



Delta's smart street light helps Jakarta plan for its smart city blueprint

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FROM THE EDITOR

The Dow Jones Sustainability Index (DJSI) is one of the world's most trusted evaluations for corporate sustainability today. Long concerned with climate issues and devoted to environmental education and green building promotion, Delta was recently honored in the 2018 DJSI world index as an Industry Leader in the category of Electronic Equipment, Instruments and Components Industry. Together with the first prize of the "Corporate Social Responsibility Awards of Commonwealth Magazine" we just received, the third in a row, these recognitions demonstrate our consistent, outstanding performance and solid capabilities in the pursuit of sustainable development under severe challenges of global climate change and competition from companies across nations.

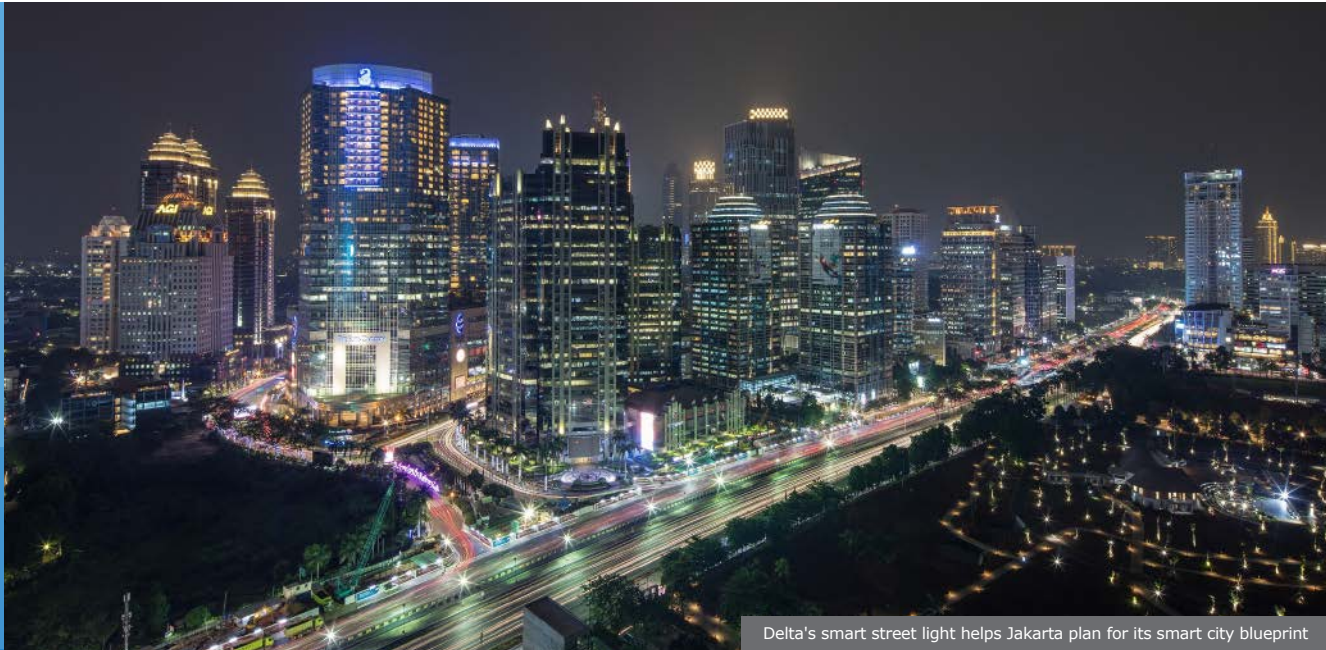
Delta has been developing smart streetlight solutions since 2010, with more than 600,000 LED streetlights installed around the world thus far. In this issue's "Special Report", we will cover how Delta's smart streetlight brand managed to go international and utilized functions such as remote monitoring, maintenance management, and lighting control to have street lighting in the city woven into a dense communication network, making it the backbone of Jakarta's for planning its smart city blueprint.

In this issue's "About DSM", we have obtained first-hand information on IA Technology Application Center in Wujiang, China. We will share with you how Delta's smart manufacturing solution helps with industry upgrades through its intelligent machine that has integrated visualized management on production manufacturing, production management, intelligent factory management, and energy management in one console. In "Brand People", Delta's Chief Operating Officer, Mr. Simon Chang, tells us how the company managed to employ an innovative digital thinking style in a highly competitive and rapid changing environment, and to optimize its product solutions and business models to achieve the synergy.

In the CIIF Shanghai, using a large exhibition booth of 200 square meters in size, Delta employed its own experience as the base for a display of its full solution in smart manufacturing in. Delta also continues to cross borders with its high-quality products. Its video equipment and network communication infrastructure products have created the ideal applications for the Indian government and Spanish Ceramics Company. Delta also uses its solutions in building automation, fan, heat dissipation, renewable energy, and energy efficiency to help the Sino-French team of Xiamen University to achieve the third place in an international solar competition. These exciting stories are featured in this issue's "Brand Circle".

For this issue's "Delta Green Life", we will share how the Ginza "Roof Garden" in Tokyo managed to build one roof oasis after another in the city's urban jungle that combines modern technology and artistic beauty to cools the building. The "Low-carbon Lohas" column is about the brilliant story of how a colleague implemented a low-carbon living after becoming a Delta volunteer. Don't miss this issue's "People" column, as our electric vehicle team in Detroit have some exciting stories.

Brand Management Office



Delta's smart street light helps Jakarta plan for its smart city blueprint

Delta's smart street light helps Jakarta plan for its smart city blueprint

Text by BABG

Delta has been developing LED smart street light solutions since 2010. Today, the cumulative number of Delta LED street lights installed exceeds 600,000. After achieving a top three market share in Taiwan, Delta went international with its own brand for the first time in 2017. This includes Delta's participation in a plan to build a smart city for Jakarta, Indonesia, through a local partner network. For the project, the Delta Smart Street Lighting Solution passed a high standards test from the Jakarta city government for a new generation of municipal infrastructure. The project team is also making itself well-known for its ability to execute international projects overseas.



Jakarta is one of the fastest-growing cities in Southeast Asia, with a population exceeding 10 million. The city of Jakarta boasts a historical legacy from the Dutch colonial era as well as the modern skyscrapers that line its streets. It is a city where tradition and modernity are intertwined. Indonesia is the largest economy of ASEAN, and the capital Jakarta is its economic, cultural and political center. In 2014, Jakarta launched its blueprint for a smart city, to move toward a low-carbon, intelligent modern city. Energy-saving and carbon-reducing LED smart street lights were positioned as the primary infrastructure for urban transformation, which would enable the city government to reduce carbon emissions and save a lot on electricity bills, while allowing local residents to enjoy a brighter and safer environment. "It is possible that the neural networks for the city will be connected," said Mr. Syamsul Bakhri, an official of the Jakarta City Street Light Management Office, explaining Jakarta's vision to lead a new generation of green and smart cities.

Due to the attention of the city government, the Jakarta smart street light project took more than two years to confirm product specifications and verify the production process. In addition, to ensure a smooth project implementation, the product and project teams with the local partner took more than three months to carefully conduct site surveys, inspect warehouse environments, and confirm installation process design before project execution officially began. However, for its first time on foreign soil, Delta faces not only a test of its own strength, but also a heated brand war.

Wu Xiangzhen, product coordination manager from Delta's street lighting team, remembers the pointed questioning of local competitors and the challenge of describing the Delta brand to Jakarta city government officials. Besides many visits to Indonesia to explain the product features and demonstrate the team's professional capabilities, Delta also provided street lighting products for installation tests by the Jakarta city government. Delta invited Indonesian officials to visit the R&D team in Taiwan to see the actual Wuhu factory production process, which finally helped win the trust of Indonesian officials who then signed off on the project.

Since the client is a foreign government unit, the details of the project implementation were more complicated. Managers Su Wenjie and Zhang Shijie, who are in charge of the on-site inspection, acceptance and installation process, have mixed feelings. They said cultural and language barriers made preparation work more complex and critical. In particular, the Indonesian team was subordinate to the government unit and had no experience with Delta's smart street lighting system. Detailed planning and arrangements were made in advance for each construction team. Construction plans detailed the lights each team was responsible for. The installation process including how to scan QR codes, how to use Apps to complete wireless connection, and more, were also explained and clarified over and over again to ensure smooth implementation and minimize the frequency of accidents. At the execution site, a staff member was assigned to ride in the car for each installation route to ensure the quality of construction. Support was provided at all times to solve installation problems or answer onsite questions. In addition, a stop point was set each day to review installation problems, test specific street lights, and check the quality of wiring to ensure problems could be solved on the spot. From lack of familiarity with the product with the language barrier, to finally completing the project successfully, the local work team forged a deep friendship with the Delta team, which was the biggest gain beyond initial expectations.



Residents feel safer going out at night as Delta's smart street lights brighten residential areas in lanes and alleys



Delta's smart street lights installed on the riverside road of Banjir Kanal Timur improve safe driving



Delta's smart street lights keep busy industrial areas bright at night for overtime workers

Delta's team of professionals was dedicated to overcoming the many difficulties and making Jakarta's smart streetlight project a top success story in Indonesia. The good news is the smart street light installation was an important step toward the construction of a smart city for Jakarta as it became a policy widely recognized by the citizens of the city.

Green energy and smart cities are already mainstream trends in global urban planning. The concept of a smart city encourages governments and major cities to use technology to improve monitoring systems and enhance the safety of citizens while reducing energy consumption and increasing the efficiency of operations. Lin Kun-Yueh, Director of the Delta Lighting Division, said that the Delta project execution team followed Delta's company mission of "To provide innovative, clean, and energy-efficient solutions for a better tomorrow" to achieve success for the Jakarta project. He noted that the leading position of Jakarta in ASEAN will help promote the concept of green energy and the construction of smart LED street lights in other Southeast Asian countries, and encourage more policies for environmental protection.

The proportion of smart street lights that can be remotely monitored is nearly 10%, and growing rapidly every year. Currently, Delta's smart street lighting system installed in Jakarta has more than 20 thousand LED smart street lights with wireless networking functions. Through remote monitoring, maintenance management, and lighting control functions, Delta's LED smart street light management platform saves on electricity consumption by at least 48% when compared to traditional high-pressure sodium lamps. The platform monitors to understand the operation status of the street lights. Personnel are dispatched immediately to handle alerts from faulty street lights, which reduces not only electricity fees, but also patrol and maintenance manpower. Delta's smart street light solution is equipped with wireless networking technology, which provides lighting and can also be used for video surveillance, inspection of air quality, temperature, and water level, information boards, electric vehicle charging, and more. The wireless network connection function allows the street lights that are dense in the city to be woven into an intensive communication network and to become the solid backbone of a smart city.



