

wiki o hawaii



ENGINEER
OF HAWAII

VOL. 44 NO. 12

SERVING 2000 ENGINEERS & LAND SURVEYORS

FEBRUARY, 2009

2009 HCES LIFETIME ACHIEVEMENT AWARD WINNER

Dr. Alfred A. Yee

In 1997, the Hawaii Council Of Engineering Societies instituted the "HCES Lifetime Achievement Award" which is designed to recognize the lifetime achievements of a deserving engineer. This annual recognition is given to an individual who has contributed significantly to the development of engineering in the State of Hawaii and who has made a noteworthy impact on the local engineering community. The award is presented annually during the Hawaii Engineers' Week Banquet to be held this year on February 21, 2009.



It is a great honor to announce the winner of this year's 2009 Hawaii Council of Engineering Societies Lifetime Achievement Award - Dr. Alfred A. Yee.

Dr. Yee has been a Hawaii-registered structural engineer since 1955. He is also a registered professional engineer in California, Guam, Texas, and Singapore. Dr. Yee served as the Structural Engineers Association of Hawaii's first president in 1970. He is the holder of numerous patents, engineering awards and recognitions.

A number of Honolulu's most recognizable structures have been designed by Alfred A. Yee and Associates. These include: The Arizona Memorial, Kahala Hilton, Ilikai Hotel, Ala Moana Hotel, IBM Building, Honolulu Municipal Office Building and the Amfac Towers. Many of these projects have been recognized for his pioneering and innovative use of precast/prestressed concrete.

(continued on page 10)

2009 YOUNG ENGINEER OF THE YEAR

Jeffrey S. Cudiamat, P.E.

On behalf of the Hawaii Council of Engineering Societies, the Filipino American League of Engineers and Architects is proud to announce Mr. Jeffrey S. Cudiamat as the recipient of the 2009 Young Engineer of the Year Award. Mr. Cudiamat was nominated by the Cold-Formed Steel Engineers Institute (CFSEI) and the Filipino-American League of Engineers and Architects (FALEA) for his outstanding achievements and contributions to his profession and community.



Throughout his educational and professional careers, Mr. Jeffrey Cudiamat has been a high achiever. After graduating as valedictorian at Pearl City High School, he attended the University of Southern California (USC) under a Dean's Scholarship. Cudiamat graduated with high honors obtaining a Bachelors of Science degree in civil engineering under the architectural-engineering program. Actively involved in numerous student organizations, he continuously contributed his talents to American Society of Civil Engineers (ASCE), JEP mentoring program, Hawaii Club, Troy Philippines, USC Lacrosse team and various other groups. He was bestowed membership into Chi Epsilon National Honor Society, Tau Beta Pi National Honor Society, and Golden Key National Honor Society. His legacy as a USC Trojan is remembered as being one of the founding fathers for Zeta Phi Rho fraternity, whose philanthropy is Habit for Humanity. Jeffrey Cudiamat attended University of Hawaii at Manoa for a Masters Degree in structural engineering; and his research involves testing of carbon fiber pins to increase the shear capacity when retrofitting existing flat slab concrete construction.

Early in his career, the majority of Jeffrey Cudiamat's structural and civil

(continued on page 11)

2009 ENGINEER OF THE YEAR

Dr. Dennis I. Hirota, P.E., L.P.L.S.

The Hawaii Society of Professional Engineers is proud to recognize Dr. Dennis I. Hirota, P.E., L.P.L.S., as the recipient of the 2009 Engineer of the Year. Dr. Hirota was nominated by the Hawaii Land Surveyors Association and Robert Akinaka, P.E., Chairman of Akinaka & Associates, Ltd.



Dr. Hirota is one of the most experienced civil engineers in the application of automation technology for the improvement of the design engineering profession. Dr. Hirota is currently President of Sam O. Hirota, Inc. and has designed many of the built landmarks of Hawaii, while trying to research and improve the design process.

A graduate of Punahou School, Dr. Hirota obtained his BSCE, MSE, and PhD degrees in civil and sanitary engineering from the University of Michigan and is a member of Chi Epsilon. After attending the University of Michigan, Dr. Hirota served in the United States Air Force and achieved the rank of captain while serving as a research environmental engineer at Air Force Weapons Laboratory at Kirtland Air Force Base, New Mexico as well as an adjunct professor at the University of New Mexico teaching graduate level civil engineering.

In 1971, Dr. Hirota returned to Hawaii and joined Sam O. Hirota, Inc., a third-generation family operated civil engineering and surveying consulting company founded by his father 45 years ago that currently includes a staff of 23 employees including professional engineers and land surveyors. The firm specializes in design/build military projects, resort residential projects,

(continued on page 10)

2009 STUDENT ENGINEER OF THE YEAR

Reece Iwami

Reece Iwami was one of only 20 students statewide to receive a UH Regents Scholarship as a graduating high school senior. Upon enrolling in the Department of Electrical Engineering at the University of Hawaii, Reece joined the UH CubeSat Program in his freshman year, and he has been an integral part of the team ever since. Reece has not only been a motivated and productive team member, but has taken on a leadership role.



