

THE FRANCIS RHODES MONTGOMERY DESIGN COMPETITION

In conjunction with the Department of Mechanical Engineering (DME) UHM ME 482 Project Design course, the ASME Francis R. Montgomery Design Competition was held May 9, 2003 in the Kuykendal Hall auditorium. Four ME student teams competed.

This design competition was established in 1987 in memory of Francis Rhodes Montgomery to further the field of Mechanical Engineering. It is aimed at the student of Mechanical Engineering with the goal of recognizing and rewarding innovative design efforts, the practicality of the design, and the ability to present the design in a clear and understandable manner. The design project presentations are judged on the basis of content, organization, delivery and effectiveness, and simple prototype.

The judges included Charles Calvet, Ron Flegal, and James Grogan. Charles Calvet is the Gas Company Manager of Engineering. He is also a member of the DME UHM, Industry Advisory Board. Ron Flegal is Associate Professor of Engineering at Leeward Community College. He has the distinction of being one of the first DME UHM students to compete in the F. R. Montgomery competition back in 1987. James Grogan is the Hawaii Section outgoing chairman. He is a retired Field Engineering Manager (Nuclear). Professor Mehrdad Ghasemi Nejjad is the course instructor and also the ASME Faculty Advisor.

The awards for this competition increased substantially from previous years. First place was \$1,000, second \$400, third \$300, and fourth \$200. The \$1,000 went to the "ASME Design 1" team of Weston Fujii, Cory Soon, and Irwine Young.

Following are brief descriptions of the projects in the order of placement.

ASME DESIGN 1

This team competed in the ASME Region IX Design Competition in UC Davis in April 2003 in which a surface mining company sought the development of a device that can reduce the energy consumption of material handling equipment used in their mountain mining operation. The device must be able to lift ore from an open pit mine up to a desired elevation.

The project objective was to design, analyze, manufacture, and test a prototype system that will use the gravitational potential energy stored in two liters of water to lift and deposit simulated ore, long grain rice.

MINI BAJA

Team members were Luke Beaver, Kurt Boehm, Raymond Ku, Matt Miyamoto, and Stan Tomimoto. The project objective was to develop a single-seat off road vehicle capable of maneuvering over rough, rocky, and wet conditions using a space frame formed out of 1-inch diameter chromoly steel. A prior year model was analyzed and tested to determine where improvements were necessary. ANSYS simulations as well as AutoDesk Inventor and AutoCAD computer Aided Design software were used to model a more compact frame. Testing has indicated that the new design will improve most aspects of the prior year model.

HUMAN POWERED VEHICLE (HPV)

Team members were Thadd Beltran, Clyde Campos, Shaun Kagawa, Tina Lee, Kevin Murata, Randy Sakagawa, and Miko Suzuki. This team competed in the 2003 ASME/HPV competition at UC Davis, April 25-27, 2003. This is an annual competition sponsored by ASME International throughout its regions. The project objectives were to design, analyze, construct, and test the HPV with the design objective to construct an innovative, high strength frame of adequate stability, while minimizing total weight. The fairing had to be rigid, aerodynamic, strong, and lightweight.

(continued on page 9)

ASME-HAWAII SECTION 2003 OUTSTANDING ACHIEVEMENT AWARD

For its eighth year, the Hawaii Section of the American Society of Mechanical Engineers (ASME) presents its 2003 Outstanding Project Achievement Award to the "Destruction of Medical Waste using Plasma Arc Technology (PAT)" project. The Meritorious Award is presented to the "NOA, Double-Hulled Fuel Oil Tank Barge" project. These projects contain mechanical engineering aspects that deserve recognition for their outstanding contributions to Hawaii.

ASME-HI presents these annual awards to projects or designs relating to mechanical engineering within the Hawaii Section area. The Hawaii Section covers a large Pacific Rim area, which includes Hawaii, Guam, and American Samoa. A panel of independent judges selects the annual awardees based on which project or design provides the greatest benefits to owner and customer in economics, social, and environmental aspects and shows outstanding use of mechanical engineering principles. The descriptions of the ASME- HI 2003 outstanding projects are as follows.

DESTRUCTION OF MEDICAL WASTE USING PLASMA ARC TECHNOLOGY (PAT)

Hawaii Medical Vitrification (HMV) has developed a medical waste destruction technology and offers medical waste disposal services using PAT. The HMV facility is located in Campbell Industrial Park. On May 25, 2002 ASME-HI attended a tour of the HMV facility conducted by Deborah Morishima and Craig Gorsuch of HMV. On October 9, 2002, Craig Gorsuch made a presentation at an ASME-HI meeting. The following are some information provided.

Safely disposing infectious medical waste is important for all regions of the world. The health risks affect people and the environment. Before PAT, disposal options in Hawaii were limited to autoclaving, incinerating and landfilling. HMV conducted extensive research and tests using PAT to destroy medical waste.

PAT uses AC and DC electricity to generate 15,000 °F temperatures in a controlled system to efficiently breakdown waste into elemental compounds (H₂, N₂, CO, CO₂, CH₃, etc.). The engineered system maintains a stable hot plasma arc vapor to not only breakdown organic and inorganic waste, but also prevent reformation of compounds. The gasification heat reaction is endothermic and generates virtually no emissions. The clean technology is capable of destroying an array of waste materials but is ideal for medical waste.

PAT end products from



Medical waste moving down the conveyor to be processed by the PAT facility



ASME participants at the stern of the huge NOA hull.

(continued on page 9)



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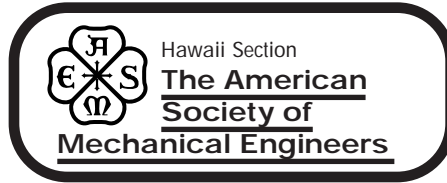
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FRANCIS R. MONTGOMERY COMPETITION

The F.R. Montgomery Fund is procuring a perpetual trophy that will be displayed in the Department of Mechanical Engineering showcase in Holmes Hall. It will have the names of the first place teams and members since the beginning of the competition in 1987.

It was approved during the June 4, 2003 meeting that the new Montgomery Fund trustees should be the Section Immediate Past-Chairman, the Treasurer, and the Secretary. The documents for transferring signatory responsibilities are being routed for signatures.

