



## All hands on deck for epidemic prevention! Delta works as one to fight against COVID-19



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The spread of novel coronavirus across the world has impacted industries and is testing the resiliency of companies. Delta set up Global Covid-19 Response Command Center at the very first moment and has established various measures to cope with the crisis. We strengthen employees' protection in the company, proactively adapt to the business needs at frontlines, and organize manpower to prepare for the resumption of work. In terms of technologies, we help the fight against the virus by providing production efficiency for mask making machines and medical imaging equipment through our industrial automation solution and uninterrupted power system. Also, through online education platform, we transform offline interaction to online communication, so as not to interrupt work and learning. More detailed content awaits you in this issue's Special Report.

The linking of IoT applications has driven the establishment and development of smart cities in the world, and the infrastructure of cities—street lighting system—has become important nodes for gathering big data in the urban environment. Delta started developing Connected LED Street Lighting Solutions in 2010, and has installed more than 600,000 LED street lights worldwide. In this issue's IoT Smart Solutions, we will be introducing Taichung Central Park, a project by Delta's Building Automation team winning Cloud Computing & IoT Innovation Award. Furthermore, the integration of smart urban management platforms makes it possible to realize the goal of a smart city and creates a more human-centric urban living space.

"Brand People" continues to bring you stories about the marketing teams of various regions. In this issue, we interview the marketing manager of Delta Americans, Mike Gazzano, where he shares how he drove the growth of branding business during Delta's transformation in recent years. By establishing marketing strategies and leading the team in liaising with the business units, he has strengthened communication internally and externally. Mike also shares with us his experience in growing together with Delta, so do stay tuned for the exciting stories.

Delta continues to target the two major trends, namely smart manufacturing and building automation. In this issue's Brand Circle, we share with you cases of film cutter solutions and servo press, and how to increase production flexibility and efficiency through automation. In early 2020, Delta participated in the International Air-Conditioning, Heating, Refrigerating Exposition (AHR 2020) held in Orlando, USA, showcasing our complete building automation and air-conditioning solutions, under the theme, "Smarter Buildings, Smarter Cities". We integrated our subsidiaries' specialized building technologies where visitors can experience various applications of smart buildings and cities through Delta's building automation solutions.

To address the severe challenges of climate change, the World Economic Forum (WEF) published "The Global Risks Report 2020". This issue's Delta Green Life contains excerpts of the possible risks in the next decade listed by WEF, highlighting the surrounding environmental problems and our responsibilities. We also introduce a green building of Fab Green Village in Danshui, where you can experience the incorporation of green living into building, and the lifestyle of coexisting with natural environment.

Brand Management Office





All hands on deck for epidemic Pprevention! Delta works as one to fight against Covid-19

## All hands on deck for epidemic prevention! Delta works as one to fight against COVID-19

Text by Brand Management Office

With Covid-19 spreading across the globe, businesses are tested for their ability to respond to the crisis. Delta has sought to deliver all possible help from company headquarters to global business groups, taking proactive measures to reduce the impact of the epidemic.



### Global Covid-19 response command center quickly set up to tackle tremendous challenges

On January 30th, the first working day after the Lunar New Year, Delta's management quickly gathered all relevant units for an emergency meeting and set up a Global Covid-19 Response Command Center. The resulting instructions were to put employee safety above all else during epidemic prevention efforts, and strive to control the epidemic while resuming operations. The meeting also announced that all employees should suspend their business trips. The command center is paying close attention to the development of the epidemic and closely collaborates with factories and business units around the globe to implement Delta's plan for prevention and control of Covid-19. Delta has appointed a general commander of the global response team, who in turn has appointed top-level managers to command Delta's regional response teams in China, Southeast Asia, Northeast Asia, Europe, and America. The command center has proposed six areas of focus: epidemic severity levels and corresponding responses, organization and work allocation, environmental management, personnel management, business trip and attendance management, and external/internal communication management.

Director of the Delta Covid-19 response command center, Jesse Chou, who is also Delta's spokesperson, said, "The biggest challenge is having employees return for the resumption of operations, which can't be rushed. Everyone must spend enough time in quarantine and self-monitoring." The key to prevention and control is personnel management. For example, in China employees returning from other places must all be quarantined for 14 days. In addition, every day employees must measure their own temperatures, disinfect hands with alcohol, and fill in a health declaration form. Each factory is equipped with infrared thermal imaging cameras to screen personnel entering the factory, and supplies of protective face masks are available to employees. Delta has also set up mask production lines in East China and begun manufacturing with production capacity that is sufficient to meet the needs of company staff. In addition, business trips are strictly controlled and have been replaced with video conferencing to reduce the risk to employee health. As for non-employees, all guests, visitors, and suppliers must have their temperatures taken, disinfect their hands, and fill in a health declaration form when entering each factory.



Delta factories take the temperature of each person entering the factory, and supplies of face masks are available to employees

Another challenge lies in the acquisition of supplies related to the epidemic. All the Delta branches abroad, including those in America, Thailand, and India, should proactively search for and procure supplies. The financial and central procurement departments should also adjust the payment procedures as flexibly as possible to complete the payment efficiently and secure the supplies in time.



## Factories strive to resume operations—A race against time

The production and R&D base in Wujiang District, Jiangsu is an important hub for Delta. Currently, a shortage of labor has become its biggest challenge. Director of Wujiang No. 3 Factory, Jing-hao Yu, who rushed back to work during the Lunar New Year, has worked at Delta for 30 years.

To resume operations as soon as possible, the factories have taken proactive measures. "In addition to fulfilling their main responsibilities, the director of each business unit also takes charge of recruitment. Recruitment can be divided into three categories: internal recommendation, employees returning to work, and direct recruitment. Each department is assigned a recruitment target." Yu gave an example of employees returning to work, and said the company dispatched chartered vehicles to pick up employees from various districts. With "point-to-point and one-stop" transportation service, Delta sent vehicles to bring employees back. To date, Delta has brought 1,609 employees back. The HR department swiftly prepared lists of returning employees for review, proactively applied for permits for employees to leave their respective villages, and checked their personal travel histories. HR also coordinates the dispatching of vehicles, and drivers transport employees with permits and entry passes. In line with local government policies, the company carries out recruitment events in key communities to shorten the distance with applicants. New recruits are encouraged to engage in employee online training sessions and take exams using Wechat groups, MOA, and the Academy platform.



The company dispatches chartered vehicles to provide "point-to-point and one-stop" transportation service for employees



### Support for frontline epidemic prevention efforts— HR gives strong backing

As first-line personnel strive to resume operations, HR staff must not only take on the responsibility of recruiting workers, but must also fulfill their administration and logistics duties. Zhengbin Lin, Delta Group China regional head of HR, said, "The factories were eager to start production again, but for the safety of our employees, we thought it was better to wait a while. We have even quarantined our employees in a way much stricter than what is used by the government. We'd rather lose some business for the time being. This is a manifestation of people-oriented management."

Lin, who experienced the SARS crisis, pointed out that the company makes use of technology and keeps track of employees with Wechat by requiring everyone to check in and keep records of their location. As for external communication, HR also strives to improve communication channels together with headquarters.



### Delta's Industrial Automation Solution and Uninterrupted Power System build fortress of epidemic prevention

Since the outbreak of Covid-19, there has been a shortage of masks all over the world. In hospitals, the demand for additional diagnostic equipment is also an issue. Delta has helped many mask manufacturers produce masks through a variety of industrial automation products such as PLCs, servers, HMIs and frequency converters, and has also launched its "Full Automation Solution for Planar Mask Making Machine" and "Full Automation Solution for Folding Type Mask Making Machine". At the same time, the UPS team supports the medical system through manpower deployment and excellent power supplies, responding quickly to epidemic prevention needs through both measures.



In response to the demands of epidemic prevention, Delta has used various industrial automation products such as PLCs, servers, HMIs, and frequency converters, to help a number of mask making machine manufacturers speed up production



In the market, there are mainly two kinds of masks, planar masks and 3D masks, which require manufacturing equipment using different technologies. Delta has corresponding automation solutions for each. For the planar mask making machine, the process is relatively simple, while process control is important. The machine adopts Delta's programmable logic controller (PLC) AS300 series and servo driver ASDA-A2 series. Delta's servo drive system ASDA-A2-M series can achieve production speeds of 150 pieces per minute.

The folding type mask making machine needs to weld ear strings before die cutting and forming because the shape of the mask is three-dimensional. The production efficiency of the folding type mask making machine is slower than that of a planar mask making machine. Manufacturers can improve the production efficiency of the mask making machine by changing the actions of welding the ear strings and edge sealing into flying shear. The mask making machine manufacturers chose Delta's CANopen busbar-type motion controller DVP15MC11T to control up to 24 real axes and support multi-axis commands such as electronic gear, electronic cam, rotary cutting, and G-code. This solution can work together with Delta's servo drive system ASDA-A2-M series, which adopts the pull-back curve of the flying shear band. It is simple to use, has better control performance, and can quickly respond to the needs of the front line.

