



2017 TBL REPORT  
CASCADE ENGINEERING  
FAMILY OF COMPANIES



• EXECUTIVE  
LEADERSHIP •



13<sup>TH</sup> EDITION

# Our Triple Bottom Line Report

## Introduction

With a unified voice, we're proud to present our 13th annual report, which brings special attention to the purpose, vision, strategic direction, culture, and values that drive our company. In a business environment that usually measures itself on financial performance, we're proud to follow principles that maximize People, Planet, and Profit—the defining components of our TBL philosophy. This report provides insight to how our principles drive our actions. We want to begin by sharing what each of them mean. These are the ideas that shape the culture across our Family of Companies.

## Purpose (our True North)

To have a positive impact on society, the environment and to be financially successful.

## Vision

Our vision is to be the highest value partner to our customers, by shaping ideas in plastics.

## Strategic Direction / Capabilities

We are driving toward operational excellence and industry 4.0 (digital transformation of smart factories). As one of the premier large tonnage plastic injection molders in the

world, we are focused on having world-class operations and value-added services. As for people, we are on the journey of being an Employer of Choice leader, where we will attract, retain, and engage top industry talent. Then, we surround them with a culture of excellence, one that makes them the safest, healthiest workforce with unlimited opportunities in personal development.

## Strategic Direction / Customers

Using a customer intimacy strategy, we choose like-minded partners and develop long-term relationships. Our core markets include automotive, truck and bus, power sports, furniture, solid waste, agriculture, and industrial. We leverage relationships in these diverse areas to generate customer-driven innovation.

## Competitive Differentiation

In order to bring the latest and greatest solutions to the market, we will invest in innovations for natural extensions of products, materials, and processes. We will conduct experiments in non-core technologies and markets. Then, we will protect those innovations through various IP methods in order to carve out differentiation in an increasingly competitive global landscape.

## Culture

The Cascade Engineering Family of Companies is a family-owned business, committed to fostering an inclusive, employee-centered work environment. We have found that a culture based on inclusion unlocks each employee's full potential and makes them an integral part of our shared success. As a diverse organization, we thrive on collectively solving difficult challenges that will improve our community, our environment, and our financial prosperity.

## Triple Bottom Line

Our history and track record show that a business focused on People, Planet and Profit – rather than profit alone – is more innovative and sustainable. Our goals are to solve difficult problems with our stakeholders and maintain operational excellence, so this philosophy continues to thrive.

## Empowered People

Using courage and consideration, we strive to create an inclusive work environment where everyone feels valued as human beings. We empower employees and treat each one with dignity and respect, regardless of racial, cultural or individual differences. Our goal is to remain an Employer of Choice that successfully attracts, retains and fully engages all employees and stakeholders. We will accomplish this by continuously identifying programs, training, and resources that support the career development and individual growth of our people.

## Trust

For our employees, customers, suppliers, shareholders, and stakeholders, we will be transparent and honest in all of our actions and communications, understanding that

trust is the basis of any strong culture. We believe that people are innately good and our expectation is that all of our employees will act with the highest level of legal, ethical, and moral integrity.

## Innovation

We understand that innovation is vital to our long-term growth and is an integral part of our culture. By encouraging entrepreneurial thinking and experimentation without the fear of failure, we discover better solutions for our internal and external customers. Embracing this process, we will continue providing value by creating unique and sustainable processes, programs, products, and services.

## Excellence

By seeking the best talent, skills, and equipment, we will achieve excellence in everything we do. We will attract world-class talent and focus on continuous improvement. Our lean culture is driven by our Cascade Enterprise System, which is pervasive across our Family of Companies.



**Fred Keller**  
Founder & Chair



**Mark Miller**  
CEO & President



**Kenyatta Brame**  
Executive Vice President



**Christina Keller**  
President - CBT





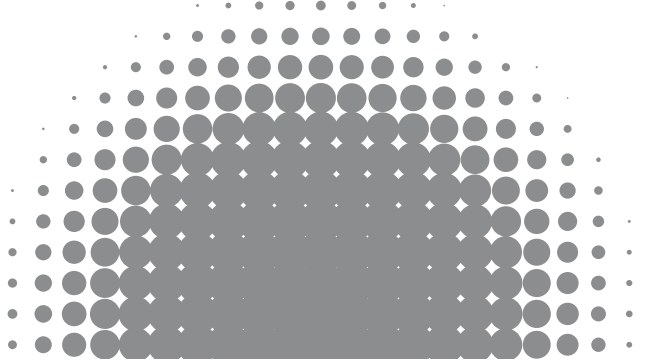


# PEOPLE

## THE HEART OF OUR BUSINESS

At Cascade Engineering, there's a Family of Companies, but also a much larger family of people. Our purpose, philosophy, and reason for existing comes back to these valued individuals, but they also encompass millions more, including the customers we serve, the partners we work with, and people from around the world we'll never have the chance to meet.

That's what we mean by "having a positive impact on society," as our purpose states. We're referring to all of society, for this generation and the next. It's a daunting task, but we believe that when you empower a passionate, forward-thinking group of people, good things are bound to happen.





# EMPLOYEE SPOTLIGHT

## Julio Fernandez

Julio Fernandez was born July 4, 1981, in Pinar del Rio, Cuba. His path in Cuba led to training as an economist, leading to an Economics Degree in 2005 from the Cuban-based University Sais Montes de Oca.

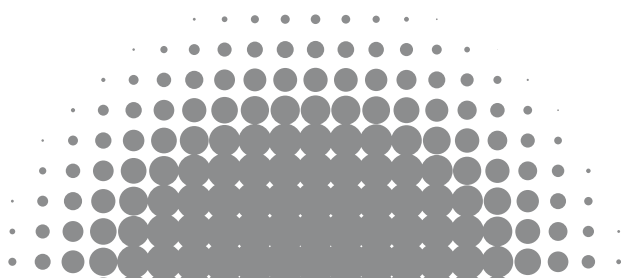
After this education, Julio found a job, but like most jobs in Cuba, the pay didn't equal the education. He then married Yadenys Abreu Alvarado, and had two boys, Leandro Antonio (4), and Alvaro Enrique (3)—the joys of his life. Despite his education and his wonderful family, Julio was trapped in a system that did not allow him to pursue better opportunities. After an agonizing deliberation, Julio decided to seek freedom in the United States, despite knowing the decision would separate him from his wife and two very young boys for an indeterminate amount of time.

