

Contents

DRC's Message -----	1
Winter Meeting 2017 -----	2
CAR ASHRAE Seminar -----	3-4
RPM 2 in Hong Kong -----	5
SA Update -----	6-7
RP Update -----	8
ECC Update -----	9-10
Honours & Award Update -----	11
YKK80 Highlight -----	12-13

DRC's Message



Dear friends in Region XIII,

Time flies and we are coming to the end of a Society year. Our new regional officers for the term 2017-2018 are as follows:

Mr Ng Yong Kong	Region Director and Regional Chair	MALAYSIA
Mr David Lau	Assistant Regional Chair	SINGAPORE
Ms Hsu ChiaChi	Region Treasurer	TAIWAN
Mr Cheng Wee Leong	Region Members Council Rep	SINGAPORE
Dr Bing-Chwen Yang	Region Chapter Technology Transfer	TAIWAN
Mr Wei-Dong Wang	Region Membership Promotion	TAIWAN
Mr Ong Ching Loon	Region Research Promotion	MALAYSIA
Dr Manuel Belino	Region Student Activities	PHILIPPINES
Ms Tracy Pang	Region YEA	HONG KONG
Mr Vorasen Leewattanakit	Region Grassroots Government Advocacy	THAILAND
Mr Siew M Leong	Region Regional Historian	MALAYSIA
Mr Apichit Lumlertpongpana	Region Nominating Committee Member	THAILAND
Mr Den Low	Region Nominating Committee Alternate	MALAYSIA
Mr Calvin Tang	Reg. Nominating Committee Reserve Alt.	HONG KONG
Mr Cheng Wee Leong	Region CRC General Chair	SINGAPORE
Dr Idrus Alhamid	Region Refrigeration Chair	INDONESIA
Dr Wong Chun Sing	Region ECC & Webmaster	HONG KONG
Mr Albert Lin	Region Newsletter Editor	HONG KONG

I sincerely hope all the chapters will use the Chapter Opportunity Fund to finance their chapter activities. We are all looking forward to the coming CRC in Singapore in August and the APCBE in Bali in November.

Finally I would like to wish you all to have an exciting and wonderful year.

Ng Yong Kong, P.Eng
DRC, RXIII



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Editor:

16-17: Tracy Pang
(tracy.pang@arup.com)

17-18: Albert Lin
(albertlwf@yahoo.com.hk)

Winter Meeting 2017 in Las Vegas

Mr Bill Wang, Taiwan Chapter

The ASHRAE Winter Meeting 2017 and the AHR Expo was successfully held on 28 Jan to 1 Feb 2017 in Las Vegas. Region XIII have over 20 people joined, including the follows:

- Philippines Chapter (Dennis Alejandro, Charlie Borbe, Jay E Cruz, Francis Guevara and Jojo Castro)
- Japan Chapter (Miyara Akio, Tanabe Shin-ichi, Akimoto Takashi, Suyama Yoshimi and Kato Shinsuke)
- Taiwan Chapter (BC Yang, Bill Wang and FJ Wang)
- Singapore Chapter (Leong Cheng Wee and David Edenburn)
- Macao Chapter (Peter Chan)
- Malaysia Chapter (CS Ow, Ng Yong Kong and Den Low)
- Hong Kong Chapter (Edward Tsui)
- Thailand Chapter (Vorasan)

**2017
 Winter
 Conference**
 Jan. 28 – Feb. 1
 Las Vegas, NV



**AHR
 Expo**
 Jan. 30 – Feb. 1
 Las Vegas, NV



After the meeting, a regional dinner with friends from CAR in Capital Seafood Restaurant to celebrate the Chinese New Year.



CAR-ASHRAE Technical Seminar 2017 in Shanghai

Dr CS Wong, Hong Kong Chapter

A full-day technical seminar titled “**High Performing Buildings**” jointly organized with The Chinese Association of Refrigeration (CAR) and ASHRAE, co-organized by CAR-ASHRAE Beijing Group and CAR-ASHRAE Shanghai Group and supported by Indoor Air Quality Association Inc. was successfully held in Jumeirah Himalayas Hotel, Shanghai, China on 11 April 2017. The seminar was divided into two sessions. There were around 80 participants attended the technical seminar. *Mr. Jeff Littleton*, ASHRAE Executive Vice President, Mr. Steve Comstock, Director of Publication and Education and friends from ASHRAE Region XIII also joined this event.



