

Next-Generation Office Strategies
Enhancing Building and Office Value
through the Evaluation and Maximization of Non-Energy Benefits (NEBs)

Deloitte Tohmatsu Consulting LLC. Investment Management & Real Estate, Sustainability Deloitte Tohmatsu Risk Advisory LLC. New Business Promotion Business Development

Contents

Ι	Changes Impacting Building Owners & Building Funds	03
	1. Domestic Office Market and Next-Generation Strategies	04
	2. The Importance of Green Buildings Utilizing Real Estate ESG Certifications	05
	3. Expanding Investment in Green Buildings	06
	4. Shift from Green / Energy Efficiency to Comprehensive Value	07
I	Definition of NEBs and International Trends	30
	1. What are Non-Energy Benefits (NEBs)?	09
	2. International Initiatives for NEBs Evaluation	10
	3. Development of NEBs Indicators as a Quantitative Evaluation Method	11
Ш	Mechanism by Which NEBs Contribute to Value	14
	1. Mechanism by Which NEBs Contribute to Asset Value	15
	2. Case Study (New Construction – Tenant Building): Urbannet Sendai-Chuo Building	1
	3. Case Study (New Construction – Owner-Occupied Building): Enefis project (DAI-DAN CO., LTD.)	1
	4. Case Study (Renovation – Owner-Occupied Building): Yashima Construction Co., Ltd. Head Office Building	1
IV	Solutions of Deloitte Tohmatsu Group	19
	1. Supporting the Strategic Utilization of NEBs with an Assessment of a Company's Management Challenges	20
	2. NEBs Quantitative Evaluation and Enhancement Support	21
	3. Providing Sustainable Solutions Utilizing Real Estate ESG Certifications	22
	4. Supporting the Advancement of ESG Activities	23
Co	ntact/Authors	25



Domestic Office Market and Next-Generation Strategies

Recent Trends in Domestic Office Demand

The office market in major Japanese cities is recovering from the supply-demand imbalance caused by the COVID-19 pandemic (2020–2021), driven by employees returning to the office and the revitalization of corporate activities. In Osaka and Nagoya, demand has outpaced supply, leading to a reduction in vacancy rates. Similarly, demand in Fukuoka remains robust despite a temporary increase in vacancy rates caused by new supply in Tenjin and Hakata areas.

In this context, Tokyo stands out due to its exceptionally favorable supply-demand balance. As of Q2 2025, the vacancy rate for Grade A office buildings in central Tokyo has decreased to 1.4%, while the overall vacancy rate for all office grades has dropped to 2.5%. In comparison, Manhattan's vacancy rate is approximately 14%, and London's is around 8%.

In Tokyo, pre-leasing activities have progressed significantly, and demand for relocations, expansions, and upgrades has driven up absorption. Additionally, improved corporate performance and profit growth have led to increased investment in human resources, further supporting office space demand. Both foreign and domestic companies are increasingly competing for talent. As workplace environments are enhanced to improve recruitment and retention, there is a clear shift toward high-quality office spaces.

Moreover, Japan's telework adoption rate remains relatively low—just over 20% in the Tokyo metropolitan area—implying that the country's culture of consistent office attendance is reinforcing stable demand for office spaces.

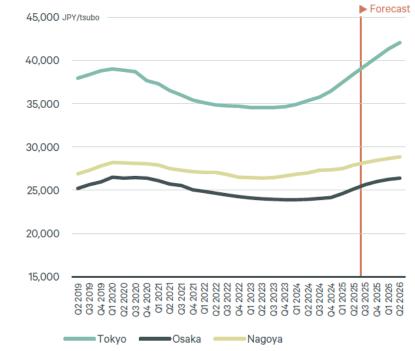
Next-Generation Office Strategies

The competitive focus on office buildings has shifted from "location and rent" to "comprehensive value creation," emphasizing environmental performance, disaster resilience, and features such as comfort and convenience.

Obtaining environmental certifications has become more common, and companies are increasingly making investment decisions that take into account non-energy benefits, such as improved health, enhanced productivity, and reduced turnover rates.

Furthermore, the adoption of digital technologies and smart building systems is enhancing operational efficiency and improving the tenant experience, thereby strengthen business continuity. These initiatives are more than mere facility upgrades; they are strategic investments aimed at securing long-term competitive advantages.

Grade A Average Estimated Achievable Rent



Note: 1 tsubo is approximately 3.3m² (35.5ft²).

Data Source: CBRE Japan Office Market View, Q2 2025

The Importance of Green Buildings Utilizing Real Estate ESG Certifications

Real estate ESG certifications have gained significant global and domestic attention in recent years, evolving into comprehensive frameworks for evaluating Environmental, Social, and Governance (ESG) factors. As a key driver in advancing the Sustainable Development Goals (SDGs) and addressing climate change, the real estate sector increasingly utilizes ESG certification systems to promote sustainability.

Global Landscape

Real estate ESG certifications first emerged in Western countries in the 1990s, with notable examples such as LEED in the United States and BREEAM in the United Kingdom—both internationally recognized as leading green building standards. More recently, WELL certification, which focuses on health and wellbeing, has also gained attention. These certifications initially focused only on environmental performance. Over time, they have expanded to include a broader range of ESG considerations, such as indoor comfort, employee health, and management systems. They increasingly address the needs of investors and tenants, enhancing competitiveness in the global market.

Domestic Landscape

Although Japan has lagged behind Western countries in adopting real estate ESG certifications, the number of certifications obtained has been growing rapidly in recent years. Prominent certifications in Japan include CASBEE, BELS (including ZEB), and the DBJ Green Building Certification. These certifications assess environmental and energy-saving performance as well as comprehensive sustainability efforts in the "S" and "G" areas such as tenant comfort, risk management, and governance. Adoption has been especially prevalent among companies and real estate owners committed to ESG investments.

The Role of ESG Certifications

Real estate ESG certifications have evolved beyond their initial role as tools for assessing environmental performance to include social contributions and data transparency—further strengthening their role in measuring social value and governance. For companies and investors, obtaining ESG certifications has become an essential tool for implementing ESG strategies and demonstrating social responsibility. ESG certifications are expected to become increasingly important in Japan, contributing to sustainable value creation in the real estate industry going forward.