Delta COO Mr. Simon Chang

Innovation and change – Enhancing our competitive edge with digital thinking

An interview with Mr. Simon Chang, Chief Operating Officer of Delta

Text by Brand Management Office

In response to organizational restructuring and to help all colleagues further understand our company's development strategy, we have interviewed the BU heads of building automation, industrial automation, energy infrastructure, electric vehicles, and other business units since the start of this year. We share with our readers these top managers' thoughts and plans to integrate advanced technologies and provide total solutions for sustainable growth. In the Brand People section of this issue, we are honored to interview Delta's Chief Operating Officer, Mr. Simon Chang. He provides his insight into how Delta optimizes its product solutions and business models in a highly competitive environment and rapidly changing market through innovative thinking and leveraging synergies.



Ride the trends and divide business categories by market segment

"Welcoming change was the biggest expectation for our team this year. At our recently concluded Global Leadership Workshop, I used this phrase to encourage more than 50 mid- and high-level Delta executives from around the world," said Simon. "In the face of global changes in population structure, political and economic environments, and lifestyles, finding the right business model is the only way to succeed." Indeed, Delta continues to respond to changing trends. Last year, based on market segmentation, Delta restructured its organization with three business categories to drive and ensure continuous business growth.



COO Mr. Simon Chang encouraged workshop participants to broaden their vision, build strategies with business insights, prove their capabilities with performance, continuously break through stereotypes, and develop new prospects in this fast-changing world

"I hope our business units will develop product designs and solutions based on industry perspectives," said Simon. Industries usually have many different products, which require more than double the investment in research and technology development. This is one of the reasons for our organizational restructuring. As market demand expands, Delta is consolidating its business units with similar R&D capacities and business focuses with centralized resources to actively gain market share and achieve maximum benefits.



Foresee trends with insight to speed up product launches with the physical and virtual integration of technologies and production

Simon also shared his views for Delta's future product and solution development. "As business models change, industries are actively seeking partnerships and connectivity, which is accelerating the cross-industry convergence of products and technologies." In the case of transportation, the automobile industry is adopting artificial intelligence (AI) technology and launching driverless vehicles. For offices and lodging, IoT integrated with hardware sensing is generating immense business opportunities for building automation. Simon believes that "shortening the product development cycle, enhancing solution flexibility, and pursuing superior quality are the ultimate goals of our persistent endeavors." To shorten product development cycles, all current technologies and domain knowhow should be modularized, digitalized and adopt the "Physical to Virtual to Physical" concept. Using simulation software for product and prototype design ensures design quality and a high yield rate. Mass production can then proceed, which will speed up product launch. In addition, Delta has excellent front-end sales teams in each region to develop flexible and customer-centric solutions. Dedicated to quality, Delta has accumulated more than 20 years of technological capabilities in the industrial automation field. Quality Diagnosis (QD) is continuously conducted to refine our automated production line and achieve our ultimate win-win goal of high flexibility and high quality.



Vertical integration - One-stop shopping sales platform to respond to market demand

As Delta gradually migrates from component provider to solution provider, Simon also shares with us his future plans for business and sales models. "As the technology advances and application scenarios change, our industry customers need more than just certain types of products. Through a single sales platform, we can quickly respond to various customer requirements." He believes that at the initial stage of entering a new industry, a business group (BG) is responsible for establishing a sales platform. After the business finds the right track, the sales platform should be handed over to each region for subsequent operation. How to integrate resources and provide customers with timely, comprehensive and highly efficient services will be a critical issue and a challenge in the future.



Internal and external refinements to maximize branding efficiency

Simon also shared his views on brand management. "As we start with quality product solutions and develop an eco-system partner network, the Delta brand will receive a synergistic effect. Our customers also face changes in the industry eco-system and overall market environment, and they bring more cross-domain requirements. Thus, we need to provide a more diverse portfolio of products and solutions." Customers choose Delta as their partner for our strong competitiveness. Delta continuously endeavors to strengthen our partnerships for co-prosperity in the eco-system. This pattern of cooperation helps us achieve double the results with half the work in product promotion as well as gaining more business opportunities. Knowing our advantages well, continuously enhancing Delta's brand value, and improving efficiency are the goals we keep striving for.



Dare to change, and keep energy and capabilities on reserve to embrace the ever-changing future

COO Simon Chang has nearly 37 years of service at Delta, starting his career as an engineer then business unit general manager, and now to chief operating officer. He is thoroughly familiar with Delta's business, market changes, and organizational operations, and he shares this observation, "In the modern age where information is exploding and changing every minute, you must dare to make changes. It's the only way towards success." Simon also indicated that the greatest benefit from the advance of technology is the easy access and acquisition of information. Now in the world of IoT, all technologies and knowhow are digitalized and stored in the cloud. With computation, analytics, plus AI, it's easy to break barriers and complete tough and complicated tasks. This is why we emphasize and promote modularization, digitalization, intelligence and automation, as we aim to accelerate product introductions and launches and become a prominent leader in the market.

At the end of the interview, COO Simon Chang left with words of encouragement for all colleagues. "Work smart and work fast. Leverage virtual-physical integration to enhance productivity and connect us to the market with the cyber speed of this digital age."



COO Mr. Simon Chang and Delta managers attended the 2018 Taipei International Automation Exhibition



Delta Smart Manufacturing Solution expedites industry upgrade

Delta Smart Manufacturing Solutions expedites industry upgrade

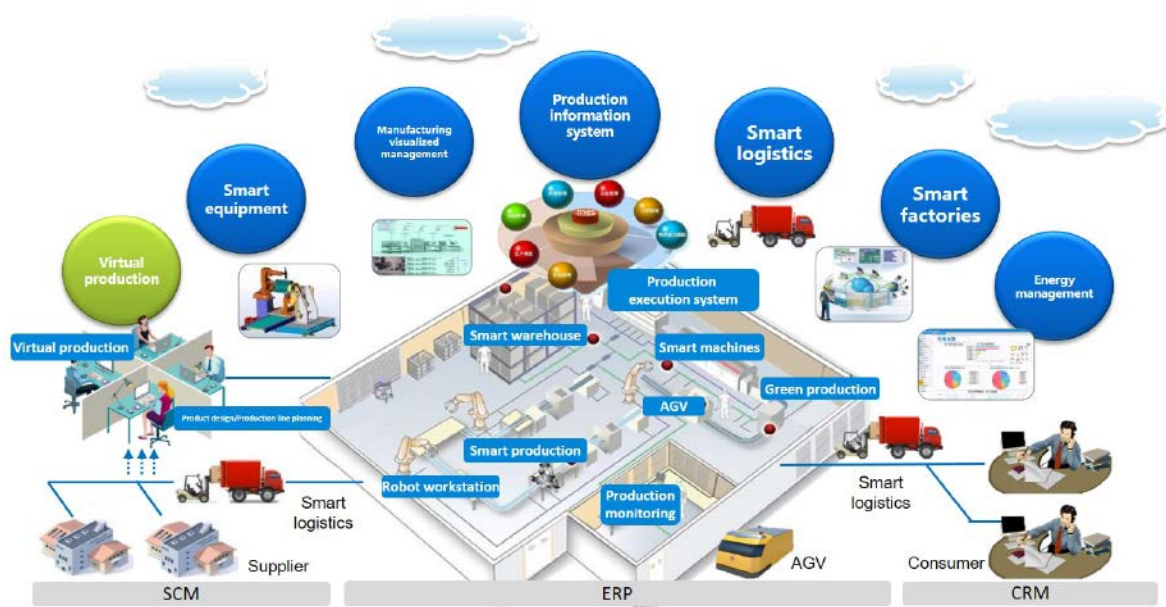
Text by Wujiang IA Factory Technology Application Center

"Industry 4.0" is a term first coined by the CEO and science director of the German Research Center for Artificial Intelligence (DFKI), Wolfgang Wahlster, in 2011. In 2013, Ulrich Sendler published the book "Industry 4.0", officially starting the industry 4.0 age. This was the prelude to today's revolution of smart production in manufacturing industries worldwide. Several nations have also published similar literature, each with their own methods, but the key behind it all is smart production.





By 2013, Delta had accumulated more than 50 years of experience in manufacturing and 20 years of knowledge in industrial automation. Delta has actively invested in smart production and hopes to automate, smarten, and digitize its competitiveness in manufacturing. Based on successful cases in Delta's own factories and for clients, Delta has launched smart machines, visualized manufacturing management, smart production management, smart factories, energy management, and other smart production solutions, helping companies construct smart, green factories, and fully upgrading existing industries.



Smart production full environment diagram

Smart machines: Delta's complete industrial product line—from sensing instruments, to transmission and motion systems, control equipment, network equipment, robots, and others—are all complete products. These products are the basis for ensuring full equipment automation, so that the machine offers high precision, complete control functions, and analysis and sensing functions. Delta Smart Machines are widely used in textile, printing, packaging, electronics manufacturing, automotive components, and other industries to help companies achieve automation and smart production processes.

