

Site Manager

Low-fi Prototype Pilot Usability Test

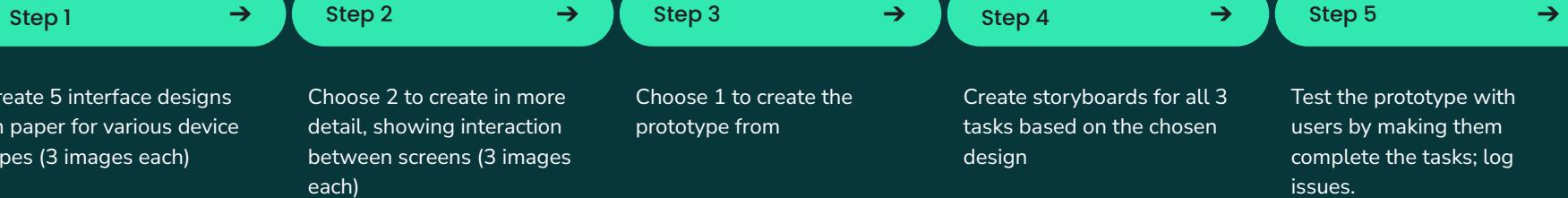
Joseph Koop

Kelvin Gordon

Enrique Garcia

Human Computer Interface

Design Sequence

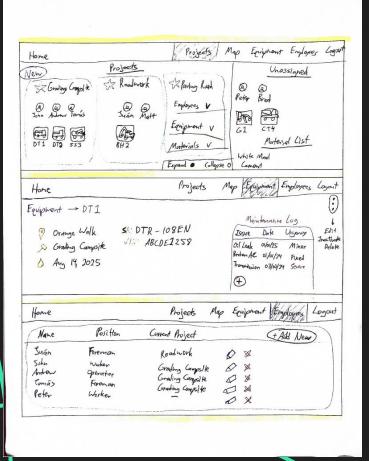


Mission Statement

Construction companies need a digital dashboard to track all projects, employees, and equipment in one place because current systems lack real-time visibility and lead to inefficiencies.

Our solution is to create a live map that links to projects and shows exactly which employees, equipment, and materials are needed at each location.