ESG Coverage by Domestic and International Real Estate Certifications



Cumulative Number of Real Estate ESG Certifications in Japan (As of August 2025)



Data Source: IBEC, UDGBC, IWBI

Footnote: LEED: Leadership in Energy and Environmental Design. BREEAM: Building Research Establishment Environmental Assessment Method. WELL certification: WELL Building Standard. CASBEE: Comprehensive Assessment System for Built Environment Efficiency. BELS: Building-Housing Energy-efficiency Labeling System. ZEB: Net Zero Energy Building. DBJ Green Building Certification: a certification system established in 2011 as an initiative to support customers' environmentally and socially conscious management of their real estate.

Expanding Investment in Green Buildings

As efforts to achieve a sustainable society accelerate, global investments in green buildings continue to grow. With the rise of ESG investments and the demand for responsible investment, buildings with superior environmental performance and energy-efficiency capability have become increasingly attractive to investors and financial institutions. Additionally, green buildings are valued as sustainable assets due to their potential to comply with stricter regulations and help mitigate long-term risks.

Alignment Between ESG Disclosure and Corporate ESG Evaluation in Real Estate ESG Certifications

As ESG regulations and disclosure requirements advance, links between real estate ESG certifications and reporting standards are being established. For example, WELL certification aligns with 51% of the criteria in the European Sustainability Reporting Standards (ESRS) and 42% of India's Business Responsibility and Sustainability Reporting (BRSR) *. This alignment highlights the mutual benefits of integrating certifications with ESG disclosure requirements. In response, Deloitte Tohmatsu continues to collaborate with ESG rating agencies to identify commonalities in evaluation criteria.

Real Estate ESG Certifications as Criteria for Investment and Financing

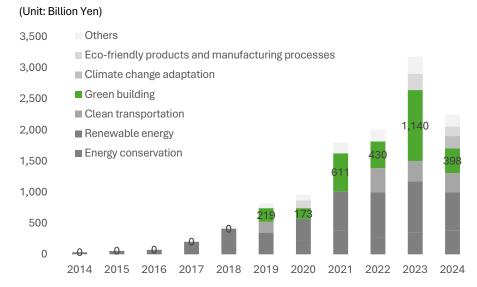
Real estate ESG certifications provide independent third-party verification of a building's environmental performance and social value. They serve as a critical benchmark for investors and financial institutions to assess sustainability. Obtaining certifications demonstrates that a property is an asset with low environmental risk, facilitating access to financing through green bonds and sustainability-linked loans. According to the Ministry of the Environment, green bond issuance in Japan has a higher proportion of green buildings than global trends, further underscoring the growing importance of real estate ESG certifications**.

6 Next-Generation Office Strategies

Toward a Sustainable Society

Promoting green building investments and adopting real estate ESG certifications are vital steps toward achieving a sustainable society. Buildings with strong environmental performance and social value are better able to address various regulations and sustainability reporting standards, while also driving the growth of ESG investments and expanding financing options. In other words, acquiring real estate ESG certifications provides a foundation for companies and financial institutions to accelerate their sustainability initiatives. Strengthened collaboration between certification systems, regulations, and evaluation standards is expected to encourage broader stakeholder participation in building a sustainable society.

Transition of Green Bond (GB) Issuance Amount by the Usage (2014–2024)



Data Source: Green Finance Market Trends, Ministry of the Environment

^{*}International WELL Building Institute: IWBI

^{**}Trends in the Green Finance Market – Ministry of the Environment

Shift from Green / Energy Efficiency to Comprehensive Value

The evaluation criteria for buildings have shifted from a focus on 'greenness and energy efficiency' to a more comprehensive approach. Stricter regulations, disclosure standards, increasing investor demands, and growing interest in tenant well-being and Business Continuity Planning (BCP) have broadened the evaluation framework. It now includes factors beyond the reduction of energy consumption and carbon emissions, such as human and business outcomes.

Health, productivity, disaster resilience, and comfort are playing an increasingly important role in building evaluation. Corporate branding, talent acquisition, and strong relationships with local communities also play a key role in enhancing a building's competitiveness and market appeal. The redefinition of offices in the post-COVID-19 era, intensified competition for talent, and the rising frequency of natural disasters are accelerating this trend. As a result, there is growing demand for comprehensive optimization that maximizes value for many stakeholders, rather than relying on a single metric.

This shift directly influences the evaluation and financing of buildings. Designs and operations that optimize comprehensive value improve rental income, occupancy rates, lease renewals, and tenant retention (i.e., fewer cancellations and shorter vacancy periods), resulting in more stable cash flow. Operational efficiencies during construction and management also help control costs and provide financing advantages, such as better funding terms and lower interest rates for targeted loans, reduced insurance premiums, lower deductibles, and favorable conditions for environmentally friendly loans (e.g., green loans). This can also help improve tenant composition, enhance corporate brand reputation, and foster collaboration with local communities, thus streamlining the process of obtaining permits and approvals. In this manner, initiatives focused on comprehensive value creation are increasingly recognized as effective strategies for optimizing the risk–return profile of building assets.

Values Prioritized by Each Stakeholder of the Building

	Enhancement of Human Capital Value	Cost Reduction	Improvement of Corporate Value	Fulfillment of Social Responsibility	Contribution to Business
Employees	0		0	0	©
Business Partners					©
Customers		0		0	©
Financial Institutions	0	0	0		©
Shareholders/ Investors	0	0	0		©
Government/ Local Authorities			0	0	0
Local Communities	0		0	0	0

Legend: ○ = Highly prioritized; ○ = Prioritized

Data Source: Created by Deloitte



1

What are Non-Energy Benefits (NEBs)?

Amid changes in the external environment, approaches and methodologies for evaluating effects beyond environmental aspects—referred to as "Non-Energy Benefits" (NEBs)—are gaining traction.

What are NEBs?

NEBs are defined as the secondary effects obtained from energy-saving or decarbonization initiatives, apart from the direct energy saving effects (Energy Benefits). This concept encompasses a broad range of benefits not limited to CO2 emission reductions, but also including improvements in quality of life, economic activity, and broader societal gains. NEBs are also known as "Co-benefits" or "Multiple Benefits," and these terms are often used interchangeably in international discussions.