At the end of January, the medical customer in northeast China was ordered to produce CT and X-ray machines for Wuhan's Huoshenshan Hospital, Leishenshan hospital and other hospitals in Hubei. To support badly needed frontline UPS power supplies, Delta's Wujiang factory applied to the local government to start work immediately and promptly answered the power demand for medical equipment using limited manpower and materials. As of mid-March, Delta had produced a total of 300 UPS units for various hospitals, 3 units for Huoshenshan hospital and 1 or 2 for each of other hospitals. It is estimated that by the end of the epidemic in April, Delta will ensure the power supply of the CT equipment and facilities in a total of 100-plus general hospitals in mainland China.



The UPS team at the Wujiang factory asked returning employees to fully meet the delivery demands of medical equipment customers

During the same period, Delta received an urgent notice from customers that mainland China needed 1,000 new-model disinfection cabinets in hospitals and the programming and prototype work had to be completed within a few days. Delta worked closely with its channel partners to provide the disinfection cabinet with electrical systems, complete the program debugging earlier than expected, actively coordinate the factory's emergency stock, organize the supply of goods, and save precious time.



## Delta online courses and DeltaMOOCx help prevent the epidemic from interrupting work and learning

The epidemic has made working from home a necessity for many. To help partners, distributors, and customers fully understand Delta's industrial automation products, technologies and solutions without leaving home, Delta joined forces with the Daodao live broadcast platform to present "10 days to understand Delta's industrial automation" that featured 10 consecutive days of classes starting from February 19th. A total of 21 automation courses were broadcast, in which Delta senior engineers gave comprehensive and detailed explanations on various aspects of industrial automation products such as functional technology, model selection and commissioning of machines, and application skills. Delta also arranged for teaching assistants to provide timely answers to the online audiences.

In early February, Taiwan postponed the start of classes for senior high schools and lower levels. During this period, "DeltaMOOCx", a free online course platform set up by the Delta Foundation, saw an increase in the number of click-through rates. Many students from senior high schools, vocational high schools and universities of science and technology, through DeltaMOOCx, studied core basic science courses and automated basic courses. The total number of click-through rates on the YouTube and youku video websites exceeded 7 million.

Faced with the unexpected course of the epidemic, Delta changed offline interaction to online communication through its online platform which reduced contact opportunities for clusters and enabled the continuous growth of work and study.



Delta cooperated with the Daodao live broadcast platform to present "10 days to understand Delta's industrial automation" online classes



## Continue to strengthen risk management

After the outbreak of the epidemic, various units of Delta demonstrated their superb capabilities for contingency management and mobilization, and effectively controlled all aspects of the epidemic's impact. However, to cope with the operational risks caused by large-scale infectious diseases, a more comprehensive risk management system should be established in the future. The epidemic will pass and Delta's next step will be to strengthen its risk and crisis management system.



Marketing Manager of Delta Electronics (Americas)

### **Marketing the Delta Americas story** Interview with Mr. Mike Gazzano, Marketing Manager of Delta Electronics (Americas)

Text by DAL

Nearly ten years after becoming Delta Americas' first marketing manager, Mike Gazzano is still at the helm of a budding department that has played a critical role in the company's transition toward developing a more solid branded business.



### Drive Delta Brand starting from Delta Breez

Mike's career had humble beginnings, when he joined Delta in March 2010 as the first marketing specialist for the Fan and Thermal Management Business Group in the region. He was tasked to start a marketing program for the Delta Breez line of bathroom ventilation fans, an unprecedented step for a company that had once only showered attention on ODM contracts. Over the last ten years, Delta Breez ventilation fans grew from obscurity to winning wide recognition in the building and HVAC communities – a true success story illustrating the power of marketing and branding.



Mike was tasked to start a marketing program for the Delta Breez line.

Mike was there behind the curtain and at times, directly in the spotlight, marshalling a massive effort to tell the story of not only Delta Breez, but also of Delta as an organization. For his first assignment, though, Mike encountered an “an uphill battle” while launching Delta Breez. The residential ventilation industry was dominated by two main players, the 800-pound gorillas of Broan-NuTone and Panasonic. Yet, through nimble marketing campaigns and cutting-edge bathroom exhaust fans, Delta was able to rapidly take market share. Today, Delta Breez has sold more than two million bathroom fans since its inception and is the third-largest brand of residential exhaust fans in the United States, according to Home Builder Executive magazine.



The Americas Marketing Department was born when Mike was suddenly called back from a Delta Breez tradeshow to the Americas management meeting in Fremont, where he was told that he would be leading the company's first marketing team in the region.

"I was excited, as well as nervous, on this new Delta adventure that I would be entering into," Mike said.

"I'm always amazed at how multi-faceted Delta is and the core values of what Delta truly believes in – making the world a better place through energy efficient products and solutions," Mike said.

Delta's unwavering commitment to executing its mission statement – "To provide innovative, clean and energy-efficient solutions for a better tomorrow" – continues to inspire and drive Mike's work.



### Diverse cooperation and learning across units

But with Delta being as diverse as it is, Mike said, the "first couple of years were quite tough with new challenges – filled with a lot of research into what all the Americas' BGBUs were doing and their future plans." Another challenge was the traditional focus of an ODM/OEM business model.

"Most of our Americas BGBUs are fueled with the drive to grow and make their own destiny within the Delta community," Mike said. "We hope that we bring our marketing knowledge to the teams that request it and want to collaborate with us. At the same time, we co-work with the BGBUs that are most driven from their respective HQ teams and learn with them together."

Mike supported the BGBUs as they launched new products and solutions at trade shows. In his first year as marketing manager, he helped organize two large company events – in Brazil and Mexico City.



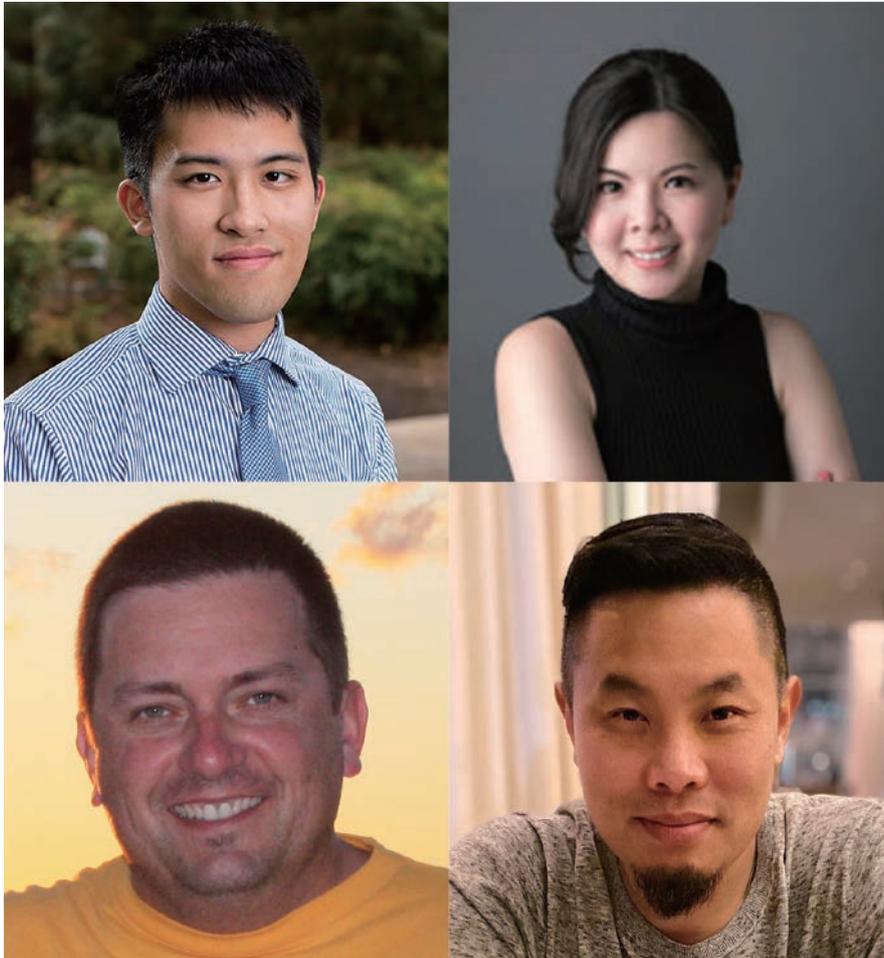
### Respond to various challenges through flexible team cooperation

The marketing team has come a long way since its inception. Early on, the focus was on trade shows and events, with some public relations sprinkled in. Over the years, several hires have been made to foster what Mike described as a "dynamic team."