In April of 2016, after a long, hard journey, Julio crossed the Mexican border into the United States where he received special status as a Cuban. By September, Julio found himself in Orlando, applying for a job as a porter with IWS—one of the few jobs he could find. Despite having very broken English, Julio's potential was seen by Gilbert Rivera

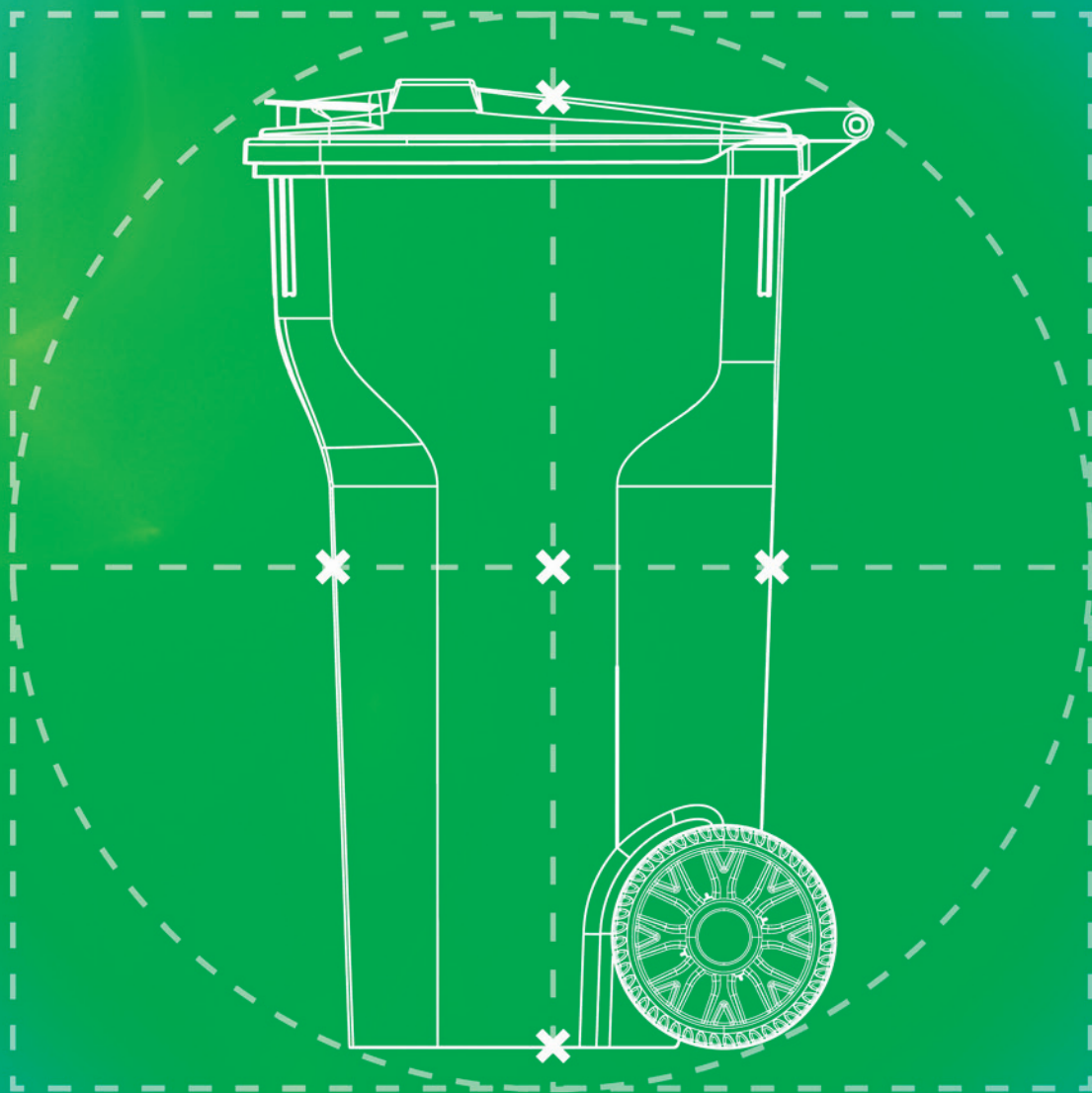
who hired him as a porter. With the new career path in place at IWS, he quickly became a lead porter and enrolled in English classes, then became route manager for the Tampa region.

Today, Julio continues to manage his Tampa route with excellence, efficiency and outstanding service. Though he has not seen his family in over a year – except on Skype – he displays unrelenting optimism, boundless energy, and a great work ethic. His favorite saying is, “Big problems require big solutions.”

IWS provided the career path, but Julio was the one who took the steps—with intention and resolve. He's grateful to have freedom in America and, fittingly, Julio will celebrate his birthday on the same day he celebrates his independence: July 4th.







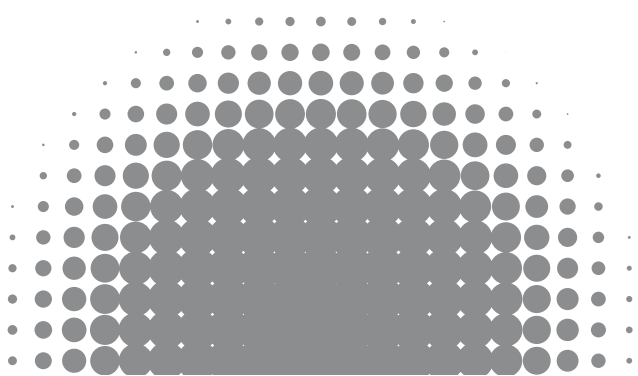


# PLANET

## MANUFACTURING FOR THE WORLD

Business is one of the greatest forces in existence, and with that comes an incredible responsibility. After all, the world's resources don't belong to anyone. They're simply on loan—and the manner in which we use them has an incredibly profound impact.

For this reason, we're taking very intentional steps to protect our environment and ecosystems. This not only goes for the actual products we manufacture, but also for the strategies and systems which support them. We only have one earth—and we're doing our best to be good stewards while we're here.





# Activating recycling systems across communities.

Southeastern Oakland County Resource Recovery Authority (referred to as SOCRRA) is a municipal corporation consisting of 12 member communities in southeast Michigan. They oversee the collection of recycling, trash, and yard waste in the densely populated, 75-square-mile area. SOCRRA also operates three facilities: a trash transfer station, a compost site, and a material recovery facility (MRF) for recycling.

Cascade Cart Solutions (CCS) previously carted one of SOCRRA's member cities in 2011. This long-term relationship facilitated SOCRRA's choice of CCS as their cart manufacturing and Assembly & Distribution (A&D) service vendor once fully transitioning all member communities to automated residential recycling collection in 2017. SOCRRA was also pleased to continue working with CCS due to our location within the state of Michigan, diligent use of recycled content in the manufacture of our carts, and our employ of a full-time, on-site Project Manager who would oversee the project from start to finish.

This would be a huge undertaking. Eleven member communities would be receiving carts. Three collection contractors were updating their truck fleets for fully automated collections. SOCRRA was also upgrading their existing MRF, which meant updating their recycling collection acceptability guidelines.

The sheer size of the project required CCS to coordinate three cart-staging areas, each in different SOCRRA member

communities. It also required CCS's team to coordinate three delivery contractors for A&D service to be completed within the required timeframe. Thanks to the collaboration and hard work of many dedicated individuals, everything came together beautifully.

In total, 100,000 64-Gallon carts were delivered to homes in 11 communities within the span of six weeks. During the six weeks, CCS was able to provide SOCRRA with real-time dashboard visibility of daily cart delivery activity via CartLogic—CCS's proprietary asset management software. Using this tool, SOCRRA was able to communicate the program upgrade to their residents, minimizing the impact on Customer Service teams and easing the influx of resident phone calls synonymous with roll-outs like these.

A project of this magnitude doesn't happen without an incredible effort. It took everyone working together—communities, contractors, and others, including funding partners. Funding came from both the private sector - The Recycling Partnership - and the public sector - Michigan Department of Environmental Quality. This is a great example of recycling accessibility and volume gains that can be made when there is full economic support.

The SOCRRA project is a solid example of our TBL philosophy in action. It has been good for residents (People) and good for the environment (Planet). It's also been good business (Profit), as the roll-outs' success will open doors for additional sales in the market area.







