

### ASCE HAWAII SECTION

## 2006 OUTSTANDING CIVIL ENGINEERING ACHIEVEMENT (OCEA) AWARD

### Winning Project: Design-Build AEF FOL Aircraft Maintenance Hangar

The Design/Build AEF-FOL Aircraft Maintenance Hangar is a \$32.8M contract with the US Air Force to design and build an earthquake and typhoon resistant, air-conditioned aircraft maintenance facility. It will serve as the primary maintenance site and shelter for aircraft crucial to the operations of the U.S. Air Force. This innovative hanger project provides reliable shelter and an air conditioned environment for B-2 and B-52 aircraft maintenance. This hangar is also designed to support "hard broke" B-1B, B-2, B-52, KC-135, F-22 aircrafts that cannot be flown off island prior to a typhoon.

The hangar encompasses some of the most sophisticated concrete construction, electrical and mechanical design systems. Several special mission requirements were incorporated into the project design. Firstly, the structure was required to be of concrete construction. The structure was designed to resist sustained winds of 170mph, and seismic zone 4 earthquake forces. Another requirement being that the air conditioning system had to be capable of cooling down two "heat soaked" B-2 aircrafts from 118° to 75° either individually or concurrently within 8 hours. The hangar has a B-52 "tow-through" capability in either direction. Bridge cranes, service and breathing air systems, fall arrest, fuel cell and spot ventilation maintenance support equipment for the B-2 and B-52 aircrafts were also a part of the specifications.

To meet these design requirements, BCC's design-build team elected to design and construct a 20m high, 4,700sm arch shaped concrete hangar comprised of precast folded plate arch segments with cast in place segment connections and diaphragm beams. Bi-parting hangar and tail doors installed at each end of the hangar and a vertical lift fabric door mounted in the center of the hangar allow direct tow through of B-52 aircrafts. Tow ways entering the hangar from both the east and the west were designed to ensure proper wing and tail clearances into and out of the hangar in either direction for all designated aircraft. In the closed position, the vertical lift fabric door divides the hangar into two separate bays large enough to accommodate one B-2 aircraft per bay.

Eight 60 ton air conditioning units and four 60,000 CFM fans were installed for independent and joint cooling and ventilation capability. The hangar has both sprinkler and high expansion foam fire extinguishing systems linked to infrared smoke detectors and fire alarm system. The hangar's new fire extinguishing system is tied to

the base's existing water supply, consisting of a new 300mm fire main. A new 200,000L fire water tank supplements the existing fire supply system's reserve capacity. Specialized maintenance equipment installed in the hangar included a 400hz power system, preconditioned ventilation units for fuel cell maintenance, spot ventilation systems, compressed breathing and service air, and two 7.5T and one 0.5 T bridge cranes. Additional support systems installed include high hangar bay lighting, trench drains, dual walled effluent collection piping, 400,000L concrete process tank, security, and PBX systems, 650KW standby generator, and package sewage lift station. The precast design of the hangar's arch segment shell makes it ideally suited for fast track, "assembly line" construction of wide span, concrete hangars for large aircrafts such as the B-52 within a short time frame.

The hangar's mechanical/electrical design successfully integrates, for the first time, high capacity HVAC equipment, ductwork, and specialized aircraft maintenance equipment needed to maintain B-52 and B-2 aircraft within a large, arch shaped, concrete hangar.

The aesthetic value of the project is prevalent in the new hangar's folded plate arch design very similar in appearance to the existing corrosion control hangar also located in Andersen AFB which was constructed in the late 1970's. The new hangar is located approximately 500m west of the existing hangar. The new hangar is painted with the same "antique linen", "tobacco brown" and "mission red" color

scheme used throughout Andersen AFB.

The design/build team for this challenging project, which was delivered safely, on time, and within budget, included Black Construction Corporation, Burns & McDonnell, Applied Technology Corporation, and SS Dannaway & Associates.

### Runner-up Project: Ford Island 46kV Subtransmission Line

The Ford Island 46kV Subtransmission Line is

*(continued on page 11)*



**OCEA Award Winning Project: Design-Build AEF FOL Aircraft Maintenance Hangar, Andersen Air Force Base, Guam.**



**Accepting the 2006 OCEA Award for the Design-Build AEF FOL Aircraft Maintenance Hangar Project are members of Black Construction Corporation's design/built team (left to right: Ben Zhou, Alfred Yee, Brenda Balbin)**



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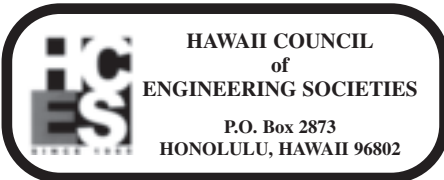
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**WILIKI MAILING LIST**

Additions and/or corrections to the Wiliki mailing list should indicate the proper society, institution or association. Corrections to email addresses should be submitted to your society coordinator.

Laverne Higa  
Department of Facility Maintenance  
1000 Uluohia Street, Suite 215  
Kapolei, Hawaii 96707  
Office: 808-692-5054  
Fax: 808-692-5857



HOME PAGE: <http://hces.us>

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**Engineers Week 2007  
Sponsorship Opportunities  
February 18-24, 2007**

The Hawaii Council of Engineering Societies (HCES) will once again be organizing events during Engineers Week 2007 that include a luncheon, exhibit, and banquet. As in previous years, the Engineers Week Exhibit will be held at Kahala Mall from February 18-24, 2007. Static displays created by local companies/organizations will be on exhibit throughout the week. In addition, the Hawaii Space Grant Consortium will be hosting interactive science demonstrations at Kahala Mall's Center Stage on Saturday, February 24th.

This year, HCES is seeking sponsors to support Engineers Week 2007 events. Your contribution will ensure that we are able to achieve our goal of bringing public attention to the work and contributions of engineers, as well as, cultivating interest in engineering, science, and math among our youth.

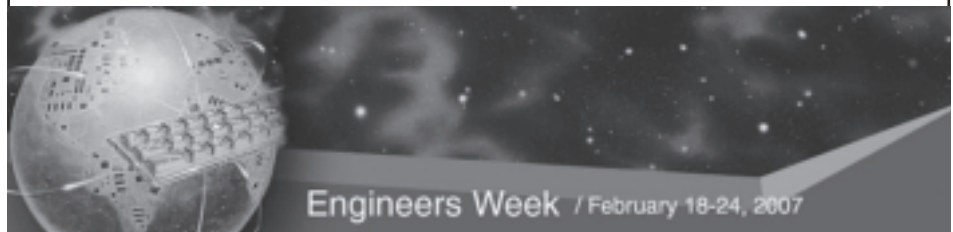
Sponsorship of Engineers Week 2007 events will provide your company or organization with excellent exposure! Your company/organization's logo will be displayed prominently at Kahala Mall for the duration of the Exhibit. In addition, your company/organization will be recognized in the Wiliki, as well as, during the Engineers Week luncheon and banquet.

**Sponsorship Levels**

**Gold \$500**

**Silver \$250**

To explore other sponsorship opportunities, please contact Cathy Leong at (808) 946-2277 or [cleong@wilsonokamoto.com](mailto:cleong@wilsonokamoto.com).



**ENGINEERS WEEK 2007  
SPONSORSHIP PLEDGE FORM**

**Sponsoring Company:**

Company Name \_\_\_\_\_

Contact Name \_\_\_\_\_

Street Address \_\_\_\_\_

City, State/Province, Zip/Postal Code \_\_\_\_\_

Phone \_\_\_\_\_ Fax \_\_\_\_\_

E-mail \_\_\_\_\_

**Sponsorship LEVEL:**

Gold (\$500) \$ \_\_\_\_\_

Silver (\$250) \$ \_\_\_\_\_

(Please contact Cathy Leong at (808) 946-2277 for other sponsorship opportunities.)

