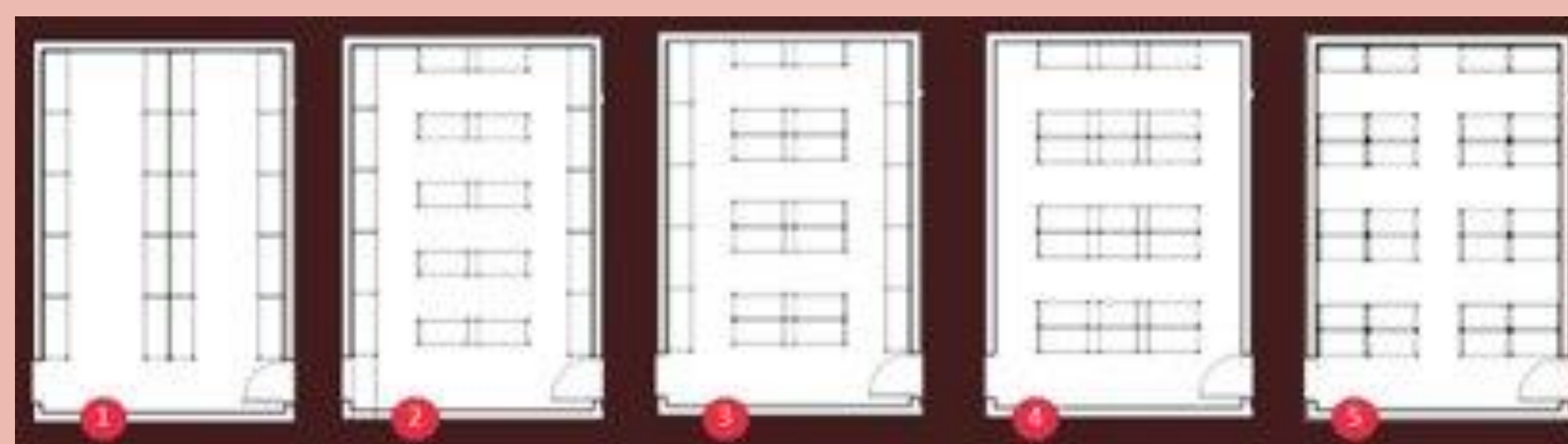


Current Layout [Plan]



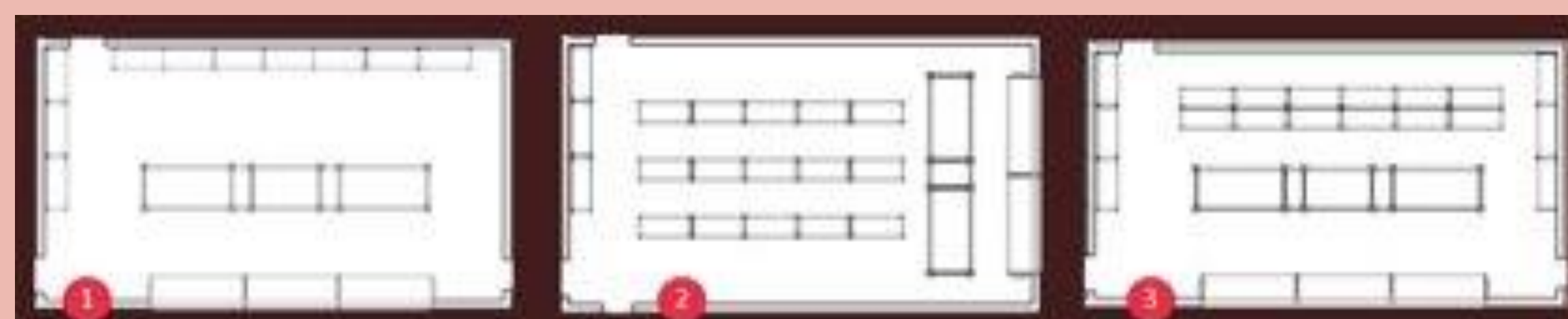
- Poor accessibility and visibility when searching for tools/spare parts.
- Currently takes over 30 minutes to find or receive item as there is no inventory tool selection in place.
- Goal to make tool/part selection more accessible for employees.
- Receiving/using tools creates a concern within Human Factors.