Definition by the Ministry of the Environment (Japan):

The Ministry of the Environment defines NEBs as effects other than CO2 emission reductions that result from energy reductions achieved through environmentally friendly actions, such as electricity conservation or the purchase of low-carbon products. NEBs are positioned as a method for evaluating secondary, indirect, and synergistic benefits associated with environmental actions. Their purpose is to make visible aspects such as improved quality of life and mental well-being, which have traditionally been difficult to quantify, and to evaluate the comprehensive value of environmental actions. This concept has also been highlighted as "cobenefits" in the Fifth Assessment Report of the IPCC (April 2014), Also, it has long been an important topic in international discussions on climate change.



Definition by the International Energy Agency (IEA):

The IEA regards improvements in energy efficiency as a vital means for countries to generate greater economic activity. The organization identifies several positive outcomes associated with enhanced energy efficiency:

- Energy savings
- Affordability
- Competitiveness
- · Grid investments
- · Energy security
- Emission reductions
- Jobs
- Asset values
- Health
- Economic growth

Among these, the IEA especially emphasizes NEBs related to job creation and health. For example, companies that invest in energy efficiency can improve workplace environments—such as lighting and ventilation—which, in turn, enhances employee health and productivity.

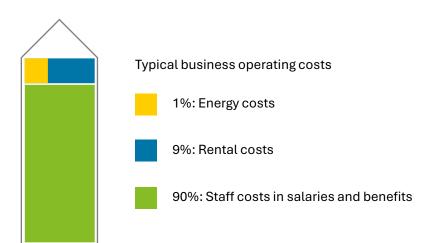
Data Source: What are NEBs, Ministry of the Environment. Multiple Benefits of Energy Efficiency

International Initiatives for NEBs Evaluation

Currently, there are ongoing efforts to apply a variety of NEBs (Co-benefit, Multiple Benefits) evaluation indicators internationally. This reflects the growing global recognition that improving building energy efficiency can yield secondary effects such as enhanced health, increased productivity, and higher property values.

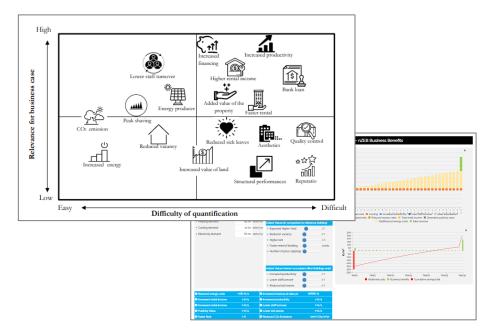
World Green Building Council (WorldGBC)

The WorldGBC is an international non-profit organization dedicated to promoting sustainable buildings, or green buildings. According to WorldGBC's reports, 90% of operational costs in green buildings are attributed to personnel expenses. This demonstrates that employee health and productivity are major factors influencing overall business operational costs.



CRAVEzero

CRAVEzero was an international research and practice project conducted from 2017 to 2020, aimed at promoting zero energy buildings. Within this project, efforts were made to quantify the secondary effects of energy-efficient buildings—such as improved productivity, reduced turnover rates, and increased rental income—using monetary conversion methods.



Data Source: WorldGBC, Health Wellbeing & Productivity in Offices (September 2014). Multiple, Non-Energy Benefits of Residential Energy Upgrades

Development of NEBs Indicators as a Quantitative Evaluation Method (1/3)

NTT FACILITIES, Inc. and Deloitte have jointly developed NEBs indicators

In response to the global trend of utilizing NEB evaluation, NTT FACILITIES, Inc. and Deloitte Tohmatsu Consulting LLC have collaboratively developed quantitative NEBs indicators for comprehensively assessing the effects of constructing or renovating energy-efficient buildings. Buildings with high environmental performance are expected to generate numerous secondary, indirect, and synergistic benefits, such as improved employee health and enhanced intellectual productivity due to better office environments. By using these indicators, management decisions regarding the introduction of energy-efficient buildings can be made not only based on energy savings, but also by considering these additional benefits.

Through the dissemination of these indicators, both companies aim to support investment decisions for the construction and renovation of energy-efficient buildings, such as Net Zero Energy Buildings (ZEBs), and thereby contribute to the decarbonization of assets owned by corporations and municipalities. Data necessary for NEBs evaluation in Japan is being accumulated, enabling estimates that reflect domestic realities by inputting existing data such as basic building specifications and operational conditions.

As-is

 Evaluated only with energy and utility costs, payback period appears long which is not correct considering other factors' effect.



Amount of investment in energy conservation and other ZEB projects *

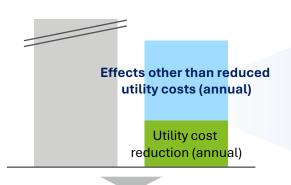
Utility cost reduction (annual)

Years for return on investment:

20 years**

To-be

 Evaluated with quantified effect of NEBs, ZEB is evaluated totally and properly, so that building owners can judge the investment rationally.





Contribute to the accumulation of high-quality social stock through the promotion of energy-efficient building

Years for return on investment:

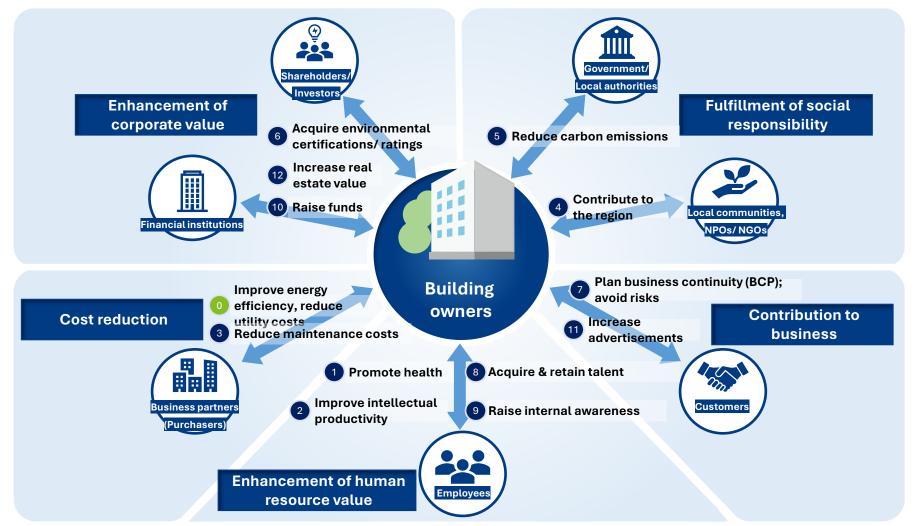
5 years**

^{*}Additional cost to upgrade basic building to ZEB

^{**}Estimated payback period for an office building with 1,200 sqm and 30 full-time employees