Total Sponsorship \$ \_\_\_\_\_

Authorized Signature: \_\_\_\_\_ Date: \_\_\_\_\_

NOTE: To be included in printed promotional materials, completed sponsorship forms and payment must be received no later than.

**Complete this form and return with check or money order payable to "HCES" to:**

Cathy Leong  
c/o Wilson Okamoto Corporation  
1907 S. Beretania St., Suite 400  
Honolulu, HI 96826  
Fax (808) 946-2253



[www.sfpehawaii.org](http://www.sfpehawaii.org)

#### OFFICERS

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| Webmaster | Derick Kam<br><i>kam@thermaleng.com</i>   |                      |

#### HAWAII CHAPTER RECEIVES SILVER EXCELLENCE AWARD

The SFPE Hawaii Chapter has received the Silver Award for the second consecutive year. The Chapter Excellence Award was established by the SFPE Board of Directors to recognize Chapters that demonstrated excellence in contributing to the needs of their members and the Society. Three levels of recognition, Gold, Silver, and Bronze are awarded to qualifying Chapters. Sam Dannaway received the award for the Hawaii Chapter during the SFPE Annual Meeting Awards Banquet held at the Turf Valley Resort and Golf in Ellicott City, Maryland on October 16, 2006.



P.O. Box 31218; Honolulu, HI 96817  
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#### 2006/2007 Post Officers

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#### Future Meetings: (check the SAME post web page for more details)

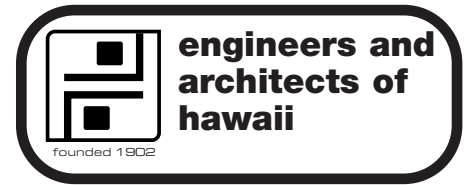
##### 1 Nov 06 (Wednesday), 1130hrs

Location: NCO Club, Hickam AFB; Speaker: Maj Gen Leaf, PACOM/J01; Subject: Guam

Note: This meeting is not on the regular 2nd Tuesday because it is being held in conjunction with the PACAF CE Squadron Commanders Conference.

##### 12 Dec 06 (Tuesday), 1130hrs

Location: Hale Ikena, Fort Shafter; Speaker: Alan Lloyd; Subject: Historical



po box 4353, honolulu, hawaii 96813  
An association for Hawaii's Engineers and Architects  
WEB Address <http://community.hei.com/eah>

#### 2006- 2007 Officers

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|            | Greg McCartney       |          |
| Past Pres. | Gary Yamamoto        |          |

Meetings held every Friday except November 10 and 24 at YWCA room 205 on Richards Street downtown. Meetings start at NOON and end promptly at 1:00 pm. Parking at Alii Place off Alakea Street for \$1.50 per hour.

Buffet Lunch: Members-\$10.00, Guests-\$12.00, BYO lunches welcome. If not having the Buffet Lunch a donation is requested: Members \$2, Guests \$3; to help cover room rental costs.

Program schedule may be adjusted. Call Secretary Sam Gillie at 543-4739 (543-4804 FAX) to confirm speaker. Anyone wanting a weekly email meeting notice please send your email address to Sam Gillie at [sgillie@hei.com](mailto:sgillie@hei.com).



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| Region 8 Chair: | Westley Chun, Ph.D., P.E.   |          |          |

### 2006-2007 YMF Officers

|                            |                |
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| President:                 | Lori Nishida   |
| Vice-Pres.:                | Lisa Takushi   |
| Secretary:                 | Lauren Ishima  |
| Treasurer:                 | Morgan LaRue   |
| Student Chapter President: | Travis Nishino |

### NOVEMBER DINNER MEETING

Program: Future Energy Challenges for Hawaii – and the World.

Date: Thursday, November 16, 2006

Location: Treetops at Paradise Park, Manoa Valley

Time: 5:30 p.m. - Social Time  
6:30 p.m. - Dinner  
7:30 p.m. - Program  
9:00 p.m. - Adjourn

Menu: Multi-entree buffet

Cost: \$22.00 for Hawaii Section members  
\$25.00 for non-section members and guests  
\$11.00 for University of Hawaii at Manoa Student Chapter members

Please make checks payable to ASCE-Hawaii Section and mail to Roger Babcock, ASCE Treasurer, Department of Civil & Environmental Engineering University of Hawaii at Manoa, 2540 Dole Street, Holmes 383, Honolulu, Hawaii 96822-2303 postmarked by Monday, November 6, 2006. Reservations for the dinner meeting to Roger Babcock by Monday, November 6, 2006, by phone at 956-7298, fax at 956-5014 or email at [rbabcock@hawaii.edu](mailto:rbabcock@hawaii.edu).

### DAM SAFETY TRAINING SESSIONS

Chris Veesaert, Manager of the Inspections and Emergency Group at the US Bureau of Reclamation, will head the 3-day training seminars with Patrick Wanker and Jeffrey Daniels leading the Emergency Action Plan sessions.

- Island of Hawaii - October 25-27, 2006 - Department of Agriculture, Waimea Irrigation Conference Room, 66-1220 Lalamilo Rd, #B, Kamuela, HI 96743
- Island of Oahu - October 30 - November 1, 2006 - Ala Moana Hotel - Ilima Room, 410 Atkinson Drive, Honolulu, HI 96814
- Island of Maui - November 29 - December 1, 2006 - Maui Arts & Cultural Center, Alexa Higashi Meeting Room, One Cameron Way, Kahului, HI 96732
- Island of Kauai - December 4-6, 2006 - Kauai Civil Defense-Emergency Operations Center, 3990 Kaana Street, Suite 100, Lihue, HI 96766

Time: 8:00 am - 4:00 pm

Cost: \$20.00/person - Waived for Owners, Operators and Governments Officials

**TO REGISTER:** Mail your completed registration form and fee of \$20.00 (Payable to: State of Hawaii) to:

DLNR Engineering Division  
Attention: Denise Manuel  
PO Box 373  
Honolulu, HI 96809

Deadline for registration is one week prior to each training session. Priority will be given to Owners & Operators. If you have any questions, please feel free to call Denise Manuel at 587-0246 or email to [denise.m.manuel@hawaii.gov](mailto:denise.m.manuel@hawaii.gov). For additional details, please see the workshop announcement which is available for download as a pdf file from this link (68 kb). The Executed Memorandum of Agreement (97 kb) between DLNR and ASCE Hawaii Section to conduct four (4) Dam Safety Training Seminars on each of the four (4) islands is also available for download.

### EXECUTIVE COMMITTEE MEETING

November 9, 2006

### AWARDS FROM ASCE NATIONAL

The ASCE Hawaii Section has been selected by ASCE's State Government Relations Committee as the recipient of the Certificate of Merit in State Government Relations. The Section would like to thank Owen Miyamoto whose dedication and continued contributions as the Section's Legislative Affairs Committee Chair helped earn this award.

Also, Congratulations to Lori Nishida who was named the 2006 Member-Get-A-Member Winner. Lori, an Associate Member and Membership Committee Chair of the Hawaii

Section, was awarded \$700 for being this year's top recruiter.

### ASCE HAWAII SECTION STUDENT SCHOLARSHIPS

Please help us increase our scholarship endowment so that we can recognize those deserving students. We continue to accept tax deductible donations with the goal of increasing the annual scholarships. Make your check payable to 'ASCE Hawaii Section' and mail to ASCE Scholarship Committee, P.O. Box 917, Honolulu, HI 96808. If you have any questions, please contact Keith Niiya at 533-3646, or [kniya@atahawaii.com](mailto:kniya@atahawaii.com).

