ENGINEERING TIMES

A Publication of AMH Philippines, Inc.

Issue No. 6 | June 2016

CHANGE

The former residence of the late Francisco and Emerenciana Arcellana is now a satellite engineering consultancy office.

49 MAGINHAWA ST.

CHANGE: FROM RESIDENCE TO OFFICE

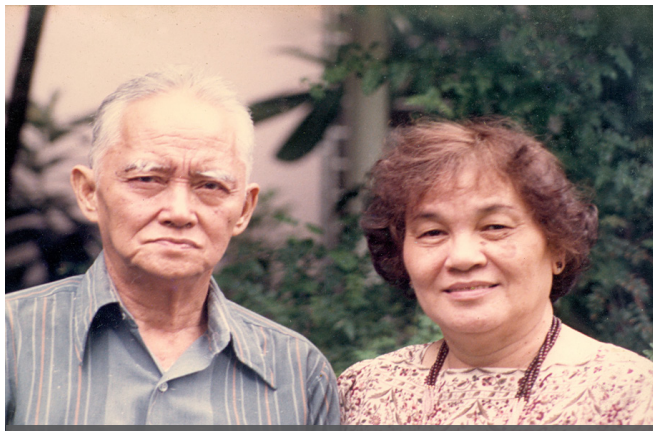
by Dino Balasbas

AMH Maginhawa Satellite Office: May it grow robust and resilient

At the start of 2016, AMH accepted 17 new engineers to address the growth demands of its professional service. This increase is significant since previously it needed office space only for 57 engineers and 11 administrative workers.

The need for office expansion forced AMH to look for space outside of the fully-occupied Ang Bahay ng Alumni Building in the UP campus. The Bahay ng Alumni has been home to AMH since its inception seventeen years ago. Various clients associate AMH with UP because of AMH consultants who are also UP Professors, and because of its office location in the campus. Thus proximity to UP Diliman was a significant factor in the selection of its office expansion.

Fortunately for AMH, the former residence of the late UP Professors Francisco and Emerenciana Arcellana at 49 Maginhawa St., UP Village, Quezon City was unoccupied at the time of the office search. The heirs were willing to rent it out, and for its use as office space. With some improvement, space for twenty-two work stations, one conference room, one training room, and one office room for visiting consultants was created.



Francisco and Emerenciana Arcellana

Considering that the vision of AMH is to be an engineering company that Filipinos can be proud of, it seems like a happy coincidence that the former occupants of the house were personages that Filipinos are proud of.

Mrs. Emerenciana Arcellana was for a long time UP professor in political science. She graduated summa cum laude in the UP of the 1940's, and became President of the UP Faculty Organization and a member of the UP Board of Regents.

Francisco Arcellana was also a long time UP Professor in creative writing. He is more known as a short story writer, and was a National Artist in Literature awardee. Like some other National Artists and National Scientists, his remains can be visited at the Libingan ng mga Bayani.

