

SCOPE

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2019 PERFORMANCE REVIEW AND MANAGEMENT DIRECTIONS FOR 2020

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BERNARD L.W. LEONG, DCPSC, P.ENG.
HEALTH, SAFETY & ENVIRONMENT MANAGER

ASIA PACIFIC RESPONSIBLE CARE CONFERENCE
8 NOVEMBER 2019

Minister of State for Manpower and Skills Development
22-23 October 2019

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2019 PERFORMANCE REVIEW AND MANAGEMENT DIRECTIONS FOR 2020

Mr Akira Yonemura
Managing Director

REVIEW OF 2019

Our financial performance for 2019 is expected to be lower than budget due to lower margins particularly in 4Q of 2019. Spot ethylene prices were depressed by ample supply while derivatives margins, in particular Mono Ethylene Glycol (“MEG”), were weak. Butadiene margins were also lower from oversupply and fundamentally weaker derivative demand while aromatics margins continue to be negative. Escalating tensions in the Straits of Hormuz caused by attacks on vessels and the drone attacks on Saudi Arabia’s oil processing facility in mid-September caused turbulence in the crude and naphtha market while the US-China trade war created uncertainty and trade flow changes.

We have worked together to improve product margins and plant efficiency through optimising plant and commercial operations and also through cross-functional collaboration. We also improved our energy efficiency amongst other operational improvements that were carried out and have successfully commissioned our 3SB Supplemental Indirect Seawater Cooling (Water Conservation) Project in Aug 2019 with resultant reduction in fresh NEWater make-up to the cooling tower. In addition, our Treated Waste Water Recovery Plant for process use (non-potable) was also commissioned in Jan 2019. We continue to strive to better our energy performance in our operations and as a recognition, we have received the Best Practices of the Energy Efficiency National Partnership (EENP) Awards for 2019.

Our HSE record remains excellent. To date, the health and safety performance

continues to be good, maintaining zero Lost Time Incident (“LTI”) and zero Total Recordable Case Frequency (“TRCF”). We are also very close to achieving another historic HSE milestone of 45 million hours worked without LTI for PCS employees and contractors. For workplace health and safety, we were conferred the Workplace Safety & Health Performance (Gold) award in 2019 for the second consecutive year. We have also received the Excellence Award in all six Responsible Care® Code of Management Practices and the Leadership Award for the fifth time at the SCIC Responsible Care Awards in March 2019.

The company’s Safety Case journey, started way back in 2016, was concluded with the Safety Case Conclusion Meeting with MOM’s Major Hazards Department on 12 Jun 2019. This marked the completion of initial submission of the written presentation. It is imperative that the Safety Case written presentation remains a “live document”, valid and reflecting current situation. I urge you to use the document for knowledge management and retention, and competency development.

DIRECTIONS FOR 2020

The global petrochemical industry is heading into 2020 with volatile crude and naphtha prices from geopolitical tensions in the Middle East, uncertain US-China trade dispute settlement and the expectation of lower global economic growth.

The expected start-up of China’s new mega-integrated-refineries/petrochemical plants and continued inflow of polymers from USA

into the South East Asia region is expected to bring prices and hence product margins further south. The impending completion of the US ethylene terminal will cap the rise of ethylene prices. Closer to home, with the impending start-up of our neighboring integrated refinery/petrochemical plant in Malaysia and expansion in the region (Thailand, Philippines), the outlook for ethylene and propylene in Asia for 2020 is expected to be challenging. Butadiene and Benzene are also expected to be long in 2020 and under pressure with huge capacity additions in Asia and USA.

Against this background, we expect 2020’s financial performance to be weaker than 2019. With the softening market conditions, we launched an internal review in 2019 of the strategic issues facing the company, focusing among others, on energy efficiency improvement, feedstock robustness, improving our product value chain and digital readiness. Work will continue into 2020 and we have to continue to work closely together, be nimble and respond to the ever changing market conditions by making use the best of our assets to achieve these goals.

As for our plants’ facilities, we need to continue with our relentless efforts to rejuvenate our aging assets to maintain integrity and reliability through HAZOP recommendations.

For 2020, the key focus areas are:

- (i) **Good Health, Safety and Environmental performance**
Strive to maintain good HSE performance and aim to reach next health and safety milestone of 45 million hours worked without LTI
- (ii) **Achieving budgeted profit by**
 - ▶ Ensuring safe, smooth and stable operation;
 - ▶ Optimising feedstock purchases;
 - ▶ Managing our sales portfolio and responding nimbly to changing market conditions and customers’ operations; and
 - ▶ Maintaining cash cost within 1st Quartile of Solomon’s unit operating index
- (iii) **Successful Implementation of Projects and Studies**
 - ▶ Implement CAPEX Projects safely, successfully, on schedule and within budget; and
 - ▶ Value Chain Upgrade Project

Last but not least, we must continue to conduct our business and operations ethically, professionally and with integrity.



**ENERGY
EFFICIENCY
NATIONAL
PARTNERSHIP
AWARDS 2019**



Francis Tan
T&O



EENP Awards 2019 recipients

PCS has achieved another Energy Efficiency Award during EENP Awards 2019.

The annual Energy Efficiency National Partnership (EENP) serves as a platform to help member companies to gain access to thought leadership in energy efficiency, bringing together experts and industry professionals to share best practices and case studies of successful projects [Ref 1].

This year, PCS bagged one award – **Best Practices** category of EENP Awards 2019 with Awards Ceremony held on

3 October 2019. The award was proudly received by PCS GM(P), Er. Lucas Ng from the Guest-of-Honour, Mr Albert Chua, Permanent Secretary for Ministry of the Environment and Water Resources (MEWR).

PCS sent a strong contingent of participants to attend the EENP 2019 Awards Ceremony and



T&O Senior Engineer Mr Ngai Jia Ming shared on PCS's innovative design

some of the participants also attended the 2-day National Energy Efficiency Conference (NEEC) following the ceremony.

PCS was given the honour to share about PCS's Energy Conservation efforts. Mr Ngai Jia Ming shared on PCS's innovative design for pressure control of the C4 plant. During the energy efficiency re-discovery process, one of the feed drums had a different design resulting in nitrogen gas (N₂) injection into the drum, thus consuming more energy. A series of modifications were carried out to the drum without any major equipment or structural changes, resulting in better specific energy consumption.

