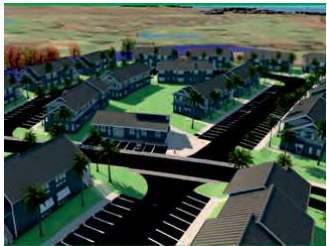
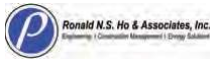




2021 ACECH ENGINEERING EXCELLENCE AWARDS



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## 2021 ACECH PRESIDENT'S MESSAGE



Aloha from the American Council of Engineering Companies of Hawaii also known as ACECH. In this special edition PBN insert, we proudly showcase the projects that were recognized and received awards at our annual Engineering Excellence Awards competition. These projects provide an example of the outstanding, innovative, and complex engineering achievements and also demonstrate the experience and expertise that our member firms possess to successfully deliver projects of varying size and complexity.

### About the American Council of Engineering Companies of Hawaii (ACECH)

Established in 1964, ACECH is the local affiliate of the American Council of Engineering Companies (ACEC). With roots dating back more than 100 years, ACEC is a national federation of more than 5,300 member firms representing over 600,000 engineers, land surveyors and other specialists throughout the country, and collectively responsible for over \$200 billion in private and public works annually. ACEC's mission is to contribute to America's prosperity and welfare by advancing the business interests of its member firms.

Locally, ACECH represents a roster of 68 member firms, employing over 1,500 employees. Our non-profit organization's mission is to promote, protect, and enhance the engineering industry through legislative and government advocacy, political action, and business education. The engineering industry and our member firms provide essential services that are vital in

For more than 50 years, ACECH has proudly represented the engineering and construction industries here in Hawaii. If you have any questions about our organization, our member firms, or the services that they provide, please do not hesitate to contact me or any of our board members. More information can be obtained from our website, [www.acechawaii.org](http://www.acechawaii.org).

**Garret A. Masuda, P.E.**  
ACECH President

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***Congratulations  
to the winners of  
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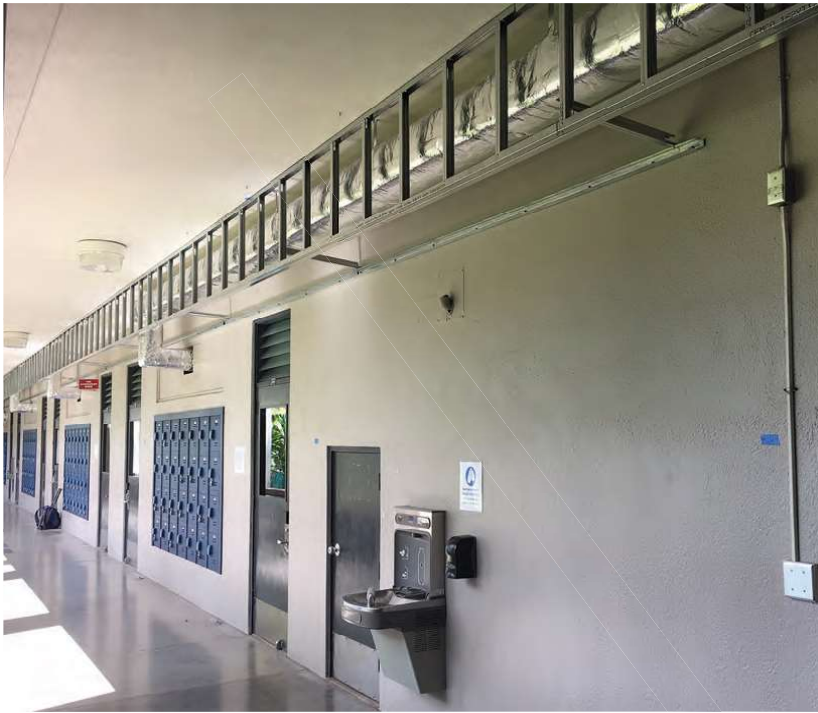


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**Entering Firm:** RHA Energy Partners, LLC and Ronald N.S. Ho & Associates  
**Client:** Punahou School

Punahou School's Path to Net Zero is the first large-scale, whole-campus educational project of its kind in Hawaii that incorporated a turnkey approach towards achieving a 100% NZE goal through a top-down commitment to transformative occupant behavior and energy efficient facility operations. RHA Energy Partners served as the overall program manager and design-build contractor, completing the project eight months ahead of schedule and within budget. Punahou School has achieved energy-efficiency savings estimated at over 20% and has received over \$100,000 in lighting incentives and \$30,000 in A/C incentives from the Hawaii Energy Program for qualifying energy efficient equipment installations. Having started with a 13% NZE footprint in 2017 to an estimated 60% NZE footprint in 2021, the NZE Program serves as a role model for other educational institutions, organizations, and businesses in Hawaii and throughout the United States as how it can significantly impact and improve sustainable and energy initiatives.

