

MECHASYS

Grondin Acoustique accelerates layout by **5.5 times** on a large commercial project with **Mechasys**



Project Background

- Project: HEC Édifice Hélène-Desmarais
- Location: Montreal, Quebec
- Type of project: Curved podium deck marking & installation
- Layout scope: 10 rooms with podium decks
Project size: 705 m² (7,592 ft²) of floor space



Gille Paquet
Foreman, Grondin Acoustique

Highlights

4 Tons
Of material saved

13_k Dollars
USD In savings

5.5 Times
Faster

Grondin Acoustique partnered with MechasyS to execute the layout of several podium decks within the newly constructed HEC Montreal university pavilion in Montreal, Canada.

Challenge

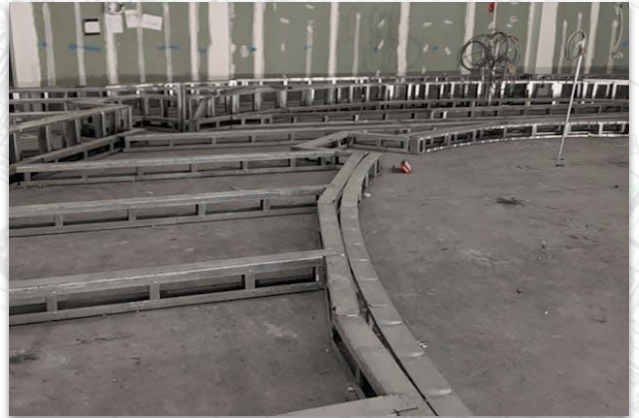
Ellipses are intricate geometrical shapes comprised of multiple curves, each with distinct radius and center points. Traditionally, crafting these curves requires a meticulous process. A worker must locate the precise center point of each curve, then fashion a string to the appropriate dimensions corresponding to the radius. This string is then utilized, often affixed to a pencil, to accurately mark the curve's trajectory.

During the HEC Montreal project, an additional challenge arose: the party walls had already been constructed. Consequently, accessing the requisite center points for laying out the ellipses proved unfeasible, given their positioning outside the confines of the classrooms.

Solution

The Mechasys' projector delivers substantial efficiency improvements across various surfaces. The projector's advanced positioning system, supported by highly precise scanning technologies, is designed to seamlessly translate 2D plans into a comprehensive projected site layout. With just one carpenter overseeing progress via a mobile device, the user interface is remarkably intuitive, in addition to reducing labor expenses.

Furthermore, the projector has demonstrated a proven increase in productivity while enhancing accuracy and consistency. It broadened the scope of layout beyond traditional methods like chalk lines and markers.



Results

Mechasys' projector surpassed expectations by streamlining the layout process, slashing 12 days from the timeline. This achievement not only accelerated the project but also instilled greater confidence in the final layout among stakeholders. Despite the facility's intricate design challenges, the projector managed to reduce costs by 74%, and eliminating 4 tons of construction waste, thanks to the projectors narrow 3mm (1/8 inch) tolerance window.

Beyond these quantifiable metrics, the projector offered numerous qualitative advantages. By transferring more information directly from the digital model to the field, it empowered Grondin Acoustique's layout carpenter and installation teams to make informed decisions throughout the process, from planning to hands-on installation work.

“ I learned to use the projector within a day, it's very simple. I can't wait to have my own
- Tony Tanguay, Senior Layout Carpenter

Cost Reduction

74% ➔ \$13k

Cost Reduction

Time Reduction

5.5x ➔ 187
faster man-hours

Time Reduction



Comparative Analysis

These metrics represent the most tangible benefits of Mechasys' projector for curved podium layouts. In the fiercely competitive construction sector, the adoption of a projector is crucial for advancing both your own interests and those of your clients on a large scale.

Wall Layout (Marking)			
		Chalk Lines	Mechasys
Initial Data	Total Floor Area	2374 m ² (7,788 ft ²)	
	Number of Rooms	10	
	Worker(s) per Team	2	1
	Hourly Labor Cost (USD)	\$62.55 / h	
Productivity	Productivity	22.8 m-h/room	4.1 m-h/room
Time	Total Required Time	228 man-hours (14.25 Days)	41 man-hours (2.5 Days)
Cost	Total Labor Cost (USD)	\$14,261	\$2,565
	Total Cost of Material	\$3,386	-
	Mechasys Rental Cost 1-week	-	\$1,999
	Total Cost	\$17,647	\$4,564 CAD
Waste	Total Weight of Material	1,828 kg (4,029 lbs)	0 kg (0 lbs)
Net Productivity Gain		5.5x	



Learn more at www.mechasys.ca

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