PCS continues striving to better energy performance and innovative design such as this helps PCS increase output without increase in energy usage. [Ref 2]



PCS contingent of participants at EENP 2019 Awards Ceremony



PCS GM(P), Er. Lucas Ng receiving the award from the Guest-of-Honour, Mr Albert Chua, Permanent Secretary, Ministry of the Environment and Water Resources (MEWR)

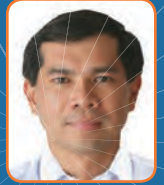
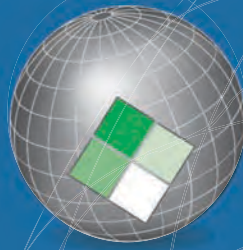


Group photo with Guest-of-Honour

[Ref 1] The Business Times supplement on EENP 2019 dated 3 October 2019

[Ref 2] The Business Times website, <https://www.businesstimes.com.sg/hub/energy-efficiency-national-partnership/innovative-design-helps-pcs-increase-output-without-increase-in-energy-usage>, accessed on 7 October 2019

5TH CCPS GLOBAL SUMMIT ON PROCESS SAFETY



Bernard Leong
HSE



Guest-of-Honour, Mr Zaqy Mohamad, Minister of State for National Development and Manpower with the welcome party.



22-23 October 2019

CCPS-GSB-SCIC(PCS) collaboration. GM (P) with (from L to R): Ms Louisa Nara (CCPS Global Technical Director), Dr Kristen Kulinowski (CSB Interim Executive Authority), Mr Shakeel Kadri (CCPS Executive Director and CEO).

The conference was declared open by the Chair and Co-Chair of the 5th GSPS Executive Committee, Mr Shakeel Kadri, Executive Director & CEO, Center for Chemical Process Safety and Er. Lucas Ng HK, SCIC-GSPS Organising Committee Chairman and PCS GM (Plant).

The welcome address was delivered by the Guest-of-Honour, Mr Zaqy Mohamad, Minister of State, Ministry of National Development & Ministry of Manpower.

Mr Zaqy Mohamad shared that the Ministry of Manpower introduced legislative changes to the Workplace Safety and Health Act for early sharing of learning points from major incidents, even before prosecutorial actions. This allows companies to learn from their peers and take immediate steps to avoid similar incidents in a timely manner. At the Summit, he announced the gazetting of the WSH (Learning Report) Regulations on 22 October 2019.

The first morning commenced with keynote addresses from several business leaders, including Mr Wim Roels, CEO, Borouge Pte Ltd and current SCIC Chairman, on the theme "Building Industry Capabilities in Process Safety", highlighting the importance of taking a pro-active approach geared towards enhancing companies' safety culture. Another business leader, Ms Rosfinah Bt A Nadir, CEO, Petronas Chemical Ethylene / Propylene Sdn Bhd., Malaysia, spoke on "Building Process Safety Competency" and strategies on how companies can strengthen their process safety culture. Indeed Process Safety



Guest-of-Honour, Mr Zaqy Mohamad, delivering the welcome address.

Over the past several years, Process Safety has taken on an increased importance. Today, companies large and small, all put a premium on improving their Process Safety performance. In fact, Process Safety is now a Board-level agenda in many companies.

Co-hosted by the Center for Chemical Process Safety (CCPS) and the Singapore Chemical Industry Council (SCIC), Singapore's inaugural hosting of the 5th CCPS Global Summit on Process Safety (GSPS) was held at the Resorts World Sentosa from 22 to 23 October 2019. The conference saw more than 300 international and regional delegates in attendance.

Continued on page 5



MOS Zaqy Mohamad's Facebook posting.

Culture is a key focus of the Summit, along with the theme of the Summit, "Process Safety Vision 20/20".

CCPS' Vision 20/20 does not refer to the year 2020, but to demonstrate what perfect process safety will look like when it is championed by industry; driven by five tenets of culture, standards, competency, management systems and lessons learned; and enhanced by community passion and four global societal themes.

This Summit is one of the initiatives to achieve the Vision 20/20 of having various stakeholders take collective actions to achieve process safety excellence. It brings many experienced practitioners together, to network and share advancements in process safety through formal paper presentations and informal discussion.

The main highlight of the day was the Leadership Panel Discussion on Process Safety, an open forum where several industry leaders, moderated by Mr Shakeel Kadri, took on questions from the audience. Questions ranged from "How leadership can be demonstrated at the middle management?", "What roles need to be played by middle management to showcase commitment towards Process Safety Culture?", to "What are some strategies to integrate process safety capabilities in the drive towards Industry 4.0?"

The technical sessions that followed featured two parallel tracks, with the theme of "Committed Culture, Process Safety Leadership" taking centre stage. Process Safety Culture featured very much in process safety management as well as concerns of the delegates, judging from the interactions during the open forum and the warm reception in the technical sessions.



Singapore Ministry of Manpower
 "There is a constant stream of activities organised for companies that are part of the Jurong Island Vision Zero Cluster. For example, we hold learning journeys to firms with innovative practices so that we can all network, share ideas and collaborate to raise the industry's safety standards collectively."
 - Engineer Lucas Ng Hong Kiang, General Manager (Plant) of the Petrochemical Corporation of Singapore



Singapore Ministry of Manpower
 "The Petrochemical Complex Contractors Association (PCCA) acts as a nexus for knowledge transfer and sharing so that smaller firms can leverage the technical know-how of bigger firms to improve their safety capabilities. The importance of this association lies in how its members have been major injury-free since the inception of PCCA in 2005."
 - Apostol Ivan Lee, President of Petrochemical Complex Contractors Association

On Social Media.... MOM's Facebook.



Further across the globe.... AICHe's LinkedIn

Indeed, on the second day of the conference, Er. Bernard Leong, 5th GSPS Technical Committee Co-Chair and PCS HSE Manager, opened the day, sharing his

overnight thoughts on the proceedings of the first day with the participants, touching on his personal observation of people at

conferences, and very much on Process Safety Culture, throwing in elements of strong leadership, open communications and human error.

Following that, a Leadership Forum summary was presented by Ms Louisa Nara, CCPS Global Technical Director. The Leadership Forum is a closed door session held on the first day, among senior leaders to deliberate on current day challenges and vision. Not forgetting the need for development and succession, an Academia Panel Discussion on Process Safety, with mainly academia on the panel with Ms Louisa Nara as the moderator, touched on issues including process safety focus and competency development.