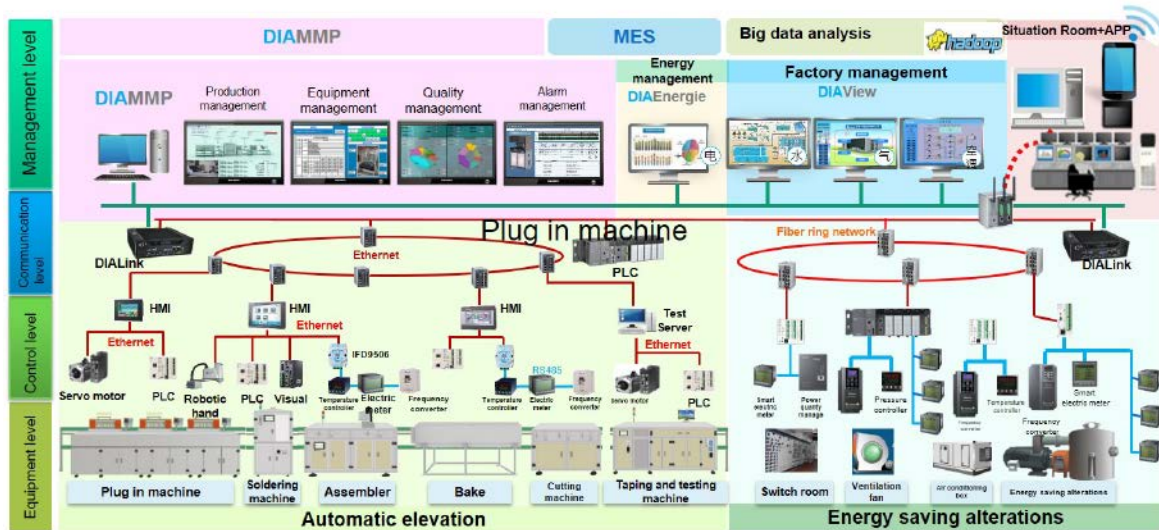


Manufacturing visualized management: Clients can use Delta's network management switch to construct a decentralized and stable network system. They can then use DIALink to download the equipment and equipment data, and share the information to the management's upper software to create manufacturing visualization and achieve layered information diversion. The data is analyzed using the Delta Manufacturing Visualization Management Platform, which helps a company transparently process the production data, grasp the production progress status at a glance, manage the production quality, conduct a production efficiency analysis, and track the product resume. It is also possible to grasp the real-time status of the equipment through the platform, notify the relevant personnel to repair abnormal equipment, and analyze the abnormal KPI data of the equipment to deal with any malfunctions more specifically. Taking a project in Dongguan as an example, Delta solutions helped customers monitor the operating status of the equipment in real time, instantly measure key parameters (temperature, pressure) of the equipment, and automatically generate a data package table. The specific benefits are to save construction and maintenance costs, improve yield, and maximize production capacity by controlling and monitoring key parameters.

Smart manufacturing management system: The manufacturing execution system is the execution layer between the planning layer and the on-site equipment layer. It is mainly responsible for workshop production management and scheduling execution. A complete MES system can integrate management functions such as production scheduling, process tracking, quality control, equipment failure analysis, and report analysis on a unified platform. Manufacturing departments, QC departments, technical department, and logistics department can use it to provide workshop management information services through a unified database and network connection. The system helps companies implement complete closed-loop production by emphasizing the overall optimization of the manufacturing process, and establishing an integrated and up-to-date ERP/MES/SFC information system. MES not only features manufacturing execution functions, but also features an open API, which enables a seamless interface with third-party systems, realizes data sharing, automation, and information integration, and makes it the core of a digitized factory.

Smart factory monitoring system: This is mainly based on factory auxiliary systems, such as plant heating, water treatment, waste treatment, air compression, refrigeration station, and environmental control (temperature and humidity, sterile dust-free treatment). These are the basics for stable production in the factory. Once a chemical leak occurs, inadvertent power loss occurs, or the temperature and humidity environment is unstable, the production chain will be broken. Through the DIAView SCADA software, the factory monitoring system centrally monitors the plant equipment to instantly understand the operational status of the plant system, eliminate hidden dangers in the equipment, and automatically adjust the operating status in real time to ensure that production demands are met.

Energy management system: Delta offers a complete energy management system solution, from ensuring energy efficient equipment with advanced automation technology and energy-saving products, to making production and factory equipment more energy efficient. This system identifies the most important energy-consuming equipment, and uses energy-saving equipment such as variable-frequency drives to reduce energy consumption and improve the efficiency of machine equipment. Energy efficiency of the system is managed from the perspective of the production line. The energy consumption on the production line is highly variable, and the rational management of energy at different times on the production line is key. Finally, energy efficiency is managed based on the layout of the whole plant. All energy consumption data in the factory is transmitted to the industrial energy management system for visual monitoring and analysis. This provides the basis for formulating energy-saving measures and solutions and ultimately improving efficiency and utilization of energy management. The energy management system has been verified by many users, and energy saving efficiency is more than 25% with a return on investment within less than 2 years.



Overview of smart manufacturing solutions

Another core value of smart manufacturing is resolving company problems. Some companies seek to improve their products, while other companies wish to digitize design production and management. There are also companies that are actively planning energy-saving factories. Delta smart production allows companies to solve problems by choosing the appropriate package for their situation. At the same time, Delta smart production solutions are based on a big picture perspective, covering long term planning and assisting companies fully upgrade their industries.





Delta wins "CSR Award" for three consecutive years

Text by Corporate Communications

CommonWealth Magazine released the results of "CSR Award" on August 29, and Delta has won the first prize in CSR Award for the third consecutive year since 2016. The judging panel emphasizes that Delta, which has been focusing and adhering to CSR, is devoted to "environmental protection, energy conservation, loving the earth" with the highest standards. It has also been proving Taiwan enterprises' determination and potential in attaining "sustainability" in the international arena. Delta's founder and honorary chairman, Bruce Cheng, attended the ceremony, and Delta's chief brand officer and executive director of Delta Electronics Foundation, Guo Shan-Shan, received the award.

Delta Group's founder and honorary chairman, Bruce Cheng, said that climate change has become a key global issue in recent years, with many cities gradually becoming unsuitable for habitation of human beings and living things due to severe air pollution and lack of water source. We cannot see the future of the originally agreed "Paris Agreement" due to the withdrawal of the major emitter. Delta continues to design innovative products over the years, actively develops energy efficient and low-carbon technologies, provides solutions to slow down total global greenhouse gas emission, and strives to control increase in global warming within 2°C.

Chief brand officer of Delta Electronics and executive director of Delta Electronics Foundation, Ms. Shan-Shan Guo, said during the award ceremony that winning the CSR Award for three consecutive years is the result of the hard work of all staffs of Delta, and the most important person is Delta's founder Mr. Bruce Cheng. With the global warming in recent years, there is a sharp climate change in the region. In the past, Taiwan architects could only rely on weather information for single location. However, from this year onwards, Delta Electronics Foundation cooperates with the Central Weather Bureau in launching Taiwan's "building microclimate information platform, Green BIM", providing architects with microclimate information for nearly thirty regions in Taiwan, so that they can incorporate microclimate factors during the design. As an international enterprise, Delta also establishes carbon reduction target – Science Based Targets (SBT) in 2017 to control increase in warming within 2°C target and propose the reduction in carbon intensity by 56.6% in 2025. It is Taiwan's first and world's top 100 enterprises in proposing to implement SBTi compliance audit through science based targets, and it appeals to the world to control temperature increase to be within 2°C, which shows our determination in achieving this goal.



Delta wins "CSR Award" for three consecutive years. Founder and honorary chairman, Mr. Bruce Cheng (center), attended the ceremony, and chief brand officer and executive director of Delta Electronics Foundation, Ms. Shan-Shan Guo, received the award



Delta names Industry Leader in 2018 DJSI Electronic Equipment, Instruments & Components

Text by Corporate Communications



MEMBER OF
**Dow Jones
Sustainability Indices**
In Collaboration with RobecoSAM

Delta names Industry Leader in 2018 DJSI
Electronic Equipment, Instruments & Components

Delta Electronics Inc. was named Industry Leader of the "Electronic Equipment, Instruments & Components Industry" in the 2018 Dow Jones Sustainability Index (DJSI). This marks Delta's third time to be named DJSI Industry Leader, after the honors received in 2012 and 2015. Delta has now been included in the DJSI World Index for the 8th consecutive year and in the DJSI-Emerging Markets Index for the 6th consecutive year. The 2018 DJSI survey not only underscores Delta's superior performance in economic and social dimensions in the electronic equipment industry, but also rewards the Company with the highest score in 6 criteria.

Mr. Ping Cheng, Delta's chief executive officer, highlighted Delta's commitment to its corporate mission "To provide innovative, clean and energy-efficient solutions for a better tomorrow". The Company leverages its core competence in power electronics, to develop even more environmentally beneficial products and services, and has a long-term dedication towards global warming and environmental issues. Besides, there is also Delta Electronics Foundation for environmental education promotion and green buildings, which has supported the company lead in the "Product Stewardship" and "Corporate Citizenship and Philanthropy" criteria. These aforementioned endeavors have helped Delta lead the electronics industry in: "Codes of Business Conduct", "Innovation Management", "Social Reporting", and "Labor Practice Indicators", and to achieve this year's industry leadership position.

Delta's recently published 2017 CSR Report elaborating that over the past 8 years, Delta's high-efficiency products and solutions have enabled electricity savings of up to 24.3 billion kWh for its customers, which is the equivalent of a reduction in carbon dioxide emissions by approximately 12.96 million tons. Moreover, Delta's 18 certified green buildings saved more than 14.9 million kWh of electricity in 2017 alone.

The DJSI was launched in 1990 as the first global sustainability benchmark and one of the world's most trusted corporate sustainability assessments. The indices are jointly offered by RobecoSAM and S&P Dow Jones Indices and serve as important indicators for global investors who invest in "sustainable corporations".

21th Beijing-Taiwan Science and Technology Forum focuses on science and technology cooperation

Text by Corporate Communications

The 21th Beijing-Taiwan Science and Technology Forum was held in Beijing on August 23, with the theme, "Science and technology cooperation boosts China-Taiwan relationship". The forum has been inviting heavyweight guests from various domains such as economy and technology from both sides over the years, and it has become a key platform for economic exchange. Delta's founder and honorary chairman Bruce Cheng was invited by the Taiwan Affairs Office of Beijing Municipal People's Government to deliver a speech. Mr. Bruce Cheng said that there has been rapid progress in various areas since the reform and opening-up of China, which is very encouraging. With the increasing global competition, such as the reckless trade war launched by Donald Trump, the President of the United States, it has generated a huge impact on the technology industry for both sides. However, this has also stimulated enterprises, as it serves as an opportunity for them to know which areas they need to improve on and be aware of the need to speed up on research and development of core technologies. It is in fact beneficial in the long run. Delta and our customers and suppliers are indeed deeply affected by the China-US trade war, and the impact will continue. Hence, we need good policy leadership and assistance.

