Introduction

The recently concluded 2014 NAREIT Leader in the Light (LitL) Working Forum was attended by 24 NAREIT Corporate Members with representation from the Healthcare, Hospitality, Industrial, Office, Residential, Retail and Timber sectors. This group, which represents NAREIT's Sustainability Committee, was joined by real estate investors and fund managers as well as by representatives from the Global Real Estate Sustainability Benchmark (GRESB), the U.S. EPA's ENERGY STAR program, the U.S. Green Building Council (USGBC) as well as academic and consulting organizations focused on advancing real estate sustainability.

Given the success of this and previous years' Working Forums, it would be fair to state that sustainability and energy efficiency have become an integral part of NAREIT Corporate Members' *modus operandi*. Their participation in industry surveys, such as the NAREIT Leader in the Light supplementary questions provides quantifiable information on the true impact of their initiatives. This article presents information on the incurred project costs, savings attributable to such projects and the resultant impacts of all NAREIT Leader in the Light projects submitted over the last 3 years – focused in the area of energy efficiency.

Methodology

RealFoundations analyzed the NAREIT Leader in the Light Survey Responses for the last 3 years (2011-13). The raw information was collected and scrutinized for data quality. RealFoundations standardized this data by requiring each data point to meet certain standards in order to guarantee reliable comparisons and removal of outliers.

These criteria were:

1. Reported projects must contain cost information. However, behavioral measures or demand response programs which require no fiscal investment were exempted from this rule.
2. Energy efficiency measures must contain benefits information – Energy *and* financial benefits, although, whole building efforts such as energy information portals and benchmarking were exempted as they do not yield immediate returns but can guide further energy efficiency measures.

Data that did not meet the above requirements was not considered for the purposes of this study. The remaining data was then collated and organized by year of response and project type. Energy efficiency measures were categorized into the following project types:

1. Lighting
2. HVAC
3. Building Envelope
4. Controls
5. Whole Building

Trends

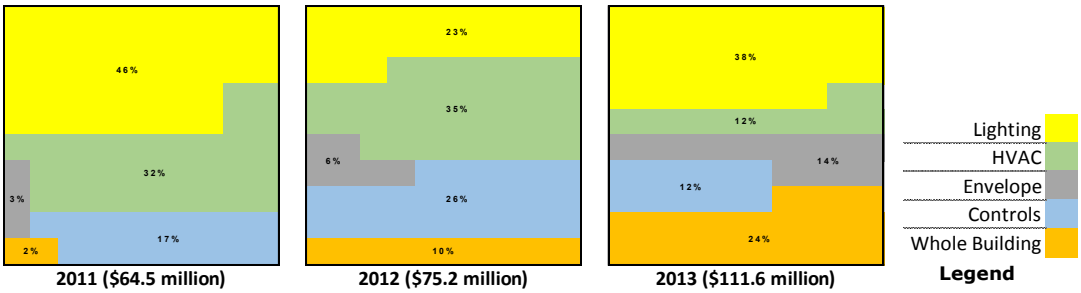
The results show a significant positive trend in sustainability related projects by real estate owners and operators, with the amount of respondents as well as energy (and cost) savings increasing each year. A number of interesting trends were identified which demonstrate a promising future for such initiatives in the real estate industry.

Investments, Returns & ROI

The first key trend identified by RealFoundations was an upward trend in investments, returns and ROI. From 2011 to 2013, investment in energy efficiency projects increased 42%: *from $54,033,499 in total investments in 2011 to $111,665,799 in 2013*. During this same period, survey respondents reported a 39% increase in annual energy cost savings: *from $12,581,769 in 2011 to $32,194,809 in 2013*. The ROI resulting from these projects increased by 48% during this time.

Investments

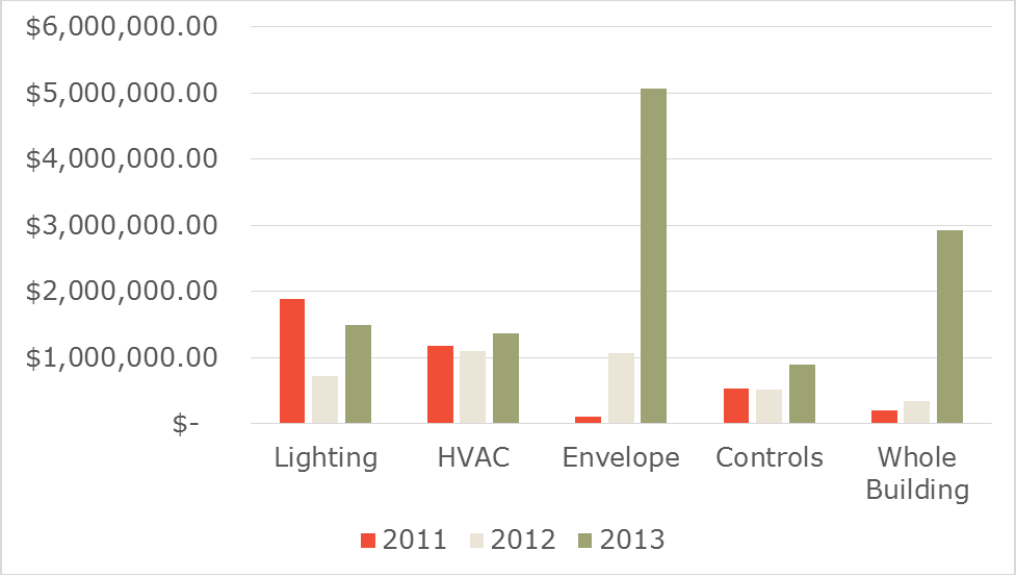
Analysis was conducted on the amount of investment in each project type (as a fraction of the total investment that year) identified with respect to time. The below figure illustrates the investment allocation to each property type in each of the three study years, along with total annual investment.



