Southface

BIT
BUILDING

Operationalizing
Better Building Performance
and Sustainability

BIT Building White Paper

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This white paper contextualizes the relaunch of Southface Institute's newly restructured BIT Building program. There are several green building certification programs that provide guidance and recognition for improved operations, yet only 25% percent of existing buildings qualify for those programs. Additionally, there are numerous of online tools to help building owners and operators reduce their energy, water, and waste consumption, yet none of those tools also provide third-party recognition for building performance improvements.

BIT Building provides the guidance to reduce energy, water, and waste consumption, provides verifiable recognition for those efforts via third-party certification, and is for all existing buildings and tenant-controlled spaces, not just the top performing 25%. BIT can even be used as a pathway to qualify for programs like LEED O+M.

Whether you serve as a sustainability officer charged with leading ESG initiatives, a property manager with a large portfolio of buildings or office spaces, a franchise owner looking to operate more efficiently who lacks the right tools, or a consultant for a company that offers green building certification services, learn more about how BIT Building can help serve your high-performance building needs and achieve your sustainability goals.

CARBON EMISSIONS FROM EXISTING BUILDINGS

Twenty-seven percent of global carbon emissions are caused by the operations of existing buildings. [i] And global emissions from buildings continue to rise at a rate of 2% per year. [ii]

With new commercial buildings set to become even larger, it is crucial that CO_2 emissions caused by the operations of existing buildings are significantly reduced to help mitigate the effects of climate change. [iii]

To help meet this need, companies are taking action to reduce their own carbon footprint through energy reduction and decarbonization efforts. Specifically, companies seek to better understand how they can deepen their carbon reduction impact in several ways including creating climate action plans, voluntarily adopting climate-related targets, and holding themselves accountable by publicly reporting emissions data. [iv]
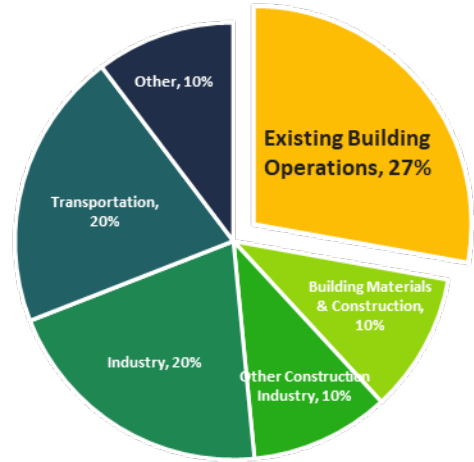
Annual Global CO_2 Emissions
~architechture2030.org

OPERATIONALIZING BETTER BUILDING PERFORMANCE

Since 1978, Southface Institute has worked to improve the performance of the built environment to reduce negative impacts on the natural environment. Back in 2013, a group of sustainability experts and real estate professionals began a conversation around the framework for a program that will help accelerate the adoption of existing green building operations and maintenance best practices across large real estate portfolios.

In 2018, these two groups partnered in the soft launch of the BIT Building program, a simple, low-cost solution that works for everyone, equipping users to operate smarter.

Since then, companies like Google, Adobe, and The Chicago Housing Authority became early adopters of the program, along with numerous other organizations. The rapid growth of BIT Building is a testament to the substantial need for this uniquely versatile program, and early results confirm its effectiveness.

A BIT of an Impact

By the end of 2023, 83 buildings and office spaces in 45 cities and 15 countries were implementing BIT Building's Best Practices across a total of 13.4 million square feet, achieving an enormous cumulative impact.

| 25,419,850	4,083	92.8	2,166
KBTU	**kGal**	**TONS**	**MT CO₂**
energy saved	water reduced	waste diverted	emissions reduced

Full Program Launched June 2023

Over the course of five years, we conducted an extensive pilot program with a unique set of buildings, gaining invaluable feedback. This development phase was aimed at ensuring the program's full launch exceeded customer expectations. In 2023, we were proud to officially release BIT Building to our customers, marking a significant milestone in our commitment to delivering exceptional value to sustainability officers, building owners, operators, and, if course, our planet.

