



# PSME-WRSA JC

PHILIPPINE SOCIETY OF MECHANICAL ENGINEERS  
WESTERN REGION SAUDI ARABIA JEDDAH CHAPTER



CHARTERED 1995  
MOST OUTSTANDING CHAPTER  
2005, 2006, 2007, 2011, 2012 AND 2013

# 19<sup>TH</sup>

## ANNUAL CONVENTION

& General Membership Meeting

Jiwar Diamond Hotel, Jeddah, KSA  
December 9, 2022

Mechanical Engineers:  
Stand United as Pillars for  
Economic Transformation  
Towards Nation's Progress



MEMBER





**PSME**



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PHILIPPINE SOCIETY OF MECHANICAL ENGINEERS



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# THEME RATIONALE

PHILIPPINE SOCIETY OF MECHANICAL ENGINEERS



## **Mechanical Engineers: Stand United as Pillars for Economic Transformation towards Nation's Progress**

**By: Engr. Leonard P. Meriales, RMEE, AE**  
Chapter Treasurer

Covid-19 sets a new threshold in the economy, unlocks the digital portal, where it can no longer return to where it was before the pandemic. The digital realm was triggered and rapidly transforming the world, which the country needs to adapt swiftly in order to stay in the loop. Furthermore, the current economic turmoil of geopolitical crisis is heavily affecting the country, where it disrupts the food and oil supply leading to shortages and inflations.

The economic transformation which the government aim, is to adapt the country into the world of digitalization and technological innovations. Likewise, to make the nation more resilient and comprehensive in addressing the effect brought by issues of pandemic, food shortages, high inflations, oil crisis and even climate change. The agenda is to boost the efficiency and productivity of various sector with the use of advance technologies, digitalization, and latest programs. Such as in the agricultural sector, where needs to implement a modernization program and mechanization to augment the production of farmers. Connecting farm to market roads via infrastructure and transportation. Energy sector exploration for alternative energy such as renewable and nuclear energy. Digital infrastructure of the government, to enhance doing business, also to education and health sector, where human capital development is a vital force to a strong economy. Reforming the economy to adapt promptly will get back the country stronger from the pandemic and from other global issues and making the economy robust over a long period of time.

With this objective, the theme, **Mechanical Engineers: Stand United as Pillars for Economic Transformation Towards Nation's Progress** is timely and highly relevant, as the economy needs to restructure to be more resilient and autonomous. In collaboration with the Mechanical Engineers as pillars of industry, their collective minds and expertise to design, built, maintain, and innovate the industries, whether it's agricultural sector, infrastructure, manufacturing, energy, health, academe and so forth, contributes a significant impact to the growth of economy. The technology today, is the key element in merging all the mechanical engineers and sharing of information up to date thru digital platform, for the advancement of everyone's skills and competencies leading to prosperous nation.

Therefore, it is a call, not only to PSME-WRSA JC members, but to all Filipino Mechanical Engineers to join hands in steering the industry forward, on the way to a better and brighter Philippines.



# CONVENTION LOGO/THE COVER

PHILIPPINE SOCIETY OF MECHANICAL ENGINEERS



## CONVENTION LOGO



By: Jose Melvin Santos, RMEE, AE  
Executive Vice President 2022

Our theme for 2023, "*Mechanical Engineers: Stand United as Pillars for Economic Transformation Towards Nation's Progress*" is represented by the **Convention Logo**. The Gear, Safety Hat, Wrench, and our Chapter Seal serve as symbols of the Mechanical Engineers. As the logo indicates, the handshake in the middle demonstrates the unity of us Engineers. Our knowledge and commitment to our profession will serve as the foundations or Pillars on which we will build to realize our vision in achieving a stronger and sustainable Economic Transformation. The ascending arrow represents the transformation and progress. The Philippine Flag signifies our Nation.



## THE COVER



By: Jobert M. De La Rosa, RMEE  
Vice President for Internal Affairs -2022

This year's annual convention souvenir program cover illustrates and relates to the Convention theme "*Mechanical Engineers: Stand United as Pillars for Economic Transformation Towards Nation's Progress*." Level up, an acceleration of economic progress that will embody the future innovation in business, livability and sustainability. The potential for a new paradigm of development that can propel human society in a more meaningful, sustainable direction.

This could likely be achieved through the improvement of infrastructure of renewable and sustainable energy like power plant upon the better nation.



# PSME CREED, CORE VALUES PRAYERS, OATH OF MEMBERSHIP

PHILIPPINE SOCIETY OF MECHANICAL ENGINEERS



## PSME CREED

We the Mechanical Engineers of the Philippines, conscious of our responsibilities to God, our country and fellowmen. Affirming our adherence to the Code of Ethics for Mechanical Engineers. Desirous in participating and contributing in the social, economic and industrial growth of our country. Determined to support one organization that shall embrace the Mechanical Engineering profession. Have resolve to unite to accomplish these aims by constituting a national organization of Mechanical Engineers.

## PSME CORE VALUES

I am a person of **INTEGRITY**. I act with honesty, transparency, and accountability. I do the right things, the right way I maintain **PROFESSIONALISM** at all times with high respect for others, observing proper conduct, following the code of ethics, honoring commitments and acting fairly and with dignity. I strive for **EXCELLENCE** thereby achieving the highest standard of performance in all my undertakings. I internalize **TEAMWORK**. I act with sense of urgency, mindful of entrepreneurial spirit and work with unity, cooperation, collaboration, synergy and convergence towards a common goal. I exercise **LEADERSHIP** with humility and characterized by stewardship. I lead by example, walk the talk and celebrate success as owned by all the members of the team. I embody **CONCERN FOR STAKEHOLDERS** especially the welfare of our members, employees and all we work for and those who work for us. I am an integral part of a **RESILIENT, NATIONALISTIC** and **GOD-FEARING** Organization. I weather the odds and implore peace, harmony, kindness, good work, love of country and social responsibility.

## PSME PRAYER

Heavenly Father, Maker of Heaven and Earth, we thank You for the Filipino Mechanical Engineer, for our profession, and for our organization the PSME. You have sown us as seeds, scattered here and abroad as PSME Engineers- humble planners, designers and builders of all things mechanical- our humble testament to the Glory of Your Creation. We bring before You the fruits of our profession, forged by the fire and burning passion of the PSME mission.

**PROFESSIONALISM-** to help us maintain the integrity of the Engineering Profession; please keep our hearts true to the highest ethical principles of our field.

**SERVICE-** to enable us to contribute to the enhancement of science and technology, we pray for all Filipino Mechanical Engineers to work together as one in shaping the economic growth of our country.

**MOTIVATION-** to uplift the Engineering Profession; please help us promote fellowship and cooperation among all Filipino Mechanical Engineers and to instill nationalism among PSME members.

**EXCELLENCE-** to enable us to become outstanding PSME members. We pray for all Filipino Mechanical Engineers to actively contribute to the advancement of the profession, to be recognized globally as we develop the talents you have given us.

Help us to provide sustainability to the changing world. May the PSME bring together all Filipino Mechanical Engineers- and as one- stand united as beacons of strength and stability to the world. All these we pray through You, our Heavenly Father, forever and ever. Amen.

## OATH OF MEMBERSHIP

I, \_\_\_\_\_, after having been accepted as a member of the Philippine Society of Mechanical Engineers -Western Region Saudi Arabia Jeddah Chapter, do hereby solemnly swear, that I will defend the Constitution and By-Laws of the society; that I impose upon myself the aforementioned duties and obligations voluntarily and without reservations or purpose of evasion.



# PROGRAM OF ACTIVITIES

## PHILIPPINE SOCIETY OF MECHANICAL ENGINEERS



TIME	DURATION		
8:30 AM - 9:00 AM	0:30:00	REGISTRATION & ACKNOWLEDGEMENT OF THE PARTICIPANTS	ORLAN C. MORIONES, RMEE, AE LEONARD P. MERIALES, RMEE, AE MARK HAROLD A. RAMIREZ, RMEE EVWIN D. JARADAL, RMEE
9:00 AM - 9:05 AM	0:05:00	FORMAL OPENING & RIBBON CUTTING	JOSE MELVIN D. SANTOS, RMEE, AE
9:05 AM - 9:10 AM	0:05:00	PSME Prayers & Muslim Prayers	GILBERT V. ESPRITU, RMEE JULIUS M. CAÑECA, RMEE
9:10 AM - 9:15 AM	0:05:00	National Anthem (Phil. & Saudi)	ZOOM MASTER
9:15 AM - 9:20 AM	0:05:00	WELCOME ADDRESS	NIÑO JOSE A. LOPEZ, RMEE, AE
9:20 AM - 9:40 AM	0:20:00	Introduction of KEYNOTE SPEAKER	CRISOSTOMO C. ORTIZ, PME, AE
		KEYNOTE SPEAKER'S MESSAGE	ENGR. MELANIE P. BANAYOS, PME
			2022 PSME National President
		Awarding of Plaque of Appreciation	MODERATOR
9:40 AM - 10:55 AM	1:15:00	TECHNICAL PRESENTATION #1	DESIGN AND APPLICATION OF NITROGEN GENERATOR
		Introduction of TECHNICAL SPEAKER	DONALD B. MAKALINTAL, RMEE
		TECHNICAL SPEAKER	NIÑO JOSE A. LOPEZ, RMEE, AE
		Question & Answer	MODERATOR
		Awarding of Plaque of Appreciation	MODERATOR
11:55 AM - 12:10 PM	1:15:00	TECHNICAL PRESENTATION #2	MODULAR LABORATORY, DESIGN OF ENHANCED CONTAINMENT FACILITY
		Introduction of TECHNICAL SPEAKER	NAPOLION M. CASTAÑEDA, RMEE, RMP
		TECHNICAL SPEAKER	JOHN RAY O. MADLA, RMEE, AE
		Question & Answer	MODERATOR
		Awarding of Plaque of Appreciation	MODERATOR
12:10 PM - 1:10 PM	1:00:00	LUNCH BREAK / VIDEO PRESENTATION	ZOOM MASTER
1:10 PM - 1:15 PM	0:05:00	FUN GAMES / RAFFLE DRAWS	DONALD B. MAKALINTAL, RMEE
1:15 PM - 2:00 PM	0:45:00	PRODUCT PRESENTATION	DVM S2   WIND FREE
		Introduction of Sponsor	DONALD B. MAKALINTAL, RMEE
		MAJOR SPONSOR	SAMSUNG AC
		Question & Answer	MODERATOR
		Awarding of Plaque of Appreciation	MODERATOR
2:00 PM - 2:20 PM	0:20:00	Introduction of INSPIRATIONAL SPEAKER	DEXTER JHONES H. ANDAYA, RMEE
		INSPIRATIONAL SPEAKER'S MESSAGE	ENGR. DOMINADOR V. POQUIZ, JR.
			President, PPO - WRSA
		Awarding of Plaque of Appreciation	MODERATOR
2:20 PM - 2:25 PM	0:05:00	FUN GAMES / RAFFLE DRAWS	DONALD B. MAKALINTAL, RMEE
		GENERAL MEMBERSHIP MEETING	
2:25 PM - 2:30 PM	0:05:00	PSME Creed & Core Values	ZOOM MASTER
2:30 PM - 2:35 PM	0:05:00	Call to Order	
		Proof of Attendance & Declaration of Quorum	NIÑO JOSE A. LOPEZ, RMEE, AE
		Presentation and Adoption of Agenda	MARIA MAY M. ATOLE, RMEE, RMP, AE
2:35 PM - 2:45 PM	0:10:00	Reading and Approval of Minutes of Previous Meeting	MARIA MAY M. ATOLE, RMEE, RMP, AE
2:45 PM - 3:10 PM	0:25:00	Introduction of GUEST OF HONOR	JOSE MELVIN D. SANTOS, RMEE, AE
		GUEST OF HONOR'S MESSAGE	HON. JEREMIAH P. ATTENTO
			Vice Consul - PCG Jeddah
		Awarding of Plaque of Appreciation	MARIA MAY M. ATOLE, RMEE, RMP, AE
3:10 PM - 3:30 PM	0:20:00	Chapter President's Report	NIÑO JOSE A. LOPEZ, RMEE, AE
3:30 PM - 3:40 PM	0:10:00	Chapter Treasurer's Report	LEONARD P. MERIALES, RMEE, AE
3:40 PM - 3:50 PM	0:10:00	Membership Director's Report	ORLAN C. MORIONES, RMEE, AE
		Presentation and Induction of New Members	
3:50 PM - 4:00 PM	0:10:00	Other Matters & Announcements	NIÑO JOSE A. LOPEZ, RMEE, AE
4:00 PM - 4:02 PM	0:02:00	Adjournment	MARIA MAY M. ATOLE, RMEE, RMP, AE
4:02 PM - 4:12 PM	0:10:00	Discharging from Office of 2022 Officers & Directors	ALDRIN ALIZON D. LANGO, RMEE, AE
4:12 PM - 4:17 PM	0:05:00	Charging to Office of 2023 Officers & Directors	HON. JEREMIAH P. ATTENTO
4:17 PM - 4:22 PM	0:05:00	Oathtaking of 2023 Officers & Directors	ENGR. MELANIE P. BANAYOS, PME
4:22 PM - 4:25 PM	0:03:00	Ceremonial Turnover of Chapter Presidency	NIÑO JOSE A. LOPEZ, RMEE, AE
4:25 PM - 4:30 PM	0:05:00	Speech of Incoming 2023 Chapter President	JOSE MELVIN D. SANTOS, RMEE, AE
4:30 PM - 4:40 PM	0:10:00	PRESENTATION OF AWARDS	NORIEL J. NOLLORA, RMEE
4:40 PM - 4:55 PM	0:15:00	GRAND RAFFLE DRAWS	DONALD B. MAKALINTAL, RMEE
4:55 PM - 5:00 PM	0:05:00	CLOSING REMARKS	JOSE MELVIN D. SANTOS, RMEE, AE

Moderators : LEE I. BONIFACIO & MARIA MAY M. ATOLE Zoom Masters : JOSE MELVIN D. SANTOS & DEXTER JHONES H. ANDAYA



# THROUGH THE YEARS

PHILIPPINE SOCIETY OF MECHANICAL ENGINEERS



The Philippine Society of Mechanical Engineers - Western Region Saudi Arabia Jeddah Chapter (PSME-WRSA JC) was started and headed by Nildo K. Tan, Jr., PME, a member of the Philippine Society of Mechanical Engineers Saudi Arabia Chapter (PSME-SA) in Dammam, during his assignment in Jeddah. He was tasked to form the PSME-WRSA JC in Jeddah being the Director of Autonomous Provincial Unit (APU). The objective was to promote excellence in the practice of mechanical engineering profession among the Filipino mechanical engineers in the Western Region of Saudi Arabia, and to provide a venue for enhancing professional competence, brotherhood, interaction and camaraderie among its members.

## REMINISCENCES THROUGH THE YEARS

### 1993

- Initially, only a handful of mechanical engineers coming from various companies and business establishments in Jeddah showed interest to join.
- 30 Registered Mechanical Engineers was the basic requirement by the PSME National to become an independent chapter.

### 1994

- The required 30 Registered Mechanical Engineers was attained and the application to become an independent chapter was formally endorsed by PSME-SA Chapter to the PSME National.
- Subsequently, Nildo K. Tan, Jr., PME was elected as the first Chapter President.

### 1995

- The term of Engr. Ruben Parpan has formally received the charter approval of PSME-WRSA Jeddah Chapter from PSME National as an independent chapter.
- Nildo K. Tan, Jr., PME was automatically named as the Charter President.

### 1996 and 1997

- During the presidency of Engr. Rene Y. Logarta and Engr. Rene C. Bernales, PME, respectively, PSME-WRSA JC formulated its constitution and by-laws identifying areas of responsibilities, social awareness campaigns, plant visits, technical seminars, membership growth, and sports activities.

- The first PSME-WRSA JC sports fest was sponsored by Advance Petroleum Services Limited-Gulf Oil courtesy of Charter Pres. Nildo K. Tan, Jr., PME

### 1998

- Pres. Danilo V. Gercio, PME and the BOD conceived the idea of board exams here in Jeddah for non-registered mechanical engineers and plant mechanics.
- Documentation and communications with the PSME National Office and the Professional Regulation Commission (PRC) was initiated.
- Rizalino Nobleza, PME spearheaded the first M.E. Board Exam review at IPSJ, Jeddah.
- The birth of PSME-WRSA JC's newsletter, "Jeddah Prime Movers" was successfully launch with this first issue. Thanks to the efforts of Ruben B. Serrano, PME, and Dionisio A. Lora Jr., PME together with the contribution from all members.
- A Presidential Award was given to PSME-WRSA JC from PSME National during the 46th annual convention in Cebu, Philippines on October 22, 1998.

### 1999

- The term of Filemon E. Agulo, PME, was considered a year of fulfillment. Plans and preparations of his predecessors became a reality.
- The first Professional Mechanical Engineer (PME) board examination took place in November 20, 1999. PRC representatives together with BME members came to Jeddah and conducted the examination. Some associate members took the Mechanical Engineers board exam in Dammam.
- Another Presidential Award was given to PSME-WRSA JC from PSME National during the 47th Annual National Convention on October 22, 1999.

### 2000

- The millennium president Wilfredo R. Ruiz, PME made substantial achievements.
- The Professional Regulation Commission (PRC) conducted the 1st Mechanical Engineers board exam and the 2nd Professional Mechanical Engineers board exam in Jeddah on July 2000.
- Pres. Willy was awarded Outstanding Chapter President.
- Felimon E. Agulo, PME was awarded as The Outstanding Mechanical Engineer (TOME), Consultancy category



# THROUGH THE YEARS

PHILIPPINE SOCIETY OF MECHANICAL ENGINEERS



- Edwin M. Evasco, PME and Mohd. Pedro D. Entico, PME was awarded Most Outstanding Member and Most Outstanding Committee Chairman, respectively.
- PSME-WRSA JC got a Presidential Award at PSME National's 48th Annual Convention in Cebu, Philippines on October 20, 2000.