Development of NEBs Indicators as a Quantitative Evaluation Method (2/3)

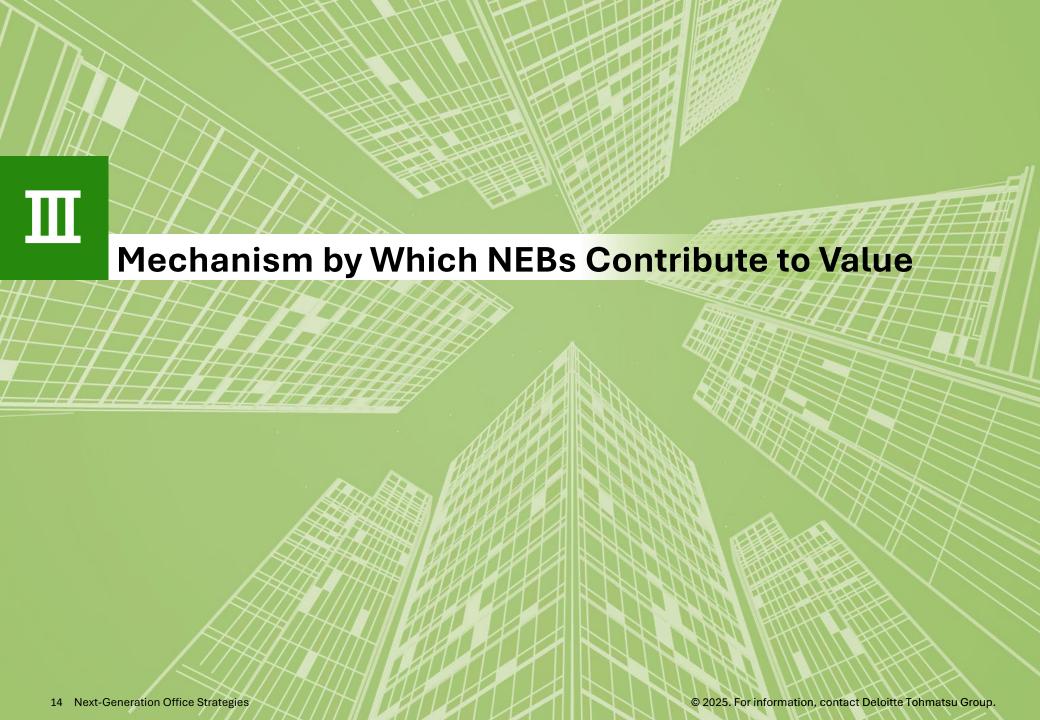
The NEBs indicators organize the effects of constructing or renovating energy-efficient buildings from the perspective of various stakeholders, including employees (i.e., the buildings' users), corporate and consumer customers, government agencies, local communities, financial institutions, shareholders, investors, NPOs, and NGOs.



Development of NEBs Indicators as a Quantitative Evaluation Method (3/3)

The NEBs indicators establish evaluation criteria for each of the many NEBs that emerge during the construction or renovation of energy-efficient buildings. Based on existing data such as basic building specifications and operational conditions, calculation logic and formulas have been developed to quantitatively assess how each NEB impacts finance and to qualitatively evaluate the effects from the perspective of NEB.

Ν	o.	Evaluation index	Effects	Calculation formula	No.	Evaluation index	Effects	Calculation formula
	1		Improvements in the office environment will enhance the mental and physical well-being of users and reduce poor performance and absenteeism due to poor health	Decrease in amount lost due to presentism/absenteeism × Number of employees working at the facility	7	Plan business continuity (BCP); avoid risks	Improvements to resilience through the introduction of new energy sources will avoid and reduce risks due to disasters and the strengthening of laws and regulations, thereby	Amount of time that would have been lost due to power outages × Amount of loss per hour
•	2	Improve intellectual productivity	Improvements in the office environment will advance users' intellectual productivity and reduce working hours	(Working hours for the entire pre- renovation base - Working hours for the entire pre-renovation base ÷ Productivity improvement rate) × Impact	•	Talent acquisition	avoiding loss of operating profit Enhanced work engagement strengthens recruitment	Mid-career recruitment cost per person × Number of employees × Turnover rate due to office
			Reductions in equipment		& retention	capabilities and reduces user turnover rates.	environment × Implementation rate of office environment measures	
•	3	Reduce maintenance costs	operating time due to downsizing and energy-saving operations will reduce the number of times equipment parts needs to be replaced and will reduce maintenance costs	Reduction in air conditioning maintenance expenses + Reduction in lighting maintenance expenses	9	Raise internal awareness	Improvements in user's environmental awareness	Substitution cost for environmental training + Reduction in material purchase costs and waste disposal costs due to increased environmental awareness
	4	Contribute to the region	as well Energy-efficient renovations improve aspects like building appearance, contributing to the local community and enhancing branding.	Substitution cost for training programs for students/local communities + Substitution cost for landscape improvement	0	Raise funds	Increase in ability to use sustainability-related financial products and ability to raise funds at lower interest rates	Loan amount × Interest rate differential from using environmentally related financial products
	5	Reduce Carbon Emission	Reductions in CO2 emissions subject to the carbon tax and in tax burdens thanks to energy conservation and creation	Energy consumption reduction × CO2 emission intensity × Carbon price	•	Increase in advertisement	Improvements in reputation in terms of environmental consideration and wellbeing thanks to media coverage of the building's advanced nature	Number of articles in the press × Price per article
	3	Acquire environmental certifications/ ratings	Improvements of owner reputation from acquiring environmental certifications through energy-saving renovations	PBR improvement rate due to carbon emission reduction × Net assets	12	Increase real estate value	Enhancing office value as a productive workplace and acquiring certifications increase rental income or real estate sale prices	NOI for ZEB - NOI for non-ZEB



Mechanism by Which NEBs Contribute to Asset Value

Enhancing NEBs leads to improvements in comfort, health, safety, and resilience within buildings. As these factors increase, tenant satisfaction, productivity, and occupancy duration are positively affected. This, in turn, enables the acceptance of rental premiums and higher lease renewal rates. As a result, cancellations, move-outs, and complaints decrease, vacancy periods are shortened, and average occupancy rates stabilize over time. Even if the total floor area remains fixed, improvements in unit prices and occupancy rates strengthen the top line, directly boosting Net Operating Income (NOI).