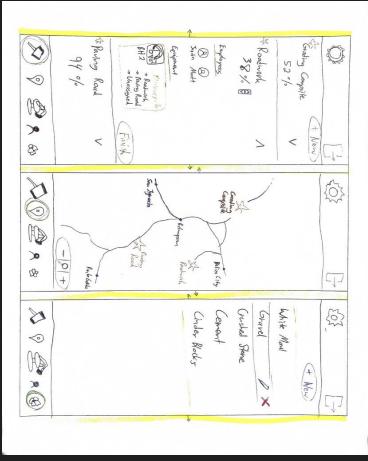
Interface Designs



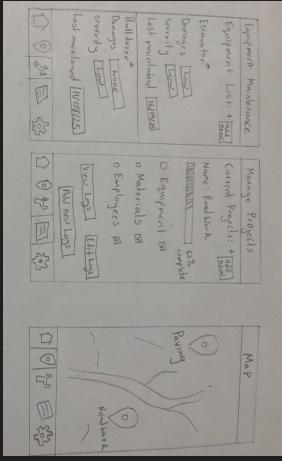
Web #1



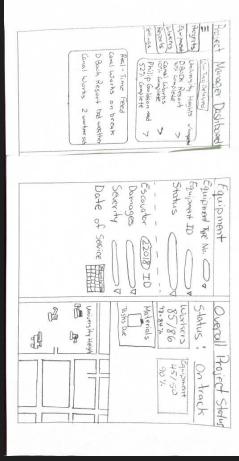
Web #2



Mobile #1

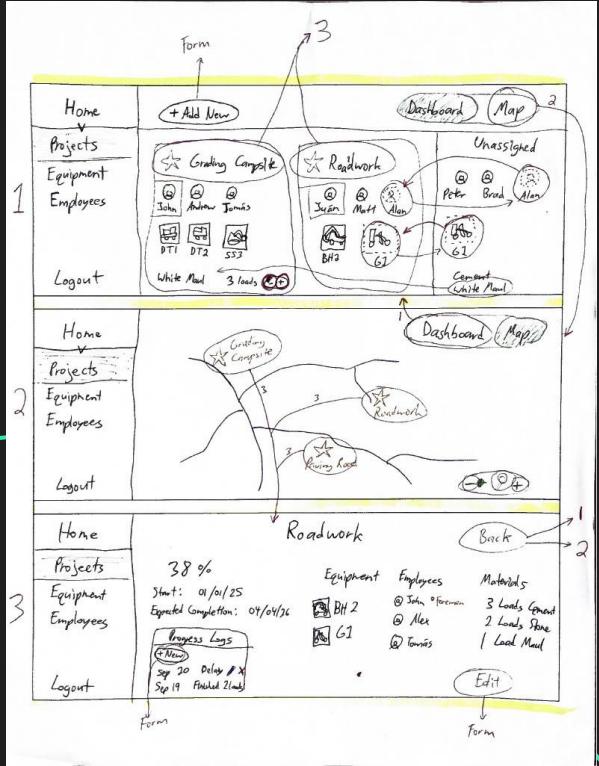


Mobile #2

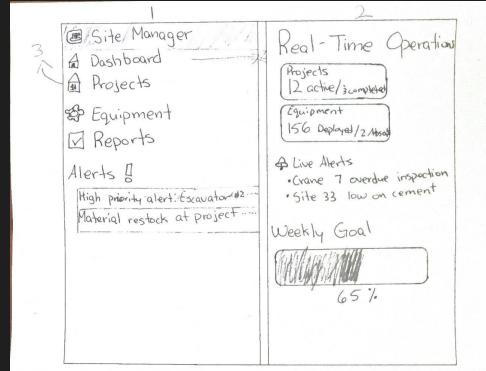


Tablet #1

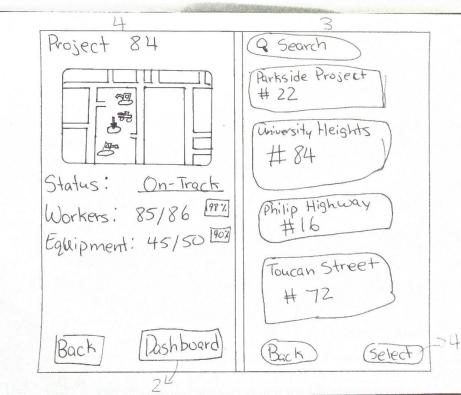
Finalists



#1
Created
from Web
#1 and #2



#2
Created from
Mobile #1 and #2
and Tablet #1



Comparison



#1 Strengths	#2 Strengths
Web based	Mobile based
Simple navigation	More alerts/feedback
More workable	More simplistic

Prototype

Home

Add New

Map Dashboard

Projects

Equipment

Employees

Material List

Logout

Grading Campsite

EX-2 DT-1

John Andrew Tomas

Maul - 1 +
Cement - 2 +
Stone - 3 +

Hummingbird Roadwork

CT-1 G-1

Juan Matt

Bricks - 2 +
Cement - 2 +

Paving Business Lot

DT-3 CT-2

Unassigned

EX-1 EX-3 DT-2

Peter Brad Alan

Maul Stone Cement

Bricks

Home

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Map Dashboard

Prototype

Projects > Grading Campsite

Grading Campsite

38%

Started: 1/1/2025 Expected Completion: 12/31/2025 Location: Orange Walk

Equipment: EX-2 (1), DT-1 (1)

Employees: John (1), Andrew (1), Tomas (1)

Progress Logs

- 20-Sep Delay - cement mixer didn't reach on time
- 13-Jun Finished laying foundational white maul
- 12-Jan Scouted site

Materials

Icon	Name	Quantity
Maul	- 1 +	
Cement	- 2 +	
Stone	- 3 +	

Logout

Delete

Are you sure you want to delete this project/material/employee/machine?