## 2001

- The presidency of Dionisio A. Lora, Jr., PME marked another milestone with notable achievements and projects.
- The 1st board exam for Certified Plant Mechanic (CPM) was conducted and the 2nd board exam for ME took place in Jeddah and Dammam.
- PSME-WRSA JC sponsored two deserving scholars who took 2-year vocational course.
- The formation of APU Riyadh for chartering was initiated.
- PSME-WRSA JC got a Presidential Award at PSME National's 49th Annual National Convention on October 19, 2001.

## 2002

- Pres. Juan U. Berbie, PME continued the implementation of the two students' scholarship from Region 11 and Region 4 under the supervision of DSWD.
- Formation and chartering of PSME-WRSA Toastmasters Club 6899 on March 5, 2002 by Toastmasters International, USA. Ricardo V. Romero, PME was the first elected Club President with 22 charter members.
- Recommendation was done to the PSME-National for the chartering of PSME-WRSA APU-Riyadh with more than 30 regular members.
- Napoleon M. Cepriaso, PME got The Outstanding Mechanical Engineer (TOME) award for Special Category in Environmental Engineering.
- PSME-WRSA Jeddah Chapter got the Most Outstanding Chapter for Membership Growth.
- Ricardo V. Romero, PME was awarded as the Most Outstanding Committee Chairman.
- PSME-WRSA Jeddah Chapter was presented a Plaque of Recognition at PSME National's 50th Annual Convention in Manila on October 19, 2002.

## 2003

- Pres. Orlando L. Digma, PME faced many challenges in his term.
- The Autonomous Provincial Unit (APU) Riyadh was chartered by PSME National. The Induction of the Board of Directors was held in 28th February 2003 in Riyadh and IPP Juan U. Berbie, PME represented the PSME-WRSA Jeddah Chapter.

- The Chapter's first-ever scholar from Region 11 has successfully completed his studies in October 2003.

- Julius D. Caringal, PME and Wilfredo R Ruiz, PME were awarded as The Outstanding Mechanical Engineers (TOME) for Consultancy and Special Category in Automation and Controls, respectively, during the 51st PSME-National Annual Convention held in Manila.

## 2004

- The second term of Pres. Wilfredo R. Ruiz, PME, reminded us of how important camaraderie is, for the good and strengthening of any organization.
- Engr. Jose Emmanuel B. Acebuque was awarded The Most Outstanding Member at PSME National's 52nd Annual Convention in Manila.

## 2005

- Pres. Ernesto C. Cala, PME made momentous accomplishments.
- Ernesto C. Cala, PME was awarded as The Outstanding Mechanical Engineer (TOME) for Special Category in Automatic Energy Management and Controls System.
- PSME-WRSA Jeddah Chapter was awarded the Most Outstanding Chapter for the year 2005.
- PSME-WRSA JC was presented a Plaque of Recognition at PSME National's 53rd Annual National Convention on October 19, 2005.

## 2006

- The term of Pres. Willie C. Leoncio, PME was a dream come true for succeeding with their mentoring of Jeddah Electrical Engineers organization of their newly established Toastmasters club.
- PSME-WRSA Toastmasters Club successfully conducted the Youth Leadership Training joined with the International Philippine Schools of Jeddah.
- PSME-WRSA JC once again garnered the Most Outstanding Chapter Award and a Plaque of Recognition at the PSME National's 54th Annual Convention on October 24, 25 & 26, 2006.

## 2007

- The presidency of Pres. Joselito A. Arellano, PME had been very fruitful.
- Pres. Joselito A. Arellano was awarded the Most Outstanding Chapter President.
- Engr. Rainier P. Patawi was awarded The Most Outstanding Member.
- PSME-WRSA JC got The Most Outstanding Chapter Award at PSME National's 55th Annual Convention.



# THROUGH THE YEARS

PHILIPPINE SOCIETY OF MECHANICAL ENGINEERS



- A mid-year thanksgiving party and fellowship was conducted to celebrate the fruitful and successful midyear activities of the Chapter.
- Continued board review for the ME and CPM examinees headed by the Professional Enhancement Director Julius D. Caringal, PME for the incoming SPLBE-SA of December 2007.

## 2008

- Under the leadership of Pres. Froilan G. Miro, PME the chapter made notable achievements.
- Napoleon M. Cepriaso, PME conducted the Project Management seminar during the Midyear Convention. Followed by Wilfredo C. Leoncio, PME who conducted a seminar and product presentation on Daikin air conditioning technological advancement.
- Under the responsibility and commitment of Engr. Julius D. Caringal, PME, determined PME examinees passed the examination; Engr. Jose Emmanuel B. Acebuque, Engr. Ruben Alzate and Engr. Edilberto Cabodil. Oath-taking was held during the 9th PSME-WRSA JC's Annual Convention on November 28, 2008.

## 2009

- Pres. Julius D. Caringal, PME was determined to maintain the good performance of the chapter.
- Professional Enhancement Director Emmanuel B. Acebuque, PME headed the review preparation for the incoming SPLBE.
- Dionisio A. Lora, Jr., PME was awarded as TOME (The Outstanding Mechanical Engineer) in Hotel Engineering category.
- Pres. Julius conducted seminars on HVAC Design Part 1 and HVAC Design Part 2 and distributed a workbook he authored entitled "Cooling and Heating Load Calculation Manual".
- Overview of Project Management seminar was conducted by Engr. Henry Cabansag, PMP.
- PSME-WRSA Toastmasters Club under the Presidency of Engr. Jaime L. Leviste, CC, CL garnered some awards from Toastmasters International.

## 2010

- Chapter President Joselito L. Bentulan, PME had to realign the chapter to where it has been heading since the chapter was chartered 1995.
- As an executive order E0-835 was signed by the Philippine President Gloria M. Arroyo on 06 October 2009 declaring that Special Board Examinations (SPLBE) is going to be conducted

by the Professional Regulation Commission of the Republic of the Philippines, in the Kingdom of Saudi Arabia yearly.

- The founding of Jeddah Review Center by Wilfredo Ruiz, PME was recognized by the chapter to handle the review classes for BS of Mechanical Engineering graduates.

• In order for the chapter to focus more of its activities to the benefits of general membership. It was on this term where history transpired that the past presidents of PSME-WRSA Jeddah Chapter were to hold positions such as: Wilfredo Leoncio, PME- Auditor and Ernesto C. Cala, PME - Code of Ethics Director: to fill the vacuum created by non-availability of PSME-WRSA JC membership to hold such positions. The Council of Past Presidents of PSME-WRSA Jeddah Chapter was organized to support the PSME-WRSA Jeddah Chapter .Officers and Board of Directors in advisory level, initially chaired by the Charter President Nildo K. Tan Jr., PME.

• The collective efforts of 2010 PSME-WRSA JC administration was rewarded with the following national awards: 1. Most Outstanding Chapter in Membership Growth. 2. Most Outstanding Chapter Project. 3. Most Outstanding Committee Chairman for Engr. Jeffrey Esperanza.

## 2011

- Pres. Rainier P. Patawi, ME shared his version of four (4) P's for the chapter's successful accomplishments: Planned purposely, Prepared prayerfully, Proceeded positively and Pursued persistently.

• The chapter made record-breaking number of National Awards from PSME National's 59th Annual Convention at Quezon City, Philippines on October 21, 2011 as follows: Most Outstanding Chapter- International; Best Chapter in Membership Growth; Most Outstanding Chapter Project - "Bayanihan Spirit for Flood Victims in Philippines"; TOME Award for Napoleon M. Cepriaso, PME in Construction category; TOME Award for Rainier P. Patawi, ME in Information Technology category.

- Nildo K. Tan, Jr., PME got the Fellow Award.

• Pres. Rainier P. Patawi was awarded Most Outstanding Chapter President- International.

- Oath-taking of new Licensed Mechanical Engineers: Engr. Antonio H. Amosco Jr., Engr. Liza L. Acosta and Engr. John E. de Leon at Al Waha Hotel, Jeddah.

• The enormous success beyond the expectation for PSME-WRSA Jeddah Chapter continued to press forward.



# THROUGH THE YEARS

PHILIPPINE SOCIETY OF MECHANICAL ENGINEERS



## 2012

- Pres. Napoleon M. Cepriaso, PME lead the chapter during its darkest year. Despite the imminent threat to its existence, it managed to move forward with programs and seminars to enhance the technical knowledge and skills of the members.
- PSME-WRSA Jeddah Chapter has set a benchmark of excellence in community service.
- Set another record-breaking number of national awards (12 awards out of 14 nominations) from the PSME National's 60th Annual Convention in Quezon City, Philippines on October 19, 2012.
- Pres. Napoleon M. Cepriaso got The Most Outstanding Chapter President - International Award.
- The Most Outstanding Chapter – International.
- Most Outstanding Chapter in Membership Growth.
- Most Outstanding Chapter Project - Operation "Habagat".
- Most Outstanding Publication - Jeddah Prime Movers Newsletter.
- TOME (The Outstanding Mechanical Engineer) Awards for: Joselito L. Bentulan, PME in Manufacturing category; Roel Alfon G. Banawis, ME in Design category; Ace Glen B. Garcia, ME in Consultancy category; Crisostomo C. Ortiz, ME in Community Service category.
- Achievements and Service Awards for: Wilfredo R. Ruiz, PME for Fellow Award; Lee I. Bonifacio, ME as Outstanding Secretary; and, Jemuel B. Esguerra, ME as Most Outstanding Committee Chairman.

## 2013

- Pres. Jaime L. Leviste, ME was one of the most active officer who served the chapter. Vice President for the year 2011 and 2012, and two-time convention chairman. Offered the lecture room of New Al Jedaani Hospital for the chapter's technical seminars and other activities. Past President PSME-WRSA Toastmasters Club and Past Area Governor.
- PSME-WRSA Toastmasters Club mentored Jotun Toastmasters Club and continued the Youth Leadership Training Program to International Philippine School of Jeddah and Al Hekma International School.
- Pres. Jaime L. Leviste with Membership Director Jemuel B. Esguerra, ME met with the PSME National president in Scout Bayoran, Quezon City to seek important advice on chapter's status.
- PSME-WRSA Jeddah Chapter garnered the following National Awards from the directorate

of PSME Scout Bayoran: Most Outstanding Overseas Chapter; Most Outstanding Chapter President for Engr. Jaime L. Leviste; Special Technical Competency Award; Special Humanitarian Award (for raising donation to the victims of Typhoon Yolanda).

## 2014

- Pres. Crisostomo C. Ortiz, ME continued to lead the chapter through its rough journey. Despite the odds, PSME-WRSA JC remained intact and committed to community service.
- Achievements and activities for this year were: Cash donation to children of Santa Veronica, San Pablo City with Engr. Jaime L. Leviste and Engr. Lee I. Bonifacio; Conducted Basketball Tournaments; Technical Seminar on General Machine Design and Parliamentary Procedure by Engr. Lorenzo O. Gaviola and TM Edgar Hernandez, respectively; Participated at KAMC Invitational Bowling Tournament; Mid-Year Convention and Technical Seminar on Design of Water Distribution System by Jemuel B. Esguerra, ME; Seminar on DSLR - Understanding Its Basic Operation by Napoleon M. Cepriaso, PME; Coastal Clean-Up Drive at Bohayrat spearheaded by APO; Plant Tour at Al Hidada Galvanizing Plant; Technical Product Presentation by DUCT Sox.

## 2015

- Pres. Ruben B. Serrano, PME demonstrated exemplary leadership at this time when PSME-WRSA JC has hibernated and going through transformation.
- When PSME National was divided, PSME-WRSA Jeddah Chapter was delisted.
- Despite being delisted, Pres. Ruben B. Serrano continued the negotiation with the PSME National officers in Paredes to recognize the chapter.
- Various activities were conducted to keep the membership alive: Participation in All-Star Bowling and PPO Bowling; General Membership Meeting; Al-Khattan get-together; Last Toast for PP Lito L. Bentulan, PME; Philippine Independence Day Celebration at PCG; and, Wow Pinoy Bowling Fun Game.

## 2016

- For the second year, Pres. Ruben B. Serrano, PME lead the chapter.
- To give full service and benefits for the members, the chapter was chartered for the 2nd time as PSME-JWR in March 4, 2016 at Trident Hotel by PSME National-Paredes under Pres. Murry Demdam.



# THROUGH THE YEARS

PHILIPPINE SOCIETY OF MECHANICAL ENGINEERS



It became the 89th chapter of PSME. Dr. Ed Malagapo conducted the oath-taking of officers and BODs as well as the chartering, graced by the presence of Vice-Consul Alexander Joseph A. Estomo. Sponsors: EGPHIL and TEAMAC Arabia.

- Pres. Ruben automatically became the charter president and first president of PSME-JWR (Jeddah Western Region).
- The chapter's website [www.psme-jwr.org](http://www.psme-jwr.org) was officially launched on May 7, 2016 thru IT Director, Engr. Paulo Taruc.
- First issue of official e-newsletter, Jeddah PrimeMovers, under PSME-JWR was issued in August.
- Continued support to PSME-WRSA Toastmasters Club.
- Conducted the following technical seminars: Press Tool Design by Ruben B. Serrano, PME; Heating, Ventilating, and Air Conditioning (HVAC) Design by Engr. Jemuel B. Esguerra, ME; and Operation and Maintenance of a Rotating Equipment by Engr. Crisostomo C. Ortiz, ME.
- Participated in Invitational bowling tournaments by GBI and KAMC.
- Collaborated with other civic organizations to help distressed OFWs of Saudi Oger.
- National awards at 64th PSME Annual Convention in Manila, October 19-22, 2016: Fellow Award to Napoleon M. Cepriaso, PME; TOME Award (Special Category: Biomedical) to Engr. Jaime L. Leviste; Best Website Award to [www.psme-jwr.org](http://www.psme-jwr.org); and, Most Outstanding Project to PSME-WRSA Toastmasters Club 6899.

## 2017

- Pres. Elmer Quanico, ME had turned a new leaf as the chapter continued the list growing of activities and achievements. He was the 2nd president of PSME-JWR.
- Conducted seminars and technical presentations as follows: Fire Alarm System Design and Application by Wilfredo R. Ruiz, FPSME, PME; ; Project Management Basics for Engineers and Technicians by Napoleon M. Cepriaso, FPSME, PME; Solar Energy System Application by Engr. Yamen Mohamed Samir Al Akeel of ICONS;
- National Awards garnered: Fellow Award for Wilfredo R. Ruiz, FPSME, PME; TOME Award for Engr. Ruben B. Serrano, PME.
- Board Exams passers: Engr. Jemuel B. Esguerra and Engr. Joel A. Santos, Professional Mechanical Engineers; and, Engr. Michael James C. Arcaparas, Mechanical Engineer.

- Sports and community activities: PPO Yearend Bowling Tournament (2nd Place); MRRD-OFW Bowling Tournament; KAMC Bowling Tournament (7th Place); PPO Bowling Tournament; and, participated in the Feeding and Relief Program for unfortunate OFWs in Saudi Oger Co.

## 2018

- Pres. Jemuel B. Esguerra, PME became the 3rd President of PSME-JWR and continued the legacy of the chapter.
- Gained CPD approval from PRC on various technical seminars conducted by PSME-JWR. CPD points was a mandatory requirement in PRC ID renewal.
- Conducted the following CPD-approved seminars: 5S Workplace Organization Process and TPM - Process for Improving Equipment Effectiveness (8 points); Project Management Basics for Engineers and Technicians Part-2 (8 points); Introduction to Auto Cad and Elevator Technology (4 points); Automatic Fire Protection System Design (8 CPD points); and, Sewage Lifting Station (8 points). Design and Application of HVAC DDC Controls and Building Management System (8 points); and, 3rd Annual Convention and General Membership Meeting (8 points).
- Continued the program for ME members to upgrade their license to PME. Two workshops were conducted accordingly.
- Actively participated in the activities of Philippine Professional Organization Western Region Saudi Arabia (PPO-WRSA) with the Philippine Consulate General; Meet and greet for our new Consul General Edgar Badajos; PPO-WRSA bowling tournament; Meeting with DOLE-OWWA at PCG; Welcome dinner for the new Consul General hosted by PPO-WRSA; Independence Day celebration; Professional Licensure Examination; Reception Dinner with other Fil Org at Hotel Intercontinental; and, assistance to the examinees of the Special Licensure Exams.
- Sports activities: Basketball friendly game at Escuela De Espanyol; Joined a basketball league with our team name "PrimeMovers".
- PSME-JWR achievers: Engr. Noel Bitera and Engr. Crisostomo Ortiz, Professional Mechanical Engineers; and, Engr. Arnel Layug, Registered Master Plumber.
- National awards garnered: Engr. Elmer B. Quanico, The Outstanding Mechanical Engineer (TOME) Special Category Household Refrigerating Appliances; and Engr. Aldrin Alizon D. Lango The Outstanding Mechanical Engineer (TOME) Special Category- Advanced Cooling System.



# THROUGH THE YEARS

PHILIPPINE SOCIETY OF MECHANICAL ENGINEERS



## 2019

• Engr. Noel S. Bitera, PME became the 4th President of PSME-JWR but has tendered his resignation from the position effective March 01, 2019 to take rest due to health condition and to reduce stress for his healing process. Engr. Noel has been on medication from the last two months of 2018. Engr. Aldrin Alizon D. Lango, the elected Executive Vice President, by virtue of succession, became the Chapter President.

• Engr. Aldrin Alizon D. Lango also became the Vice-President for PPO WRSA.

• On February 06, 2019, a Board Resolution dated January 30, 2019 was forwarded to PSME National under the leadership of Interim National President Dr. Jeffrey Singson with the title "A BOARD RESOLUTION EARNESTLY REQUESTING THE PSME NATIONAL TO REACTIVATE "PSME-WRSA JEDDAH CHAPTER" AS CHARTERED IN 1995 INCLUDING ALL OF ITS ACHIEVEMENTS, RECOGNITIONS AND ACCOMPLISHMENTS AND MERGED WITH "PSME-JWR" AS CHARTERED IN 2016 INCLUDING ALL OF ITS ACHIEVEMENTS, RECOGNITIONS AND ACCOMPLISHMENTS". During the 2nd National Regular Board Meeting held on February 9, 2019 at the PSME Building, Sgt. Bayoran St, Bgy. South Triangle, Quezon City, the Interim Board of Directors thru its Board Resolution 2019-31 has approved the resolution. On June 09, 2019 the formal letter regarding the approval of the resolution was received.