From a cost perspective, NEBs can lead to reductions in maintenance costs, repair expenses, property management fees, tenant recruitment costs, and insurance premiums. Improved NEBs encourage proper equipment usage and preventive maintenance, resulting in greater efficiency for regular maintenance procedures and reduced accident-related losses. Fewer complaints and incidents can also lower property management workloads

and recruitment costs. Furthermore, enhanced safety and risk reduction may lead to a favorable review of insurance premiums. Ultimately, stabilizing and reducing Operations & Maintenance (O&M) related costs contributes to improved NOI.

Additionally, as NEBs help lower physical and compliance risks, investors may require lower capitalization rates (cap rates), leading to increased asset values. Improved revenue, reduced costs, enhanced capital efficiency, and decreased risk collectively result in more stable cash flows with lower volatility. Overall, strengthening NEBs functions as a foundation supporting both NOI and asset value, thereby reinforcing the long-term value proposition of real estate assets.

In summary, a strategic focus on NEBs not only elevates tenant experience but also drives financial stability and asset appreciation. This comprehensive approach aligns with global best practices in real estate and facilities management, supporting sustainable growth and resilient investment outcomes.

Example: Evaluation of NEBs Effects as Asset Value Using the Direct Capitalization Method

```
Real Estate
                                                                                              Asset Value Enhancement Story Through Improvement of NEBs (Example)
                        NOI
                                        Cap Rate
   Value
                  Net Cash Flow (NCF) -
                                                CapEx
                                                                   Cap Rate
                      Real Estate Rental
                                                       Real Estate Rental
             =
                                                                                         CapEx
                                                                                                              Cap Rate
                     Business Revenue
                                                      Business Expenses
     Improvements in comfort and other factors lead to greater tenant
                                                                              Enhanced tenant satisfaction contributes
    satisfaction, making tenants more willing to accept rent premiums
                                                                                 to higher average occupancy rates
                                                               Average Occupancy
                        Rent
                                 × Total Leasable Area ×
                                                                                       + Parking Income +
                                                                                                               Other Income
                                                              Rate During the Period
     Downsizing equipment and
                                                  Energy-saving
                                                                                                        Improvements in tenant satisfaction, higher
                                                                          As with maintenance
    proper usage help to reduce
                                                measures result in
                                                                         costs, repair expenses
                                                                                                        occupancy rates, and promotional effects all
        maintenance costs
                                                lower utility costs
                                                                            are also reduced
                                                                                                        contribute to lower tenant recruitment costs
                       Maintenance and
                                                                                        _Tenant Leasing _ Public Charges _ Property Insurance
                                                                  Repair
                                                                                                                                                       Other
                                            + Utility Costs +
                      Management Costs
                                                                 Expenses
                                                                                                              and Taxes
                                                                                                                                   Premium
                                                                                 Fees
                                                                                                                                                     Expenses
                       CapEx
                                            Cap Rate
```

Case Study (New Construction – Tenant Building) Urbannet Sendai-Chuo Building

An evaluation of the "Urbannet Sendai-Chuo Building" (Sendai City, Miyagi Prefecture) revealed that the building achieved a total annual effect of 240 million yen. This figure combines the direct effects of EB, amounting to 70 million yen per year from reduced utility costs, with the secondary effects of NEBs, amounting to 170 million yen per year. Of the total, the effect realized by tenant companies was 220 million yen per year, while the effect realized by the building owner was 20 million yen per year.

Building Subject to Calculation

Urbannet Sendai-Chuo Building

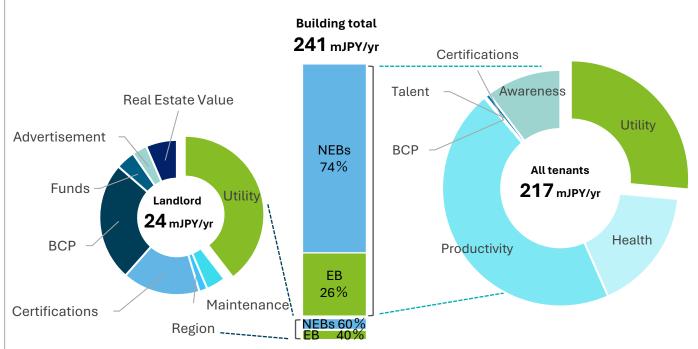


© NTT Urban Development

Location: Sendai City, Miyagi Prefecture Site Area: 3,073.86 m² (33,086.75ft²) Total Floor Area: 42,132.77 m² (453513.34 ft²) Structure and Scale: Steel structure with partial reinforced concrete, seismic isolation structure

19 floors above ground, 1 basement floor

Calculation Results



- * In the evaluation of Urbannet Sendai-Chuo Building, the effects of seismic isolation were taken into account to calculate the BCP / risk mitigation benefits.
- * The annual effect of 220 million yen for tenants includes the benefits of enhanced collaboration and co-creation among tenant companies through the use of collaboration spaces, as well as improvements in health and intellectual productivity resulting from the use of shared spaces equipped with amenities and landscaping.

Case Study (New Construction – Owner-Occupied Building) Enefis project (DAI-DAN CO., LTD.)

In the evaluation of three newly constructed ZEB office buildings at Dai-dan Co., Ltd.'s Enefis project, the average annual EB was calculated to be 2.5 million yen, while the NEBs were estimated at 10.2 million yen per year. As a result, the investment payback period was shortened to approximately one-fourth of the period calculated when considering only utility cost savings.

