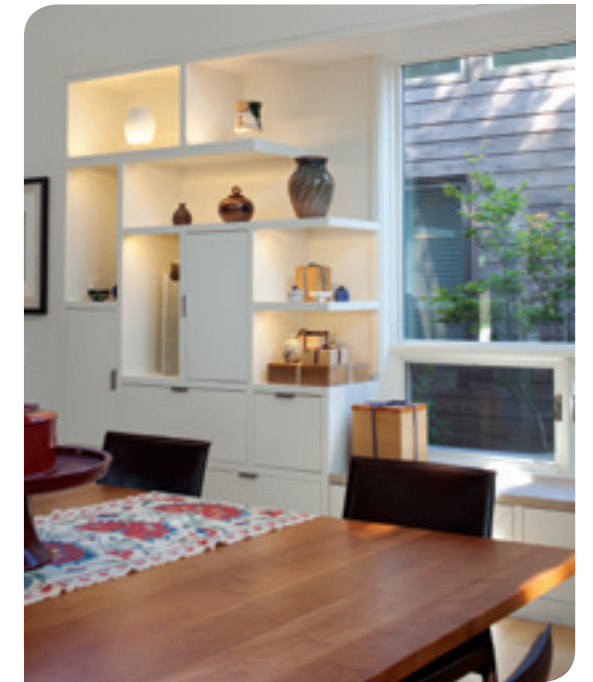


HACIENDA JA-JA



By ANGELA RABKE

ONCE UPON A TIME AND NOT THAT LONG AGO, THE TERM “SUSTAINABLE HOME” CONJURED UP IMAGES OF GEODESIC DOMES AND HAY BALE HOUSES. TODAY, WITH A CULTURE THAT IS SATURATED IN REFERENCES TO GREEN PRODUCTS AND SUSTAINABILITY, MOST PEOPLE REMAIN UNCERTAIN ABOUT HOW TO SUCCESSFULLY INCORPORATE SUSTAINABILITY INTO THE CONSTRUCTION OF A NEW HOME.



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Tenna Florian and Heather Holdridge, of San Antonio-based architecture firm Lake/Flato, recently walked Urban Home through the firm's process for designing a sustainable home, using the example of recently constructed San Antonio home Hacienda Ja-Ja (pronounced "ha-ha"). Nestled in an urban Alamo Heights neighborhood, Hacienda Ja-Ja has achieved Platinum Level LEED Certification and is notable for its beautiful design, its environmental friendliness, and absence of "over the top" visual cues about its sustainability.

For all residential clients, an early step in the design process is energy modeling. After the design team has visited the project site and determined basic building massing to maximize daylight, natural ventilation, and respond to important site features such as existing landscape and views, Lake/Flato then uses energy modeling to evaluate which materials and design strategies work best in a particular climate. This includes a cost-benefit analysis, where the team analyzes which approach is the most energy and cost-efficient. "Early in the process, we determine the ideal proportions and orientation of the building, passive and active solar strategies, and ventilation systems," says Florian.



In this case, all parties felt strongly about preserving and protecting the many live oak trees on Hacienda Ja-Ja's site. "When we first saw the site, we fell in love with the live oak trees, and from the beginning wanted a house that would fit into its natural surroundings both visually and environmentally. This house achieves these goals beautifully and effortlessly," says the homeowner. In order to work around the many trees, Lake/Flato conceived a compact design incorporating a small central courtyard and clerestory windows that allow for an abundance of natural light in all rooms, as well as cross-ventilation. Because of the thoughtful design, the clients seldom need to turn the lights on during the day, nor do they need to have privacy concerns. Certain areas of the home, like the closet, don't have windows but utilize Solatubes, long reflective tubes that extend to the roof, drawing sunlight indoors, and providing as much bright light as an electric bulb.

The tree canopy was also a consideration when solar panels (specifically, a 7kW photovoltaic array) were carefully placed to maximize their exposure to the sun while remaining invisible to passers-by. Water is heated using solar thermal panels, with a back-up electric hot water heater. At the end of the client's first week in the home (a particularly overcast and rainy week in San Antonio), he noticed that his showers weren't as hot as they should be, only to find out that the traditional hot water heater had never been plugged in. The solar thermal panels were still warming quite well, even without sunlight for more than three days!

Later in the design process, Lake/Flato's team begins the LEED Certification process, which continues throughout the construction of the home. "We sit down with our contractors and consultants and establish our LEED goals early in the process," says Holdridge. While there are a few options out there for green certification, LEED is notable in that there are three levels of certification involving stringent third-party verification. Hacienda Ja-Ja achieved platinum level certification, the highest level awarded by the U.S. Green Building Council. "We've chosen LEED to ensure that our buildings are performing to the highest standard," says Florian. "Design is a holistic process and we always look at all aspects of sustainability. The third party verification is a means to quantify how well we are doing." As part of the process, the U.S. Green Building Council "grades" the project. Ja-Ja was awarded 100 points out of a possible 136, getting especially high marks for water efficiency - notable in the hot South Texas climate. 100% of the roof area is used to harvest rainwater. Beautiful rain chains are an attractive alternative to downspouts, and direct the water to underground tanks. The water provides all outdoor irrigation needs for the property, which is landscaped only with drought-tolerant plants. Wood construction waste was shredded to create mulch for Ja-Ja's outdoor paths. LEED also grades on materials and resources. Locally-harvested and naturally-durable cedar siding was selected for the exterior, and recycled, renewable resources are incorporated throughout the home.



What might be most striking about Hacienda Ja-Ja is that, while every consideration for sustainability was made during the design and construction, it achieves this level of efficiency in such a subtle way. The home is inviting and comfortable, showcasing the owners' Asian art collection and a kitchen that was designed for lots of cooking and entertaining. A guest would never really know that the home uses approximately 79% less energy than another home of the same size. Some small cues are the discreet "green switches" and the dual-flush toilets. This subtlety allows the beautiful design of the home to remain the focus.

The final step in Lake/Flato's unique process is a post-occupancy review. Shortly after completion of Hacienda Ja-Ja, an energy dashboard was installed to monitor energy use of various components within the home. Daylight, humidity and temperature monitors were also installed. These monitoring systems display real-time building performance data, offering a detailed glimpse of daily household energy consumption. "This process gives us

the opportunity to continue our conversation with the client long after the keys have been turned over," says Florian. "We have always had a commitment to sustainable design—in the past Lake/Flato used regional and historical precedents, because those people knew how to live comfortably in this climate without the aid of air conditioning, etc. We still look to those precedents but now as technology allows, it is important for us to be able to quantify the performance of the home." Holdridge elaborates, "Not only that, but there is a qualitative aspect to it - we want to learn from what we do and improve upon it."

In the case of Hacienda Ja-Ja, the lesson for readers is that a beautiful, comfortable, AND highly sustainable home is achievable. ❖

Established in 1984, Lake/Flato has gained national recognition for architecture that is rooted to its place, responds to the natural environment and merges with the landscape. In 2004, the American Institute of Architects awarded Lake/Flato the prestigious Firm Award – the highest honor an American architecture firm can receive. Call their office in San Antonio at 210.227.3335, or visit their website at www.lakeflato.com.

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