• Conducted the Technical Seminar on February 15, 2019 regarding "Communication, Leadership Skills & Wealth Management" with DTM Joey Villanueva as our Technical Speaker which was approved by PRC with 32 CPD points.

• On March 22, 2019, the Chapter conducted the First PME, AER, AET Orientation Seminar facilitated by Lorenzo O. Gaviola, ME, Crisostomo C. Ortiz, PME, and Lee I. Bonifacio, ME.

• June 29, 2019-conducted First Plant Tour regarding "Familiarization & Observation of Refrigerator Manufacturing Process" at Saudi Refrigerator Manufacturing Company Factory, Jeddah, Saudi Arabia.

• MYGMM & Technical Seminar regarding "Basic Design of Firefighting System (Wet Pipe Sprinkler)" was conducted by Engr. Roseller A. Junsay Jr. last July 26, 2019 at Saudi Refrigerator Manufacturing Company Factory, Jeddah, Saudi Arabia.

• September 19-20, 2019, we conducted "Thanksgiving and Get-together" at Al Qattan Village Beach Resort highlighted by the "Last Toast" for the PSME-JWR Charter

President, Ruben B. Serrano, PME.

• October 4, 2019, conducted Plant Tour at Friesland Campina Middle East Factory regarding "Milk Production Process".

• Our Chapter have actively participated in different activities of the Philippine Professional Organization-Western Region Saudi Arabia (PPO-WRSA); Attended 17 meetings; On August 9, 10 & 11, 2019, we have assisted in the SPLE 2019 Registration of Examinees at the PCGJ and at the examination Venue at Ibn Sina Medical College; On August 12, 13, & 14, 2019, we have assisted in the conduct of SPLE 2019 at Ibn Sina Medical College; Participated in the Coastal Clean Up Drive at Bohayrat, Jeddah last October 18, 2019 with the theme "Taking Action for a trash free environment".

• The Chapter have also participated in some activities of the Philippine Consulate General of Jeddah: Have attended first ever State of Post Address by the Hon. Edgar B. Badajos last December 6, 2018; Attended the Anti-Terrorism Information Campaign on June 15, 2019 conducted by delegates from Philippine Embassy; Attended the 121st Anniversary of Philippine Independence on June 17, 2019 at the Hotel Intercontinental, Jeddah; and Attended the HOPPA or the Huwarang OFW Pamilyang Pilipino Award on November 8, 2018.

• 2019 PSME-WRSA JC achievers.

## Chapter First Batch ASEAN Engineers

1. Engr. Willyn D. Espino
2. Engr. Lee I. Bonifacio
3. Engr. Amos Joel A. Acosta
4. Engr. Liza L. Acosta

## 2019 SPLE Passers for Master Plumber

1. Engr. Maria May M. Atole
2. Engr. Napoleon M. Castañeda

## 2020

• The Chapter's operations have been on hold for almost three months due to Covid-19 pandemic but the Board of Directors led by Engr. Aldrin Alizon D. Lango persevered. The Chapter were able to discharge its functions while observing the health protocols through the virtual platform "Zoom".

• Conducted ASEAN Engineering Register Technical Writeshop on February 7, 2020. The writeshop Technical Speaker was the PTC MENA Deputy in the Western Region, Engr. Richard R. Garcia, PECE, APEC Eng., ACPE, FACPE, AE.



# THROUGH THE YEARS

PHILIPPINE SOCIETY OF MECHANICAL ENGINEERS



- Our Chapter was able to organize technical seminar on "The Role of BIM in Sustainability, Energy and Environment" conducted on April 26 by Ace Glen Garcia, Mechanical Designer & Energy Modelling Lead, Canada.
- Organized "PME Orientation and Writeshop" conducted by Engr. Napoleon M. Cepriaso, PME, FPSME.
- Conducted "Webinar on Autonomous Maintenance" on June 19 by Engr. Greg A. Gulmatico.
- Our Chapter had actively participated in 11th Middle East Regional Conference hosted by PSME-SA and was conducted on July 31 to August 1, 2020.
- Conducted a "Virtual Membership Kamustahan" on August 14, 2020 in order to assess the current status of our general membership. We also conducted a virtual kumustahan with the COPPs on September 11.
- The Mid-Year General Membership Meeting was conducted on August 28. For the first time in the history of PSME-WRSA Jeddah Chapter, the constitution and By-Laws (CBL) was ratified by the general membership.
- Extended assistance to our fellow Filipinos in the Philippine Consulate General in Jeddah male and female wards. Gave 90 pieces of single mattress, 21 pieces of one-liter bottle of Sanitizers and 15 boxes of Yamama Cakes. Delivered the said assistance on September 18, 2020 facilitated by Madam Consul Maria Jennifer Dingal.
- Organized the first Virtual Plant Tour and Election of Year 2021 BODs and was conducted on October 2, 2020. In line with the PSME's theme, "Mechanical Engineers: The Nation's Prime Mover of Industrial Revolution 4.0".
- Achievers of this year, our Chapter's second batch of approved ASEAN Engineers.

1. Engr. Maria May M. Atole
2. Engr. Napoleon M. Cepriaso
3. Engr. Aldrin Alizon D. Lango
4. Engr. Jose Melvin D. Santos
5. Engr. John Ray O. Madla
6. Engr. Leonard P. Meriales
7. Engr. Orlan C. Moriones
8. Engr. Crisostomo C. Ortiz
9. Engr. Antonio Elmer L. Quintilla
10. Engr. Oliver O. Salazar

## 2021

- In the midst of the pandemic with eased health protocols, on January 7 and 8, 2021, Engr. Lee I. Bonifacio led the Chapter's thanksgiving

Get-together in a beach resort at Obhur with a successful annual planning of activities.

- PSME-WRSA JC CBL was amended to serve the growing number of members in the Philippines who desired to keep their membership with WRSA Jeddah Chapter. Chaired by our Code of Ethics Director Engr. Noriel Nollora. The proposed CBL amendment was approved by the Board of Directors last November 2, 2021 and due for ratification.

- The chapter is keen on reaching out to our fellow mechanical engineers. We were able to induct 4 new members. Our chapter renewed the membership and paid the fee of 22 regular members and 6 associate members to PSME National. We had paid the RFID fee for 71 outstanding members and the fee was bore by the chapters fund.

- Three (3) of our members were virtually conferred last April 10, 2021 during the 2021 ASEAN Engineering Register Conferment Ceremonies 2021-02 and ten (10) of our members were conferred in a hybrid set up last July 16, 2021 in collaboration with Institute of Electronics Engineers of the Philippines, Inc – KSA WRC during the 2021 ASEAN Engineering Register Conferment for Western Region of Saudi Arabia by the Philippine Technological Council. Our outstanding members are:

1. Engr. Amos Joel A. Acosta
2. Engr. Liza L. Acosta
3. Engr. Lee I. Bonifacio
4. Engr. Maria May M. Atole
5. Engr. Napoleon M. Cepriaso
6. Engr. Aldrin Alizon D. Lango
7. Engr. Jose Melvin D. Santos
8. Engr. John Ray O. Madla
9. Engr. Leonard P. Meriales
10. Engr. Orlan C. Moriones
11. Engr. Crisostomo C. Ortiz
12. Engr. Antonio Elmer L. Quintilla
13. Engr. Oliver O. Salazar

- Our chapter had actively participated in the 12th Middle East Regional Conference hosted by PSME-UAE Chapter. It was concluded on October 8 and 9, 2021. We actively participated and attended the 69th NatCon activities.

- Our Mid-Year General Membership Virtual Conference was conducted last June 25 and successfully chaired by Engr. Nino Jose A. Lopez. Graced by PSME National leaders and BME Chairman Leandro A. Conti as the Guest of Honor.
- "Prime Movers" the official newsletter of PSME-WRSA JC is back, we were able to release Volume 16 in 2 Issues, in June and September 2021 respectively.



# TECHNICAL WRITE UP

## PHILIPPINE SOCIETY OF MECHANICAL ENGINEERS



### DESIGNING A PLUMBING SYSTEM BASED ON REVISED NATIONAL PLUMBING CODE

#### INTRODUCTION:

An efficient Plumbing System starts with a design that saves water and energy resources. A good design incorporates short runs between plumbing fixtures and uses state of the art materials. A plumbing design must include two systems; the system that supplies water and the system that gets rid of waste. The drain system also has vent stacks that allow drain pipes to breath and move sewer waste through the sewer pipes.

Before begin to design a plumbing, drain, waste and vent systems. Must follow local building codes to ensure design compliance. Plumbing codes limit the number of fixtures that can be on a vent stack on a drain system in a room or where supply lines and drains must be placed inside the walls. Local building jurisdictions provide information as to the codes they follow as well as giving you specifics of where they diverge from standard codes. To ensure that your plumbing design meets code, check with your local building jurisdiction before beginning to design.

#### DEFINITION OF TERMS:

**PLUMBING SYSTEM** Includes all potable water supply and distribution pipes, all plumbing fixtures and traps, all sanitary and storm drainage systems, vent pipes, roof drains, leaders and downspouts and all building drains and sewers, including their perspective joints and connections, devices, receptacles and appurtenances within the property, water line in the premises, potable, tap, hot, and chilled water piping, potable water treating or using equipment, fuel gas piping, water heaters and vents for the same.

**DRAINAGE SYSTEM** Includes all the piping within public or private premises which convey sewage or other liquid wastes to legal point of disposal but does not include the mains of a public sewer system or a public sewage treatment or disposal plant.

**VENT SYSTEM** pipes installed to provide flow of air to or from a drainage system or to provide a circulation of air within such system to protect traps seals from siphonage and back pressure.

**FIXTURE UNIT** is an arbitrary quantity in terms of which the load producing effects or water requirements on the plumbing system of different kinds of plumbing fixtures are expressed in some arbitrarily chosen scale. One fixture unit is equivalent to a rate of flow at 28.3 liters per minute (1 cu ft / min), 7.5 gal / min or 8 gal / min.

**PLUMBING FIXTURES** are approved type installed receptacles, devices, or appliances supplied with water or receive liquid or liquid borne wastes and discharge such waste into the drainage system to which they may directly or indirectly connected. Industrial or commercial tanks, vats and similar processing equipment are not plumbing fixtures, but may connected to or discharge into approved traps or plumbing fixtures as provided for in the Code. (e.g Water Closet, Urinal, Bidet, Lavatory, Kitchen sink etc.)

**WATER MAIN** or street main is the water supply pipe for public or community use.

**VALVE** is a device or natural object that regulates, directs or controls the flow of a fluid (gases, liquids, fluidized solids, or slurries) by opening, closing or partially obstructing various passageways.

**PRESSURE** the normal force exerted by homogeneous liquid or gas per unit of area on the wall of the container.

**STATIC PRESSURE** the pressure existing without any flow motion.

**PIPE** a cylindrical conduit or conductor conforming to the particular dimensions commonly known as pipe size and is denoted by its interior diameter or I.D.

**SERVICE PIPE** the pipe from the street water main or other source of water supply to the building served.

**TRAP** a fitting or device designed and constructed to provide, when properly vented, a liquid seal which prevents the backflow of foul air or methane gas without materially affecting the flow sewage or wastewater through it.

**TRAP ARM** the portion of a fixture drain between a trap and the vent

**WASTE WATER** is the discharge from any fixture, appliance or appurtenance in connection with a plumbing system which does not receive fecal matter.

**PLUMBING CODE** is a code that provides regulations for the design, installation and inspection of plumbing and sanitary systems.



# TECHNICAL WRITE UP

## PHILIPPINE SOCIETY OF MECHANICAL ENGINEERS



### DESIGN CRITERIA

#### 1.0 SIZING OF DRAINAGE, WASTE AND VENT SYSTEMS

- **TABLE 7-2 (Revised National Plumbing Code of the Philippines) - Page 80**  
Minimum Trap Diameters and Drainage Fixture Unit Values
- **TABLE 7-5 (Revised National Plumbing Code of the Philippines) – Page 88**  
Maximum Fixture Unit and Maximum Length of Excreta Drainage and Vent Piping

#### Example:

Determine the diameter of the horizontal, vertical and vent pipe that serve 1 water closet (Private), 1 Lavatory, 2 Floor Drains, 1 Kitchen. Determine the maximum length of the vertical pipe and the vent pipe.

#### From Table 7-2

(Drainage Fixture Unit Value)=DFU

1 Water closet (Private) x 4 DFU	= 4 DFU
2 Lavatory x 1 DFU	= 2 DFU
2 Floor Drains x 2 DFU	= 4 DFU
1 Kitchen Sink x 2 DFU	= 2 DFU
	12 TDFU

#### From Table 7-5

Maximum Fixture Unit and Maximum Length of Excreta Drainage and Vent Piping

Vertical Pipe = 76mm (3 inch)

Horizontal Pipe = 76mm (3 inch)

Vent Pipe = 51mm (2 inch)

Maximum Length of Vertical Pipe = 26m

Maximum Length of Vent Pipe = 37m

Below is simple illustration



#### 2.0 SIZING OF WATER SUPPLY PIPE

- **TABLE 6-5 (Revised National Plumbing Code of the Philippines) – Page 73**  
Equivalent Water Supply Fixture Units  
(Includes Combined Hot and Cold Water Demands)  
Note: 1 F.U. (Fixture Unit) = 1 cu. Ft / min or 7.5 gal/min
- **TABLE 6-6.1, 6-6.2, 6-6.3 (Revised National Plumbing Code of the Philippines) – Page 74,75,76**  
Fixture Unit Table for Determining Water Pipe and Meter Sizes
- **TABLE A-1 (Revised National Plumbing Code of the Philippines) – Page 167**  
Demand Weight of Fixtures in Water Supply Fixtures Units



# TECHNICAL WRITE UP

## PHILIPPINE SOCIETY OF MECHANICAL ENGINEERS



### HOW TO DETERMINE THE WATER PIPE SIZE.

- 1.0 Select the table based on the pressure ranger available at the water meter. (Table 6-6)
- 2.0 Select the length column which is equal to or greater than the given length.
- 3.0 Follow down the column to a computed fixture unit value to or greater than the total number of fixture units required by the installation.

**Note:** No building water service pipe shall be less than 19mm dia.

### EXAMPLE

Design the water pipe size that is connected to 1 Water Closet, 2 Lavatories, 1 Kitchen Sink and 1 Shower. The length of the pipe is 10 meters. Assume pressure of 35psi at the main. (Water district)

### From TABLE 6-5.

Equivalent Water Supply Fixture Units

1 Water Closet x 3 WSFU	= 3 WSFU
2 Lavatories x 1 WSFU	= 2 WSFU
1 Kitchen Sink x 2 WSFU	= 2 WSFU
1 Shower x 2 WSFU	= 2 WSFU
<b>TOTAL</b>	<b>9 WSFU</b>

### Compute the Net Pressure at the Water Meter.

Pressure = Ave. Pressure at the Main – Static Pressure

$P = P_{ave} - P_{static}$

$P_{static}$  = Pressure loss due to elevation change ( $9.79 \times h$ )

Where  $h$  = is the elevation of the remote fixture.

$P_{ave}$  = Service Pressure at the Main (Water District=35 psi)

$P$  = lowest possible pressure in the building

$P = P_{ave} - P_{static}$

$= 35 \text{ psi} \times 6.895 \text{ kpa} - 0$

Psi

$P = 241.325 \text{ kpa}$

### FROM TABLE 6-6.1

Pressure = 241.325 kpa (Pressure Ranger)

Length of pipe = 10 meters (Given)

Total Fixture Unit = 9 F.U. (Computed)

Project length of pipe = 10 meters and the total fixture = 8 F.U., It falls on item no.2 of Table 6-6.1

Therefore the water pipe sizes are the following:

Meter and Street Service = 19mm or 3/4 inch

Building Supply and branches = 19mm or 3/4 inch

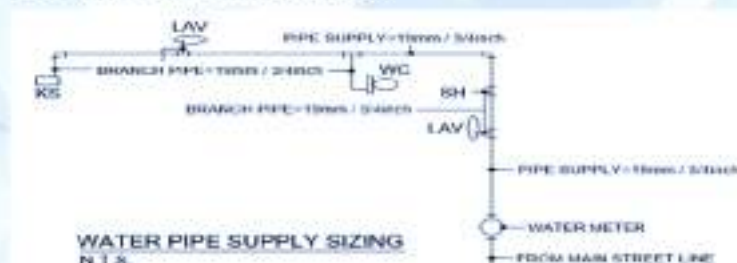
### FROM TABLE A-1

Demand Weight of Fixtures in Water Supply Fixtures Units

For checking the water pipe supply minimum connections of the given fixtures.

Water Closet, Lavatory, Kitchen Sink, Shower.

Below is simple illustration.



**Note:** This design of Plumbing System does not use any mechanical means like motor pump. The pressure available in the system depends on the water concessionaire / district or in the water main line as one of the basis of design.

### REFERENCE:

- 1.0 Revised National Plumbing Code of the Philippines (RNPC)

Thank you!

**Engr. Napoleon M. Castañeda**

Technical Affairs Director - 2022

PSME-WRSA JC



# MESSAGE FROM THE CONSUL GENERAL- PCG JEDDAH

PHILIPPINE SOCIETY OF MECHANICAL ENGINEERS



My warmest greetings to all the officers and members of the Philippine Society of Mechanical Engineers – Western Region Saudi Arabia Jeddah Chapter (PSME-WRSA JC) on the occasion of their 19th Annual Convention and General Membership Meeting!

With the theme ***“Mechanical Engineers: Stand United as Pillars for Economic Transformation Towards Nation’s Progress”***, your convention sends a very meaningful message of solidarity and development for our kababayans in the mechanical engineering field. May all those who take part in this online event be filled with the motivation and inspiration to further their knowledge and skills for their own professional benefit and for the betterment of the lives of our fellow countrymen, not only of those who remain back home

but also of our OFWs who bring us pride from all over the world. Since 1995, the PSME-WRSA JC has been bringing Filipino mechanical engineers together in Jeddah, KSA, and that is something worth celebrating. We at the Philippine Consulate General in Jeddah are so grateful that you are part of the dynamic Filipino community in Jeddah and Western Region. We encourage you to continue nurturing such strong friendship and camaraderie and using your expertise in order to provide our Filipino practitioners in the mechanical engineering field here with more opportunities to further enhance their knowledge and skills.