"I am truly thankful for the team," Mike said. "Without them, I wouldn't be who I am. We have brought together numerous skillsets that feed off one another."

- Christopher Yang –Marketing Specialist
- Niv Lin –Marketing Specialist
- Tony DeMello – Digital Marketing Specialist
- Richard Chang – Public Relations and Communications Specialist

Mike summed up the tempo and mindset of the team into one single word: agile. He added, "We have to juggle many items and projects ... throughout the course of a year. Some we're planning and prepping in advance, while others will spring up out of nowhere."



DAL marketing team members : Richard Chang(Upper left) · Niv Lin(Upper right) · Tony DeMello(Lower left) · Christopher Yang(Lower right)



### One Delta in exhibition by integrating multiple units

To be sure, there's always a concrete schedule at the start of the year with a bustling roster of tradeshow activity: ASHRAE's AHR Expo and the International Builders' Show, among others. At the region's largest show (AHR), Delta this year unveiled its first-ever fully integrated booth around the theme "Smarter Buildings, Smarter Cities" that incorporated the Building Automation Business Group's Delta Controls, LOYTEC, Amerlux and VIVOTEK.

Mike side "It was incredible to see where we've come from 10 years ago with very simple and small booths to one of the largest booths we've ever had in the region at 39 feet by 90 feet."

Delta's AHR booth generated significant media buzz with seven on-site press interviews among outlets that have a collective reach of 374,000 people. On the social media front, posts tied to AHR generated over 35,000 impressions on LinkedIn as well as more than 16,000 impressions on Twitter.



## Drive future development through continuous learning and taking challenges

Entering this new year and decade, Mike remains upbeat about the future and possibilities for what Delta will do. The marketing team is exploring new mediums and objectives, within digital marketing, to further expand brand awareness and ultimately, to drive more sales.

Reflecting on his career, Mike said it's always been a joy "when we come together" as the Delta family.



Mr. Mike and Delta executives took a photo for 40<sup>th</sup> Delta anniversary

Asked if he has any advice for newcomers to Delta, Mike said, "It's been great to see and be a part of what Delta Americas has grown into and what we'll become. My advice: keep learning and be willing to adapt to new changes."





Delta's Building Automation team has designed the smart street lighting solution to improve the foundation for a smart city

## Delta's Building Automation Solution for smart life - Taichung Central Park

Text by BABG

Over the years, Delta's Building Automation Solution has proactively designed and strengthened smart city infrastructure. With more and more successful projects and continuous development, smart buildings have become indispensable basic elements in a blueprint for future smart cities across the world.





Sprawling across 67.34 hectares, Taichung Central Park has a diverse landscape that serves as a habitat for various wild animals; it is, in fact, the most significant urban oasis in Taichung. However, as the park covers an expansive area, the project placed a strong focus on how to save manpower, enhance maintenance/operational efficiency, and refine the safety alarm system.

Since Taichung Central Park is an urban park located in a densely developed area, it is important to maintain park ecosystems, autonomy in management and sustainable operations. This provides a space that exemplifies environmental sustainability and coexistence with nature for the local residents.

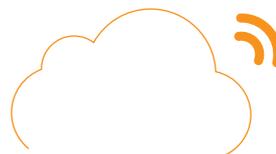


### Smart street lighting solutions enable a safe and smart urban space

Delta's Building Automation team came up with a smart street lighting solution for the Taichung Central Park. By combining energy-saving lighting, IoT devices, and ICT, Delta offered innovative and value-added services other than street lighting, including EV charging stations, mini weather stations, integration with traffic signals, and real-time roadside billboards. By doing so, Delta attempted to energize smart city development and make street lights important nodes for gathering big data in the city. This design not only introduces a more convenient and safer lifestyle to urban dwellers, but also allows the government to set up other systems, such as water level monitoring, safety protection, and environmental sensor systems. Furthermore, the integration of smart city management platforms makes it possible to actualize the goal of a smart city and creates a more human-oriented urban living space.



Smart Park for A Great Life-Taichung Central Park





## Smart park design wins 2019 Cloud Computing & IoT Innovation Award

The project, "Smart Park for A Great Life--Taichung Central Park," won the 2019 Cloud Computing & IoT Innovation Award, as it planned to provide the Taichung Central Park with energy-saving lighting, as well as value-added services including automatic lighting brightness adjustment, safety protection, and emergency rescue. The Delta Smart Street Lighting Solutions are geared to help Taichung City save manpower, enhance maintenance/operational efficiency, and improve the park's quality and safety for visitors.

### Smart street lighting — automatic lighting brightness adjustment:

After processing the traffic data and the data acquired from light sensors and mini air pollution sensors, the brightness of these smart streetlights can be automatically adjusted. For example, when there is a high level of PM2.5, the streetlights become brighter; when the sky is still bright, the brightness is reduced, or the lights will only be switched on later. These adjustments enhance road safety and save electricity. In the meantime, to avoid affecting the animals, the brightness is adjusted based on the day/night cycle, providing animals and plants with more natural environmental rhythms.

### Surveillance cameras with alarms

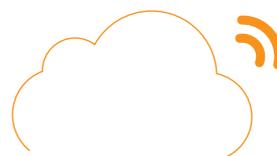
Web cameras are used to monitor controlled areas with limited access for cars and humans. Alarms go off when detecting unauthorized cars entering/exiting the park or people undertaking suspicious activities. For example, the cameras can not only distinguish unauthorized cars from cars belonging to maintenance contractors, but can also identify abnormalities such as large objects being transported in or out by car. The cameras can automatically capture images of license plates and instantly notify the control center, while putting out a warning sound alert.

### Emergency alarm and call to police:

When someone press the emergency button, the system automatically sets off an alarm. Meanwhile, the staff in the control center assess the real-time image of the site and use the instant broadcasting system to call the police and attempt a rescue. Furthermore, A panoramic camera marks the time and location of the incident for the control center to replay afterwards.

Delta's Building Automation team proactively designed the smart infrastructure of the Shuinan Economic and Trade Park and constructed a smart street lighting system across Taichung. With this construction project, Delta managed to lay a foundation for a smart city and provided innovative, value-added services apart from street lighting. Completed in February 2020, the Taichung Central Park project received unanimous approval from the judges. The judges pointed out that since most of the entries were of a very high standard, the winners were undoubtedly the best of the best.

By combining energy-saving lighting, IoT devices, and ICT, Delta's Smart Street Lighting Solution offers innovative and value-added services in addition to street lighting





## Delta shows a great integration of BABG at AHR Expo 2020

Text by DAL

Delta's booth at the AHR Expo roared to life this year, drawing more than 5,000 visitors over the three-day event in Orlando, Fla. with the company's integrated booth showcasing the strength of its Building Automation Business Group subsidiaries in the Americas region. Delta Brand Management Office co-worked with DAL marketing team and made an integration of Delta, DCI, LOYTEC, Vivotek and Amerlux smart building solution to preset the theme "Smarter Buildings, Smarter Cities" with clearly brand identity. Delta made a statement about the future of buildings that reverberated throughout the show, which bills itself as the world's largest HVACR gathering.

"Our collaboration at AHR is a great example of what's truly possible by fully integrating all the BABG teams," said Joe Oberle, BABG regional head and vice president of corporate development for Delta. "I was thrilled to see the great teamwork that went into developing this booth. The foot traffic and customer interaction was terrific."

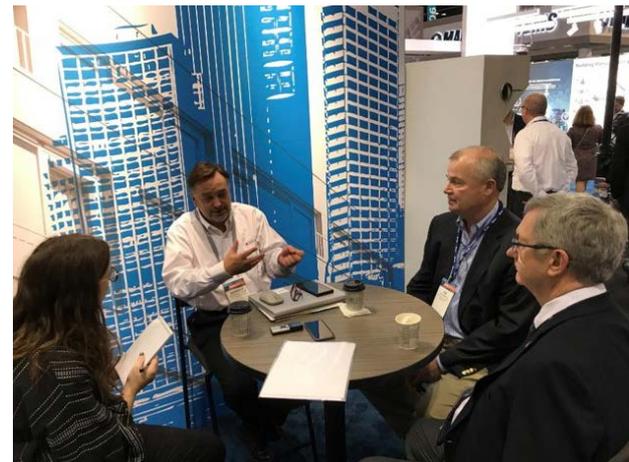
The future is now: Delta offered an assortment of live demonstrations to bring its vision to life. A smart, streetlight-supported EV charging station was one example: Amerlux's LED lighting integrated with VIVOTEK security cameras and a Delta AC mini level 2 EV charger, along with advanced building control software from Delta Controls and LOYTEC. Charger access was monitored via the VIVOTEK camera, with the capability of license plate scanning for identifying information.