### ASCE JOB LISTINGS

The following employers have openings they would like to fill:

- Austin Tsutsumi & Associates, Inc. (Civil Engineer - Honolulu and Wailuku, Land Surveyor - Honolulu)
- Bills Engineering Inc. (Civil Engineer, Engineering Assistant & CADD Technician)
- CH2MHILL (Transportation/Traffic Engineer - Honolulu Office)
- Engineering Solutions, Inc. (Civil/Sanitary Engineer - Honolulu)
- Fewell Geotechnical Engineering (Geotechnical Engineer - Honolulu)
- Fukunaga & Associates (Civil and Civil/Environmental Engineers - Honolulu)
- Mitsunaga & Associates, Inc. (Civil Engineers)
- Warren S. Unemori Engineering (Project

*(continued on page 10)*



## 2007 HSPE ENGINEER OF THE YEAR AND YOUNG ENGINEER OF THE YEAR AWARDS

In conjunction with the activities of Engineers' Week 2007, the Hawaii Society of Professional Engineers (HSPE) is soliciting nominations for the Hawaii Engineer of the Year and the Hawaii Young Engineer of the Year Awards. HSPE will evaluate candidates for both awards. The selected engineer(s) will be announced at the 2007 Engineers Week Banquet. Completed nomination forms and letters of support must be received *no later than Friday, December 15, 2006 at the following address (electronic submittals only):*

### Hawaii Society of Professional Engineers

c/o Barry Nakamoto  
[barry.nakamoto@heco.com](mailto:barry.nakamoto@heco.com)

Each candidate shall be nominated on the following basis:

#### Candidate for Engineer of the Year (Nomination Form not to Exceed 8 Pages)

1. Shall be current practicing Licensed Professional Engineer in the State of Hawaii;
2. Shall be current State of Hawaii resident; and
3. Shall not be a State Officer or Director for HSPE.

#### Candidate for Young Engineer of the Year (Nomination Form not to Exceed 6 Pages)

1. Shall be 35 years of age or less as of Jan. 1, 2007;
2. Shall be a current practicing Licensed Professional Engineer in the State of Hawaii;
3. Shall be a current State of Hawaii resident; and
4. Shall not be a State Officer or Director of HSPE.

Electronic files of the respective nomination forms are available for your use – contact Barry Nakamoto at [barry.nakamoto@heco.com](mailto:barry.nakamoto@heco.com). Or you may download the nomination forms from the Hawaii Council of Engineering Societies Web Site at <http://hces.us/special/announcements.html>.

#### Criteria for Selection of Young Engineer & Engineer of the Year Awards

1. 30% Technical Accomplishment  
(Technical Awards, Papers & Presentations, Major Projects, etc.)
2. 35% Professional History & Contributions  
(Positions Held, Professional Affiliations, Special Contributions to Profession & Special Recognition, etc.)
3. 20% Civic & Community Contributions  
(Affiliations, Position Held, Special Recognition, etc.)
4. 15% Recommendation(s)  
(Why the individual is nominated)

*No more than 3 letters of support per candidate with maximum 2 page limit per letter.*

# ASCE American Society of Civil Engineers

Hawaii Section — Younger Member Forum  
Web site: <http://www.ascehawaii.org/yymf.html>

## 2006-2007 YMF OFFICERS

|           |   | <b>Phone</b>      |
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| Vice-Pres | Lisa Takushi<br><a href="mailto:ltakushi@ascehawaii.org">ltakushi@ascehawaii.org</a>                          | 531-2462 ext. 231 |
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| Past Pres | Florence Ching<br><a href="mailto:fching@ascehawaii.org">fching@ascehawaii.org</a>                            | 227-4704          |

## Next YMF General Meeting

The next two YMF general meetings are scheduled for Wednesday, November 1, 6:00 p.m., at Compadres Bar & Grill at Ward Centre, 591-8307; and Wednesday, December 6, 6:00 p.m., at Hiroshi's Eurasian Tapa's at Restaurant Row, 533-4476. If you are interested in attending to find out what the YMF is all about, please contact Lori Nishida at 533-3646 or [lnishida@atahawaii.com](mailto:lnishida@atahawaii.com).

## Friends of the Library of Hawaii Service Project

by Emi Kiyoi,  
YMF Community Service Committee Co-Chair

On July 15, 2006, ten volunteers from the Hawaii Section YMF assisted with the 59th Annual Friends of the Library of Hawaii booksale. This annual event held at McKinley High School helped to raise an event record of \$180,000. Proceeds from the sale will help libraries across the State and continue to support reading programs, scholarships, continuing education, and other community activities. Our YMF volunteers helped during the final day of the sale with packing books, removing shelves, and transporting boxes to donation centers and storage facilities.

A very special mahalo the Rosmary Chong and Byrde Cestare from the Friends of the Library of Hawaii for organizing this event and for allowing us to participate in such a successful event. Thanks to all the Hawaii Section YMF volunteers for participating!

## Daniel W. Mead Prize for Younger Members

by Lori Nishida, YMF President

Congratulations to ASCE Hawaii Section Younger Member Scott W. Jennings, P.E., A.M., whose Daniel W. Mead submission earned him a Certificate of Commendation in this year's competition. Every year since its establishment in 1939 by ASCE Past President and Honorary Member Daniel W. Mead, the prize has been awarded on the basis of papers on professional ethics. This year's Younger Member topic was "Is It Ethical to Transfer Risk of a Construction Project Solely to the Contractor Indemnifying the Design Engineer and Owner?" The upcoming 2007 topic is "Should Engineers Advocate Public Entities to use Eminent Domain Power for Economic Development?" Nice job Scott!

## YMF Golf Update

by Jeff Kalani, YMF Golf Committee Co-Chair

Thank you to the fourteen YMF members and friends who participated in the YMF golf outing at Olomana Golf Links September 23, 2006. Congratulations to the closest-to-the-pin contest winners Eric Ancheta, Chris Firby, and Bernice Pabingwit – Bernice won two holes!

The YMF would also like to welcome Ryan Tanaka of Wilson Okamoto Corporation as the new YMF Golf Committee Chair. Please keep checking the Wiliki and YMF website ([www.ascehawaii.org/yymf.html](http://www.ascehawaii.org/yymf.html)) for information regarding the next YMF Golf Outing.



## 2006 Special Olympics Holiday Classic

Jennifer Chang, YMF Community Service Committee Co-Chair

The YMF will once again be helping with the 2006 Special Olympics Holiday Classic. The Special Olympics Holiday Classic is one of three events sponsored by Special Olympics Hawaii for children and adults with intellectual disabilities.

The Special Olympics will be needing assistance with score keepers for the bowling event. Volunteers will be briefed prior to the shifts and will be taught everything needed to assist.

When: Sunday December 3rd, 7:30 a.m. to 11:30 a.m. (allow time for registration and free parking)

Where: Hickam Airforce Base (volunteers will receive passes to get on base)

Food, drinks and snacks will be provided by the Special Olympics to all volunteers. Covered shoes must be worn. Special Olympic t-shirts will be passed out to volunteers at the registration booth.

Please RSVP by Wednesday, November 15th, with your T-shirt size. Send any questions or RSVP to Jennifer Chang at [jchang@ascehawaii.org](mailto:jchang@ascehawaii.org). We will need at least 10 YMF members for this event.

Thank you and hope to see you there!



## 2007 HCES LIFETIME ACHIEVEMENT AWARD CALL FOR NOMINATIONS

In 1997, the Hawaii Council Of Engineering Societies instituted the "HCES Lifetime Achievement Award" which is designed to recognize the lifetime achievements of retired engineers. 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. The first HCES Lifetime Achievement Award was made on February 27, 1998.