Building Subject to Calculation

Enefis Kyusyu (2016)





© SS Co., LTD. Kyushu branch

ZEB Ready 67%* reduction

Location: Fukuoka City, Fukuoka

Prefecture

Site Area: 759.00 m² (8169.80 ft²) **Total Floor Area:** 1,383.00 m²

(14886.48 ft²)

Building Footprint: 430.00 m²

(4628.48 ft²)

Structure/Scale: Mainly steel structure with partial reinforced concrete, 3 stories above ground, 1 basement level

Enefis Shikoku (2019)





© SS Co., LTD. Osaka branch Hiroki Akita

ZEB 101%* reduction

Location: Takamatsu City, Kagawa Prefecture

Site Area: 1,206.55 m² (12987.19 ft²)

Total Floor Area: 1,180.77 m² (12709.70 ft²)

Building Footprint: 480.78 m²

(5175.07 ft²)

Structure/Scale: Reinforced concrete structure, 3 stories above ground

Enefis Hokkaido (2021)





© Nacása & Partners Inc.

ZEB 102%* reduction

Location: Sapporo City, Hokkaido Prefecture

Site Area: 770.32 m² (8291.65 ft²)

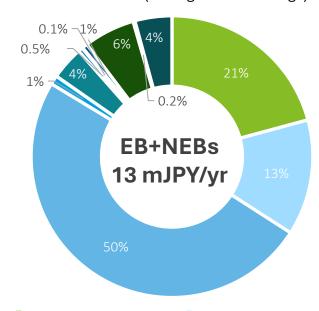
Total Floor Area: 1,113.21 m² (11982.49 ft²)

Building Footprint: 543.93 m²

(5854.81 ft²)

Structure/Scale: Reinforced concrete structure, 2 stories above ground

Calculation Results (Average for 3 buildings)



- Utility costs
- Productivity
- Local contribution
- BCP
- Internal awareness
- Advertisement

- Health
- Maintenance
- Certifications
- Talent
- Funding

*Annual primary energy consumption reduction rate relative to the baseline value.



Case Study (Renovation – Owner-Occupied Building) Yashima Construction Co., Ltd. Head Office Building

In the evaluation of the ZEB renovation of the headquarters building of Yashima Construction Co., Ltd.*, the average annual EB was calculated at 1.3 million yen, while the annual NEBs amounted to 11.9 million yen. As a result, the investment payback period was reduced to approximately one-ninth of the period calculated when considering only utility cost savings.

Building Subject to Calculation

Yashima Construction Co., Ltd. Head Office Building (June 2022 renovation, work completed)



ZEB 101%** reduction

Location: Yoshida-cho, Handa City, Aichi

Prefecture

Site Area: 3,257.53 m² (35,063.76 ft²) **Total Floor Area:** 1,051.32 m² (11,316.31 ft²) **Building Footprint:** 536.10 m² (5,770.53 ft²) **Structure/Scale:** Steel structure, 2 stories

above ground





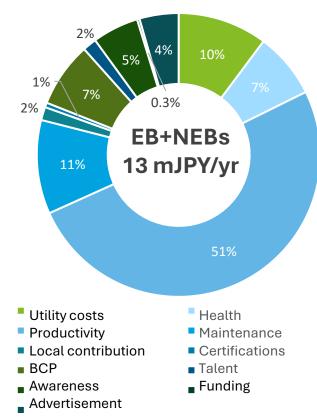
@Yashima Construction Co..Ltd.

After the ZEB renovation, we are now able to work comfortably, with faster start-up of air conditioning in summer and winter as well as improved thermal comfort for seats near the windows.



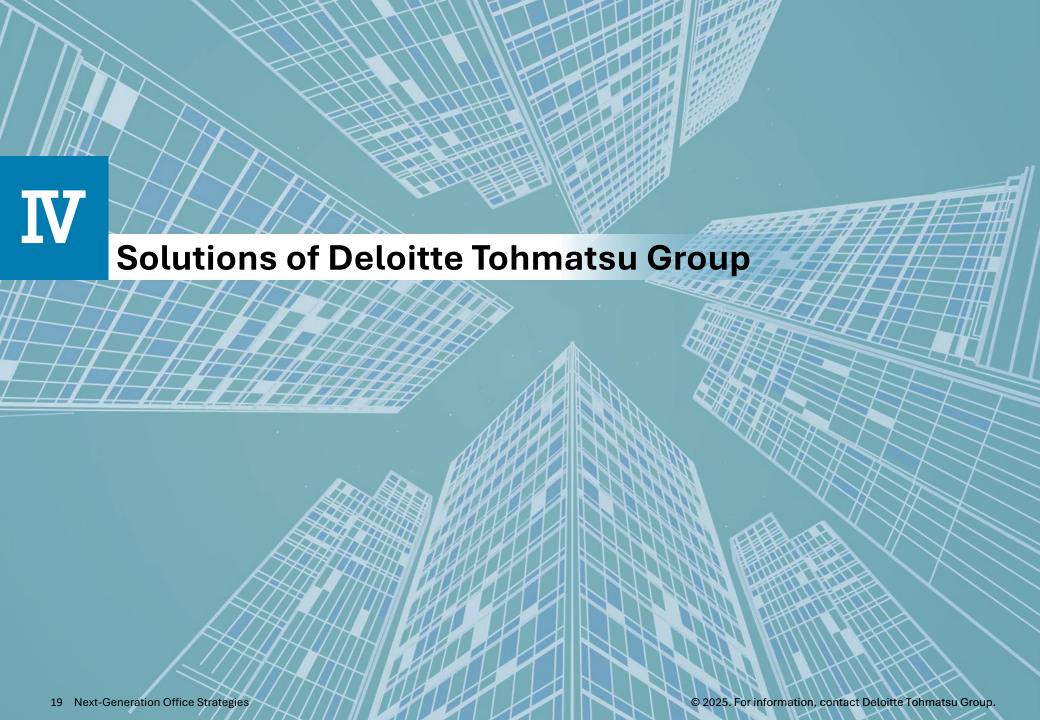
Employee Insight

Calculation Results



 $^{^{*}\}text{A company focused on environmental business, providing proposals and construction for ZEB renovation projects in the Tokai area.}\\$

^{**} Annual primary energy consumption reduction rate relative to the baseline value.



Supporting the Strategic Utilization of NEBs with an Assessment of a **Company's Management Challenges**

Deloitte Tohmatsu Consulting LLC.

Deloitte provides services to support the strategic utilization of NEBs (Non-Energy Benefits, meaning secondary effects beyond energy-saving), starting with an assessment of a company's management challenges.