"The seamless connectivity and integration between our technologies will change the way contractors, facility managers and municipalities view IoT for buildings and cities," said Bill Lo, general manager of BABG.

In the spotlight was Delta Controls' O3 Sensor Hub 2.0, which won AHR's Innovation Award in the Building Automation category. Designed to enhance the occupant experience, this new solution integrates a variety of sensors – temperature, humidity, occupancy and light – to revolutionize how buildings respond to tenant needs. It features a compact design that reduces setup time – improving the appearance of a room by eliminating the need for multiple sensor installations.

"The O3 continues to win accolades and draw heads. It certainly represents a new milestone for the building automation industry," said Robert Hemmerdinger, chief sales and marketing officer for Delta Controls.

VIVOTEK generated buzz with its line of security cameras, people counters and thermal cameras. VIVOTEK technology counted each person as they entered the booth, which was lit by Amerlux lighting fixtures including the Linea family of LED pendants and the MESA trough housing unit which combines mechanical, electrical, security or audio components into a single fixture. MESA was featured as one of four "noteworthy products from the 2020 AHR Expo floor" by Buildings magazine.



Associate Editor Mary Kate McGowan of ASHRAE in a roundtable discussion with John Nicholls, president of Delta Controls (center left), and Joe Oberle, BABG Americas region head (center right)



The Delta booth generated significant media buzz with 1-1 interviews and even an on-air podcast



### Delta enhances productivity and efficiency of tissue paper production

Text by DAL

Tissue paper is indispensable to our modern lives. Taiwan is no stranger to panic buying, whether tissue paper or masks, for various reasons. Buying frenzies increase market demand, which is why manufacturers have been upgrading their equipment and expanding production lines to raise productivity. For hygiene products such as tissue paper or masks, the packaging of finished goods is crucial to keep products clean and uninfected during transportation and sale. Delta provides a film cutter solution to meet the packaging requirements of these products.

Recently, Delta's film cutter solution has successfully increased packaging productivity by 80% for a tissue paper manufacturer in China. Alternating the tissue feeding and film cutting for packaging successfully enhances the yields to 180 packs of tissue papers per minute.

Delta's film cutter solution features a simple structure. It adopts the Delta AC Servo Drive & Motor ASDA-M Series to drive the two sets of conveying axes and the cutting axis synchronously. The Delta AC Servo Drive & Motor ASDA-A2 Series drives the film feeding axis to complete the 4-axis simultaneous operation.

Delta brings the following benefits to customers with its film cutter solution: fast tuning and changeover, abundant and agile control functions and efficient and stable production. Delta's film cutter solution can be combined with a tissue paper packaging machine for paper towels, single-packed tissue papers and string-packed tissue paper production, providing tissue paper manufacturers with a highly efficient production solution.



Delta's film cutter solution can be applied to paper towels, single-packed tissue papers and string-packed tissue paper packaging for enhanced productivity



## Delta's servo press performs accurate and flexible control

Text by Delta IABG

Manufacturing in recent years has gradually changed. Both manufacturing machinery and technology continue to advance, while the production model of small quantities with greater variety has become a prevailing trend for various applications. Industries such as automotive, metal parts and electronic components processing have widely adopted pressing machinery to change the shapes of work pieces for product assembly or mechanical operations. Delta's electric servo press provides accurate pressing force and flexible control with easy operation and simplified mechanics, saving costs on maintenance and consumables.



Delta develops and manufactures all the key components of the servo press (including PLCs, servo drives, motors and an HMI) for seamless integration and stable performance

Delta recently provided a pressing solution for an electric motor manufacturer in southern Taiwan to improve the pressing process of rotor and motor bearings. Through the multiple control modes that Delta's servo press performed, rotors were pressed into the bearing with a well-controlled force level at a precise position.

Another success story is a passive automotive component manufacturer located in northern Taiwan. During the process of riveting, Delta's servo press adopted the load mode to press rivets into thick copper plates. The servo press performed the stable pressing process with an accurate loading force to enhance the quality of finished products and raise productivity for this customer.

Integrated with its own-brand programmable logic controller (PLC) to actuate servo motors, Delta's servo press takes advantage of smart sensors and flexible multiple control modes to perform precise control of force and position and to achieve higher productivity with better quality. All the detected pressing data and parameters are traceable and analyzable when uploaded to a manufacturing execution system (MES). Users can adjust parameters and create different pressing recipes via communication modules to change product lines swiftly and to carry out production of small quantities with greater variety.

Delta's electric servo press performs accurate and precise pressing and position control, fulfilling high-quality duplication for diverse applications and industries. It can integrate with MES software and provide remote control, data analysis, and visualization for smart factories.



## Delta Controls O3 solution contributes to construction of a "Smart Hospital"

Text by DGC

Recently, The Delta Controls has successfully served "the world's largest single" private level-three hospital, Xi'an International Medical Center, utilizing its highly-integrated enteliWEB equipment, energy management platform, and more than 300 Delta Controls O3 area network control stations to conduct unified cross-system, cross-area monitoring and management on nearly 100,000 control points of building systems including conventional cold and heat sources, air-conditioning systems, fresh air systems, air supply and exhaust, water supply and drainage, etc. It utilizes OPC to connect with the original smart management platform in the hospital and provide the analysis of equipment operation and energy status, helping the medical center to achieve "smart management". It offers individualized smart adjustment for different environmental needs of hospitals, which is an important in the Northwest.

For a large medical center with 535,000 square meters, it is important to ensure the safe operation of all equipment and to equip energy-saving solutions, while providing patients and their families with a healthy medical environment.

### The Delta enteliWEB equipment and energy management platform

The Delta enteliWEB equipment and energy management platform used in this project is a set of building energy management tools designed and developed based on the Web and the Native BACnet protocol gathering data on corporate energy source in the form of "dashboards". Featuring the ability to release management energy source data reports and task-driven alarm management functions, it enables the staff to read the data for rapid monitoring and management of building equipment and energy conditions, ensuring that the equipment operates in an optimal state.

### Delta Controls O3 integrates air conditioning, access control and lighting control in one combination

Various protocols such as Modbus, DALI, EnOcean can be integrated through I/O expansion modules. With built-in multiplex sensors featuring IoT function, it can automatically adjust space equipment at any time. Delta Controls O3 area control system can achieve the modular management, intelligent management, equipment networking control, and the docking partner system.

Delta Controls will continue to assist the Xi'an International Medical City in its later projects, employing its professional capabilities in the field of building control to provide medical staff and patients with a clean, comfortable, and healthy environment.



Delta Controls O3 integrates air conditioning, access control and lighting control in one combination



## Delta helps universities improve capabilities in digital teaching

Text by DGC

Delta teamed up with a well-known university in Zhejiang Province to create a highly integrated and scalable data center infrastructure solution that offers a reliable platform. To build a high-caliber institution, the platform aimed to support system operation of various modules, such as multi-media in teaching, smart campus, etc.

After taking careful consideration of the overall planning and requirements for data center provided by the university, Delta recommended its Dynamic Datacenter. Each Dynamic Datacenter contains 19 IT cabinets and 2 InfraSuite precision cooling RowCools, and is equipped with a set of DPH series modular UPSs. To achieve smart management, these facilities and IT equipment are integrated into the Data Center Infrastructure Management (DCIM) system.

The DCIM system of the micro-module solution enables a central view to monitor the IT infrastructure and facility environments which are critical to the system operation. It is connected with the hardware and the software and can offers critical information to manage key operations for a data center. It can provide more information for the management staff to facilitate planning and forecast the probable demand in the future for the data centers.

In terms of energy-efficient design, Delta adopts the principle of green design in the deployment of its dynamic datacenter. The cabinet (in each raw of cabinet) air conditioners provide direct air supply near the heat source so that the air flow path is shorter and the cooling is more accurate, solving the problem of uneven distribution of hot spots. The cold aisles between the cabinets are closed and isolated, so that the hot and cold air flow do not interfere with each other, which prevents the heat island effect caused by the crosstalk of the air flow, as well as the loss of air volume and cold volume. Compared with the traditional data center, it delivers a better performance in energy efficiency.

At present, the new data center built by Delta has been officially put into use. Compared with other similar products on the market, the Micro Datacenter series provided by Delta enjoys the consistent stability, reliability and high performance which are the advantages shared by all of Delta's key infrastructure solutions. It also has the significant advantages of low-volume engineering, fast installation and high integrability, making it the best choice for an integrated on-campus data center and the result was well recognized by the university.