Prizes for the competitions such as ASME membership, and PE Review reference books were suggested along with the monetary awards.

HAWAII SECTION CHAIRMAN CHANGES

CAPT Joe Bradley is being transferred to the Puget Sound Naval Shipyard. His new job is Operations Officer in which he will be responsible for the planning and execution of all ship and submarine work at the yard. This involves approximately 1.4- million man-day per year. CAPT Bradley leaves his position as Production Resources Officer at Pearl Harbor Naval Shipyard.

This transfer was not expected so soon at this time. CAPT Bradley had planned to complete a full term as Hawaii Section Chairman. His role as Hawaii Section Chairman will officially end July 31, 2003.

Moving up from the Vice-Chairman position to Chairman is Raymond Liu. Raymond received his BSME from UHM in 1993. He is with Cedric D.O. Chong & Associates as a pro-

The Engineering Alumni Association of the University of Hawaii (EAAUH) is pleased to present the members of its 2003-2004 Executive Board, as listed above. The officers were elected and installed at the Annual General Meeting held on June 18, 2003 at the Honolulu Country Club. Outgoing President Jamie Hikiji reviewed the past years activities and Dean Wai-Fah Chen outlined the highlights of and major issues facing the College of Engineering.

The Executive Board extends a special Mahalo to Ted Liu, Director of the State Department of Business, Economic Development and Tourism (DBEDT), and Maurice Kaya, Chief Technology Officer of DBEDT. They presented DBEDT's purpose, which is to provide leadership, policies, and incentives to revitalize Hawaii's economy. Of special interest was DEBDT's view of the importance of the College of Engineering in providing quality engineers for Hawaii's workforce in new and expanding markets. They presented an optimistic view for a dynamic business environment for engineers.

The Executive Board would like to thank Dean Wai-Fah Chen, and his staff members

ject mechanical engineer. He currently participates in the Waikiki Toastmasters and ASHRAE. He is a past-President of the Leeward Oahu Junior Chamber of Commerce. A new Vice-Chairman has not yet been selected.

The Hawaii Section thanks CAPT Bradley for his wisdom, guidance, and contributions to the Section. We wish him success and good fortune in his new job.

2003 SUMMER FLUIDS ENGINEERING CONFERENCE

The ASME Fluids Engineering Conference is planned for July 6- 10, 2003 at the Sheraton Waikiki. In participation with the conference, the Hawaii Section is arranging for a tour of the Hawaii Fuel Cell Testing Facility for interested conference attendees. The tour will be on Thursday afternoon, on July 10. The state-of-the-art test facility to test hydrogen fuel cells is located on HECO's Ward Avenue property. It is a joint project with partners HECO, the Hawaii Natural Energy Institute (HNEI), UTC Fuel Cells and the Office of Naval Research. Arrangements are being made through Rick Rocheleau, HNEI Director.

KAKAAKO PUMPING STATION "ENGINEERING IN HAWAII" MUSEUM

One of Jim Grogan's last activity as Hawaii Section Chairman was drafting and sending a letter to Governor Linda Lingle on the engineering museum concept. Ather Dar had mentioned the museum to the Governor during the Governor's Roundtable Discussion on Procurement earlier this year. The Governor had suggested that a request be submitted in writing. Jim Grogan attached a pamphlet and photos of the Baltimore Public Works Museum at Baltimore, Maryland Inner Harbor that he toured and believes a similar facility would be appropriate for the Kakaako abandoned pumping station. The purpose of this letter is to request a meeting with the appropriate people in the Governor's administration to form a working group to pursue the engineering museum concept.

FUTURE ACTIVITIES

The following are activities that are planned: August or September 2003: ASME Distinguished Lecturer - William L. Dean, P.E., on "The Engineer as an Independent Business Person: How to Start Your Own Engineering Company."

Carrie Matsuzaki, Fay Horie, Cheryl Sato- Ishii, and Dennis Yamauchi for their assistance in organizing the Annual General Meeting. Their unwavering support and generosity for all that we do throughout the year is greatly appreciated.

26th ANNUAL ENGINEERING ALUMNI ASSOCIATION GOLF TOURNAMENT

Reminder to all golf tournament participants! This year's tournament will be held on Friday, July 25, 2003, at the Leilehua Golf Course. This annual event is held to raise money for the EAAUH Scholarship program. This year's tournament, as always, will be full of fun, fellowship, and PRIZES, so don't be late!

EAAUH WEBSITE

Don't forget to visit our website at www.eaauh.org for information on upcoming events and EAAUH news. View photos of the Las Vegas trip, last year's golf tournament, and other events. Post some messages on our bulletin board. Employers: Do you have positions to fill? Post job listings on our website! It's easy to do, and it's FREE! There's a lot to look at, so check it out!



www.eng.hawaii.edu/~hspe

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HSPE STATE BOD MEETING

JUNE 14, 2003 HELD AT KINGS GRILL AT WAIKOLOA, HAWAII

GOAL EIGHT: GOVERNANCE

National President Howard Blitman was asked to address the group. He discussed how to handle membership in a new way by setting a new direction. He discussed getting industry to recommend engineers to join NSPE to help give some kind of certification to individual engineers. Suggestion was that we should try and tap new members from industry. There is a need to change the way we do things. Dues for example, could be paid on a monthly basis to help those who are on a tight monetary schedule. Continuing education for continued certification is another example of change. In New York State, 12 pdh credits is required a year. There was a discussion on how to meet these requirements. Howard also briefly touched on Mathcounts and how he was impressed with the efforts that have been made on Mathcounts.

Ken Rappolt reported on preparation for attendance at the 2003 Annual Meeting. Various members will be attending the meeting in San Antonio. Discussion was held with regard to manning of the Hawaii Booth.

Bruce Witcher reported on the upcoming Western Region Meeting to be held in September on the Big Island. He handed out a preliminary agenda for the meeting for discussion. The meeting will be held at the Keauhou Beach Resort. Primary areas of discussion were the Lunch on Friday and the Dinner on Saturday.