It was also an honour to have the presence of US Chemical Safety and Hazard Investigation Board's (CSB) Interim Executive Authority Dr. Kristen Kulinowski. At the closing stages, she presented "Learning Lessons from Process Incidents". This was aptly followed by a presentation from GM (Plant) entitled "No Reason for Not Learning Lessons – There are Many Valuable Resources Out There!".

The local organisation of the event was spearheaded by PCS, with GM (Plant), Er. Lucas Ng HK, as the 5th GSPS Executive Committee Co-Chair, and Chairman of SCIC-GSPS Organising Committee, with support from HSE Manager, Er. Bernard Leong, as 5th GSPS Technical Committee Co-Chair. PCS committed as a Platinum



And, not forgetting the support team from SCIC, with Er. Bernard Leong and Ms. Lilian Tang.



PCS Exhibition Booth, with "sweet memories" for visitors.

Sponsor, and also as the main driver in the CCPS-SCIC Memorandum of Understanding collaboration and partnership. The hosting, logistical

arrangements, and the success of the Summit would not have been possible without the support and effort of Ms Gina Ling of SCIC and her team.



PCS-PCCA delegates, showcasing "One PCS, One Team" partnership with PCCA.



Responsible Care® Good Practices Sharing Beyond Singapore

It is the belief of Responsible Care® signatories that the chemical industry's knowledge in improving their Health, Safety, Environment and Security (HSES) performance can be effectively enhanced through sharing of good practices and learning from one another.

The Singapore Chemical Industry Council (SCIC), as the programme administrator for the Responsible Care® programme in Singapore, requested PCS to represent Singapore to speak at two recent conferences; the 3rd Gulf Petrochemicals & Chemicals Association (GPCA) Responsible Care® Conference 2019, held in Jubail, Saudi Arabia, on 14-16 October 2019, and the 16th Asia-Pacific Responsible Care® Conference (APRCC) held in Seoul, Republic of Korea, on 7 & 8 November 2019.

These are also in line with PCS Management's philosophy of openness in communicating HSES information, and sharing of its programmes and practices. As a Responsible Care® leader, PCS hopes to influence peers, and the chemical industry in common, to share and exchange views towards sustainable development goals in the future.

3rd Gulf Petrochemicals & Chemicals Association Responsible Care® Conference 2019



Lucas Ng HK
General Manager
(Plant)

The 3rd Gulf Petrochemicals & Chemicals Association (GPCA) Responsible Care® Conference 2019, was held in Jubail, Saudi Arabia, from 14-16 October 2019.

Themed "Responsible Care® – Celebrating a Decade of Excellence", the conference showcased best regional learnings across the chemical and petrochemical sector and defined the future direction for Responsible Care® companies in the region.

GM(Plant) Er. Lucas Ng HK, shared with the conference delegates some good practices and experiences of Responsible Care® implementation which have provided valuable insights to the conference delegates. Dr Abdulwahab Al-Sadoun, Secretary General of GPCA expressed his appreciation to Er. Ng for the excellent presentation which has received favourable feedback from the audience.

GM(Plant) further shared his learnings with the following key takeaways from the conference:

- 1) **Process Safety** – Significant emphasis on process safety aspect together with occupational safety in eliminating incidents.
- 2) **Circular Economy** – Besides water reclamation, there is an increasing emphasis on recycling, reusing, minimising and converting waste to energy. Discussion also took place on education efforts to drive improvement in plastic handling and disposal behaviour to address waste pollution issues.
- 3) **Energy & Global Warming** – Energy efficiency and optimal use of energy resources to reduce greenhouse gas emissions.



Sharing by Er. Lucas Ng, General Manager (Plant) of PCS at the 3rd Gulf Petrochemicals & Chemicals Association (GPCA) Responsible Care Conference 2019, held in Jubail, Saudi Arabia, on 14-16 October 2019.



Asia-Pacific Responsible Care® Conference 2019



Bernard Leong
HSE



Sharing by Er. Bernard Leong.

The Asia-Pacific Responsible Care® Conference (APRCC) has been held every other year since 1995 for the purpose of promoting Responsible Care® activities through sharing of best practices and jointly developing long-term chemical industries in Asia and the Pacific region, thereby enhancing the image of the chemical industry.

The sixteenth edition with the theme “The Next Challenge for Responsible Care” was held in Seoul, Republic of Korea, on 7 & 8 November 2019. This year also marks the 20th anniversary of the Korea Responsible Care Council, so it is apt to hold APRCC 2019 to celebrate this event with representatives from Asia-Pacific member countries.

Echoing the spirit of Responsible Care® on non-confidential sharing of health, safety, environment and security (HSES) practices, the APRCC gathers Responsible Care® practitioners from the chemical and chemical related industries in this region for a valuable networking session of ideas and information exchange. About 250 delegates from the region were present. It will also serve as a guide to get the next generation of practitioners excited and inspired in continuing the Responsible Care® spirit and the way forward for business sustainability.

At the two-day conference, there were discussions and sharing of ideas about

the direction, challenges, and vision to implement Responsible Care®, and the role of chemical industry in contributing to the sustainable development goals with focus on plastic issues and process safety.

Singapore was represented by HSE Manager, Er. Bernard Leong, who shared “Six Senses for Process Safety”, touching on PCS’ Responsible Care® journey, organisation structure and beliefs. The gist of the sharing

was on the story of “Six Blind Men and the Elephant” and its analogy to plant operation and process safety management.

The whole environment was very cordial, with the spirit of open sharing of information and collaboration within Asia-Pacific member countries. These will contribute, not only to spur mutual friendship and goodwill, but also to improve development and competitiveness in the future.



Panel discussion.

ChemEx 2019



Calvin Neo
T&O

Oasis@Sakra. Overview of Jurong Island's history, significant roles, ecosystems, and future plans were showcased in the gallery tour. After the gallery tour, the students were invited to industry booths at the marquee area for interaction with industry ambassadors. To encourage students' interests about PCS, members from HRA prepared quizzes and lucky draws for students visiting the PCS booth.

Chemical Industry Experience (ChemEx) is an annual industry profiling event to raise awareness among tertiary students of the various career opportunities in the Oil & Gas, Petrochemical, Chemicals & Energy industry. This year, ChemEx 2019 was held on 19 October 2019 with more than 600 chemical-related courses students from various institutes such as Universities, Polytechnics and the ITE. A total of 13 participating companies that collaborated with organiser, Singapore Chemical Industry Council (SCIC) to host plant tours for the first half of the programme. As a participating company in ChemEx 2019, PCS proudly hosted 32 students and 1 lecturer from the School of Life Science and Chemical Technology, Ngee Ann Polytechnic.