# Good chemistry with customers and with the planet.

One of our company's most rewarding pursuits is developing planet-positive ideas that don't compromise the quality of the product we're manufacturing. In 2017, Noble Polymers added another achievement to our list.

The disposal of paint waste is a common problem in the materials industry. No longer is landfilling a responsible solution and the low BTU content and high residual solids make this particular waste stream unattractive for energy production. Facing this problem, Noble Polymers came up with a solution.

Noble Polymers partnered with Series One – a Detroit-area consulting firm focused on finding sustainable solutions for the materials industry – to develop TPO formulations using reclaimed content. The result is a sustainable Thermoplastic Polyolefin (TPO) that competes with traditional materials—Re.Paint™ (made from powder coat) and Re.Calc™ (made from calcium carbonate filter media).

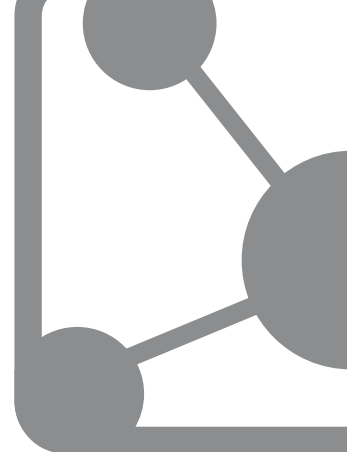
It's nearly impossible to find a mineral filler that's sustainable or recycled. Typically, that portion of the compound isn't able to be counted as "sustainable" or "recycled" content. Re.Calc™ and Re.Paint™ change the game—for good.

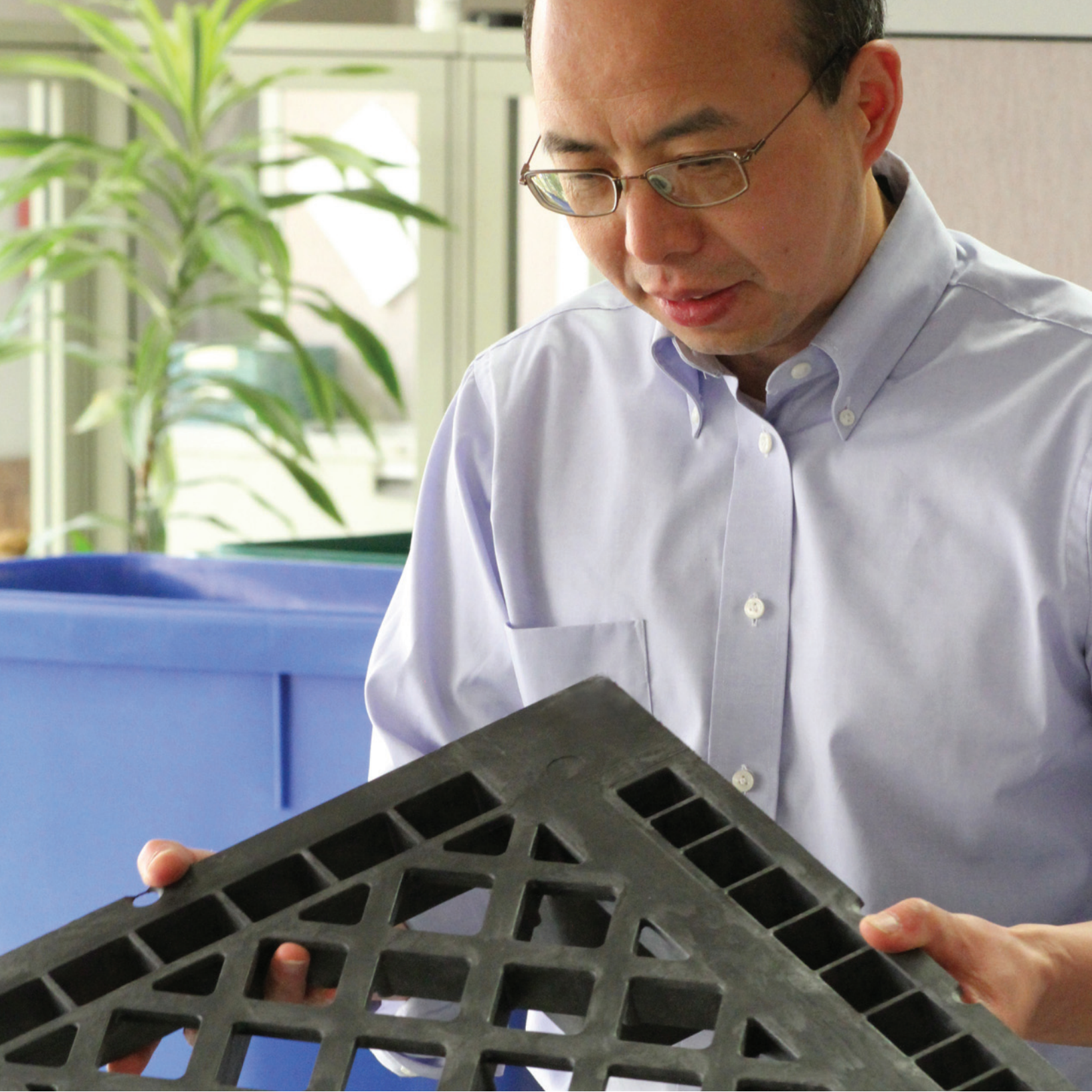
Going forward, Series One will be handling the reclaiming of the waste, then sell it to Noble Polymers as a raw material for use in plastic compounding.

