



# Smart buildings and the path to green certification

Prepared by  
Switch Automation

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To provide a deeper understanding of green building certification, this e-book highlights the certification types that matter most in CRE. The following section examines how organizations have traditionally achieved certification, and the new, more efficient process now available. The final segment then investigates the financial, organizational and occupant-related benefits of investing in green certification.



# Part one: Achieving greater portfolio value with green certification

The green building movement that began in the 1970s is making tremendous strides in sustainability and efficiency practices in buildings across the world. But as people begin to understand the impact of office environments on our mental, emotional and physical health, the “wellness” of buildings – and their occupants – is becoming just as important as minimizing their impact on the environment.

The next logical step in the green building movement, The Healthy Building Movement, looks beyond the buildings themselves and toward the symbiotic relationship between sustainability and occupant wellness. While green certification standards got us to this point, this new way of thinking is driving changes in behaviors and certifications. This new thinking is also changing who is at the table early in the process. For example, HR becomes critical when an organization embarks on a “healthy building” certification.

Some estimates say that commercial and residential buildings draw up to half of all energy consumed in the U.S. Zero energy buildings work to reduce that level of usage.

We’re talking about “an energy-efficient building where, on a source energy basis, the actual annual delivered energy is less than or equal to the on-site renewable exported energy,” [according to the U.S. Department of Energy](#).

In other words, a zero energy building is one that produces as much energy as it uses. These buildings are still connected to the grid, but only draw energy from the grid at night or on cloudy days. Otherwise, they’re supplying power to the grid, usually via solar panels, effectively zeroing out their energy draw.

# Achieving greater portfolio value with green building certification

The U.S. Dept. of Energy worked hard to create a common understanding of metrics and boundaries for zero energy buildings, helping everyone work toward a common goal. In 2018, the U.S. Green Building Council (USGBC) [announced a new green certification](#) called LEED Zero, which “rewards net-zero carbon, energy, water, or waste.” Buildings must first be LEED-certified to achieve LEED Zero status.

As we continue to experience these fundamental shifts – and climate change continues to make a dramatic impact – it will be important to know which programs and certifications best advance sustainability and wellness goals. Zero energy buildings, equitability and continuous monitoring are just some new areas of focus.

## High performance green building certifications

These days, a number of green building certifications and programs exist, each with its own focus area and sustainability goals. Environmental impact is just one piece of the puzzle. Air quality, humidity, ventilation and temperature are also important parts of this evolving challenge. It’s not just about energy savings and cost reductions anymore – it’s also about occupant wellness and how these impact the other. Let’s examine the most exciting green certifications available today.

### Zero Energy

A [Zero Energy Building Certification \(ZEB\)](#) from The International Living Future Institute (ILFI) requires that [a building get 100% of its net annual energy](#) needs “from the sun, wind or earth.” Buildings are not eligible for a ZEB certification until it’s been documented and demonstrated a zero energy performance for one year. This information must be confirmed through a third party audit. Certification may sacrifice wellness or comfort for efficiency.

### LEED

Short for Leadership in Energy and Environmental Design, [LEED certification](#) is the most well-recognized green certification program in the world. Since its inception in 1993, LEED has grown from a single standard for new construction to a comprehensive system for new construction and building maintenance. Employees in LEED-certified buildings [report being happier, healthier and more productive](#). LEED has seen more than 80,000 projects across 160+ countries participate in their programs and serves as the standard for new programs.

# Achieving greater portfolio value with green building certification

## WELL

Initially, [WELL](#) focused on commercial buildings, but has recently moved into residential certification. [Going beyond the standards of sustainability and efficiency](#), WELL is “focused exclusively on the ways that buildings, and everything in them, can improve our comfort, drive better choices, and generally enhance, not compromise, our health and wellness.” Launched in 2014, WELL is now more well-known than ever, certifying more than 1,100 building in 40+ countries.

## GREEN STAR

The Green Building Council of Australia launched [the Green Star rating system](#) in 2003. A voluntary system, Green Star is designed to assess the sustainability of community and building design, encouraging recycling of demolition and construction waste, reductions in water consumption and ongoing evaluation of efficiency.

## GRESB

Starting in 2009, [GRESB](#) is controlled by [Green Business Certification Inc.](#) to “assess the Environmental, Social and Governance (ESG) performance of real estate and infrastructure portfolios and assets worldwide.” With a focus on sustainability, [GRESB has evaluated](#) “903 real estate funds and property companies, 75 infrastructure funds, 280 infrastructure assets and 25 debt portfolios.”

