

Hong Kong Air Conditioning and Refrigeration Association 51st Anniversary Dinner
Speech by CHAN Fan, Frank JP DEMS

Good evening President Ringo, distinguished guests, Ladies and Gentlemen,

Engineering Wonders

Mother Nature has continuously evolved and shaped the global landscape since genesis of the planet Earth, and has created many world wonders over the past four and a half billion years. Despite a lack of consensus as to what are the World's seven natural wonders, there is little dispute with respect to their absolute uniqueness and splendor, irresistible charm and beauty as well as sublimation of human senses to the fullest, be it the Northern Lights, Victoria Falls or Mount Zhūmùlǎngmǎ.

Amazed and speechless, humanity soon learns and springs into action, and has eventually created many world wonders of another kind. The Great Wall of China and Christ the Redeemer in Brazil are exemplars. Architects design and build skyscrapers everywhere on Earth, with the tallest Burj Khalifa now standing 828m high in the desert city Dubai. Engineers have done equally well if not better. They take brine from the sea and turn it into drinking water. They cover the bare ground with blankets of green grasses all over Dubai, and feed them with life sustaining water all year round with automatic irrigation system.

The air conditioning and refrigeration engineers go even further. Amidst the melting heat, they bring in snow and keep it freezing. They even moved the alpine slope all the way to Dubai so that people can now ski in the desert. These are things that Mother Nature couldn't have imagined but realized by mankind. Maintained under sub-zero temperature, the indoor ski resort in Dubai has a 60m high mountain with 5 slopes of varying steepness and difficulty, including a 400m long, the world's first indoor black run for expert skiers.

If Dubai is a bit far and ski a bit unfamiliar, let's zoom back to Hong Kong, a place where we are and close to heart. Our dear air conditioning and refrigeration friends have relocated walrus from the North Pole and penguins from the South Pole, to the Arctic corner of the Ocean Park. Hong Kong residents and visitors can now enjoy a train ride in freezing cold, experience North Pole Encounters and South Pole Spectaculars, without the need for long distance travel. Seriously, the North Pole and the South Pole have never been so close!

The Way We Were

Accordingly to the US National Academy of Engineering, air conditioning and refrigeration as a whole is among the twenty greatest engineering achievements in the twentieth century. Effective air conditioning and refrigeration technologies and products started to emerge in early 1900s.

In Hong Kong, the old HSBC headquarters was the first commercial building equipped with central air conditioning system. Air conditioning then became an attraction by itself, and people flocked to cinemas at that time to experience how cool it was. Since 1979, Hong Kong's mass transit railway lines have been gradually put into operation, and air conditioned ventilation is indispensable in supplying millions of commuters every day with cool, clean and fresh air. Otherwise, travelling inside MTR trains would be unbearable.

We often see in movies and TVs that doctors sweat while performing emergency surgeries and nurses have to wipe dry their foreheads. Instead of perceiving sweating as a sign of anxiety and pressure of the doctors concerned, air conditioning engineers often consider it more a matter of poor design or maintenance of the air conditioning system. In reality, operating theatres in hospitals are now fully air conditioned, with laminar flow to ensure a comfortable, clean and safe environment. The Queen Mary Hospital is the first in Hong Kong to have air conditioned operating theatres back in the 1930s.

A Story Untold

Among everybody here tonight, many of us would still remember vividly the attack by SARS that claimed nearly 300 lives in 2003. With solidarity and determination of the entire community, with professionalism and dedication of the medical profession, we fought with all our might and finally we overcome.

Tonight, I would like to share with you the story of a small battle charged by the air conditioning and refrigeration sector alongside the SARS war. Soon after the SARS outbreak, the engineering community immediately convened a forum at the Polytechnic University with a view to ascertaining the mechanism of viral propagation as well as means to minimizing the risk of cross contamination among people in the hospital.

At the time when the Prince of Wales Hospital was cordoned off from the general public, we went straight inside and shared with the medical professors what we had in mind.

Soon after, the SARS Buster team was formed, with consultants, contractors and academia all coming forward to help. Within months, a full size 8-bed hospital ward was built inside the engineering laboratory of the HK University. System design, equipment supply and installation, testing and commissioning were all done on voluntary basis, with necessary expenses met by donation. The design has proved to be effective and subsequently adopted for SARS wards in Hong Kong.

At time of need, the engineering community worked ceaselessly behind the scene to help combat SARS. And as I look around, many of the unsung heroes are also here with us tonight.

Save for Future

According to the WWF's Hong Kong Ecological Footprint Report 2010, Hong Kong's ecological footprint is 2.2. That means, if everyone on this planet Earth lived a lifestyle similar to Hong Kong people, we would need the equivalent resources of 2.2 Earths. This is clearly unsustainable and technology alone cannot be the answer.

At a time when we didn't have air-conditioning system, we wore less and thinner clothes during Summer and more and thicker clothes in Winter. But now, people are putting on more clothes than necessary in Summer because of the availability of air conditioning, and thinner clothes in Winter because of the use of central heating. If the ambient temperature is fine, let's stay in harmony with nature. If it's cold, let's put on more to keep warm. If it's hot, use a fan to stay cool, and turn on air conditioning only when necessary. These are nothing innovative but certainly contributive to sustainable development. We have a choice and our choice will make the difference.

Ladies and gentlemen, air conditioning and refrigeration together has indeed shaped the way we live and transformed Hong Kong into a cosmopolitan City. However, all these are only sustainable with lesser and better use of energy. Air conditioning and refrigeration altogether consume about 14.7 billion kWh of electricity in 2010, a staggering 35% of Hong Kong's total electricity consumption. Surely, it is time for us to reflect and act.

The community and I would naturally look upon the ACRA and everyone here tonight for an answer as to how we can make Hong Kong a green and sustainable city. I understand that you would be hungry by now and I am going to stop here. But please be prepared, I shall be back for the answer. Thank you.