This service connects corporate management strategies with the value of buildings and workplaces, offering actionable solutions that connect directly to management decisions toward topics such as advancing human capital management and well-being-oriented management, improving business resilience, strengthening financial and real estate strategies, and enhancing ESG communication.

The process begins with evaluating the company's management challenges and assessing the current state of its buildings and workplaces from the

perspective of NEBs. For example, concrete benefits such as improved health and productivity, achieved through optimized office air conditioning, lighting, and layout, are quantified and visualized. This approach enables companies to treat building and office reforms not only as energy-saving investments but also as initiatives contributing to human capital management strategies.

Furthermore, Deloitte supports the use of NEB evaluation results in stakeholder communications, including integrated reports, sustainability reports, and ESG disclosures. By effectively communicating the multifaceted value of NEBs, companies can build stronger relationships with a broad range of stakeholders such as investors, business partners, employees, and local communities.

Management issues	NEBs Utilization Areas	Expected Outcomes		
Human Capital Management / Health Management	 Assessment and visualization of employee health and productivity Utilization in human capital disclosure 	Improved recruitment competitiveness and retention rates Enhanced investor evaluations		
BCP / Risk Management	 Evaluation of workplace and business resilience Visualization of disaster response capabilities 	Strengthened business continuity Reduced insurance premiums Increased trustworthiness		
Finance / Real Estate Strategy	Economic valuation of NEBsSupport for financing and investor demands	Improved financing terms Increased asset value		
ESG / Social Value Communication	 Visualization of contributions to local and regional branding Contributions to health and comfort in local communities Support for ESG communication (e.g., use in integrated reports) 	 Enhanced reputation Strengthened branding Improved customer loyalty and stronger community ties 		

NEBs Quantitative Evaluation and Enhancement Support

Deloitte Tohmatsu Consulting LLC.

Quantitative Evaluation of NEBs

Deloitte evaluates the effects of NEBs in existing buildings and workplaces, as well as in projects involving new construction, renovation, or acquisition. By collecting and analyzing quantitative data on factors such as health, comfort, productivity, and satisfaction, we calculate both the payback period and the ROI (return on investment), factoring in the effects of NEBs.

Compared to traditional evaluations focused solely on energy-saving benefits, this approach can reduce payback periods to as little as one quarter or one fifth of the original duration. This significantly enhances the credibility of executive decision-making and improves the effectiveness of applications for subsidies, grants, and other forms of financial support.

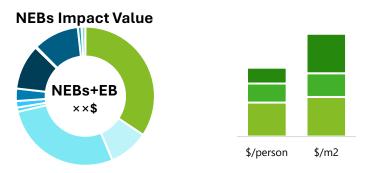
Evaluations of NEBs can be conducted not only for individual buildings but also for entire portfolios of buildings.

NEBs Enhancement Support

To maximize the positive impact of NEBs on buildings and workplaces, Deloitte provides recommendations for enhancing capital investments, operational practices, and workplace reforms. We present specific investment strategies along with estimates of economic benefits.

These initiatives go beyond traditional energy-saving assessments, establishing a new standard for investment evaluation that is directly linked to corporate value, social responsibility, and business growth.

Quantitative Evaluation Image



		E	Effect Amount	(\$/year)
EB	Reduction in utility costs			X,000
NEBs Health				X,000
	Intellectual	productivity		X,000
	Reduction in	n maintenance costs		X,000
	Local contri	X,000		
	Reduction in	n carbon emissions		X,000
	Acquisition ratings	of environmental certification	on and	X,000
	BCP / risk avoidance			
	Talent acqu	isition and retention		X,000
	Internal awa	areness		X,000
	Funding			X,000
	Advertising	and promotional effects		X,000
	Increase in	X,000		
Total		EB + NEBs, 12 items		X,000
		Excluding carbon tax and r estate value	eal	X,000
	NEBs	12 items		X,000
		Excluding carbon tax and r estate value	eal	X,000
Effect Amount per Unit	Per person		X,000\$/pers	son/year
(EB+NEBs)	Per area	x,000\$/m		

Note: This service is provided in collaboration with NTT Facilities Corporation.

Providing Sustainable Solutions Utilizing Real Estate ESG Certifications

Deloitte Tohmatsu Risk Advisory LLC.

Deloitte Tohmatsu Group has a dedicated team of experts specializing in real estate ESG certification solutions. This team views certification not as the ultimate goal, but as part of a broader, forward-looking initiative to develop environmentally friendly real estate and environments that prioritize well-being. Guided by this philosophy, our specialists analyze the unique

challenges faced by individual companies and deliver tailored solutions with clear roadmaps to employ certification as a means to address these challenges. We offer the following three advisory services as part of our targeted support. In advancing projects, we will facilitate consensus among relevant parties to ensure successful achievement of goals.

Advisory Menu		① Establishment of ESG concepts both inside and outside the company by maintaining certification	② Business development using standard/regulation formation related to ESG technology	③ Building a sustainability brand by using real estate ESG certification	
Οι	After obtaining real estate ESG certification, we support the thorough implementation and development of ESG activities, such as raising employees' awareness of environmental issues and well-being, as well as communicating these efforts externally.		We support companies with designated areas in real estate ESG certification to establish their ESG-related strengths and technologies as defacto standards or regulations within the industry.	We support clients in building a robust sustainability brand by strategically obtaining certifications that are globally recognized.	
	Client	 Identification of the department in charge of the organization Building collaboration in the company Acquisition of various types of ESG data 	Recognition of their strengths in ESG-related areas Building collaboration in the company Acquisition of various types of ESG data	Recognition of their strengths in branding Building collaboration in the company Acquisition of various types of ESG data	
Roles	Deloitte	 Preparation of procedural documents for maintaining certification Support to build an internal organization (workshops, seminars, etc.) Implementation of employee questionnaires necessary for maintaining various certifications 	Holding workshops to recognize strengths and supporting PMO operations within the organization Identifying and arranging opportunities for presentations at international conferences Lobbying with the central government and business organizations Formulation of the activity materials	Holding workshops to recognize strengths using Deloitte Greenhouse Supporting PMO operations in the organization Effective press release material preparation Choosing a method of promotion for clients' brand image	
Deliverables		 Documents to be submitted to the certification institutes Questionnaire results and analysis documents Textbook for the workshops 	Presentation materials for international conferences Presentation manuscripts at lobbying activities Preparation of materials for online publications	Brand concept manuscript Domestic marketing support International marketing methodology guidebook	

Please refer to the following for details: Business solutions spread from real estate ESG certifications, 2024 ESG in Real Estate Insights | Deloitte Global

Supporting the Advancement of ESG Activities

Deloitte Tohmatsu Risk Advisory LLC.