While certification programs have had dramatic, positive and important effects, they’re still not enough. The World Green Building Council (WorldGBC) says that net-zero energy buildings may not be [100% achievable in some instances](#), saying “buildings that are energy efficient, and supply energy needs from renewable sources (on-site and/or off-site) is a more appropriate target for the mass scale required to achieve Paris Agreement levels of global emission reductions.”

Regardless, the certification programs mentioned here are just a handful of programs available worldwide, indicating a growing preference for sustainable and thoughtful building development. It’s clear that green certifications add value to properties and encourage desirable features that occupants want more and more.

There are lots of reasons to pursue green certifications for your buildings: reducing environmental impact, tenant attraction and retention, brand differentiation, occupant health and comfort, and operations and maintenance (O&M) cost reductions.

In the past, earning green certification for existing buildings was a time-consuming, laborious, and often frustrating process that involved onsite visits for evaluation, analysis and data wrangling from multiple siloed departments. When a team finally got everything they needed, they would have to enter their findings into numerous spreadsheets to produce the reports and documentation green certifications require.

This process could take months, and by the time a team was done tracking down and gathering information, the data was often outdated, meaning the exercise may have to start all over again. This lengthy process caused many building owners simply to not bother pursuing green certification.

[\*\*Green Business Certification Inc. \(GBCI\)\*\*](#) is the only certification body to exclusively administer project certifications for various rating systems. GBCI took notice of this outdated process and created Arc. An open platform built to integrate current and future standards, guidelines, protocols and systems, Arc helps bridge the gap between raw data and certification.

Smart building platforms are also taking on this challenge, automatically capturing building information for better, more data-driven decision making. They streamline communications between departments and across different sources, helping to efficiently measure progress, create performance benchmarks and determine how to conserve resources.



## Part two: Using smart building platforms to facilitate green certification

# Using smart building platforms to facilitate green building certification

Smart building platforms remove cumbersome, manual processes from green certification by providing real-time data using Internet of Things (IoT) integrations. Some of these platforms work with your building's existing systems to [optimize old equipment](#) while preparing them for future enhancements. Implementing the right smart building platform supports green building certification in a few key ways:



## Retro-commissioning

Retro-commissioning is a process that documents and analyzes existing mechanical and electrical systems to optimize building performance. In addition to supporting the green certification documentation process by gathering data more efficiently and within a single source, retro-commissioning can lower bills, extend the life of existing systems and reduce the volume of required maintenance.



## Continuous commissioning

Continuous commissioning is an ongoing scheduled process where system tune-ups occur regularly. Continuous commissioning involves identifying new tenant usage patterns and calibrating systems to their needs. These ongoing, incremental improvements maintain cost savings and create more reliable systems over time.

Advanced smart building platforms use APIs to continuously share building performance data directly with green certification organizations such as GRESB. This [simple pathway toward green certification](#) can save hundreds of hours of manual documentation and analysis. Additionally, because ongoing data collection facilitates continuous commissioning, buildings can continue to gain efficiency, making it easier to maintain green certification once it's first attained.

If your organization is considering pursuing green building certification, go in with eyes wide open and be sure to understand which certification type is right for you. Closely evaluate the certification requirements because critical documentation could take longer to aggregate and configure than you expect, especially if you rely on legacy methods of data aggregation.

With more certification programs than ever and a growing desire for architects, designers and engineers to consider tenant desires and environmental needs, smart building programs promise a better, faster way to meet these certification demands.



# Part three: Understanding the personal and financial benefits of green certification

People are demanding healthier places to live and work, not just in the U.S. but around the world. [79% of employees](#) said that, all else being equal, they'd sooner take a job in a LEED-certified building over a job in an uncertified one. This shift in preference has turned sustainability into a global trillion-dollar industry.

To meet the growing demand, companies are turning to smart platforms that not only assist with green certification processes, but actually help building operators and facility managers make better data-driven decisions. These platforms use readily available data to quickly and easily gather and process building data so FM teams can improve the occupant experience, drive down costs and improve energy performance.

## Putting a little humanity back into the workplace

There's been plenty of hand-wringing in recent years about the prospect of artificial intelligence and machine learning "stealing jobs." While automation will undoubtedly reduce or eliminate certain positions, the reality is that the jobs on the chopping block are the manual, time-intensive jobs we don't particularly like anyway.

19% of the world's workforce can be qualified as "actively disengaged." That disengagement accounts for approximately \$7 trillion in lost global productivity each year, [according to Gallup](#). And while automation might eliminate some jobs, it also has the potential to reverse these numbers a bit.

