

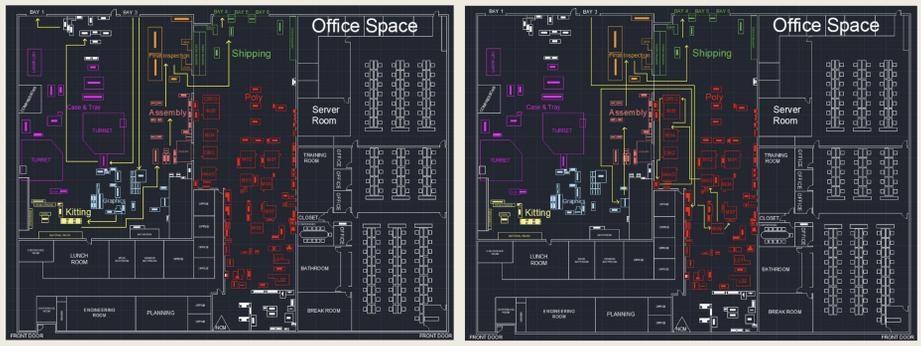
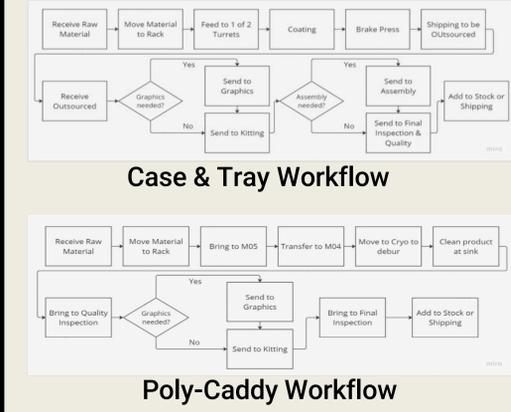
Problem Statement

Arcamed seeks expansion layout(s) that improve their current production flow. Having recently acquired 16,000 square ft. of additional space, new facility layout options can incorporate post outside service workflow, account for the growth of their 3-year blueprint, and optimize flow of material throughout the entire facility.

Client Background

- Arcamed is a fast, responsive, and reliable provider of case and tray systems and precision machined products to orthopedic OEMs
- Their surgical cases and trays are manufactured with their exclusive ARC™ (All Riveted Construction) system of design, dramatically enhancing the durability, usability, and attractiveness of your case-tray system
- Their capabilities span from initial prototypes to full production runs and are scalable according to their partner needs

System Flow



Methodology

Relationship chart measures work process to determine the significance for each machine and influences machine placement in new design(s).

Case & Tray	Raw Material	Turrets	Coat	Brake Presses	Shipping 1	Air Compressor	Laser	Receiving	Kitting	Graphics	Assembly	Final Inspector	Shipping 2
Raw Material	-	A	O	U	O	U	U	O	U	U	X	X	X
Turret 1	A	-	A	O	U	I	I	U	U	X	X	X	X
Coat	O	A	-	A	O	E	E	O	U	U	X	X	X
Brake Presses 1	U	O	A	-	I	E	E	O	U	U	X	X	X
Shipping 1	O	U	O	I	-	E	E	I	O	O	O	X	X
Air Compressor	U	I	E	E	E	-	E	U	U	U	X	X	X
Laser	U	I	E	E	E	-	E	U	U	U	X	X	X
Receiving	O	U	O	O	I	U	U	-	E	I	U	X	U
Kitting	U	U	U	U	O	U	U	E	-	E	I	X	U
Graphics	U	U	U	U	O	U	U	I	E	-	E	I	U
Assembly	X	X	X	X	U	O	X	X	U	I	E	-	E
Final Inspection	X	X	X	X	X	X	X	X	X	I	E	-	A
Shipping 2	X	X	X	X	X	X	X	U	U	X	X	A	-

Relationship Chart for Machines in Workflow

Discussion

Total Workflow Travel Distance
Current Layout vs. New Layout

Workflow	Current Layout (ft)	New Layout (ft)
Case & Tray	555	495
Poly-Caddy	711	591

Decreased travel distance for product flow

Focuses with new designs:

- Improved overall product flow traffic
- Major pain point of lack of storage in certain departments
- Post outside workflow machinery moved in-house
- Additional space utilization for employee growth and gatherings

Results

Analytics

Department	Original Square Footage	New Square Footage	Percent Increase
Kitting	1130	2489	120%
Shipping	2006	2432	21%

Outsourced Machines Added	5
Additional Machines	6
Storage Percent Increase	82%
Manufacturing Floor Space Added	12,118 sq. ft.
Office Space Percent Increase	3,882 sq. ft.

New Layout With Case & Tray Flow

New Layout With Poly-Caddy Flow

Based on our Relationship Chart, including our client's expectations and constraints, these are the resulting changes recommended to be implemented in the new layout design