Delta Dynamic Datacenter Solution



## Delta UPS solution powers major telecommunications operator in Morocco

Text by Delta EMEA



Delta worked with the Moroccan telecom operator to install an integrated UPS solution that not only ensures uninterrupted power, but also provides stable and clean power under normal conditions

The power costs in a data centre make up the largest component of the total cost of ownership (TCO). The power usage effectiveness (PUE), or the total power consumption of a data centre divided by the IT power consumption, is usually high in conventional data centres. It is often at around 2.0 or higher. This means: only half of the energy is spent on the IT workload. The other half is consumed by the physical and critical infrastructure such as power supply, cooling, and lighting. High-quality UPSs function as an essential safeguard against many potential energy issues, including voltage surges and spikes, voltage sags, total power failure, and frequency differences.

Faced with power supply challenges at its data centre, a leading telecommunications operator in Morocco was at a crossroads. The operator needed to update its data centre with new UPSs without risking downtime. The cost of downtime due to critical load failure is expensive and could cost anywhere between \$4,000 and \$6,000 per minute or even more. To achieve the highest availability possible for its data centre, the operator knew how vital it was that the new UPSs come equipped with fault-tolerant capability and fail-safe design for assured system reliability. The operator also knew that the new UPSs had to offer the flexibility of different configurations for the sake of redundancy and to further enhance overall power availability.

Delta worked with the Moroccan telecom operator to install an integrated UPS solution that not only ensures uninterrupted power throughout the UPS replacement process, but also provides stable and clean power under normal conditions. The modular UPS solution installed by Delta was able to maintain the incoming power without causing any disruption in operations. Using the Delta modular DPH Series UPS did not only allow for a quick replacement and uninterruptible power supply, but also translated into significant reduction of operational costs by 30% compared to traditional data centres, allowing the Moroccan operator to extend the entire life cycle of its data centre.

Motaz Al Maani, Senior Director and General Manager of Delta EMEA, said: "In addition to providing extended power for long stretches, Delta's modular UPS solutions are designed to provide customers with critical total power protection against voltage drift, surges, high frequency interference, and any other kind of power failure and drift, protecting vital computer components from data loss and damage. Delta's modular UPSs are designed to ensure that companies can protect their mission-critical applications by maintaining a steady flow of energy even under adverse circumstances, resulting in significant cost reduction and maximum operating efficiency."



## A great success for Delta at ISE 2020

Text by Delta EMEA

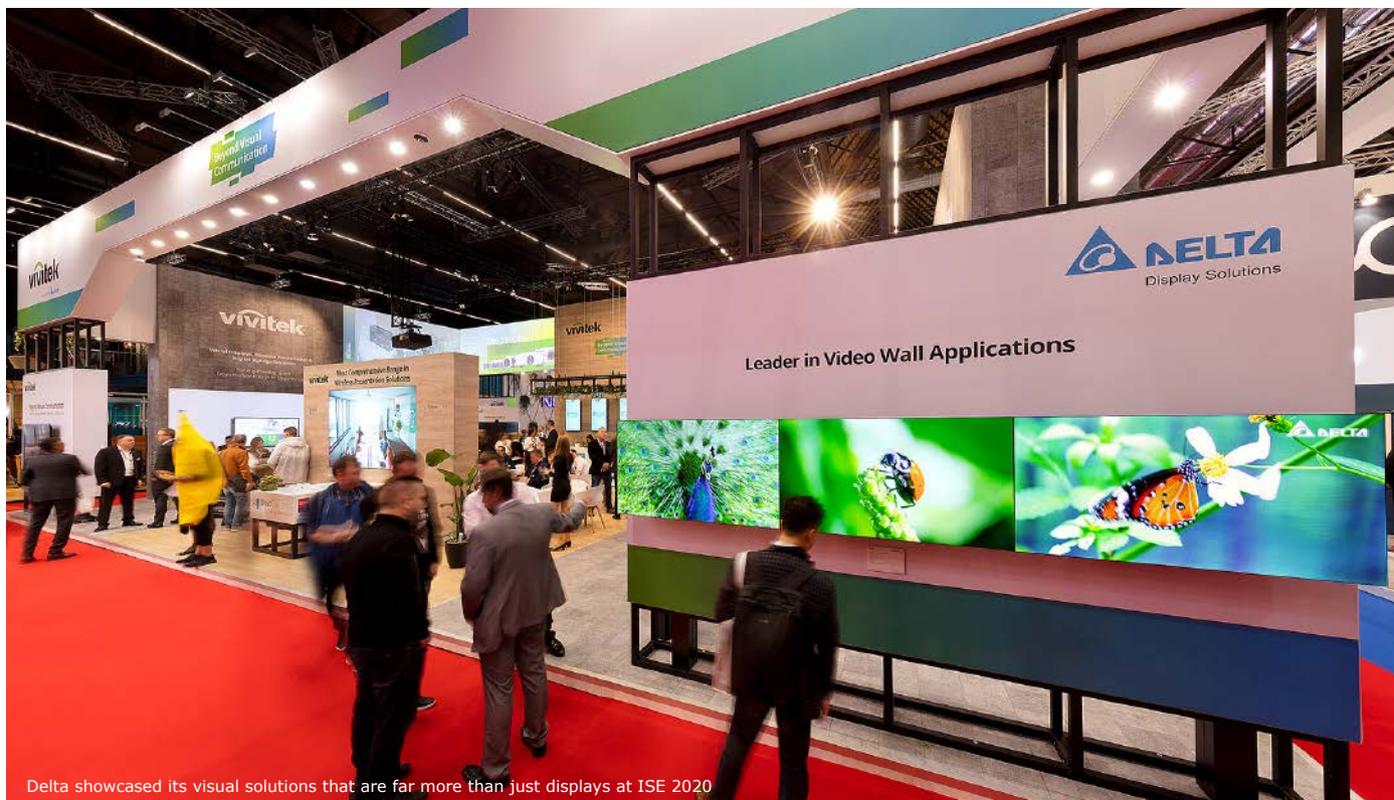
Delta has participated in ISE 2020 held at RAI in Amsterdam. The show got off to a thrilling start for Vivitek, a brand of Delta, with it winning an award for the AV Marketing Team of the Year at the prestigious AV News Awards hosted on the first morning of ISE, while the Novo Ecosystem was a finalist in the award for best Collaboration Innovation of the Year.

The focus area at the show was the meeting room solutions, highlighting the comprehensive NovoConnect range. Delta also presented three exciting new additions, which included NovoDisplay – an all-in-one signage and collaboration display; NovoProjector – the first wireless collaboration projector, and the NovoTouch EK Series for Education. Vivitek launched its new marketing campaign at ISE conveying that Vivitek's comprehensive product line is ideal for any type of visual communication, from meetings, digital signage - or both! - at the same time.

At the show, visitors could experience the performance we bring to control room applications with Delta's video wall cubes in a UHD 4K resolution and laser-phosphor technology. Delta also exhibited its LCD video wall displays, which are the ideal solution for demanding, yet space-constrained control rooms.

Bringing further excitement to the booth were the Delta Display Solutions' FE Series, with its range of LED offerings for indoor and outdoor displays. Displayed on a sample wall, Delta's LED Wall Solutions deliver excellent image quality and uniformity, making it ideal for control or signage solutions.

Delta also held its annual ISE partner meeting for distributors to update them on market trends, new products and positioning and provide them with the strategic insights to align our businesses to grow together in 2020.



Delta showcased its visual solutions that are far more than just displays at ISE 2020



## Delta presents new PV inverters at 2019 EnerGaia

Text by Delta EMEA



Delta showcased new range of PV inverters at 2019 EnerGaia in France

From Dec. 11-12, Delta exhibited at EnerGaia, a major renewable energy event in Montpellier, France. Delta's experience at the 2018 show was quite good but in the 2019 show, it was clear that the number of exhibitors and visitors had expanded more, reflecting the growth and interest in the French renewable energy sector.

Delta presented in France for the first time the newly-launched M70A solar PV inverter, which offers 77 kVA maximum AC apparent power for ground-mounted and commercial solar rooftop systems. In addition to the M70A, the full range of Delta photovoltaic inverters as well as the new MyDeltaSolar Cloud and PV monitoring apps were also featured. Several Delta inverters now ship with both Wi-Fi communications and RS485 as standard equipment. Combined with the new cloud-based monitoring platform, this gives operators more advanced capabilities for remote setup, monitoring, and control of solar photovoltaic systems.