Partner Spotlight
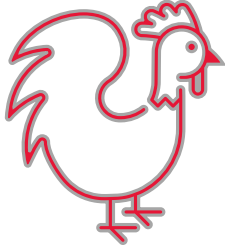
The leading fried chicken sandwich quick-service restaurant in America has partnered with Southface to create a sustainable operations and maintenance program tailored to its existing QSRs based on the BIT Building model. Upon completion of the pilot scheduled for Q1 2025, the program will be implemented at more than 2,000 of its restaurants across the US.

CHALLENGES TO BETTER BUILDING PERFORMANCE

Sustainability Officers' Biggest Challenges

Pending changes to SEC regulations calling for uniform and comprehensive ESG disclosures alongside the push from consumers for strong statistics that prove companies are environmentally conscious are driving change. The need for technology that can provide accurate, verifiable data is important for both a company's ESG initiatives as well as its bottom line.

Unfortunately, most companies are not prepared to provide quality data about their sustainability efforts. A recent Deloitte survey of accounting, finance, legal, and sustainability executives found that **governance and capacity**, **technology**, and **accurate data** are some of the main challenges faced by sustainability officers in meeting ESG requirements. [v]

Governance and Capacity | Company-wide sustainability initiatives require intentionality and planning with prioritization of these initiatives coming from senior leadership. However, **only 21% of surveyed companies shared that they have a governance structure in place for ESG initiatives** and **only 17% feel confident** with their current capacity to keep up with the **shift in ESG reporting requirements.**

Technology | **92% of surveyed senior executives are concerned with not having the right technology to help meet ESG goals and requirements.** With different types of reporting standards, technology that makes the right data available is critical. This data could be aggregated across large real estate portfolios for both performance analysis and reporting.

Accurate Data | Reliable and accurate data provide clear guidance and unclouded reporting progress about a company's sustainability goals and initiatives. However, **only 3% of surveyed companies believe their sustainability data to be as accurate as their financial data.** Capturing, verifying, and analyzing relevant historical data can be a time-consuming task that usually ends up at the bottom of an ever-growing to-do list.

Building Owners' and Operators' Biggest Challenges

Those who own, lease, and operate buildings are all charged with ensuring the safety, comfort, and well-being of occupants while also ensuring an efficiently operating building that, in most cases, have operational initiatives aligned with company-wide ESG goals. However, buildings consume enormous quantities of energy and water and produce large amounts of waste to the detriment of both the business' bottom line and the environment. Thus, any approach to curbing excess consumption, emissions, and cost in operations must account for the realities and priorities of those who own and operate buildings and tenant-controlled spaces.

In 2022, facilities managers ranked **health and safety**, **improving facility image**, and **improving productivity and efficiencies** as the three most important issues to their operations.[vi]

HEALTH AND SAFETY | **Healthy buildings aren't just a boon for occupants but also for businesses, leading to an 8-10% increase in productivity.[vii]** However, it's hard to have a healthy building with poor indoor air quality. Levels of pollutants indoors are often **two to five times higher** than they are outside, and infectious diseases, like COVID-19, can travel through air currents.[viii, ix] While health and safety were ranked as the top priority for facility managers, only 58% reported taking new measures to improve indoor air quality in the past year. This pales in comparison to the 97% who added hand sanitizer stations, suggesting that indoor air quality improvements are a largely untapped opportunity to address facility managers' most pressing concern.

FACILITY IMAGE | **Buildings with poor reputations sell for 15-25% less,** rent for 6-7% less, **and experience lower occupancy rates.**[x, xi] It is important to demonstrate that a building is well-maintained, comfortable, and suited to projecting confidence and professionalism. Facility managers rightly recognize that improving operations and maintenance and backing it up with data has the potential to be a valuable investment.

PRODUCTIVITY AND EFFICIENCIES | No building operator has infinite resources to get the job done, so increasing productivity and efficiency using the resources they do have is paramount. Many look to technological solutions to optimize their operations. While **30% of property managers shared that they use technology as a key tool to help drive efficiency, only 50% of those users are satisfied** with their current technology. [xii]

Existing Green Building Certification Programs

Green building certification programs worldwide have accomplished a considerable amount towards helping companies to reduce their CO_2 emissions, meet ESG goals, and operate their buildings more efficiently. However, **only 40% of existing buildings qualify for these certification programs, leaving the other 60% without a clear path to sustainability.**[xiii]

The development of the BIT Building program identified three main challenges for existing buildings to make progress on sustainable operations priorities with the tools that exist. Existing certification programs only work for a **small number of buildings**, **are designed for engineers instead of building operators**, and focus on maximizing points, not **long-term operational success**.