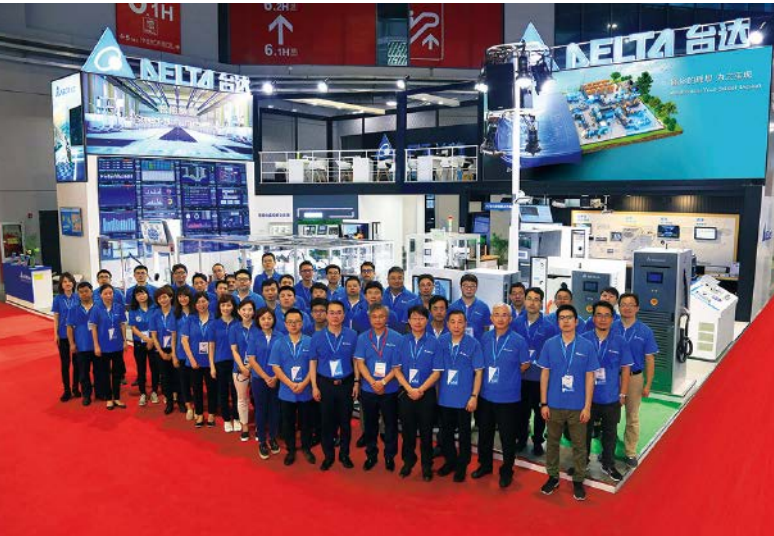


Delta founder and honorary chairman Bruce Cheng (second from left), Delta senior executive vice president Jin Shou-Feng (second from right), Delta spokesperson Jesse Chou (first from left), managing director Professor Donald Yu of Delta Greentech (China) Co., Ltd (first from right) attended the opening ceremony of Beijing-Taiwan Science and Technology Forum



Delta presents integrated Smart Factory Solutions at CIIF 2018

Text by IABG



Delta attended the CIIF 2018 from 19th to 23rd in Shanghai, China, and highlighted "Smart Factory" with smart manufacturing, smart office and energy management products and solutions

Delta highlighted a series of integrated smart factory solutions at the China International Industry Fair 2018 (CIIF 2018) from September 19th to 23rd in Shanghai, China. For this year's event, Delta integrated its high-end products and solutions to build three major exhibition areas for smart manufacturing, smart office, and energy management. Among these, the Flexibility Multi-tasking Smart Production Line displayed in the smart manufacturing area adopted robot workstations, a smart conveyor, automation systems and a management platform to make customized products onsite, which attracted the attention of both visitors and the media. Delta also attended numerous summits, forums and other events related to future manufacturing during the exhibition, while sharing its smart manufacturing approaches and success stories.

Delta participated in several summits and forum events during this year's CIIF to share its achievements, experience, and efforts toward real smart manufacturing, as well as how Delta can facilitate manufacturers and partners in taking this path.

Mr. Eric Chen, the General Manager of the Industrial Automation (IA) BU at Delta Greentech, participated in the 4th Future Oriented Manufacturing Summit 2018, and introduced how Delta has supported industrial development with smart production solutions, digitalization manufacturing and management, and data analysis. "We have strong automation technology and abundant experience in various industries, and we can apply the best smart factory and production solutions in our own factories before presenting them to customers," said Eric Chen. "Take Delta's PLC smart manufacturing demonstration production line as an example. This production line increases productivity by 40%, reduces labor by 88%, and cuts production space by 64% after implementing Delta's own smart equipment and production solutions. Since we seek the best and most suitable ways to achieve a smart factory and smart manufacturing, this great success provides us with inspiration, and it will be a model for replication at hundreds of our production lines in factories all over the world."

The IABG Smart Manufacturing Solutions Business Division Director Mr. Lear Li introduced Delta's "Automation for Changing Industries" at the 7th Global Automation & Manufacturing Summit China (GAMS China). According to Lear Li, the essence of Industry 4.0 is to elevate productivity with complete smart solutions for equipment, robots, automation systems, and production lines. "We're helping our customers build a brighter future with Smart Manufacturing," said Lear Li.



Delta provides production visualization and energy management solutions for smart factories



Delta's Ultron DPS series chosen by leading Spanish ceramic tiles manufacturer Peronda

Text by EMEA

Peronda, a leading Spanish ceramic tiles manufacturer, has chosen Delta's high-efficiency Ultron DPS series Uninterruptible Power Supply (UPS) to protect their mission critical applications.

The project of the replacement of Peronda's UPS was born after an efficiency and comparative study of 3 installed 200kVA UPS vs Delta's Ultron DPS 200kVA UPS with real measurements in Peronda's facilities. The installation of the new Delta UPS improved the current performance from 90% to 96% and a considerable improvement in the input harmonic distortion (iTHD) due to the patented three-phase PFC system, which achieved a very Spain interesting TCO for the customer with a payback in less than two years due to energy efficiency.

The strengths of Delta's UPS were the DPS series technical characteristics focused on the industrial world with a very wide input range, and Peronda's performed tests at Delta's facilities in Madrid which were very satisfactory.

The UPS protects the furnaces and the ceramics production line; these furnaces must be working 24/365. In the event of power blackout, the ceramic manufacturing process could come to a halt and cause high costs due to production loss, high costs due to furnace maintenance, and a waste of employee time. It is also worth noting the installation of 6 Delta's Ultron HPH 30 kVA UPS to protect the printers that decorate the ceramic.

A power blackout would also cause production loss here. To Peronda, the implementation of a reliable and efficient power backup solution was a critical task to prevent waste of material and person-hours while maintaining targeted production output.

Finally, for this leading manufacturer of ceramics, both the Ultron DPS and the Ultron HPH solutions were a success. Without additional hardware, Ultron DPS and HPH Series UPS also offer a flexible and convenient way to expand the total output power to fulfil business growth.



Delta's Ultron DPS series chosen by leading Spanish ceramic tiles manufacturer Peronda

Delta micro modules builds e-government server room for vocational colleges

Text by DGC

Having received multiple successes in various cases in the field of IT-based education, the Delta MDC Micro-Modular Data Center InfraSuite series has been chosen again by a vocational and technical college in Zhejiang Province for the school's electronic government (e-gov) server room. The series was selected for its significant advantages such as being highly integrable, scalable, and quick to install.

Take this vocational and technical college in Zhejiang Province. Its e-government system urgently needed to integrated the existing IT applications and accelerate the expansion with new application systems to achieve "information integration". Therefore, the school wanted to adopt a standardized and modular product as soon as possible to prevent decentralized procurement, lengthy construction, management challenges, low compatibility, potential malfunctions, and various other issues in the past. Delta offered 2 sets of MDC Micro-Modular Data Center InfraSuite series which perfectly matches the users' needs.

The project adopted the InfraSuite series which demonstrates the user's demand for the deployment of a stable and reliable small data center. For small data centers of less than 10 IT rack cabinets and 50 m2 in area, a three-in-one system including a power distribution and monitoring integrated system, a cabinet system, a cooling system will be provided. It is the perfect server room solution that is highly applicable and offers great value for cost.



Delta MDC Micro-Modular Data Center InfraSuite series, the best solution for integrated small data centers, is currently installed in vocational and technical colleges in Jiangsu and Zhejiang



Delta micro-module data center supports the premium yacht contest

Text by DGC



Delta Micro-module DPH 75150200kW

Delta, the global leader in power management and cooling solutions, teamed up with a national sports event center to create a leading micro-module data center that provides a reliable information platform for top-class sailing events.

There are many application systems involved in sailing events. Dozens of application systems such as competition management system, performance system and office system are highly centralized. The event management unit selected Delta's Dynamic Datacenter Series of micro-modules, including DPH Series modular UPS, precision cooling, data center infrastructure management (DCIM) system, etc.

The UPS selected for the sailing event data center is a modular DPH Series that is capable of achieving automatic redundancy for the power module through its built-in control mechanism. Taking into account the importance of the UPS system, Delta also adopted a centralized power supply solution with a maximum scalable capacity of 500kVA and a 2N dual busbar architecture, which greatly improved the reliability of the power supply system.

The DCIM system used in the micro-module provides a comprehensive unified view of the combination of the IT infrastructure (virtual machines, servers, racks, etc.) and the facility environment (power, cooling system, and environment) on which the data center operations depend. In terms of the energy-efficient design, Delta uses cabinet-type air conditioners to directly supply air in the near heat source, solving the problem of local hot spots. Compared with traditional machine rooms, the cooling efficiency of the micro-module data center is increased by more than 12%, with the PUE reduced to below 1.5.

Delta supplies industry-leading ventilation fans to major Thai property developer

Text by DET

DET (DEI and DET are associate companies) is the exclusive supplier of DC ventilation fans for a home ventilation solution recently launched by one of Thailand's leading property developers. Delta's DC ventilation fans play a crucial role in the customer's active controlled ventilation solution by efficiently and quietly circulating fresh air from outside to the interior of houses. Homeowners at the customer's premier housing projects can enjoy a healthy and comfortable indoor life with clean and cool airflow delivered by Delta's ventilation fans.

With years of experience perfecting DC brushless motor technology, Delta enriches the lives of customers around the world with best-in-class power, efficiency, durability, noise reduction and advanced functions for optimal performance. The DELTA VFB17AXTH ceiling type DC ventilation fan with duct leverages its superior energy saving capability to enable the green and cost-effective operations of the customer's entire home ventilation solution. As part of Delta's range of brushless DC motor fans, this dual speed DC ventilation fan can outlast conventional AC fans while consuming less power. In addition, the low noise impeller and scroll design of Delta's DC fans allow them to move large amounts of air at reduced RPM, creating quiet and relaxing indoor environments for users.

Delta drives innovation in sustainable green buildings as part of its mission to provide innovative, clean and energy-efficient solutions for a better tomorrow. Delta's fans and thermal management products are an integral part of its green building solutions which integrate energy management, automation controls and equipment to make environmentally friendly, secure and sustainable buildings.



The DELTA VFB17AXTH ceiling type DC ventilation fan offers energy savings, reliability and low noise



Delta micro modules builds e-government server room for vocational colleges

Text by DSBUE



Rajasthan Government uses Delta outdoor LED displays for public content delivery

Delta, a leading provider of video wall solutions, has been chosen by RajCOMP Info Services Ltd. (RISL), a Government of Rajasthan Undertaking, for providing a networked solution of LED outdoor displays. The 44 full colour and full motion LED display boards, each measuring 3.84m wide and 2.88m tall, are now installed at various locations in Rajasthan, and were built using Delta's cutting-edge outdoor LED technology. All the displays are connected to a central control room, which is used to publish content on the displays.

This is a first of its kind network in India where a state government has taken the initiative to take its programs and policies to the common man. This helps the public better understand the various schemes which the government has floated and how they can take part. The displays encourage the public to take maximum benefit from various government initiatives. The outdoor displays also help in broadcasting live information or telecasting government events live.

"Large format electronic displays are an effective way to provide useful information to the masses, for example, broadcasting new government schemes and their benefits or streaming the live feed of an important event"." expressed a senior RISL official. "This vision was first reflected in Rajasthan State's budget announcement (FY 2016-17) and subsequently, LED Video walls were commissioned throughout the state", he added.