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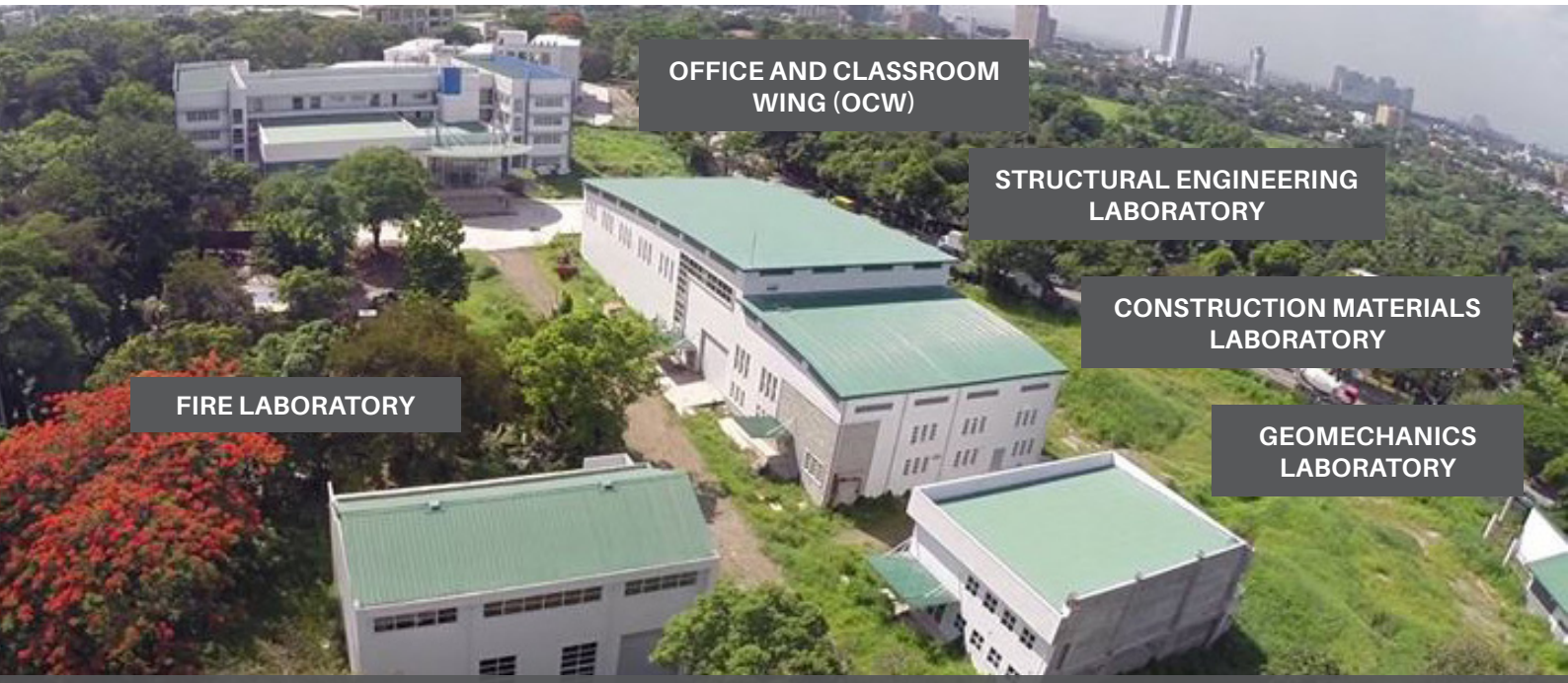
BUILDING THE BUILDER'S BUILDING

CHANGE: FROM MELCHOR HALL TO ITS OWN ICE COMPLEX

by Karen Leobrera & Rona Pangyarihan

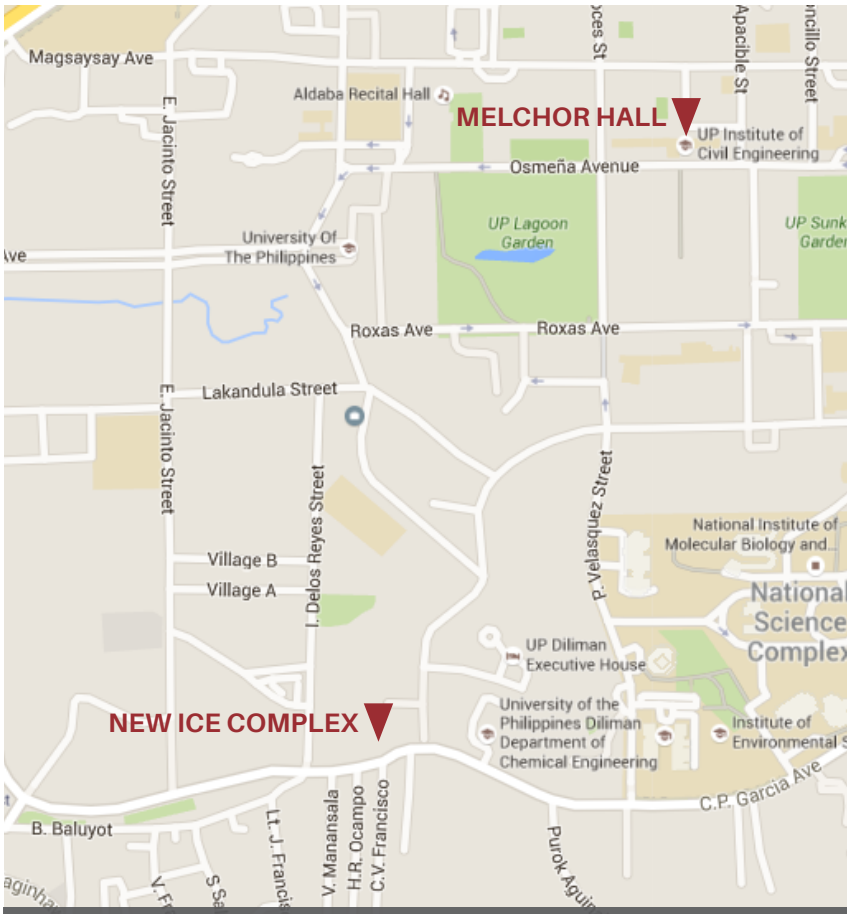


Aerial view of the New ICE buildings (Source: UP Institute of Civil Engineering Facebook Page)

UP civil engineering alumni visiting Melchor Hall will be surprised to find the CE department gone. The CE department has expanded to an institute, the Institute of Civil Engineering, and it has moved to a larger complex near the Executive House. Other engineering departments have also constructed buildings of their own near the ICE complex since the College of Engineering is now the biggest college in terms of population.