### ELIGIBILITY

The following criteria shall be applied when nominating a candidate for the award:

- The nominee shall be affiliated with an HCES member society as an active member.
- The nominee shall have lived and worked in Hawaii as an engineer or engineer-manager for at least 15 years.
- The nominee shall be 62 years or older at the time of nomination.
- The nominee shall have taken retirement from public or private sector employment. The nominee could, however, be continuing employment or consultancy or other work after effective retirement.
- In the case of a nominee who was an entrepreneur who started his/her own company, the nominee shall have actively handed over control of the company to a successor. The nominee may continue to be involved with the company.
- Posthumous awards may be made provided the nominee was an active member of an HCES member society at the time of his/her passing away and fulfilled all the required criteria listed above.

### NOMINATION

The following criteria shall apply to the method for nomination:

- Any person belonging to any HCES member organization may nominate a candidate.
- The nomination shall be accompanied by a citation that must effectively highlight, in narrative form, the engineering contributions of the candidate. Special emphasis shall be made on the nominee's contributions to Hawaii.
- The nomination shall include a detailed resume of the nominee.
- The nomination package shall be submitted with a cover letter addressed to the HCES Chair.
- Multiple nominators may nominate a single nominee. The nominations submitted may be a joint or separate nomination. To be considered valid, each nomination package shall be complete.
- A single nominator may nominate multiple candidates. The nomination for each candidate shall be distinct and complete with all necessary documents.
- If the nominee has not been selected in a previous nomination, he or she may be nominated in subsequent years.

The HCES Selection Committee will select the recipient. Five copies of the nomination shall be mailed to: 2007 HCES Lifetime Achievement Award, P.O. Box 2873, Honolulu, Hawaii 96802.

**Award nominations must be postmarked on or before December 15, 2006.**



# Structural Engineers Association of Hawaii

## Conducts a Hurricane Retrofit Outreach Program

By Bennett Fung, President of SEAOH

Structural engineers are well respected by the public. However, very few people know what we actually do or how we contribute to the community. Structural engineers strive to protect and promote the safety and welfare of the public, yet there are very few opportunities for engineers to promote our mission to the public outside of the immediate circle of design and construction professions.

The Structural Engineers Association of Hawaii (SEAOH) set a goal earlier this year to reach out to the public through a topic that is relevant to the hearts of the public. Under the guidance of Bennett Fung and with the assistance of Gary Chock, president and vice president of SEAOH, respectively, a free public seminar on "How to retrofit your home for the next hurricane" was conducted on September 23, 2006.

Hawaii has sustained significant damage from past hurricanes. In 1992, Hurricane Iniki destroyed over 1,000 homes and significantly damaged approximately half of the single family homes on the island of Kauai, resulting in about \$900 million dollars of direct losses to private homeowners. It destroyed several hotel complexes and condominiums and sank private boats moored in local marinas. Coastal communities were pounded with high surf and storm surge that scoured beachfront properties. Ten years before that, Hurricane Iwa did substantial damage to Kauai and Oahu. More recently, the devastation of New Orleans and other cities along the Louisiana and Mississippi coast in 2005 are still fresh in the minds of the public, again bringing hurricane vulnerability and hurricane insurance cost/availability to heightened public concern.

The Hawaii State Legislature passed a bill to provide 4 million dollars this year, and 2 million dollars next year to fund a Loss Mitigation Grant Program. This program provides a 35 percent reimbursement of the cost of hurricane retrofits, up to a maximum of \$2100 per dwelling unit, for homeowners who install approved wind resistive devices to improve wind resistance. The Department of Commerce & Consumer Affairs – Insurance Division administers this program. SEAOH member Gary Chock authored the technical specifications on five generic types of home retrofits that utilize both performance-based and deemed-to-comply provisions. More information on the program specifications and procedures is posted for download at <http://hurricaneretrofits.hawaii.gov>.

The SEAOH partnered with the State Insurance Division, the State Civil Defense Division, NOAA's Central Pacific Hurricane Center, and the Oahu Civil Defense Agency to organize an information-filled half-day workshop on "How to Retrofit your Home for the Next

Hurricane". This became the first public briefing on the Loss Mitigation Grant Program. Sponsors were also invited to exhibit hurricane-related products and services.

With the assistance of State Civil Defense and NOAA, SEAOH distributed press releases to all local news organizations. Bennett Fung and Insurance Commissioner J.P. Schmidt appeared on a morning news show, articles appeared in local newspapers, and SEAOH called local radio stations and went on the air to promote the workshop. As a result of these publicity efforts, the workshop turned out to be well attended. Over 450 people showed up at the event to learn about the grant program.

SEAOH member and Simpson Strong-Tie Company representative Tim Waite served as the emcee for the event. Adjutant General of Hawaii General Robert Lee started the program with a discussion of the public safety role and skillfulness of structural engineers in the design of buildings, and a call for personal hurricane awareness and preparation including construction of residential safe rooms. Bennett Fung gave a demonstration of wind loading and internal pressurization effects with the aid of a house model. Jim Weyman of NOAA Central Pacific Hurricane Center presented an in-depth review of climate

ology, hurricane tracking, and the risks in Hawaii. Lloyd Lim from the State Insurance Division discussed the administrative details of the Loss Mitigation Grant Program. Gary Chock of SEAOH presented a study of Hurricane Iniki damage, the vulnerability of homes in Hawaii, and details of the five types of hurricane retrofits in the state's program. Insurance Commissioner JP Schmidt gave a summary on dynamic changes in the local hurricane insurance market. The program concluded with Ed Teixeira of State Civil Defense encouraging public hurricane preparedness and providing information on hurricane shelter procedures and disaster response.

The partners that par-

icipated at this event were very satisfied with the results. The Insurance Division received a lot of inquiries about the Loss Mitigation Grant Program. State Civil Defense was happy with the turnout and the opportunity to educate the public on their role to reduce the risk of a hurricane disaster. NOAA was pleased with the public's interest, and SEAOH was pleased with the positive message we made to the public, as well as the publicity that we received towards getting public awareness of our organization's presence at the forefront of building safety and hurricane retrofits.

The success of this event shows that private and public organizations with a common goal can create an effective public message. This program proved to be mutually beneficial for all participating organizations. The ultimate beneficiaries are those who become motivated to strengthen their homes to improve their safety and reduce the burden on emergency response agencies during the next hurricane. Based on the public response and input of the participants in the event, SEAOH has started to organize more workshops in the near future for the neighboring counties of Kauai, Maui, and Hawaii.



**Structural Engineers Association of Hawaii**  
Presents

**How to Retrofit your Home for the Next Hurricane**

Partner

- DCCA, Insurance Division
- State Civil Defense
- NOAA
- Oahu Civil Defense Agency
- American Red Cross

Speakers:

- Tim Waite
- General Robert Lee
- Bennett Fung
- Jim Weyman
- Gary Chock
- Ed Teixeira
- Lloyd Lim
- J.P. Schmidt

**HAWAII CHAPTER**

98-029 Hekaha St. Unit 23, Aiea, Hawaii 96701  
 Phone: (808) 485-1400 Fax: (808) 485-1500  
 Web Page: [www.lgsea.com](http://www.lgsea.com)

**2006/2007 Officers and Directors:**

|           |                               | Phone    | Fax      |
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| Vice Pres | Brian Enomoto                 | 486-5202 | 486-5206 |
|           | brian@iwamotollc.com          |          |          |
| Secretary | Adrian Lee                    | 536-7692 | 537-9022 |
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| Director  | Akira Usami                   | 682-5747 | 682-2928 |
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| Director  | Will Wong                     | 682-6000 | 682-6001 |
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| Director  | Shane Arnold                  | 499-3137 | 499-3142 |
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| Past Pres | Jeff Hanyu                    | 536-2108 | 521-3000 |
|           | jeffhanyu@allisonide.com      |          |          |