Pan Intellect Ltd. executed this project by using Delta's 10mm SMD LED display that provides high brightness, high contrast ratio and wide viewing angles for clarity and easy readability. With a contrast ratio of over 4000:1, and a light output of over 6000nits, the LED delivers best-in-class image quality in an outdoor environment.

The displays can be addressed as single displays, groups of displays or a single large group, and are capable of showing bright images even during peak daylight, running non-stop during summer, monsoon and winter months. They are IP65 rated, which means that they are protected from the vagaries of nature. Different kinds of content like videos, text, images, RSS feeds, web pages, and others, can be displayed and played depending on a schedule that can be set in the central control room. In addition to this, streaming of live events, along with its audio can help to get the message across to the public.

5D animation of The Fairy of Ninth Heaven world's first augmented reality cave lightshow with Vivitek projectors

Text by DGC

The world's first augmented reality cave lightshow, "The Fairy of Ninth Heaven", was produced in Western Zhangjiajie Jiutian Cave Scenic Area. It uses Delta's projector brand, Vivitek large venue projector, to present the legend of The Fairy of Ninth Heaven in animated form through 5D light show.

"The Fairy of Ninth Heaven" is produced using five Vivitek large-venue laser projectors, including two DU9800Z projectors with brightness of 18,000 lumen for the top and three RU81913 projectors of 12,000 lumen brightness for the wall. 5D images were projected on the rocks of various sizes and shapes of the cave with splicing and fusion methods, producing spectacular visual effects for the audiences.

DU9800Z is Vivitek's newly launched small-sized and high brightness large-venue laser projector. With a brightness of up to 18,000 lumen, laser source with lifespan of up to 20,000 hours, 100,000:1 contrast ratio, WUXGA resolution, highly stable brightness decay, 720 degree installation, full series 3D, and 7*24 continuous operation, it is very suitable for culture and travel (theme park), stage performance, lease, etc.

World's first augment reality cave lightshow, "The Fairy of Ninth Heaven", is another case of success for Vivitek's large-venue projector in culture and travel (theme park) domain, highlighting the quality of Delta's Vivitek large-venue projectors.



Vivitek's large-venue projectors displayed spectacular visual effect for the audiences



Embrace 5G, Delta DLP helps communications service provider network management center

Text by DGC

As 5G technology matures gradually, Delta is partnering with the network management center of a communications service provider to create a 3rd generation distributed laser DLP large-screen display system that supports 4k display technology. The system will cover the provider's network control, data analysis, emergency trouble-shooting, video monitoring, emergency deployment command, demonstration exhibition, and other functions. It is an important installation component of a service provider's information platform in the future era of 5G.

The system implements Delta's 3rd generation DVCS network distributed image splice control system, which builds on the advantages of the 2nd generation products and adopts the latest DSP chip and the large-scale array signal processing chip FPGA, embedded with independent intellectual property rights 3rd generation high definition image quality, low delay, and low bandwidth encoding/decoding algorithm. It achieves full HD, all instantly, high performance image acquisition, encoding, transmission, decoding, and synchronized display. Meanwhile, the DVCS system allows the network management center to easily and quickly manage various data server room signals through a local keyboard, mouse and the DVCS control software interface. It provides safe, reliable, and seamless switching between machines for operations and management (including ultrahigh resolution full-screen visualized signals), achieving human-machine separation.

Furthermore, Delta's 4th generation laser DLP display unit offers excellent real color display with a wider brightness control range, constant color temperature, and the light source with 60,000 to 80,000 hours of lifetime, which reduces a significant amount of maintenance cost later on.



Delta's 3rd generation distributed laser DLP



Delta Power-Efficient Solutions helps Xiamen University's Chinese-French team JIA+ place 3rd in SDC2018

Text by Corporate Communications

The Chinese-French Team JIA+, formed by students of Xiamen University, Shandong University, and French Team Solar Bretagne, attended the Solar Decathlon China 2018 (SDC2018). Delta provided the project with various products and solutions including building automation, fan & thermal management, renewable energy, DC power supply, network switches, projectors, and charging stations. Team JIA+ stood out among 19 participating teams to win the 3rd place overall, the 3rd in Market Appeal, the 4th in Engineering, and the 5th in Innovation.



Xiamen University's Chinese-French Team JIA+ ranked 3rd overall in Solar Decathlon China

Delta's chief brand officer Guo Shan-Shan indicated that Delta sponsored Xiamen University's Chinese-French team to enter SDC2018 in the spirit of the brand commitment "Smarter, Greener, Together." The Company also wishes to encourage students to join the research and application in the field of power-efficient buildings, and to dedicate themselves into the Earth's sustainable development. Since 2006, Delta has been title sponsor of the Delta International Solar Building Design Competition each year. In 2014, Delta sponsored the Taiwan's National Chiao Tung University to participate in the Solar Decathlon Europe. In 2015, Delta held the Green Building Exhibition at the Grand Palais during the 2015 United Nations Climate Change Conference in Paris (COP 21), and the Exhibition has continued its world tour ever since. These are all actions taken by Delta to promote green buildings and fulfill its corporate social responsibility.

Wang Bo, the advisor of Team JIA+ indicated "The team cleverly created a spatial design, choosing the appropriate power-saving technologies, to create a traditional Chinese-style building that is also a modernized, sustainable green building." The building is 100% solar powered, using Delta's efficient photovoltaic inverters that supply the powerful energy. Furthermore, Delta's building automation products provided comprehensive monitoring and control of the lighting, HVAC, and energy management systems, while the EV charging system provided instant power monitoring and control.



International Solar Building Design Competition kicks off with competition topics of rural revitalization and building a sustainable green research base

Text by Corporate Communications

The kick-off meeting of "International Solar Building Design Competition 2019", with Delta as the exclusive title sponsor, was held in Beijing, with the organizing committee choosing Hebei Xinglong Starry Park Station and Zhejiang Fengxi Rose Educational Research Base as the competition topics. The competition aimed to build a green, low carbon, and healthy research base through optimizing architectural design and making use of renewable energy technologies such as solar energy, upholding the philosophy of "Let the dreams become reality".

Chairman Tan Tian-Wei of China Renewable Energy Association, secretary general Zhong Ji-Shou of the Architectural Society of China, chairman Song Yuan of the China Architecture Design & Research Group, Delta's chief brand officer Guo Shan-Shan, and Delta's spokesperson Jesse Chou attended and participated in the launching ceremony of the competition. Together, they unveiled the two competition topics for "International Solar Building Design Competition 2019".

Delta's chief brand officer Guo Shan-Shan represented the title sponsor in expressing that they were very happy that this year's competition was able to focus on rural revitalization, as it increased the added values from development of villages and townships through research base and stations while promoting the sustainable development of villages. Since 2006, Delta has been the title sponsor of "Solar Building Design Competition", playing a great role in promoting energy efficient and eco-friendly green buildings. "Constructing Green buildings with Delta" published early this year fully records Delta's journey in learning and promotion of green buildings over the years. Delta also produces mini-movies and holds exhibitions all over the world, so that more people can understand the advantages of energy efficiency for buildings in adapting to global climate change.



Kick-off meeting of "International Solar Building Design Competition 2019", with Delta as the exclusive title sponsor, was held in Beijing, with attendees including Chairman Tan Tian-Wei of China Renewable Energy Association (4th from left), secretary general Zhong Ji-Shou of Architectural Society of China (6th from left), chairman Song Yuan of China Architecture Design & Research Group (3rd from left), Delta's chief brand officer Guo Shan-Shan (2nd from left), and Delta's spokesperson Jesse Chou (5th from left), who also participated in the competition launching ceremony



Delta and TCIVS debut basic industrial and smart manufacturing training

Text by IABG

Delta and the Taichung City Industrial High School have just announced the official start of an industry-education partnership for basic industrial and smart manufacturing training. This is Delta's first time working with a vocational high school to train student talent. Using more than ten million NTD worth of Delta's industrial automation products, the partnership has built three labs: the Automation Basic Training Lab, the Robot and Motion Control Lab, and the CNC Mechanical Practice Center. There are also free online DeltaMOOCx courses by the Delta Electronics Foundation and the school's Electrical and Electronics Engineering Study Center, which offers courses in fundamental subjects such as basic electricity, electronics, and digital logic. The partnership demonstrates Delta's devotion to education and developing fundamental industrial and smart manufacturing talent. Attending the opening ceremony were Deputy Secretary General of the Taichung City Government Mr. Kun-Ming Kuo, Taichung Industrial High School Principal Mr. Wei-Xian Huang, Founder and Honorary Chairperson of Delta Group Mr. Bruce Cheng, DeltaMOOCx Project Leader Mr. Tsong-Pyng Perng, and General Manager of Delta IABG Mr. Andy Liu.

The Deputy Secretary General Kun-Ming Kuo indicated that as the world steps into the age of the knowledge economy, big data, and AI, the central government has designated Taichung as the "Smart Machine City". Taichung has specialty industries with outstanding production values such as machinery, green energy, aerospace, and precision machinery, as well as flourishing cultural and arts industries, which promise unlimited potential in the development of various industries.

Mr. Bruce Cheng, Founder and Honorary Chairperson of Delta Group, indicated that smart manufacturing is a rapidly growing trend, which requires Taiwan to develop more professional talent. Industrial automation is one of Delta's core businesses where research innovation and talent training are essential. Taichung Industrial High School is an excellent school for developing industrial technology expertise, and it has the advantage of being located next to Taichung's smart machines industry cluster. After the success of the online DeltaMOOCx courses created by the Delta Electronics Foundation and the Electrical and Electronics Engineering Study Center, Delta and Taichung Industrial High School partnered again to build the three labs. The labs will provide students with excellent opportunities to develop a foundation in automation skills through practice, and to continue their education in the smart manufacturing field.

Training talent for industry is the goal of Taichung Industrial High School, pointed out Mr. Wei-Xian Huang, principal of the school. Most of the school's alumni enter technology universities to pursue further studies and work in related fields after graduation. Since Delta is one of the Taiwan's leading industry brands, the school places a huge importance on this partnership and hopes that the donated equipment by Delta will allow students to gain practical experience and connect with the industry. He expects this industry-education partnership will encourage more students to join the automation industry.