When companies address sustainability challenges involving ESG factors, they often face significant barriers, such as selecting relevant activity themes and demonstrating the importance of these themes to stakeholders. Common challenges include:

- Identifying ESG activity themes that best align with the company, considering the wide range of options.
- Integrating ESG factors into business operations and efficiently planning and executing related initiatives.
- Communicating the content and outcomes of activities both internally and externally to support effective investor relations (IR) and public relations (PR) efforts.
- Develop KPIs aligned with the company's management plan to address social challenges and define approaches for external collaboration aimed at improving achievability and operational efficiency.
- Conduct comprehensive and quantitative evaluations of societal impact.
- Develop IR and PR strategies, tools, and communication tactics to effectively promote ESG initiatives, enhance visibility, and strengthen stakeholder engagement.

To help companies overcome these barriers, Deloitte Tohmatsu Group offers a diverse set of services such as ESG activity evaluation and prioritization, design of individual initiatives, and external communication. Our comprehensive support promotes ESG-driven management and strengthens the strategic alignment between ESG-driven management and business goals.



- Select themes that align with societal needs, the company's mission, and business activities, while leveraging the company's unique strengths to create high-impact initiatives.
- Establish action items, roadmaps, organizational structures, and financial plans. Implement monitoring and improvement processes (PDCA cycle) to ensure the ongoing enhancement of activities.
- Evaluate and communicate ESG activities to investors and other external stakeholders, emphasizing corporate value and investment efficiency.

Please refer to the following for details: ESG Evaluation Support | Deloitte Tohmatsu Group (Japanese)

Contact

Deloitte Tohmatsu Consulting LLC

Investment Management & Real Estate

Takaumi Tamura

Partner

tatamura@tohmatsu.co.jp

Ayumu Shimizu

Director

ayushimizu@tohmatsu.co.jp

Sustainability

Hiroyoshi Niwa

Partner

hniwa@tohmatsu.co.jp

Yuichi Sunaga

Senior Manager

yusunaga@tohmatsu.co.jp

Deloitte Tohmatsu Risk Advisory LLC

New Business Promotion Business Development

Daisuke Kuwabara

Partner

daisuke.kuwabara@tohmatsu.co.jp

Noriko Kono

Manager

noriko.kono@tohmatsu.co.jp

Authors

Ayumu Shimizu

Director

Investment Management & Real Estate

Mana Kunisaki

Senior Consultant Sustainability

Moeka Saito

Yuichi Sunaga

Senior Manager

Sustainability

Consultant Sustainability

Ran Furuyama

Manager

Research & Knowledge management

rfuruvama@tohmatsu.co.ip

Noriko Kono

Manager

New Business Promotion Business Development

Ryohei Matsubara

Consultant

Sustainability



Deloitte Tohmatsu Group (Deloitte Japan) is a collective term that refers to Deloitte Tohmatsu LLC, which is the Member of Deloitte Asia Pacific Limited and of the Deloitte Network in Japan, and firms affiliated with Deloitte Tohmatsu LLC that include Deloitte Touche Tohmatsu LLC, Deloitte Tohmatsu Risk Advisory LLC, Deloitte Tohmatsu Group LLC, Deloitte Tohmatsu Group LLC. Deloitte Tohmatsu Group is known as one of the largest professional services groups in Japan. Through the firms in the Group, Deloitte Tohmatsu Group provides professional services in accordance with applicable laws and regulations. With more than 20,000 people in about 30 cities throughout Japan, Deloitte Tohmatsu Group serves a number of clients including multinational enterprises and major Japanese businesses. For more information, please visit the Group's website at www.deloitte.com/ip.

Deloitte refers to one or more of Deloitte Touche Tohmatsu Limited ("DTTL"), its global network of member firms, and their related entities (collectively, the "Deloitte organization"). DTTL (also referred to as "Deloitte Global") and each of its member firms and related entities are legally separate and independent entities, which cannot obligate or bind each other in respect of third parties. DTTL and each DTTL member firm and related entity is liable only for its own acts and omissions, and not those of each other. DTTL does not provide services to clients. Please see www.deloitte.com/about to learn more.

Deloitte Asia Pacific Limited is a company limited by guarantee and a member firm of DTTL. Members of Deloitte Asia Pacific Limited and their related entities, each of which is a separate and independent legal entity, provide services from more than 100 cities across the region, including Auckland, Bangkok, Beijing, Bengaluru, Hanoi, Hong Kong, Jakarta, Kuala Lumpur, Manila, Melbourne, Mumbai, New Delhi, Osaka, Seoul, Shanghai, Singapore, Sydney, Taipei and Tokyo.

Deloitte provides leading professional services to nearly 90% of the Fortune Global 500° and thousands of private companies. Our people deliver measurable and lasting results that help reinforce public trust in capital markets, and enable clients to transform and thrive. Building on its 180 year history, Deloitte spans more than 150 countries and territories. Learn how Deloitte's approximately 460,000 people worldwide make an impact that matters at www.deloitte.com.

This communication contains general information only, and none of Deloitte Touche Tohmatsu Limited (DTTL), its global network of member firms, or their related entities (collectively, the "Deloitte organization") is, by means of this communication, rendering professional advice or services. Before making any decision or taking any action that may affect your finances or your business, you should consult a qualified professional adviser. No representations, warranties or undertakings (express or implied) are given as to the accuracy or completeness of the information in this communication, and none of DTTL, its member firms, related entities, employees or agents shall be liable or responsible for any loss or damage whatsoever arising directly or indirectly in connection with any person relying on this communication. DTTL and each of its member firms, and their related entities, are legally separate and independent entities.

© 2025. For information, contact Deloitte Tohmatsu Group.



IS 669126 / ISO 27001



BCMS 764479 / ISO 22301



Member of

Deloitte Touche Tohmatsu Limited