ONLY WORKS FOR A SMALL NUMBER OF BUILDINGS | The buildings with the most to gain from operational improvements all too often have the fewest resources to make those improvements. What's more, even if some buildings or tenant-controlled spaces in an operator's portfolio qualify, generally all of them won't. While some managers reported being responsible for one or two buildings, **most managers (34%) said they were responsible for 20 or more buildings.** Those facilities can vary significantly in baseline performance, which underscores the need for a program that can benefit all types of existing buildings and tenant-controlled spaces.

DESIGNED BY LARGE IN-HOUSE TEAM AND CONTRACTORS, NOT OPERATORS | 75% of facility managers report that they handle preventive maintenance and building systems in-house. However, a large team of engineering experts to perform complex metrics, algorithms, worksheets, and normalization schemes is a luxury most building operators don't have. **Existing green building certification programs are designed to be implemented by large in-house teams or contractors and usually do not account for the real-world constraints of those tasked with the actual implementation of operational changes.**

NOT AN ONGOING, LONG-TERM APPROACH | Because most green building programs have strict numbers that operators must meet that may not take realistic, individualized company goals into account, **short-term point-chasing is sometimes incentivized simply to check off the boxes**. Once certification is achieved, there is not much of a path to keep improving. Solutions are needed that enable and reward the development of customized, long-term efficiency strategies and goal setting.

BIT BUILDING EQUIPS USERS TO OPERATE SMARTER

After identifying the main challenges that sustainability officers and building owners and operators contend with—insufficient governance and capacity, inadequate technology, inaccurate data, overly complex calculations, high performance thresholds, and restrictive program requirements—BIT Building was developed to provide practical solutions. The result was a **simple, low-cost solution that works for everyone, equipping users to operate smarter.**

BIT Building offers an easy, flexible pathway to achieve better building performance—and earn green building certification—for existing buildings no matter the age or performance level. BIT's online platform helps sustainability officers as well as those who own, lease, and operate buildings across the globe to simultaneously optimize their operations, reduce costs, and achieve sustainability goals. BIT's technology is a solution that provides science-based data that ensures quality reporting and helps drive sustainability initiatives.

BIT Helps Sustainability Officers Meet ESG Challenges

The technology of BIT Building's online platform provides sustainability leaders with accurate, quality, science-based performance data for ESG reporting and helps guide the process of setting climate-related goals and initiatives.

BIT BUILDING'S SOLUTIONS TO SUSTAINABILITY OFFICERS' CHALLENGES	
Governance Structure & Increased Capacity	Using existing performance metrics, BIT Building's framework helps companies easily create and implement sustainability goals and strategies across the organization.
The Right Technology	BIT Building's user-friendly, comprehensive, digital platform is a unique collection of analysis and improvement tools combined into a single platform. Using utility consumption data, BIT Building provides users with guidance to make informed efficiency improvement decisions at the right time—even for companies with multiple projects around the globe.
Quality, Accurate Data	BIT Building provides clear, standardized, science-based data that can be used to quickly assess performance and report on ESG initiatives.

BIT Helps Bolster Your Progress

BIT Building-certified projects receive full credit under GRESB as a TIER 1 certification and help companies meet United Nations Sustainable Development Goals

BIT Helps Building Owners and Operators Operate Smarter

Simply having the right data is only part of the equation. BIT Building's online platform also provides building owners and operators with the tools, resources, and step-by-step guidance needed to deliver measurable results.

BIT BUILDING'S SOLUTIONS ANSWER OPERATORS' CHALLENGES		
	BIT Building	**Other Green Building Programs**
Designed with Operators in Mind	✓ Designed by and for building operators to accommodate busy schedules and limited resources. BIT uses simple, easily accessible metrics that can be applied to a variety of building types across geographies.	✗ Designed by engineers to be implemented by large in-house teams or contractors. Usually requires complex metrics, algorithms, worksheets, and normalization schemes.
Scalable and Customizable for All Buildings and Tenant-Controlled Spaces *(except single-family residential)*	✓ With no minimum performance thresholds and the flexibility to align with company goals, BIT meets operators where they are and easily scales across diverse global portfolios of buildings.	✗ With stringent one-size-fits-all requirements, 60% of existing buildings don't qualify. Buildings that do qualify often need to make costly upgrades to meet high-performance thresholds.
Enables Continuous Quality Improvement	✓ Focuses on ongoing achievable improvements that support long-term efficiency. BIT's platform guides users through the process with a full suite of assessment, planning, and implementation tools.	✗ Strict certification requirements incentivize point-chasing instead of the development of long-term efficiency strategies.