Treasurer's Report: Ken Rappolt handed out the income statement for the period 7/01/2002 to 6/13/2003. He reported that dues and collections were down and did not meet expectations. Overall we had a balanced budget with slight variations.

Secretary's Report: Alva Nakamura reported on the Election Results. We had a total of 7 ballots that were submitted, including one ballot from Maui and one from the Big Island. There were no write-in names. Some chapter representatives mentioned that hard copy voting was done in parallel. Alva noted that the next Board might consider how to promote better use of the web-based voting next year.

Chapter Reports:

Maui: Eric Yamashige issued a summary of the year's events on Maui and made a brief report.

Request from David Smith NSPE Membership Retention: In reviewing and discussing David's request for dues, tax and PAC information, it was decided that there would be no change in the dues structure, tax and PAC information. A. Nakamura will report back to

David regarding the Board's decision.

GOAL TWO: COMMUNITY SERVICE

Scott Seu reported on the scholarship award to 10 students. Eight of the ten recipients were from the Public School sector. Some of the awards were presented in person to students by representatives of HSPE.

Golf Tournament: The Hawaii Prince Golf Course will be the location of the upcoming Golf Tournament fundraiser on September 26. R.M. Towill will be coordinating the event. Scott and Sheryl will be attending the monthly meetings.

Education Fund: Scott will replace Sheryl as chair of the Education Fund.

GOAL FIVE: GOVERNMENT RELATIONS

Scott reported and discussed briefly on the 2003 legislative wrap up from Mike Street. Among the items discussed was that the Continuing Education bill did not pass.

A request from the American Consulting Engineering Council of Hawaii for \$500 was discussed. The Board supported the request in general, but as it was not budgeted for in the 2002-2003 year, further review was necessary to determine where the money would come from.

GOAL NINE: MEMBERSHIP

Curt Beck reported that there were 267 members presently which is a slow declining trend.

It was decided that HSPE will not get involved in Long Term Care Insurance offerings for its members. Besides that the National Society has these offerings, concerns on liability, endorsing one company over another, and administering the offerings were raised.

GOAL TEN: LIASON ACTIVITY

Sheryl will be representing HSPE as the HCES Representative. She will review criteria for the Engineering Week awards program.

OTHER GOALS: There were no other items to discuss.

High Temperature Energy System: There was a short presentation at the Outrigger Waikoloa Marriot of this new energy technology by Pacific Energy. Curt Beck arranged this presentation.



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LTJG Jeremy Ramberg, CEC, USN

For CONSTRUCTION CAMP:

available



PROVEN RESULTS

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JULY MEETING NOTICE

Speaker: Ray Davis, ITE International Director for District 6

Date: Thursday, July 3, 2003

Time: 11:45 a.m.

Location: Maple Garden Restaurant

Address: 909 Isenberg Street

Topic: Current Activities of District 6 and at the International Level of ITE

Cost: \$15.00 for Members/Guests and \$10.00 for Students

Please call Susan Uejo at phone 521-5361 or send email message to suejo@beltcollins.com by noon, Friday, June 27, 2003 to make your reservations. Payment will be collected at the meeting.

APRIL 2003 MEETING HIGHLIGHTS

At the April 24, 2003 meeting, Dr. Ricardo Archilla, an Assistant Professor at the UH Department of Civil and Engineering, spoke about how the lack of appropriate traffic engineering measures results in higher accident rates in Argentina when compared to the United States (US). Dr. Archilla gave a slideshow presentation of typical Argentina cities and roadway facilities. From his rough estimates, Dr. Archilla believes that Argentina has an accident rate of more than five times of the US, after accounting for differences in population and travel statistics.

Dr. Archilla indicated that the lack of traffic control devices, such as stop signs, lane demarcation or inadequate sight distances make it difficult to determine who has the traffic right-of-way at intersections. There are problems of mixed modes — automobiles, bicycles, scooters and pedestrians sharing the roads. For instance, joggers like to jog on the freeways. Also, Argentinian people like to socialize so it is common for motorists to stop along the roadway and talk to friends they see walking along the road.

Argentinian standard roadway designs were adopted many years ago and have not been modified for recent changes that would improve safety. Road construction cost is still a very important factor and the local highway departments resist change that would result in higher cost. For instance, there are no guardrails along mountainous roads that have no shoulders.

In the rural areas, people may herd animals across or alongside roads and motorists have to be patient and wait to maneuver around the animals. Motorists have been killed in high-speed accidents with large animals. Seat belt usage is low in Argentina.

Dr. Archilla noted that he had accepted the poor roadway and intersections facilities as normal conditions when he was growing in up in Argentina. After Dr. Archilla had lived in the US for awhile and returned home for a visit, then he began to recognize the great differences in US and Argentinian roadway designs. He has visited Argentina agencies to let them

know what he has learned about improved safety designs, but change is slow in Argentina when the country has economic problems that have a higher priority for the public sector.

MAY 2003 MEETING HIGHLIGHTS

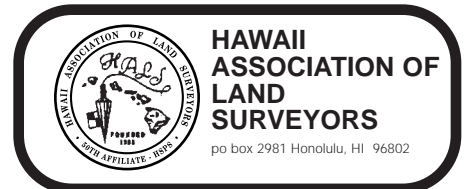
At the May 15, 2003 joint dinner meeting with ASCE, Rodney Haraga, Hawaii DOT Director, spoke presented short-term goals and long-range plans for the Airports, Harbors and Highways Division. For the Harbors Division, new cruise ships will require rehabilitation of Piers 1 and 2 at Aloha Tower. Also, improvements are planned for Nawiliwili, Hilo and Kahului Harbors. An intra-island ferry is being planned for commuters on Oahu. The State DOT is also considering proposals for inter-island ferry that would carry about 900 passengers and 200 cars; possible one-way fees between Maui and Oahu are \$65 for passengers and \$90 for vehicles. A \$17 million fishing village will open in Honolulu Harbor in April 2004 and it will have an open fish market with auctions in the early morning.