I congratulate you sincerely for conducting this truly commendable and beneficial activity. May this convention be a fruitful and successful event!

Mabuhay po kayong lahat!

EDGAR TOMAS Q. AUXILIAN  
Consul General

REPUBLIKA NG PILIPINAS



# MESSAGE FROM THE LABOR ATTACHE POLO JEDDAH

## PHILIPPINE SOCIETY OF MECHANICAL ENGINEERS



**Message of Labor Attaché ROEL B. MARTIN  
for the Philippine Society of Mechanical Engineers – Western Region of  
Saudi Arabia Jeddah Chapter (PSME-WRSA JC)  
19th Annual Convention and General Membership Meeting  
December 9, 2022**

Greetings! On behalf of the Philippine Overseas Labor Office, also known as the new Migrant Workers Office of the Department of Migrant Workers, I would like to congratulate the officers and members of the Philippine Society of Mechanical Engineers – Western Region of Saudi Arabia Jeddah Chapter (PSME-WRSA JC) on its 19th Annual Convention and General Membership Meeting!

Kudos also to all the PSME-WRSA JC officers who have assisted and supported its members in the best way possible for the past nineteen years. Thank you for the opportunity to send an inspirational message for your special event.

Probably, every home, family, and individual has benefited from the products and services, which required mechanical engineering. Mechanical Engineers are ultra-special as a professional because you are in the forefront of solving problems and creating new solutions in the areas of healthcare, energy, retail, manufacturing, food and agriculture, transportation, telecommunications, space exploration, among others. I cannot over-emphasize how your skills and talents truly make a difference in everyone's lives.

As Saudi Vision 2030 unfolds its plan for KSA to become a global powerhouse, the demand prospects for Filipino engineers look positive. There is vast opportunity for economic growth in the Kingdom. Even experts from the International Monetary Fund (IMF) lauded Saudi for its quick recovery efforts during the pandemic particularly in its liquidity and fiscal support, reform momentum, and high oil prices and production. Overall growth was robust at 3.2 percent in 2021, driven by a recovering non-oil manufacturing, retail (including e-commerce) and trade sector.

However, as you know, Saudi OFW engineers not only compete against global talents but also have to weather the impact of a full force Saudization. Due to the pandemic, we saw shifts in paradigms that forced everyone to figure out how to work "differently." Mechanical engineers are expected to take advantage of computer applications for product and computational design, prototyping and simulation.

In this regard, learning should never stop because industry dictates that the future is brightest only for the mechanical engineer++. For instance, train in the latest software tools, particularly for computational design and simulation, which will allow engineers to take a project from the conceptual phase directly to a finished product and eliminate the need for prototypes. Learn to create virtual simulations before proceeding to the design, build, and test stages to help firms reduce product development cycles. With a more data driven approach to projects, strive to learn more about data analytics, artificial intelligence and project management.

Value addition is not only in about being the best in your profession. The real value addition lies in how your faith in God has made you a better, kinder, and more loving person. It also lies on how you handle and manage your priorities and finances. Learn self-discipline and delayed gratification in terms of buying more of the things you (or your family) need rather than the things you (or your family) just want. Revisit your goals – for instance, why did you choose to work in Saudi Arabia? What are your long-term plans? Be careful not to lose sight of the reasons for your sacrifices. Save, invest, and pursue dreams that matter.

The year 2023 is just around the corner. We, at the Department of Migrant Workers, are cheering for to all your accomplishments for 2022. We will always be here to support you. We also count on you as the role models for OFWs helping other OFWs in Jeddah, Saudi Arabia. May you and your family find true joy and peace as we welcome 2023 in the next few weeks!

Mabuhay po ang Mechanical Engineers sa Saudi Western Region! Mabuhay ang migranteng manggagawang Pilipino!



# MESSAGE FROM THE 2022 PSME NATIONAL PRESIDENT

PHILIPPINE SOCIETY OF MECHANICAL ENGINEERS



**PHILIPPINE SOCIETY OF MECHANICAL ENGINEERS INC.**  
INTEGRATED ASSOCIATION OF MECHANICAL ENGINEERS

**PSME NATIONAL HEADQUARTERS**

19A Scout Bayoran St. Bgy. South Triangle

Quezon City, Philippines

Tel: (632) 7752-2527

Email: [national@psme.org.ph](mailto:national@psme.org.ph) Website: [www.psme.org.ph](http://www.psme.org.ph)



## PSME National President's Message



My sincere greetings and profound congratulations to the PSME WRSA Jeddah Chapter as you hold your 19th Annual Convention & General Membership Meeting this December 9, 2022!

Your theme: *"Mechanical Engineers: Stand United as Pillars for Economic Transformation Towards Nation's Progress"* manifests your resolve to remain unified, solid, formidable, and unwavering professionals who are committed to helping in the economic recovery and growth of our beloved country.

There may be trials that we encounter as a chapter and as a national organization, but the PSME WRSA Jeddah Chapter persists as tough as ever, with the strong belief that *"no matter what you are facing in life, stay focused on what is right, what is good and what is constructive, and always choose a positive mindset."*

So on your 19th GMM, continue to focus on programs that will improve your operations and services to your supreme members as you pledge to preserve the unity and camaraderie within your chapter and be the pillar for economic transformation through the practice of our profession. Maintain the warmth of brotherhood within your chapter. Do not hesitate to be a channel of new ideas and be our country's driver of technology.

Congratulations and thank you for your continued support to PSME National!

Mabuhay ang PSME WRSA Jeddah Chapter! Mabuhay tayong lahat!

  
Engr. MELANIE P. BANAYOS, PME  
2022 National President

*"PSME @ 70 and Beyond: The Home of Resilient Filipino Mechanical Engineers"*



# MESSAGE FROM THE 2023 PSME NATIONAL PRESIDENT- ELECT

PHILIPPINE SOCIETY OF MECHANICAL ENGINEERS



## MESSAGE FROM EXECUTIVE VICE PRESIDENT, LORETO G. CATALAN FOR THE 19TH AC GMM OF PSME WRSA JEDDAH CHAPTER

My congratulations to the PSME-WRSA Jeddah Chapter for their 19th Annual Convention and General membership Meeting. I salute all the officers and members of the chapter whose ideas and services made this day happen.

When this Chapter was created in 1995, I could only imagine the hard work and dedication required to start a professional organization of Filipinos in a foreign land. Your host region of Saudi Arabia with its own culture, customs and traditions, is totally different from our beloved Philippines. Most of you, if not all, are away from families and loved ones. Back in 1995, fighting homesickness was harder relying on snail mails, a few emails and expensive phone calls. In this regard, the Chapter became a surrogate family where members can exchange and debate ideas and plans for themselves, the chapter and the society.

The dreams for the Society are part of the Annual Convention and the plans on how to achieve those dreams are part of the General Membership Meeting. These dreams and plans were and will be thoroughly discussed, reviewed, debated, finalized and agreed on. It may be physically and mentally exhausting but necessary. Today is a solid evidence that those hard work were not laid to waste. Those seeming exercises also strengthen the bonds amongst you. This bond reinforces the position of Mechanical Engineers as a pillar for economic transformation towards the nation's progress. Today, I wish that your bond will be as strong as ever! And may more Filipino MEs and CPMs in your region find intellectual refuge in your Chapter as we continue to work hand-in-hand in propelling our nation towards Green industrialization.

Mabuhay ang Resilient Filipino Mechanical Engineers and CPMs!

Agbiag ti PSME!

**ENGR. LORETO G. CATALAN, PME**  
2023 PSME National President-Elect



# MESSAGE FROM THE PSME VP MIDDLE EAST

PHILIPPINE SOCIETY OF MECHANICAL ENGINEERS



## Greetings!!!

I would like to congratulate the PSME WRSA Jeddah Chapter for all the vigorous effort in organizing the 19<sup>th</sup> Annual Convention and General Membership Meeting. This shows that all Officers and members are committed to bringing together the value and spirit of commitment, loyalty, and continuous support to our beloved organization, the PSME.

The theme **“Mechanical Engineers: Stand United as Pillars for Economic Transformation Towards Nation’s Progress”** will show the true image of all Filipino Mechanical Engineers not only in our home country but also abroad. We, in PSME, have gone a very long way in building our nation. To be world-class Filipino mechanical engineers in today’s fast pacing environment, we need to be equipped with advanced knowledge and experience by upgrading ourselves for continuous learning, professional certifications, and/or qualifications from duly recognized institutions and organizations.

This event is both timely and relevant. As the current pandemic situation is easing, it shows that we are back to the real world of providing technical and engineering supports to all our members not virtually but physically.

Even though our organization is experiencing a lot of challenges, we continue to deliver the best and top-caliber seminars, training, and conferences for the benefit of all our members. May you continue to be the role chapter in showing the professional vision, contributions, and commitment to serve PSME and all the members of the organization. To the Chapter President, **Engr. Niño Jose A. Lopez**, your leadership shows your steadfast commitment to PSME.

As the year ends, we should put forward thinking to provide more for our organization. We continue to inspire and help our supreme members for uplifting our profession. For the next year, we look forward to seeing you more to be a more active chapter providing more beneficial and worthwhile technical assistance.

As your Vice President for the Middle East, I would like to give my unconditional appreciation and recognition to the Chapter President, Board of Directors, and supreme members who are always loyal to our organization, the PSME.

Congratulations and Mabuhay PSME!

**Engr. Carmelito A. Sinag, MsCM, RMEE, RMP**  
PSME VP-Middle East 2022



# MESSAGE FROM THE PPO-WRSA PRESIDENT

## PHILIPPINE SOCIETY OF MECHANICAL ENGINEERS



My heartfelt felicitations to everyone!

As the President of the Philippine Professional Organization – Western Region Saudi Arabia (PPO-WRSA) for 2022, it is a great honor and privilege to give an inspirational message to the leaders and all the members of the PSME Western Region Saudi Arabia Jeddah Chapter as you hold your 19th Annual Convention and General Membership Meeting. With this year's theme **"Mechanical Engineers: Stand United as Pillars to Economic Transformation Towards National Progress"**, as mechanical engineers, you can do so much to contribute to national progress. The design, engineering and production of various equipment, machines, tools and gadgets useful for modern industries and agriculture, to maximize their production efficiency and at the same time, reduce the cost of production are some examples.

Food security is considered national security. A hungry population can become unstable. Food insecurity can spark riots against governments that are unable to provide basic services. The current administration acknowledges this fact, it is the main reason why the President took upon himself the task to lead the agriculture department. We also see on social media truckloads of fruits and vegetables being dumped, partly due to lack of cold storage facilities. These are only a few of the things of what mechanical engineers could do for our country towards national progress.

In this virtual age of technological advancement, engineering technology is constantly evolving at a daily basis as automation like artificial intelligence continues to be implemented within countless professions and industries. Thus, as engineers, we need to be sustainable and keep up with the times through integrating our practices with these future technologies so that we can further enhance the efficiency and services of mechanical engineering. Moreover, COVID 19 taught us to be flexible and by incorporating the lessons learned out of this global pandemic, we can further prepare for future challenges through finding appropriate solutions as the best solutions are often anchored on the basics and fundamentals of any practice. As we return to the basics, let us continue to uphold our mission of developing our nation as years of learning and relearning innovations will ground our foundations through sustainable mechanical engineering.

To achieve this goal of sustainability, we must equip our mechanical engineers with the right work environment, the right mechanical engineering processes, the right mechanical engineering technologies, and the right mechanical engineering incentives to create unstoppable professionals who will lead the future of the profession and its successive generations. Therefore let us continue to encourage professional development and career growth for our mechanical engineers including those mechanical engineering graduates who aspire to become licensed mechanical engineers through SPLE, as you continue to build value in developing the mechanical engineering processes and technologies for a sustainable future. To the current officers of the PSME-WRSA-JC led by Engr. Nino Jose A. Lopez, kudos for a job well done and for ensuring that your organization remains an active member of PPO, in very good standing. To incoming Chapter President Jose Melvin D. Santos and other Officers and BODs who were chosen by your esteemed members, I salute you for taking the challenge of leading your organization. May you always continue the best practices that your predecessors have done and may you sustain the burning zeal to serve your members and the mechanical engineering profession.

Above all, may you "Stand United as Pillars to Economic Transformation, Towards National Progress".

Thank you and Mabuhay!!!

**Dominador V. Poguiz Jr., MPA, F.PICE**  
President, Philippine Professional Organization  
Western Region Saudi Arabia



# MESSAGE FROM THE CHAPTER PRESIDENT

PHILIPPINE SOCIETY OF MECHANICAL ENGINEERS



Congratulations to PSME-WRSA Jeddah Chapter on its 19th Annual Convention and General Membership Assembly. This is a momentous event as after two years of virtual conferences, we're finally back in person alongside the joy, laughter and camaraderie.

This year's Annual Convention theme: **"Mechanical Engineers: Stand United as Pillars for Economic Transformation Towards Nation's Progress"** applies well to us mechanical engineers since we are the catalyst of our nation's growth. With the new administration's focus on food security, mechanical engineers can be tapped for the mechanization of the agriculture industry thereby increasing output and revitalizing our agricultural economy. Truly what a mechanical engineer can contribute to the nation is beyond limits.

I would like to give my warmest thanks to the executive officers and directors for a job well done on our 28th year, we have stayed the course despite the challenges and limitations we are facing and we emerge victorious.

To our benevolent sponsors, we deeply appreciate your continued support and trust you bestowed on us. To our council of past presidents, our sincerest gratitude for imparting your wisdom and sage advice to the Board.

And finally to our Supreme Members, where the true power of the Chapter emanates, thank you for your continued trust to the Board and we will always be your humble servant-leaders.

Mabuhay and PSME-WRSA Jeddah Chapter!  
PSME Forever wala nang iba! God Bless!

  
**Niño Jose A. Lopez, RMEE, ASEAN ENG.**  
2022 Chapter President



# MESSAGE FROM THE CONVENTION CHAIRMAN

PHILIPPINE SOCIETY OF MECHANICAL ENGINEERS



Greetings, Everyone!

This Annual Convention will mark the first In-Person Year End gathering since 2019. We have restricted ourselves due to the safety protocols and economic challenges for the past 2 years. Our Convention theme, "Mechanical Engineers: Stand United as Pillars for Economic Transformation Towards Nation's Progress, drives us to stand strong, work together, and dedicate our skills as we move towards economic recovery and every nation's vision of progress. As we celebrate our 19th Annual Convention and 28 years of existence, I would like to congratulate: all the members for

keeping up; the board of directors for your untiring service; the past presidents for the motivations and encouragements; and to our brothers and sisters in our advocacies to be of service to our fellow OFWs.

Way to go to the 2022 Executive Officers and Directors. Applause, for the work well done!!! And to the Incoming 2023 Board of Directors, let us continue the PSME-WRSA Legacy. I look forward to a promising year ahead.

Mabuhay, PSME-WRSA. Mabuhay ang PSME.

Let us be ONE with PSME, Home of Resilient Filipino Mechanical Engineers.

  
**Engr. Jose Melvin D. Santos**  
Convention Chairman & EVP



# MESSAGE FROM THE EDITOR-IN-CHIEF

PHILIPPINE SOCIETY OF MECHANICAL ENGINEERS



Congratulations to PSME-WRSA Jeddah Chapter in its 19th Annual Convention!!

This souvenir magazine collected the significant contributions of 2022 executive officers and directors to our beloved chapter. With the support and wisdom of the Council of Past Presidents, they were able to continue the WRSA's legacy in developing high ideals of competence while fostering cordial and fruitful relations among its members.

However, post pandemic era has a lot of uncertainties. Increasing costs of basic needs and commodities, utilities and services affects the majority. With resiliency as the best armor towards those challenges, our chapter adapted and survived. The executive officers and directors were able to discharge their duties with all the possibilities at hand, stretching the best of their capabilities.

This year's annual convention theme: "Mechanical Engineers: Stand United as Pillars for Economic Transformation Towards Nation's Progress" will align the next leaders of WRSA with their purpose to serve. Unified leaders will work hand in hand to pursue and reach their goals. This will promote and maintain high professional standards in Mechanical Engineering profession, therefore, providing strength and stability to the community it belongs.

I would like to express my deepest gratitude to the executive officers, directors and council of past presidents. We are in the 27th year of service for the betterment of our society. Let's keep our boat sailing.

Mabuhay ang PSME-WRSA Jeddah Chapter!  
God Bless PSME.

  
**Lee I. Bonifacio, RME, MACDDS, ASEAN Eng.**  
2021 President, PSME-WRSA, Jeddah Chapter





# MESSAGE FROM THE PAST PRESIDENTS

PHILIPPINE SOCIETY OF MECHANICAL ENGINEERS



**RUBEN B. SERRANO, PME**

2015 Chapter President (PSME-WRSA  
Jeddah Chapter)  
2016 Charter President (Jeddah Western  
Region Chapter)  
2016 – 2017 Deputy VP-Middle East  
(Western Region, Saudi Arabia)  
2017 TOME Awardee

Congratulations PSME-WRSA Jeddah Chapter on its 19th ANNUAL CONVENTION and General Membership Meeting! Another milestone added to the history of the chapter.

Credit to the 2022 Board of Directors under the leadership of Engr. Nino Jose Lopez, Chapter President, for a job well done. The theme, **"Mechanical Engineers: Stand United as Pillars for Economic Transformation Towards Nation's Progress"** is a timely mission to accomplish. With the current economic challenge the world is facing, it is a must that every citizen of a country should contribute, on his own little way, boost economy. Much more that organized professionals such as, PSME-WRSA JC, must work towards this direction. This is a challenge how the incoming 2023 BODs spearhead on this call.

MABUHAY and PSME-WRSA Jeddah Chapter!

Congratulations to the **2022 BOD of PSME-WRSA Jeddah Chapter** headed by **Pres. Niño Jose A. Lopez** on its **19th Analcon** and for job well done inspite of current political squabble in the national level. You have demonstrated your ability to cope up with the circumstances.

This year's theme **"Mechanical Engineers: Stand United as Pillars for Economic Transformation Towards Nation's Progress"** is very timely. The Philippine goal for economic recovery after the pandemic is aimed on technology especially on the power sector. Due to global carbon emission issue, green renewable energy (solar and wind) is a priority plus the possible resurgence of modular nuclear power plants which so far is considered as the greenest form of energy at this time. As mechanical engineers, upgrading our knowledge in this field would be a good opportunity.