Automation – and the up-to-date, real-time data that comes with it – can impact organizations, teams, colleagues and brands simply by freeing up human brain capacity. In the specific case of green certification, once laborious 'data chasing' has been alleviated, building operators, facility managers and other stakeholders will have more time and resources to devote to improving creativity, innovation and customer experiences.



# Understanding the personal and financial benefits of green certification

This important work can only be achieved, once more tedious and menial work is offloaded however. Automation therefore creates deeper, more meaningful work – the antithesis of job loss and disengagement.

**Put plainly, automating green certification processes with smart platforms can actually enable workers to do more meaningful, and sometimes more creative, tasks that deepen connection and improve revenue in the long-term.**

It also lightens the certification admin workload, affects organizational culture and puts a little humanity back into environmental campaigns.

LEED is one of the most popular green certification programs in the world, with [more than 32,500 projects certified since 2000](#). There's no doubt that green building certifications like these add value to new properties – more than 10% in some cases – but there are greater environmental and social benefits too. Let's examine some of the other ways going green can add value.



## Reduced overhead costs

Green certification saves building owners money. The systems, processes and platforms that optimize equipment and improve building performance efficiency have the potential to generate [more than \\$400,000 in cost savings](#) over a ten year period. Retro-commissioning and continuous commissioning practices offer additional cost savings, with retro-commissioning delivering [an average payback period of one year](#) and continuous commissioning producing average savings of \$100 million per building according to [Texas A&M's Energy Systems Laboratory](#).



## Tax incentives

Another benefit of securing green building certification are the associated tax credits and deductions. The requirements tend to be highly specific, so it's important to speak with your tax professional on this subject, but improvements like high-efficiency lighting, more efficient building envelopes and better HVAC systems are just a few ways to achieve these.

# Understanding the personal and financial benefits of green certification



## Increased tenant comfort

Sure, green building certifications indicate healthy environmental practices, but how does a green building really affect the people inside? Ensuring greater personal comfort – whether for employees or residents – positively impacts health and wellness. Adequate ventilation helps control air pollutants from fabrics, cleaning chemicals, and outdoor pollution. Good design, access to outdoor areas, and recreational and leisure spaces reduce boredom, increase blood flow, and give people a general sense of well-being.

Additionally, employees in green certified buildings report that they [show up to work more often](#) and are more productive while they're there. Furthermore, green certified buildings tend to demand [higher rent and achieve greater occupancy levels](#) than non-certified buildings.

## Signal your brand's values and raise awareness

As climate change awareness grows, people are becoming increasingly aware of sustainability initiatives. Whether you're LEED or WELL-certified, you clearly signal your organization's commitment to reducing climate change, positively differentiating your brand and attracting similarly conscientious occupants.

[The U.S. National Security Agency credits LEED](#) with creating a "greater awareness of green building benefits" by demonstrating "the broad applicability of green and sustainable building design criteria."

Although programs like LEED and WELL are certifying tens of thousands of buildings worldwide, these buildings remain in the minority. Nonetheless, awareness of green building certification is growing as property owners, operations managers, design firms and architects gain a deeper understanding of the benefits.

## Growing awareness, growing opportunities

Green certification should be the first step to helping facilities managers and building owners cut costs, improve system efficiencies, reduce their carbon footprint and improve occupant health. While an understanding of green buildings and their benefits is continuing to spread, there's still a long way to go to achieve change on a global scale. It won't happen overnight, but as worldwide concern about climate change increases and smart building platforms find wider adoption, our industry appears to be well on its way.

## Beyond green building certification

A centralized hub of building performance data makes it easy to get your organization's portfolio green certified. Traditionally, the data required for building certification was kept in siloed spreadsheets and software applications across different departments. A centralized hub of building performance data vastly simplifies the green building certification process and fosters high performance transparency.

While green certification is a key indicator of a healthy commercial real estate portfolio, **it's just one of many benefits** associated with an effective smart building program.

## About Switch

Switch Automation is a global real estate software company that helps property owners and facility managers reduce operating costs, improve energy efficiency and deliver exceptional occupant satisfaction. Our comprehensive smart building platform integrates with traditional building systems as well as Internet of Things (IoT) technologies to analyze, automate and control assets in real-time. We serve enterprise customers and partners in a variety of industries including financial services, retail, grocery, commercial real estate and more. Learn how Switch Automation creates technology to bring people and planet to the center of building operations at [www.switchautomation.com](http://www.switchautomation.com).