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Winners & Nominees***

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## 2021 ACECH ENGINEERING EXCELLENCE AWARDS EXCELLENCE AWARD

LAHAINA WWRF STAGE 1A IMPROVEMENTS

### JACOBS ENGINEERING GROUP, INC.



**Entering Firm:** Jacobs Engineering Group

**Client:** County of Maui

The Lahaina Waste Water Reclamation Facility Stage 1A Improvements Project offered a positive step forward in addressing potential environmental sustainability challenges in the County of Maui, including those due to drought, climate change, population growth, agricultural demand, dependency on source water supply, and nutrient load caps. The County partnered with Jacobs Engineering Group to plan and design plant improvements using aging infrastructure supplemented with new construction into a state-of-the-art facility with improved biological unit process redundancy. In addition, a Supervisory Control and Data Acquisition (SCADA) system was provided allowing continuous online dissolved oxygen (DO) and ammonia control. This SCADA system improved control of bioreactor blowers, the plant's biggest energy demand. Furthermore, parallel bioreactor tank design allows operators to remove tanks from service to conduct maintenance without impacting wastewater treatment. These and other improvements allow the County to improve nitrogen removal from the wastewater.

## 2021 ACECH ENGINEERING EXCELLENCE AWARDS EXCELLENCE AWARD

KEAUHOU BEACH HOTEL AND SITE DEMOLITION

### BELT COLLINS HAWAII LLC



**Entering Firm:** Belt Collins

**Client:** Kamehameha Schools

The demolition of the Keauhou Beach Hotel, a 7-story, 309-room structure built in tide pools and on a parcel with 4 ancient heiau, is a major engineering achievement. The hotel demolition was accomplished with a high-reach excavator for landslide demolition and remote-controlled demolition robots for overwater work. The work, including footing removal from the tide pools, was completed in compliance with all permits and with minimal impact on the physical environment. Over 90 percent of all construction material generated from the building and site demolition work was recycled or salvaged and reused.

With the completion of the hotel demolition, the shoreline parcel will be redeveloped into an educational center that will focus on Native Hawaiian 'aina-based science, technology, engineering, and mathematics programs and arts education for keiki and kupuna.



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## 2021 ACECH ENGINEERING EXCELLENCE AWARDS HONOR AWARD

OPAEEA BRIDGE REPAIR/REHABILITATION

**KAI HAWAII, INC.**



**Entering Firm:** Kai Hawaii, Inc.

**Client:** County of Kauai, Department of Public Works

What do you do with a 130-year old, 73 ft long, steel truss bridge that is in extremely poor condition and is no longer capable of safely supporting vehicles? And what do you do when the local residents and historic community insist that this State and Nationally registered historic 1890's bridge be repaired and not replaced?

The ultimate solution was to design a retrofitted bridge that incorporated the original steel trusses giving the Opaekaa Bridge its iconic 19th century aesthetic appearance while maintaining its historic integrity. Retrofitting/repairing old steel trusses for reuse is sustainable, however it's unique and has rarely, if ever, been accomplished for a bridge in Hawaii as old and severely damaged as this one. This is because the design and construction was costly, complex and challenging due to a thorough assessment of each original truss member, creating innovating ways to strengthen damaged truss members, and duplicating the 19th century construction method.

## 2021 ACECH ENGINEERING EXCELLENCE AWARDS HONOR AWARD

KEANAE ROAD SAFETY IMPROVEMENTS

**HART CROWSER, A DIVISION  
OF HALEY & ALDRICH**



**Entering Firm:** Hart Crowser, a division of Haley & Aldrich

**Client:** County of Maui, Department of Public Works

The mile-long Ke'anae Road originates as Hana Highway and provides the only access to historic Ke'anae Peninsula. This road supports resident and tourist traffic important to the community's financial well-being. A 100-foot high slope along an 800 foot portion of the road had a history of rockfalls, endangering residents and tourists. The County of Maui sought to mitigate the rockfall hazards, even considering whether the roadway should be relocated. After gathering site information by engineering geologists rappelling down the cliff face, Hart Crowser assessed the rockfall risk and worked with the County to select a mitigation strategy that included a combination of rock scaling, netting, rock fencing, and concrete barriers. Roadway improvements, including regrading, pavement widening, and installing guardrails, were incorporated into the project to further improve roadway safety. Significant community outreach and coordination benefited the project and community as construction required road closures with major impact to residents and tourism-related business.

## 2021 ACECH ENGINEERING EXCELLENCE AWARDS HONOR AWARD

KOAE MAKANA WORKFORCE HOUSING

**BOW ENGINEERING & DEVELOPMENT, INC.**



**Entering Firm:** Bow Engineering & Development, Inc.

**Client:** Mark Development

As of January 2021, the median price for a single-family home on the island of Kauai was \$1.03 million where the average income is just over \$60k. For low income families, affordable housing is a scarce necessity that needs to be more abundant. Thanks to Koa'e Makana, Kauai now has its largest affordable housing property and has begun to address its inequality in the housing market. With roughly 40" of rainfall a year, careful consideration of the drainage and layout led Bow Engineering to redefine the flood plain to account for excess storm water runoff generated from a 100-year storm event. Solar panels were also installed on the units to aid in creating an even more affordable living situation that is environmentally friendly. This development project is a pioneer for all future affordable housing projects.



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