Meanwhile, I look forward to the upcoming 2023 set of officers under the leadership of incoming president **Jose Melvin D. Santos** to maintain and keep the legacy of the Chapter which has been in existence for 28 years. Mabuhay po tayong lahat. Mabuhay ang PSME.



**NAPOLEON M. CEPRIASO, PME,  
FPSME, ASEAN Eng.**

2012 Chapter President, PSME-WRSA Jeddah  
Chapter  
2016 Fellow Awardee  
2002 & 2011 TOME Awardee



# MESSAGE FROM THE PAST PRESIDENTS

PHILIPPINE SOCIETY OF MECHANICAL ENGINEERS



**JEMUEL ESGUERRA, PME**  
2018 Chapter President  
PSME Jeddah Western Region Chapter

Congratulations PSME WRSA Jeddah Chapter for holding 19th Annual Convention and General Membership Meeting. Once again, you have demonstrated an exceptional year of serving not only the members but the community as well.

Mechanical Engineers are well involved in all facets of the industry. Be it a design, operation and maintenance, manufacturing, research and development, management, etc. we take huge part of the process that contributes to its success – that forms part of a nation's progress.

Your programs like technical seminars, plant tours, sports, community service among others play enormous amount of the members' technical growth and competitiveness. Thus, truly commendable.

My heartfelt congratulations to all who made this event a momentous one.

The way we perceived things and the way we react on so many issues, etc. had been affected by the past years pandemic. This has been worsened by the war, world politics, natural disasters, etc.

Concept design, detail design, construction and even products manufacturing - IAQ's, space usage flexibility, energy conservations and unending discussions about climate change are considered. Many countries are maximizing their sources of energies from dams, solar, wind, geothermal, natural gas, power plants, etc.

The world still needs competent and adaptive Mechanical Engineers. Before there is Excel, AutoCad, etc. a need to learn Revit, Navisworks, BIM, PMP, Primavera, etc. to keep afloat might be a good idea.

We are digitalized and just need to keep on joining worthwhile engineering societies. Thus, hats off to PSME WRSA JC for trying their best to update us with the technologies via zoom webinar, etc. Thank you very much PSME WRSA JC Board Members for a year 2022 job well done!



**DANILO GERCIO**  
PSME-WRSA-JC-1998-President



# MESSAGE FROM THE PAST PRESIDENTS

PHILIPPINE SOCIETY OF MECHANICAL ENGINEERS



**Wilfredo R. Ruiz, PME,  
FPSME, ASEAN Eng.**

2000 & 2004 Chapter President,  
PSME-WRSA Jeddah Chapter  
2000 Most Outstanding Chapter President  
2004 The Outstanding Mechanical  
Engineer (TOME)  
2012 & 2017 Fellow Awardee

My warmest greetings to the Officers and members of the Philippine Society of Mechanical Engineers – Western Region Saudi Arabia, Jeddah Chapter on its 19th Annual Convention and General Membership Meeting.

The theme "Mechanical Engineers: Stand United as Pillars for Economic Transformation Towards Nation's Progress", highlights the paramount role of each mechanical engineers to promote unity, teamwork, transparency, and we must be steadfast to our profession and organization, thus achieving Financial Change is inevitable.

Let me extend my gratitude and appreciation to the 2022 Executive Officers and Board of Directors led by our unselfish and untiring Pres. Niño Lopez, you have done your best in serving the general membership, PSME National and the community. In the essence of unity, strength, sustainability and innovation, Mabuhay ang PSME at ang PSME-WRSA Jeddah Chapter!

Congratulations to the 2022 Officers and Directors of PSME-WRSA Jeddah Chapter headed by Pres. Niño Jose Lopez on its 19th Annual Convention.

Once again, you have done a wonderful job in the year 2022. Building on the success of previous activities of our organization in times of pandemic is already an achievement. Hence, I am honored to be part of this esteemed organization.

We are already shaped up to be excellent, and the opportunities will be indeed outstanding.

Remember, "If you to desire to make a difference in the world, you must be different from others".

To the upcoming year 2023 set of Officers and Directors, maintain and keep the legacy of our chapter. Let us make our organization more vibrant, proactive and expand our fellowship beyond the boundary to uplift our organization image with my cheerful tagline "Cheers to Everyone".

I add my best wishes for a successful and fruitful Convention and my thanks to all Officers and Directors behind the success of our 19th Annual Convention in Jeddah, KSA

May Allah bless us with His mercy to make it happen through open opportunities.



**CRISOSTOMO C. ORTIZ, PME,  
ASEAN Eng.**

Past President, PSME-WRSA 2014  
Past President, PSME-WRSA Toastmaster Club  
2012-2013  
2013 TOME Awardee



# MESSAGE FROM THE PAST PRESIDENTS

PHILIPPINE SOCIETY OF MECHANICAL ENGINEERS



**RAINIER PLAMENCO PATAWI,  
ME, ASEAN Eng.**

2011 PSME-WRSA Jeddah Chapter  
President

PSME-TOME 2011-Information Technology  
PSME-Most Outstanding Member Year 2007  
Forsspac MBR Corporation - MEP Manager  
Plaridel Water District-Board of Director  
(Vice-Chairman) Rainierhiya Construction  
(OPC)- Director/President

Let me applaud the Year 2022 Board of Directors of the PSME-WRSA Jeddah Chapter from Chapter President - Engr. Niño Jose Lopez, Board of Directors, and to all active Members on its 19th Annual Convention & General Membership Meeting.

This year's Annual Convention Theme – "Mechanical Engineers: Stand United as Pillars for Economic Transformation Towards Nation's Progress" will be a great task to our society to perform a key role in supporting the growth and development of our country's economy as well as in cultivating the quality of life. Also, as an Overseas Filipino Mechanical Engineers, you are the important pillar for network between each countries' engineering capacity and can transform to economic advancement of the world itself. We must position Mechanical Engineering in the heart of the nation's progress by improving public awareness and recognition of the crucial role of Mechanical Engineers everywhere.

In the end, it is certain that "we cannot be separated in interest or divided in purpose" – the PSME-WRSA Jeddah Chapter's strength in standing with unity where there is teamwork and collaboration can achieve brilliant things. We must lead the profession by utilizing our proficiency, vitality, and competence of the profession to provide strategic direction for mechanical engineering by collaborating on resolutions to all engineering major challenges and further innovations.

How great to see our Chapter flourish through the years and see it thrive through horrendous episodes in the journey of mankind. It is with great honor to congratulate the supreme members of PSME-WRSA Jeddah Chapter and to recognize the unwavering dedication of 2022 Officers & Directors who have passionately led us through challenging times.

This year's theme "**Mechanical Engineers: Stand United as Pillars for Economic Transformation Towards Nation's Progress**" is perfectly compounded to be the core of our incoming Fiscal Year operations and a timely response to the economic agenda of our country "**Not One More Hungry Filipino**". It is with great optimism to look forward to another wonderful year ahead with the 2023 Officers & Directors taking the lead for our beloved Chapter.



**ALDRIN ALIZON D. LANGO, RMEE,  
ASEAN Eng.**

Chapter President 2019 & 2020  
2018 TOME Awardee



# COUNCIL OF PAST PRESIDENTS

PHILIPPINE SOCIETY OF MECHANICAL ENGINEERS



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RMEE, ASEAN ENG.



**ALDRIN ALIZON D. LANGO**  
RMEE, ASEAN ENG.



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**JEMUEL B. ESGUERRA**  
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RMEE



**RUBEN B. SERRANO**  
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FPSME, PME, ASEAN ENG.



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PSME-WRSA JC  
CHARTER PRESIDENT



**NILDO K. TAN, JR.**  
FPSME, PME

## MISSION STATEMENT

Maintain integrity of the Mechanical Engineering profession.  
Promote excellence in the practice of profession.  
Develop among members high ideals of competence, ethical conduct, integrity and civic consciousness.  
Contribute to the enhancement of Science and Technology.  
Foster cordial, harmonious, and promote fellowship and cooperation among Mechanical Engineers globally.

PSME-JWR  
CHARTER PRESIDENT



**RUBEN B. SERRANO**  
PME



# 2022 BOARD OF DIRECTORS

## PHILIPPINE SOCIETY OF MECHANICAL ENGINEERS



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RMEE, ASEAN ENG.  
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IMMEDIATE PAST  
PRESIDENT





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<b>Convention Chairman</b>	Engr. Jose Melvin D. Santos
<b>Convention Secretary</b>	Engr. Maria May M. Atole
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<b>Chairman of Administration</b>	Engr. Niño Jose A. Lopez
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<b>Editor-in-Chief</b>	Engr. Lee I. Bonifacio
<b>Layout Artist</b>	Arabelle Justine P. Santos



# PSME NATIONAL AWARDEES HALL OF FAME

PHILIPPINE SOCIETY OF MECHANICAL ENGINEERS



## THE OUTSTANDING MECHANICAL ENGINEER



## MEMBERS' AWARDS

YEAR 2012  
Napoleon M. Cepriano, PME  
Most Outstanding  
Chapter President Int'l

YEAR 2012  
Lee I. Bonifacio, RMEE  
Most Outstanding  
Chapter Secretary

YEAR 2012  
Jemuel B. Esguerra, PME  
Most Outstanding  
Committee Chairman

YEAR 2011  
Rainier E. Patawi, RMEE  
Most Outstanding Chapter  
President Int'l

YEAR 2010  
Jaffray C. Esperanza, RMEE  
Most Outstanding  
Committee Chairman

YEAR 2007  
Joseito A. Azollano, PME  
Most Outstanding  
Chapter President

YEAR 2007  
Rainier E. Patawi, RMEE  
Most Outstanding  
Member

YEAR 2004  
Jose Ma. Emmanuel B.  
Acabaque, PME  
Most Outstanding Member

YEAR 2002  
Ricardo V. Romero, PME  
Most Outstanding  
Committee Chairman

YEAR 2000  
Wilfredo R. Ruiz, PME  
Most Outstanding  
Chapter President

YEAR 2000  
Edwin M. Evasco, PME  
Most Outstanding  
Member

YEAR 2000  
Pedro D. Entico, PME  
Most Outstanding  
Committee Chairman



# CHAPTER'S AWARDS AND MEMBERS' ACHIEVEMENTS

## PHILIPPINE SOCIETY OF MECHANICAL ENGINEERS



**CONGRATULATIONS TO THE  
NEWLY CONFERRED ASEAN ENGINEERS!**



BLIVEN U. GARCIA

JULIUS Q. GARCIA

LORENZO O. GAVIOLA

ROSELLER A. JINSAY, JR.

MILLER F. NARIAS

NIÑO JOSE A. LOPEZ

RAINER P. PATANI

WILFREDO R. RUIZ



# 2022 CHAPTER AWARDEES

## PHILIPPINE SOCIETY OF MECHANICAL ENGINEERS



### PRESIDENTIAL SERVICE AWARDS

**NIÑO JOSE A. LOPEZ, RMEE, ASEAN Eng.**

2022 Chapter President  
2022 PPO-WRSA Board of Director  
13th Middle East Regional Conference Co-Chairman

**JOSE MELVIN D. SANTOS, RMEE, ASEAN Eng.**

Executive Vice President  
19th Annual Convention Chairman  
Chapter Deputy Auditor  
2022 PPO-WRSA Secretary

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Vice President for Internal Affairs  
2022 Mid-Year Conference Chairman  
Chairman on Committee on Election Rules  
Managing Editor for Jeddah Prime Movers Newsletter

**JOHN RAY O. MADLA RMEE, ASEAN Eng.**

Vice President for External Affairs  
Review Instructor for Chapter Review Program  
Chapter Administrator for Membership Interest and Development Office

**MARIA MAY M. ATOLE, RMEE, RMP, ASEAN Eng.**

Chapter Secretary  
Exemplary Performance as Chapter Secretary

**LEONARD P. MERIALES, RMEE, ASEAN Eng.**

Chapter Treasurer  
Exemplary Performance as Chapter Treasurer

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Membership Director  
Chairman on Committee on 70th Natcon Nominees

**OLIVER O. SALAZAR, RMEE, ASEAN Eng.**

Professional Enhancement Director  
Coordinator for ASEAN and APEC Engineer Aspirants  
Chapter Review Program Chairman  
2022 PPO-WRSA Board of Director

**DONALD B. MAKALINTAL, RMEE**

Sports Director  
Exemplary Performance in Outsourcing of Sports Activities

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Editor-in-Chief for Jeddah Prime Movers Newsletter

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Member, Council of Past Presidents  
Most Active Past President  
Chapter's Volunteer Photographer

**ALDRIN ALIZON D. LANGO, RMEE, ASEAN Eng.**

Member, Council of Past Presidents  
Exemplary Performance as 2022 COMELEC Chairman  
2022 PPO-WRSA Board of Director

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NAPOLEON M. CASTANEDA, RMEE, RMP  
WILLYN D. ESPINO, RMEE, ASEAN Eng.

**SHERWIN D. FRANCISCO, RMEE**

JOHN ISAAC P. GONZALES, RMEE  
NORIEL J. NOLLORA, RMEE

### MERITORIOUS AWARDS

WILFREDO R. RUIZ, PME, FPSME, ASEAN Eng.

CRISOSTOMO C. ORTIZ, PME, ASEAN Eng.

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EVWIN D. JARADAL, RMEE

**ASSOCIATE MEMBERS**

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ANTONIO ELMER L. QUINTILLA, ASEAN Eng.

### SPECIAL SERVICE AWARD

BLIVEN U. GARCIA, RMEE, ASEAN Eng.

### CONFERRED ASEAN ENGINEERS

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JULIUS Q. GARCIA, RMEE, ASEAN Eng.

ROSELLER A. JUNSAY, JR., RMEE, ASEAN Eng.

LORENZO O. GAVIOLA, RMEE, ASEAN Eng.

BLIVEN U. GARCIA, RMEE, ASEAN Eng.

RAINIER P. PATAWI, RMEE, ASEAN Eng.

MILLER F. NARVAS, RMEE, ASEAN Eng.

WILFREDO R. RUIZ, PME, FPSME, ASEAN Eng.

### 70th NATIONAL CONVENTION TOME AWARDEES

ROSELLER A. JUNSAY, JR., RMEE, ASEAN Eng.

JOHN RAY O. MADLA, RMEE, ASEAN Eng.



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## PHILIPPINE SOCIETY OF MECHANICAL ENGINEERS



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ME L-0000581



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ME L-0000582



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ME L-0000583



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# PRESIDENT'S ANNUAL REPORT

## PHILIPPINE SOCIETY OF MECHANICAL ENGINEERS



### PRESIDENT'S REPORT

19th ANNUAL CONVENTION & GENERAL MEMBERSHIP MEETING

By: **Niño Jose A. Lopez, RMEE, ASEAN Eng.**

2022 Chapter President

How time flies as they say, just a few months ago, I am just presenting the Strategic Planning for the Year 2022 and with a wink of an eye, the year is almost done. But really, managing a 28 year old organization with its rich history and dynamics is quite a challenge and all you can say is, so many things need to be done in such a short time. Allow me as your Chapter President to give an account on what our chapter had accomplished in a short amount of time.

On January 2, 2022, we presented our Strategic Planning to the Board and COPP (Council of Past Presidents). It included the 9 (nine) Point Agenda as follows:

1. To be able to apply CPD Points for our trainings and seminars
2. To provide seminars that would raise awareness on COVID-19
3. To increase membership growth by at least 20%
4. To continue to provide Community Service to our distressed OFW's
5. To reactivate our Chapter Review Program
6. To reactivate our participation in the PSME-WRSA Toastmaster
7. To maintain at least SR 1,500.00 Cash-on-Hand at the end of every month
8. Ratification and continuous upgrading of our CBL
9. To establish the PSME-WRSA Ladies Circle

On Feb. 11, 2022, we had our 1st Technical Webinar about "Solid Financial Foundation and Parliamentary Procedure" conducted by Mr. Joey I. Villanueva, CPA.

On Mar. 4, 2022 we had our 2nd Technical Webinar about "PME Writeshop" conducted by Engr. Crisostomo C. Ortiz, PME, ASEAN Eng. and Engr. Napoleon M. Cepriaso, PME, FPSME, ASEAN Eng. Our Professional Enhancement Director (PED) Engr. Oliver O. Salazar started organizing the aspirants.

On March 17 to 18, 2022, we proceed with our Annual Thanksgiving at Obhur Resort. The two days and one night fellowship evoked memories, laughter and games to forge long lasting bonding with our membership.

On March 25, 2022 we launched our 2022 Review Program. This was in preparation for the SPLE (Special Professional Licensure Examination), the review program was chaired by PED Engr. Oliver O. Salazar. It covered the board examination for Registered Mechanical Engineer (RMEE) and Registered Master Plumber (RMP). The lecturers respectively were VP External Affairs, Engr. John Ray O. Madla, RMEE, ASEAN Eng. and Technical Affairs Director Engr. Napoleon M. Castañeda, RMEE, RMP.

The prospects for the ASEAN and APEC Engr. aspirants were also organized by PED Oliver O. Salazar in preparation for the scheduled write-ups. This was a big challenge as some of the aspirants are located outside the Kingdom.

Listed are the number of aspirants:

RMEE – 7	PME – 11	APEC Eng. - 10
RMP - 14	ASEAN Eng. – 10	

On Apr. 22, 2022, the 3rd Technical Webinar about "Health and Safety Awareness" was conducted by Engr. Dante L. Calapatia.

There's a saying "all work and no play makes Niño a dull boy". In order to balance the battery of webinars we had, our Sports Director Engr. Donald B. Makalintal and Engr. Antonio Elmer L. Quintilla organized a friendly basketball game "Let's Play Ball" at a school stadium in Khames Al Khoula on May 20, 2022.