Cancel

Delete

Prototype

New Project

Name:

Start Date:

Expected Completion Date:

Location:

Edit Project

38%

Name: Grading Campsite

Start Date: 1/1/2025

Expected Completion Date: 12/31/2025

Location: Orange Walk

Danger Zone

Prototype

Progress Logs

Date	Note	Action
20-Sep	Delay - cement mixer didn't reach on time	✗
13-Jun	Finished laying foundational white maul.	✗
12-Jan	Scouted site	✗

Home

Projects

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Excavators

EX-1	EX-2	EX-3
✓	✓	✓

Dump Trucks

DT-1	DT-2	DT-3	DT-4
✓	✓	✓	✗

Graders

G-1
✓

Cement Trucks

CT-1
✓

Prototype

Equipment > EX-1

EX-1

Back



Model Number: 14DF56
Brand: CAT
Purchase Date: 1-Apr-22

Status: Working Condition

Maintenance Log

Date	Issue	Urgency	
			Submit
4-Jan-24	Oil Leak	Severe	 
8-Sep-24	Broken AC	Minor	 
21-Apr-23	Transmission Shifting	Fixed	 

Edit

Logout

Edit Machine



Name:	EX-1
Model Number:	14DF56
Brand:	CAT
Purchase Date:	1-Apr-22
Type:	Excavator
Status:	Working Condition

Cancel

Save

Danger Zone

Delete Machine

Prototype

Add Machine

Name:

Model Number:

Brand:

Purchase Date:

Type:

Status: Working Condition

	Name	Position	Action
	John	Foreman	<input type="button" value="Edit"/>
	Andrew	Employee	<input type="button" value="Edit"/>
	Tomas	Operator	<input type="button" value="Edit"/>
	Juan	Manager	<input type="button" value="Edit"/>
	Matt	Employee	<input type="button" value="Edit"/>
	Peter	Employee	<input type="button" value="Edit"/>
	Brad	Foreman	<input type="button" value="Edit"/>
	Alan	Operator	<input type="button" value="Edit"/>

Prototype

Progress Logs

Date	Note	Action
20-Sep	Delay - cement mixer didn't reach on time	✗
13-Jun	Finished laying foundational white maul.	✗
12-Jan	Scouted site	✗