Facilities Layout [Do]

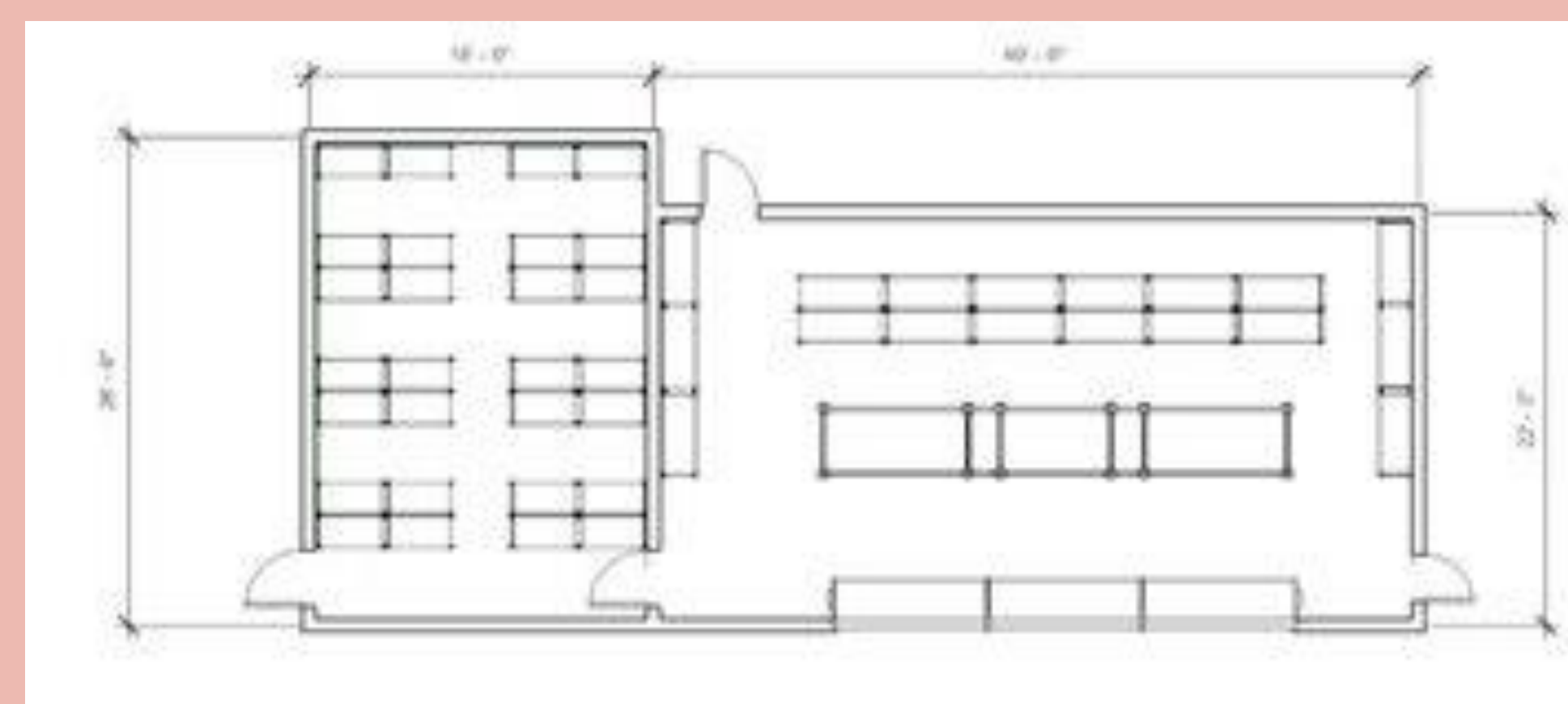


Small Shed Design	1	2	3	4	5
Small Shelf Area	140.5	105.1	130.6	128.5	157.9
Walking Space Area	293.75	329.15	303.65	305.75	276.35
Area Ratio (shelf/total)	0.32	0.24	0.30	0.29	0.36

- OSHA recommends walking aisles be at least 3'.
- Aisles with both lifting equipment and people need to have 3' of clearance in addition to the width of equipment.



Large Shed Design	Weight	1	2	3
Small Shelf Area		72.00	131.63	172.04
Large Shelf Area		87.42	58.54	87.42
Small Shelf Area Ratio	1	0.08	0.15	0.20
Large Shelf Area Ratio	2	0.10	0.07	0.10
Final Ratio		0.28	0.29	0.40



Inventory Sheet [Do]