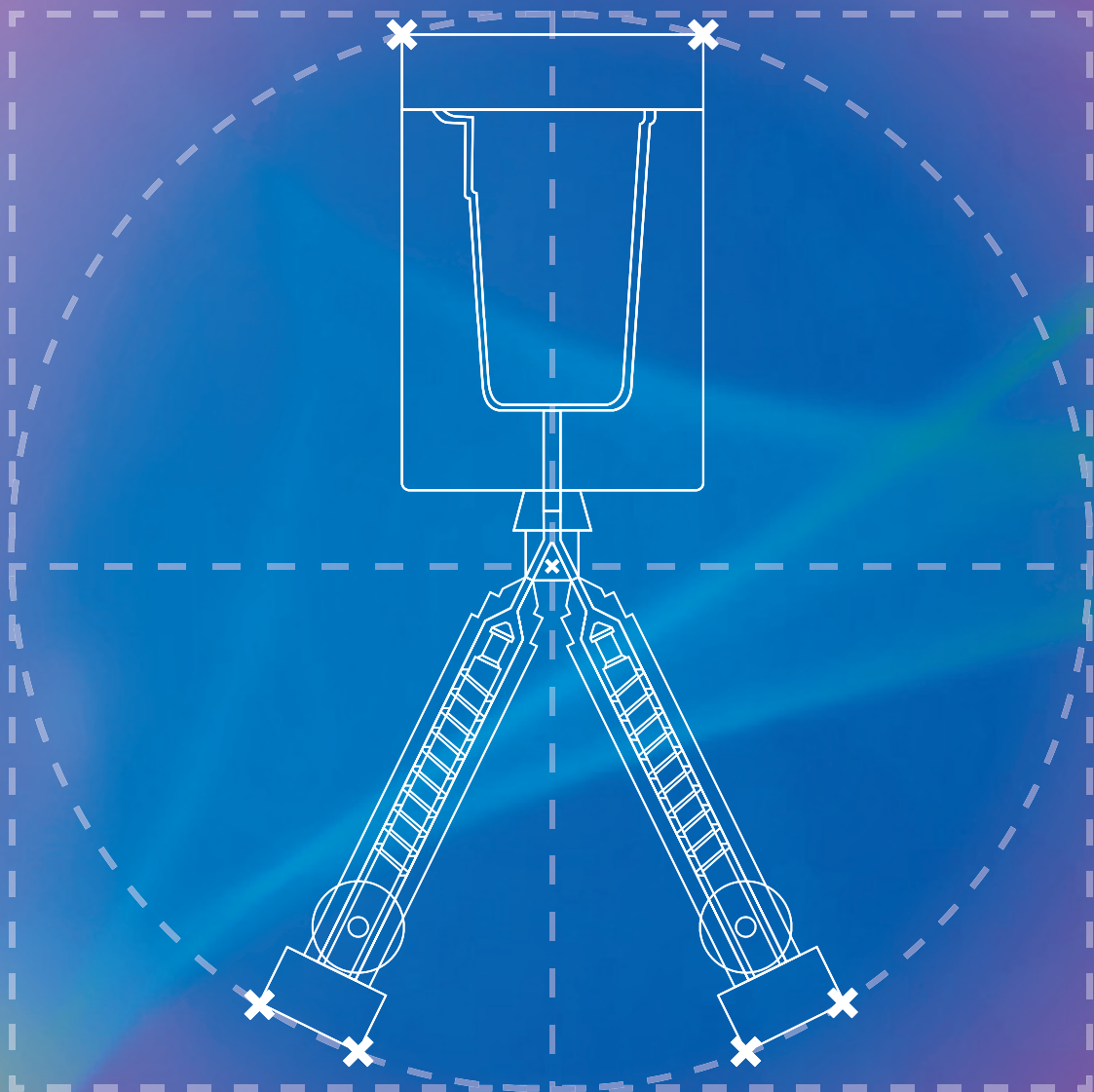
As an example of the product's application, Noble Polymers successfully manufactured a plastic pallet out of HDPE using 20% powder coat waste.

Above and beyond the sustainable aspect, Re.Calc™ and Re.Paint™ also weigh less and can provide weight savings compared to traditional mineral fillers such as talc, and calcium carbonate. This presents a unique opportunity to market the product to other companies seeking to increase the sustainability of their products. Adding to the excitement is the potential for a closed loop system, where OEMs can reclaim and use their paint system waste to make their own TPO products.

This marks the beginning of a great partnership and a world of possibilities moving forward—for Cascade Engineering and other companies looking for a sustainable solution that doesn't sacrifice quality.







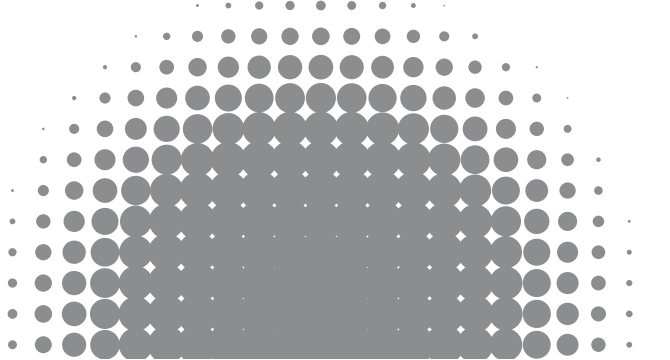


# PROFIT

## THE BENEFIT OF THE BOTTOM LINE

As a chair cannot stand on two legs, Profit is a critical and equal component supporting our TBL philosophy. With this in mind, we create value for our employees, customers, and the communities we serve, while staying true to our guiding principles.

Our vision is to be a sustainable and capable partner to our customers. Year by year, we achieve this by doing good work, solving meaningful business problems, and pushing the boundaries of what's possible for manufacturing.





# Decade Products

Decade Products offers a complete line of reusable plastic bins and pallets for industrial, agricultural, and food processing applications worldwide. For the company, 2017 was a record year revenue-wise, but one key investment, and the innovative team behind it, became the highlight of the year.

Given the acquisition of Decade Products' Sysco Court facility in 2015, along with the purchase of a new ACE mold in 2016, one would think the company would stop investing—but the team isn't easily settled. Believing that technology and innovation are only as good as last year's model, the company invested in one of ABB's 7 axis robots in January of 2017—a state-of-the-art robot for customizing their bins.

One of Decade Products' key initiatives for 2017 was to improve quality. Securing the new robot, the company was able to measurably streamline the cutting and drilling in their customization department. The investment also improved their safety measures—a fundamental element of the business.

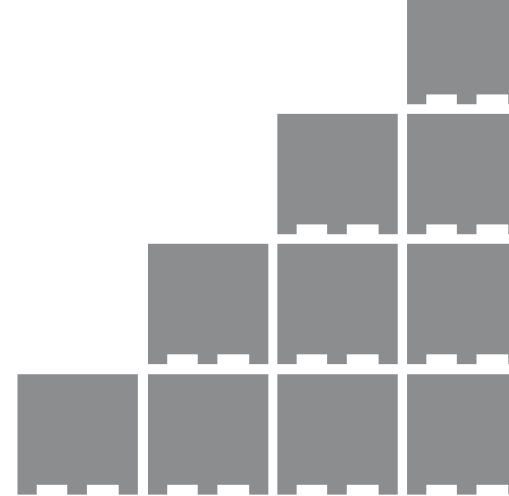
The robot also brought new business opportunities. After the investment, Decade Products partnered with True

Leaf Farms—a company that shares the same values in regards to people, planet, and profit. Since the robot assists with repeatability, Decade Products provided True Leaf Farms with a bin customized to their exact needs—as each bin could be cut, welded, and assembled to precise specifications.

Another customer, Rio Valley Chili, also assisted Decade Products in achieving a record year in regards to revenue. Rio Valley purchased a substantial quantity of shortened customized bins.

The team took their standard MACX bin, cut it in half, drilled holes in the corner posts, and riveted on corner caps. Without the robot, Decade Products would have faced challenges keeping up with high-volume jobs like these.

Given the record year and high-level investments, Decade Products has positioned itself in the market as a leader and innovator. It's all thanks to a mindset of innovation, continuous improvement, and serving customers faster and more precisely.







# Innovative Plastic Technologies

Healthy employees are happier employees, and since research has shown 75% of work in industrialized countries is performed while seated, the office chair has a significant impact on a person's health and wellness—for better or worse.

With this in mind, Haworth set out to design a chair fully centered on the user, with pioneering levels of balance, flexibility and performance. They call it Fern—a chair that looks simple, but is informed by a high level of science, engineering and creative thinking, enabling the chair to work with you, not against you.

Fern's center structure includes a suspension system Haworth calls Stem, which supports a number of structures called Fronds. These Fronds – each one uniquely designed – support a different area of the back. The result? When working from the Fern chair, the entirety of one's back is supported all day long.

Fern has a complex design, using materials in ways they've never been used before. When Haworth needed a plastic injection partner for the development of the key component in the back of the chair, they called on our team.