Taichung Industrial High School President Mr. Wei-Xian Huang (middle), Delta Founder and Honorary Chairman Mr. Bruce Cheng (second from right), and Taichung Industrial High School teachers and students visited the newly unveiled lab



Delta showcases Industrial Smart Solutions at SPS/IPC/Drives Middle East 2018

Text by IABG

Delta participated in the SPS/IPC/Drives Middle East 2018 Exhibition from Sep. 18th ~ 19th in Dubai, UAE, and presented integrated smart manufacturing solutions for local industries. The SPS/IPC/Drives Middle East 2018 Exhibition is an international industrial automation shows in the Middle East and North Africa. This year, hundreds of world renowned industrial automation companies and experts, along with thousands of visitors, came to visit the show.

At the exhibition, Delta showcased a variety of smart industrial solutions, include:

Integrated Factory Control and EtherNet/IP Solution: Delta demonstrated a set of compact dynamic devices equipped with the Compact Drive M300 Series for driving motors, matched with the Compact Modular Mid-range PLC AS Series for programming commands. Operating data can be uploaded to Delta's DIACloud cloud platform via the Ethernet Cloud Router DX-2300 Series, allowing customers to experience remote system monitoring and equipment management through application software. All of the equipment can be perfectly integrated into a suitcase, showing the compact size of Delta's industrial automation products, and the potential space savings for customers.

Multiple Water Pumps Solution: This solution is matched with 4 sets of the Compact Drives MS300 Series to precisely drive various types of pumps to achieve flexible and integrated efficiency. For data exchange among equipment, the Ethernet Cloud Router DX-2300 Series uploads operating data to Delta's self-developed DIACloud cloud platform to provide managers with remote information integration. This smart water pump solution achieves complete variable-frequency drive and data acquisition solutions for customers.



Delta participates in the first SPS/IPC/Drives Middle East 2018 Exhibition in Festival Arena, Dubai, UAE, showcasing various industrial application solutions to demonstrate energy-saving, highly flexible and highly integrated "smart manufacturing"

Delta promoted upgrades to smart manufacturing by showcasing its robot series in World Robot Conference 2018

Text by DGC

Delta showcased its three robotic production lines in World Robot Conference 2018, incorporating various types of Delta's software and hardware industrial automation products. Visitors can place orders on spot for precision gifts to be produced by the smart manufacturing demonstration line immediately. Other exhibits included the DRV90L Series vertical multi-joint robot, which features high performance and quality, and DRS60H Series ceiling-mounted robot with significant space efficiency, etc.

"The most important thing about industrial robots in the smart manufacturing era is to have perception of timeliness and be able to operate flexibly, which are what Delta industrial robots are striving to improve." Robot Product Department manager of DGC, Jimmy Jiang, said, "Delta incorporates its years of experience in the intensive industry, together with its professional controller, machine vision and software, etc., in building competitive robotic solutions to satisfy application requirements such as fast implementation, quick changeover, and quick maintenance for customers from different industries. They can seamlessly integrate with master management system and help customers in implementing smart management, attaining smart manufacturing upgrade."

During the conference, Delta demonstrated innovative robotic products and solutions, including smart manufacturing demonstration line, Delta's DRS60H ceiling-mounted robot series, DRV90L Series vertical multi-joint robot, and DRS40L/60 Series horizontal multi-joint robot.



Delta showcased its robotic products and solutions at World Robot Conference 2018



Delta strengthens partnerships with channels in Southern Asia

Text by IABG



The 8th Southern Asia Channel Partner Meet

2018 Southern Asia Industrial Automation Channel Partner Meet

Delta IABG held its 8th Southern Asia Channel Partner Meet at the Furama RiverFront Hotel in Singapore. Attended by a large gathering of channel partners from across India, Nepal and Sri Lanka, as well as senior management from Delta Group and employees from Delta India Industrial Automation, Delta presented awards to partners for their excellent contributions over the previous year.

Mr. Andy Liu, the General Manager of IABG, indicated that since Southern Asia is a vast region with developing infrastructure, promoting Delta IA's business is especially challenging. Mr. Liu appreciated the partners' continuous support for Delta IA's products all over the region, and looks forward to more cooperation in the future.

Mr. Manish Walia, head of the Industrial Automation Business Group - Delta India, said that the channel partners have played a very significant part in the success and consistent growth of Delta's industrial automation business in India. Delta thanked the channel partners for their consistent support and assured them all possible assistance from Delta India in the future.

Delta India and LUBI Electronics - 20 Year Anniversary

At the end of August, Delta IA held a celebration ceremony for 20 years' of partnership between Delta and Indian distributor, LUBI Electronics. LUBI is the leading industrial automation production supplier in India. It has focused on the textile, rubber and plastics, and machine tool industries for more than 40 years.

With 20 years of partnership, LUBI is not only Delta's oldest Indian distributor, but it has also maintained the highest growth rate. The celebration ceremony was held at Delta India's headquarter just before the annual Channel Partner Meet. The General Manager of Delta IABG Andy Liu and the General Manager of Delta India Dalip Sharma presented LUBI Electronics CEO Atul Adalja with the outstanding distributor award for their 20 years of support. Together, they cut the anniversary cake to celebrate the 20 years of partnership. Mr. Atul Adalja said that LUBI Electronics is honored to have accompanied Delta on their 20 years' journey. LUBI is committed to working with and supporting Delta's IA business in India, and looks forward to establishing an even stronger relationship in the future.



The General Manager of IABG Andy Liu (2nd from left) and LUBI Electronics CEO Atul Adalja (1st from left) cut the 20 year anniversary cake together



Delta scholarship contributes hundreds of environmental talents to Taiwan

Text by Delta Electronics Foundation

The solutions to environmental issues require expertise from various fields. In order to train diversified talents, Delta has been in partnerships with the Netherlands Trade and Investment Office and British Office Taipei respectively since 2005 to sponsor students participating in overseas master and Ph.D. programs in these two countries. 110 talented students have been sponsored so far.

For the past ten years, Delta Scholarship has helped over a hundred Master's and Ph.D. graduates, who have returned to Taiwan to continue to work in the industry, government, academia, and NGOs, and promote the low-carbon sustainability work in the country. 2009 Delta/Chevening Scholarship recipient Yang Zhong-han is an honorary attorney of the Small and Medium Enterprise Administration and of the Green Trade Project Office of the Ministry of Economic Affairs, and has translated the internationally renowned book "Energy Law: An Introduction". 2009 Delta Netherlands Scholarship recipient Huang Ruo-ting, currently a Ph.D. candidate of Environmental Management and Energy Economics at TU Dresden, helped the Delta Foundation to participate in the Intergovernmental Panel on Climate Change to increase Delta's visibility in the overseas climate change community, so that Delta was able to present its green buildings success cases and carbon reduction achievements on the international stage.

★ More about the Delta Scholarship:

The registration period of the 2019 Delta/Chevening Scholarship is from August 6 to November 6, 2018. For more information: <http://www.delta-foundation.org.tw/Press/437>

The registration period of the 2019 Delta Netherlands Scholarship is from February to April, 2018. For more information: <http://www.delta-foundation.org.tw/Project/16>



Group photo at the 2018 Delta Scholarship Awards Ceremony

Delta Electronics and Nanyang Technological University launch second lab space to expand joint research efforts in developing smart technologies

Text by DRC

Delta Electronics and Nanyang Technological University, Singapore (NTU Singapore) have officially opened a second laboratory space on September 19th. Launched by Delta Electronics Chairman Yancey Hai, NTU President Subra Suresh and National Research Foundation Chief Executive Officer Low Teck Seng, the expansion of the lab helps accommodate the rapid growth in research activities and also allows the joint research team to explore several new projects that involve partners from industry, government and academia.

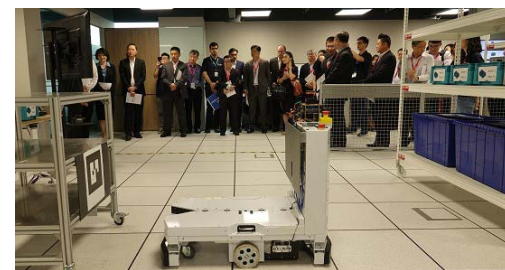
In the opening remarks, Delta Electronics CEO, Mr Cheng Ping, said, "Delta has a rich history and great success in collaborating with academia, a value continuously promoted and supported by our founder Mr. Bruce Cheng. As a corporate citizen, we truly believe that cultivating talent and nurturing innovation are the keys to a sustainable future."

NTU President Professor Subra Suresh said, the tight collaboration between researchers from NTU and Delta enables the key progresses in the joint efforts of enhance manufacturing processes, and improve learning and living experiences.

Launched in 2016 with the support of the National Research Foundation (NRF), the lab currently runs 15 projects. The research projects focus on four broad research areas: smart manufacturing, smart learning, smart living and smart commercialization. These technologies will be further developed into total solutions for global clients.



Delta Electronics Chairman Yancey Hai, CEO Ping Cheng, CTO Thomas Li, NTU President Subra Suresh and Corp Lab Steering Committee members all attended the launch ceremony



Guests watched the Smart Manufacturing project demo - universal smart navigation kit for AGVs. The new kit will increase AGVs' flexibility with enhanced navigation abilities such as obstacle detection & trajectory planning



DET in FTSE4Good index series 2018

Text by DET



Delta Thailand in the FTSE4Good Emerging Markets Index

DET (DEI and DET are associate companies) is in the FTSE4Good Emerging Index for the second consecutive year. Launched in 2001 by global index provider FTSE Russell, the FTSE4Good Index Series measures performance in companies demonstrating strong Environmental, Social and Governance (ESG) practices. In 2016, the FTSE4Good Emerging Indexes began for companies in over 20 emerging countries.

As part of the London Stock Exchange Group (LSEG), FTSE Russell's services and products reach a wide range of institutional and retail investors globally. Investors can leverage the FTSE4Good Index as a tool for sustainable investment and as a framework for corporate engagement and stewardship.

Besides the FTSE4Good Index, Delta is also among the top five companies of the "Electronic Equipment, Instruments & Components" sector on the world-renowned Dow Jones Sustainability Index (DJSI). In addition, Delta is in the RobecoSAM Sustainability Yearbook 2018 with a Bronze Class distinction. The company's many internationally acclaimed ESG recognitions are strong indicators of the successful strategy of its Sustainable Development Committee led by Mr. Hsieh Shen-yen, Delta President.

As one of the leading electronics companies in Thailand, Delta commits to global corporate citizenship and supports the UN Sustainable Development Goals (UNSDG) to benefit stakeholders and society at large. In a talk on Delta's alignment to global megatrends, Mr. Hsieh said, "Our stability, development-friendly environment, and diverse opportunities for growth make us uniquely situated to provide sustainable solutions for a better world."