# PRESIDENT'S ANNUAL REPORT

## PHILIPPINE SOCIETY OF MECHANICAL ENGINEERS



On July 22, 2022, after more than two (2) years of virtual seminars, the chapter held the 2022 Mid-Year Conference and General Membership Meeting at Bora Café Restaurant in Al Ballad, Jeddah led by our Conference Chairman cum VPI Engr. Jobert M. De La Rosa. This was done in a Hybrid (In-Person and Virtual) setting. The following seminar topics were presented: 1. The Role of HVAC during the Pandemic by: John Ray O. Madla, RMEE, ASEAN Eng., 2. Introduction to Industrial Automation and Control by: Michael F. Canuday, RME, 3. Introduction to TPM for Maintenance Engineers and Technicians by: Lawrence P. Bacelonia, RMEE. The event also served as the Ratification of our 2021 Amended Constitution and By-Laws conducted by our Code of Ethics Director (CED) Engr. Noriel J. Nollora. The event was credited with 3 CPD Units.

The week after, on July 29, 2022, upon the invitation of Pres. Lorenzo P. Santos and VPT Pasciano A. Defensor of PSME-SA, Pres. Niño Jose A. Lopez and VPE John Ray O. Madla travelled to Al Khobar to attend the 30th Technical Symposium as part of the 1st PSME SA Summit. VPE John Ray O. Madla presented the topic about "The Role of HVAC during the Pandemic" this time for the PSME-SA audience. The Al Khobar trip also provided time to mingle and bond with our PSME brothers in the Eastern Province.

It's time again to stretch our bones and on Aug. 26, 2022, our Sports Director Engr. Donald B. Makalintal organized a "Bowling Fun Game" held in Bowling City, Tahlia. Our CED Engr. Noriel J. Nollora is the champion.

On Sept. 30, 2022, the chapter held the 2nd General Membership Meeting and Election of 2023 Board of Directors via Hybrid platform at Bora Café Restaurant in Ballad, Jeddah. Part of the event is a seminar on "Solar PV System Installation – Best Practice by: Engr. Ahmed L. Selim, RMEE. This was credited with 2 CPD Units.

On Oct. 28, 2022, the chapter organized a "Plant Tour at Saudi Airconditioning Manufacturing Co. (SAMCO) Ltd." The presentation and tour was conducted by Engr. Noel A. Cabacungan (QA Supv.), Engr. Othman Ali Abdullah Ali (QA Engr.) and Engr. Aris P. Chong (Prodn. Coordinator), all of them working at SAMCO.

For the membership, we already delivered to our members the Batch 2, 3 and 4 of the RFID's keeping in line with the requirement of the MIDO (Membership Interest and Development Office) program of National.

As of this writing, our jovial Membership Director Engr. Orlan C. Moriones already inducted seven (7) new members. Our strength is now at 83 members from 75 at start of this year, with an equivalent of 10.67 % membership growth. We had 3 batch of membership remittance share to National with a total of Php 11,510.

The chapter was able to secure the services of Montreal LLC for the application of CPD Units in our seminars and trainings. CPD Units are the pre-requisite for the renewal of Professional Regulation Commission (PRC) license and ASEAN/APEC Engineering Registers.

Our Chapter Newsletter, Jeddah Prime Mover, is active as ever. The Newsletter team led by our energetic Editor-in-Chief, IPP Lee I. Bonifacio kept our membership up to date with the latest happenings in our chapter. As of this writing, we already published two (2) issues for this year. To keep up with our Hybrid platform events which is becoming the norm, our chapter invested in purchasing hardwares like speakers, conference mics etc. and our continuous familiarization of this technology.

Our chapter was actively involved in the 13th Middle East Regional Conference hosted by PSME Qatar last July 10 – 11, 2022. As Chapter President, we were one of the Co-Chairman and one of the earliest who contributed for the seed money, we sent video greetings and chapter presentations as requested by the Committee.

Our chapter was actively involved in the 70th PSME National Convention, we had 14 participants for the virtual platform and attended almost all of the pre-natcon webinars. We engaged in the raffle ticket distribution and as requested by the Committee, we added extra tickets for distribution. We sent video greetings as requested by the Committee.



# PRESIDENT'S ANNUAL REPORT

## PHILIPPINE SOCIETY OF MECHANICAL ENGINEERS



Our chapter also initiated fund drives as follows:

1. Tabang Vizmin for victims of typhoon Odette-Dec. 2021-Php 8,000.00
2. Financial Assistance for PP Napoleon Cepriaso's relative-Jan. 2022-Php 8,548.76
3. Financial Assistance/Burial for former BME Chairman Jess Redelosa's-Jan. 2022-Php 2,310
4. Financial Assistance for Engr. Noriel Nollora's relative-June 2022-SR 715.00
5. Arayat Abra for victims of Luzon earthquake-June 2022-Php 8,400.00
6. Financial Assistance/Burial for PSME Y & R PP Engr. Ryan Rance-Nov. 2022-Php 11,000.00
7. Financial Assistance for our AER Mentor, Pres. Richard Garcia's relative-Nov. 2022-Php 8,555.00

Being a member of the Philippine Professional Organization – Western Region Saudi Arabia (PPO-WRSA), our chapter was actively involved in every activity and event and these were the following:

1. Leadership and Training Webinar via Zoom on Feb. 18, 2022 conducted by: Vice Consul Alfred Kristoffer A. Guiang of Phil. Consulate General (PCG) Jeddah and Engr. Edwin R. Apacionado, REE.
2. Gala Night for a Cause held at Bora Café and Restaurant, Ballad on Apr. 1, 2022
3. "Araw ng Kalayaan with Filipino Community" held at Phil Consulate General Jeddah on June 16, 2022
4. "Community Outreach at SAED Accommodations" on June 24, 2022
5. "Coastal Clean-up Drive" at Buhairat Open Beach on Sept. 30, 2022
6. "Bowling Fun Game" with Guardians held at Iceland Bowling Center on Oct. 7, 2022,
7. Bloodletting drive on May and July

We would like to congratulate our achievers for The Outstanding Mechanical Engineers (TOME) award for the recently held 70th PSME National Convention last Oct. 21, 2022 and they are:

1. Engr. Roseller A. Junsay, Jr. in the Field of Facilities Engineering
2. Engr. John Ray O. Madla in the Field of HVAC

Another round of congratulations to our achievers for the Batch 3 ASEAN Engineers Conferment, after much excitement and talks, finally it was push thru and they are:

For Bahrain Conferment - Nov. 11, 2022

1. Engr. Roseller A. Junsay, Jr
2. Engr. Julius Q. Garcia
3. Engr. Niño Jose A. Lopez

For Phil. Conferment – Nov. 19, 2022

1. Engr. Bliven U. Garcia
2. Engr. Lorenzo O. Gaviola
3. Engr. Miller F. Narvas
4. Engr. Rainier P. Patawi
5. Engr. Wilfredo R. Ruiz

Finally, I would like to take this opportunity to thank our Board of Directors and the Supreme Members for giving me an opportunity to serve as your Chapter President, for pushing me to boundaries of leadership I did not experience before. To our Council of Past Presidents, our gratitude for your words of wisdom especially when we are at the crossroads. To the National Officers for the unwavering support. And finally to the Lord Almighty, the source of all knowledge. Mabuhay ang PSME! Mabuhay ang Inhenyerong Pilipino! PSME Forever wala nang iba!

**Niño Jose A. Lopez, RMEE, ASEAN Eng.**  
2022 Chapter President



# TECHNICAL WRITE UP

PHILIPPINE SOCIETY OF MECHANICAL ENGINEERS



## Liquid Desiccant Cooling and Dehumidification

### Abstract:

Liquid-desiccant assisted dehumidification and cooling system has been proven an effective method to extract the moisture of air with relatively less energy consumption, especially compared with conventional vapor compression system. To date, the conventional dehumidification mode with desiccant solution has been improved or replaced by newly emerged energy-saving systems with better performance. This paper gives a detailed account of the general features of the various components used in desiccant dehumidification and cooling techniques; meanwhile, the effect of various operating parameters on system performance is also highlighted. Moreover, a summary of the experimental and analytical studies to evaluate the system performance has been made. Some new hybrid systems that greatly expand the desiccant dehumidification technique in industrial and residential applications, as well as effectively promote the single system's performance, are also reviewed through literature. Through a literature review, the feasibility of desiccant cooling is proven by its comparison with conventional vapor compression systems in terms of energy, and cost savings are underscored. Finally, future studies and applications for liquid desiccant dehumidification techniques are concluded.

### INTRODUCTION

The role of the desiccant used in the dehumidifier is to remove water vapor from the conditioned air due to the vapor pressure difference between the hot desiccant and the supplied conditioned air. The desiccant can be categorized mainly into two categories as solid adsorption and liquid absorbent desiccant materials. Several other types of solid materials are available in nature that can hold water vapor to a great extent to its weight, e.g., silica, polymers, zeolites, alumina, and mixtures. Other commonly used liquid desiccant materials are calcium chloride, lithium chloride, lithium bromide, trimethylene glycol, and an equal mixture between calcium chloride and lithium chloride. These liquid desiccants have many thermo-physical properties, but their requirements cannot be fully described by any single desiccant. These requirements include low vapor pressure, low crystallization point, high density, low viscosity, low reactivation temperature, and economy [1]. The moist air is dehumidified by being brought into contact with strong liquid or solid desiccant, after this to provide sensible cooling to the dehumidification process, traditional vapor compression, and vapor absorption, direct or indirect evaporative cooler units used. When the solution is weakened by the absorption of moisture, it provided for the regeneration process that can lose its moisture content due to external thermal sources. This is called reactivating the saturated desiccant material [2]. Thermal energy, at a temperature range of 46–72°C required for reactivating the liquid

desiccant can be efficiently obtained using a particular type of air or water solar collector or other primary heat renewable source [3]. The typical cycle of the desiccant is made up of three processes as shown in Figure 1 and Figure 2 depicts the fundamental deviation between the traditionally used air conditioner and novel desiccant-assisted dehumidification and cooling process. [4]. The traditionally used vapor-compression cycle is now the foundation of the world air conditioning industry and will remain so for many years in conjunction with other hybrid cooling systems. The following problems are being addressed through several approaches including (1) More efficient designs for household and commercial air conditioners, (2) More efficient buildings that require minimum or zero cooling, (3) The conversion of power generation from fossil fuels to sustainable and renewable energy resources like as freely available solar energy, (4) The development of air conditioners that provide a more efficient method of drying the moisture-laden air, or latent cooling, more efficient ways, and (5) A wider implementation of energy storage technologies for different commercial and residential applications. Solutions do exist using only vapor-compression technology, but these solutions will increase the cost of producing thermal comfort by the use of various air conditioning technologies. So, the desiccant-assisted dehumidification and cooling system as a promising option to the traditionally used vapor compression air conditioner may be better able to control indoor thermal comfort while meeting the new economic, environmental, and performance requirements.

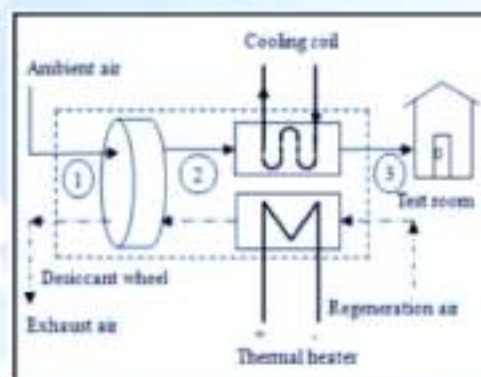


Figure1. Schematic Layout of Desiccant Integrated Dehumidification and Cooling Technique.

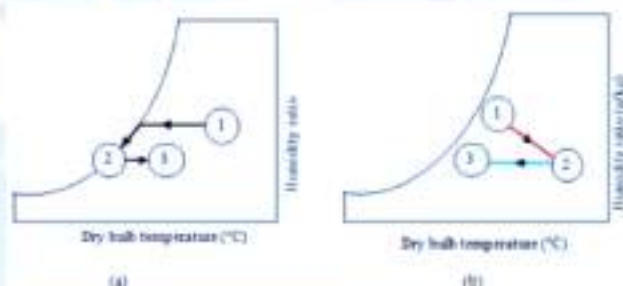


Figure2. Presentation (A) Conventional Cooling and (B) Desiccant Cooling on Psychrometric Chart.



# TECHNICAL WRITE UP

PHILIPPINE SOCIETY OF MECHANICAL ENGINEERS



## WORKING PRINCIPLE OF THE LIQUID DESICCANT

### How it works?

It starts with a very salty solution, which will create the "Dead Sea Effect" of absorption



A two-part system enables transport...



Any imbalance will create a driving force for equilibrating the solutions between the two parts



...and finally adding a heat source creates a continuous dehumidification process

## WORKING PRINCIPLE OF THE LIQUID DESICCANT-ASSISTED DEHUMIDIFICATION AND COOLING SYSTEM

The liquid desiccant cooling system consists of six major components namely an air dehumidifier, a regenerator, two heat exchangers, a heater, and a cooler. The dehumidifier or absorber consists of a packed tower and is operated in an adiabatic mode. While the regenerator is a device very similar to the dehumidifier, and so are the flow system and associated components. The regeneration heat required for desiccant reactivation is supplied by the regenerator. The packing materials can be categorized as random packing materials and structured packing materials, the former are materials without regular geometric forms and are placed randomly in the packing tower. While the opposite structured packing materials have fixed geometric forms. Pall rings, rosette rings, ladder rings, etc. are among the widely used random packing materials in gas-liquid contacting industrial equipment, such as cooling towers. The schematic layout of the liquid-desiccant system is shown in Figure 3. The conditioner (or absorber) is the component that cools and dries the process air. As shown in this figure, the conditioner is a bed of structured contact media, similar to the corrugated fill that might be used in a cooling tower. Liquid desiccant is first cooled in a heat exchanger and then sprayed onto the contact media. The desiccant flow rate must be sufficiently high to ensure complete wetting of the media, meaning it should be about 4-6 GPM per square foot of face area. The process air is then cooled and dried as it meets the desiccant-wetted surfaces of the contact media. The absorption heat is released as the desiccant absorbs water from the air, but the high flow rate of the desiccant limits its temperature rise to a few degrees. The regenerator removes the water vapor absorbed by the desiccant during the conditioning the room process air. The desiccant is reactivated by first heating it to raise its equilibrium vapor pressure. The hot desiccant, typically between 50-80°C temperature, is sprayed over a bed of random fill. Flooding rates are again sufficiently high to ensure complete wetting of the media. The hot desiccant desorbs water to the air that flows through the bed. This moisture-laden air is typically exhausted to ambient. Both the regenerator and conditioner require droplet filters (also referred to as mist eliminators) to ensure that the desiccant is not entrained in either the supply air to the building or the exhaust from the regenerator. Droplet formation is fundamental to both the spray distributor and the highly flooded beds of contact media used in industrial equipment. Droplet filters can suppress desiccant carryover to parts per billion of airflow, but these filters do increase airside pressure drops and require maintenance. An interchange heat exchanger (IHX) can be used to preheat the weak desiccant that flows to the regenerator using the hot, concentrated desiccant that leaves the regenerator. The IHX reduces both the thermal energy use of the regenerator and the cooling requirements of the conditioner.



# TECHNICAL WRITE UP

## PHILIPPINE SOCIETY OF MECHANICAL ENGINEERS



The corrosion effects on the operating components of the system should also be taken into account, the normal anti-corrosion methods adding additives to the liquid desiccant or choosing parts made of synthetic plastic for the system, which can simultaneously lower cost compared with metal parts.

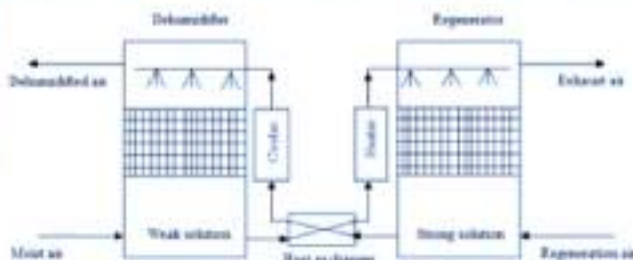
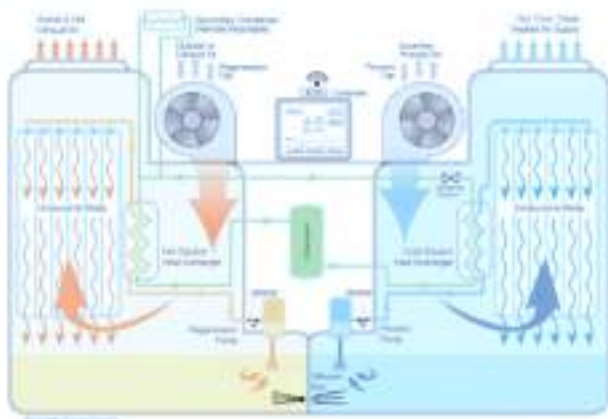


Figure 3 Schematic Layout of Liquid-Desiccant System

### HOW IT WORKS



### Pros and Cons of Liquid Desiccant Systems

#### Benefits

Liquid desiccant technology has a number of benefits over other conventional systems such as no condensation on interior surface of the equipment, which eliminates the growth of different fungi and bacteria and avoids different health issues. This capability of liquid desiccant systems benefits different industries including medicines, food storage and processing, laboratories, etc. A summary of few other advantages of liquid desiccant cooling are as follows.

- The liquid desiccants can be regenerated at lower temperature, which makes the use of low-grade energy sources feasible.
- The entire unit is more compact and small.

•If heat source is not available at some time, concentrated liquid desiccant can be stored and used.

•It lowers the use of electrical power and has high-moisture removal capacity.

•No freezing or frosting occurs at lower temperature as liquid desiccant materials are good antifreeze.

•The latent and sensible loads are controlled independently.

#### Limitations

Along with the above-mentioned advantages, liquid desiccant systems have the following drawbacks as well:

•The corrosive nature of liquid desiccant materials can damage the system.

•Health of occupants can be affected due to any carryover of liquid desiccant with process air. Mist eliminators are needed.

•Larger pumping power is required in order to pump large volume of liquid desiccant solution.

•Some liquid desiccant can also face the problem of crystallization.

•The initial cost for the system is higher.