At Cascade Engineering, we love a good challenge and have become known for our ability to manufacture first-of-its-kind products. Working closely with the engineering team at Haworth, our material suppliers, and our tooling suppliers, we developed, evaluated and aligned new methods of process

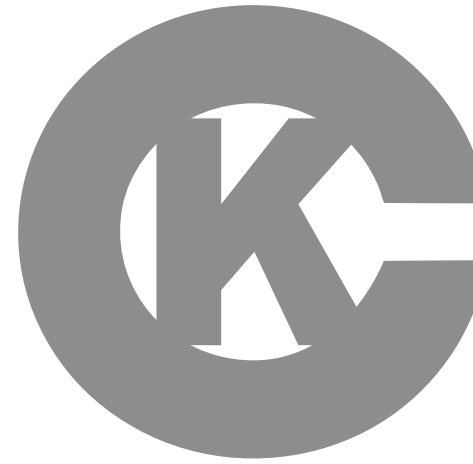
control and tooling control for the Fern back. The result is the core component of a revolutionary chair.

In recognition for our work, we were honored with the 2017 Innovation Award from Haworth. The award recognizes suppliers who have demonstrated superior effort and value to Haworth in driving innovation. They specifically highlighted three areas:

- Cascade Engineering created a unique lumbar and thoracic support product, enabling key performance characteristics which made the Fern chair recognized as best in class by ergonomic experts in the automotive, hospitality and furniture industries.
- The approach of matching up a material selection with a manufacturing process yields a geometric part application that has never been done before in the industry.
- This innovation was achieved utilizing scientific molding steps enhanced with secondary processes that push Fern's back beyond standard industry manufacturing feasibility and design guidelines.

Fern is a revolutionary answer to the ergonomic working problem, allowing workers to sit well, work well and, ultimately, feel well. We're proud to have been part of this new movement.





## CK Technologies

At the CK Technologies facility in Montpelier, Ohio, a prime paint line covers parts for the commercial truck and bus industry. Ten thousand parts are successfully handled on the line each week, but missing primer is one of its top failures. This causes parts to go through the process more than once, impacting capacity and increasing the potential for a customer to receive a part that hasn't been primed. The problem is much more complicated than it sounds, but CK Technologies was determined to find a solution.

CK Technologies' paint line applies prime paint using 70 different programs and averages 5,000 racks weekly. Their first time yield was only 88.5%.

Brad Geiser, CES Manager and project leader, applied the methodology he was learning while attending Paccar's Six Sigma training to the problem. Each phase of the training brought different methods and tools to quantify the problem and identify the root cause. One useful tool applied by the team was a cause and effect diagram that narrowed the most likely contributors to be line stoppage during production, inconsistent work performance, and unreadable barcodes.

The team then began a data-gathering process, they identified the barcodes that were unreadable, low fluid

and no fluid application, and part spacing as types of failures. They analyzed the data and implemented two improvements: barcode scanner replacement with new technology to address misread labels and pressure increase on the fluid line to accommodate when the line paused.

The team also created new laminated barcode labels and implemented a cleaning procedure for them. The alarm system was updated to alert operators when parts weren't meeting paint application targets. Then came the moment of truth—and the results were extremely positive.

The team took the failures from 39,107 defects per million opportunities (DPMO) to 6,880 DPMO—a whopping 82% reduction in defects, increasing yield to 98.9% and resulting in a \$90,466 annual benefit.

Solving problems is a messy process. It can lead to dead ends and frequent frustrations. Solving this one wasn't simple for CK Technologies, but a spirit of perseverance and teamwork had a measurable impact—one which will benefit the business moving forward.



# Cascade Engineering Europe

Here's the reality: business is tough. Competition is fierce and challenges are always present. That's why it's critical to have a strong culture and values—because principles should be followed in good times and bad.

This year in Budapest, Hungary – where Cascade Engineering Europe (CEE) is headquartered – the automotive team experienced tougher competition. This was on top of increasing customer demands and a strained labor market. Despite the challenges, the team came together, accelerating the automation of labor-intensive workstations and continuing to install camera control monitoring systems in their assembly cells. By embracing the idea of continuous improvement, the team achieved better results and inched closer to their Level 0 objectives.

In 2017, the most memorable moment was welcoming the Cascade Family of Companies - Board of Directors to Hungary and celebrating CEE's 25th anniversary. The enthusiastic workforce in Hungary has endured several challenging periods in the past, but results from the last decade show they've found their way. Moving forward, CEE is poised to achieve outstanding results in three major product segments:

## Kinematics

Continuing their success with commercial vehicles, CEE was nominated to complete the new air vents for MAN

Trucks with full design responsibility. The interior of today's trucks is getting more refined and is becoming an important differentiator for our customers. After awarding CEE with this nomination, MAN highlighted that CEE's latest project with the Volkswagen commercial segment was a major reason they were awarded the business.

