

Annex 3

CASBEE Brochure

Comprehensive Assessment System for Built Environment Efficiency

CASBEE®

Introduction

Climate change has become a global issue of extraordinary importance. In 2008, the commitment period of the Kyoto Protocol, based on the Framework Convention on Climate Change began. As international negotiations on a post-Kyoto Protocol framework are already in progress, Japan has announced to commit to reductions in greenhouse gas emissions of 25% by 2020 and 80% by 2050 based on 1990 levels.

On the other hand, controlling growing energy consumption within the private sector continues to be a major challenge. Against this backdrop, a joint industrial/government/academic project was initiated in Japan with the support of the Housing Bureau, a branch of the Ministry of Land, Infrastructure, Transport and Tourism (MLIT), in April 2001. Since then, a committee established as part of the project has been working on development of the Comprehensive Assessment System for Built Environment Efficiency (CASBEE).

In 2008, in order to facilitate active participation in CO₂

reduction initiatives, improvements were made to include life cycle CO₂ (LCCO₂) assessment to evaluate efforts to reduce operating energy, a causal factor in climate change, as well as efforts that contribute to reducing embodied CO₂ associated with the manufacturing of construction materials.

In order to further promote and improve a low carbon society, we have now developed the 2010 edition of CASBEE for New Construction. The new edition promotes CO₂ reduction initiatives that include energy efficiency improvement, use of ecological materials and extended building lifespan. It is also intended for use in labeling buildings with superior low-carbon performance such as zero energy buildings (ZEBs), zero energy houses (ZEHs) and life cycle carbon minus (LCCM) houses. It is our hope that CASBEE will continue to gain importance in Japan, thus greatly contributing to the advancement of sustainable building development.

What is CASBEE?

CASBEE (Comprehensive Assessment System for Built Environment Efficiency) is a method for the evaluation and rating the environmental performance of buildings and built environment. It is a comprehensive assessment of the quality of a building, evaluating features such as interior comfort and scenic aesthetics, in consideration of environmental practices which include using materials and equipment that save energy or achieve smaller environmental loads. The CASBEE assessment is ranked in five grades: Superior (S), Very Good (A), Good (B+), Slightly Poor (B-) and Poor (C).

CASBEE is comprised of assessment tools tailored to different scales: construction (houses and buildings) and urban (town and city development). These tools are collectively known as the

CASBEE Family.

CASBEE has been developed by a research committee established in 2001 as part of a joint industrial/government/academic project. The first assessment tool, CASBEE for Office, was completed in 2002, followed by CASBEE for New Construction in July 2003, CASBEE for Existing Building in July 2004 and CASBEE for Renovation in July 2005. The CASBEE assessment tools were developed on the basis of the following three principles: [1] Comprehensive assessment throughout the life cycle of the building, [2] Assessment of the Built Environment Quality and Built Environment Load and [3] Assessment based on the newly-developed Built Environment Efficiency (BEE) indicator.

Who is User of CASBEE

1) For use in the Private Sector

Design for the environment (DfE)

CASBEE can serve as an assessment tool that designers can use to check the environmental performance of buildings at the design stage and provide their clients and others with objective information on environmental considerations. It can also be used as an indicator for the indirect setting of targets that clients, designers and others can use to evaluate their own environmental management activities under ISO14000s and other systems.

Environmental labeling

CASBEE can be used by third-party agencies as an environmental performance assessment tool for labeling buildings when they are valued as assets. The aim is to make assessment by CASBEE for Existing Building a tool that can be used in property appraisal.

Environmental performance diagnosis

CASBEE can be used as a tool to generate proposals for building operation monitoring, commissioning and upgrade design with a view to ESCO (Energy Service Company) projects and building stock refurbishment. Assessment under CASBEE for Renovation is a tool that can be applied to energy-saving remodeling etc.

Criteria for design competitions and PFI projects

CASBEE is now being applied in the scoring process of design competitions and proposals, in evaluation of PFI project operators and in design-stage verification of environmental performances. CASBEE's comprehensive environmental performance indicators can be used to co-establish environmental targets between clients and designers, or between building owners and tenants. Furthermore, municipal authorities and building owners in the private-sector can propose target performance levels as design conditions.