### The M70A solar inverter

The M70A is a three-phase string inverter with 77 kVA maximum AC apparent power for ground-mounted and commercial solar rooftop systems. Thanks to its compact design and low weight, the M70A is easy to transport and install. Six MPP trackers with three pairs of connectors each give system planners more flexibility to arrange module strings and maximize yields. Module rows for ground-mounted systems require only minimal spacing as a result. Smart allocation of the MPP trackers can compensate potential shadowing.

### New cloud monitoring solution MyDeltaSolar

The MyDeltaSolar Cloud works with all Delta inverters and allows operators and installers to quickly set up and manage multiple systems and inverters. The system is available free of charge for five years with the purchase of a Delta solar inverter.

### M6A, M8A, and M10A with onboard wireless

Delta M6/8/10A series solar inverters were designed to provide high efficiencies for smaller photovoltaic arrays. These string inverters accept a wide range of voltages and come with two MPP trackers each. With capacities ranging from 6 kVA up to the M10A's 10 kVA, they are suitable for small and mid-sized commercial applications. All three inverters now ship with wireless connectivity as standard equipment. This makes connecting to the MyDeltaSolar Cloud even easier for installers and operators.



## Delta presents the fans for refrigeration and HVAC at EuroShop 2020

Text by Delta EMEA

Delta showcased a complete range of fans for commercial refrigeration in the supermarket industry at EuroShop 2020 from 16-20 February 2020. The refrigeration solutions from Delta on display at Messe Dusseldorf ranged from small DC fans up to nine-inch EC models. These fans have been designed to offer outstanding efficiency, reliability, and safety for use.

"Fans are critical pieces of equipment for supermarkets," said Gavin Hsu, Business Development Director of FMBG in Delta EMEA. "Stores rely on their refrigeration systems to do business. When they lose the ability to maintain the required temperatures, it can cost them lost inventory and sales revenues. Energy and maintenance costs for refrigeration also impact bottom lines during normal operation. There are also regulations and safety to consider. This is why makers of supermarket refrigeration systems are always looking to deliver better, more reliable, and more energy efficient solutions for their customers. So, we're really excited to go to Dusseldorf and show them how our fans can help in all of these areas."



Delta showcased a complete range of fans for commercial refrigeration in the supermarket industry at EuroShop 2020

### Innovative fan technologies for commercial refrigeration

As a global leader in DC brushless fans and one of just a handful of top suppliers to the commercial refrigeration industry, Delta has been producing high-quality and innovative fans for decades. The portfolio includes everything from DC to EC fans in sizes ranging up to nine inches. Delta brushless DC motors are electronically commutated (EC) and feature an integrated AC to DC inverter driven with brushless DC motor. This design can reduce energy consumption by as much as 70% compared to conventional AC fans yet maintain the ability to operate from existing AC inputs—without sacrificing performance. All of Delta's EC models also comply with ATEX 2014 34-EU, an important requirement for systems installed in the EU and an additional layer of safety against explosion in the event of a refrigerant leak.

Delta also offers programmable fans, which can greatly enhance the efficiency of the entire cooling system. Instead of continuing to spin and consume power continuously, programmable fans can be configured to reduce output during periods of low system load. This results in energy savings and less noise on the supermarket sales floor. In addition, Delta fans offer ingress protection up to IP67 by using superior production methods to make them completely resistant to dust and moisture. The universal voltage models can be used for both 115 V and 230 V applications, giving OEMs additional flexibility. Delta fans also offer higher motor performance and controller and impeller efficiencies than conventional AC fans.



## An overview of Intersec 2020

Text by Delta EMEA

Delta Displays team exhibited its portfolio of 4K surveillance monitoring solutions at Intersec 2020, the world's leading security, safety, and fire protection trade show, from 19-21 January 2020 in Dubai, showcasing an 87 sq ft 4K Laser DLP® Video wall.

Speaking on the occasion Mr. Hemant Agarwal, Business Head, Display Solutions of Delta India said, "This year at Intersec, Delta unveiled its 4K Laser DLP Video wall designed to support critical control room requirements with superior visual performance and clarity that enables effective information monitoring and interpretation. Video walls are the heart of control rooms, and for efficient monitoring it is essential to have a display system with the industry's best image quality and reliability."

The highlight of the booth was Delta's extra slim 4K laser DLP® video wall with 560mm of depth and boasting the world's highest brightness. The state-of-the-art Delta 4K Laser Video wall solution features an extra slim form factor, 560mm-depth, an unmatched 4K (3840 x 2160) resolution, a brightness of 4,000 lumens and a brightness uniformity of over 98 percent.



VIVOTEK announced the collaboration with its strategic partner, Cyberlink, for facial recognition technology at Intersec 2020



Delta Displays team exhibited its portfolio of 4K surveillance monitoring solutions at Intersec 2020 in Dubai

Delta's subsidiary VIVOTEK also participated this event and announced that they have entered into a strategic partnership, which will integrate CyberLink's FaceMe® AI facial recognition engine into VIVOTEK's IP surveillance solutions. The collaboration also showcased in VIVOTEK's booth at Intersec 2020.

"Entering the era of AIoT, we will continue global partnerships to accelerate and enhance video applications by joining force with industry-leading analytic software providers. We are honored to partner with CyberLink and to adopt CyberLink's FaceMe®, which was ranked one of the most accurate AI facial recognition engines in the NIST Face Recognition Vendor Test (VISA and WILD tests)", said Owen Chen, Chairman of VIVOTEK. "Through this strengthened alliance, facial recognition intelligence will be integrated with VIVOTEK's network cameras and back-end video management software, enabling security operators to receive accurate facial recognition alerts based on both blacklists and whitelists, further enhancing our goal to provide advanced video value for users around the globe."



## Delta wins "20-year Industry Achievements Award of the New Century"

Text by DGC

Recently, the selection results to the "20-year Industry Achievement Award of the New Century" (formerly known as "the annual selection for industrial automation and intelligentization") initiated by chinakong.com were announced, whereby Delta's outstanding business growth attracted the attention of the entire industry of industrial control. Delta Group was selected as the "Top 10 Industrial Automation Companies" based on its impressive market performance. The team led by Mr. Eric Chen, the General Manager of DGC IABU, was highly praised and awarded the "Industry Leadership Award." In addition, Delta's independently developed high performance ASDA-B3 series servo drive system won the "Innovative Product Award" as well.

### Industry Leadership Award - Mr. Eric Chen

With years of experience in the industrial automation industry, Mr. Chen officially became the general manager of DGC IABU in 2018. During the last two years in office, it was also a period of major change for Delta to transform from a product supplier to a system solution provider. In order to fully implement the concept and operating values of smart manufacturing to various industries and to actively promote the digital transformation, Mr. Chen led the team to implement the concept of smart manufacturing, open up new channels to attract end customers, formulate the value-based marketing strategies and establish lasting relationships with key customers.

### One of the Top 10 Industrial Automation Companies - the Delta Group

As a key manufacturer in smart manufacturing transformation, Delta emphasizes that smart manufacturing and green manufacturing should go hand in hand. In recent years, in the process of developing smart manufacturing solutions, Delta has innovatively developed a variety of software and hardware products and system integration solutions. Meanwhile, based on its cumulative experience in factory infrastructure as an electronics manufacturer, it has combined solid industry know-how to support smart factories with highly integration, high accuracy and excellent performance, and continuously implemented the concept and practice of smart manufacturing to users in various industries.

### Innovative Product Award - Delta high performance ASDA-B3 series servo drive system

The high-performance ASDA-B3 series servo drive systems that won the "Innovative Product Award" this time is the servo drive system solution developed by Delta in face of increasing market demands for consistent servo system performance and functionality. The ASDA-B3 series enable powerful motion control, long service life and stable operation.



Innovative Product Award - Delta high performance ASDA-B3 series servo drive system



Namasia Ming Chuan Elementary School, a green campus donated by the foundation after a typhoon, achieved net-zero energy status in 2015-17 with an EUI of only 1.03 in one year, saving up to 90% of the energy

PEOPLE

## Advocate to boost energy efficiency and mitigate the impact of global warming via educating the young generation and linking up with the world Delta Foundation

Text by Delta Foundation



Tzu-Jung Chiu / Project Supervisor, Delta Foundation

With climate and energy education becoming a required class for elementary schools, passionate volunteer lecturers in blue vests can always be spotted bringing the latest energy education courses to elementary school classrooms near Delta's factories. Many people might wonder why the bashful Delta engineers transform into hosts on kids' channels once becoming volunteers. Inspiring the enthusiasm of volunteers, fostering employees in the green energy industry to be the most looked-forward-to volunteer energy lecturers by children, planting the seeds of environmental sustainability in children's hearts, coming up with ways for more people to value energy education—these are my typical day at work.