JOHN RAY O. MADLA, RME, ASEAN Eng.  
2022 VP External Affairs  
2022 TOME Awardee

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- Desiccant cooling systems: a review  
Munir Sahlot and Saffa B. Rifat  
Department of Architecture and Built Environment, University of Nottingham, Nottingham NG7 2RD, UK
- Low-Flow Liquid Desiccant Air Conditioning: Demonstrated Performance and Cost Implications  
Eric Kozubal, Lesley Herrmann, and Michael Danu National Renewable Energy Laboratory Jordan Clark University of Texas, Austin Andy Lowenstein AIL Research
- Solar Thermal-Driven Cooling Systems  
Ioan Sarbu, Calin Sebarchievici, in Solar Heating and Cooling Systems, 2017
- Liquid Desiccant Technology  
[https://webstermason.org/downloads/Weirring\\_Presentations/jan\\_2014\\_tech\\_presentation.pdf](https://webstermason.org/downloads/Weirring_Presentations/jan_2014_tech_presentation.pdf)
- <https://www.cibsejournal.com/cpd/modules/2014-12/>



# ANNUAL THANKSGIVING

## PHILIPPINE SOCIETY OF MECHANICAL ENGINEERS



### PSME-WRSA JC 2022 Annual Thanksgiving

By: Niño Jose A. Lopez

At last, after two months of waiting, with easing government health protocols, our 2022 Annual Thanksgiving finally pushed through at Obhur Resort last March 17 and 18, 2022. The two days and one night activity was a well needed respite from our daily grind. After dinner of adobong pusit and adobong manok, the night was spent on singing, laughter, reliving the past and remembering former colleagues. The night was filled with abounding joy that time flies so fast we came to realized that it's 4:00 AM already before hitting the sack.





# 1ST TECHNICAL WEBINAR

## PHILIPPINE SOCIETY OF MECHANICAL ENGINEERS



Our 1st Technical Webinar for the fiscal year 2022 consists of two parts. The first part entitled "Solid Financial Foundation" gave us an idea on how to spend our money wisely and find a good investment while working here in abroad. The second part entitled "Parliamentary Procedure" which is applicable to governing meetings of an organization like our regular B.O.D. meetings. This was conducted by our Technical Speaker, Mr. Joey I. Villanueva, Senior Executive Vice Chairman MD of IMG (International Marketing Group). It was held last February 11, 2022, with an attendance of Twenty five (25) Professionals in different fields through virtual platform Zoom.

The program started with an opening remarks from Engr. Niño Jose A. Lopez, our Chapter President in welcoming the participants in this event. The inclusion of our Vice President for PME Affairs, from PSME National Dr. Joemarie A. Arib as our Inspirational Speaker is truly an honor for us. He shared his thoughts about our PSME National status as he reminded us to stay as ONE PSME. In the continuation of the event, we heard our Guest Speaker Engr. Wilfredo R. Ruiz, FPSME, PME, 2000 and 2004 Chapter President delivering his words to fellow attendees about the importance of joining an organization like the PSME – WRSA JC. He stated that helping fellow Mechanical Engineers thru our organization is an achievement in the eyes of our Creator.

As the event is coming to a close, our Vice President for External Affairs, Engr. John Ray O. Madla, RMEE, ASEAN Eng. gave his final thoughts, thanking the participants in gracing this event especially to our Speakers who spent their time with us.

Once again, on behalf of PSME – WRSA JC B.O.D.'s 2022, we expressed our gratitude to the members for their continued support to our activities. Mabuhay PSME – WRSA JC!

By: **Napoleon M. Castañeda, RMEE, RMP**  
Technical Affairs Directors-2022

**Philippine Society of Mechanical Engineers**  
Western Region of Saudi Arabia Jeddah Chapter  
Chartered 2005  
<https://www.psmewrsc.com>

**1st Technical Webinar**

**Part 1: Solid Financial Foundation**

- The Importance of financial education
- Prosperity formula
- Rule of 72

**Part 2: Parliamentary Procedure**

- Principles of Parliamentary Law
- Basic Definitions
- Steps in handling Main Motions

**TECHNICAL SPEAKER:**  
**MR. JOEY I. VILLANUEVA, CFA**  
Past President of PSME Western Region Jeddah, Saudi Arabia  
Senior Executive Vice-Chairman MD, IMG (International Marketing Group)  
San Jose del Monte, Philippines International Chapter PSME

**Inspirational Speaker:**  
**Dr. Joemarie A. Arib, PME**  
VP for PME Affairs, PSME National

**Guest Speaker:**  
**Engr. Wilfredo R. Ruiz, FPSME, PME**  
Chapter President, 2004, 2006

**Date: 11 Feb. 2022 (Friday)**  
**Time: 1:00PM - 6:00pm**  
**Venue: Via Zoom**

**For Details please contact the following:**

- Engr. Leonard E. Morales  
024 624 1032
- Engr. Napoleon M. Castañeda  
024 624 1340
- Engr. John Ray O. Madla  
024 624 1405

**Mechanical Engineers Sustaining Digital Transformation Towards Industrial Excellence**







# CHAPTER REVIEW PROGRAM FOR SPLE

PHILIPPINE SOCIETY OF MECHANICAL ENGINEERS



By: Engr. Oliver O. Salazar

On March 25, 2022 PSME WRSA JC held an orientation for the "2022 Review Program in Preparation of SPLE" held in the HQ. Program Details are:

1. Registered Mechanical Engineer (RMEE)
2. Registered Master Plumber (RMP)

The virtual examination review started on 1st April 2022 via Zoom and is scheduled every Friday. Our Reviewers are:

1. Engr. John Ray O. Madla for Mathematics Subject
2. Engr. Bliven U. Garcia for Power Plant Subject
3. Engr. Lorenzo O. Gaviola for Machine Design Subject
4. Engr. Napoleon M. Castañeda for Master Plumber

Thanks to all participants of review program PSME WRSA JC, PSME KSA Riyadh and the Graduating Students of PSME Romblon State University led by Engr. Bliven U. Garcia.

**PHILIPPINE SOCIETY OF MECHANICAL ENGINEERS**  
WESTERN REGION SAGAY ARABA  
JORDAN CHAPTER  
\*Chartered 1985  
Website: <http://www.psme-wrsa.com>  
Email: [psme-wrsa@psme-wrsa.com](mailto:psme-wrsa@psme-wrsa.com)

**PSME WRSA JC WELCOMES YOU TO OUR  
2022 REVIEW PROGRAM IN  
PREPARATION FOR SPLE**

**PROGRAM DETAILS:**

1. Registered Mechanical Engineer (RMEE)
2. Registered Master Plumber (RMP)

Review Launch and Orientation on  
**MARCH 25, 2022**  
at PSME-WRSA JC Headquarters

To be conducted by the following:

1. Engr. John Ray O. Madla (VP- External Affairs) - for RMEE
2. Engr. Napoleon M. Castañeda (Technical Affairs Director) - for RMP
3. Engr. Oliver O. Salazar (Professional Enhancement Director) - for SPLE Orientation

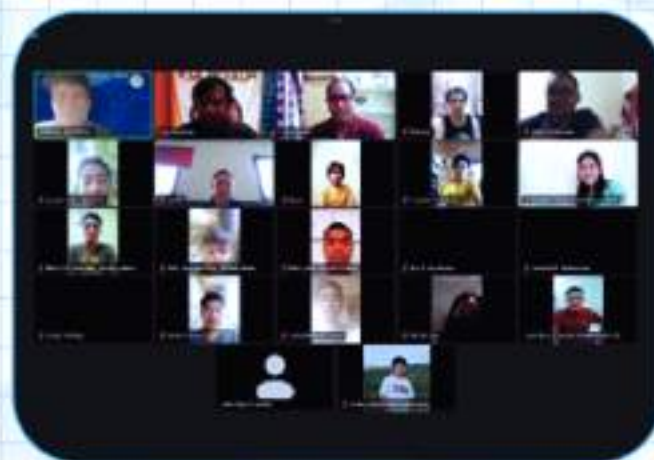
**Review Proper Starts on April 1, 2022 via Zoom every Friday**

**Our Reviewers:**

1. **Mathematics**  
Engr. John Ray O. Madla (VP- External Affairs)
2. **Power Plant**  
Engr. Bliven U. Garcia (Former Information Technology Director)
3. **Machine Design**  
Engr. Lorenzo O. Gaviola (Chairman LIT Conveyance & Material Handling Technical Division)
4. **Master Plumber**  
Engr. Napoleon M. Castañeda (Technical Affairs Director) and Engr. Maria May M. Atola (Chapter Secretary)

**FOR DETAILS PLEASE CONTACT THE FOLLOWING:**

Engr. John Ray O. Madla 963 2001 788  
Engr. Oliver O. Salazar 966 716 8612  
Engr. Napoleon M. Castañeda 966 716 8612





With the continuing professional development of PSME-WRSA JC to each members, we held our 3rd Technical Webinar entitled "Health and Safety Awareness". It was conducted by Engr. Dante L. Calapatia, a Registered Mechanical Engineer with Master's Degree in Occupational Safety Health and Fire Science Management, and PhD in Security and Risk Management Major in Public Safety Supervision (Honoris Causa). The Technical webinar focused on Occupational Health and Safety (OSH) topics. It was attended by Twenty-Seven (27) participants that included professionals and students from the Philippines thru virtual platform Zoom.




## PHILIPPINE SOCIETY OF MECHANICAL ENGINEERS WESTERN REGION SAUDI ARABIA JEDDAH CHAPTER

<https://www.psmes-arsa.com/>  
 00966 02 571 04460 0447 041 0446 044 044 047 041 044 044 047 041

# Technical Webinar

# "HEALTH & SAFETY AWARENESS"

**When:** April 22, 2022 (Friday)  
**Time:** 1:00 PM to 5:00 PM (K.S.A. Time)  
**Where:** Via Zoom

**Technical Speaker:**



**Engr. Dante L. Calapatia**  
 (OSH/ISO Consultant, JBDC-OSH)

**Includes:**

1. Introduction & Importance of OSH	5. OSH Legislation
2. OSH Data & Statistics	6. IIR Highlights of RA 11558
3. General Concepts of OSH	7. Safety Officer overview as required by RA 11558
4. Risk Assessment Overview	

**Inspirational Speaker:**



**Engr. Loreto G. Catalan**  
 PME, MP, Asean Eng.  
 (2022 PSME National Executive Vice President)

**For Details please call the following:**

Engr. Napoleon M. Castañeda 091 812 7449	Engr. Stephen T. Francisco 091 864 2007
Engr. Leonard P. Marabon 090 838 9395	Engr. Nilda Jean A. Lopez 091 209 4708

[psme@psme-arsa.com](mailto:psme@psme-arsa.com) or 0918 30 30 30

\*Member of Engineering Council, Engineering Council of the Philippines, Philippine Society of Mechanical Engineers





# TECHNICAL SYMPOSIUM

## PHILIPPINE SOCIETY OF MECHANICAL ENGINEERS



### THE TASK

"I never thought something like this could happen due to the busy schedule in my work at the hospital". Our chapter President Engr. Niño Lopez and I was invited to a technical symposium in Al-Khobar last July 29, 2022. The first PSME summit which was a way strengthening unity of PSME chapters in Saudi Arabia. Hosted by PSME-SA. We were invited along with the other chapters, and our main task was to conduct a technical seminar on "Role of HVAC during Pandemic".

### THE TRAVEL

Both Pres. Niño and I had a work and we needed to schedule a flight, booked for a room to stay, our flight was around 10:00 pm. It was exciting even we were tired from our works; it was rare that we had this kind of event. We could have visited other chapters, enjoyed a little pleasure in traveling and escaped our busy jobs in a few days. We arrived in King Fahad International Airport, Dammam around 12:00 in the morning and greeted by the tireless executive officer of PSME-SA, with their President Engr. Lorenzo Santos, Engr. Ian Defensor, Engr. Vincent Cantara, Engr. Lester Baluran together with their families. We had a small snack and "kamustahan" greetings before they accompanied us to our rooms to have a rest.

### First Day of Event

Me and Engr. Niño, woke up as early as we could because the location of the event is quite far and I had to prepare for my Technical Presentation. We arrived earlier as expected and we had a lot of time to take pictures, greet and be acquainted with fellow mechanical engineers, sponsors and visitors. The event was graced by our National President Engr. Melanie P. Banayos, followed by our National Auditor Engr. Ed Malagapo. We also listened to Inspirational Speaker, Engr. Mel Sinag, Engr. Ian Defensor, Engr. Henrich Basalo and Hon. Hector B. Cruz, Labor Attache – POLO ERO. The presentation went well which lasted around one hour and few questions were all answered. Pres. Engr. Niño also delivered his privileged speech. Next to my presentation is Engr. Para-Ase with his presentation about "Steam Power Boiler Operation & Maintenance", and Engr. Murugesan for "Wellhead System".



# TECHNICAL SYMPOSIUM

## PHILIPPINE SOCIETY OF MECHANICAL ENGINEERS



### After a long day,

We roamed around Al-Khobar district, visited the place where most Filipino like to eat and stay to spend time. We had dinner with PSME-SA executive officers and BOD's. We didn't run out of stories, jokes and energy during the dinner, and they invited us on the next day to have a tour in the city and in Um Al Naasan the island going to Bahrain.

### Time to go back to Jeddah

Upon waking up early, we prepared all our things to pack-up, had a breakfast and tour. We visited King Abdulaziz Center for World Culture Ithra, Saudi Half Moon Beach, Khobar Corniche, Khobar Sea Front, King Fahd Causeway. There was still a lot of places to visit but our time was limited. PSME-SA President Engr. Lorenzo Santos and IPP Engr. Lhester Baluran, with their family, accompanied us up to the airport. Before we left, they offered to have coffee and had a small talk to plan for future engagement like the successful Technical Symposium and hopefully PSME WRSA will host this event next year.

**By: Engr. John Ray O. Madla**

Vice President for External Affairs



# MID-YEAR CONFERENCE AND GENERAL MEMBERSHIP MEETING

PHILIPPINE SOCIETY OF MECHANICAL ENGINEERS



By: Jobert M. De La Rosa, RMEE  
VP for Internal Affairs

The PSME-WRSA JC Mid-Year Conference and General Membership Meeting was held last 22 July 2022, in Boracay Café, Al Balad, Jeddah, KSA. It was attended by Thirty-One (31) participants that includes professionals and students from the Philippines thru face to face and thru virtual platform Zoom.

Our Chapter VP – Internal Affairs Engr. Jobert M. De La Rosa, RMEE started the formal opening program and the welcome address with the Chapter President Niño Jose A. Lopez, RMEE to the participants. With the presence of our 2022 PSME National – President Engr. Melanie P. Banayos, PME as our Keynote Speaker via virtual zoom. She also invited us this coming October for the celebration of PSME @ 70th anniversary year of existence thru Hybrid platform. Presenting also our 2022 PSME National VP for Middle East – Engr. Carmelito A. Sinag, RMEE as our Inspirational Speaker via virtual zoom.





# BASKETBALL FRIENDSHIP GAME

PHILIPPINE SOCIETY OF MECHANICAL ENGINEERS



The most famous sports in the Philippines is of course **BASKETBALL**. How Filipinos love basketball in the Philippines. It is played on both amateur and professional level. Basketball is everywhere since it requires a little space, no maintenance, no expensive gear, and no required number of players for a social game.



Besides, it is easy to learn, the sport also fits well in the Philippines because of its strategic and dynamic nature, making the game rewarding for both players, and spectators.

In May 20, 2022, PSME-WRSA's: **"LET'S PLAY BALL!"** Basketball Friendship Game was held in Prince Abdulmajeed District. The team of Engr. Elmer Quintilla and his colleague, against Engr. Nino Lopez, Engr. Donald Makalintal and friends. Playing to score 21 points first and both teams were able to display their skill in shooting and driving the ball to the hoop. After 4 games of running and shooting the ball, Pres. Nino and Engr. Elmer prepared snacks for everyone. And of course, we congratulated everyone for showing sportsmanship and camaraderie.

**By: Engr. Donald B. Makalintal**

Sports Director



# BOWLING FUN GAME

PHILIPPINE SOCIETY OF MECHANICAL ENGINEERS



By: Engr. Donald B. Makalintal

Sports Director

Ten-pin bowling is a type of bowling in which a bowler rolls a bowling ball down 60 ft wood or synthetic lane toward ten pins position evenly in four rows in an equilateral triangle. The goal is to knock down all ten pins on the first roll of the ball which called strike, or failing that, the second roll will be spare. Oil is applied to approximately the first two-thirds of the lane's length to allow "skid" area for the ball before it encounters friction and hooks. The oil have different length and patterns, especially in professional and tournament play, to add challenge and complexity in the sport.

PSME-WRSA: **"BOWLING FUN GAME"**, was held in Bowling City, Andalus, Jeddah, last 26 August 2022. Many participated in the fun game, which everyone enjoyed the complexity and challenge of the game. Playing 2 games in the elimination and another game for the finals.

After the final game, Engr. Noriel Nollora was awarded as the CHAMPION, Engr. Donald Makalintal was 1st Runner-up, Engr. Jose Melvin Santos was the 2nd Runner-up and Engr. Gilbert Espiritu was the 3rd Runner-up.





# PLANT TOURS

PHILIPPINE SOCIETY OF MECHANICAL ENGINEERS



## SAMCO PLANT TOUR

By: Engr. Niño Jose A. Lopez

PSME-WRSA Jeddah Chapter conducted its plant tour at Saudi Airconditioning Manufacturing Co. Ltd. (SAMCO, Ltd.), a joint venture between Carrier Corporation USA and Juffali. The company manufactures window, package, split-type airconditioners and air handling units which caters to the Middle East and Africa Region. Our resource speakers were Engr. Noel A. Cabacungan, Engr. Othman Ali Abdullah Ali and Engr. Aris P. Chong. They are the QA Supervisor, QA Engineer and Production Coordinator respectively of the factory.





# PPO-WRSA COMMUNITY SERVICE

PHILIPPINE SOCIETY OF MECHANICAL ENGINEERS



## Community Outreach (Saed International Camp)

By Engr. Jose Melvin Santos

We took part in the Community Outreach Program of the PPO-WRSA and its 13 organizations including the PSME-WRSA Jeddah Chapter. The fund came from the successful "Gala Night for Cause" event of the PPO-WRSA. We planned and carried out the program from the coordination with beneficiaries, buying the goods from different stores and packing them in one of the member's place at the night of June 23. We were able to prepare 74bags of relief goods, containing 4kgs. of Rice, 2cans of Tuna, 2cans of Sardines, 2cans of White Beans, 1can of luncheon meat, 10pcs. Noodles and a separate Tray of eggs.