**National LGSEA Secretariat**

Don Allen 202-263-4488, x14, fax 202-785-3856  
 steeldon@earthlink.net

**Committee Chairmen**

|                                    |               |
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| Public Rel./Wiliki/Webpage Comm.   | Mardie Torres |
| Program Committee                  | Brian Enomoto |
| Corporate Sponsor Committee        | Akira Usami   |
| Membership                         | Darin Okuda   |
| HCES Liasion                       | Will Wong     |
| Ad Hoc CFS Education Committee     | Jeff Hanyu    |
| Ad Hoc Specifications Committee    | Jeff Hanyu    |
| Ad Hoc Directed Research Committee | Brian Ide     |
| Ad Hoc Field Problems Committee    | Shane Arnold  |

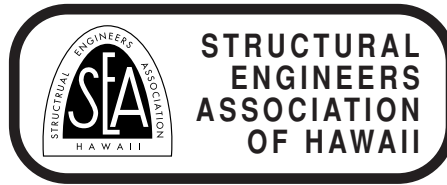
**Membership Update**

The chapter recognizes and appreciates the corporate sponsors for their continued support for the structural engineers in Hawaii. Your support directly aids our Hawaii engineers in the efficient structural design of safe and cost effective cold-formed steel framed structures. **14 gauge sponsors:** GW Killebrew, Worthington Industries and CEMCO Steel. **16 gauge sponsors:** Simpson Strong-Tie and Hawaii Partition Systems. **18 gauge sponsors:** Coastal Construction, Structural Analysis Group, Castle & Cooke Homes Hawaii, Maryl Pacific Construction, Aegis Metal Framing and Whitecap Construction Supply. **20 gauge sponsors:** Grabber Pacific, Sinclair Drywall, and Sunrise Construction. We would also like to thank those who have renewed their membership to LGSEA-Hawaii Chapter. The chapter is becoming stronger due to the support its members shared throughout these past years.

**CFSEI Membership meeting**

The CFSEI Hawaii will hold a membership meeting (jointly with HPSFA) on November 2, 2006, Thursday at Sam Choy's BLC on Nimitz with Mr. Timothy F. Noonan of DL Adams Associates, Ltd as speaker. The presentation will look at the acoustical difference between different wall and floor/ceiling systems and how metal studs and joists compare to other studs and joists. Mr. Noonan will also look at some new technologies like Quiet Solutions gypsum board and resilient clips and how they can affect acoustical performance with the two types of studs. Finally, common stud configurations that can inadvertently reduce the acoustical performance of a partition will also be covered. Similar presentation will also be held at Royal Kona

(continued on page 10)



PO BOX 3348, HONOLULU, HI 96801  
 Web Page URL <http://www.seaoh.org>

**2006 BOARD OF DIRECTORS (BOD) OFFICERS & DIRECTORS**

| Position   | Officer   | Phone    |
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| President  | Bennett Fung<br><i>bfung@ssfm.com</i>               | 531-1308 |
| Vice Pres. | Gary Chock<br><i>structures@martinchock.com</i>     | 521-4513 |
| Secretary  | Brandi Jim On<br><i>bjimon@wilsonokamoto.com</i>    | 946-2277 |
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| Director   | Akira Usami<br><i>ausami@dietrichindustries.com</i> | 682-5747 |
| Past Pres. | Beverly Ishii-Nakayama<br><i>beverlym@lava.net</i>  | 942-9100 |

**HIGHLIGHTS OF BOD MEETING**

October 4, 2006

**Committee Reports:**

General Membership Meetings/Technical Seminars/Events:

- How to Retrofit Your Home for the Next Hurricane" is Public Outreach Program that was held on September 23, 2006 at the Japanese Cultural Center from 9:00 am to 12:30pm. Attendance at this event was extremely successful.
- AISC 13th Edition Design Handbook Seminar is scheduled for October 26, 2006.
- SEAHO general membership meeting is scheduled for October 31, 2006. Nominations for the 2007 BOD will be announced. The time, place, and technical topic are to be determined.
- MIH Masonry Design Seminar is scheduled for November 16, 2006.
- 2007 SEAHO Installation Banquet will be held on Friday January 19, 2007 at The Plaza Club.
- AISC short program is scheduled for January 30, 2007.
- AISC Seismic Design Seminar has been rescheduled to Mid 2007.

**New Member Applications:**

Lois Mistunaga's (Mitsunaga and Associates, Inc) application to be an Allied SEAHO Member was approved. No new applications for SEAHO membership were received to vote on.

**New Business:**

- Golf: The next golf outing

is scheduled for Friday November 24, 2006 at Waialeale Golf Course. Ten tee times have been reserved for 11:45 am. Sign up for the event will be sent out.

- 2007 SEAHO Convention: The 2007 SEAHO Convention will be held in Kona. The proposed date for the convention is July 19-21, 2007. This date was selected based on the public school year round summer vacation schedule. For those interested in attending, please contact any member of the SEAHO BOD if you have suggestions for another date or convention location.
- Nominations for the 2007 SEAHO BOD: Nominations for the 2007 BOD will be announced at the upcoming SEAHO meeting on October 31, 2007.
- NCSEA: Posters for NCSEA were printed and given to SEAHO for distribution to middle and high schools. Anyone interested in assisting with the distribution of the posters to any high school should contact a SEAHO BOD member.
- Membership Directory: The SEAHO Membership Directory is being updated and a hardcopy as well as a PDF version will be distributed shortly.

**Next Deadline for  
 Wiliki  
 is November 15th**

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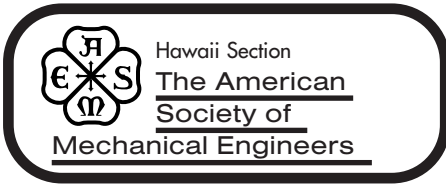
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 visit us at: [www.ssihawaii.com](http://www.ssihawaii.com)  
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Website: [www.sections.asme.org/hawaii](http://www.sections.asme.org/hawaii)

#### ASME-HI 2006-2007 Officers

Chair: Raymond Liu  
 Vice-Chair: Derick Kam  
 Treasurer: Kevin Dang  
 Secretary: Ron Flegal  
 Director (2 yr): James Grogan  
 Director (1 yr): Chester Kaitoku

#### ASME-HI 2005-2006 Officers

|             |  |          |
|-------------|--|----------|
| Chairperson | Raymond Liu  | 521-3773 |
|             | <a href="mailto:rliu@cdoca.com">rliu@cdoca.com</a>                       |          |
| Vice-Chair  | Derick Kam   | 848-6966 |
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| Dir 1 yr    | Chester Kaitoku  | 527-6063 |
|             | <a href="mailto:ckaitoku@honolulu.gov">ckaitoku@honolulu.gov</a>         |          |
| Dir 2 yr    | James Grogan   | 254-2947 |
|             | <a href="mailto:jfgrogan@worldnet.att.net">jfgrogan@worldnet.att.net</a> |          |

#### NEXT ASME-HAWAII SECTION MEETING

Date: November 14, 2006  
 Time: 5:30 pm to 7:00 pm  
 Agenda: General membership meeting promoting membership with ASME Hawaii. The main program will recognize P.E. candidates and instructors for the recently completed P.E. refresher course.  
 Place: Hawaiian Electric  
 Ward Avenue Cafeteria

Please contact Ray Liu or Ron Flegal for directions and for more information.