Mr. Jin Jiawei, CAR President, delivered the Welcome Address before the seminar started. For morning session, the program theme was **Energy Savings Design & Case Study**. *Mr. Timothy Wentz*, Society President was invited to have a keynote speech with the title of “**Energy Efficiency: The Future of Our Industry**”. Followed by *Mr. Wentz*, *Prof. Xuwei*, Chairman of China Committee of HVAC delivered a topic of “**China Public Building Energy Efficiency Standard 2015**”. Then, ASHRAE Speaker, *Ms. Bing Liu* presented “**Update on ASHRAE Standard 90.1-2016**”.



CAR-ASHRAE Technical Seminar 2017 in Shanghai

Dr CS Wong, Hong Kong Chapter

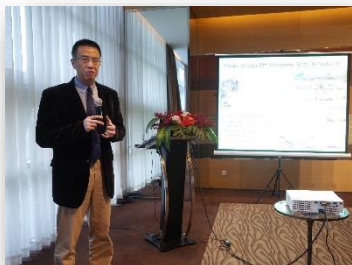


After the tea break, *Mr. Ming Hu*, MEP Team Leader of Skidmore, Owings & Merrill LLP, presented a topic of **“21st Century Tall Building HVAC Design”**. *Dr. Yang Jianrong* from Shanghai Building Research Institute shared his experience on **“The Performance Study and Post Evaluation of Green Buildings”**.

For afternoon session, the program theme was **Operation and Maintenance**. *Prof. Wu Desheng* was invited to have a keynote speech with the title of **“Get “Return” from the “Investment” on High Performing”**. Afterwards, *Prof. Zhangping* delivered a topic of **“Operation and Maintenance Professional in China today”**. *Mr. Stephen Lam*, Senior Manager of REC Engineering (Shanghai) Co., Ltd., also shared his working experience with the topic of **“Application of Intelligent & BIM Technology for Energy Saving and Renovation in Old Building”**.



After the tea break, *Mr. Edward Tsui*, Society Vice President presented a topic of **“High Performing Building through Big Data Analytics in Operation”**. Next, *Prof. Wei Qingpeng* from Tsinghua University, delivered a presentation of **“Energy Saving through Operation and Maintenance Management”**. Finally, *Mr. Ng Yong-Kong*, Director and Regional Chair of ASHRAE Region XIII, delivered the Closing Address before the seminar ended.



2nd Regional Planning Meeting (16-17) in Hong Kong

Dr CS Wong, Hong Kong Chapter

Before the RPM, ASHRAE Hong Kong Chapter as host chapter to invite the RPM participants to attend the 33rd Anniversary Dinner of Hong Kong Chapter in Kowloon Shangri-La Hotel, Tsim Sha Tsui, Kowloon, Hong Kong on 2 June 2017 as Welcoming Dinner. All participants enjoyed the dinner together with around 500 local guests.



There were total 41 participants of Regional Officers, Chapters President-Elects and interested Committees from 10 chapters of Region XIII attended the 2nd Regional Planning Meeting for 2016-17 in Holiday Inn Golden Mile Hong Kong on 3-4 June 2017. The 2-day RPM included the reports from Regional Officers & Committees, Trainings to Chapters President-Elects and regional planning discussion.



Student Activities Update

Dr Sam Hui, SA RVC

Our ASHRAE Region XIII now has ten chapters and we are grateful to the Chapter Student Activities Chairs (see the list below) for their efforts in promoting student activities. A brief summary of the achievements is shown below.