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Excavators

EX-1	EX-2	EX-3
✓	✓	✓

Dump Trucks

DT-1	DT-2	DT-3	DT-4
✓	✓	✓	✗

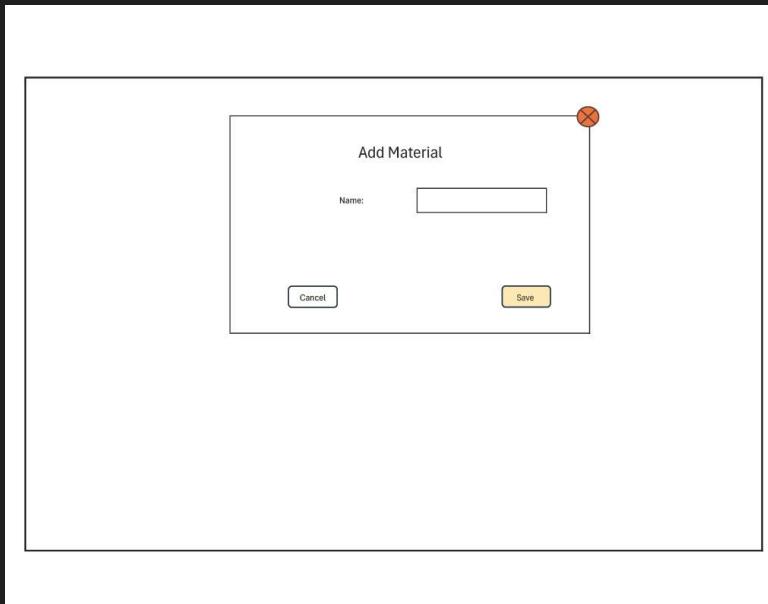
Graders

G-1
✓

Cement Trucks

CT-1
✓

Prototype



UI Task Flows - Easy

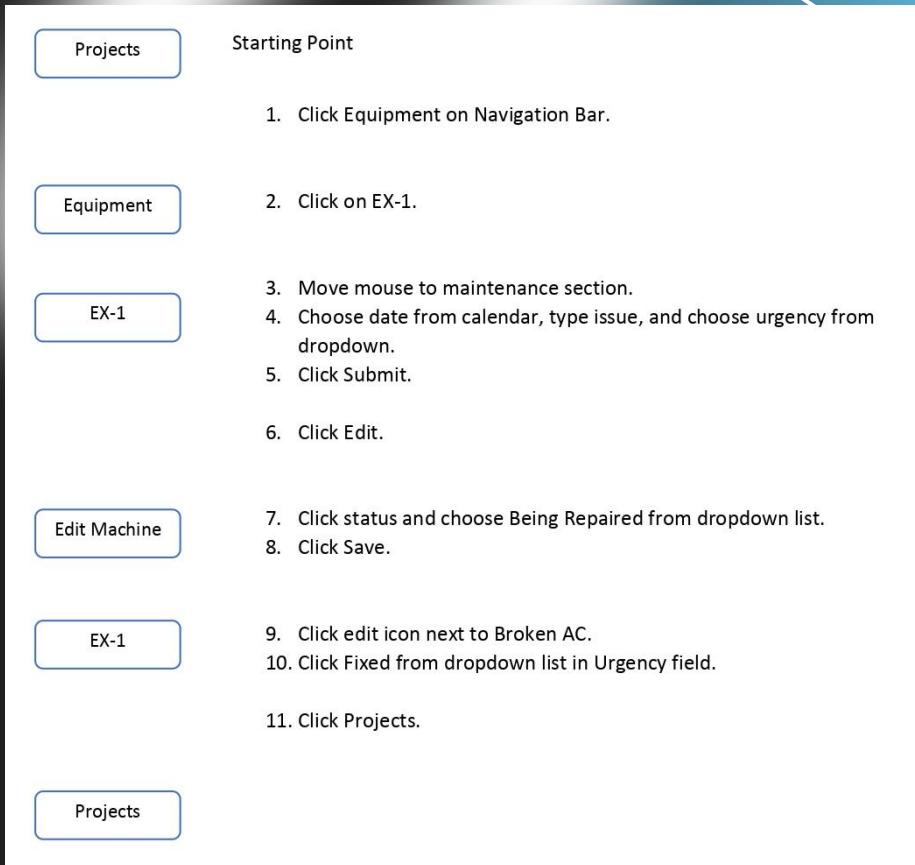
Task Description:

Add a new maintenance log to the excavator EX-1: May 3, 2025, Busted Hydraulic Hose, Severe.

Change the status of the machine from Working Condition to Being Repaired.

Mark the Broken AC log as being fixed.

Return to projects page.