16 BEST PRACTICES FOR SUSTAINABLE OPERATIONS & MAINTENANCE

BIT Building's 16 Best Practices for Sustainable Operations & Maintenance were established as a holistic set of industry standards that, when implemented, result directly in performance improvements for building operations. The Best Practices are cost-effective and simple to implement in all building types *(except single-family residential)* regardless of the building's age or current level of performance.

BIT Building offers a robust suite of tools that guide users through an Assess-Plan-Implement process aligned to each best practice. Program participants can quickly build the digital infrastructure needed for continuous quality improvement and long-term operational success.

BIT BUILDING'S 16 BEST PRACTICES FOR SUSTAINABLE OPERATIONS & MAINTENANCE						
Best Practices	**Sustainability Officers' Priorities**			**Building Operators' Priorities**		
	Governance & Capacity	Technology	Accurate Data	Health & Safety	Facility Image	Productivity & Efficiency
BP01 Basic Performance Data Tracking	☑	☑	☑			☑
BP02 Energy Audit & Planning	☑	☑	☑			☑
BP03 Water Audit & Planning	☑	☑	☑			☑
BP04 Waste Audit & Planning		☑			☑	
BP05 Indoor Air Quality Audit & Planning				☑		
BP06 Annual Sustainability Planning	☑			☑	☑	
BP07 Preventative Maintenance & Operations				☑	☑	☑
BP08 Refrigerant Leak Detection				☑		
BP09 Water Leak Detection				☑		
BP10 Alternative Transportation					☑	
BP11 Green Purchasing					☑	
BP12 Waste Management					☑	
BP13 Green Cleaning				☑	☑	
BP14 Integrated Pest Management				☑	☑	
BP15 Landscape & Exterior Maintenance					☑	
BP16 Green Renovation & Fit-Out				☑		

Four Tiers of Certification

The ultimate objective of BIT Building is for facilities to improve from their own baseline. The first tier of BIT Building certification is achieved when all 16 Best Practices are implemented. Three additional tiers of certification recognize 10%, 20%, and 30% improvements in energy, water, and waste metrics relative to the project's baseline.

Moving Forward with Digital Data-Driven Tools and Resources

Operating better and meeting sustainability goals doesn't need to feel like an impossible undertaking. By leveraging technology with more than 40 years of experience, Southface Institute in partnership with sustainability experts and real estate professionals, including founders Dan Ackerstein, Jenny Carney, and Sundee Wislow, have developed a program that helps sustainability officers, building owners, and operators meet these demands while providing them with customized guidance and recognition every step of the way.

BIT Building is a comprehensive digital platform that helps to reduce operating costs, streamline efficiencies, and meet sustainability goals.

BIT Building is a simple, low-cost solution that works for everyone, equipping users to operate smarter.

Fee Structure

Priced to be straightforward and affordable for all participants, BIT Building charges a flat participation fee for each project that enrolls in the program. Paid at the time of registration, the fee includes program enrollment, access to BIT's tools and resources, and certification review.

FOR-PROFIT ORGANIZATIONS	NON-PROFIT ORGANIZATIONS
$1,500/project	$1,200/project

GET STARTED TODAY!
www.Southface.org/BIT

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[i] Why the Built Environment?
https://architecture2030.org/why-the-building-sector/#:~:text=The%20built%20environment%20generates%2040,for%20an%20additional%2013%25%20annually.