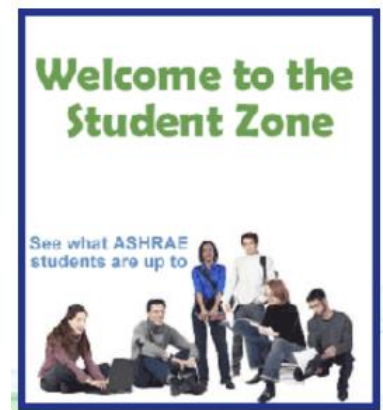
Chapter Student Activities Chairs 2016-2017:

- Singapore: Mr Rajesh Pudupadi Balachander <pbraajesh@gmail.com>
- Hong Kong: Mr Joao Wong <joaowong@yahoo.com.hk>
- Malaysia: Mr See Boon Lim <jeffreylsb@hotmail.com>
- Taiwan: Dr Yu-Lieh Wu <wuyl@ncut.edu.tw>
- Philippines: Mr Hans Felix R Bosshard <bosshard_hanz@yahoo.com>
- Thailand: Mr Chirdpun Vitooraporn <chirdpun@hotmail.com>
- Indonesia: Dr Agus Wismakumara <aguswismakumara@yahoo.com>
- Japan: Dr Kazuhide Ito <ito@kyudai.jp>
- South Korea: Dr Sean Hay Kim <seanhay.kim@seoultech.ac.kr>
- Macao: Mr Hei Man Vong <adam.vong@gmail.com>

In 2016-2017, nine new student branches were established in our Region and the total number of student members has increased by 6.7% as compared with the previous year. At present, our Region has total 29 student branches and about 1,021 student members.

New Student Branches:

- Hong Kong:
 - ❖ Technological and Higher Education Institute of Hong Kong (THEi) Student Branch
- Malaysia:
 - ❖ Swinburne University of Technology Sarawak Campus Student Branch
 - ❖ Taylor's University Student Branch
 - ❖ Universiti Teknikal Malaysia Melaka (UTeM) Student Branch
- Philippines:
 - ❖ Adamson University Student Branch
 - ❖ Far Eastern University (FEU) Institute of Technology Student Branch
 - ❖ Tarlac State University Student Branch
 - ❖ Technological Institute of the Philippines Quezon City (TIP-QC) Student Branch
- Indonesia:
 - ❖ Institut Teknologi dan Sains Bandung (ITSB) Student Branch



Student Activities Update

Dr Sam Hui, SA RVC

In this fiscal year, the students in our Region have actively participated in the student functions of the ASHRAE headquarters including the ASHRAE Undergraduate Program Equipment Grants (previously Undergraduate Senior Project Grant) and the Student Design Project Competition.

ASHRAE Undergraduate Program Equipment Grants 2017-2018 (Grant Winners from Region XIII):

- Technological and Higher Education Institute of Hong Kong (Air performance test unit for electronically commutated (EC) plug fans)
- Technological Institute of the Philippines-Quezon City (Design and Construction of Radiant Cooling System in Residential Houses for Comfort Cooling in Humid and Tropical Countries)
- University of Santo Tomas (Design and Fabrication of a Force Draft Cooling Tower Laboratory Training Unit)



ASHRAE 2017 Student Design Project Competition:

This year focuses on a new single-story with mezzanine office and repair building in the Diego Ramirez Islands (Islas Diego Ramirez) in Chile, South America. The participating teams from Region XIII include:

- HVAC Design Calculations:
 - ❖ The Hong Kong Polytechnic University and City University of Hong Kong (Hong Kong)
 - ❖ Chulalongkorn University (Thailand)
 - ❖ DongHua University (China)
- HVAC System Selection:
 - ❖ Universitas Indonesia (Indonesia)
 - ❖ Bandung Institute of Technology (Indonesia)
- Integrated Sustainable Building Design (ISBD):
 - ❖ Telkom University Team 1 (Indonesia)
 - ❖ Telkom University Team 2 (Indonesia)

Starting from 1 July 2017, our new RVC-SA for Region XIII, Dr. Manuel C. Belino <mcbelino@mapua.edu.ph> from Philippines Chapter will assume duty. With extensive experience and enthusiasm on student development, it is believed that Dr. Belino will contribute effectively to promote further the student activities in our Region.

Research Promotion Update

Mr Ong Ching Loon, RP RVC

What is RP?

RP is Research Promotion and as much as Resource Promotion. Both activities support sustainable efforts in Education, Scholarship, YEA and most of all, funding Research. All these noble activities to build talents and generate new standards require charitable funding and hence fund-raising is sought from each chapter, members and non-members regardless of the amount to ensure continual implementation of the activities yearly.