Since his junior year, he has led a team of 10 students ranging from freshmen through graduate students. The team is focused on developing a standardized bus - something that CubeSat programs nationwide have seen striving toward. Reece's team's bus ideas have been used in recent proposals to the Air Force of Scientific Research and the National Science Foundation. Reece assisted in writing an Air Force Office of Scientific Research proposal, and should it get funded, he will serve as the student lead for the project. His work on the CubeSat program has also led to three co-authored publications, with one more in preparation.

Reece was awarded a NASA Space Grant Traineeship and Fellowship, which helped fund his work on mobile ground station development and planar antennas. His video on the mobile ground station was viewed by NASA Space Grant Consortium Directors across the nation, and received favorable reviews, including an invitation from the AIAA to write a book chapter on it. Reece is a co-author on that chapter now undergoing review.

In addition to his work on small satellites, Reece was also recognized with a national \$10,000 scholarship this academic year. He was one of only ~20 undergraduates to be recognized as a National Consortium for MASINT

(continued on page 5)

AL YEE, from page 1

Dr. Yee is one of the few Hawaii engineers elected to the prestigious National Academy of Engineering. This honor, bestowed in 1976, highlights the major contribution that Dr. Yee had made to structural engineering and construction in the US. His pre-eminence in the field of structural engineering has only grown in the decades since, as he continued to apply his innovative and creative concepts to all aspects of structural design and construction.

Based on his lifetime of dedication and service to the structural engineering community, we believe that Dr. Yee is an outstanding candidate for this honor.

Dr. Yee completed work for his Master's of Engineering degree in Structural Engineering under the guidance of Professor Hardy Cross at Yale University, New Haven, Connecticut. The year before he had just received his Bachelor of Science degree in Civil Engineering from the Rose-Hulman Institute of Technology in Terre Haute, Indiana. In recognition for his work in concrete technology and proven concepts for both land and sea structures, particularly in the field of precast and prestressed concrete construction, Dr. Yee was awarded an Honorary Doctor of Engineering degree from Rose-Hulman Institute of Technology in May 1976.

In 1976, Dr. Yee was also elected to the prestigious National Academy of Engineering (USA), a branch of the National Academy of Science which was originally founded by President Abraham Lincoln in 1863 for the purpose of assembling a group of scientific advisors to the President and the Congress of the United States of America. Being elected to the NAE is among the highest professional distinctions accorded to an engineer. Academy membership honors those who have made important contributions to engineering theory and practice and who have demonstrated unusual accomplishment in the pioneering of new and developing fields of technology.

Dr. Yee participated in introducing the first precast, prestressed concrete mass production facility in the Hawaiian Islands in 1955. Dr. Yee personally designed the prestressing beds, concrete forms, and developed innovative structural concepts and construction techniques utilizing prestressed, precast concrete units for the construction of both low- and high-rise buildings. In the field of marine concrete vessels, Dr. Yee designed and supervised the construction of the world's first pretensioned, prestressed concrete oceangoing barges in 1964. A total of 19 barges were constructed in this program and used successfully to transport ammunition, food, fuel and other supplies between the Philippines and Vietnam during the war. The last of these barges were decommissioned after 33 years of continuous service.

Dr. Yee also developed and patented a novel structural concept for marine structures. This system utilizes reinforced concrete in the form of an integrated cylindrical cell honeycomb core in composite action with prestressed top and bottom slabs and side walls which can produce a structure with maximum strength and rigidity with the least amount of construction material. The prestressed honeycomb system was utilized commercially for the first time on the award winning ROFOMEX I, a floating platform designed to support a large phosphate processing plant. ROFOMEX I, which measures 260 feet long x 110 feet wide x 24 feet deep, was constructed in Singapore, launched and towed 10,000 miles across the Pacific Ocean to Baja, California where it was outfitted for use as a floating plat-

form supporting a mobile phosphate processing facility.

Due to the inherent strength of the concrete honeycomb, this system was incorporated into the first mobile concrete island drilling system (SUPER CIDS) used for offshore oil exploration on the North slope of Alaska. This mobile platform facility has proven itself by continuous service for nearly two decades without any sign of damage, wear or deterioration and has developed a reputation of being the most economical method of oil exploration in Arctic offshore environment.

Dr. Yee has invented unique systems for splicing and joining precast components which are widely utilized throughout the world on many high-rise and civil engineering structures. In addition, he has developed numerous original concepts in mechanical equipment design to transport and erect heavy long span prestressed concrete beams in the construction of high-rise buildings.