Delta DRV90L aeries articulated robot wins "2018 Golden Finger Award"

Text by DGC

Delta's multi-axis articulated robot DRV90L series won the innovative product award in the "2018 Gold Finger Awards - China International Robot Annual Rating".

The multi-axis articulated robot DRV90L series is a six-axis, multi-angle industrial robot with a 900mm working radius, a 7 kg maximum load, and superior speed, linearity, verticality, and precision repeatability. Its sensor compliance allows for the compensation for the deviation between workpieces and insertion holes. The robot series is a combination of performance and high quality. The DRV90L series is highly integrable and can quickly integrate the automated components released by Delta to create a high performance robot workstation. Based on the changes of the production line, it can quickly introduce production line automation to satisfy the needs of process applications and help industrial clients of 3C electronics, rubber and plastic, machine tools, food products etc. to improve the production efficiency and quality.

The "2018 Golden Finger Award - China International Robot Annual Rating" is supervised by the China Machinery Industry Federation and jointly initiated by the 2018 China International Robot Show (CIROS) and the Vogel Industry Media. The purpose of the event is to effectively review the drive of technological innovation in the robot industry, find the development driving force, source, path, and directions of technological innovation in the industrial robot field, and further continuously improve China's high-end equipment application standards.



Delta articulated robot DRV90L series wins innovative product award



Delta wins 3rd prize in 2018 NLP Challenge on Machine Reading Comprehension

Text by DRC

Delta recently placed 5th and won the 3rd prize among 153 international teams in the "2018 NLP Challenge on Machine Reading Comprehension" organized by Baidu, the Chinese Information Processing Society of China, and the China Computer Federation.

During the award ceremony, Team Leader Yi-Ying Tseng received the prize on stage, and represented the 3rd prize winning team to speak on stage. Tseng explained the NLP technologies and machine reading comprehension models to hundreds of industry and academia experts.



Delta team members (left to right): DRC Yi-Ying Tseng, Chi-Chieh Shao, Yu-Ting Lai, and DMS Po-Chen Lin, Rui-Chen Hsiao



Delta employee Yi-Ying Tseng explains the data and model used in the competition to hundreds of industry and academia experts in the audience

The day-to-day research field of Delta's team, consisting of staff in the DRC Intelligence in Text Team and DMS, includes NLP and machine reading comprehension. In this NLP Challenge on Machine Reading Comprehension competition, the whole dataset came from real questions on Baidu search engine and "Baidu Knows". There were over 270,000 pieces of data, the largest Chinese dataset in history.

After this competition, the team not only received a valuable real dataset, but also experience in data processing and model optimization. "After the external resources and experience we acquired through the competition are combined with the Chinese dataset independently developed by DRC, Delta's machine reading comprehension was reinforced, particularly in the search for professional knowledge in specific fields." says Team member Chi-Chieh Shao.

The next step for the team is to focus on a machine reading comprehension model that is knowledgeable and can understand questions made by real people. Along with the word generation technology, users are allowed to obtain answers quickly from the database in a user-friendly and intuitive Q&A window. It could further reinforce Delta's intelligence and knowledge management capabilities.



Delta Detroit Office

PEOPLE

Driving growth, driving towards the future Delta Detroit Office

Text by Delta Detroit Office



Dr. Charles Zhu / Vice President, Automotive Sales and Product Development

I joined Delta in September, 2010. At the time, the Detroit office had just been established. It was a small office with only 5 employees. The reason I was attracted to Delta, besides its strong technical background in Power Electronics, was the compatibility of my personal skills and vision with Delta's development of its electric car sales strategy. I was determined to join the team and I began my work at Delta as an Engineering Director.



PEOPLE & PRODUCT



Charles Zhu (first on the left) and the band during the Christmas concert last year



Charles Zhu surfing in the Dominican Republic

Delta is a leader in the IT power supply industry. During the beginning of the electric car industry, we started with the development of basic electronic power modules for car specification. In 2011, we developed the first 95% efficient 2.2kW DCDC module alongside the Taiwan team. In 2012, we developed the first 95% efficient 3.3kW OBCM for car specification with Shanghai team. Both of these projects were completed under the sponsorship of General Motors' Advanced Technology Work (ATW). With these car specification samples, we began to bid and luckily win production items; transforming ourselves into a Tier-1 supplier for North American car companies (OEM) and launching our business. Our development partnership with OEMs was very effective. OEM would send engineers to help guide us and our Delta team was a fast learner, who made quick progress. These drove us to winning more production items. From car electronics to now, we have taken on at least 15 ATW front end development items. These front end development items had a crucial effect on Delta's expansion of its car business and product line. From the beginning in 2012 to now, the Detroit team has also successfully applied for 3 items of United States Department of Energy. With these high standard research and development items, we have attracted the very best talent in the car industry. There are now more than 40 members in our team. When TIBU was established in the middle of the last year, we in Detroit were lucky enough to recruit dozens of experienced motor development engineers. In just a year, the Detroit team, alongside the Zhongli team in Taiwan, has successfully acquired an integrated product project from each of the two main car companies in North America (inverter+OBCM+DCDC). These results are truly exciting and has officially opened the door for Delta in terms of electric car systems and solutions.

The target market for EVSBG is the electric car market in the automobile industry. As environmental protection becomes a focus of government policies and the car companies, electric cars replacing combustion engine cars has become a trend. The development goals for the Detroit team over the next few years are to continue strengthening its technical capabilities, deepen relationships with the heads of each major car company, and becoming a long term partner with every car company. This will ensure a place for Delta in the rapid growth of electric cars in the future.

Besides work, I love music. My love for playing saxophone in the university orchestra has stuck with me until now. Since I joined the Canton Concert Band, we play for free on holidays or during summer outdoor events every year. We hope to fill people's lives with happiness and bliss with our music. Skiing and surfing are also activities that I love. I find there is a special fun in challenging nature.



PEOPLE & PRODUCT



Paula Hart / Logistics & Production Release Analyst, EVSBG

I joined Delta in May of 2018 in Livonia, MI USA as Logistics & Production Release Analyst, for the EVSBG group. Since that short time, that role has expanded and I have been able to work with teams from Fremont, Thailand and Taiwan to help improve and stream line our supply chain process for the Automotive Market. Our goal is not to just meet the customer expectations but to exceed them.



Paula Hart with a two years white tail deer in Cheboygan, Michigan in the fall of last year

I would describe myself as a true outdoor person. Here in Michigan, we enjoy the four seasons and I take full advantage of them all. In the wintertime, I enjoy the 6300 miles of wilderness snowmobile trails and ice fishing on our inland waterways and the Great Lakes. In Michigan no matter where you are you are only 85 miles from a Great Lake. In the spring, I fish for walleye and Lake Perch. Summer is filled with boating and salmon fishing in the Strait of Mackinac on Lake Huron and scuba diving here and the Caribbean. Fall is my favorite time of year I hunt the Michigan white tail deer. Through hunting and fishing, I provide my family with seventy percent of our red meat and it is very organic. Through fishing, I provide the family with eighty percent of our fish. Hunting and Fishing helps to control prey species (deer, elk, and bison) who might otherwise have population explosions due to reduced predator populations and urbanization through money for licenses funding habitat and population control. I am passionate for life and the outdoors and helping to maintain and preserve nature's beauty for generations to come.



PEOPLE & PRODUCT



Richard Hampo /
Sr. Director of Engineering – Traction Inverters from the Detroit, Michigan office, EVSBG

I joined Delta in June of 2017 to start a new business unit (TIBU) for automotive traction inverters. This is the electronic module that powers the electric motor in electric and hybrid-electric vehicles. We have had fantastic growth in the short time due to the great work of our worldwide TIBU team and now have several production customers. I am so fortunate to have great people on our team across the globe: Detroit, Taiwan, Shanghai and India. It is interesting to note that I currently work in Detroit with several people for the 3rd time (3 different companies) – automotive high power electronics is really a small group of experts in Detroit!

When I am not working on automotive electronics, I am busy with many family activities. My wife and I enjoy all outdoor activities and ride our bikes, hike, and kayak on the local rivers and lakes in the area. I took up the sport of ice hockey when I was 40 (when my son was 8 years old) and have been playing ever since. I am inspired by the “world’s oldest hockey player” (<https://www.youtube.com/watch?v=qC2O9Y9I2Lo>) and hope to be healthy and fit enough to be able to play for many more years.

I am also a very hands-on person by nature – I like to do-it-myself. As examples, I have been brewing my own beer for almost 25 years, and now I am finishing the basement of my home, including a bar area where I will soon serve my friends some of the beer that I make. It has taken me 18 months of evenings and weekends, but my wife calls it my “therapy”. I have done all the work myself, including framing, insulation, electrical, plumbing and drywall. The first picture was taken the beginning of the project, and the second picture is the current status of the bar area, showing a cardboard template that I made to size the custom bar-top that I am having made.



Richard Hampo is finishing the basement of his home, including a bar area where he will soon serve his friends some of the beer that he makes



Delta PMH series expands to pollution degree 3 for harsher industrial environments

PRODUCT

Delta PMH series expands to pollution degree 3 for harsher industrial environments

Text by DET

Pollution Degree (PD) is an important classification for the clearance & creepage distances of electrical insulation, such as distance between components, PCB traces and power supply enclosure. With contaminants or condensation, the gaps are smaller increasing the risk of failure or short circuit. PD1 refers to environments with no pollution, or only dry non-conductive pollution such as sealed enclosures. PD2 are environments with only non-conductive pollution occasional temporary conductivity. Harsh industrial environments would fall under PD3 classification.

Both PMH-24V100WCAS and PMH-24V150WCBS models now includes pollution degree 3 classifications ensuring product reliability in industrial manufacturing environments. This applies to the new models PMH-24V100WCCS and PMH-24V150WCDS. They comply to pollution degree 3 even up to operating altitudes of 5000 meters.

The models also meet the EMC approvals to EN 55014-1 / EN 55014-2 for household appliances, EN 55032 Class B and EN 61000-6-1 / EN 61000-6-3 for residential environment without extra EMI filter required. Suitable applications include household appliances (e.g. vending machine, washing machine, etc.), industrial automation and measuring instruments.



A visit to the Ginza Six Garden

Text by Tino Wang / Delta Electronics Foundation Climate and Energy Project Officer

I took a trip to Tokyo at the end of June and discovered that the scorching temperature of Japan's summer was as high as that in Taiwan. Street pedestrians had no other choice but to stay in a department store where there is air conditioning. I accidentally ran into an oasis over the roofs of several department stores in Ginza, a concrete jungle and most affluent shopping area in Tokyo.



