

# Our footprint reduction initiatives

## Offices

- Maintaining LEED<sup>1</sup> certifications for our offices in New York (Platinum), Hong Kong (Gold), Hong Kong (Silver) and Istanbul (Silver). Our office in Paris is located in a BREEAM-certified building
- Continuing the redesign of our office spaces globally to promote collaboration and minimize environmental impact by reducing renovation work, converting and reusing furniture for modular, multi-purpose working areas that are flexible and mobile, and using environmentally-responsible materials such as vinyl floor tiles which are low in volatile organic compound emissions and phthalate-free. Since 2016, we have transformed offices in Ho Chi Minh, Hong Kong, Jakarta, Qingdao, New Delhi, Seoul, Shanghai and Singapore, with London and Dhaka under renovation and targeted for completion in the first and second quarters of 2020
- Implementing systems to measure, track and manage our environmental performance across our office operations with an ISO 14001 environmental management system (EMS) standard certification covering our office in Norderstedt, Germany
- Retrofitting T-8 and halogen lighting with energy-efficient LED, T-5 and CFL alternatives and maintaining appropriate lux levels; all renovations and new facilities using only LED
- Using energy-efficient variable refrigerant volume (VRV) air conditioning systems
- Optimizing performance and energy-efficient retrofits of chillers and ventilation systems
- Consolidating equipment and installing energy-efficient blade servers and virtual machines in our server rooms, as well as conserving energy by improving airflow and enclosing areas that have high-intensity cooling requirements
- Turning off lights, computers, monitors and printers when not in use
- Implementing an automatic computer and lighting shutdown policy outside of working hours
- Maintaining office and server room temperatures at levels that minimize energy use
- Reducing energy consumption of IT infrastructure through use of virtual machines, blade servers, efficient air flow systems, revamp of storage and server technology and changing from hybrid cooling system to water cooling
- Using renewable energy where feasible; photovoltaic panels generate a portion of our Istanbul office's electricity demand
- Using paper certified by a Forest Stewardship Council™ (FSC™) accredited certification body to be FSC Mix Paper from responsible sources or that has Programme for the Endorsement of Forest Certification (PEFC), or from recycled, post-consumer materials
- Collecting materials for recycling, including glass, metal, paper, and plastics in our offices in Hong Kong, and those other materials in other locations depending on what can be recycled in local markets
- Recycling 77 kilograms of metal mooncake tins following the Mid-autumn Festival; our Logistics business collected the tins from Li & Fung offices across Hong Kong
- Engaging a licensed contractor to collect used electronics for reuse, recycling and safe processing

<sup>1</sup> Leadership in Energy and Environmental Design (LEED).