The first building, tagged as the Office and Classroom Wing (OCW), houses classrooms, offices, meeting rooms, faculty rooms, computer laboratory, department rooms, graduate students' rooms, senior students' rooms, library, and theatre. This serves as the main building of the institute. The next four buildings are the laboratory buildings.

- Structural Engineering Laboratory
- Construction Materials Laboratory
- Geomechanics Laboratory
- Fire Laboratory



Location of the New ICE Complex (Source: Google Maps)

The structural and construction engineering laboratory currently contains the shaking table, a device for shaking structural models using simulated ground motions and pre-recorded earthquake time-histories. It also contains a crane for carrying full scale samples.

As the five buildings are nearing their completion, the institute plans to launch the opening of these building on June 10, 2016, in time with the 108th anniversary of the UP College of Engineering. All classes, offices and ICE related transactions will be transferred to OCW on the 1st semester of Academic Year 2016-2017.

CE ALUMNI PITCH IN TO FINISH BUILDING PROJECT

With the theme "Building the Builder's Building," the Institute of Civil Engineering, together with the Office of the President of the University of the Philippines, conducted a building endowment drive last August 15, 2015. The objective of the event is to solicit funds for the furnishing of selected facilities in the ICE building such as classrooms and laboratories. Student organizations, alumni, and companies were invited to the event and among the attendees were Engr. Egbert Abiad and Engr. Roy Anthony Luna, representatives of AMH Philippines, Inc.

During the event, Engr. Luna pledged to donate for the funding of one medium-sized classroom in behalf of AMH. This was realized before the year ended as the UP Engineering Research and Development Foundation, Inc., through a Certificate of Donation, affirmed that AMH Philippines, Inc. made the PHP350,000.00 donation.

UP officers, ICE Faculty members, and fit-out donors during the Building Endowment Drive

SOURCE: http://coe.upd.edu.ph/2015/09/14/up-alumni-and-companies-pledge-to-help-build-ices-compound/

Sitting from left to right (bottom row): *ICE Director Ricardo Sigua, UP Diliman Vice Chancellor for Academic Affairs Benito Pacheco, RS Caparros and Associates President Engr. Romeo Caparros, COE Dean Aura Matias, UP President Alfredo Pascual, DOST – PCIEERD Executive Director Undersecretary for Scientific and Technological Services Dr. Rowena Cristina Guevara, UP Vice President for Academic Affairs Gisela Concepcion, UP-ERDFI President Alfonso Aliga, Jr.*

Standing from left to right (top row): *Engr. Alfredo R. Austria (DMCI Homes), Engr. Rolando Dimaano (Konstructura), Egbert Abiad (AMH Philippines, Inc.), Engr. William Liu Jr. (Primary Group of Builders), UPAE President Engr. Emilio Lolito Tumbocon, Engr. Levy Espiritu (Datem), Ms. Ritzi Villarico Ronquillo (Holcim), Engr. Isidro A. Consunji , Engr. Raul Ignacio (MNTC), Engr. Michael Roberto Reyes (DCCD Engineering Corp.), Engr. Roy Anthony Luna (AMH Philippines, Inc.)*