As a paradise where fashion is born across Japan, Ginza is known for its extremely high property prices, how could there be a piece of real estate allotted for no practical use? Yet commercial-savvy entrepreneurs were smart enough to plan a terrace over the roofs of department stores and shopping malls, which could reduce the high temperatures of urban buildings and electricity bills, while creating an environmental-friendly image of this shopping district. All of this would attract more tourists and develop new customers at the same time.

As a matter of fact, this trend of building green roofs and terraced gardens has swept Japan in recent years—from Shinjuku, Omotesando Hills, and Roppongi Hills, to the most well-known Namba Parks of the Osaka shopping district. Here I'd like to share two examples of roof terraces in Ginza.

GINZA SIX, an ideal place for parents to take a rest and kids to frolic near the water

The GINZA SIX, part of an urban renewal project, was opened in April 2017 on the previous site of Matsusakaya and two adjacent areas. As to why it was called "Ginza Six," some said this was because it is located in 6-chome, whereas others said it was aimed to provide a 6-star customer experience. Yet it might have something to do with the "roof zoo" built by Matsusakaya many years ago. Probably the roof terraces were inspired by the roof zoo.



The lushly abundant vertical greening of the roof terraces in GINZA SIX





DELTA GREEN LIFE

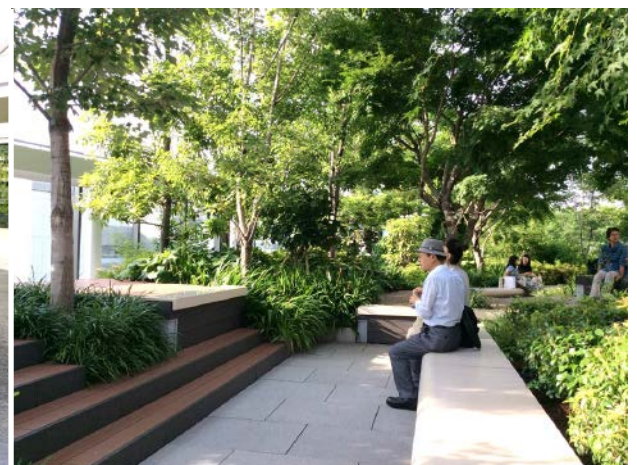


As a shopping mall that contains the famous Tsutaya Bookstore, the interior design of GINZA SIX is full of artistic atmosphere. Before stepping into the roof terraces, you may see an LED lighting green waterfall wall (designed by the teamLab), which was called "Universe of Water Particles on the Living Wall," a perfect combination of modern technology and aesthetic value that brings visual coolness to visitors. You'll be welcomed by a vertical wall named as "Living Canyon" in the staircases. Covered with domestic plants, this vertical wall provides shoppers with a pleasant experience when walking up or down the stairs.

The greening design in the stairways of GINZA SIX

When arriving at the Ginza Six Garden on the 14th floor, the well-planned paths are shielded by trees. This Edo-style garden is featured with large numbers of cherry blossoms and pine trees, along with a small shrine in one of the corners. There is a similar shrine over the rooftop of Hayashi Department Store in Tainan, Taiwan.

It is worth noting that a green roof was thought out before GINZA SIX was even constructed. This ensures against water leakage, and explains why there are large trees, lawns, and a pool. A slightly tilted pool was designed to let the water flow over the rooftop. The 1-2 cm depth of water allows children to frolic safely here, while parents have a leisurely conversation nearby. This sight seems to be very similar to any parks in Taiwan.



A pool specifically designed for children to frolic and have fun in GINZA SIX Garden



Sipping at coffee while enjoying the night scene in Tokyo Plaza

A short distance away from the Ginza Garden, the roof of the TOKYU PLAZA GINZA also boasts a three-story vertical wall (Take an escalator when you reach the 11th floor). The vegetation was designed to grow inwardly, which disallows pedestrians from seeing this green wall outside the building.

The KIRIKO TERRACE & café attracts diners with its very special location at the rooftop, which is divided up into "Water Side" (white) near the pool and "Green Side" (featuring an L-shape green wall). Diners may enjoy the night scene while drinking coffee. This makes the best use of the roof space in a commercial district.

Interestingly enough, the lawns of the Mitsukoshi department store nearby make a triangle to the above two green roofs. All three green roofs provide a number of precious green spaces amid the densely populated urban areas. They also provide an ideal place for people to take a break for a while.



The roof coffee shop at the TOKYU PLAZA was beautifully decorated with a green wall

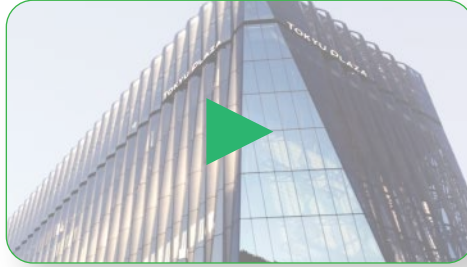


The green roof of the TOKYU PLAZA provides a nice view of the city (left), A bird's-eye view (right)



If the speed of global warming cannot be reversed, such horrid heatwaves and torrents might become regular occurrences in the future. To address this problem, we need more green lands to reduce the heat for the urban environment where we live and work and where foreign visitors come to visit. This may help to alleviate urban heat island effect and the impacts brought by extreme weather.

I cannot help but wonder, where can we find the roof oases in Taiwan's department stores or high rises, like those we find in Japan?



A commercial of the TOKYU PLAZA in 2018

Reference /

- ▶ The official website of GINZA SIX
- ▶ The official website of TOKYU PLAZA GINZA



Protect the environment with Delta volunteers

Text by Katharine Liu / Delta Research Center project manager

I chanced upon a video "Zero Waste Lifestyle" on the internet, which left a deep impression on me. It describes how a lady from the United States, Lauren Singer, who graduated from environmental studies at New York University, implements the environmental protection philosophies that she learnt from school and changes the relationship between human and environment. She began her journey of Zero Waste Lifestyle, producing less than a glass bottle of trash in five years. It makes me realize that to implement environmental protection, we have to start from ourselves and should not burden the earth further.



Let's take this opportunity to experience energy conservation and carbon reduction, and practice waste reduction for a day.

Exhibit of the trash generated by Singer, which are mainly unrecyclable items such as plastic straws, desiccant, paper wrapper, etc (source: trashisfortosser IG)



1. Energy-saving tips for daily life

Have you ever wondered which household electrical device has the highest power consumption?

In summer, air-conditioning consumes the highest electricity. Without proper control, the electricity bills could burst your budget. I'll normally set the temperature to 28°C and let the air circulate with the help of a fan to maintain comfortable body temperature. In addition, I clean the air filter every month to prevent accumulating too much dirt and wasting electricity.

During winter, electric water heater and electric air pot have the highest power consumption. According to the statistics of the Bureau of Energy of the Ministry of Economic Affairs, the monthly power consumption of an electric air pot may exceed that of a large refrigerator. Take a small household for example, they may consume hot water about 3 to 5 times per day, but the water dispenser or electric air pot require 24 hours of operation in order to maintain the temperature for the hot and cold water, consuming a lot of electricity. Hence, I will install a timer on the socket or heat up the water manually where necessary, instead of maintaining high temperature at all times.

Cultivating good power consumption habit is very important. According to a test by the Industrial Technology Research Institute (ITRI), standby power is about 7.4% of household electricity consumption, including the indicator lights of television / computer, set-top box or wireless base station (AP), microwave with time indicator, air-conditioning or dehumidifier with indoor temperature and humidity indicators, etc. If we switch off the power of these electrical appliances with standby function or use independent power switch, it is possible to save a thousand NTD of electricity bill in a year.



independent power switches for household appliances such as electric air pot, dehumidifier, electric fan, TV set-top box, etc



2. Environmental protection program with reduction of plastics

Statistical reports show that people of Taiwan use an average of more than 782 plastic bags per year, four times that of Europe. There have also been recent reports of turtles being stuck with plastic items such as straws, sparking different environmental issues. This reminds me of attending meetings in other companies, where bottles of mineral water are placed on the meeting table, leaving behind a big bag of empty bottles trash at the end of the meeting, and I felt quite disturbed by it. I keep reminding myself to cut down on disposable tableware and plastic items, and bring my own shopping bag, reusable chopsticks, and water bottle. I also bring my own cup when buying soy milk for my breakfast and try not to buy bottled water and beverages. Such actions will reduce a lot of rubbish over a period of time.

In addition, for household cleaning, I'll use environment-friendly washing products such as replacing laundry detergent and dish detergent with bitter tea powder, using environment-friendly washing powder, etc. Such behavior requires great determination in order to persist.



Bring my own reusable cup, shopping bag and cutlery, do not use disposable chopsticks and straw when eating out, and use environment-friendly cleaning products

3. Promotion of energy education

In the past, I did not put much thought into it, but now, I'll think about the problems behind consumption behavior, which makes me realize that environmental protection starts from small areas, producing big changes over time. I hope to influence my colleagues and friends with this philosophy. What should I do in order to set an example? I believe that education is a very good start. After joining Delta Foundation, I began to accumulate many stories that can relate to people and also get to know a lot of friends who spare no effort in contributing to environmental protection.

The Foundation organizes energy volunteer training every year, attracting volunteers from Taoyuan, Chungli, Tainan, and even Shanghai and Thailand. We led the students in learning about energy usage of the surrounding, starting from climate change and global warming. With the knowledge in energy and green buildings, we do blocks building and gradually let the students understand they can implement energy conservation and carbon reduction after the lesson, and then to the whole campus and at home. We believe the environmental education will produce good results.



The two trips that left me with deep impressions were at Tainan's Yongan Elementary School and Kaohsiung's Namaxia Elementary School, which are both built with green building campuses. The students have cultivated energy-saving behavior with the influence of the environment and the teachers. The teaching activities that the Foundation planned are green building-related. Groups of different ages attended the course and played games, and the students can learn about energy saving in a more structured manner. Through picture books making, e-books, and augmented reality, we hope to increase the influence of the energy teachings. Every energy-saving action and every story in the process records the effort of the teachers and students. I feel that this is a big step for me in promotion of the environmental education.



Energy education volunteers – guiding children in learning about energy and implementing energy conservation and carbon reduction

“Environmental Protection” is not only a habit, but an attitude towards life. We are too used to convenient lifestyle, that we forget about “change”. With the above stories about energy saving in household, plastic reduction program, energy education promotion, etc., we’d like to invite you to join us in protecting the environment that we live in.

Reference /

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