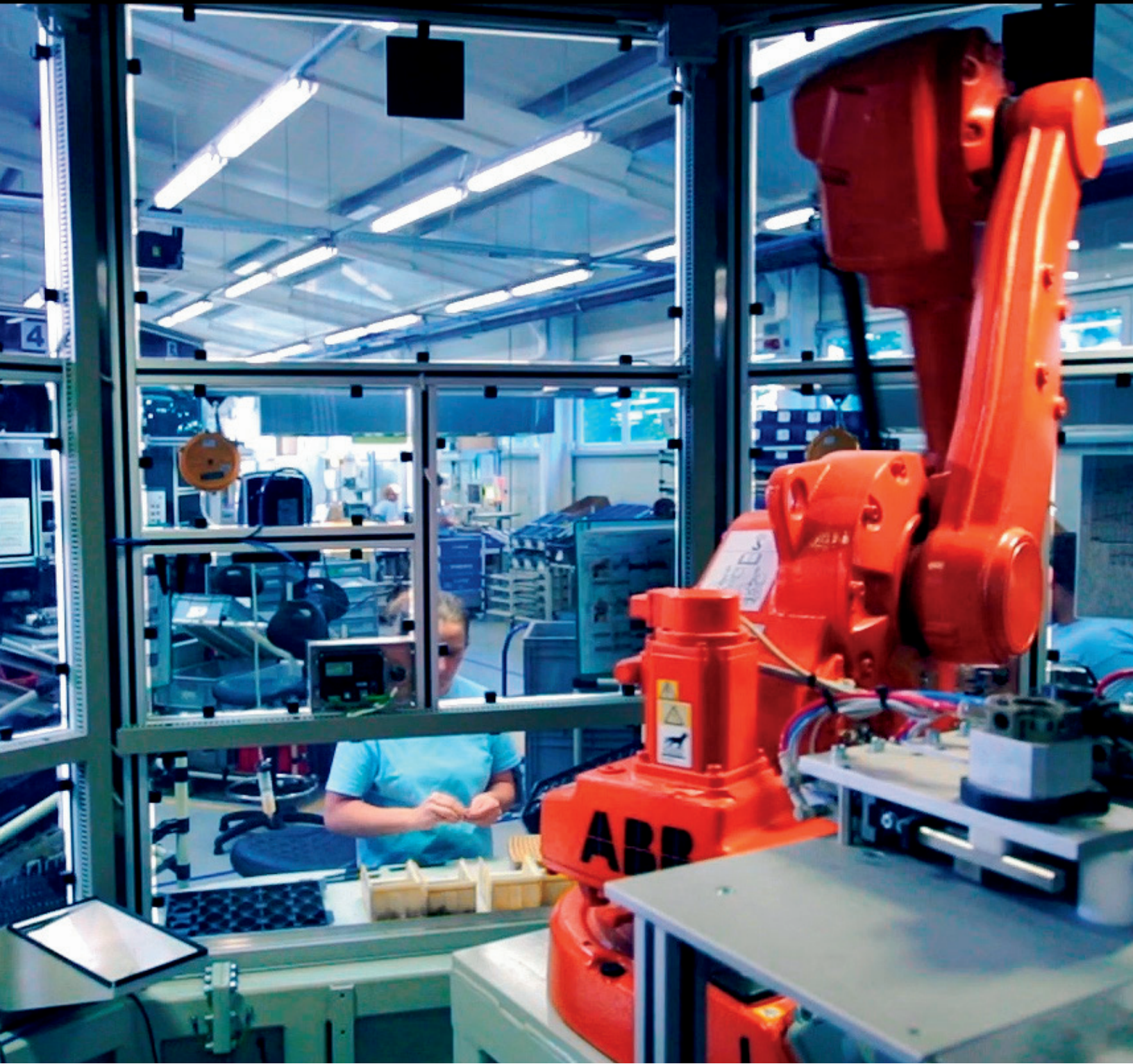
## Fluid Quick Connectors

In FY2017, CEE worked with six different customers, serving 18 different assembly plants with pre-production prototypes and production connectors. A new internal team, composed of talented young engineers, supported the launch of newly awarded products resulting in a 20% increase in revenue for this product line.

## Multicomponent Products

These products give CEE a competitive advantage. With new business in HVAC (heating, ventilation, and air conditioning) assemblies in FY2017, CEE will witness considerable growth. The knowledge gained in the development, tooling and production of these new products gives CEE a distinct advantage when pursuing new customers.

Despite being separated by thousands of miles and numerous time zones, the CEE team embraces the same purpose and values as our parent, Cascade Engineering and the entire Family of Companies.





# Invisible Waste Services

As a diverse employer, Invisible Waste Services (IWS) employs individuals originally from Puerto Rico, The Dominican Republic, Haiti, Cuba, and many places in between. In FY2017, IWS identified their brand strengths as the following:

- Recognizing employees as the heart of the brand.
- Empowering them to think bigger and bolder about their role with the company.

Being that IWS's workforce is composed mostly of entry-level porters who often know very little English, this would be an incredible challenge. It would require some dramatic changes to take place, but IWS was willing and determined.

The strategy was straightforward: Transform IWS into a company known for its people and outstanding level of service. The team knew this meant investing heavily in their workforce—empowering them to achieve great things. With that, they formed a new strategy revolving around these core components:

## Providing Superior Service

Investing in long-term employees, rather than short-term, temporary work.

## Paying a Living Wage

Increasing base pay for all porters and rewarding them for their work.

## Creating Career Ladders

Directly impacting retention and engagement.

## Supporting Immigrant Workers

Teaching English language skills and providing a path to success.

## Elevating the Brand

Improving the visual appearance of trucks and employee uniforms.

## Expanding Services

Adding pressure washing and bulk hauling to the service portfolio.

Today, a few months in, IWS has seen great improvements. Their employee-first strategy is doing more than building trust with customers. It's giving their workforce a direct path to success.



## Automotive Americas

In 2017, thanks to CK Technologies, our automotive group gained a European-based customer—one of the world’s premier automotive brands. Here’s how it happened.

Being a design-forward company, the customer decided to elevate the exterior of its vehicles. The vision was a patterned finish – instead of a painted finish – for their underlays, the decorative surface covering the structural bumper. After the decision, the customer developed the technology in Europe with Akzo Nobel, along with an injection molding supplier. Once developed, they needed a supplier for their North American operations.

Historically, underlays have been painted, but the customer sought a patterned look to promote a ‘sport-luxury’ image. In-mold film is typically used in automotive interiors, but on the exterior, they provide different advantages, including design freedom, performance improvements, and durability. In North America, Akzo Nobel provides films for DT Manufacturing. DT makes mold-behind films for truck grilles, but the part the customer needed was too large for DT’s presses. That’s when Mike Ellerman, VP Technology & New Business Development of CK Technologies, was contacted.

Since CK Technologies had the molding capabilities, Mike devised a strategy where DT Manufacturing would vacuum-form the film and Cascade Engineering would mold-behind

the film. Cascade Engineering would then sell the part to Plastic Omnium, who installs it for the automaker on their fascia assemblies.

CK Technologies, Cascade Engineering, and DT Manufacturing worked as partners to develop the quote, eventually winning the business.

It was a big win, and the underlays marked a series of ‘firsts’ for Cascade Engineering and the auto industry:

- The underlays are among the largest in-mold films ever made for the auto industry.
- This was the first time the legendary brand has used this technology on the exterior of their vehicles.
- And it was the first time Cascade Engineering worked with Plastic Omnium (a new customer) and DT Manufacturing (a new supplier partner).

In order to meet the extremely high standards of making a product like this, a new ‘Environmentally Controlled Room’ has been constructed to ISO 8, FS209E class 100,000 standards. It is temperature controlled with filters which will continuously scrub the air clean, and other state-of-the-art features.

Our 33rd Street location in Grand Rapids has undergone a relaunch of 6S in preparation for this new program and 6S tools and training for the entire plant team are complete.



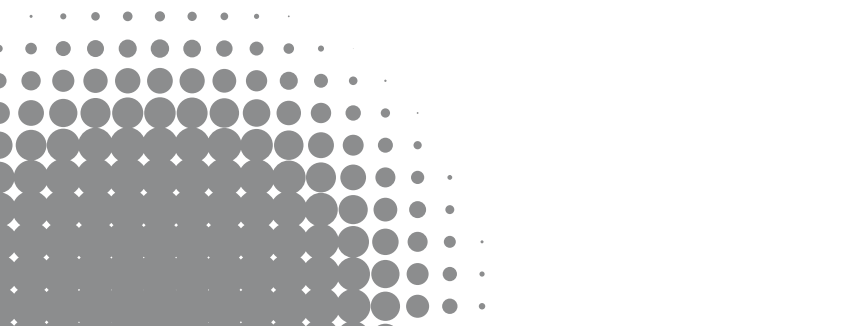


# Glimpses into Cascade

## Short Stories Across Cascade Engineering

The culture of Cascade Engineering can be seen and felt throughout our Family of Companies, but also exists in our initiatives, programs, support teams, and long-term strategies.

The following pages provide a glimpse into different pieces and parts of who we are and what we're doing to make a difference for people, the planet, and our bottom line.





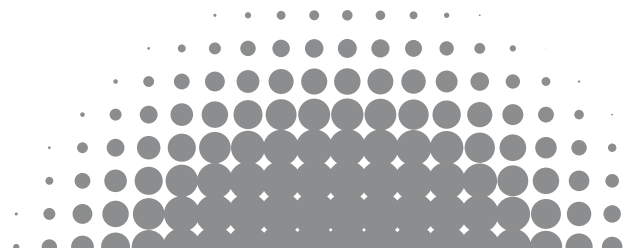
## U of M: CPO Magnify Team

At Cascade Engineering, we believe paving the way for a positive future involves equipping and empowering the students of today. This is why, for the last three years, we've participated in a program that encourages the development of relationships between Cascade Engineering and local colleges and universities.