#### ASME PARTICIPATES IN KAILUA HIGH SCHOOL CAREER DAY FAIR

As part of the community outreach program of ASME Hawaii, section Vice Chair, Derick Kam; Director, Jim Grogan; and Chair, Raymond Liu attended the Kailua High School career day fair on October 17, 2006 from 9:00am to 1:00pm.

This annual event gave the members the opportunity to influence the future mechanical engineers of our state by promoting the profession and demonstrating its relevance to almost everything that we do and most products that we use.

Through the use of a poster display board and pre-printed literature that explains our profession, section members answer student's questions such as "What do mechanical engineers do?", "How many hours a day to you work?", "What industries do mechanical engineers work in?", and of course, "How much do mechanical engineers get paid?"

Of course, the typical high school student was most interested in the last question. However, a small portion was more interested in how things work – the typical trait that most engineers have that starts the beginning of their careers. Nonetheless, members had the challenge of talking to many students, and competing with other booths of other organizations, in hoping to interest them in a career in mechanical engineering.

In the end, it was worth it as the members were treated to lunch provided by the high school. And for most of the members, it brought back reminders of good eats (or bad eats) of cafeteria food.

For pictures of the event, please visit the section website at [www.sections.asme.org/hawaii](http://www.sections.asme.org/hawaii). For information on participating in future events, please contact Ed Chang at [edmund.chang@heco.com](mailto:edmund.chang@heco.com) or Raymond Liu at [rliu@cdoca.com](mailto:rliu@cdoca.com).

#### ASME SUCCESSFULLY WRAPS UP P.E. REFRESHER COURSE

As the Principles & Practices of Mechanical Engineering, or P.E. licensing exam scheduled for Friday, October 27, 2006 approaches, the qualified candidates and those planning to take the exam in April 2007 are wrapping up the course with a review of the HVAC/R, ventilation, cooling, heating and controls principles.

As reported in the September and October Willki O'Hawaii articles, Dr. S. Masutani and Dr. C. Kinoshita provided concise, valuable, yet entertaining instructions in the subjects of thermodynamics, fluid mechanics and its applications. The last portion of instructions, which were held on Tuesday nights in the later part of October, involved a collaborative method where all candidates get involved with solving problems in the Mechanical Engineering Reference Manual (MERM) prior to attending classes with the balance of the instruction time filled with critical problem-solution discussions that focus on important engineering concepts.

This requires the candidates to ask critical questions for problems that they didn't understand in an open and professional environment. This method fosters an open and mutually focused environment where all candidates support each other to pass the exam the first time. The discussion of problem solutions is facilitated by several ASME Hawaii section members using the solutions manual for the MERM.

This method was found to be valuable as the problems in the MERM and the solutions manual were found with typographical errors. Most questions were clarified through the in-depth discussions of solutions between candidates and facilitators.

As the exam closed in, an extra Saturday study session was made available for the candidates scheduled to take the October exam. This extra session focused on miscellaneous exam topics such as statics, dynamics, properties of areas, tips on economic analysis and more. Finally, an 8-hour mock exam was given to the candidates on Saturday, October 21, 2006 from 8:00am to 5:00pm to gauge their performance prior to the exam. The final review session was held on Tuesday, October 24, 2006 at UH Manoa in Holmes Hall Room 242.

ASME Hawaii wishes the seven qualified candidates the best of luck as they pursue engineering licensure to further their career as engineering professionals. A total of 13 students attended the course. Plans are in the works for another P.E. refresher course for the April 2007 exam. For more information on signing up for the April 2007 refresher course, please email Raymond Liu at [rliu@cdoca.com](mailto:rliu@cdoca.com) or contact cell at 497-1395. For more information on other section events, please visit [www.sections.asme.org/hawaii](http://www.sections.asme.org/hawaii).

#### NOVEMBER GENERAL MEMBERSHIP MEETING

The next ASME Hawaii general membership meeting will be held on Tuesday, November 14, 2006, at the Hawaiian Electric Company Cafeteria meeting rooms from 5:30pm to 7:00pm. Parking and meeting location is at 820 Ward Avenue which is across from the Neil Blaisdell ticket office. Meeting attendees are requested to meet at the Ward Avenue gate at 5:30pm sharp for escort to the meeting room.

This month's meeting will include a general overview of the benefits of professional membership with ASME Hawaii. However, the main program of the evening will include recognition of recent P.E. exam candidates and instructors for the review course.

As usual, it will be an opportunity to network with industry professionals and discuss the latest in mechanical engineering issues facing our profession and the construction industry.

The meeting is open to all mechanical engineers interesting in joining and all friends of the section. For more information on future events, please visit [www.sections.asme.org/hawaii](http://www.sections.asme.org/hawaii) or call Edmund Chang or Raymond Liu at the numbers listed in the website.

#### OCTOBER 15, 2006 - REDICATING OURSELVES TO THE PROFESSION

The quiet Sunday morning of October 15, 2006 rocked and awakened the entire state of Hawaii as a magnitude 6.6 earthquake hit the Big Island of Hawaii just 10 miles northwest of Kailua-Kona at 7:07am.

This historic event triggered an island wide power outage when HECO's Honolulu and Kahe power plant tripped off-line, causing the HECO's computer systems to automatically shut down the entire power system to prevent further damage. HECO's dedicated employees immediately began the methodical and prudent approach, working until 1:55 a.m., to restore power to most of its 291,000 customers.

The rest, as you know, is history when it made national headline news – focusing on our island's precarious power generation situation. Needless to say, this event demonstrates the need not only for emergency preparedness to safeguard our family and personal property, but as mechanical engineers, to renew our dedication to our profession. It was fortunate that the earthquake occurred on a Sunday, with astoundingly very limited injuries. It was reported that one death was related to the earthquake, but it could have been worse.

With our local economy booming in the construction and building industry – along with the increase in demand for power generation - how do we meet the state's need to sustain responsible growth for the next generation? Certainly, it will take a "mixture of energy solutions" such as renewable energy and fossil fuel generation to make an impact on our energy needs. But with the extreme shortage of construction professionals in the state, let alone qualified mechanical engineers, how do we meet that need?

Perhaps the "solution" lies in renewing ourselves to our profession by participating and getting involved with ASME Hawaii and its section activities. Of course, this not only applies to mechanical engineers, but to all professional engineering societies within our state of Hawaii which we call home.

But how does participating in ASME Hawaii section activities benefit today's mechanical engineer? It through a combination of education and training; mentoring the next generation of engineers by participating in career day fairs; it is by conducting technical seminars and workshops; and, it is by supporting the foundations of engineering – math and science. The bottom line – it is by getting involved and supporting the section.

Our profession isn't a cure all for the challenges facing our state, but it sure can make a positive impact to increase the level of protect to life and property while increasing the standard of living for our island community.

This has been the purpose of the American Society of Mechanical Engineers since 1880, and will continue to be for ASME Hawaii as we move ahead to face the future. To get involved with the section, please visit our website at [www.sections.asme.org/hawaii](http://www.sections.asme.org/hawaii) or email Edmund Chang at [edmund.chang@heco.com](mailto:edmund.chang@heco.com) or Raymond Liu at [rliu@cdoca.com](mailto:rliu@cdoca.com).