It was an enjoyable session to share my personal experience with the students who are genuinely interested about career in the Petrochemical and Chemical Industry. A special thanks goes out to the organisers and supporting members who contributed to this successful event.



Group Photo at the "Ethylene Molecule".

The plant tour started off with light refreshments in the reception area of PCS Administration Building, where the new scale model of Singapore Petrochemical Complex were showcased, and group photo taking session at the "Ethylene molecule". The students were then invited for safety briefing and PCS corporate video viewing for an overview of PCS key roles as an upstream petrochemical company.



Mr Ngai Jia Ming, T&O presenting the safety briefing.



Mr Calvin Neo, T&O sharing his experience working in PCS.

In order to showcase career experiences in Petrochemical industry, topics on "Job Scope and Challenges" and "Why I choose to work in PCS" were shared by T&O engineers, Mr Ngai Jia Ming and Mr Calvin Neo respectively. For instance, Mr Ngai Jia Ming shared various plant troubleshooting and Shut Down Maintenance (SDM) activities, while Mr Calvin Neo further emphasized the challenges faced by engineers to adapt to global challenges, such as global warming. On the fun side, Mr Calvin Neo also shared PCS' extra curriculum activities such as Futsal, Dragon Boat, Durian Fest, Dinner & Dance. After the presentations, the students were given opportunity to engage with HRA and T&O members during the Q&A session. The plant tour ended off with a bus tour around the Singapore Petrochemical Complex with T&O engineers as bus guides to introduce the manufacturing plants in the Complex.



PCS Booth at Oasis@Sakra marquee area.

The second half of the programme continued with Jurong Island gallery tour at



Team PCS for ChemEx 2019 at Oasis@Sakra marquee area.

PEPS 25th Anniversary Celebration cum Dialogue

8 October 2019



Think left and think right and think low and think high. Oh, the thinks you can think up if only you try!
Dr Seuss

[Theodor Seuss Geisel (2 Mar 1904 – 24 Sep 1991) was an American children's author, cartoonist, and animator. He is known for his work writing and illustrating more than 60 books under the pen name Dr Seuss]



Chong Hon Yeng
T&O

This quote by Dr Seuss reflects our scheme. PEPS, an acronym for PCS Employees Participation Scheme, is about creativity, innovative or new ideas. It is a thinking process to improve things and to make things work. It also encourages us to think in different ways, different directions so that we can scour our minds for really amazing ideas and suggestions.

“
Figure out what works and do it”

Mr Lee Kuan Yew

GMP delivering MD's message, in his absence



MD's Opening Speech at the PEPS 25th Anniversary Commemoration Celebration 8 October 2019

Good afternoon

My fellow colleagues, ladies and gentlemen,

On behalf of the Management team, congratulations to all PCS staff on this special occasion to celebrate PEPS 25th anniversary.

PEPS, started a quarter of century ago in Y1994, is a formal channel for every employee to suggest ideas that can solve or avoid problems, improve work process and HSE performance. How have we been doing as we reach our 25th anniversary mark?

Today, there are 46 PEPS work groups with 268 employees registered as group members and other staff involved in one way or another to steer, support and promote PEPS. In other words, PEPS involves everyone in PCS. For the past ten years, there were total 49 high quality suggestions that yielded over S\$70 million savings. PEPS crosses 10,000 suggestions on 26 March this year.

In Y2000, FIND scheme was launched to be part of PEPS. What this means is that now we have few hundreds pairs of eyes keeping a look-out for abnormalities and hazards in the plant. We also rope in our contractors. This has helped us spot several potentially hazardous situations before the events escalate to more serious ones.

So I believe that fundamentally, the spirit of continuous improvement and learning in our striving for excellence is strong. 25 years is a long time and a good time to reflect our journey here and the way forward. To remain strong, PEPS must be part of our organisation culture that every PCS staff is empowered to work safer, better and faster. It is a movement that energises and motivates us to act. In an environment of rapid changes, with new technology opportunities and new challenges, we must remain nimble and lean, put in our teamwork spirit and work together for PCS' benefits. By finding ways to help business operate faster, making work safer and more efficient, and giving new ideas the best chance to work, we are laying groundwork for PCS to succeed at home and abroad.

To commemorate this special occasion, I am pleased to announce that every PCS employee will be given a Samsonite backpack, carefully selected by the organising committee. I hope you would find it useful for your daily work or travelling. This is an appreciation of your active participation in all the improvement efforts for PCS.

As I have mentioned in the recent Executive-Get-Together and Management-Union Dialogue Sessions, safe and reliable operations is the cornerstone for PCS. As we celebrate today, think how we can work to make PCS more competitive, our workplace safer and operations more reliable. Make Our Ideas Work! Thank you and enjoy the celebrations.

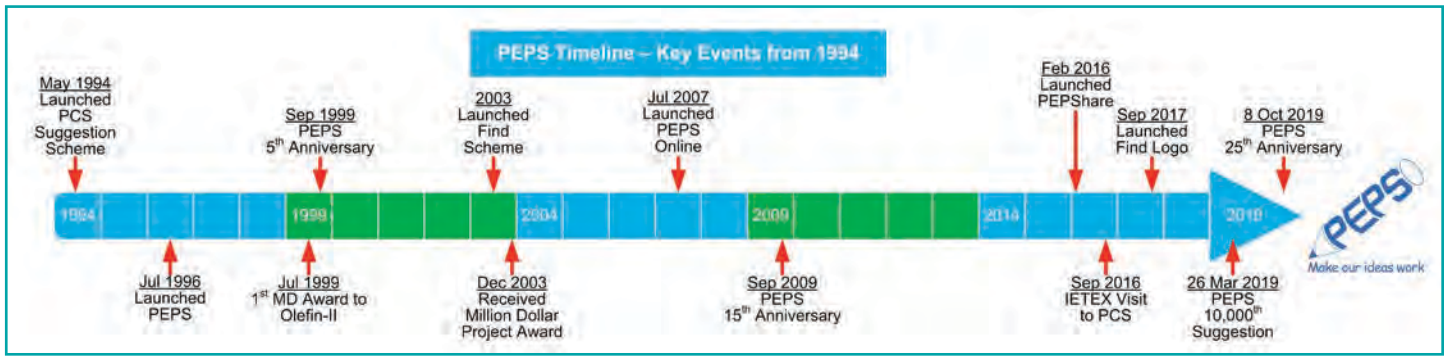


GMP addressing the audience

PEPS 25th Anniversary celebration was held on 8 October 2019 in conjunction with the PEPS Dialogue, at Merbau Room with 160 staff in attendance. In the delivery of MD's message by GMP Er Lucas Ng, he stressed that PEPS is a channel for every employee to suggest ideas that can solve or avoid problems, improve work processes and HSE performance, as well as to uphold the spirit of continuous improvement and learning in our strive for excellence. He went on to announce that every PCS employee will be given a Samsonite backpack. (See MD's message in the box)