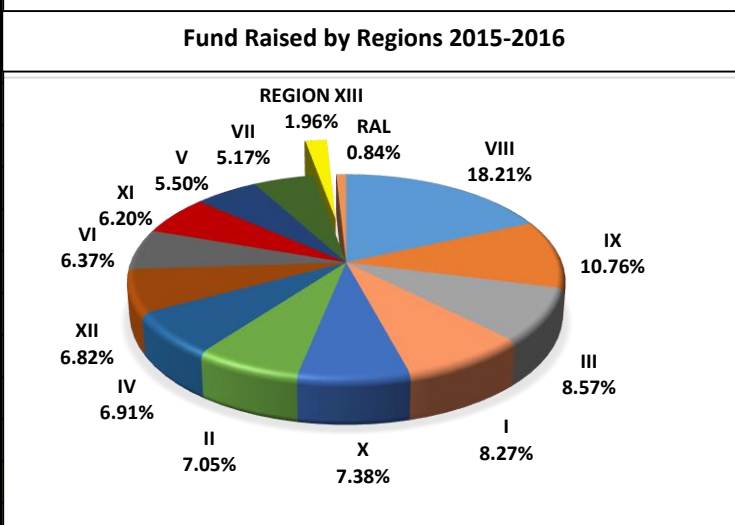
In 2015-2016, Society's PR goal of \$2,300,000 was met and exceeded by about 10%. Close to 80% of which was expended for research. Equally, Region XIII had a formidable delivery of its fund-raising during the same Society year of 2015-2016 and the result surpassed the goal of \$41,615 by 19%. To all RP Chairs, RP Committee Members, Chapter Presidents, Chapter BOGs, members and non-members of Region XIII, **THANK YOU VERY MUCH** for your generosity.

As for Society year of 2016-2017 which is coming to an end on 30th June 2017, it is my fervent hope that chapters of Region XIII will collectively meet the goal of US\$44,013 despite the challenging markets of most economies in our region.

Statistically, Region XIII contributed about 2% of total funds received from among all the fourteen (14) regions (please refer to the table and chart below). However, the membership size of Region XIII is 4.6% of total. Evidently, there is a mismatch between the two. To be a respectable region, there is perhaps a need for Region XIII to raise our goals staggeredly over a few years to match our contribution against that of our membership. A food for thought.

Lastly, I take this opportunity to thank all retiring RP Chairs and Committee Members for their great efforts in successfully organizing various RP Campaigns. I welcome the new Chairs and Committee members on board and looking forward to another exciting year working with you.

Region	RP Campaign	% of Total	Goal
VIII	462,754	18.21	380,000
IX	273,318	10.76	225,000
III	217,741	8.57	178,400
I	210,194	8.27	182,000
X	187,463	7.38	190,200
II	179,115	7.05	162,000
IV	175,710	6.91	170,000
XII	173,328	6.82	141,500
VI	161,847	6.37	175,000
XI	157,469	6.20	169,000
V	139,780	5.50	120,000
VII	131,373	5.17	125,000
XIII	49,701	1.96	41,815
RAL	21,293	0.84	41,040
	2,541,086	100.00	2,300,955