# Our footprint reduction initiatives

## Distribution Centers (DCs)

- Becoming a signatory to Nike and Ocean Conservancy's Arctic Shipping Pledge, prohibiting the use of Arctic routes for shipping
- Establishing a 15-year strategic partnership with leading bespoke solar developer and asset management company, [NEFIN](#)<sup>2</sup>, to install a solar photovoltaic (PV) system on the rooftop of LF Logistics' headquarters, the LiFung Centre in Shatin. The system showcases 336 pieces of cutting-edge shingled modules together with leading monitoring and control systems. It will produce an estimated 145,000 kWh per annum of electricity to the grid, which will avoid approximately 86.6 tonnes of carbon dioxide equivalent per year that would have been emitted from local energy generation. This is equivalent to planting 4,165 trees a year!
- Becoming a signatory to the Hong Government's Energy Saving Charter in 2019, reaffirming ongoing commitments to reduce energy consumption, improve efficiency and be transparent in performance monitoring
- Maintaining our LEED Gold-certified DC in Singapore that also received the BCA<sup>3</sup> Green Mark Platinum rating
- Systems to measure, track and manage our environmental performance have been implemented across our Logistics' operations with ISO 14001 environmental management system (EMS) standard certifications covering six DC facilities in Hong Kong, four in Taiwan, two in Mainland China and one each in Singapore and Thailand
- Continuing to implement Logistics' Lean Transport initiative that includes:
  - > Optimizing the proximity of DC facilities to supplier and customer locations
  - > Maximizing vehicle loads, minimizing truck mileage, reducing empty vehicle returns and consolidating customer deliveries
  - > Phasing out pre-Euro IV diesel commercial vehicles with the phased introduction of Euro V and VI vehicles
  - > Improving route planning to reduce fuel consumption and GHG emissions
  - > Operating three electric delivery vans in Hong Kong, and over 50 through a third party in Mainland China, with ongoing expansion of electric vehicle fleets
  - > Awarding drivers that consume less fuel than the monthly fuel consumption standard
- Joining [Green Freight Asia](#)<sup>4</sup> in 2019 to learn from and collaborate with industry peers to adopt logistics' practices with reduced environmental impact, including fuel efficiency and reductions in GHG emissions
- Directing ocean freight to marine transport operators that provide more environmentally-responsible fleets with reduced air pollution, greenhouse gas emissions and waste generation
- Operating renewable energy installations in both Japan and Mainland China with 40% of the energy consumption at two of our DCs, one in Ping Gu, near Beijing, and another in Suzhou, coming from their rooftop solar systems
- Using environmentally-responsible materials in building construction and refurbishment, including building materials with responsibly-sourced and/or recycled content, non-toxic and ultra-low VOC paint and carpet tiles with pre- and post-consumer recycled content

<sup>2</sup> <http://nefinco.com/en/home-en/>

<sup>3</sup> Building and Construction Authority of the Government of Singapore.

<sup>4</sup> <https://www.greenfreightasia.org/>

# Our footprint reduction initiatives

## Distribution Centers (DCs)

- Reducing energy consumption by:
  - > Maximizing natural light with skylights
  - > Installing high-efficiency induction lighting, motion sensors and infrared automatic induction lighting in high-shelf areas and voice-controlled lights in corridors
  - > Equipping non-air-conditioned areas with very large and energy-efficient ceiling fans to enhance air ventilation
  - > Installing LED lighting in newly-built warehouses and replacing existing halogen lighting with LED in restructured warehouses
  - > Changing the control sequence of the air conditioning to use less units, and aligning the heater workload and water spraying control valve
- Operating forklift vehicles that have rechargeable electric batteries for the majority of our fleets in all our facilities, and safely reusing fit-for-purpose parts from retired forklifts for vehicles in operation
- Reorganizing DC operations to streamline processes, increase automation and reduce waste, and adopt more energy-efficient equipment
- Deploying drones for stock taking at a DC in Malaysia, eliminating the need for warehouse colleagues to use very large, energy-consuming equipment and to work at height. As the drones can analyze 180 pallets per hour, twice as fast as traditional methods, productivity gains are also realized
- Increasing efficiency and reducing paper consumption at our DCs in Thailand by employing a voice picking solution that enables colleagues to identify items to be moved in the warehouse (i.e. the picking process) using spoken commands. Printed picking lists or remote data terminals are no longer needed and are replaced with wired or wireless Bluetooth headsets. The technology also enables colleagues to work hands-free and enter information or make changes via spoken commands
- Using handheld monitoring devices with rechargeable batteries that are linked to centralized databases to monitor inventory and thereby reduce paper consumption and enhance the efficiency of warehouse operations
- Reducing waste by reusing boxes and hangers, providing reusable dishware and cutlery, increasing the capture of recyclables, and installing filtered water stations that meet required drinking water standards to avoid plastic water bottles
- Using machines and rope to reduce the consumption of plastic shrink wrap in the warehouse, and bundling packages for delivery to reduce packaging waste
- Replacing plastic storage bands and cling wrap with reusable alternatives and recycled materials
- Reusing and recycling pallets made from plastic and wood-based materials, recycling waste materials and minimizing packaging for internal storage and delivery of finished goods. In Singapore, our DC is reducing the use of disposable packaging by reusing metal storage crates. We are using over 5,500 zero-waste, recycled pallets<sup>5</sup> in our DCs in Indonesia and will look to expand their use across our operations. Aligning with circular economy principles, the pallets are made from 100% waste plastic and they are designed to be recycled into new pallets at the end of their useful life
- Planting trees and vegetation to reduce heat and dust in warehouse areas and capturing rainwater for landscape irrigation to reduce water consumption. During non-rainy seasons, rainwater captured and stored at our DC in Taiwan is able to provide a month's supply of water