For the Highways Division, the draft version of the new federal transportation legislation, called "SAFE TEA" is being reviewed. Currently, it proposes to spend about \$247 billion on highway projects across the nation in the next 6 years. Hawaii share of these funds would start at \$134 million and increase to \$162 million, or a total of \$905 million for the State of Hawaii over a six-year period. Mr. Haraga indicated that Hawaii would be asking legislators for greater funding, especially for traffic mitigation.

The Nimitz Highway contraflow four-month demonstration program will begin in August or September 2003. The Waimalu Bridge widening in the Pearl City area is going out to bid soon. Major Neighbor Island projects include Kapaa Bypass on Kauai, Mokulele Highway widening on Maui (which is already under construction) and Queen Kaahumanu Highway widening from two to four lanes on the Big Island. The North-South Road in Ewa, Oahu will be constructed along with the widening of Fort Weaver Road from four to six lanes. In August or September 2003, the Highways Division plans to start freeway patrols to remove accidents or stalled vehicles from the travel lanes on the State highway system during weekday daylight hours.

Internally, the DOT is looking at developing Project Status Reports (PSR) to promote accountability among internal DOT staff and the private sector consultants and contractors. Eventually DOT will begin to pursue liquidated damages to keep projects on schedule. The PSR will be placed on the DOT website for easy access by the public. Construction management practices and inspections are also being reviewed.

For the Airports Division, there will be two new gates at Aloha and Hawaiian Airlines at Honolulu International Airport (HIA) as well as new checkpoints and new Wikiwiki buses. The old HIA Bank of Hawaii parking lot will converted for a 30-minute waiting zone with concessionaires for motorists waiting to pick-up arriving passengers. For Kahului Airport, a new check-in area will be established; a new cargo building and alien species building will be constructed and the extension of the runway will be pursued for safety reasons. There will be general rehabilitation for Hilo Airport to fix leaky roofs and the jetways affected by acid rain. For the Lihue Airport, a new baggage handling area is planned. Security practices and management at all airports are being examined to determine how to systematized procedures at all airports, yet still be friendly to passengers.



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HAWAII ASSOCIATION OF LAND SURVEYORS

PRESENTS

"Rules of Construction"

&

"Original Surveys -vs- Retracements"

Saturday July 26, 2003

9:00 am till 3:00pm

on the Big Island (Hilo, Hawaii)

at the Hawaii Naniloa Resort

Sandalwood II Room

Presented by:

Patrick M. Cummins, LPLS

This workshop will look at Rules of Construction, also known as the Hierarchy of Calls, as established by case law and how surveyors and the courts apply these legal principles in analyzing boundaries. Discussion will include the differences between original surveys and retracements, and will look at the legal differences between these types of surveys including guidelines, principles and practices affecting them.

Pat Cummins is co-owner of Hawaii Land Consultants together with his wife, Mary Myers Cummins, LPLS, and has been registered as a professional land surveyor since 1981. His knowledge and experience in boundary surveys dates back to 1969. Pat teaches CE 491, "Professional Land Surveying in Hawaii", at the University of Hawaii, College of Engineering, is a co-author of the NBI handbooks "Boundary Law in Hawaii" and "Boundary Disputes in Hawaii", and has presented numerous workshops on boundaries and Hawaiian Land Matters topics for HALS and ACSM. He currently serves on the NSPS Standards Committee, the ACSM/NSPS ALTA Committee and is Chairman of the NSPS Ethics & Liability Committee.

COST: \$25.00 (Mem.) \$35.00 (Non-Mem.)

(Lunch & coffee are included)

Should you have any questions contact Kevin Kea at 808-531-4252 Ext. 17 or kevinkcpi@hawaii.rr.com.

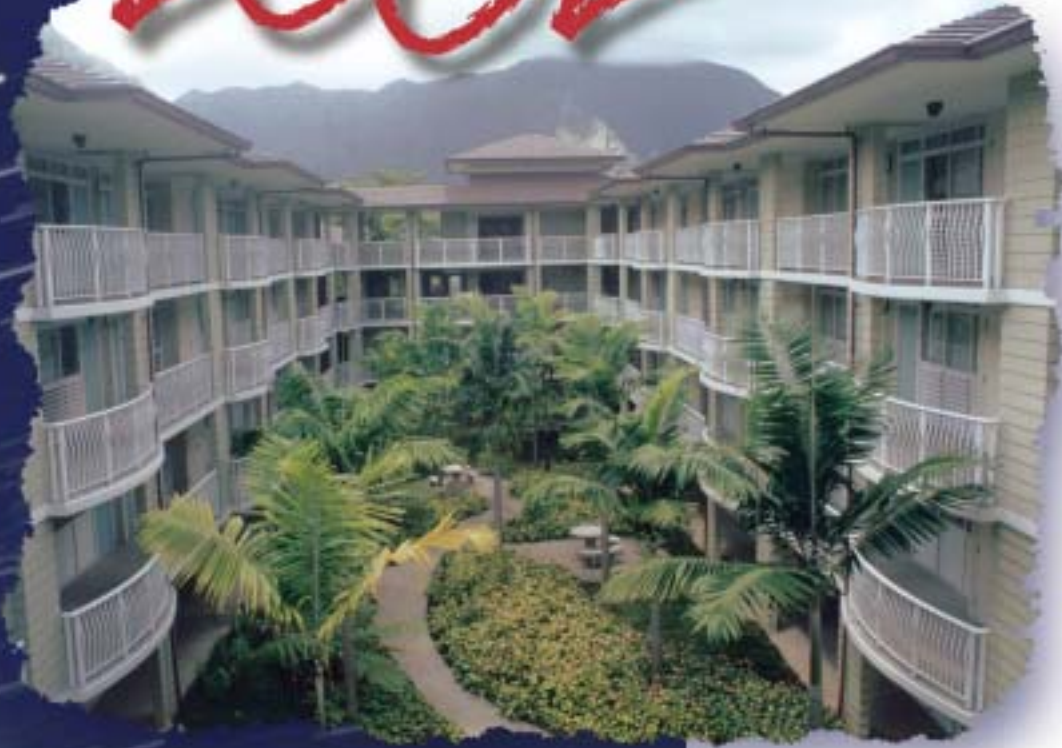
NOTICE

The original Shoreline workshops by Randy Hashimoto (State Land Surveyor) as published in May's HALS newsletter have been cancelled. A new venue has been tentatively set for Kauai and Maui:

Kauai: July 11 (9:30AM - 2:30PM) @ Lihue Civic Center, Moikeha Building, Rooms 2A & 2B

Maui: July 14 (12noon - 4PM) @ Maui County Office of Planning Conference Room

2007



Senior Residence at Kaneohe

The project was built on a long but relatively narrow strip of land that sloped downwards from the street level toward a drainage easement at the rear of the property. To keep a low profile from the street level and still be able to build a 4-story building, the slope was utilized by excavating for the forward half of the structure and building a concrete retaining wall to enable the 1st and 2nd floors to be built below grade. Thus, concrete products were used throughout the structure to provide an attractive and secure building.