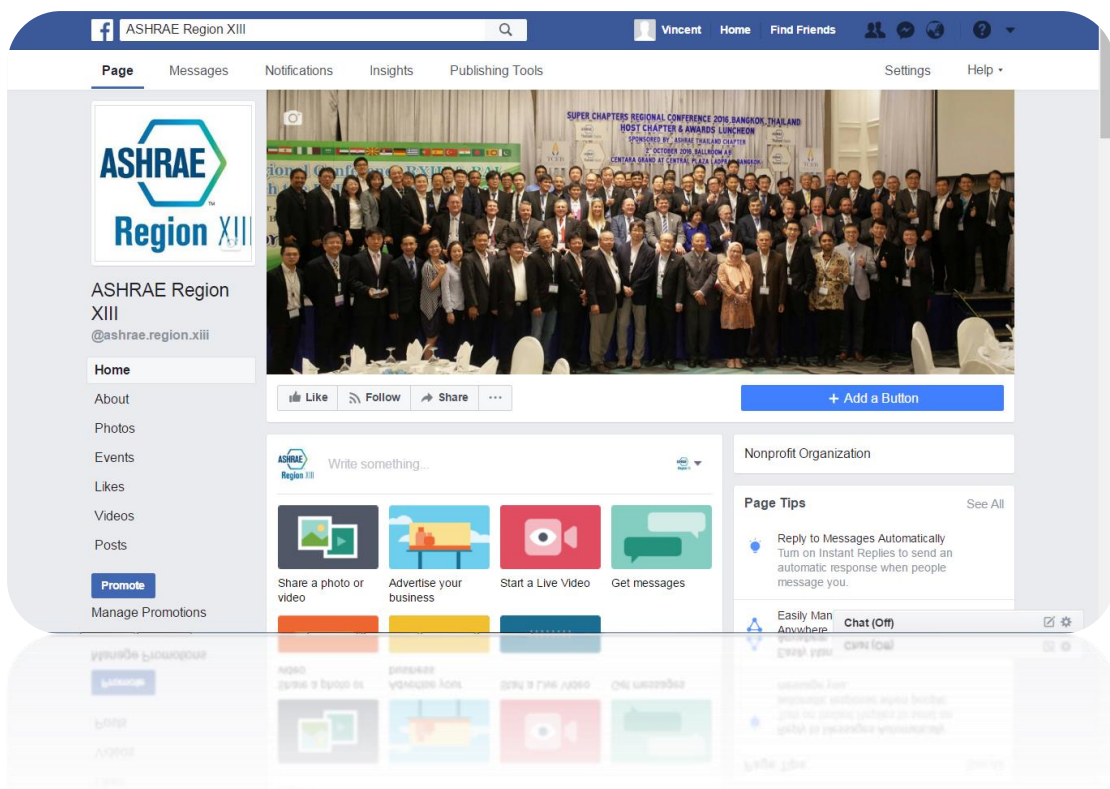
Electronic Communicate Chair Update

Mr Vincent Chu, Regional ECC and Webmaster

Back to some years ago, website was the only electronic media for communicating with our members. With rapid development of information technologies in recent years, use of laptop computers, tablets and smart phones becomes part of our daily life. This enables an overwhelming electronic communication tools developed for different purposes. This provides us opportunities to deploy electronic tools in regional and chapter operations. The work of ECC thus expands greatly from just maintaining the website of the Region XIII to exploring and implementing other electronic communication tools that may be able to enhance the operation of the Region, and promoting these tools to Chapters, so that we can better serve our members.

Region XIII consists of 10 chapters in different locations. A central storage space for document is essential. 'Cloud Storage' is an ideal solution for the region to keep the documents electronically. Region XIII's 'Cloud Storage' space was created in 2014, where documents can be accessed and retrieved from any places as long as internet access is available.

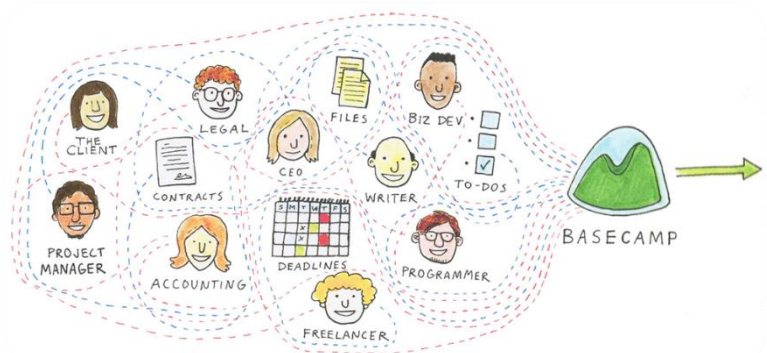
Social media plays a very important role in our life today. Facebook being a social media, allows people to continuously stay in touch with friends, relatives and other acquaintances wherever they are in the world. It allows us to trade ideas, stay informed with local or global developments, and unite people with common interests and/or beliefs through open, closed and private groups. Rather than having to reply to others through email, Facebook allows us to broadcast or share content to others, and thereby to engage others or be engaged with others' posts. Region XIII's Facebook was created in 2015, which has changed how we communicate with our members as well as non-members.



