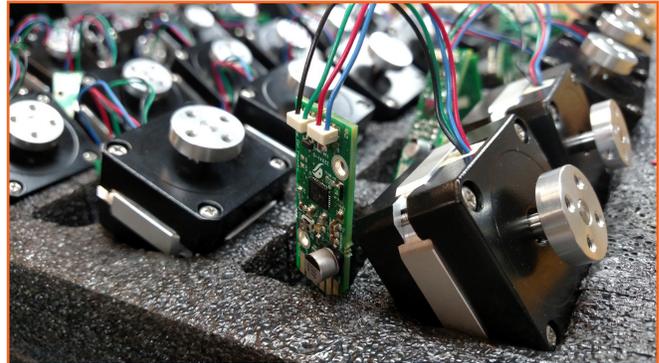


Oat Foundry Case Study



Let's Build Some Cool Stuff

“This company’s divining rod is building cool stuff— we’re thrill seekers – we love seeing the motors turn, the laser cut, the LEDs blink, the beer flow, the messaging splash across the board.”

- Mark Kuhn, CEO of Oat Foundry

Oat Foundry, LLC, of Bensalem Pennsylvania is a self-described agency of engineers that turns its clients’ ideas into everything from mechanical tech to industrialized cold brew machines to a process that doubles packaging capacity. “This company’s divining rod is building cool stuff— we’re thrill seekers -- we love seeing the motors turn, the laser cut, the LEDs blink, the beer flow, the messaging splash across the board,” said Oat Foundry CEO Mark Kuhn.

Regardless of what makes a project cool, Oat Foundry always makes the same promise to its clients: Build it fast. Build it well. Stand behind it.

The Oat Foundry story began with the design of an innovative vending solution for the [Philly Pretzel Factory](#). “During that first process, we just fell in love with prototyping,” said Kuhn. “So we decided to start a company.”

Four short years later, the company has grown exponentially and built a lot of really [cool stuff](#).

Rapid Growth Demands Mad Skills

Founded by [six veterans](#) of a Drexel University Mechanical Engineering capstone design program, Oat Foundry has no shortage of brain power in its den of makers. As

the company's projects grew in number and complexity, Kuhn and his team found themselves filling knowledge gaps and developing new skills.

To make a broader array of project ideas come to life, Oat Foundry quickly added printed circuit board (PCB) design to its impressive list of capabilities.

Big Project Idea Creates New Partnership

When Philly's own [Honeygrow](#) approached with a creative idea for its restaurant's customer experience, Oat Foundry welcomed the challenge.

"We were tasked with creating an interactive split flap display board that would



integrate with Honeygrow's point-of-sale (POS) system and alert diners when their orders were ready," said Kuhn. Split flap displays are those [classic arrival and departure boards](#) in airports and train stations from the second half of the 20th century.

These classic displays were integral to Honeygrow's truly original, fast-casual dining concept.

Combining new technology with older machinery, and doing so in a restaurant environment, presented several unique challenges for Oat Foundry. "We were looking at building a complex piece of machinery operating in a hot, humid environment with no tolerance for failure," said Kuhn.

The split flap sign would require a more robust, complex PCB than the team had designed in the past. Oat Foundry was referred to [Sunstone Circuits](#) by [NextFab](#), a trusted partner in the maker community. "We were impressed with how fast and easy Sunstone made the quote process," said Kuhn.

Sunstone exceeded expectations on its first engagement with Oat Foundry. The split flap display unit would use [stepper motors](#) that had to be directly connected to the control board. "When our Lead Engineer sent the Eagle file over, Sunstone engineers showed us ways to increase the board's longevity and make it perform better. They even had us consider changing the shape just to ease assembly," said Kuhn.

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- Mark Kuhn

Rather than simply confirm the design’s viability, Sunstone engineers sought to optimize for manufacturability and functionality. “The process with Sunstone just makes our work life easier. Fast quotes, an expert on the other end of the line—it really supports our competitive advantage,” said Kuhn.

If You Can't Stand The Heat...

Given the enduring popularity of [split flap displays](#), Kuhn was at first surprised they weren’t already being produced elsewhere. “It was dated technology that hadn’t evolved. The displays still in use were expensive to repair, and replacement parts were hard to find,” said Kuhn.

“We challenged ourselves to find the best way to update split flap display technology,” said Kuhn. Oat Foundry chose reliable stepper motors that were [hot swappable](#). For the brains of the display, the team used [Raspberry Pi](#)—a small, single-board computer popular with makers across the globe—coupled with an Arduino microcontroller. Components, including PCBs from Sunstone, were built to withstand the open-kitchen environment.

“The displays have been deployed in 20 Honeygrow restaurants, and more are on the way. We have built a durable, modern version of a classic technology that can be replicated anywhere,” said Kuhn.

Build It Fast. Build It Well. Stand Behind It.

“We recognized early on that Sunstone shared our commitment to quality and customer service.”

- Mark Kuhn



After successfully making a beloved old technology new, Oat Foundry is about to bring its split flap display technology to places such as maker spaces in local libraries and venues in Major League Baseball stadiums. Kuhn and his team can be confident about their products because they have partners like Sunstone, which also stands behind what it manufactures.

“We recognized early on that Sunstone shared our commitment to quality and customer service,” said Kuhn. “We work hard to take care of our clients, and it’s great to have partners that take care of us. It makes me like using Sunstone’s service.”