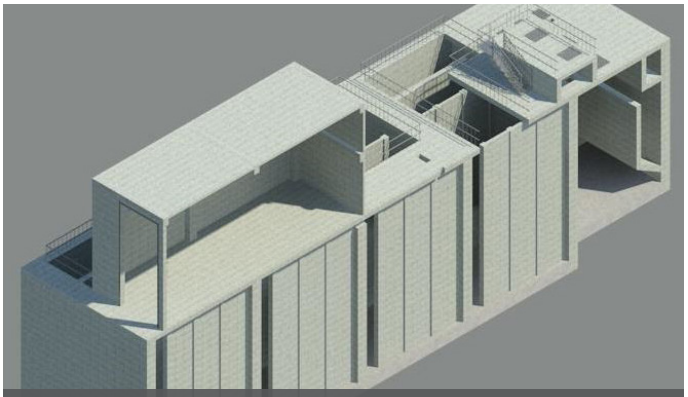
BUILDING INFORMATION MODELING

TRANSITION: FROM CAD TO BIM

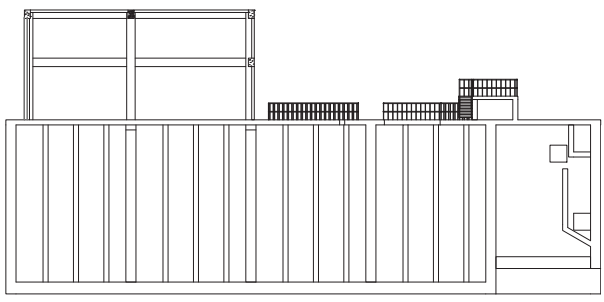
by JR Chua

Pasay STP Aeration Tank and Air Blower Room

The use of a Building Information Modeling (BIM) software like REVIT® allows the creation of a 3D model that contains data or information about every component of a structure. REVIT is used like AutoCAD® to produce the standard drawings required for bidding and construction. A big advantage of REVIT though is its data management capability.



3D Longitudinal Cross Section of Structure



2D Cross Section Drawing of Structure

Because of its data management capability, REVIT is able to detect conflicts in the designs of different disciplines, e.g., Architectural, Structural, Electrical, Mechanical, and Plumbing. Corrections are faster to make too, because a change in the e-file drawing of one discipline will be reflected in the e-file drawings of the other disciplines. REVIT's data management capability also allows faster production of cost estimates and schedules.

In 2015, AMH principal EP Kasilag II started using REVIT in the design and drafting of two (2) large sewage treatment plant (STP) projects that ME Sicat Construction, Inc. was going to build. Since it was difficult to wean CAD personnel from AutoCAD, AMH engaged a licensed distributor of the software not only to provide the software, but also some of its personnel to work side by side with AMH engineers and CAD personnel.

AMH personnel produce all 3D models using REVIT now, after regular training sessions conducted by the same licensed distributor. Small group training sessions are still held on weekends for the Structural Group of engineers and new CAD operators. Soon all architectural and structural drawings of AMH projects will be produced using REVIT.

SLOPE STABILIZATION PROJECT

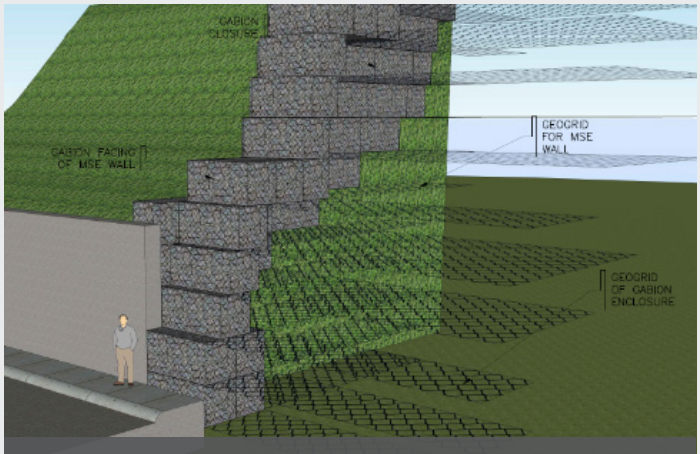
GLOBAL-ESTATE RESORTS, INC. TWIN LAKES VINEYARD MSE WALL

by Gian Reyes & Eric Santos

Slope Stabilization Project Site

Sitting on the ridge facing Taal Lake and Taal Volcano Island, Tagaytay offers one of the best and most relaxing views in the country. Developments in the area are continuously increasing throughout the past several years and people are starting to build structures on top of its mountainous areas. Often, the development plan will require the terrain to be altered to make room for roads and utilities as well as building pads for various structures. Working on such a geographically unique area therefore, will require proper engineering. Now, more than ever, geotechnical engineering is of paramount importance.

One developer who recognizes such importance is Global Estate Resorts, Inc. (GERI). In 2013, AMH was engaged by GERI to provide the design of a slope protection measure for a particular project site within the Twin Lakes Vineyard Development in Laurel, Batangas. The project specifically focuses on a road alignment located below a relatively high slope. The two main challenges of the engineering project are: 1) retaining 20m-high exposed cut and fill slopes and 2) addressing the presence of water in the soil material. The saturation of the soil reduces its effective shear strength, hence, the need to ensure proper subsurface drainage. The slope along the road alignment has an average height of 40 meters, inclined at angles of about 30 to 40 degrees, with 20 meters of fill height for the road alignment requiring slope protection. The underlying soil is predominantly composed of interspersed layers of silts and silty sand with consistency varying from loose, medium dense, to very dense. Based on the geotechnical investigation results and topography of the road alignment, a slope protection system called Mechanically Stabilized Earth Wall, or MSE Wall, was designed.