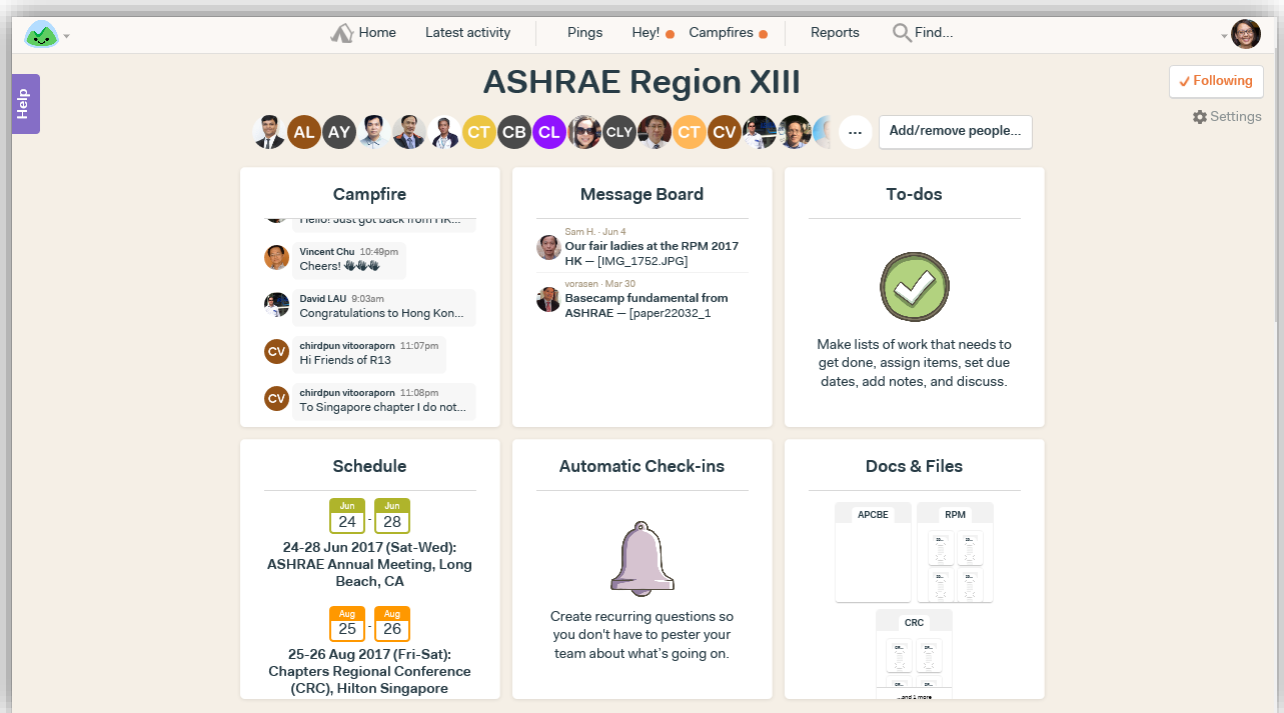
Electronic Communicate Chair Update

Mr Vincent Chu, Regional ECC and Webmaster

While ECC was exploring better electronic platforms for communication and document storage, the Headquarters was doing similar investigation in 2014. With the Headquarters' adoption of 'Basecamp' as the finally selected collaboration platform, Region XIII started our trial of 'Basecamp 2' in 2015.



However, we found that it did not fully fulfil our requirements for storage and communications. The use of Basecamp in our Region was on hold until a new version 'Basecamp 3' came up in mid-2016. The new version provides much better features which satisfy our needs. The new version combines email, chat group, project management, document storage, etc. on one platform, which is a true 'electronic collaboration' platform. The Headquarters' adopted this version accordingly, and we started coordinating with the Headquarters for adoption of this tool in our Regional operation. In early 2017, the platform specifically for Region XIII was constructed and a new page of electronic communication in our Region starts.



What is next? The development of information technologies is fast. We expect new electronic tools coming up in the near future, and continuously explore new opportunities in this area.