# Our footprint reduction initiatives

## Distribution Centers (DCs)

- Our nine-story, one-million-square-foot, multi-temperature DC in Singapore is the country's largest, automated and customs-bonded warehouse, leveraging a suite of best-in-class technologies and product-handling methods, including an automated storage and retrieval system (ASRS), semi-automated pallet shuttle system, robotics, put-to-light pick systems and market-leading e-commerce logistics solutions. It also consumes 30% less energy than a facility we previously operated in Singapore, despite being four times larger. Key features of the facility include:
  - > An intelligent lighting system, combining motion sensors and LED lights, reduces electricity consumption, greenhouse gas emissions and cost. The LED lights are 45% more efficient and last 25 times longer than fluorescent lights and they emit much less heat compared to traditional metal halide lamps, which also reduces air-conditioning demand
  - > A mix of air cooling and ventilation systems that reduce energy consumption and improve air flow in large areas of the warehouse with varying temperature requirements. The building facade has composite paneling and glazing to minimize solar heat gain, acting as insulation to keep the interiors cool, which enhances the comfort and productivity of workers on hot days. With only half of the building being air-conditioned, the rest is cooled by seven-meter-wide, high-volume, low-speed fans that circulate extremely high volumes of air using much less energy than would be consumed by air-conditioning systems. Louvered windows are also used to maximize natural ventilation and air circulation
  - > Energy-efficient variable speed chillers that are 20% more energy efficient than conventional systems as well as air-conditioning systems that are 40% more efficient with CO<sup>2</sup> demand control ventilation sensors
  - > High-efficiency, zero-emission handling equipment was fully adopted to avoid the indoor air pollution that arises from traditional, diesel-powered equipment and to conserve energy. Examples include:
    - ~ Best-in-class, electric-powered forklifts, cranes, conveyors and semi-automated pallet shuttles that move goods throughout the warehouse
    - ~ An electric-powered, high-density ASRS with narrow aisles that uses 25% less floor space than conventional storage systems, requiring less energy for lighting and temperature control
  - > Cooling towers consume NEWater – reused wastewater that has been treated through both dual-membrane (via microfiltration and reverse osmosis) and ultraviolet technologies and conventional water treatment processes, thereby reducing overall water consumption
  - > A Building Management System (BMS) integrated with the electrical, water and plumbing, mechanical ventilation and fire protection systems that optimize temperature control and operating times within the building. Sub-metering linked to the BMS monitors performance and detects leaks for all major water uses
  - > Non-toxic paints and ultra-low VOC carpets used during the fit out of the indoor office areas benefit both indoor air quality and workers' health. Indoor air quality (IAQ) management plan implemented with air filters providing 80 to 85% dust spot efficiency for key working and staff areas
  - > Sheltered bicycle racks and onsite showering facilities encourage people to adopt healthy and more environmentally-responsible transport options. Preferential parking for hybrid, fuel-efficient and car-pooling vehicles
  - > Recycling paper, plastic, glass and carton boxes during operations (at least 50% of waste arising from the construction process in 2016 was recycled)
  - > Adopting a mechanical system, which includes a conveyor, chute and compactor, to move and substantively reduce the volume of recyclable materials, requires fewer resources to handle these materials within our DC and reduces the number of trips required to collect these materials for recycling. Overall, productivity has increased by 5% with annual cost savings of over US\$36,000, which represents a two-year payback for the investment