



Verdant EI™ Whitepaper



Verdant Environmental Technologies

Save Energy. It Pays.

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A Brief History

Verdant was founded in 2007 upon the premise that HVAC energy management should be **simple**. To achieve that, we identified numerous areas we could improve on the technology that was already on the market. One area of opportunity in particular was networking.

Most conventional energy management systems on the market necessitated the use of numerous edge controllers, routers, and cabling to adequately build a wireless control network. More importantly, most of these networks could only be controlled locally since they were not cloud-based.

Verdant's solution to this problem was to build its own, 100% wireless communication protocol. Doing so allowed our network to function using just a single device plugged in via an ethernet cable. More importantly, our tool for managing the network was cloud-based, allowing property staff the ability to monitor their property from anywhere. It would also form the basis by which Verdant EI™ was created.

VERDANT EI

WHAT IS VERDANT EI™?

Verdant EI™ is at its core, a 'do it for me' energy management service whereby Verdant's proprietary software and energy management experts assume responsibility - ensuring the integrity of

the network and optimizing system settings to achieve the maximum energy savings without compromising guest comfort.



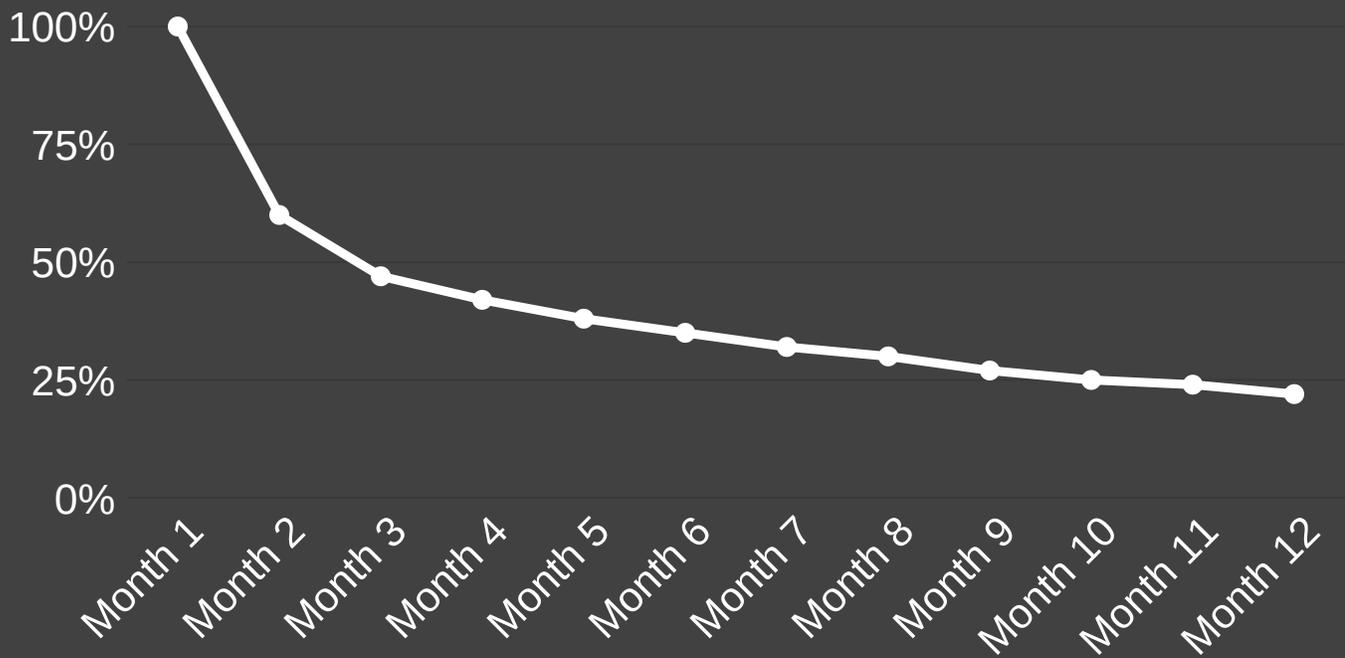
Upgrading to the Verdant EI™ service allowed me to squeeze incremental savings from my EMS without lifting a finger. More importantly, our guests never complained once.

Quint Dixon
Owner - SpringHill Suites Savannah



DO IT MYSELF USER HABITS

Like many technologies, usage often peaks soon after installation and decreases over time. Our data shows a correlation between time spent using the platform, and overall system savings.



THE IMPETUS FOR VERDANT EI™

As Verdant's customer base continued to grow rapidly in 2015-16, we began hearing a similar refrain from many of our largest and most loyal customers. The feedback was unanimous – they loved the system, were seeing significant energy savings, but felt as though they might not be getting the most out of the system. Some properties had great savings, others, not so much.

This prompted us to look more closely at the user behavior of our online management website and solicit further feedback from our wider network of customers. The website analytics data coupled with the responses from our customer survey validated what we had been hearing.

As the chart above illustrates, a small percentage of users were logging in regularly to monitor and manage their property. Yet, a majority of users would login regularly after installing the system, and would do so less and less frequently over time.

Was the interface difficult to navigate? Were customers unhappy with the platform? The answer was no. Our surveys revealed that over 95% of customers found the online management platform useful! So, if the vast majority of customers were happy with the platform, why weren't they using it more often? It turns out the answer was more common sense than anything.