Proposed MSE Wall Slope Protection Scheme

This particular MSE Wall essentially utilizes engineering materials such as geogrids to reinforce the soil thereby strengthening the entire soil mass. To protect against erosion on the slope surface, facings such as gabions were adopted. Similar to conventional retaining structures such as retaining walls and rubble

masonry walls, an MSE wall prevents failure of the soil mass by resisting the equivalent lateral earth forces induced by the soil and pore water by transferring the stresses to the geogrid reinforcement. The gabion facing allows an efficient dissipation of pore water pressure in the retained soil and also promotes vegetation to eventually creep over it, thereby resulting in an aesthetically pleasing facade. The main advantages of this structure, compared to conventional retaining structures, are the relatively lower cost, ease of construction, superior drainage properties and contribution to a greener environment.

In the design of the MSE Wall, two types of analyses were performed: 1) Global stability and 2) Internal stability. For the global stability, a slope stability computer software called Slide 6.0® by Rocscience was utilized to facilitate the calculations. This modelling software performs slope stability analysis based on Limit Equilibrium Methods to determine the minimum factor of safety under static and pseudo-static conditions. For the internal stability analysis, design guidelines from the Federal Highway Administration (FHWA) were used with the aid of in-house developed algorithms using Mathcad® software.

From the design calculations, a maximum of 12 meter-long geogrids were needed for the 20 meter-high MSE walls. To address the potential saturation of the soil, blanket drains were installed behind the MSE walls and these were connected to the gabion facings to facilitate continuous drainage. The rocks specified for the gabions and blanket drains consisted of hard, durable, and angular rock pieces which will not deteriorate when submerged in water and have high permeability to let water flow. In addition, since the entire MSE wall system itself induces large loads to the existing ground, jet grouted piles were introduced at the bottom of the wall in order to increase the bearing capacity of the underlying soil and to intercept deep-seated failure surfaces.

Details of the Constructed MSE Wall

Twin Lakes Vineyard Residences is one of GERI's premier developments in Tagaytay. The proper design and application of MSE walls help ensure the stability of slopes and at the same time contribute to a greener environment.

Constructed MSE wall for Twin Lakes Vineyard

Presenting the CE 2016 Interns from left to right (top row): *Jowi Miranda, JR Chua, Mike Villaraza, Mon Margallo, Dino Balasbas, Deo Reyes, Ivan Molina;* ***(bottom row):*** *Annette De La Rosa, Karen Cardenas, Manicar Manguera, Karen Leobrera, Telle San Antonio, Hanna De Leon, Rose Quiocho, Rona Pangyarihan;* ***(not in photo):*** *Oliver Ramos*

CE INTERNS BATCH 2016

TRANSITION: FROM STUDENT TO WORKING PROFESSIONAL

by Mike Villaraza, with contributions from Rose Quiocho and some interns

As board exam results were released and life as a college student came to an end, I embarked on my first job search. Being a millennial has its perks. Millennials have more career options and opportunities compared to the previous generations. However, this brings them to a crossroad with many directions, and deciding which career path to take can be quite confusing and overwhelming. Furthermore, civil engineering also branches out into numerous disciplines, and choosing your field of specialization is no easy task.

Job satisfaction and mentorship were my topmost considerations. I believe that it is important to align yourself in a career path by considering the skills you need to learn in order to tackle the challenges you enjoy. I seek a team that I'll be excited to work with every day and a workplace that will give me the headroom to grow and expand my capabilities. Since you are laying the groundwork for your career, you want to tread a path to success from the very beginning.

This January 2016, AMH Philippines Inc. hired the biggest batch of interns to date. Batch 2016 interns is a mixture of thirteen (13) young engineers from UP-Diliman and UST. Aside from the Interns, four (4) new Lateral Entrants were also hired. Lateral Entrants are engineers with one year experience already, but who still want to explore other fields of civil engineering.