Honors and Awards Update

Mr Den Low, Regional Nominating Committee Alterative

2016-2017 is a very good year for Region XIII, as we have received several honors and awards, please join me to congratulate the following award recipients!

- **Distinguished 50 Year Member Award**
 Mr Sunny C. L. Tan (Singapore Chapter)
- **Chapter Program Star Award**
 Dr. Chun-Sing Wong (Hong Kong Chapter)
- **William J.Collins, Jr. RP Award**
 Mr Hung Man Huang (Hong Kong Chapter)
- **Government Advocacy Award**
 Dr. Sam C.M. Hui (Hong Kong Chapter)
- **ASHRAE Fellow Award**
 Prof. Wang F.J. (Taiwan Chapter)
- **ASHRAE Technology Award – First Place Winner (Category I, Commercial Building, New)**
 YKK80 Building
 Mr Kitaro Mizuide (Japan Chapter)
 Mr Takashi Matano (Owner Representative)
- **ASHRAE Technology Award – Honorable Mention Winner (Category I, Commercial Building, Existing Building)**
 MGM Macau
 Mr Seck Pong Chan (Macao Chapter)
 Mr Seck Pong Chan (Owner Representative)
- **Young Engineers In ASHRAE (YEA) Award of Individual Excellence**
 Ms Kris Tan
- **Chapter Service Award**
 Mr Matthew Ngah Ping Leung (Singapore Chapter)
 Dr. Chow Tin-Tai (Hong Kong Chapter)
 Ms Tracy Pang Ching Man (Hong Kong Chapter)



YKK80 High Efficiency Building – Radiant Control Both Outside and Inside

Dr. Kitaro MIZUIDE, General Manager, M&E Design Department, NIKKEN SEKKEI, Japan



1. Introduction

Located in the metropolitan city of Tokyo, Japan, the new YKK headquarters building is named “YKK 80” because it was completed in 2015, which marked the 80th year since the company was founded. Tragically, in March 2011, just one month after design began, the Great East Japan Earthquake and disaster occurred. Japan rapidly shut down all of its nuclear power plants (nearly 30% of Japan’s total energy supply) and reassessed their energy supply and demand as well as their seismic vulnerability. This allowed the owner and design team to reassess the energy, comfort, sustainability, and seismic design requirements for this project—ultimately leading to much more innovative, integrated, comfortable, healthy, and aseismic design solution.

The project site is a 5-minute walk from Akihabara station, and the longer axis of the site is 70 meters (230 feet) in length, faces westward, and overlooks a metropolitan expressway. These constraints immediately established several energy, daylight, noise and view design challenges for the hot and humid summer climate of Tokyo.

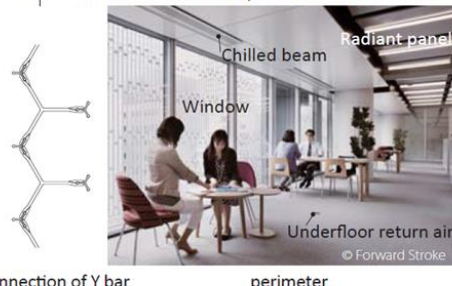
2. Energy Efficiency

Using a passive first approach, an exterior “sudare screen”, or Japanese traditional blind, was used over the entire west facing façade to block and filter direct solar gain while maintaining daylight and views. This sudare screen is positioned 1.5 meters (~5 ft.) in front of the glazed façade utilizing the cantilevered floor structure as overhangs. The screen is made of “Y” shaped aluminium bars making a delicate filtering of light. Clear double glazing with automatically controlled bottom-up or “climbing” blinds also provides solar shading while still allowing exterior views. The sudare screen also helps filter outdoor noise, creates a safe service space for maintenance of exterior installed mechanical systems, and even provides lightning protection—ultimately providing 6 functions for a single cost (shading, reflecting daylight, noise filter, deck enclosure, maintaining views, and lightning protection)

YKK80 Building Data	
Location	Tokyo, Japan
Principal Use	Office
Total Floor Area	20,919 m ² (225,170 sf)
Floors	10 Stories + 2 BF
Structure	Steel, Reinforced Concrete
Completed	2015