The Magnify Program was started to train, educate, and exhibit the best practices of Positive Organizations. For the last three years, we were asked by the University of Michigan's Center for Positive Organizations (CPO), based at the Ross School of Business, to spend a week with four of their brightest undergraduate students. The benefits are extremely mutual—students join us on campus for an in-depth look at our TBL philosophy, and we gain valuable insights about this promising, up-and-coming generation.

Our founder, Fred Keller, is an Executive in Residence Emeritus at the University of Michigan's CPO and we are highly engaged with the Ross School. It was an honor to host these students and show them how success in business can also be a force for good.

In addition to the University of Michigan, in 2017, leaders from Cascade Engineering engaged with students from Cornell University, Haworth College of Business and Cooley Law School (Western Michigan University), Aquinas College, Calvin College, Davenport University, Grand Rapids Community College, Grand Valley State University, Kendall College of Art and Design, IIT Institute of Design, Cornerstone University, and Kuyper College.





## Center for Innovation

Years ago, fabricating an object would take weeks, possibly even months. Today, it happens in a matter of hours thanks to 3D printing.

Cascade Engineering is taking advantage of 3D printing technologies to provide innovative solutions for our internal and external customers. 3D printing – also known as additive manufacturing (AM) – is a process used to fabricate three-dimensional objects by building the object a layer at a time. 3D printers are currently in use at our Budapest, Grand Rapids and Montpelier facilities.

Cascade Engineering uses printed parts for design validation, proof of concept, sales demonstrations and low-volume prototype builds. We also use AM for building jigs and fixtures, part nests, robot grippers, end of arm tooling, assembly aids, and quality check gages.

Better than viewing a drawing, holding a physical part provides the ability to visualize complicated geometry and evaluate fit and function which enables a greater level of feedback and understanding of whether the part will perform as intended.

For example, we printed six variations of an end-of-arm component before committing to a hardened steel tool. In other applications, we have used printed end-of-arm components in production, completely eliminating the need to purchase components at a higher cost and longer lead time. We have also printed tooling inserts that allowed us to mold a limited number of prototype parts for review.

As the development of our equipment and processes evolves, we look forward to pursuing new and exciting ways to utilize AM to provide innovative solutions for our internal and external customers.



## Legal & Risk Management

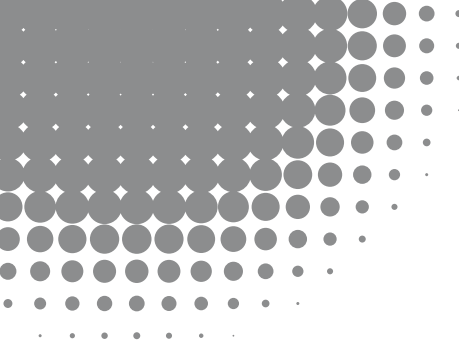
At the Cascade Engineering Family of Companies, we're dedicated to following lean principles. Done right, this methodology works across the organization; not just in operations, but for all groups, departments, and leaders.

When our legal group began their lean journey five years ago, they were challenged with how to apply lean tools traditionally used in manufacturing operations to their work in the legal department. Today, they have a clear understanding of how lean principles can lead to dramatic improvements, evidenced most recently by an application launched this past year.

One of the key services the legal group provides is the cataloging and monitoring of contracts. A database allows the group to enter action items. Once entered, the appropriate individual knows when an agreement is terminating, when it's time to renew, when obligations are expiring and a number of other items. It's a useful tool; but as the organization has grown and activity has picked up, the system began running very slowly. At times, it would stop working altogether. Not only did this interrupt their work, it also required IT resources to research new ways to configure the database just to keep it going.

In August of 2017, the group launched a browser-based web application following lean principles. The tool significantly reduced the waste of waiting and increased productivity through double-digit improvements in the pace of entering new records, searching for records and remotely accessing records. Some of the other benefits include new functionality that automatically identifies upcoming action items and enhanced security, all at a very reasonable cost.





## Supply Chain

2017 has been a difficult year from a supply chain perspective. Through these difficulties our suppliers continue to be the backbone of support for our business. Hurricane Harvey compromised the operations of major resin suppliers in the Houston area, at a time when resin was already in high demand. Resin supply has garnered much of our attention since, but hope is on the forefront with increased polyethylene capacity having been achieved, bringing better pricing and more abundant supply.

We continue to work on adding alternative material options for our organization as it supports two legs of our triple bottom line. Searching for new suppliers and materials is part of our daily activities.

CES (Cascade Enterprise System) improvements are utilized everyday by the supply chain team and our suppliers to remove waste and improve our systems and processes. Reduced quoting time is a customer expectation, and therefore a focus for us. Timely and accurate quoting is a catalyst for opportunities to grow as an organization along with transparency and alignment throughout the entire value chain.

Our top five suppliers for FY2017 were Chevron Phillips, Noble Polymers, Nova Chemicals Inc., GDC, and DSM Engineering Plastics. All except GDC are resin suppliers, which certainly is not surprising due to our injection molding expertise and focus.



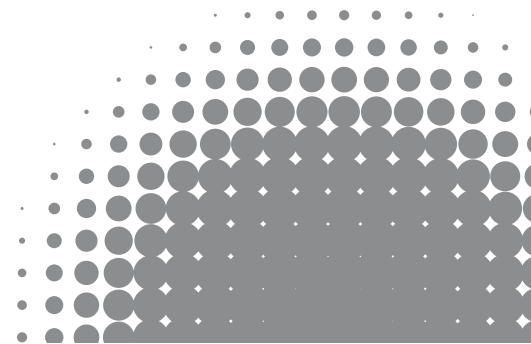
## CES

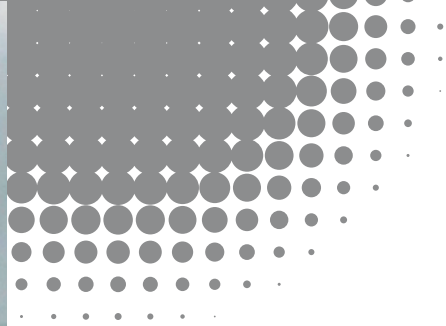
The Cascade Enterprise System (CES) is our company-wide growth strategy that empowers all of us to continuously improve the way we work. In 2012, with decades of lean experience under our belts, we embarked on our CES Immersion Journey—a strategy engaging every department and person in lean methodologies.

Five years in, we saw a great opportunity to integrate our lessons learned and make the CES strategy a defining part of a person's role in the company, so we initiated a pilot program that revised job functions and descriptions for leaders in Operations. The revised descriptions included specific CES systems and methodologies for running the shop floor and executing manufacturing strategies. Following the program's initiation, we launched a formal CES Certification program in Grand Rapids to support current leaders in their new roles and create a development pathway for future leaders.

We are seeing great things from our Operations leadership in Grand Rapids. In the coming years, we plan on spreading our learning throughout the Family of Companies.

Establishing lean skills and lean thinking as the prerequisite for leadership positions was a pivotal milestone in our CES immersion. We are excited to embark on the next phase of this meaningful journey.





## Quality Systems Assurance

Over the last two years, in the spirit of continuous improvement, our quality systems assurance (QSA) department has been working alongside IT to integrate and implement system improvements. The collaborative effort ensures we're doing our best for our customers every step of the way.

A major improvement involved training records stored in MQ1, which are now available through MODS. Another improvement required our operators to log into the work cell, and verify their competency, or work with a certified trainer.

