

ElectronVault, Inc.
www.electronvault.com

Customer Success Story

Autodesk® PLM 360

Autodesk® Product Design Suite
Ultimate

Autodesk® Vault Professional

ElectronVault can provide real solutions, right now, to address the business and technical requirements of companies deploying energy storage. This is in part due to the Autodesk Clean Tech Partner Program. The software we received significantly streamlines our processes, accelerates our project timelines, and helps us respond to customer and partner requests anywhere in the world much faster than before. It's incredible.

—Rob Ferber
Chief Executive Officer and
Co-Founder
ElectronVault, Inc.

The Autodesk Clean Tech Partner Program supports clean technology innovators with design and engineering software they can use to accelerate their development of solutions to the world's most pressing environmental challenges. For more information visit autodesk.com/cleantech.

Batteries included.

Innovative clean tech startup creates reliable, cost-effective, and sustainable battery systems with Autodesk software.



Electric scooter powered with ElectronVault battery system, Image courtesy of ElectronVault, Inc.

The Company

ElectronVault, Inc., is the brainchild of Rob Ferber, CEO, and Linda Maepa, COO, innovators who met as students at the California Institute of Technology in the early 1990s. Their goal is to create reliable, affordable, and sustainable electrical storage systems for infrastructure applications and electric vehicles (EVs). "Electric vehicles have been around for decades and are increasing in popularity as consumers grow more environmentally conscious," says Ferber. "Their Achilles heel, however, has always been their expensive and short-lived batteries." A single battery refresh can cost as much as 30 percent of the original EV purchase price. They are also difficult, if not impossible, to properly recycle.

"ElectronVault is out to create something better—an EV with a regular maintenance cost comparable to that of an oil change," says Maepa. "That's why we've focused on developing technology that cuts battery system manufacturing costs in half and doubles battery cell lifespan."

Ingenious Ideas—Supported by Innovative Software

"We are trying to address the technology of connecting cells electronically, supporting them mechanically, and effectively managing both the system and the individual cells," says Ferber. At the heart of the company's new battery systems is the commodity lithium-ion battery cell, much like that found in digital cameras or notebook computers. The major difference is one of scale. A battery pack for an EV might contain more than 6,000 off-the-shelf battery cells. A backup power system for a housing development could contain millions.

By taking advantage of commodity cell prices, proprietary battery management and assembly technologies, ElectronVault has been able to cut battery pack costs in half compared to competing technologies. System complexity is also considerably reduced in this approach, while safety is improved. For help designing and delivering these innovative battery systems, ElectronVault joined the Autodesk Clean Tech Partner Program, which provided software to the startup.

Autodesk®

ElectronVault cuts time spent on critical manufacturing design and Digital Prototyping by up to 75 percent.

ElectronVault used Autodesk Inventor Professional, part of the Autodesk Product Design Suite Ultimate, throughout the design process to simulate and work on dynamically updated models of infrastructure and EV battery systems. “Autodesk Inventor Professional reduces the time we need to spend on critical manufacturing design, Digital Prototyping, and assembly and disassembly projects by up to 75 percent,” says Ferber. “Inventor has been incredibly valuable to developing the final product: an affordable, highly sustainable, completely recyclable battery system.”

To share files with its network of partners and local suppliers, ElectronVault relies on Autodesk Vault Professional data management software. “Vault enables us to exchange designs with our partner companies around the world in the most cost-efficient and effective manner,” says Ferber.

Product Lifecycle Management Supports Sustainability

ElectronVault also began implementation of Autodesk PLM 360 product lifecycle management software. “Autodesk PLM 360 has been an important addition to our Digital Prototyping workflow,” says Maepa. “Because we operate across 16 time zones on four continents, we needed a flexible, cloud-based PLM solution to help us stay synchronized while sharing and developing processes among all of our branches.” Maepa believes that traditional PLM solutions are too cumbersome and costly for most startups. “They just didn’t make sense for our company.”

ElectronVault is rolling out PLM 360 to the entire organization. “In many ways, Autodesk PLM 360 has been the fulfillment of our technology dreams,” says Maepa. “It is an incredibly flexible and cost-effective platform.” PLM 360 also supports the company’s vision around sustainability, helping to facilitate the

use of Eco Materials Adviser, a tool within Inventor that helps design teams evaluate the sustainability of potential product materials early in the design process.

The Result

ElectronVault has deployed its innovative battery systems for EVs and solar energy storage in Asia, Africa, Europe, and North America, and provided technology and expertise for multiple EV and remote-power products in both Asia and Africa. ElectronVault recently partnered with fellow Clean Tech Partner Program member SunPods to design, build, and install a modular solar storage system in rural South Africa. This system is capable of supplying up to 10 kilowatt-hours of clean power every day.

“Many people around the world have energy storage challenges,” says Ferber. “ElectronVault can provide real solutions, right now, to address the business and technical requirements of companies deploying energy storage. This is in part due to the Autodesk Clean Tech Partner Program. The software we received significantly streamlines our processes, accelerates our project timelines, and helps us respond to customer and partner requests anywhere in the world much faster than before. It’s incredible.”

To learn more about the Autodesk Clean Tech Partner Program, visit autodesk.com/cleantech.

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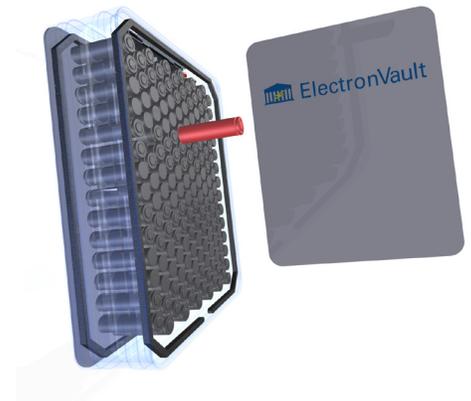


Image courtesy of ElectronVault, Inc.



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Using Autodesk PLM 360 and other Autodesk software, we were able to launch a cloud-based design and build solution that allows our customers to create—in a matter of minutes—a battery system that meets their specific business and technical needs. In doing so, we have cut battery system delivery time to under 60 days.

—Linda Maepa
Chief Operating Officer and Co-Founder
ElectronVault, Inc.