Photo 1. Sudare screen / maintenance deck



connection of Y bar perimeter

Fig. 1. Details of sudare screen/ perimeter image

YKK80 High Efficiency Building – Radiant Control Both Outside and Inside

Dr. Kitaro MIZUIDE, General Manager, M&E Design Department, NIKKEN SEKKEI, Japan

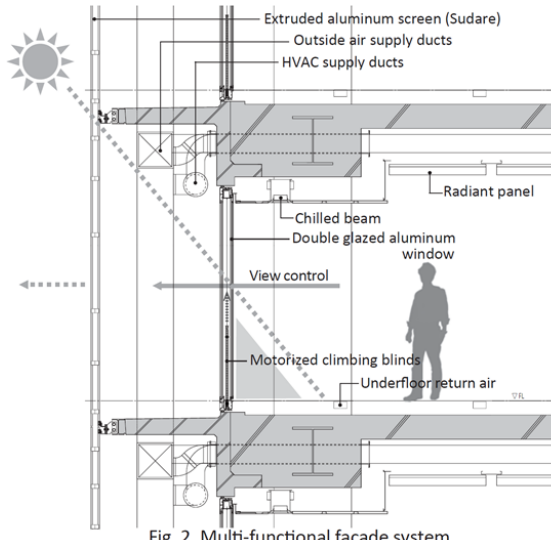


Fig. 2. Multi-functional façade system

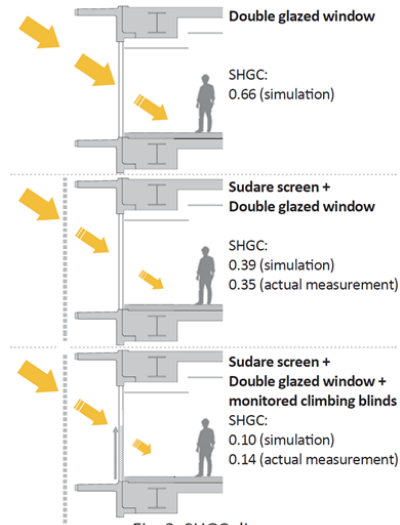


Fig. 3. SHGC diagram

Daylighting is maximized by controlling the light coming through the windows with automatic solar adjustment of the angle of the blind slats every 10 minutes. Through post-occupancy evaluation, which was completed in February 2016, more than 80% of the occupants were satisfied with the indoor lighting conditions noting that it was “bright enough” and “not too bright” (no presence of glare). Ceiling integrated LED lighting and controls for dimming or turning off lighting in vacant areas using daylight and motion sensors, extends the value of the energy saving façade design to the indoor environment.

With direct solar heat gains mitigated and daylight and lighting optimized, a properly sized, high-efficiency HVAC system could be designed. A custom, radiant ceiling panel cooling/heating system was designed to facilitate integration of hot/cold water piping with lighting and low-velocity (slight) air flow. This slight air flow concept came from the memory of experiencing a natural breeze under the shade of a tree. Small fans, functioning as diffusers, provide the slight air flow behind the inclined radiant panels and allow greater variation in temperature set points.

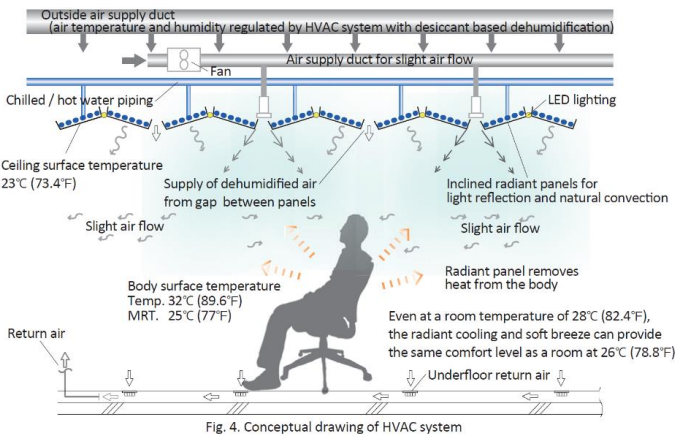


Fig. 4. Conceptual drawing of HVAC system



Photo 2. Interior image