NEW LOW-RISE BUILDING AWARD

OWNER/DEVELOPER:
Kaneohe Elderly Housing Project
Limited Partnership

ARCHITECT:
Luersen Architects, Inc.

STRUCTURAL ENGINEER:
Tanimura & Associates, Inc.

GENERAL CONTRACTOR:
Hawaiian Dredging
Construction Company

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JULY JOINT DINNER MEETING WITH SEAOH**Program: Structural Engineering Research at UH - Ian Robertson, Associate Professor, University of Hawaii Department of Civil and Environmental Engineering**

Numerous experimental research programs are underway at the structural engineering laboratory at the University of Hawaii at Manoa. Current and recently completed research topics include:

- Flexural and shear performance of concrete beams repaired with FRP
- Fiber optic instrumentation of FRP repair materials
- Seismic response of slab-column connections
- New innovations in cold formed steel construction
- Research and development of engineered cementitious composites
- Durability of reinforced concrete in marine environments
- Corrosion of galvanized steel fasteners used in cold-formed steel framing
- Development of instrumentation systems for bridge structural monitoring

The presentation will give a brief overview of these projects and explain how other locally generated research efforts can be initiated.

Date: **Thursday, July 17, 2003**

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

Make check payable to ASCE-Hawaii Section. Mail to Lori Fong, ASCE Treasurer, C/O Parsons Brinckerhoff, Pacific Tower, Suite 3000, 1001 Bishop Street, Honolulu, HI 96813, postmarked by Monday, July 14, 2003. Reservations to Lori Fong by Monday, July 14, 2003 by phone at 531-7094, fax at 528-2368, or e-mail at lfong@ascehawaii.org.

EXECUTIVE COMMITTEE MEETING

June 5, 2003

2003 CALENDAR OF EVENTS (subject to change)

August 2003 - Dinner meeting hosted by the Construction Committee

September 2003 - Dinner meeting hosted by the Ocean and Energy Committee

Call for nominations for 2003 ASCE Hawaii Section Outstanding Civil Engineering Achievement Award

The ASCE Hawaii Section annually recognizes an exemplary civil engineering project as the Outstanding Civil Engineering Achievement (OCEA). This prestigious award recognizes the project that best illustrates superior civil engineering skills and represents a significant contribution to civil engineering progress and society.

The 2003 Hawaii Section OCEA Award winner will be announced and the award presented to the project owner at the Hawaii Section Annual Banquet in October. OCEA Awards of Merit may also be awarded. The Hawaii Section OCEA Award winner will be nominated for the 2004 ASCE National OCEA Award to be presented next spring.

Nominations for the 2003 Hawaii Section OCEA Award may be submitted by the individual firms or agencies involved in the project. The project must be located either in the State of Hawaii or in a location that is not under the jurisdiction of another ASCE Section. The level of project completion required to be eligible for the OCEA Award depends on the type of project.

Additional information on OCEA Award eligibility criteria, entry form and other entry requirements may be downloaded from the ASCE Hawaii Section website at www.asce-hawaii.org. Deadline for nominations is Monday, September 9. Please submit six (6) copies of each nomination to Awards Committee Chair Tony Lau at Hawaii Pacific Engineers, 1132 Bishop Street, Suite 1003, Honolulu, Hawaii 96813-2830. If you have any questions, please e-mail Tony at tlau@hawaiiipacificengineers.com or call him at 524-3771.

Call for ASCE National Award Nominations:

The ASCE Hawaii Section is seeking candidates to nominate for the following three ASCE National Awards:

Alfred Noble Prize - Given annually to an ASCE member of any grade, 35 years or younger, for a technical paper of exceptional

(continued on page 8)

**2002-2003 OFFICERS**

	Phone
President	Jeff Kalani jeff_kalani@urscorp.com
Vice-Pres	Jamie Hikiji jamie.hikiji@m-e.com
Secretary	Lori Nishida lnishida@atahawaii.com
Treasurer	Paulette Chang pchang@hawaiiipacificengineers.com
Student Chapter President	Meris Ota merisota@hotmail.com

Next YMF General Meeting

The next two YMF general meetings are scheduled for Tuesday, July 1, 6:00 p.m. at Player's (University Ave.); and Tuesday, August 5, 6:30 p.m. at Monterey Bay Cannery. If you are interested in attending, please call Jeff Kalani at 593-1116.

0.00631 Leagues Under the Sea

By Jeffrey K. Kalani, P.E.

...league - "a unit of distance equal to about three miles..." (The Merriam-Webster Dictionary, 1998).

Trying to escape from the demands of an engineer's work week, seven ASCE Hawaii

(continued on page 8)



YMF Divers (L to R): Loy Kuo, Marty Yuen, and Lori Nishida.

ACI CONCRETE FIELD TECHNICIAN PROGRAM—GRADE I CERTIFICATION

Sponsored by the Cement and Concrete Products Industry of Hawaii

The ACI Certification Program for Concrete Field Testing Technician—Grade I. During Session I, the seminar portion, will include instruction and review of ASTM testing. Session II, the examination, each participant will be given a written and performance examination.

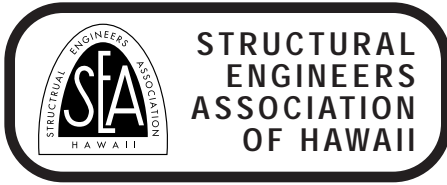
Session I Seminar: Saturday, September 6, 2003 from 8:00am to 2:00pm at Hawaiian Cement (Halawa Valley Plant) Halawa Valley Road, Aiea, Hawaii.