On June 24 about 5:30am, we picked up the relief packs from Architect Ver's place and then went to Mc.Donalds Hera St. for a short meet up and breakfast before we moved to our destination, Saed Int'l Camp. When we arrived in the Camp, we were received warmly by our kababayans. We were introduced by PPO-WRSA President Jun Poquiz and explained the purpose of our visit. Shortly after, they queued amiably and every one of them got their share. They showed gratitude and said that the goods received will be of great help for their day to day needs. They all went back to their respective rooms with a big smile in their faces. Enough to put away our tiredness and motivate us to repeat this noble deed we just accomplished.





# PPO-WRSA COASTAL CLEAN UP

PHILIPPINE SOCIETY OF MECHANICAL ENGINEERS



## Coastal Clean Up Drive – Buhairat Open Beach, Jeddah

By Engr. Jose Melvin Santos

As part of the Community Service Program of the Philippine Professional Organization – Western Region Saudi Arabia where PSME-WRSA is one of the member organization, we conducted the Coastal Clean-Up Drive last September 30, 2022 to celebrate the World Clean-Up Month.

The 13 member organizations were joined by the representatives from the Philippine Consulate General of Jeddah led by Vice Consul Jeremiah Attento. We gathered at Buhairat Beach before 6:00am. The program began with: the welcome speech by PPO-WRSA President Jun Poquiz; Committee Chairman for the Drive, Ar. JM Luis had a brief message about the objectives and tasks; and Vice-Consul Jeremiah gave his commemoration speech about the Maritime and Archipelagic Nation Awareness Month (MANA-MO) campaign for the month of September 2022.

Right after the talks, everybody wore their plastic gloves and opened the black bags and started collecting debris along the coast line of the public beach. The clean-up lasted until 7:00am. All the collected rubbishes were placed into the Garbage Dumpsters that are available in the area.





# PPO-WRSA BOWLING TOURNAMENT

PHILIPPINE SOCIETY OF MECHANICAL ENGINEERS



**Bowling Tournament –  
Philippine Guardians  
Brotherhood**  
By Engr. Jose Melvin Santos



PPO-WRSA was invited to join the Philippine Guardians Forever Bowling Fun Game. The tournament was held in Ice Land Bowling Center on Oct. 7, 2022. It was participated by 24 teams from different Filipino Community including the PPO-WRSA. Two of the players of PPO-WRSA White Team were from PSME-WRSA JC namely: Engr. Donald B. Makalintal and Engr. Noriel J. Nollora. The team won the Championship.

**Congratulations  
PPO-WRSA White  
Team!!!**



# 2ND GMM & ELECTION OF 2023 BODs

PHILIPPINE SOCIETY OF MECHANICAL ENGINEERS



By: Jobert M. De La Rosa, RMEE  
VP for Internal Affairs

The PSME-WRSA JC 2nd General Membership Meeting and Election of 2023 Board of Directors was held last 30 Sept. 2022, in Boracay Café, Al Balad, Jeddah, KSA. It was attended by 30 participants that includes professionals and other dedicated members from the Philippines thru face to face and thru hybrid virtual platform Zoom.

The program started at noon time. The Technical presentation conducted by Engr. Ahmed L. Selim with the title of "Solar PV System Installation". After the presentation, came plenary session for the 2nd General Membership Meeting and Election of 2023 Board of Directors in the presence of 2022 PSME National VP – Internal Affairs Archelle B. Baculi as Inspirational Speaker.

I would like to congratulate the newly elected Board of Directors for 2023 and Good luck.



**PHILIPPINE SOCIETY OF MECHANICAL ENGINEERS**  
WESTERN REGION SAUDI ARABIA  
JEDDAH CHAPTER  
Chartered 1999  
17th Floor, Jeddah Marriott Hotel, Jeddah, KSA

**2ND GENERAL MEMBERSHIP MEETING  
AND ELECTION OF 2023 B.O.D.'S**

**Solar PV System Installation - Best Practice**

**Inspirational Speaker:**  
Archelle B. Baculi, PME  
2022 National VP-Internal Affairs

**Technical Speaker:**  
Ahmed L. Selim, RMEE

With applied CPD units

When : 30 Sept. 2022, Friday  
12:00 PM to 6:00 PM - KSA Time

Where : Bora Café & Restaurant via  
Hybrid Platform

FOR DETAILS PLEASE CALL THE FF:

- Engr. Orson C. Arceles - 094 746 5473
- Engr. Jhay Jay D. Malib - 094 968 5465
- Engr. Rose milly D. Tancos - 099 458 2817
- Engr. Jose Marlon D. Suarez - 093 412 9936

\* Mechanical Engineers: Accelerating Digital Transformation Towards Industrial Excellence





# 2023 BOARD OF DIRECTORS

## PHILIPPINE SOCIETY OF MECHANICAL ENGINEERS



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RMEE, ASEAN ENG  
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**IMMEDIATE PAST  
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# 70TH NATCON & 13TH MERC

PHILIPPINE SOCIETY OF MECHANICAL ENGINEERS





# AER CONFERMENT CEREMONIES

PHILIPPINE SOCIETY OF MECHANICAL ENGINEERS



## AER Conferment Ceremony in Bahrain

By Engr. Roseller A. Junsay, Jr., RMEE, AE

On November 11, 2022, Philippine Technological Council successfully held an ASEAN Engineering Register special conferment ceremony at the Art Rotand Hotel and Resort, Amwai Island in Bahrain. 34 Filipino new members based in Bahrain, Saudi Arabia, and Kuwait were inducted to the ASEAN Register consist of engineering technologists, associate engineers, and engineers. The event was organized by PTC-MENA, PICE EPSA, and PICE Bahrain led by Engr. Maria Gracia Opena and Engr. Jay-ar Legaste. They were inducted by Engr. Romulo Agatep, Engr. Federico Monsada and Engr. Trese Bustamante. Special guest, Bahrain Consul Bryan Jess Baguio attended the remarkable event.

Conferees from PSME-WRSA JC were:

Engr. Niño Jose A. Lopez

Engr. Julius Q. Garcia

Engr. Roseller A. Junsay, Jr.





# AER CONFERMENT CEREMONIES

PHILIPPINE SOCIETY OF MECHANICAL ENGINEERS



## AER Conferment Ceremony in the Philippines

By Engr. Bliven U. Garcia, RMEE, AE

The Philippine Technological Council hosted a conferment ceremony together with the Philippine Institute of Civil Engineers, Institute of Integrated Electrical Engineers, Institute of Electronics Engineers of the Philippines, Philippine Institute of Industrial Engineers, Philippine Society of Sanitary Engineers and Philippine Society of Mechanical Engineers. They orchestrated a national event for ASEAN Engineering Register Conferment last November 19, 2022 at Ang Bahay ng Alumni in University of the Philippines Diliman, Quezon City. All 96 conferees attended the momentous event with the PTC President Engr. Federico A. Monsada, PTC Country Registrar and PTC-IRC Chair Engr. Romulo R. Agatep, PTC-IRC Member Dr. Roberto S. Licup, PTC-MENA President Adviser and PTC-IRC Member Engr. Trese T. Bustamante and Guest of Honor Professional Regulation Commission – Commissioner II Hon. Erwin M. Enad.

Conferees from PSME-WRSA JC were:

Engr. Wilfredo R. Ruiz  
Engr. Rainier P. Patawi  
Engr. Lorenzo O. Gaviola  
Engr. Bliven U. Garcia  
Engr. Miller F. Narvas



**Congratulations PSME-WRSA!!!  
FROM JOMEL SANTOS & FAMILY**



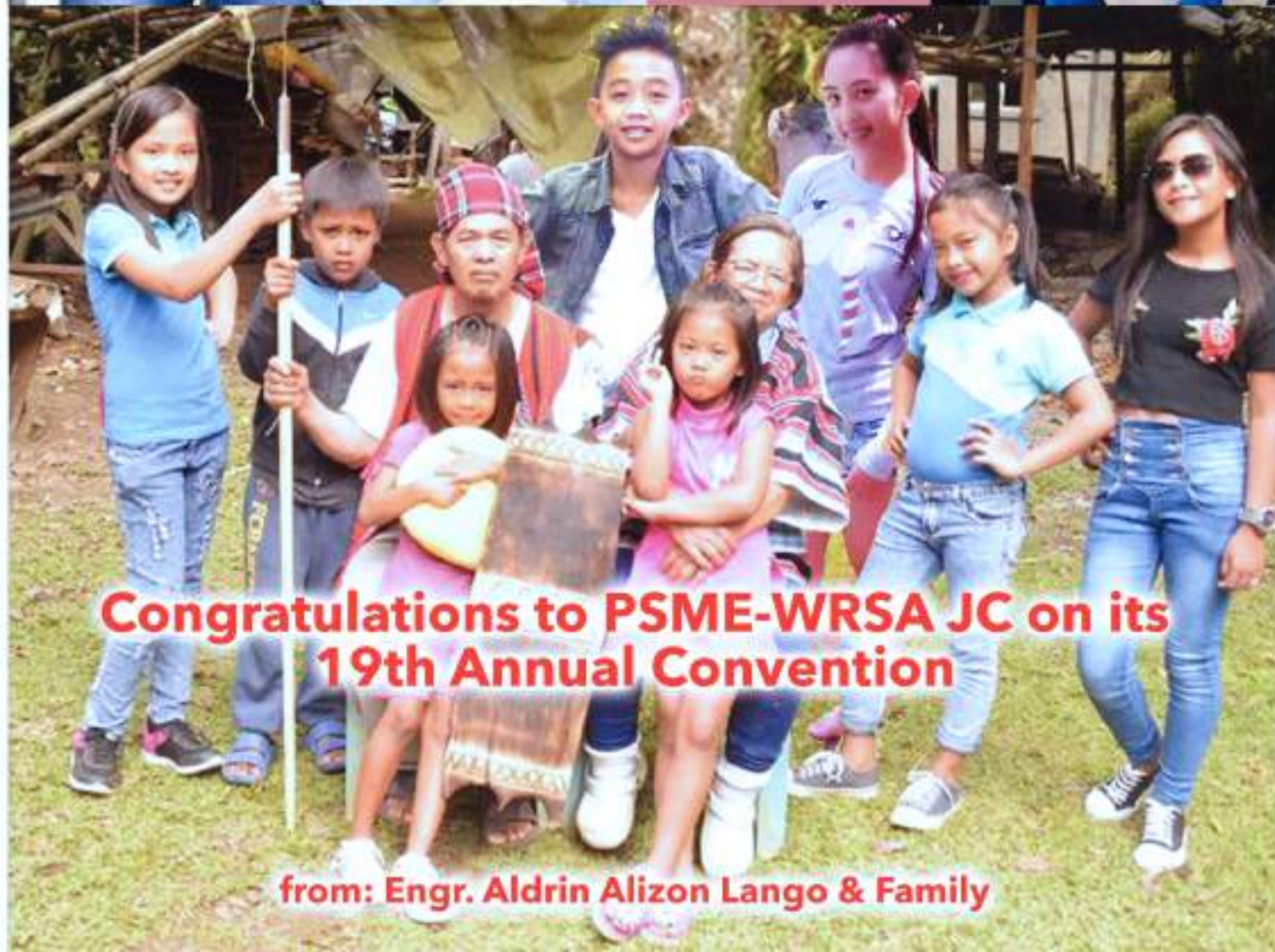
**Congratulations  
PSME-WRSA JC on your  
19th Annual Convention.**

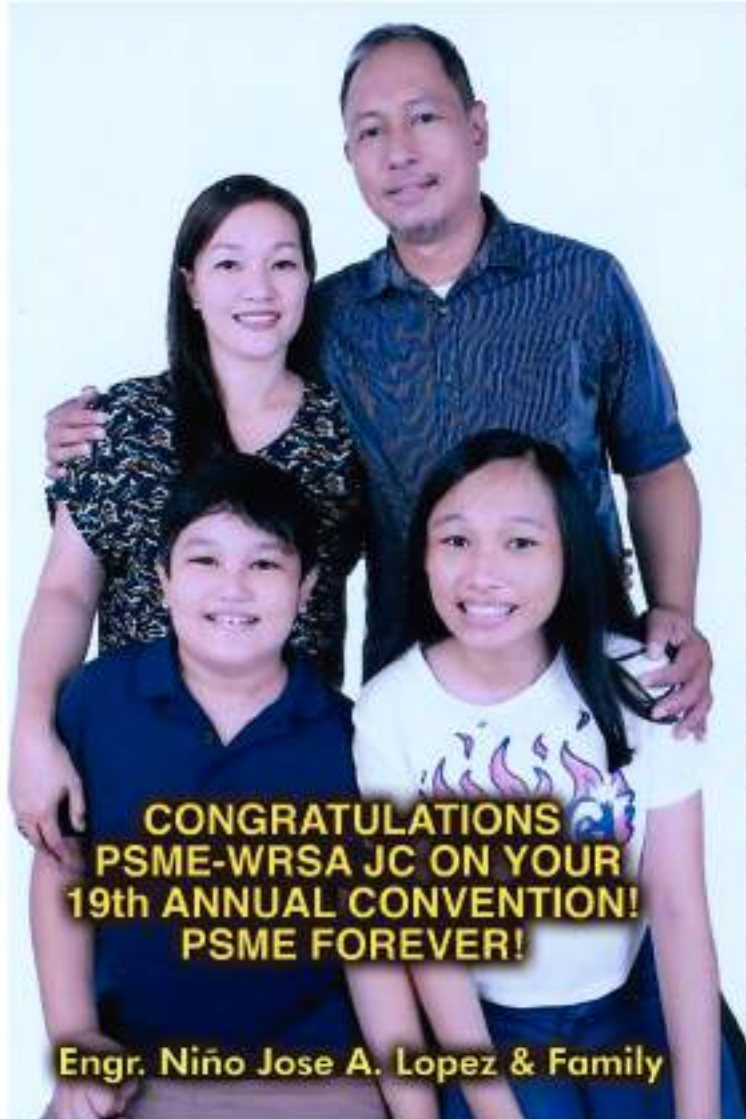
**From Maria May Atole**



**Congratulations to PSME-WRSA JC on its  
19th Annual Convention**

**from: Engr. Aldrin Alizon Lango & Family**





**CONGRATULATIONS  
PSME-WRSA JC ON YOUR  
19th ANNUAL CONVENTION!  
PSME FOREVER!**

**Engr. Niño Jose A. Lopez & Family**

**CONGRATULATIONS TO  
PSME-WRSA JC ON ITS  
19TH ANNUAL CONVENTION.**



**FROM ENGR. DEXTER  
JHONES H. ANDAYA**

**Congratulations!  
PSME WRSA JC  
On its  
19th Annual  
Convention**



**from:  
Engr. John Ray Madla, AE  
and Family**



***Congratulations,  
PSME-WRSA JC ON ITS  
19TH ANNUAL CONVENTION.***



**FROM: ENGR. NORIEL NOLLORA**

**CONGRATULATIONS  
TO PSME-WRSA JC**

**FROM ENGR. ORLAN MORIONES  
& FAMILY**



**"CONGRATULATIONS  
TO PSME-WRSA JC ON ITS  
19TH ANNUAL CONVENTION"**



**"Congratulations,  
PSME-WRSA JC!!!"**

**From: Engr. Napoleon Castañeda &  
Family**



**From: Lee, Rizza, Yusef and  
Lyle Bonifacio**



**Congratulations to PSME-WRSA JC on its 19th Annual Convention.  
From: Engr. Jobert De La Rosa & Family**



**CONGRATULATION PSME-WRSA FOR ITS  
19TH ANNUAL CONVENTION**



**Congratulations on your  
19th Annual Convention,  
PSME-WRSA JC!!!**



**From: Engr. Oliver Salazar &  
Family**



**Congratulations,  
PSME-WRSA JC on our  
19th Annual Convention.  
From: Engr. Leonard Meriales &  
Family**

***MABUHAY ANG PSME-WRSA JC!!!***



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A Tailored Solution  
Delivers Results



For Sales: +966-50-300-1840



**Congratulations 2023 BOD!!!**

## DVM S2 | WindFree™

Digital Variable Multi

Compatible

Leading technology brand in VRF industry and now it's time to meet a whole new series of DVM S2.



### Top Class Energy Efficiency

DVM S2 will maintain the highest energy efficiency during the platform operation period



### Active AI Technology

Active AI function will give customers more benefits



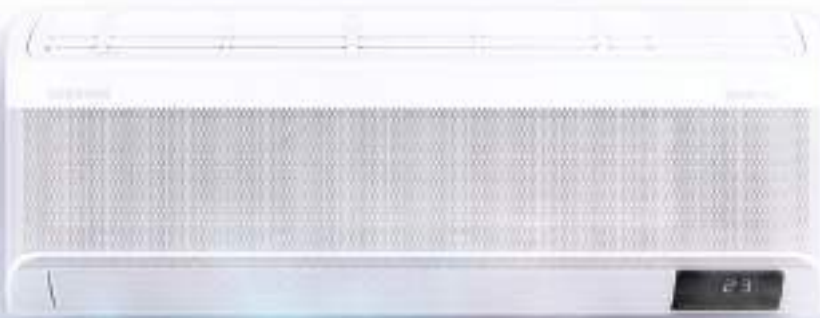
### Refrigerant Reduction

Refrigerant reduction and pipe diameter scale down will give the benefit to installer



### Advanced Flash Injection

Providing more powerful heating even under extremely cold weather



## WindFree™

Automatically optimized cooling without unpleasant direct wind



### Fast Cooling

Cools you down faster from corner to corner. Designed to cool faster, wider & farther



### Energy Saving

Energy saving up to 73 % by Digital Inverter Boost technology



### AI Auto Cooling

Advanced Wind-Free AI Auto Cooling considering fast cooling, healthy humidity & comfort cooling



### 3-Step Auto Clean

Auto Clean function automatically dries the Heat Exchanger using a 3-step process

## 360 Cassette

Ultimate form of cassette unit that provides pleasant experience of air conditioning.



### Cold-draft Free

Comfortable Airflow, Free from Cold-draft



### Fast Cooling

Improved Cooling Speed by 25%



### Perfect Even Cooling

Circular Air Wave Ideally Controls Room Air Temperature



### Functionality meets Design

Superior Design and Various Applications