In GMP's own address, he recapped the journey of PEPS from 1994 to the present and attributed PEPS as part of PCS' core safety and health programmes. He cited the mantra of the late Mr Lee Kuan Yew: "Figure out what works and do it", as a formula for success.

During the dialogue session, representatives from various functions took turns to present their topics. The objectives were to



share good ideas, good work practices and outstanding suggestions that add values. It also provides a good platform for the novice speakers to hone their presentation skills. Each presenter received a token of encouragement from GMP.

Mr P Thanabalan presented the story of PEPS. It was back in 1993 when he and Mr Hong Kim Pong, were tasked by then GMP Mr Taichi Yamada, to start a suggestion scheme for PCS. The team went on the floor to learn from government

agencies and other champions in the field of productivity. The scheme was finally launched on 17 May 1994. He reminisced how the PEPS acronym was thought up in a flash of inspiration. Mr Hong, in a recorded video, urged all PCSians to continue



Mr P Thanabalan presenting the story of PEPS



MC for the event, Chong Hon Yeng putting on a top hat to look like Dr Seuss 'THE CAT IN THE HAT'



Happy face!



Quiz time - thanks for the voucher!



I want!



Quiz time - thanks for the voucher!



Happy face!



We each got one!



The answer is.....



The cake for the PEPS 25th Anniversary Commemoration

generating value-added and innovative ideas to strengthen PCS' role as a leading petrochemical plant in safety, reliability and productivity. A homemade movie of staff sending congratulatory messages was played to a rapturous reception.

Following that was the ceremonial cake-cutting. Amid the celebratory music blasting in the background, Management, together with founding members and



Ready, Get Set, Go!

organising committee were invited to join the ceremony.

Last but not least was DMD Mr Chiew Nguang Yong's closing address. He credited

the success of PEPS to Management's leadership and the efforts of our employees to sustain the scheme for the past 25 years!

What a joyous and memorable occasion!



Ceremonial cake-cutting by the management, with founding members and organising committee



GMP with founding members and organising committee



Thumbs up for the hard work and a job well done!



Can I have a bowl of laksa, please?



Tea reception



We are glad to be here!



Team Olefin from Olefin-I Received the 'Star Award' for Team Excellence Assessment 2019



Chong Hon Yeng
T&O

One,
two,
three!

PCS PEPS workgroups received three 'Star Awards' in consecutive years for their participation in the Team Excellence Assessment.

The Team Excellence Assessment, organised by Singapore Productivity Association, is an assessment platform which allows teams from various organisations to present their Team Excellence projects to a panel of judges. Through this assessment, they will be awarded either Star, Gold, Silver, Bronze or Certificate, according to their presentation and project report.

Team Olefin from Olefin-I, led by Lim Poh Ling, together with team members Marcus Koh, Gunaseelan, Ong Chong Khoon and supporting engineer Jessica Tan, presented their project 'Recovery of Ethylene Boil-Off Gas to Minimize Flaring', at the assessment on 27 Sep 2019.

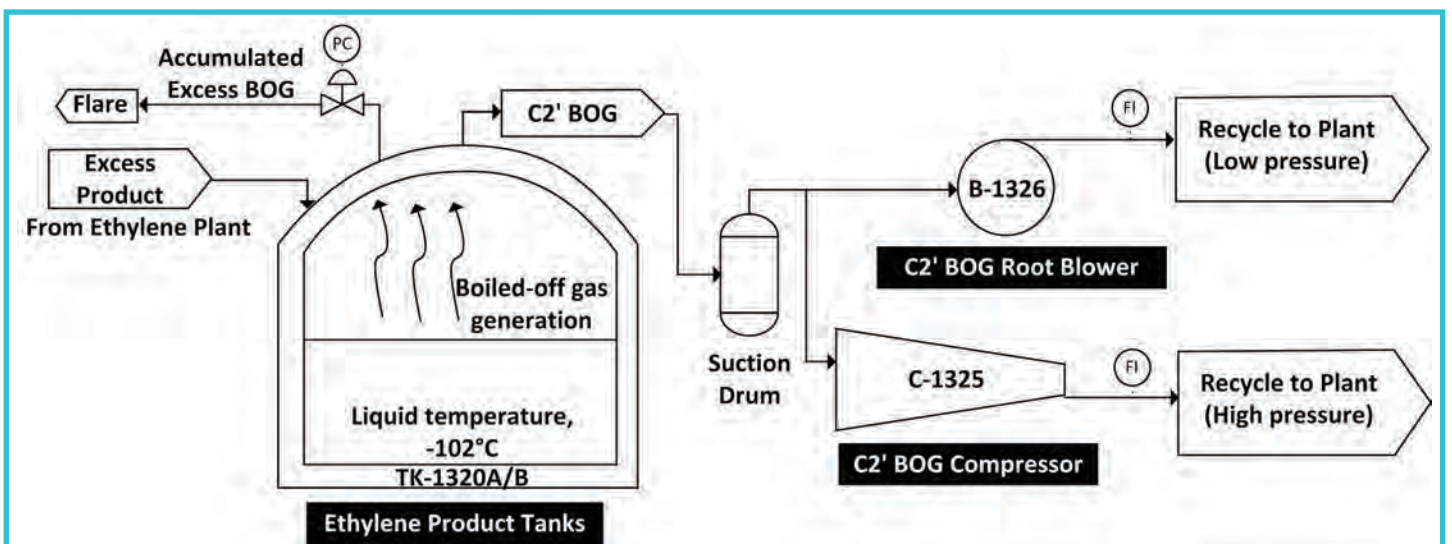


Team Olefin members, from left: Ong Chong Khoon, Lim Poh Ling (Team Leader), Jessica Tan, Marcus Koh, Gunaseelan

Product Ethylene Liquid (at -100°C) is rundown to TK-1320A/B for storage. Due to heat from the process and ambient surroundings, BOG (Boil-Off Gas) is generated in the tank. Accumulated BOG in the tank is continuously removed by C-1325 (BOG Compressor) and B-1326 (BOG Root Blower), and recycled back to the plant. Excess BOG, if any, will be sent to the flare via tank pressure control valve.