These changes have included several benefits. First, the system will no longer let an employee log in if they are not trained on the job, and have not achieved competence per ISO/IATF requirements.

Further, if an employee has not run the job for an extended period of time (short-term disability, service job, etc.) the trainer verifies the employee is still able to run the job. The system also verifies that employees are trained to the latest document revision by notifying them of document changes since the last time they ran the job. This addition fulfills new IATF requirements for skills retention and eliminates audit non-conformances related to training.

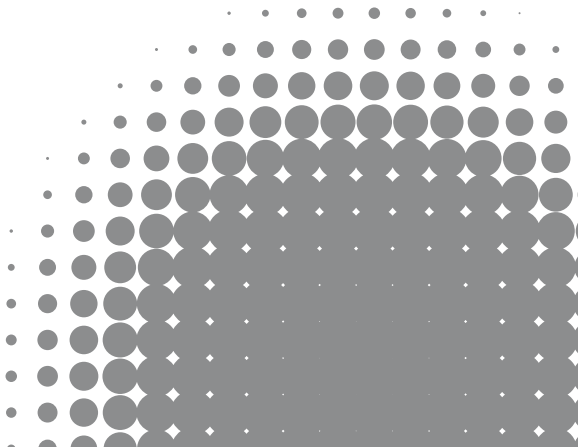


## Information Systems

After Hurricane Harvey, the primary and backup communication systems at the CK Brownsville, Texas facility were down. Our ISP was overwhelmed with the sheer scale of infrastructure failure, and we determined that we needed to create an alternative solution on our own. What we came up with was an ad hoc network of WiFi hotspots.

We developed a temporary network based on integrated hotspots which provided online access. Once employees were connected to the VPN through this network, we reserved an IP address for each user. QAD was then able to be redirected to data stored locally on each user's computer. Once this was all working, CKT's shipping department was able to resume production, and print all necessary labels.

We also found an alternate solution through another cellular provider using their LTE network. During the testing phase a cut in the local fiber in Brownsville was located and repaired which brought them back to full network connection on both lines. This solution is applicable to any location that may experience such an outage in the future.



# PEOPLE

- 1 Safety is our number one priority. We are proud to report that we come in below the national average of 3.9% and strive to decrease this rate year over year.
- 2 We value every human being at Cascade Engineering and we work to ensure that all of our employees have an opportunity to build successful careers.
- 3 We believe that business has the opportunity to make a positive impact on society. We are proud to contribute to our community.

# PLANET

- 4 We use this metric to measure our environmental footprint. We work at decreasing this number year over year.
- 5 We strive to increase our use of post-consumer and post-industrial recycled resin in the manufacturing of our products.
- 6 At Cascade Engineering, we take trash seriously. We have spent \$0 on landfill costs over the last six years.

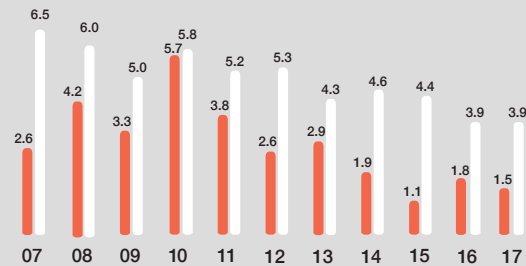
# PROFIT

- 7 In fiscal year 2017 for every kWh of energy we used, we made \$3.40 per hour in sales dollars.
- 8 This graph represents our fiscal year sales for the entire Cascade Engineering Family of Companies over the past 10 years.

## Incident Rates:

Cascade Engineering compared to National Average

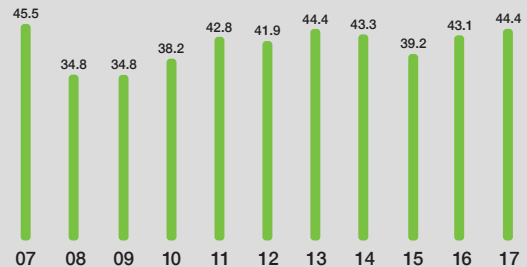
1



## CO<sub>2</sub> Emissions

Metric Tons of CO<sub>2</sub>

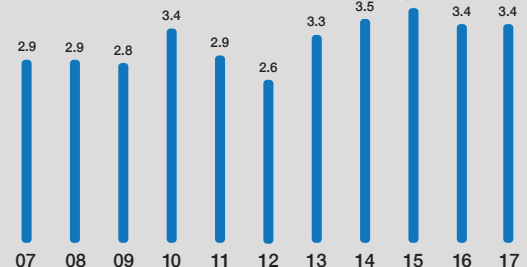
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## Sales Dollars

Per Kilowatt Hour

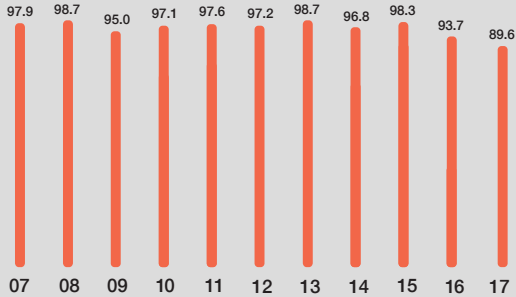
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## Welfare-to-Career

Employee Retention  
Rate Percentage

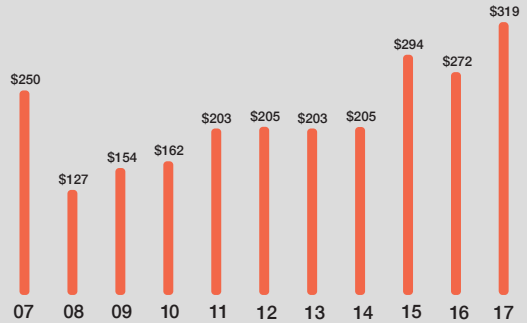
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## Social Contributions

(\$ In Thousands)

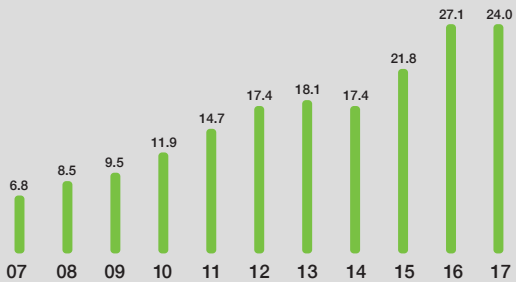
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## PIR/PCR Usage

Pounds in Millions

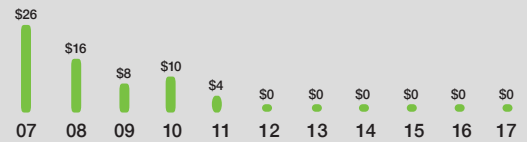
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## Landfill Cost

(\$ In Thousands)

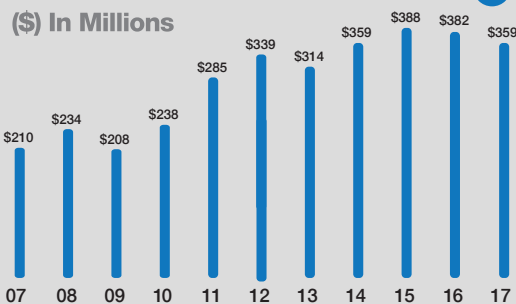
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## Sales Dollars

(\$ In Millions)

8





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