Over the years, he has served on technical committees of various national engineering societies such as the American Concrete Institute, Prestressed Concrete Institute, American Society of Civil Engineers, and the American Bureau of Shipping. In recognition of his technical contributions towards the advancement of engineering, he was awarded honorary memberships in the American Concrete Institute and the American Society of Civil Engineers, the highest recognition accorded to any member of these societies.

For seven consecutive three-year terms, he has served as honorary structural consultant to the Singapore Housing Development Board (HDB) to assist in the initiation and direction of a major program for industrializing high-rise building methods. This program involved introduction of construction systems utilizing mass-produced prefabricated concrete components to accelerate housing construction in Singapore. Dr. Yee assisted in the development of design and construction criteria and in the training of structural engineers and technicians for this program. The training program also involved methods of design, construction, quality control, materials research, precast concrete plant production and field erection. To date, the HDB has built thousands of high-rise housing blocks utilizing precast concrete technology.

The Prestressed/Precast Concrete Institute awarded Dr. Yee the Medal of Honor in 1997 for his extraordinary contribution to the industry. In 2004, Dr. Yee was named a Titan of the Precast/Prestressed Concrete Industry in recognition of his outstanding contributions to the Industry; for prominence in industry innovation and change; for positive leadership in industry-altering development and expansion; and for advancing and accelerating the growth of the North American Precast and Prestressed concrete industry.

In 2007, Dr. Yee was appointed to the International Panel of Experts by the Building and Construction Authority (BCA) of Singapore to assist in the effort to review and strengthen its regulatory framework.

Presently, Dr. Alfred A. Yee is the President of Applied Technology Corporation in Honolulu, Hawaii, and Director of Precast Design Consultants Pte. Ltd., in Singapore, both specializing in precast prestressed concrete design with projects in the United States, Singapore, India, and the Middle East.

Dr. Alfred A. Yee certainly serves as a role model to all engineers. Congratulations to Dr. Alfred A. Yee, the HCES 2009 Lifetime Achievement Award winner.

Engineer of the Year, from page 1

land surveying and 3D laser scanning, and spherical photographic imaging.

The first five years on returning to Hawaii, Dr. Hirota promoted the use of the overlay process that was used at the Weapons Laboratory for the production of design documents and the electronic automation in civil engineering, land surveying and architecture. The firm's staff was trained and they worked with other design firms and the reproduction profession to improve the understanding of the information layering process, which is used today in computer aided design and drafting. Sam O. Hirota, Inc. was the first firm in Hawaii to acquire a high speed digital electronic plotting and computational capability for in-house use.

Hawaii's economy in the 1980's attracted many large Japanese contractors, who were primarily design builders. Dr. Hirota was fortunate to work with almost all of them in building many of the projects completed during this period. The lessons learned by those experiences have been transferred not only internally to the staff at Sam O. Hirota, Inc. but to other firms that have partnered with them. This has led to Dr. Hirota forming affiliated teams including architects, engineers and contractors to pursue design/build projects in Hawaii.

Dr. Hirota served as a member of the American Consulting Engineers Council Management Practices Committee for five years in the 1990's, which provided practice guidelines in the areas of computer automation hardware and software by conducting seminars for the 5,000 member firms.

Recently, Dr. Hirota has used his affiliations with companies based in Europe to research and use 3D laser scanning and spherical imaging in the design and construction industry. He is known throughout the industry for his practical and innovative approach to everything he accomplishes. He has attracted international interest by participating in the planning of documenting the world's 500 most significant cultural sites by CyArk. CyArk is a non-profit entity whose mission is to digitally preserve cultural heritage sites through collecting, archiving and providing open access to data created by laser scanning, digital modeling, and other state-of-the-art technologies.

While earning the respect of colleagues locally, nationally, and internationally throughout the years, Dr. Hirota has also been actively involved in civic and community service. Since 1980, he has served as a director of Central Pacific Bank and the bank's parent company, Central Pacific Financial, one of only a handful of Hawaii companies registered on the New York Stock Exchange. As a Trustee at Le Jardin Academy for 25 years, during the period of the new campus acquisition, expansion, design and development, he has had a strong interest in education. He has been a Lecturer in Computer Applications at the University of Hawaii, School of Architecture. He is on the UH College of Engineering Dean's Advisory Council and the Department of Civil Engineering/private sector liaison committee. He currently is a University of Hawaii Regent, serving as Chair of the Public/private partnership Task Group and a member of the Budget, Long Range Planning, Finance and Facilities Committee. As a Regent, Dr. Hirota has focused on the changes to the language for indemnification on University of Hawaii contracts for A/E consultants in order that their projects are covered by Errors and Omissions insurance.

Dr. Hirota has recognized that educational
(continued on page 11)