Session II Examination (Performance & Written): Saturday, September 27, 2003 from 7:30am to 1:30pm (specific times to be announced). Location will be Hawaiian Cement at (Halawa Valley Plant).

Registration is \$200 per person and includes seminar, books, and exam. Cost for Session II re-examinations are—written re-examination \$100, and performance re-examination \$125. Class size is limited to 15 people. Registration deadline is Sept. 5, 2003.

For additional information or to register, call CCPI at 848-7100





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

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Director	Ibbotson Kellett	540-1030	526-1989
Director	Les Nagata	951-5916	941-6489
Past Pres	Tom Tanimura	536-7692	537-9022

HIGHLIGHTS OF BOD MEETING

June 5, 2003

Committee Reports:

Randy reported that Rodney Yamamoto confirmed that UH was only able to select one qualified candidate for the SEA OH scholarship this year.

Program committee is looking into the possibility of finding a speaker from DPIC to speak on the subject of mold and contracts.

Old Business:

Randy contacted Laura Moore at Diversify Office Support Services for a proposal to provide administrative assistant services.

Susan presented additional information on CECH's \$500 contribution request to retain a Legislative consultant. CECH retains a legislative consultant at a cost of \$2,500 to track legislative bills and provide insights on bills that affect the engineering community. Other organizations that provide monetary support for this effort include ACECH, ASCE, HWE and HSPE.

Susan presented a 2003 legislative session report from our legislative committee chair person, Clayton Wong. The board discussed the possibility of having the SEA OH Legislative Committee post summaries and pertinent legislative information on the SEA OH website for our members to view.

New Business

SEA OH has begun the electronic distribution of Wiliki in the month of June to those members who elected to receive SEA OH notifications via email. Approximately 150 SEA OH members will receive the electronic Wiliki which will result in a cost savings of approximately \$600 a year. The board is considering going with all electronic delivery of Wiliki and SEA OH correspondences from next year. If you have not received your electronic copy or wish to add your name to the electronic distribution list, please send your email address to seaohwiliki@yahoo.com.

New Member Applications

By unanimous vote, Clyde Omija of Grace Pacific Precast, Inc. was voted in as an allied member.

2003 Calendar of Events

Hot Topics in Masonry Design sponsored by CCPI: Thursday, July 10, 2003 at Pagoda Hotel.

Structural Engineering Research Update at UH-Manoa: SEA OH/ASCE Joint Dinner Meeting, Thursday, July 17, 2003 at Tree Tops Restaurant.

SEA OH Annual Convention: August 8 - 9, 2003 at Manele Bay Hotel, Lanai.

Wood Design Seminar: Tuesday, August 19 at the Pagoda Hotel.

AISC Practical Steel Design Seminar: Thursday, October 2 at the Pagoda Hotel.

Next BOD meeting: Thursday, July 10, 2003, 4:00 p.m. at Zippys Vineyard.

2003 RENAISSANCE BUILDING AND REMODELING AWARD WINNERS TO BE HONORED

Winners of the Building Industry Association of Hawaii's (BIA-Hawaii) 2003 Renaissance Building and Remodeling Awards will be honored at a banquet on Friday, August 1, 2003, at the Renaissance Ilikai Waikiki Hotel Pacific Ballroom. The industry's top construction professionals will be recognized for new construction and remodeling of residential, kitchen and bath, commercial, landscape and historical projects.

The Hawaii Remodelors Council, the remodeling arm of BIA-Hawaii, established the Renaissance Awards event in 1986. Projects are judged based on the strength of the design and project solution, aesthetic, and market appeal; sensitivity to the existing structure, appropriate use of existing building elements; compatibility with the neighborhood; functional

value; and cost-effectiveness. A jury of remodeling industry professionals selects Grand awards. The Carl Reppun Award is presented to a small residential contractor in honor of the chair of the first Renaissance Competition.

American Savings Bank is the presenting sponsor of the 2003 Renaissance Building and Remodeling Awards, along with co-sponsors, The Blue Print Company and Pacific Source. Ms. Carole Kai will be the evening's mistress of ceremonies.

Tickets are \$55 per person or \$550 per table of 10. Please call Tracy Jefferson at the BIA-Hawaii at 847-4666 ext. 206 (or email at council@bia-hawaii.com) for more information or tickets. No host cocktails will begin at 5:30 p.m. followed by dinner and program at 6:30 p.m.



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ASCE, from page 6

merit accepted by the Committee on Publications or a committee of like standing for publication in any of their technical publications. Papers must be prepared by a sole author.

Elmer A. Sperry Award – Given annually to an individual or group in recognition of “a distinguished engineering contribution which, through application, proved in actual service, has advanced the art of transportation whether by land, sea or air.”

Washington Award – Given annually “as an honor conferred upon an engineer by fellow engineers on account of accomplishments which preeminently promote the happiness, comfort, and well-being of humanity.” The award is not restricted by a society or locality requirement and is administered by the Western Society of Engineers.

The National deadline for nominations for these three awards is October 1. If you are interested in nominating an individual for any of these awards, please contact the Hawaii Section Awards Committee Chair Tony Lau at 522-7426 by August 5.

ASCE JOB LISTINGS

The following employers have openings they would like to fill:

Austin Tsutsumi & Associates, Inc. (Civil, Traffic/ Transportation, Environmental and Surveying - Honolulu and Wailuku)

Fewell Geotechnical Engineering (Geotechnical Engineer - Honolulu)

Fukunaga & Associates (General Civil and Environmental/Sanitary Engineers - Honolulu)

Hida Okamoto & Associates, Inc. (Civil Engineer - Honolulu)

Warren S. Unemori Engineering (Project and Civil Engineers - Wailuku)

For more information on these job listings, please visit the ASCE Hawaii Section website at www.ascehawaii.org.