P.O. Box 88840  
 Honolulu, HI 96830  
 Website: [www.acechawaii.org](http://www.acechawaii.org)

#### 2006-2007 OFFICERS

|            |   | Phone    | FAX      |
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| President  | Barry Jim On  | 521-3773 | 521-3993 |
| Pres-Elect | Jon Nishimura   | 944-1821 | 946-9339 |
| Treasurer  | Norman Kawachika  | 531-1308 | 521-7348 |
| Secretary  | John Katahira   | 596-7790 | 596-7361 |
| PastPres   | Janice Marsters   | 484-5366 | 484-0007 |
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| Directors  | Sheryl Nojima   | 521-0306 | 531-8018 |
|            | Douglas Lee   | 523-8499 | 533-0226 |
|            | Terrance Arashiro   | 533-3646 | 526-1267 |
| Exec.Dir.  | Ginny M. Wright   | 741-4772 | 234-1721 |
|            | Email: <a href="mailto:gwright@acechawaii.org">gwright@acechawaii.org</a> |          |          |

#### Dates to Remember:

**October 31** Board of Directors Meeting – SSFM International Conference Room

**November 9** November General Membership Meeting / Workshop (9:00 am to 1:00 pm): **“Contractor Integrity Program Workshop”**

**December 3** Engineering Excellence Awards

**December 13** NAVFAC Symposium

#### New Business and Committee Reports:

November's monthly meeting will be combined with a ½ day workshop focusing on Ethics Training as it relates to business practices and procurement. The program will be followed by lunch.

ACECH is anxiously waiting the completion of our new web-site which should be completed in November. The web-site will be informative as well as interactive allowing members to register for programs on-line. The web-site will also have links to other web-sites and valuable resources.

Pacific Business News will feature an 8 page section in December highlighting the accomplishments of Engineers and the ACECH Engineering Excellence Awards.

Update on Defend Clause: ACECH met with the State Small Business Regulatory Review Board (SBRRB) on September 20th and is scheduled to meet again on October 18th to discuss the impact of the “Defend” clause in State contract language and its negative effect on Small Businesses. Initial meetings appeared to be favorable. Further updates to follow.

Make your plans now to attend the 2006 ACECH Engineering Excellence Awards Banquet, ‘The Academy Awards of our Industry’. The Awards banquet is scheduled for December 3, 2006.

Kick off meeting for planning of the 2007 State AE Symposium to be held on 18 October 2006 (11:00 am at the Navy Marine Golf Club House). The State Symposium is scheduled for February and will feature break out sessions by the State DOT, DAGS, DOE, and DLNR (and possibly University of Hawaii).

#### Old Business

Our October membership meeting featured Mrs. Barbara Wong, Executive Director of the State Campaign Spending Commission. She provided a very interesting discussion on campaign contribution laws as it relates to individual donors, corporate donors, and donations to Political Action Committees. Many thanks go out to her for having lunch with us and for spending time with ACECH.

ACECH is still looking for volunteers to sit on the new UH Liaison committee.



#### 2005-2006 OFFICERS

|                |                 |
|----------------|-----------------|
| President      | Greg Hiyakumoto |
| Vice-president | Paul Won        |
| Secretary      | Steven Yoshida  |
| Treasurer      | Robert Nehmad   |
| Director       | Wayne Yoshioka  |

#### September Meeting Highlights

The September luncheon meeting was held on September 21, 2006 at the Honolulu Municipal Building. The guest speaker was Don Kitaoka, Deputy, City and County of Honolulu Corporation Counsel, who spoke about professional liability. Mr. Kitaoka's presented several cases including the Taylor-Rice case to illustrate how professional liability has increased for professional engineers/designers. He explained that there are three steps in determining if someone is liable. These steps entail determining if the plaintiff had a duty, whether there was a breach of that duty, and if that breach caused harm. If the court determines that someone is liable, damages are then determined based upon what it would take to bring someone/something back to pre-accident condition. With regards to the Taylor-Rice case, the driver of the vehicle was drunk, speeding, and evading police when he hit a utility pole killing two people. The State was found to be

only 25% liable, however, since there had been an accident in the same vicinity previously and the State had resurfaced that section of the highway prior to the accident, the court determined that the State had prior notice regarding deficiencies at that location and had not rectified them. As such, the State was found joint and severally liable and had to cover whatever damages the other liable parties were unable to pay.

#### November Meeting Announcement

The November Section meeting date, location, and guest speaker will be announced at a later date. Meeting notices are forthcoming.



[http://www.eng.hawaii.edu/~hals/hals\\_001.htm](http://www.eng.hawaii.edu/~hals/hals_001.htm)

#### 2005 HALS BOARD

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 Vice Pres. - Ross Tanaka  
 Secretary - Dan Hirota  
 Treasurer - Eric Hee  
 Director - Joanne Williamson  
 Director - Alva Nomura  
 NSPS Gov. - Pat Cummins  
 Membership: 192 regular, 21 sustaining, 2 honorary, 5 life, 41 governors



## Engineers Week 2007

### Call for Exhibits

by the Hawaii Council of Engineering Societies

Your company/organization is encouraged to create a display that will increase public awareness and appreciation of the engineering profession. In the past, displays have included posters, 3-D models, and interactive systems.

- Exhibits will be displayed at Kahala Mall Shopping Center from Friday, February 16th, 2007 through Monday, February 26th, 2007.
- Entries will be judged on presentation, technical merit, and promotion of the engineering profession.
- Awards will be presented for each of the aforementioned categories at the Engineers Week Banquet on Saturday, February 24th, 2007.

Fax or email completed forms to Cathy Leong at (808) 946-2277 or [cleong@wilsonokamoto.com](mailto:cleong@wilsonokamoto.com) by **January 15, 2007**.

Company Name/Organization/School

Contact Person

Phone

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Please attach a one to two paragraph summary describing your display (size and content). Also indicate any special needs that your display may require (i.e. table, electricity). You will be contacted to confirm the availability of the requested items.

Exhibit set-up is tentatively scheduled for Friday (2/16) with breakdown scheduled for Monday (2/26).

## KNOW YOUR ASCE HISTORY

by C.S. Papacostas

### "SLUICING IS MUCH CHEAPER"

The early 1900s requirement to use only "citizen labor" on public projects that I discussed last month (October 2006) was not without its opponents who supported their position on grounds of labor availability and cost. When the Maui News objected to the requirement, the Hawaiian Star [HS, 10/4/1904] quoted the Territory's Secretary Alatau L. C. Atkinson to retort that contractors "can get all the citizen labor they want if they will pay a fair price. Perhaps it may cost them more than it would for Japanese labor but that has nothing to do with the question."

To deal with the issue of labor availability, the Superintendent of Public Works, C. S. Holloway, proposed a procedure "to employ Asiatics" on public projects when citizen labor was truly unavailable, but to also ensure that cost savings resulting from the lower wages earned by them accrued to the Territory rather than the contractor [HS, 10/28/1904].

The construction of the "Big Dam" at Nu'uany Reservoir No. 4, however, commenced on July 29, 1905 with citizen labor only [HS, 8/15/1905], despite strong opposition to its construction and design adequacy [EB, 7/8/1905].

On Sept. 26 of that year, the HS carried the front-page headline "Nuuanu Water Undrinkable," describing it as a "liquid containing mud enough to make it the color of a weak tea." This condition was caused by sluicing operations at the dam that allowed soil to enter the surface water supply. Assistant Superintendent J. H. Howland all but dismissed the contaminants as "clean dirt," but the executive officer of the Board of Health, Dr. J. S. B. Pratt, left that same afternoon with chemist R. A. Duncan, Food Commissioner and Analyst, to examine the Nu'uano water supply. Holloway announced to the Evening Bulletin [EB, 9/27/1905] that sluicing was the preferred method of construction as it cost 15 cents "a square yard" vs. 56 cents "by other methods" and that he took immediate action to supply artesian water by pumping as much as possible.