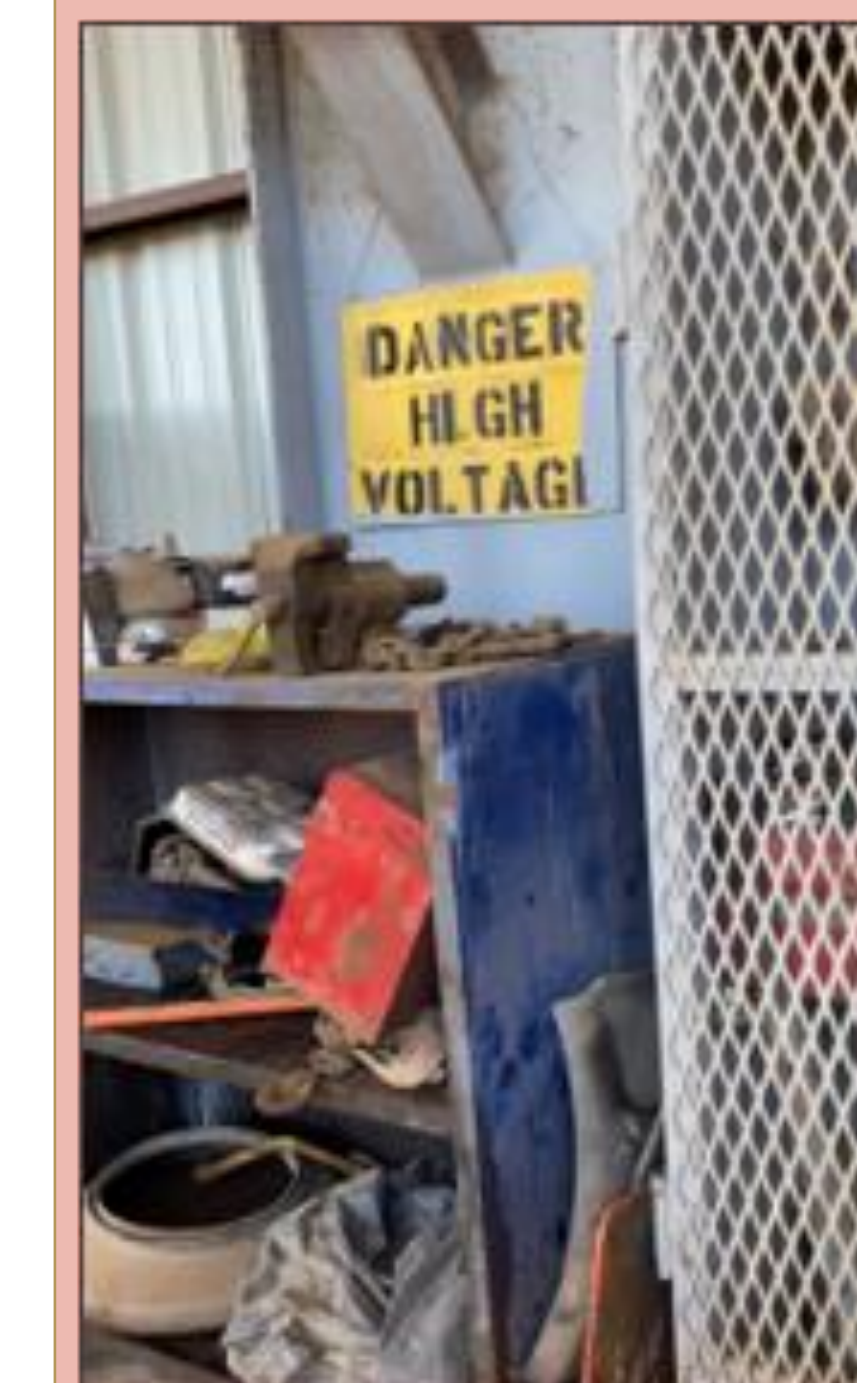
Data Entry			
Inventory ID		Check-in/out	
Category	0	Quantity	
Name	0	Employee ID	
Description	0	Reset	
Model #	0	Submit	
Dimension	0		
Weight LB	0		
Shelf Location	0		
Shed Location	0		

Data Entry			
Inventory ID	T-3	Check-in/out	In
Category	infeed	Quantity	4
Name	track bolt	Employee ID	1234
Description	track bolt 5/8" bolt x 2 2/32" 100 box	Reset	
Model #	518-0020	Submit	
Dimension	0		
Weight LB	0		
Shelf Location	0		
Shed Location	Tool Shed		

Time	Inventory ID	Category	Name	Description	Model Number	In/Out	Quantity	Shelf Location	Shed Location	User
11/7/2022 8:40	T-3	infeed	track bolt	track bolt 5/ 518-0020		In	4	0	Tool Shed	1234

Inventory ID	Category	Name	Description	Model #	Dimension	Weight LB	Quantity	Location	In	Out	Inventory
T-1	infeed	shaft	tail shaft - 6-1/2"	854-7004-1-1			1		0	0	1
T-2	infeed	chain	chain pitch group D-4 6.75 pitch standard	518-0009		18	10		0	0	10
T-3	infeed	track bolt	track bolt 5/8" bolt x 2 2/32" 100 box	518-0020			160		4	0	164

Human Factors [Do]



- Reduces workplace accidents.
- Equipment can be stored properly without the worries of being stepped on or rusting.
- Having a new area will encourage workers to adopt their practices to the new guidelines.

Future Plans

- Devise a check in/out system for our inventory sheet using excel to program in that feature. [DONE]
- Optimize the floor plan using skills learned in facilities planning and Revit. [DONE]
- A future team could use the inventory to organize tools on shelves.

Team Members



Acknowledgments

We would like to extend a special thanks to these individuals who have been guiding us through this project:
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