The data shows that initial investment in energy efficiency measures by the real estate industry was primarily made in lighting and HVAC projects (2011). In 2012, there was not a significant increase in energy efficiency investment: total investment increased only 14% and investment in lighting projects decreased when compared to the increase in controls projects and whole building investment. In 2013 however, total investment increased 42% compared to 2011, with a larger share of this investment was made in whole building and envelope projects coupled with renewed investment in lighting projects.

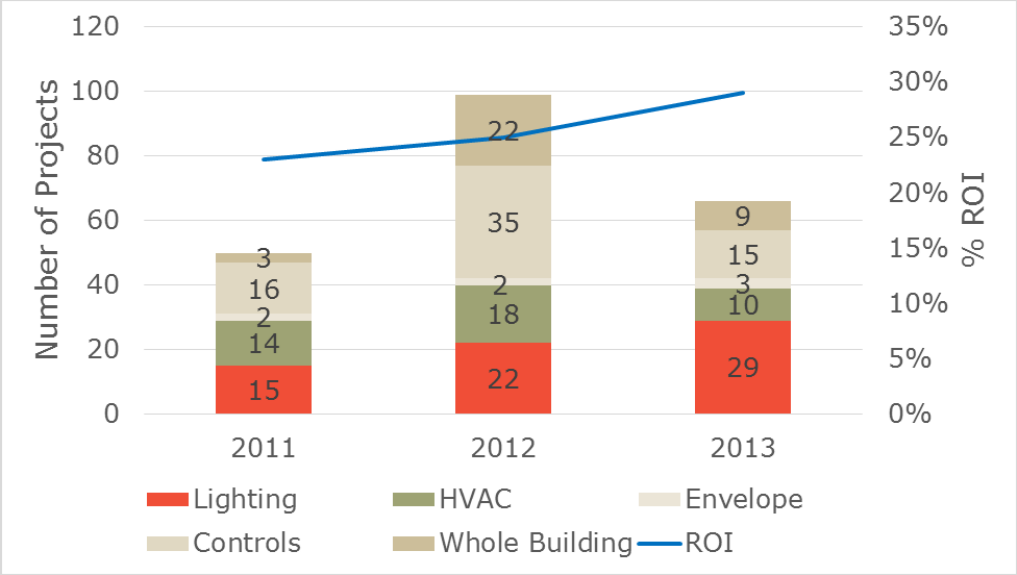
This data, along with the positive trend in project ROIs suggests that NAREIT LitL respondents are beginning to target their investments more strategically in order to maximize returns. HVAC and lighting projects are typically lower hanging fruits, which may explain the trend towards increase in whole building and building envelope projects which are the next step in the project adoption curve. Lighting projects, most likely due to their quicker payback and increasing availability and affordability of LED technology, were again the highest project investment in 2013, after a decline in 2012. One has to keep in mind that due to a relatively smaller size ($/per project) of a typical project, one large initiative can skew the overall data trend for any given year.

Average Investment by Project Type



The data was also trended for average investment cost by project type. As seen in the above table, investment in building envelope projects and whole building measures increased measurably in 2013. Controls and HVAC projects had a slight rise in average investment, while lighting investment increased in comparison to 2012 but was still lower than 2011 levels. As noted above, one large project has the ability to skew the overall data trend for a given year.

Number of Projects



The data also shows an upward trend in the number of lighting projects conducted each year. Lighting is the only project category that increased in number of projects for each year, with most other categories increasing in number of projects in 2012 and decreasing in 2013. Interesting to note is that the number of lighting projects has increased year over year but total investment in lighting projects peaked in 2011. This important observation demonstrates that a larger number of lighting projects are being conducted for an overall lower cost; a trend that will likely continue as advanced lighting technologies such as LEDs become more widely affordable and refined.

Conclusions

Analysis of the NAREIT Leader in the Light survey data allows for some interesting insights regarding the state of sustainability and energy efficiency related investments in the real estate industry. It is clear that energy efficiency is here to stay, as evidenced by the positive trend of increased investment and returns resulting from projects implemented by the participating real estate companies. It appears that after the initial growth in 2011, investors are beginning to make more strategic investments in order to focus on maximizing returns. This is supported by the fact that the total number of projects undertaken decreased between 2012 and 2013, while the amount of total investment increased, as did ROI.

Increasingly, investments are being made in relatively more sophisticated projects (with an increase in building envelope and whole building projects in 2013), perhaps to expand the reach of such efforts as quicker payback opportunities, such as lighting and HVAC are better understood and taken care of. Another factor to note is the projects are relying more on interactive effects through whole building efforts. Improvements to the building envelope or building structure can further maximize the efficiency of HVAC, lighting or controls projects, while whole building

efforts like energy information portals can help drive forward energy efficiency programs. With regards to lighting projects, it would be fair to state that based upon the lessons learned from previous years, coupled with the decreasing costs of LED technology should lead to increasing numbers of lighting projects for even lower investment, with attractive savings and ROI. Overall, the interactive effects of energy efficiency measures should yield even higher returns as the positive feedback loop between project types drives even more savings. It is safe to assume that the trend in whole-building and envelope project investments will continue to increase while the amount of investment in energy-efficiency projects will continue to grow. It is also probable that external factors, such as utility programs, disclosure needs, tenant/investor demands, etc. influenced some of the investment decisions.

The success of the NAREIT Leader in the Light Working Forum demonstrates that there are real and measurable savings to be achieved through such initiatives. Even more promising is the on-going positive trend as more and more investments are made in energy efficiency for greater returns.