This project focused on the up sizing of B-1326. The upsize results in reduction of flaring and steam consumption. The improvement also reduces losses incurred during C-1325 stoppage for maintenance.

All efforts were well worth when they received the Star Award. Well done, Team Olefin!



Our Learning Journey in PCS



Mohd Haron



Mohd Raihan



In the Field during Operations Phase



We are currently pursuing our Diploma in Chemical Engineering in School of Applied Sciences of Temasek Polytechnic. As part of the curriculum of the course, students are required to do an internship with an industry company for 6 months, to gain the knowledge of working life and also apply the concepts that had been taught in the polytechnic.

We joined PCS as intern students and started our internship on 18 Mar 2019. There were various programmes and activities arranged by the company for us. For the first 9 weeks, we were attached to the Electrical and Mechanical groups in the Maintenance Function. The subsequent 4 weeks, we were working in the Quality Control Function and for the last 12 weeks, we were attached to a shift team in Olefin I Ethylene Plant.

Our learning journey in PCS was indeed an eye-opening experience for the both of us. Reading about a plant in textbooks to seeing an actual industry-size operating plant provided us with a completely new experience.

Firstly, the experience that we had in the Electrical group was completely foreign to us, in the sense that we have very little knowledge of electrical concepts. We learned many new things such as the function of motors, the routine checks on motors, the components inside a substation, the purpose of Motor Control Centres (MCC) and their components, single line electrical and schematic diagrams. We also learned the Lock-out and Tag-out (LOTO) procedures carried out for the MCC units for safe isolation of equipment maintenance.

Secondly, in the Mechanical group, we were able to observe the routine works, like pump strainer cleaning and replacement of pump bearings. We also had the opportunity to observe the assembly of a seawater pump. We learned about the different parts of the seawater pump such as the bell, bowl, spider, shaft, bearing housing and many more. We were informed that the seawater pumps routinely undergo a 5-year routine maintenance. In the area of pump design and specifications, PCS follows the API code. API stands for American Petroleum Institute.

Our Maintenance supervisor also taught us the general specifications for piping design. PCS follows the ASME (American Society of Mechanical Engineers) code closely when designing pipelines. ASME B31.3 is used for process pipings while B31.1 is used for power pipings. We learned that good piping design uses a minimum number of fittings and must be of the shortest practical length. If more fittings or flanges are used, there will be higher risk of leakages. Dead ends or legs must be avoided when designing a pipeline.

After 9 weeks in Maintenance, we were attached to QC Function. We learned about laboratory safety and how to work safely in a laboratory environment. Both of us



With Mentor Dominic Chee

were assigned a project each. One project required us to find out if the presence of Silica (Si) will interfere with the phosphate measurement, as the test principle is largely similar with similar principles. The other project is to verify that amine detection can be done by using Dimethylamine as the solution and to bubble boric acid through the solution. Both projects were entirely new to us and interesting too as we have very little experience of working in a laboratory in school.

After a month in QC, we were assigned to the Olefin I Ethylene Plant for 12 weeks. We were attached to Shift Team B. The fun and exciting part about this was that we followed the shift hours, being our first time working in a shift environment. We were attached to the Hot Section Furnace and Quench sections. Supervisor Simon Hoon was our mentor and we routinely followed the furnace field man, Muhammed Sufi out to the plant to carry out assigned tasks. During the 12 weeks in Operations, we learned various new things such as the cracking furnace system, shutdown procedures, decoking cycles and chemical pumps injection check. On a daily basis, we were involved in data logging and Direct Tube Metal Temperature (DTMT) checks on the radiant tubes of the furnaces.

Overall, the internship provided us with the exposure, experience and knowledge of how an industry-size plant operates. It also provided us the opportunity to use our knowledge of chemical engineering to solve day to day issues together with the PCS employees. We would like to thank everyone who had helped us directly or indirectly to make this internship a fruitful and enjoyable one.



Presentation to GMP and PCS managers



GMP Cup Futsal Tournament 2019



Ryan Lim
Olefin II



GMP Cup Futsal Tournament 2019 Champion – Team King of Kings (Olefin II)

Many players from the previous tournament were absent, perhaps due to ageing. However, for those who were present, they were still “on the ball”, taking up the challenge against themselves and among colleagues. When signing up for the game, I believed some of them have the mentality of “relax”, “have fun” and “enjoy the game”. Then again, when they are in the field, their mentality totally changed; they were defending, heading, passing the ball and shooting...GOAL!!!

From what I observed, this year was really a challenge for everyone. With 10 minutes of play time per match and a total of 6 matches to finish, it means that each team would have to play 60 minutes of intensive game in the court. This is definitely not an easy task, especially for players above 50 years old.

The winning team King of Kings (Olefin II) was presented the Challenge Trophy by General Manager (Plant) Er. Lucas Ng. They were virtually dominating the tournament, winning all the 6 matches! Team Olefin 1.1 (Olefin I) and Brothers of Destruction (Olefin II) came in 2nd and 3rd place respectively. Congratulations to all the winners!

It was a sunny and windy Saturday morning at Golazo Futsal Singapore on 16th November 2019, where a total of 7 teams took part in the GMP Cup Futsal Tournament 2019, vying for the top 3 positions. This year, we have 3 teams from Olefin II, 2 teams from Olefin I, 1 team from T&O and 1 team from Fire & Security. The tournament lasted a total of approximately 2.5 hours, with participants trying their best till the last game.



1st Runner Up – Team Olefin 1.1 (Olefin I)



2nd Runner Up – Brothers of Destruction (Olefin II)

See you
again in GMP
Cup Futsal
Tournament
2020!



Thank You for the Participation!



Beer Appreciation with Brewery Tour



Tey Tai Keat
BDP



Hope everyone enjoyed the food and beer. Cheers!