On the following day, the HS reprinted Duncan's report to Lucius E. Pinkham, President of the Board of Health. Duncan found that "the contamination due to the sluicing operations ... consists of an increase of double the solid matter and a very large increase in highly objectionable organic matter" and that "the use of water contaminated with earthy and organic matter may possibly result in decease." However, "from Mr. C. H. Smith, the government engineer, we learned that within one hour of our visit on Tuesday [the 26th] the sluicing operations were discontinued and when again begun provision will be made to prevent contaminated water reaching the reservoirs." Nevertheless, noting that not all consumers could be served by pumping, the Sept. 29 HS leveled an accusation that "the authorities allow a favored contractor to sluice soil instead of carting it away."

On Oct. 7, Pinkham reported to the Board of Health that "the Department of Public Works has kindly consented to permit the Board to examine the arrangements now being installed for the protection of the water supply before further sluicing is undertaken." In November, the Board approved a recommendation by Pinkham to forbid fishing in Nu'uano Stream [EB, 11/23/1905] and at the Dec. 20 meeting of the Board he concluded "in company with Dr. Pratt and Analyst Duncan, I, this morning, made a thorough investigation of conditions at the new Nuuanu reservoir. With the carrying out of our recommenda-

tions, there can be no contamination of the water supply" [HS, 12/21/1905]. Earlier, the HS [10/18/1905] had disclosed that "boys bathe in Nuuanu Stream," despite a prohibition, adding that "possibly the amusement of a few kids on a Sunday does not seriously affect the water but then the idea is not a nice one." At about the same time frame, various individuals and entities, including the Hawaii Medical Society, strongly endorsed the filtering of drinking water as a defense against typhoid fever [EB, 11/20/1905] but, as reported later, the Legislature had not, as yet, made an appropriation for a proposed filtration plant [HS, 5/2/1906].

As things appeared to calm down, a short newspaper article stated "the discovery of a number of surface springs in the workings at the new Nuuanu reservoir have been giving the men there considerable trouble recently, but there seems to be no reason to believe that there will be any permanent difficulties to dispose of in the course of the work." Holloway characterized the springs as merely "a nuisance during the rainy season" [HS, 1/29/1906] but a future article in this series will show that this was not a very accurate assessment of the situation.

To add to the accumulating construction difficulties, then Acting Governor Atkinson, due to Honolulu-born George Robert Carter's illness, "has taken up the matter of the long delay in completing the Nuuanu reservoir dam" [HS, 3/23, 1906]. He visited the site with Lou Whitehouse, the contractor, and F. E. Thomson, the contractor's attorney, and concluded "there seems to be many troubles over specifications and other matters." About three weeks later, Holloway, speaking to the Pacific Commercial Advertiser of April 11, 1906, attributed some of the delays to a lack of rainfall:

"Work is progressing very slowly because of the water shortage. We have no water with which to sluice in the mud and all the material is placed by hand. That is expensive and slow. Sluicing is so much cheaper."

But this turned out to be only the tip of the iceberg!

Do you know of a civil engineering accomplishment or event that your fellow ASCE members might find interesting? Please send a brief description to C.S. Papacostas (fax 956-5014, email [csp@wiliki.eng.hawaii.edu](mailto:csp@wiliki.eng.hawaii.edu)). Previous articles in the series may be found at the Section's web site. Just point your browser to <http://www.ascehawaii.org>.

### ASCE, from page 4

Engineer, Civil Engineer, & CAD Operator - Wailuku)

For more information on these job listings, please visit the ASCE Hawaii Section's webmail list at <http://www.ascehawaii.org/jobs/jobs.html>.

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### REGION 8 GOVERNOR VACANCIES

There will be two Region 8 governor seat

vacancies for 2007 - 2008. Anyone interested in serving in a leadership role in Region 8 is encouraged to contact a member in the Executive Committee by the end of 2006.

### LGSEA, from page 7

Resort at 12nn on November 3 for the HPSFA Big Island Chapter members. For more information, please contact Mardie Torres at (808) 4851400 or visit [www.hawaiisteel.com](http://www.hawaiisteel.com).

### National CFSEI Update

Last month, CFSEI Hawaii Chapter President Tim Waite and Vice President Brian Enomoto attended the METALCON in Tampa, Florida and represented the chapter at the annual meeting of the newly-named CFSEI (formerly LGSEA). As a council of the Steel Framing Alliance (SFA), the CFSEI is the industry's home for design professionals who are actively designing cold-formed steel structures, and those who are interested in improving their knowledge and skill in cold-formed steel design. Visit [www.lgsea.com](http://www.lgsea.com) for new information.

### CFSEI Supports PACRIM 2007

CFSEI – Hawaii Chapter is actively participating in the 2007 Pacific Rim Steel Framing Conference (PACRIM 2007) to be held March 14-17, 2007 at the Hilton Waikiki Prince Kuhio in Honolulu, Hawaii. The conference will coincide with the 2007 Spring Forum of the national Steel Framing Alliance and annual national meetings of both the Cold-Formed Steel Engineers Institute and the Committee on Framing Standards. Leading experts in cold-formed steel engineering and design, as well as cutting-edge researchers will be in attendance. A wide variety of seminar tracks to attract the building designers, contractors, and homebuilders. Speaker from around the world will address topics on economics, home forecasts, architectural and engineering issues, and new construction tools and technologies. The chapter is organizing four (4) technical seminars, namely, latest research updates on cold-formed steel (CFS), update on CFS design standards, diaphragm & shear walls in CFS, and mid-rise load bearing structures. Visit [www.hawaiisteel.com](http://www.hawaiisteel.com) for more details.

See you at PACRIM 2007 (March 14-17, 2007)!



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**OCEA Award Winning Project: Design-Build AEF FOL Aircraft Maintenance Hangar, Andersen Air Force Base, Guam.**



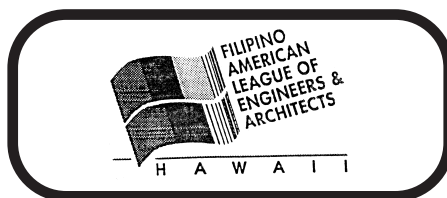
**OCEA Runner-up Project: Ford Island 46kV Subtransmission Line, Pearl Harbor, Hawaii.**

**ASCE OCEA, from page 1**

a two-mile, double circuit 46kV cross linked polyethylene (XLPE) line extending from mainland Oahu to an electrical substation on Ford Island. Approximately one mile of the line runs parallel to the Admiral Clarey Bridge and is installed below the Pearl Harbor channel floor. For the first time in Hawaii, horizontal directional drilling (HDD), a technique normally utilized to install civil utilities, was used to install underground subtransmission electrical cables. HDD is a technique that involves drilling a pilot hole underground, enlarging the drilled hole with a reamer, lubricating and clearing the reamed hole with a swab, and specifically for this project, finally pulling a steel casing through. In the Ford Island project, two 36-inch diameter tunnels were created 65 feet under the Pearl Harbor channel floor.

Through each tunnel, a 24-inch diameter steel casing containing six high-density polyethylene ducts (3 for XLPE cable, 1 for spare, 1 for fiber optics, and 1 for ground wire) was pulled back using a 750,000-pound drill rig. The project took nearly four months to construct and is the longest continuous underground 46kV installation in Hawaii and possibly one of the longest in the world.

The Subtransmission Line was installed as part of a \$22 million electrical upgrade completed by Hawaiian Electric Company. The upgrade was required to meet future electricity demands to support the U.S. Navy's plans to renovate and modernize Ford Island. The upgraded system will provide 40 MVA of capacity to Ford Island, home of a Navy-Marine Corps Intranet nerve center.



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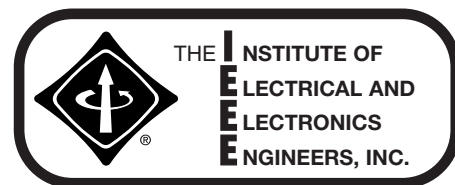
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