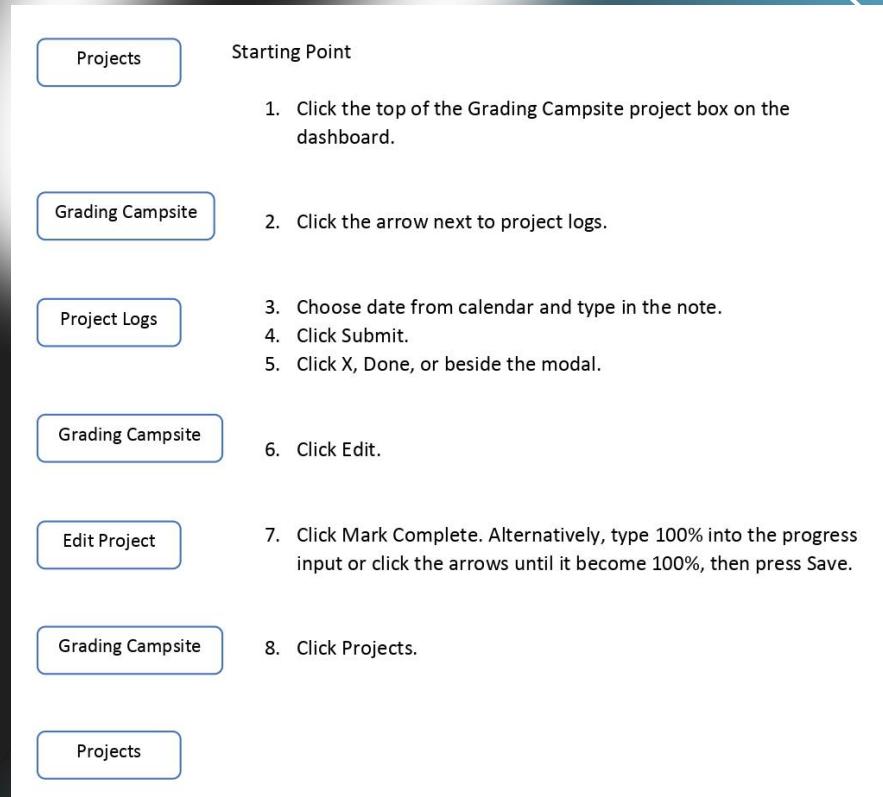
UI Task Flows - Medium

Task Description:

Add a new progress note to Grading Campsite specifying that project was completed on December 24, 2025.

Mark the project as Complete.

Return to projects.



UI Task Flows - Hard

Task Description:

Assign DT-2 to Hummingbird Roadwork.

Assign Peter to Grading Campsite.

Reassign CT-2 to Hummingbird Roadwork.

Add 1 load of Stone to Hummingbird Roadwork.

Change the loads of Cement from 2 to 3 in
Grading Campsite.

Remove the load of Stone from Grading
Campsite.

Unassign Tomas.

Look at the overview of your projects on the map,
then go to Grading Campsite to see more details.

Projects (Dashboard)

Starting Point

1. Drag DT-2 to Hummingbird Roadwork.
2. Drag Peter to Grading Campsite.
3. Drag CT-2 to Hummingbird Roadwork.
4. Drag the Stone Icon onto 1 Hummingbird Roadwork.
5. Click the up arrow next to Cement in Grading Campsite.
6. Drag the Stone from Grading Campsite to Unassigned.
Alternatively, click the down arrow 3 times.
7. Click Map near the top of the dashboard.
8. View the project map.
9. Click on Grading Campsite's star or label.

Projects (Map)

Grading Campsite

User Testing



Method

Found students in computer lab and asked them if they wanted to help us test

Execution

Introduced the system, gave them the tasks, then let them move around the interface until they figured out the task

Roles

Schedule conflicts
Facilitator + Computer: Joseph Koop
Observer + Notetaker: Enrique Garcia

Test #1

Vibe: Understandable

Statements:

- ★ “Generally, once everything is color-coded, it will be pretty easy to follow.”
- ★ “You could box items so it's easier to follow.”
- ★ “Overall pretty simple”



Test #2

Vibe: Enjoyable

Statement: "This is kind of fun"

Trouble Areas:

- ★ Not all icons directly linked to their individual page
- ★ Progress Notes link was not clear enough
- ★ Dragging to reassign took a while to figure out



Conclusion

We gave the constraints of the system (what was possible/what was not)

Both users frequently visited the wrong sections, but were able to backtrack and figure out the tasks on their own

Some issues would be resolved with a more detailed UI

Discovered UI Improvements

- Color-code website
- Enclose more elements in visible containers
- More detailed features like drop-down arrows
- Make certain links more perceivable (link to progress logs)
- Make drag feature more intuitive
- Use different method of assigning materials (list all under each project)



The End