Interns from UP-Diliman:
1. Kaye Leobrera, cum laude
2. Manicar Manguera
3. Jowi Miranda, cum laude
4. Ivan Molina, magna cum laude
5. Rose Quiocho, cum laude
6. Telle San Antonio
7. Mike Villaraza, cum laude
8. Dan Estanislao, magna cum laude*

(**Dan felt he wanted to specialize in structural design, and decided to transfer to a multinational company.*)

Interns from UST:
1. Dino Balasbas
2. Karen Cardenas, cum laude
3. Hanna De Leon
4. Annette De Le Rosa
5. Oliver Ramos

Lateral Entrants:
1. Antonio "JR" Chua, Jr., UP-Diliman
2. Mon Margallo, UST
3. Rona Pangyarihan, cum laude, UP-Diliman
4. Deo Reyes, UST

AMH interns are rotated around various practiced-based groups every quarter to have a better understanding and exposure to the different civil engineering disciplines. Aside from the technical skills, the interns also learn life lessons along the way. The interns gain a sense of responsibility and realize the relevance of civil engineering to the quality of life.

According to Telle, she learned to value time and punctuality more than ever. Ivan said that he became more matured on money spending and budgeting. Manicar said her time management skill and prioritization has improved. Jowi said he became more attentive to details. Kaye, Hanna and Karen said they now have a greater appreciation of Civil Engineering as a profession, while Dino and Annette said that working helped them to develop their communication skills.

As part of AMH's Corporate Social Responsibility (CSR) program, I was able to participate in a water supply improvement project for a public school in Tondo, Manila. There is indeed a great sense of fulfillment knowing that the things we learned in college could actually make a difference in the lives of other people. My project involvement was also a very useful professional development opportunity. It gave me the chance to use civil engineering software such as EPANET in an actual

project, deliver technical presentations to the stakeholders and develop new contacts along the way. I enjoyed the hands-on nature of the project that went beyond the blueprints and technical reports.

The start of a career is an exciting time. The ability to work with individuals from different culture and background, to cooperate with diverse personalities and to work on projects with strict deadlines will all be constantly put to the test. Back at the university, we usually worked with our contemporaries, but now the collaboration involves a wider range of people in the workplace. Your new colleagues may have more experience in the job, the organization you're working for or just in life itself, but working with a diversified team can also be invigorating and fun!

NEW AMH PARTNERS

TRANSITION: FROM STAFF ENGINEERS TO CO-OWNERS

by Hanna De Leon

AMH owners or, as they call themselves, "partners" dream that AMH will be an engineering company that Filipinos can be proud of. In an interview, one of the partners said that among their strategies to attain this vision, is to encourage AMH staff engineers not only to share the vision, but also to be co-owners of the company.

In the first quarter of 2016, former AMH President Roy Luna announced that the Board of Directors approved a motion to offer shares to Edsel Edra, senior associate engineer, and Michael Follosco, associate engineer. Mr. Luna said he had conveyed the offer, and that both engineers accepted the offer to be co-owners of AMH. Engr. Edra is head of the Civil Works PBG (Practice Based Group), while Engr. Follosco is head of the Geotechnical PBG.

For a staff engineer to qualify as an AMH shareholder, he or she must have been with AMH for at least 5 years, and must have earned an MS degree in engineering or a related field. In the absence of a graduate degree, the staff engineer must have been with AMH for at least 10 years.

Engr. Edra has been with AMH for 13 years now. In addition to being a licensed civil engineer, Engr. Edra is also a licensed sanitary engineer and master plumber. He has completed all the academic units required for an MS in Sanitary Engineering, but unfortunately never finished the required thesis.

Asked about his reasons for staying on at AMH, he said that he liked the fact that AMH encouraged his development as an engineer. He was given time off when his BS and MS Sanitary Engineering studies required it. Later on, his tuition was even subsidized. He also found a niche at AMH: sanitary engineering, and site development design. And his wife worked at the UP-Ayala Technohub complex across Commonwealth Avenue, so he and his wife had the convenience of going to work, and going back home together.

Engr. Michael Follosco has been with AMH for only eight (8) years, but he said that if you include the overtime hours he has logged, it will surely be more than ten (10) years. One major reason, Engr. Follosco stayed on at

New AMH Partners: Engr. Michael Paolo Follosco (Left) and Engr. Edsel Edra (Right)

AMH is because he chose geotechnical engineering as his area of specialization. AMH provides the opportunity to be mentored by known specialists, and to use various software in geotechnical engineering.

Three of ten AMH founders are geotechnical engineers and teachers: Dr. Alexis Acacio, Roy Luna, MSCE, and Eric Santos, MSCE. Also, AMH regularly engages Dr. Salvador F. Reyes, Dr. Mark Zarco and Dr. Benjamin Buensuceso, Jr. as consultants or technical reviewers of reports before submission to Clients.

Engr. Follosco has been the reliable assistant of Engr. Roy Luna in many of the latter's projects involving subsurface investigation and evaluation, pile foundation design, natural slope and embankment slope stability analyses, remedial solutions for failed slopes, and protection works during excavation.

