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Adroit Energy CEO James Backman consults, advises, presents and educates on the latest renewable technologies at international conferences and government agencies as well as for engineering, architectural and general contracting firms.

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A BURST OF ENERGY EDUCATION

Proactive Firm Helps Power California's Renewable Energy Surge

Adroit Energy

by Steve Freeman

While California has increasingly enacted a number of aggressive and all-encompassing renewable energy regulations—placing new, immediate demands on the architecture, engineering and construction (AEC) industry—the team at Adroit Energy in San Diego has switched from being reactive to being proactive in their compliance efforts.

“We wanted to be on the forefront of educating architects and engineers,” says Luciana Da Silva, Adroit Energy’s Director of Marketing and Corporate Development. “Nobody had an idea about these regulations; so many were unaware of much of the technology that’s available, the rebates that are available, etc.”

Adroit Energy (Adroit) has given some 30 presentations, classes, site tours and media interviews to inform the industry. Most presentations were for municipal departments, AEC firms, general contractors, and renewable energy conferences and trade shows.

Why all the interest? In the last several years, a dozen major pieces of state and municipal legislation in the Golden State have forced architects, engineers and construction



Luciana Da Silva, Adroit Energy Director of Marketing and Corporate Development, is highly involved with informing and educating the public, media, AEC firms, and local and state governments on renewable energy technologies and policies.



William Chen, Adroit Energy COO, consults and presents his net zero expertise and designs to a variety of international organizations, government agencies, AEC firms, clientele, and general contractors.

professionals into full compliance today so that long-term energy goals are met tomorrow. One major impetus for these stringent laws stems from the internationally accepted 2020 and 2030 targets—backed by the United Nations and numerous countries, including the U.S.—for partial reductions that make net zero energy hopes possible by the year 2050. It’s a united response in support of global climate change.

Cities like San Diego and San Francisco have also joined the state in rolling out strict building codes, conditional funding options, mandatory water audits and other hefty energy technology requirements, pressuring those in the built environment to either change or be left behind. At a bare minimum, designers and contractors are required now to reserve space on the rooftops of new buildings for solar thermal and/or solar photovoltaic (PV) systems that may be installed in the future.

NEEDS FULFILLMENT

Adroit developed in the field like many firms are now expected to do. The company, started 30 years ago,

originally specialized in hydronic radiant floor heating and cooling, but then moved into geothermal capabilities. By 2007, Adroit had added solar thermal and solar PV capabilities.

“The market conditions had matured in a way that opened doors,” says James Backman, Adroit’s CEO. “Not too many firms specialized in [renewable energy] and we’ve invested a lot to provide these solutions for the building and construction industry.”



Jim Backman (left), Adroit Energy CEO, leads project site tours for engineers, architects, general contractors and developers. These tours lend firsthand knowledge and provide real-world examples of various renewable energy technologies.

With offices in San Diego, San Francisco, San Jose and Hawaii, Adroit already had the expertise, knowledge and skills to meet the increasing body of regulations for its clients. From its start in consulting services to now—with energy procurement and construction services, Adroit has been a leading advocate of the state’s goal to dial back energy consumption.

But the practice of simply reacting to legislative demands fell short of what Adroit’s leadership thought could be an opportunity for proactive engagement. That’s when Da Silva did her homework.

Da Silva and an intern pored over countless pieces of legislation, briefs, news articles and commentaries to create a report titled “An Overview of California Energy Legislation.” The document summarizes the laws and policies that some thought were beyond the reach of the companies and firms that were actively creating the buildings, homes and structures most targeted by the regulations.



Adroit Energy installing a solar hot water system on a multifamily high-rise in downtown San Diego.

From there, Adroit launched its strategic vision to educate and support the firms needing more information and how-to capabilities, but which lacked the necessary time or resources to acquire them.

Adroit began making presentations and giving classes to anyone interested—architecture and contractor firms, industry groups, local government departments and industry associations. Members of the San Diego Environmental Services Dept. became a frequent audience; also, the California Solar Energy Industries Association became a new affiliation for the company.

“We’re clearing a large educational hurdle for everyone by helping owners, architects and contractors navigate the new laws,” says William Chen, Adroit’s COO and Vice President of Engineering.

INCONVENIENT TRUTH

Among the initial fallacies that Adroit had to dispel was the notion that any installation of energy-saving technology is a correct installation—as long as the owner, the firm and the city could “check off the box,” the job was done. Adroit had to educate those entities that merely installing the equipment did not always achieve success.

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-William Chen, COO and Vice President of Engineering, Adroit Energy

“Some firms put solar panels on the wrong side of the roof or calibrated the panels facing the wrong direction,” says Chen. “Many times we’ve reviewed plans for a solar system and determined that the figures wouldn’t work as designed.”

Another misapprehension faced early on was the idea that planning for renewable energy technologies came at the end, instead of at the beginning, of conceptual design work.

“Architects have to take renewable technologies into consideration during the design phase in order to pass California’s standards,” says Katy Hamilton, Vice President of Architectural Energy at Adroit. “The earlier those energy considerations are factored into designs, the easier they will be to integrate.”



Adroit Energy has completed the largest number of multifamily solar hot water installations in San Diego County.

Another common mistruth is the “one and done” perspective—that adding a single renewable energy component to a project will meet all obligations. The truth is that net zero goals—although years away—cannot generally be met by single or even isolated technologies in operation on a property; rather, whole building and integrated systems are required.

LEARNING BY DOING

Adroit specializes in solar PV, solar hot water, solar cooling, solar process heating, and ground source geothermal systems. Also, the company configures systems for efficient energy distribution, examples of which include hydronic radiant floor heating and cooling, and high-efficiency boilers and water heaters.

The California Solar Initiative, which tracks data for the state, has recognized Adroit as the company with the largest number of multifamily solar hot water heater installations in San Diego County.

The firm has racked up a number of successful projects, including: Facebook corporate headquarters;

Sacramento’s Robert E. Coyle Federal Courthouse; Intuit; Google headquarters, Kendall Jackson Winery; the U.S. Army, Navy and Marines; and numerous multifamily, university and hotel projects.

Backman points to two projects to illustrate Adroit’s capabilities.

Adroit was on the integrated project delivery team to design and build a \$36 million dining hall and bookstore at San Diego Mesa College. Adroit designed and installed an architecturally integrated, façade-mounted 2,655-square-foot evacuated tube solar thermal system, as well as designed and installed the radiant heating and cooling system. The

entire facility is heated and cooled using sustainable energy. The system saves the college more than 9,450 therms of natural gas annually.

The company also engineered and installed the tallest (143 feet high, to be exact) vertical solar PV façade array in the U.S. for a 250-unit multifamily affordable housing project called The Celadon in downtown San Diego. The 125 PV collectors were mounted as a vertically integrated façade on the south side of the building. Adroit also designed and installed the structure’s 105-panel solar hot water system on the roof, featuring a custom-made 2,499-gallon tank and pump station.

Whether installing goal-meeting technology, conducting energy audits or its newest mission—educating the professional AEC community in California—Adroit is heading in a new direction that others will surely welcome. ☞

Author Bio: Steve Freeman is a contributing writer and communications management professional based in Pauls Valley, Okla. He is also Principal of Freeman Communications.



Adroit Energy configures systems for efficient energy distribution, and specializes in solar photovoltaic, solar hot water, solar cooling, solar process heating, and ground source geothermal systems. Here, team members install a solar hot water system in downtown San Diego.