## PEOPLE & PRODUCT

Preparing the best stage for the volunteers necessitates perseverance, which is a process that involves choosing a handful of schools that click with our ideals, solving hardware and software problems in classrooms, and educating volunteers to play the role of animal trainers to tame energetic children. Occasionally, I share ways to improve teaching skills or thoughts of eye-catching teaching aids with the volunteers. Through on-site observations and interviews, one can feel the feedback from children and teachers on teaching interaction, which is also the best reward to encourage volunteers to devote themselves.

Stepping out of Taiwan into the factories in China and Thailand, I experience more deeply the different types of environmental energy, which are the best nutrient that spawns new lesson plans every year. After creating energy topics such as green buildings and low-carbon transportation, the biggest challenge is to turn energy saving technology into fun and simple life knowledge. Lecturers and I have to comb through reports, data, and scientific progress when doing brainstorming in order to develop suitable lesson plans and stories, such as leading children to build the nine indicators of green building with Lego bricks, to connect with the local educational system. Through experiments that verify the working principle of electromagnetics, science teaching tools make every classroom into a "science lab." Looking back, the education process is like the process for farmers waiting for harvest after sowing. I am fortunate that there are always fruitful results and feedback, and full of hope waiting for the seeds to germinate.



Annual highlight for Delta volunteers—volunteers from Taiwan, China, Thailand, and the United States learn about energy together every year



Yvonne Chan / Senior Program Coordinator, Delta Foundation

In 2016, having just obtained a master's degree in environmental science in Europe, I joined the Delta Foundation because of a timely opportunity. I remember it was the time when the department was simultaneously preparing the "Delta Green Building Exhibition" in Huashan 1914 Creative Park and the yearly "Energy Volunteer Training." Although several months were incredibly busy for me, it was unimaginably fulfilling.

It has been exactly thirty years since the foundation was established. Over the past two decades, as global warming has intensified, the foundation has made raising awareness on climate change a top priority. My job is to act as a "translator" on climate issues, to promote climate communication and policies in multiple ways. At the same time, I also continuously strengthen the research skills of think tanks, and work with well-known domestically and international climate and energy organizations to influence policies together.

In order to be in line with the world's green trend, participating in the Conference of the Parties to the United Nations Framework Convention on Climate Change (COP) every year has become my routine. At first, Delta's involvement in 2007-2011 was simply to track climate negotiations. However, since 2012, the foundation has obtained official observer status with the UN Climate Conference, and began to hold official peripheral conferences in the UN to bring Taiwan's energy-saving examples onto the international stage. To sum up our key activities, besides presenting Delta's green building practices at the conference, in the recent years, we have been ceaselessly providing innovative solutions for decentralized energy and results of water environment education.

On the other hand, the foundation has long operated the Delta Media Salon on climate issues, Low Carbon Life Blog, and IC Radio's Climate Battle in Taiwan program, analyzing the latest environmental, energy and climate issues for the Taiwanese society. This job entails spending time collecting information, conducting field interviews, and writing up articles, to turn complex scientific facts into accessible and quotidian language, and increase the public's willingness to understand issues. At the same time, I continuously work with climate think tanks in research or obtain new knowledge on my own, striving to promulgate the most accurate basic theories of climate science.

All in all, the work at the Foundation has given me the opportunity to reach the international climate community and the general public, which is often a source of my sense of accomplishment. Whenever I am able to bring Delta onto the UN stage despite international restrictions while learning and interacting with environmental opinion leaders, my drive for work just gets stronger and stronger. I even see the meaning of work every time I receive positive feedback from communicating new knowledge at home and abroad.



Attended the 25th United Nations Climate Change Conference in Madrid, Spain in 2019 with the CEO of the foundation



Delta introduces the new 25W 2" x 3" medical power supply

PRODUCT

## New 25W 2" x 3" medical power supply

Text by Delta Electronics (Thailand)

Delta Electronics unveils the new 25W output under the MEP series of medical power supply. The MEP-25A15J provides a 15V output voltage and can operate in temperatures ranging from -10°C to +50°C, with de-rating from +50°C to +70°C. Other features include low touch current and electric shock protection complying with 2 x MOPP. The MEP series is certified according to EMC standards EN 55011 for industrial, medical equipment and EN55032 for Industrial Technology Equipment (ITE) equipment. It is fully compliant with RoHS Directive EU/2015/863 for environmental protection. Risk management report can be provided upon request.

### Highlights & Features:

- ▶ Safety approvals to IEC 60601-1 3.1rd Ed. & IEC 60950-1
- ▶ Compliant with IEC 60601-1-2 4th Ed. Requirements
- ▶ Low touch current (<70uA Normal & 210uA single fault)
- ▶ Over-Voltage/Load/Temperature & Short Circuit protections
- ▶ 2 x MOPP (means of patient protection)



Delta introduces the new 500W enclosed medical power supply with built-in fan

PRODUCT

### New 500W enclosed medical power supply with built-in fan

Text by Delta Electronics (Thailand)

Delta Electronics has added a 24V 500W output to MEB Series of enclosed medical power supply for medical applications. The MEB-500A24F model comes with built-in fan and active PFC. It operates on universal AC input range from 90Vac to 264Vac and has a wide operating temperature range from -20°C to +70°C. Additional features include low leakage current of 0.3mA at single fault condition, Type BF Patient Access Leakage Currents, electric shock protection compliance with 2 x MOPP requirements and Power Good signal.

The MEB-500A24F comes with both medical and ITE safety approvals, including UL/CE/CCC, and CB certification. The product is certified for EMC standards according to EN 55011 for industrial, scientific and medical (ISM) radio-frequency equipment, and in compliance with EN 55032 for Industrial Technology Equipment (ITE) radio-frequency equipment. Full compliance with RoHS Directive (EU) 2015/863 for environmental protection is included.

#### Highlights & Features:

- ▶ Compliant with IEC 60601-1-2 Ed.4 Requirements
- ▶ High power density
- ▶ Built-in remote On/Off
- ▶ 5V / 1A standby Output
- ▶ 12V / 0.5A fan output for system
- ▶ Conformal coating on PCB



Fab Green Village has a large lawn area on the roof, allowing visitors to relax and at the same time cooling the building naturally

## Experience the ecological arts and culture: Take a walk in the green building leisure park in Tamsui

Text by Yvonne Chan, Delta Foundation

Hiding within Tamsui settlements, the Fab Green Village which just received the Taiwan EEWB diamond certification last year has begun its official operations. It may be hard to imagine that this park, which blends with the surrounding natural landscape of Tamsui, includes an international hotel and a mall. From its appearance, you don't feel that it's a commercial space at all.



### A low-profile and humble architecture that integrates Tamsui's natural scenery and culture

This feeling is related to the architectural style of the village. At the beginning of the design and construction, the Fabulous Group who built the village from scratch has set the tone that the architecture could not steal the scene of the original ecological charm of the nearby Tamsui area. Therefore, unlike other high-rise shopping malls and hotels in popular tourist areas, the two buildings in the village followed the land shape and are humbly hidden within the surrounding landscape. At the same time, the simple white outlook of the buildings not just accentuates the surrounding greenery, but also eliminates the surface heat and reduces high indoor temperatures.

When I look around, the one-by-one semi-circular arches of the building façade are quite eye-catching. The design echoes the image of the arches of the Hobe Fort, as if the entire building has become a military site. On the other hand, in order to make the overall appearance not too monotonous and boring, there are squares between these arches for creating an extra interest.

### Vigorously restore the Mifenliao Creek to bring back the home of native species

In addition to the pleasing white buildings, the village also has a large green rooftop lawn and a large green space which also capture visitors' attention. At first, the team chose a plant cover on account of the adaptation of the architecture to the original green landscape nearby. With this insistence, the scenery of the entire village blends with surrounding natural landscape extended around the Tamsui Itteki Memorial House and the golf club without disharmony. On the other hand, the green roof also contributes to the efficient thermal insulation of the building and reduces the heat island effect.

The village lies next to the Mifenliao Creek, which had become a stinky drain because it flew through multiple settlements for a long time. The Fabulous Group spent a lot of money on restoring the water environment though the undertaking is not part of its duties. Starting from the ecological survey, it took another two years to purify the water quality with appropriate ecological engineering method and to create cascading waterfalls to secure animal migration, increase dissolved oxygen in the water, and prevent creek from flooding. Nowadays, the Mifenliao Creek has not only become a waterfront accessible space for travelers to relax, but also a symbiotic environment for birds, fish, shrimps, shellfish and crabs. These efforts promoted the improvement of local ecosystem in Tamsui.