Our research led us to a startling fact - according to the bureau of labor statistics, the hospitality industry experiences annual turnover of nearly 75%.[1] Our assumption was that housekeeping and restaurant employees accounted for a good portion of that number but wanted to validate that hypothesis.

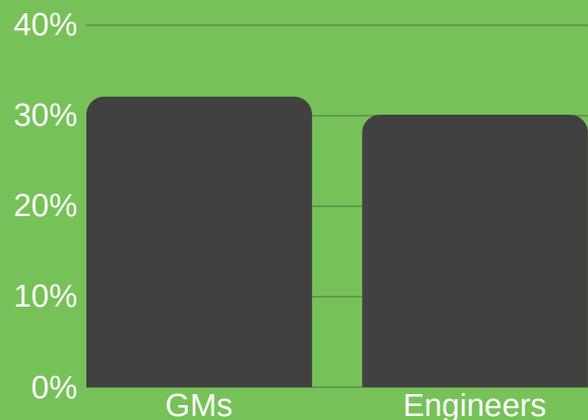
To do this, we scraped our CRM for email addresses of Engineers and General Managers (the two roles most likely to use and monitor our system at the property) that had existed in our database for a one-year period. Next, we used an online email list cleaning tool called *Neverbounce* to verify the validity of those addresses. Those email addresses that were returned "valid" indicated emails that are still active, and therefore, people still employed at that property. Those that were "invalid" were presumed to be employees whose email addresses were disabled and no longer work at the property.

Our findings indicated that the turnover rate for GM's and Engineers was nowhere near as high as the 75% cited figure above but was still 50% higher than the national average of 19.3% at around 29% and 32% respectively.[1]

Combined, that meant an almost 1 in 2 chance that a key user of our system would leave the property within a year, and that their replacement would not even know about the existence of our cloud-based management system, let alone be trained on how to best operate it.

Despite the fact that Verdant's technical support team provide training and re-training (at no cost) to properties who experience staff turnover, in the fast-paced world of property management, things get lost in the shuffle. Unfortunately, this almost always results in diminished savings.

NON-VALID EMAILS AMONG GM'S & ENGINEERS



[1] <https://business.dailypay.com/blog/staff-turnover-rates-hotel-motel-hospitality-industry>

Comparing the Performance of 'Do it Yourself' and 'Do it for Me' Models

When Verdant conceived of a 'do it for me' service, a top priority was to ensure customers would realize incremental savings. Because Verdant's business model at the time was predicated heavily on the *absence* of any recurring costs, we knew that a subscription model service would be met with skepticism.

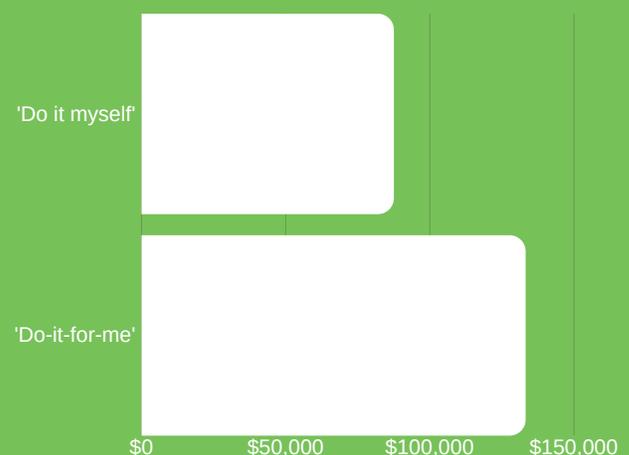
A year after soft-launching Verdant EI, we turned to the data again, analyzing the over 325,000 rooms of our 3000+ customer base, and were vindicated in our findings. When we compared the HVAC runtime reductions of the 'do it myself' camp to those in the 'do it for me' camp, we found that on average, the customers using Verdant EI™ were achieving significantly better savings.

On average, customers who managed the Verdant system themselves achieved runtime reductions of 26% compared to 36% for customers subscribed to Verdant EI™. That's a 38% improvement on runtime reductions when Verdant's energy management experts have control. Those incremental savings considerably improve the ROI over an 8-year time frame - the length of a typical PIP cycle. To illustrate this, we've charted the projected dollar savings for an average 100 room property managing their own EMS settings compared to one subscribed to the Verdant EI™ service.

HVAC RUNTIME REDUCTION (AS PERCENTAGE)



PROJECTED SAVINGS (\$) - TYPICAL 100 ROOM PROPERTY (8 YEAR LIFECYCLE)





A USEFUL ANALOGY

When it comes to matters of personal finance and asset management, most people prefer to rely on a financial institution or advisor to steer their investments and manage their assets. Not surprisingly, this usually stems from a personal lack of knowledge, confidence, or even interest.

More recently, a variety of financial institutions have introduced “robo-advising”, whereby smart algorithms continuously monitor an investment portfolio, automatically buying/selling, rebalancing, and making smart decisions on behalf of the customer.

That is precisely how we like to think of Verdant EI™. While the heavy lifting is done by the smart algorithms built into our thermostat software, the added element of human interaction and visibility over a property by Verdant’s technical support team ensures that guest comfort is not compromised, and any issues requiring manual intervention are dealt with quickly.

All Verdant products are backed by a one year, no-questions asked warranty*. But Verdant EI™ customers get extended warranty coverage on all equipment at no extra cost.

*Please see www.verdant.co/warranty for more information.

LIFETIME WARRANTY