At present, Engrs. Edra and Follosco act as mentors themselves and guide new AMH engineers in the use of special software.

AMH Board of Directors and Shareholders (top row): *Mike Follosco, Edsel Edra, Roy Luna, Ramon Quebral, Fer Germar, Ellen Del Rosario, Jocelyn Jocson, Lei Lava, Jon Kasilag, Edgardo Atanacio;* ***(bottom row):*** *Nathaniel Diola, Eric Santos, Eric Cruz, Alexis Acacio, Rod Salazar, Egbert Abiad, Tonet Tanchuling*

ANNUAL STOCKHOLDERS' MEETING

CHANGE IN ADMINISTRATION

by Amery Fabi

NEW SET OF DIRECTORS AND OFFICERS

AMH shareholders elected new directors and officers in their annual meeting held March 21, 2016 at the Crowne Plaza Galleria, Ortigas Avenue, Quezon City.

Dean Edgardo G. Atanacio, AMH partner and COMELEC chair, announced the election of the following:

1. Rodolfo C. Salazar
2. Alexis Philip A. Acacio
3. Jose Carlo Eric L. Santos
4. Eric C. Cruz
5. Egbert B. Abiad

The newly elected directors immediately met and elected the following officers and independent directors:.

Chairman of the Board – Alexis A. Acacio
Vice-Chairman – Eric C. Cruz
President – Rodolfo C. Salazar
Treasurer – Edgardo G. Atanacio
Corporate Secretary – Egbert B. Abiad
Independent Directors – Adeline Pacia (IE Professor), and Lorelei Lava (HR Specialist)

The officers shall hold office from April 1, 2016 to March 31, 2017.

Also held during the annual meeting was the formal appointment of Engrs. Michael Follosco and Edsel Edra as official shareholders of the company.

FROM MANAGEMENT ADVISER TO PRESIDENT

Rodolfo C. Salazar (RCS) is the first AMH President who is neither a civil engineer nor a founding incorporator. AMH, which was incorporated in 1999, engaged RC Salazar as management adviser in 2008, and he has continuously served in that position, including three years as Independent Director.

RCS convinced the shareholders to adopt SEC-mandated Corporate Governance guidelines, although AMH is not a publicly traded corporation. It should be mentioned though that AMH adopted and practiced core values of "truth" and "merit" since its inception, so that the Corporate Governance policies of "fairness", "accountability", and "transparency" were easy to add.

RCS has provided management and consultancy services to business groups and foundations. These include Semirara Mining and Power Corporation (6 years), and various companies including Bayantel in the Lopez Group of Companies (14) years. He was President of Pepsi Cola Products Philippines, Inc. for three (3) years. He was also was part of the group that set up the e-marketplace, BayanTrade. RCS has lectured at the Asian Institute of Management and the U.P. Technology Management Center, and is a director of the Philippine Foundation for Science and Technology.

RCS graduated from UP with a BS Mechanical Engineering, magna cum laude. He also holds an MS in engineering from Princeton University, and a Master's Degree in Industrial Administration from Carnegie Mellon University.

MESSAGE FROM THE PRESIDENT

Dear Colleagues at AMH,

I must confess that the strongest sentiment I felt when it was announced that I have been elected President of AMH Philippines just after the annual general meeting a few weeks ago was FEAR. It is indeed scary, because in many ways, we are venturing into the unknown. AMH was started in 1999 by a group of professionals, all civil engineers from the University of the Philippines College of Engineering, friends and colleagues, who wanted to start and build something together, collectively, and contribute their talents to the country, to their university, to their college, and for themselves and their families. They shared a common vision of professionalism, excellence, collegiality, using science and engineering to build and grow and serve the community, to further the development of the Philippines.

And we have seen the amazing growth of AMH from those beginnings. More importantly, you can see many of their work around the country, monuments to their engineering competence. They are indeed getting closer to being as big and as famous as the "other company" and in time we know you will be.

So, it is indeed a great leap of faith to change somewhat their formula of success and go to a non-founder, not a Civil Engineer, to lead the company at this inflection point of their growth path. I am very privilege to be given this opportunity, but it certainly SCARES me as well.

I am not scared of the challenges of this assignment – I know I have faced more difficult ones and survived and did well. I am not scared about the many differences of the circumstances of this assignment from previous experiences, as that has been the nature of my widely varied assignments in different countries, different cultures, different industries, and different corporate challenges. NO, what I am most scared of is failing you as I am very aware that you are all expecting quite a bit from this change, and I may not deliver on your expectations. My styles and the processes I go through in leading organizations will most likely be different than what you have experienced in the past at AMH, and I know there will be complaints, criticisms, and many times in the near future, I know some, if not many of you, will express the sentiment to go back to the past ways. There will be trying and difficult times. And there will be no instant successes, there will be rocks along the way.