This year, PCS held its very first Beer Appreciation with Brewery Tour at Paulaner Bräuhaus on 13 December 2019 – Singapore's only German Microbrewery & Restaurant. 43 employees participated in the event, including PCS' Senior Management.



Appetizer and Bräuhaus platters. Yummy!



Alex showing us part of the beer making process.

The event started with everyone gathering at the Lounge in the evening. We were first greeted with a unique beertail called "Tropical Paul", which basically consists a mix of lager beer, rum, mango/ pineapple juice and sprite. The event kicked off with a presentation by the Brewmaster, Alex, who shared with us the process of beer making and types of ingredients involved. I was surprised that beer making was such a tedious process!

We were then shown around the 3-storey building to understand how beer was brewed at the restaurant. I have to say that equipment used were nothing unfamiliar to our plant folks – storage tanks, pipes, pumps and even heat exchangers. Some even joked that PCS could probably manufacture beer on our own!

When the tour was over, everyone moved back to the restaurant and took their seats. The ambience was indeed convivial and cozy – at the center of the restaurant, the Maibaum (or known as a maypole), a 16th century Bavarian architectural feature takes center stage; and as the year is also coming to an end, the restaurant was decked with Christmas decorations such as wreaths, ornaments and baubles. The light drizzle in the evening added on to the atmosphere and made it felt like Christmas was already here.

Beer was free flow throughout the dinner (yes, you are not reading this wrongly, it's free flow). We were given selections of *Paulaner Pale Lager*, *Weissbier*, *Dunkel*,

and a limited edition Christmas beer to choose from. Dinner served was slower than expected, but when the food came it did not disappoint at all – smoked hams, cream cheese, oven roasted pork knuckles, mashed potatoes, sausages, chicken schnitzel, sauerkraut and dark beer sauce... how can it go wrong? People started moving around and offering toasts for all kinds of reason, and the night was filled with great food, great beer and great companionship.

As the convenor for this event, I sincerely thank everyone who took their time to attend and I hope you have enjoyed as much as I did. Let's hope we see more of such events in the future. Cheers!



Presentation by Alex on beer making and ingredients.

Baking Class



Sim Kai Sheng
T&O

This year's baking class was held on 12 October 2019 at Palate Sensations Culinary School with a good mix of ladies and gentlemen. Divided into 3 teams, everyone had a hands-on experience at each stage of baking/cooking process and learnt how to make 3 different items with guidance by the chefs, namely *Chicken Pie*, *Classic Tiramisu* and *Passion Fruit Swiss Roll with Chocolate Glaze*.



Hope Everyone Enjoyed the Class!



Chefs in the making



Looks good!

Other than understanding the whole process, it also made us more appreciative of the effort by chefs to bring out the exquisite taste that they wish to present when we are eating at cafes or restaurants.



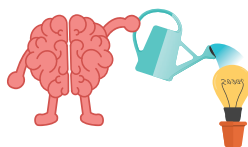
Ingredients for the Class

Of course, it was wonderful to see the exchange of baking experience among some of our regular bakers and how they assisted the new bakers when the chefs were away. This actually created a topic for them to mingle with each other.

While waiting for the Swiss Roll to be baked, a Food Tower Challenge was given to each group to create a food "picture" that would represent PCS by using a variety of vegetables.

Participants were given 15 minutes to come up with ideas and present them to the chefs. Eventually it was the all ladies team that won the friendly challenge, where they depicted PCS as a sailing ship with everyone on-board the journey and moving forward in a common direction – the strength of PCS!

It was a great bonding and tasting experience for everyone. Other than bringing back the food, let's hope everyone also brought home great memories!



Healthy Lifestyle Promotion Week

25 – 29 November 2019



Cerine Lim
HR & Admin



SRCC, together with The Wok People, jointly organised the recently concluded Healthy Lifestyle Promotion Week which spanned across 25 Nov to 29 Nov 2019. The theme this year revolved around the "State of Mindfulness". Mindfulness is

an innate ability of the mind to be aware of the present moment, by paying attention on purpose, non-judgementally and with curiosity. Cultivating mindful awareness enables one to recognise habitual thinking patterns, create the space to step out of the

negative patterns, access inner resources to cope with stressful & difficult situations and lead a more fulfilling life.

During this weeklong campaign, activities were specially planned out for PCS employees. Reading exhibits displayed in the PCS Canteen were also designed to share useful information on Mindfulness with canteen patrons, coupled with an online quiz that came with complimentary healthy snacks and some nice prizes for selected winners. Wholesome fruits (Brown Pear & Dragonfruit) were distributed to all employees, to encourage consumption of fruits for healthy living.

Continued on page 18



“Urban Farming with Microgreens”

by Everything Green, Ms Sakina Dhillawala



Microgreens is another name for any edible plant that is harvested and eaten at the seedling stage. The workshop provided an introduction to the different types of Microgreens and the health & nutritional benefits. Ms Sakina demonstrated the correct methods of sowing the seeds to allow for germination of Microgreens. Participants were also provided with the starter kit to get some hands-on experience growing their first Microgreens.



“Cracked it” with Masseur

Singapore Association of The Visually Handicapped (SAVH)

The SAVH team was engaged to provide massage services (Head & Shoulder or Foot Reflexology) for our staff. Highly popular annual event!



“Breathe, Pause, Reconnect”

by Rebalance, Ms Michelle Mah

An experiential workshop introducing Mindfulness, consisting of basic mindfulness practices, tools and craft to help bring peace, focus and clarity to our life. Participants also had the opportunity to make a “calm down” jar to bring home.

“Laughter Yoga Experience”

by Ms Sara Mei Woo

Laughter Yoga is a unique exercise routine developed by Indian physician Dr Madan Kataria in 1995. It combines laughter exercises with yoga breathing which brings in more oxygen to the body and brain making one feel more energetic and healthy.



SSRCC hope you have found the workshops and healthy tips beneficial. Let us work towards maintaining a healthy lifestyle in Year 2020!