MEMBERSHIP DRIVE

ASCE counts on our members to help us grow every year by actively participating in the Member-Get-A-Member Drive. The drive is now year-round and offers great new prizes, such as cash rewards, gift certificates, digital cameras, personal digital assistants, LCD TVs and more. For most prizes, all you have to do to be eligible to win is refer a colleague. This is a great time to help out your colleagues while also helping ASCE find new members. Take a minute to think about the people in your professional life who could benefit from membership. Visit www.ASCEDrive.org to refer them and you could be a winner in the next drawing!

CONVERTING TO ELECTRONIC VERSION OF WILIKI

If you would like to help the ASCE Hawaii Section reduce operating costs by receiving your monthly issue of the Wiliki via e-mail, please contact Tony Lau at 522-7426 or e-mail him at tlau@hawaiipacificengineers.com.

2003 ASCE Annual Conference and Exposition

The 2003 ASCE Annual Conference and Exposition will be held in Nashville, TN at the Gaylord Opryland Resort and Convention Center from November 12 to 15. The preliminary program can be found on the ASCE National website at www.asce.org/conferences/annual03/. If you plan on attending the conference, please considering registering through the Hawaii Section because there is a \$50 to \$60 discount per person when registering as a group. To register through the Hawaii Section before September 17, please contact Tony Lau at 522-7426 or at tlau@hawaiipacificengineers.com.

ASCE YMF, from page 6

Section Younger Member (YMF) members ventured to depths approaching 6 thousandths of a league (100 feet) beneath the clear blue waters off of Waikiki to explore a shipwreck and get a glimpse of the tropical undersea world surrounding our Hawaiian islands. On May 17, 2003 the seven adventurous YMF members donned self-contained underwater breathing apparatus (SCUBA) for the diving expedition aboard the *Enzo*, a 36-foot long Power Catamaran.

Led by professional master diver guides from Diamond Head Divers, the first dive expedition began by descending to the deck of a former yard oiler vessel named *Caroline*, which was decommissioned after World War II, then intentionally sunk in 1989. Now called the YO-257, this 178-foot long vessel rests in 100 feet of water and is a dream home for a variety of beautiful fish, turtles, eels, coral, and other tropical marine life. While exploring the upper decks of the YO-257, YMF divers posed for underwater photos taken by passengers aboard Atlantis submarines, which passed within 50 feet of the divers while viewing the shipwreck.

The second diving expedition of the afternoon was the exploration of *Turtle Canyon*, a “secret spot” in about 35 to 50 feet was water. The discovery of a juvenile frog fish (still yellow and very rare) was one highlight of this dive in addition to the abundant fish, octopus and coral that the YMF divers were treated to. To top off the day, an awesome barbeque lunch (prepared by YMF non-divers Ann Mukai and Tony Lau) was ready and waiting for the seven YMF sea adventurers as they stepped off of the boat!

The YMF would like to thank Captain Karim “Enzo” Hammani of Diamond Head Divers for making this YMF diving experience a memorable one. Diamond Head Divers is a first class, full service, dive company offering training and guided dive expeditions to all levels of interested divers. For more information call Diamond Head Divers (Karim) at 224-2770.

Anyone interested in participating in the next YMF event including monthly happy hour meetings, community service activities, technical

field trips, or social outings such as this diving expedition should contact YMF President Jeff Kalani via e-mail at Jeff_Kalani@urscorp.com or visit the YMF link on the ASCE Hawaii Section website at www.ascehawaii.org.

ASCE Job Classified

Looking for work? Visit the ASCE's job listing page at <http://www.ascehawaii.org/jobs/jobsinfo.html>.

KNOW YOUR ASCE HISTORY

by C.S. Papacostas

Robert William Kalanihiapo Wilcox, whose statue adorns Honolulu's Fort Street Mall, is a well-known figure in the history of Hawaii. Known for leading several insurrections, he also led the Home Rule Party and became the first elected Hawaiian delegate to the U.S. Congress. The 1893 Report of U. S. Commissioner James H. Blount to U.S. Secretary of State Walter Q. Gresham says that part-Hawaiian Wilcox “who led the Hawaiian revolt in 1889, which came so near being successful, is now for annexation. He was educated in Italy at a military school...”

The often-cited brief reference to his education had caught my attention some time ago, particularly because “military” engineering preceeded the modern profession of “civil” engineering.

According to the memoirs of courtier Curtis Pi'ehu laukea, King Kalakaua favored “a bill, considered extravagant by conservatives, to cover the cost of educating several Hawaiian youths abroad.” It turns out that Wilcox was one of the first three of 18 young Hawaiians (17 males and one female) that participated in a little known “Study Abroad Program” sponsored by King David Kalakaua between 1880 and 1887. Program participants were sent to Italy (5), Scotland (3), England (3), United States (4), Japan (2) and China (1). This was part of the King's “Hawaii for Hawaiians” initiative that was admired by his supporters and scorned by his enemies.

A 1988 article in the “Hawaiian Journal of History” by Agnes Quigg traces the progress of

"HOT TOPICS IN MASONRY DESIGN" BY JOHN CHRYSLER, P.E.

*Sponsored by The Masonry Institute of Hawaii and the
Cement and Concrete Products Industry of Hawaii*

The seminar will feature such topics as successful masonry load bearing buildings, masonry materials, grouting methods, termite infestation, masonry design using computer software, and a review of current design manuals.

Thursday, July 10, 2003 from 8 am to 1 pm (registration at 7:30 am)
Pagoda Hotel, International Ballroom, 1525 Rycroft Street, Honolulu

Featured speaker is JOHN CHRYSLER, P.E.,
Executive Director of the Masonry Institute of America.

Regular registration is \$40.00 per person. Registration fee includes seminar, handouts, continental breakfast, and lunch. Class size is limited.
Registration deadline is July 3, 2003.

**For additional information or to register, call CCPI at
833-1882, or after July 1, 2003, call 848-7100.**



all 18 students and points out that upon the imposition of the "Bayonet Constitution" that curtailed Kalakaua's power in 1887, the so called "Reformed Cabinet" recalled most of the students home. Wilcox came back with his Italian wife, left for San Francisco where he practiced surveying for a year and then returned to resume his auspicious career. Quigg explains that the 1890 Hawaii Legislature passed a new program that established geographic quotas by island and provided for candidate selection based on test scores (rather than by the King). Among the professions eligible under the program were Surveying and Civil Engineering.