I know that as I am scared, so are YOU. So, I only ask that we all accept that fear, and work hard together to conquer it. Let us give each other the chance to work together, learn from each other's different ways and approaches. We can only be STRONGER if we take this attitude and learn together. Let us transform that FEAR into HOPE and POSITIVE ACTION, and we will WIN, individually and collectively.

May the Lord be with us!

Rod C. Salazar

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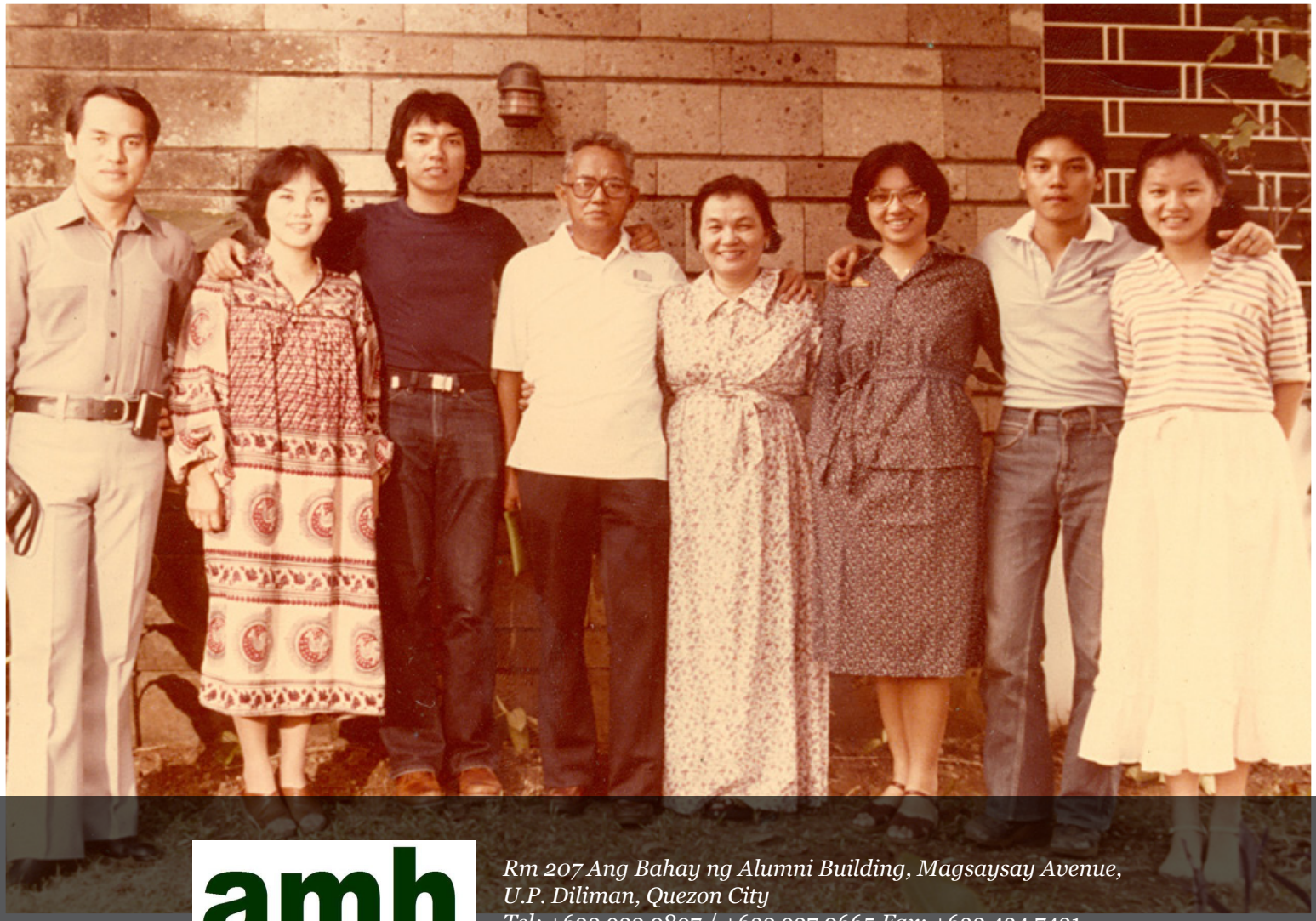

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Tonet Tanchuling

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