

# Egg-Telsa masters complex architectural layout with Mechasys' XR Projector

## PROJECT BACKGROUND

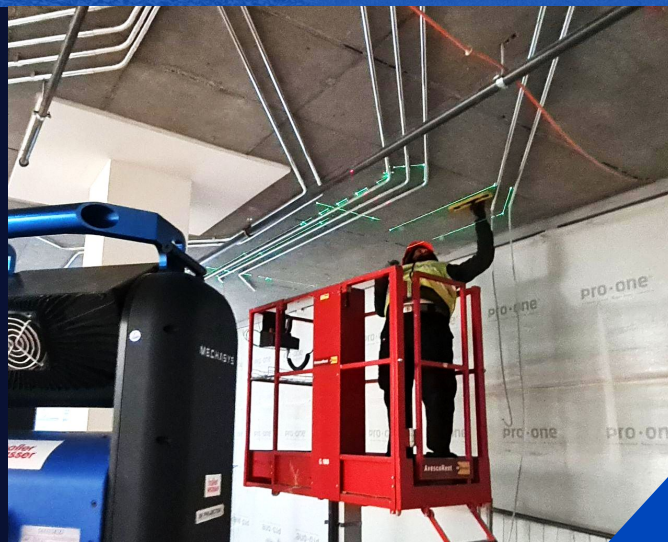
**Project:** Caterpillar EMEA HQ: Electrical Layout

**Location:** Geneva, Switzerland

**Type of Project:** Architectural Electrical Conduit Project

**Project Scope:** High-Profile 35,000 m<sup>2</sup> Renovation

**Key Actors:** Egg-Telsa (Electrical Contractor), Haller Wasser (Geospatial firm), Spatial SA (Distributor), Implenia (General Contractor), Burckhardt Architecture (Architect)



# 5x

FASTER  
LAYOUT TIME

# 12.8k<sub>CHF</sub>

SAVED IN  
1 WEEK

# 100%

ACCESSIBLE TO ALL  
TRADES

## CHALLENGE

The **Caterpillar EMEA HQ renovation** was a high-profile 35,000 m<sup>2</sup> project led by general contractor Implenia. Within this vast scope, architectural firm Burckhardt Architecture designed a centerpiece infrastructure consisting of an **intricate network of exposed aluminum conduits** mimicking a **large-scale electronic circuit board**. Executed by Egg-Telsa, this artistic installation was distributed across 295 m<sup>2</sup> of ceiling throughout the project, demanding absolute precision and geometric continuity across multiple distinct zones.

### Technical Hurdles

- **Finished Surfaces:** The conduits were the final aesthetic element; the ceiling had to remain pristine. Traditional chalk lines or ink markers were restricted.
- **Geometric Complexity:** The circuit design ignored the building's structural grid, requiring non-linear, millimetric placement of anchors and tubes.
- **The Logistical Impasse:** The team rejected 1:1 paper templates due to high costs and material deformation risks, while floor-to-ceiling point transfer was ruled out due to parallel alignment errors between non-level surfaces.

## SOLUTION

To overcome these obstacles, geospatial firm Haller Wasser introduced **Mechasys' XR Projector**. By projecting the CAD file directly onto the ceiling at a 1:1 scale, the solution ensured absolute fidelity to the plan and **flawless precision**. Beyond technical performance, the tool provided genuine **working comfort for the teams**; its reliability significantly accelerated the installation while eliminating the stress of manual errors, ensuring the artistic vision was realized without compromising the finished surfaces.



## RESULTS

The primary result was a picture-perfect design that served as a flawless physical mirror of the digital intent. Over a week of work, the project realized a **potential saving of 12,830.78 CHF** by enabling a technician to perform high-precision layout with the XR Projector, rather than with a total station.

This digital workflow enabled **seamless coordination across different organizational levels**. The on-site teams utilized the live projection to verify the layout in real-time, respecting the project's tight schedule and ensuring the design met the precise requirements of both the architect and the client.



The XR Projector allowed us to see this design realized without compromise; exactly what we conceived was put into practice.

- Benoît Grenier, Architect  
Burckhardt Architecture



SCAN TO WATCH  
FULL VIDEO

PRODUCTIVITY GAIN

5x  
FASTER



375  
PTS PER DAY



## COMPARATIVE ANALYSIS

Results prove that the XR Projector's true value lies in enabling technical designs previously considered impossible while delivering massive productivity gains. In an environment of rigid deadlines and uncompromising standards, Projected Reality acts as the essential bridge for architects and contractors to execute high-density patterns—simultaneously streamlining the bottom line through maximum operational efficiency.

### ELECTRICAL LAYOUT (ANCHOR POINTS)

		Total Station	XR Projector
Initial Data	Total Area	295 m <sup>2</sup> (3,175.35 ft <sup>2</sup> )	
	Total Points	1432 points	
	Hourly Labor Cost (CHF)	CHF 105.00	CHF 105.00
	Team Composition	Technician	Technician
Productivity	Avg Productivity (Pts/Day)	75	375
	Avg Productivity (Pts/Hour)	9.4	46.9
Time	Total Time (Man-Hours)	153	31
	Total Time (Team-Day)	19.1	3.8
Cost	Total Labor Cost	CHF 16,038	CHF 3,207.62
<b>Labor Cost Reduction</b>		<b>CHF 12,830.78</b>	
<b>Net Productivity Gain</b>		<b>5.0x</b>	

## COLLABORATORS



Electrical Contractor



General Contractor



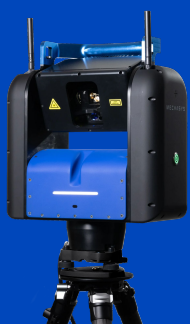
Architect Firm



Geospatial Firm



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