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 msp@willki.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>.

OUTSTANDING AWARD, from page 1

comprise a synthesis gas containing 40% hydrogen, glass, and metal. All end products can be recycled. Hydrogen is used to generate electricity used to run the facility. The hydrogen synthesis gas end product is run through a generator to produce electricity, which is fed back into the facility system. The amount of electricity is increasing as HMV increases the waste-processing rate. Energy balance tests indicate the potential to be a net energy provider at higher processing rates. Excess electricity will be sent back into the Hawaiian Electric Company grid.

NOA, DOUBLE-HULLED FUEL OIL TANK BARGE

The NOA is a new state-of-the-art double-hulled tank barge built in 2002 at a cost between \$9 million and \$10 million and designed to ensure the environment gets the utmost protection whenever fuel oil is transported to the neighbor islands. Joe Almony, Operations Vice-President of Smith Maritime, the owner/operator arranged tours of the NOA, on November 23, 2002 for ASME-HI members and guests. The following is what was described and observed.

The NOA, the length of a football field (328' x 76' x 22') and pulled by a 4000 hp tug boat, is contracted to transport fuel to Maui Electric Company, Ltd. and Hawaii Electric Light Company, Inc. The double-hulled structure keeps the fuel oil cargo in an inner tank physically separate from the barge hull such that if the hull is penetrated in an accident, the oil will not spill into the ocean. It has many other necessary safety features to ensure that oil spills are prevented.

The 12-tank barge has cargo capacities including 34,200 gallons of No. 2 diesel fuel,

25,200 gallons of No. 6 fuel oil, and 10,400 gallons of naphtha fuel. One may ask how does a barge fit in with mechanical engineering. Looking at the NOA more closely one can see the relationship with mechanical engineering beginning with the huge amount of welding to join the steel plates of the hull and tanks. The most modern onboard mechanical equipment include 2 diesel engine driven 100 kw generators, 5 diesel engine driven deep-well pumps, a 2-ton hydraulic crane system for handling hoses and mooring lines, and a heating boiler in case the No. 6 fuel oil requires heating for pumping. It has a sophisticated remote control anchoring system, and necessary oil spill response equipment.

The NOA owner, Smith Maritime, is a 30-year-old Honolulu tug and barge company made up of five independent companies providing a wide range of services for the Hawaii Maritime industry.

ASME-HI's Project or Design Outstanding Achievement Award is presented annually. Deadline for nominations is always April 30 each year. The nomination process is made very simple so that the busy engineers and executives are not overburdened with additional tasks in their already overwhelming workloads. Everyone is welcome and is strongly encouraged to submit an entry. You do not have to be a mechanical engineer. The first place and runner-up receive attractive plaques to proudly display on their office walls. Contact Ed Chang of ASME-HI for more information.

DESIGN COMPETITION, from page 1

Composite materials, finite element analysis software, and manufacturing techniques were used to meet the design criteria.

ASME DESIGN 2

Team members were Alex Niemi, Justin Wade, and Karl Santa. This was the second team competing in the ASME Region IX Design Competition in UC Davis in April 2003 in which a surface mining company sought the development of a device that can reduce the energy consumption of material handling equipment used in their mountain mining operation.

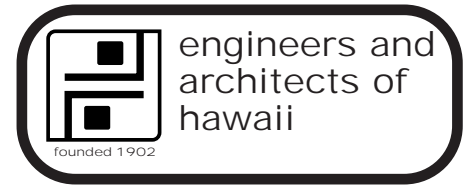
Funding for the Mini Baja and HPV project came from several Hawaii companies. With the high cost of materials and mainland travel part of the course includes the techniques and the practicing of soliciting donations.

Since the beginning the F. R. Montgomery Fund ASME-HI trustees have been past-chairmen Kent Murata (1983-84), Gary M. Ishikawa (1986-87), and Robert G.F. Lee (1985-86). They have done an outstanding job to ensure that the Fund and competition perpetuated. All three past-chairmen hold important positions in state and federal government. Murata is the Chief Civilian personnel at Kaneohe Marine Corp Base. Lee was appointed State Adjutant

General, and Ishikawa as deputy Adjutant General by Governor Lingle last December. ASME-Hawaii is in the process of changing trustees. The ASME-HI Section trustees will include active members of the ASME-HI Executive Committee, specifically the immediate past-chairperson, the treasure, and the secretary. Chairman Grogan has guided the process for this change.

SPECIAL ACKNOWLEDGEMENTS

The ASME-HI Senior Section again thanks the DME UHM for letting them be a part of their program twice a year. Without their welcome it would be difficult to perpetuate the ASME Francis Rhodes Montgomery Design Competition.



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

New EAH Officers for 2003 - 2004

President: Martin McMorrow
1st V.P.: Bob Morrissey
2nd V.P.: Gary Yamamoto
Treasurer: Ralph Dobson
Secretary: Sam Gillie
Director: Mary Ellen Nordyke-Grace (2 year term)
Ron Boyle (2 year term)

Membership dues are due. Mail or pay the Treasurer at a Friday Meeting. Dues \$35.

July Program Chair: Travis Hylton
July 4th, No Meeting In honor of Independence Day

July 11 **Speaker: John Thatcher, "Hawaii's Aviation Industry, the Hawaii Airlines Committee and the Hawaii Fueling Facilities Corporation"**

Member highlight: **Wallace Lane**
July 18 **Speaker: Eric Crispin, Director, City & County Dept. of Planning and Permitting, "Getting Your Project Permits"**

Member highlight: **Martin McMorrow**
Friday July 25 To be announced - See EAH WEB Site <http://community.hei.com/eah/>

Meetings held every Friday at YWCA room 205 on Richards Street downtown. Parking at Alii Place off Alakea Street for \$1.00 per hour. Meetings start at NOON and end promptly at 1:00 pm.

Members-\$7.50 Guests-\$8.50
Program schedule may be adjusted. Call Secretary to confirm speaker. Anyone wanting a weekly email meeting notice please send your email address to Sam Gillie at sgillie@hei.com.

Professional Directory

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