Employee News



LONG SERVICE

Presentations on 2 & 7 October 2019

5-Year

Johnny Lim	HRA
Muhammad Hanaffe bin Haironi	Olefin I
Mohammed Naim bin Mohd Wahid	Olefin II
Teo Zhi Xiang Kelvin	Olefin II

10 Years

Bai Wangxin	Olefin I
Teo Ding Li	Olefin I
Guo Kanghui	Technology & Optimization

15 Years

Mazlan bin Hamid	Fire & Security
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25 Years

Tan Kian Boon	Engineering
Chan Yew Oon	Olefin I
Foo Sin Yau	Olefin I
Chee Tsze Wah	Olefin I
Lim Teik Hong	Olefin I
Ho Thean Seng	Olefin I
Neo Soon Hen	Olefin I
Lee Chio Chui	Olefin II
Heng Boon Siong Edmund	Olefin II
Mohamad Ali Faisal bin Arifin	Olefin II

30 Years

Chiew Teck Weng	Olefin I
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35 Years

Tan Tee Hong	Maintenance
Ishak bin Ismail	Olefin I
Lim Poh Ling	Olefin I
Ng Yiu Hao	Olefin I
Iris Tay	Olefin I
Ng Eng Hock	Olefin II
Tan Sek Hee	Olefin II
Sim Bee Hoe	Olefin II
Chong Hon Yeng	Technology & Optimization



From left: Tan Tee Hong, Kelvin Teo Zhi Xiang, Mohd Ali Faisal Bin Arifin, Edmund Heng Boon Siong, Ho Thean Seng, Lucas Ng (GMP), Tan Sek Hee, Iris Tay, Lim Poh Ling & Lim Teik Hong.



From Left: Chong Hon Yeng, Lee Chio Chui, Bai Wangxin, Chan Yew Oon, Chee Tsze Wah, Lucas Ng (GMP), Ng Eng Hock, Tan Kian Boon, Mazlan bin Hamid, Guo Kanghui & Mohd Naim Bin Mohd Wahid



NAME	FUNCTION	NEW BORN
Nah Chong Poh	Maintenance	Boy
Wahedah bte Ahmad	Quality Control	Boy

NEW EMPLOYEES



Mr Yeo Wei Hao
Technician, Olefin I
Joined 1 Oct 2019
Hobbies: Reading, Exercise, Music



Mr Dharmaraj Anbazhagan
Technician, Olefin I
Joined 1 Oct 2019
Hobbies: Cricket, Cycling, Reading



Mr Cheong Kok Liang
Technician, Olefin II
Joined 1 Oct 2019
Hobbies: Swimming, Badminton, Video game



Mr Rajmohan Rajadurai
Technician, Olefin II
Joined 1 Oct 2019
Hobbies: Reading, Drawing, Volley Ball



Mr Muhammad Helmi bin Johari
Technician, Olefin II
Joined 1 Oct 2019
Hobbies: Bowling, Cycling



Mr Mahesa Riga Hamnur
Technician, Olefin I
Joined 1 Nov 2019
Hobbies: Travelling, Badminton



Mr Wong Sin Hoong
Supervisor, Maintenance
Joined 2 Dec 2019
Hobbies: Motorcycling, Handicraft, Swimming

Hanami in Japan



Kew Jia Ming
Marketing & Sales



After several days in Tokyo, we made a short 2-day visit to nearby Yokohama. Yokohama is the second largest city in Japan by population and is one of Japan's prominent port city which was developed in the mid-19th century. We took a quick 45mins high speed rail ride from Tokyo Station and stayed at the Yokohama Bay Hotel which overlooked the iconic Cosmo Clock 21 Ferris Wheel and the Yokohama Bay. The night view was exceptionally beautiful with the lit Ferris wheel slowly rotating against the Yokohama backdrop.

Cherry Blossom Viewing or "Hanami" typically occurs around end March to end April where the Sakura tree bloom all over Japan. The blossom forecast is announced each year by the Japan weather bureau and it is tracked by those planning Hanami as the blossoms only last a week or two. Following the weather bureau's advice, we planned a trip to Tokyo in early April to maximise our odds of catching the full bloom.

After our 7-hour flight, we landed at Narita airport in the evening and dragged our luggage and stroller in tow via the train and subway to our Airbnb accommodation. By then, most of the shops were closing and our first dinner in Japan turned out to be 7-11 Bento sets. Convenient store food is actually a typical quick and easy lunch for Japanese workers' and I must say that the variety is plentiful and the quality of food is surprisingly tasty for microwavable food.



Another must-go attraction in Yokohama is the Cupnoodles Museum. We learnt the history of Instant Noodle and made our very own cup noodle there. After walking the many exhibits at the museum, we made a stop at the Noodle Bazaar foodcourt inside the museum. There we ate many freshly prepared instant noodle dishes which included the familiar Mee goreng, Laksa and Pho as well as less common noodle dishes like Lagman from Central Asia. Overall, I felt Yokohama had a relaxed city vibe that was different from the fast-paced Tokyo and I would recommend to visit it if you like a city to 'chill' in.

After a good night rest, we started the next day looking for good Sakura viewing spots. Our first stop was the Shinjuku Gyoen National Garden which was an imperial garden in 1879 before opening to the public in 1949. We were lucky that the weather was good and the cherry blossoms were at full bloom. Many families brought food and drinks for a leisure picnic under the morning spring sun. Next stop was Ueno Park. Sakura trees lined both sides of the park's walkway as locals and tourist alike gathered to catch the best views of the bloom. Along the way, we made a stop at the Japan' oldest Ueno Zoo in the park grounds to catch a glimpse of the Pandas, Okapi (which looks like a cross breed between a zebra and a horse), polar bears and elephants among many other animals.



Another stop was the colourful Sensoji also known as Asakusa Kannon Temple which is one of Tokyo's most colourful temple as well as Tokyo's oldest temple which was completed in 645AD. In between the two Kaminarimon and Hozomon gates which leads to the temple is a shopping street (Nakamise) of about 250m selling Japanese souvenirs and traditional local snacks. Another attraction was the o-mikuji stalls where visitors can consult the oracle by shaking labelled sticks from enclosed metal containers and reading the corresponding slips of paper linked to the number on the sticks.

On the next day we headed to the Tokyo Metropolitan Government Building to get a 360° view around Tokyo. This 243m tall building has an observatory which provide good panoramic view of Tokyo and beyond. With the right weather conditions, you could see the Tokyo Skytree, Tokyo Tower and even Mount Fuji. It is also open at night, making it a perfect place to catch night views of the city.



For this trip, travelling with a 10-month old infant gave me a different perspective to my understanding of travelling and it has taught me that "less is more" where spending quality time as a family is more important than just rushing to complete all the attractions. I can't wait for our next family adventure!