[ii] Global Status Report for Buildings and Construction 2019
This year's Global Status Report for Buildings and Construction provides an update on drivers of CO2 emissions and energy demand globally from 2017, along with examples of policies, technologies and investments that support low-carbon building stocks. About this report This is an extract, full report available as PDF download Download full report
https://www.iea.org/reports/global-status-report-for-buildings-and-construction-2019

[iii] U.S. Energy Information Administration (EIA) - Conference
2018 EIA Energy Conference Presentations Leaders from industry, government, and academia turned out for EIA's 2018 Energy Conference, June 4 and 5, at the Washington Hilton in Washington, DC, to discuss current and future challenges facing domestic and international energy markets and policymakers. Links to their presentations are provided below.
https://www.eia.gov/conference

[iv] Business Strategies to Address Climate Change
Improved energy efficiency has emerged as a key component of corporate climate change strategies. Companies participating in the global EP 100 initiative pledge to double their energy productivity (dollar of output per unit of energy), which has the potential to save more than $2 trillion globally by 2030.
https://www.c2es.org/content/business-strategies-to-address-climate-change

[v] Sustainability action report
Get in touch Kristen Sullivan US Sustainability and ESG Services Leader ksullivan@deloitte.com +1 203 708 4593 Kristen is a partner with Deloitte & Touche LLP and leads Sustainability and ESG Services. Kristen also serves as the Deloitte Touche Tohmatsu Limited's Global Audit & Assurance Sustainability and Cli... More Jon Raphael Sustainability
https://www2.deloitte.com/us/en/pages/audit/articles/esg-survey.html

[vi] 2022 In-House/Facility Management Benchmarking Survey Report
The 2022 CMM In-House/Facility Management Benchmarking Survey Report, brought to you by Cleancode, offers a snapshot of how the second year of the global pandemic affected facility managers (FMs) and in-house service providers, how they've adapted, and what trends they'll see for the rest of 2022.
https://cmmonline.com/articles/fmsurvey2022

[vii] The Financial Case for High-Performance Buildings - Stok
A methodology for how to quantify the financial value of enhanced productivity, increased retention, and improved wellness across an organization's workforce THOROUGH FINANCIAL METRICS Including annual profit per employee, annual profit per square foot, and net present value due to High-Performance Building investment Deo Prasad
https://resources.stok.com/financial-case-for-high-performance-buildings

[viii] Why Indoor Air Quality is Important to Schools | US EPA
For the purposes of this guidance, the definition of good indoor air quality (IAQ) management includes: Good IAQ contributes to a favorable environment for students, performance of teachers and staff, and a sense of comfort, health and well-being. These elements combine to assist a school in its core mission — educating children.
https://www.epa.gov/iaq-schools/why-indoor-air-quality-important-schools

[ix] Scientific Brief: SARS-CoV-2 Transmission | CDC
SARS-CoV-2 is transmitted by exposure to infectious respiratory fluids The risk of SARS-CoV-2 infection varies according to the amount of virus to which a person is exposed Transmission of SARS-CoV-2 from inhalation virus in the air farther than six feet from an infectious source can occur Prevention of COVID-19 transmission References
https://www.cdc.gov/.../2019-ncov/science/science-briefs/sars-cov-2-transmission.html

[x] Assessing the Value of Green Buildings
Green Building Benefits Increased Market Value Compared with Conventional Buildings NABERS Buildings Green Star Buildings Premium in value 2-12% Buildings with a 5-star nABers rating delivered a 9% premium in value, and 3-4.5 star nABers energy ratings delivered 2-3% premium in value. (newel 2011) green star rated buildings had a 12% premium in ...
https://www.corporatesustainabilitystrategies.com/wp-content/uploads/2016/01/Assessing...

[xi] The Economics of Green Building - MIT Press
Abstract We analyze the economics of green building, finding that recent increases in the supply of green buildings and the volatility in property markets have not affected the returns to green buildings. We then analyze a large cross-section of office buildings, demonstrating that economic returns to energy-efficient buildings are substantial.
https://direct.mit.edu/rest/article/95/1/50/58056/The-Economics-of-Green-Building

[xii] Voice of the Property Manager Report – 2021 Australian Edition
In The Voice of Property Manager 2021 Report, we surveyed 773 property management professionals across Australia to identify benchmarks around key employment issues, satisfaction levels and priorities as well as the overall outlook for the future.
https://www.mrisoftware.com/au/resources/voice-of-property-manager-report

[xiii] Understand Portfolio Manager Metrics | ENERGY STAR
A score of 50 represents median energy performance, while a score of 75 or higher means your building is a top energy performer — and may be eligible for ENERGY STAR certification. Take a look under the hood of Portfolio Manager to see what makes it run. Property types in Portfolio Manager How the 1 – 100 ENERGY STAR score is calculated
https://www.energystar.gov/buildings/benchmark/understand_metrics