### A village that is not only "green", but also very energy-efficient

Then let's take a look at the energy-saving design of the buildings in the village. First, the design team used the outside layer of the exterior wall to create energy-saving effects. Skylights were installed on the roofs of the hotel and the mall to allow natural light in, forming a beauty of light and shadow intersecting with the shapes of the windows on the walls. During the daytime, since these areas do not need extra lighting, the energy consumption can be reduced.

In addition, the village has introduced several active designs, including a solar power system and the Energy Management System (EMS). The former one can save the electricity costs by at least more than 200,000 a year for the buildings; the latter one is connected to energy-consuming appliances such as water chillers, monitoring appliances daily to allow managers to identify power problems and rectify any errors at any time.



The top floor of the Golden Tulip Hotel in the park allows visitors to enjoy the beauty of Tamsui from a fresh perspective

As for the ventilation, because the village is near the estuary, the "north wind disasters" might present a serious threat to the comfort in the building. Therefore, the design team hid the entrances and the activity spaces of the buildings. It is possible to miss the entrances to the mall and the hotel if you don't pay attention. As for water treatment, a rainwater harvesting device on the roof is installed in the village, and the surrounding green plants are irrigated by using this harvested rainwater. At the same time, permeable pavements are also used, and the soil pores of the large planting area also facilitated water penetration and enabled water conservation of the land base.

Another highlight worth mentioning is that the Fabulous Group has made a good use of its own skill: Building Information Modeling (BIM). With the data of sun exposures, wind speeds, temperatures, degree of humidity, precipitation and other information collected by micro weather stations, not only the designers are able to experience spaces in the building in advance, but the actual performance of the buildings can also be inferred. The system helped to reduce the possibility of incorrect designs or waste of resources during construction.

If you take a closer look at every detail of the village, you can indeed feel that it is not easy to build this certified green building leisure village. In the process, the Fabulous Group also made quite a few tough decisions on economic profits and green design, and these decisions have also made the mall and the hotel unique. Even though the facade is not as magnificent as most hotels, it still enriches travelers' maps with the simple atmosphere of green buildings and Tamsui's native natural ecology.



Environmental issues pose threats to human existence, standing out in world's risk assessment

## World Economic Forum Annual Meeting 2020: World's top 5 long-term risks are environmental

Text by Tino Wang, Delta Foundation

This year, the members of World Economic Forum (WEF) made predictions about the risks that are likely to happen over the next 10 years among those, the top five risks are environmental: "extreme weather," "failure of climate-change mitigation," "natural disasters," "biodiversity loss," "human-made environmental damage."



Since the beginning of this year, many major events have grabbed the public’s attention. Apart from the terrifying outbreak of COVID-19, Brexit has occupied the headlines and widely appeared on social media platforms, leading to a lack of news coverage of WEF this year. However, The Global Risks Report 2020, recently published by WEF, points out a non-negligible problem— over the past 14 years, the five biggest long-term risks in the world have no longer been “economic,” but rather “environmental.”

Figure I: The Evolving Risks Landscape, 2007–2020



The world’s five biggest long-term risks over the past 14 years have no longer been economic (blue), but rather environmental (green) (source: The Global Risks Report 2020)

**Environmental issues stand out for years in world’s risk assessment**

The potential global risks over the next 10 years revealed by WEF this year include “extreme weather,” “failure of climate-change mitigation,” “natural disasters,” “biodiversity loss,” “human-made environmental damage,” “data fraud or theft,” “cyberattacks,” “water crises,” “failure of global governance,” and “asset bubbles.” If you take a closer look at the categorization made by WEF, you will realize that the first five issues are included in the “environmental” category.

In view of the WEF annual ranking in the past, “extreme weather” has been on the list for seven consecutive years and ranked top for four consecutive years. In addition, “natural disasters” has been ranked top three for the last four years. Considering the recent major disasters across the world, such as amazon rainforest fires and Australia’s bushfires, this report is extremely convincing, as these risks have actually happened and might get worse in the future.



As to the five most impactful risks, there are three risks related to the environment. Among all, “failure of climate-change mitigation” ranks top as to the severity of its impact over the next 10 years and ranks second as to the likelihood of it becoming a global risk. These results are not baseless: little progress has been made during the UN climate negotiations over the past years; countries have not achieved expected results when implementing climate measures. All these are largely harmful to global climate governance.

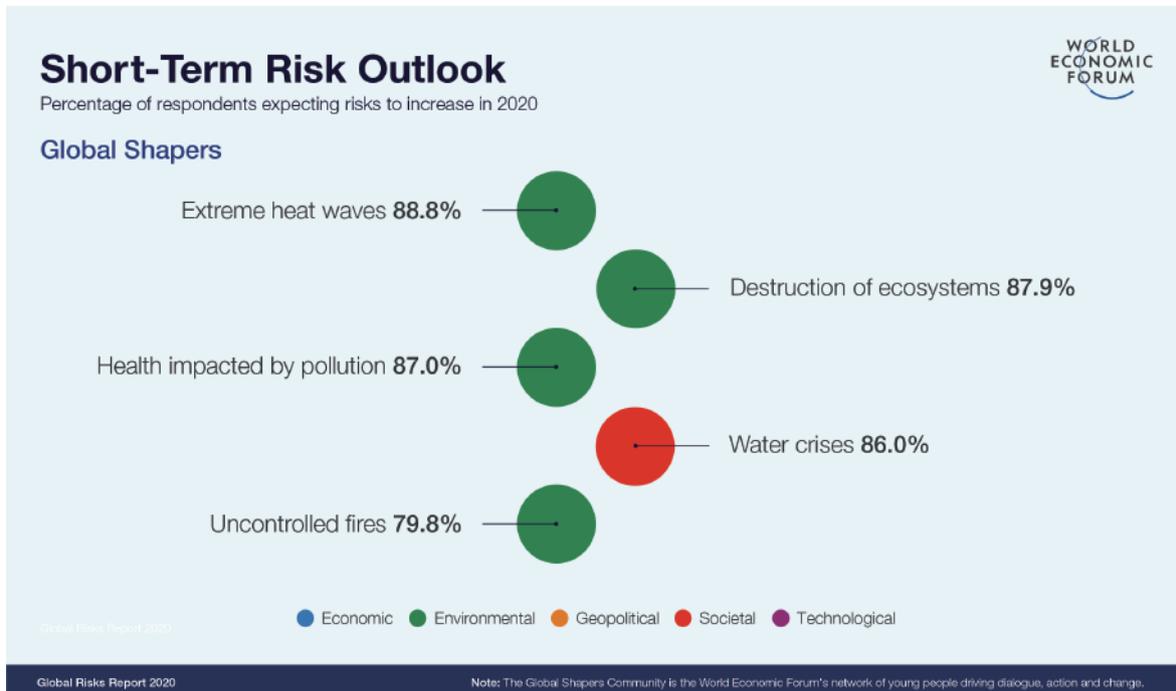


The potential global risks over the next 10 years predicted by the members of WEF this year are mostly environmental (source: The Global Risks Report 2020)

### Climate change accelerates biodiversity loss

Meanwhile, climate change has become more severe and faster than expected. Looking back, the temperatures in the last five years were the highest ever recorded. When natural disasters have become more severe and frequent like last year, it means that the world is facing unprecedented extreme weather. What’s more astounding is that by the end of this century, the global average temperatures will rise at least 3°C—twice as high as the maximum 1.5°C warned by climate experts to prevent serious consequences. This will significantly affect global biodiversity.

Therefore, the report also lists “biodiversity loss” as the third most impactful risk and the fourth most likely risk over the next 10 years. Based on the statistics, the current level of biodiversity loss has been tens to hundreds of times higher than its average over the past 10 million years, and the loss is accelerating. Many scholars are worried that the global food and health systems will collapse, and the entire eco-system will be destroyed.



The five biggest risks rated by Global Shapers (source: The Global Risks Report 2020)

### Youth participation in future risk assessment

The negative results of the report are alarming; yet, the report also has an interesting analysis that shows increased awareness of environmental issues among the new generation.

In fact, when assessing the global long-term and short-term risks over the next 10 years, WEF mobilized thousands of members including Global Shapers Community—an online network of young people across the globe. According to the survey, these young people rated each risk higher than people of other age groups, meaning that young people are much concerned about the future of the world.

In addition, regarding risks expected to increase this year, the top five risks chosen by young people are environmental, whereas “economic confrontations” was ranked top by the forum members in the past. Meanwhile, though “water crises” falls under the category of “societal risks,” it is still environment related. Apparently, young people have a stronger sense of urgency when it comes to climate crisis, and the drive behind all the climate initiatives nowadays should not be underestimated.

[Reference]

The Global Risks Report 2020