International building assessment tool

The International Organization for Standardization (ISO) has been developing an internationally -standardized assessment method for environmental performance in buildings under TC59/SC17 and in June 2010 published ISO 21931-1: Framework for methods of assessment of the environmental performance of construction works-Part 1: Buildings, which offers a universal framework for various assessment tools including CASBEE. An assessment system in compliance with international standards can be applied globally for various purposes such as multilateral cross certification of environmental labeling. For example, such a system may be useful when a multinational company considers a lease or purchase of a building in Japan or when a Japanese company is building a factory abroad.

2) For Administrative Applications

In recent years, the active player in market transformation of building sector appears to be public sector who utilize environmental assessment tool for environmental performance of buildings. Several local authorities introduced CASBEE into their building administration. In April 2004, the city of Nagoya introduced CASBEE Nagoya for their sustainable building reporting system. The city of Osaka also adopted CASBEE Osaka in October 2004. The reporting systems oblige building owners intending to newly build or rebuild a building to submit a planning document assessing the environmental performance of the building.

In some cities that introduced CASBEE, several kinds of incentives are now provided. For instance, the maximum floor-area ratio of the building can be increased if the ratings reach the B⁺ class, the third of CASBEE's five grades. Financial support can be provided for high score buildings assessed by CASBEE. The city

of Kitakyushu subsidizes residential buildings that are B⁺-ranked by CASBEE. In some cities, such as Kawasaki, developers who are selling multi residential units must publish CASBEE results in their advertisements to inform consumers about the environmental performance of the buildings. Financial sector, such as banks, utilizes such information to offer better interest rates to the consumers who buy environmentally high performance residential units.

3) Application to Education

Use of CASBEE is also progressing in construction-related education in universities and elsewhere. At present, it is used for environmental planning training in most universities with faculties of architecture. We hope that construction-related professional bodies and academic bodies will use CASBEE in continuing professional development (CPD) for construction professionals who are already in practice.

How does CASBEE assess

Two Categories of Assessment: Q and L

Under CASBEE, these two factors are defined below as Q and L, the main assessment categories, and evaluated separately.

- Q (Quality): Built Environment Quality

Evaluates "improvement in living amenity for the building users, within the hypothetical enclosed space (the private property)."

- L (Load): Built Environment Load

Evaluates "negative aspects of environmental impact which go beyond the hypothetical enclosed space to the outside (the public property)."

Therefore the assessment categories contained within these two fields had to be examined and reorganized. Q is further divided into three items for assessment: Q1 Indoor environment, Q2 Quality of services and Q3 Outdoor environment on site.

Similarly, L is divided into L1 Energy, L2 Resources & Materials and L3 Off-site Environment.

Environmental Labeling Using Built Environment Efficiency (BEE)

BEE (Built Environment Efficiency), is the core concept of CASBEE. BEE, as used here, is an indicator calculated from Q as the numerator and L as the denominator.

Built Environment Efficiency (BEE) =

$$\frac{Q \text{ (Built Environment Quality)}}{L \text{ (Built Environment Load)}}$$

The use of BEE enables simpler and clearer presentation of building environmental performance assessment results. BEE values are represented on the graph by plotting L on the x axis and Q on the y axis. The BEE value assessment result is expressed as the gradient of the straight line passing through the origin (0,0).

The higher the Q value and the lower the L value, the steeper the gradient and the more sustainable the building is. Using this approach, it becomes possible to graphically present the results of building environmental assessments. The figure shows how the assessment results for buildings can be ranked on a diagram as class C (poor), class B⁻, class B⁺, class A, and class S (excellent), in order of increasing BEE value. Each rank corresponds to the assessment expressions shown in Table 1 and are also expressed as a number of stars for clarity.

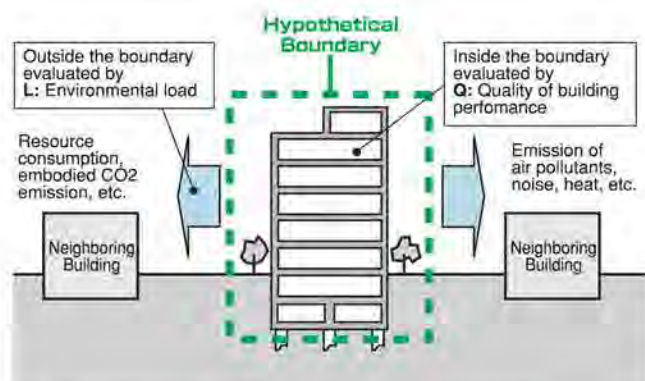


Figure 1 Definition of Q and L through hypothetical boundary

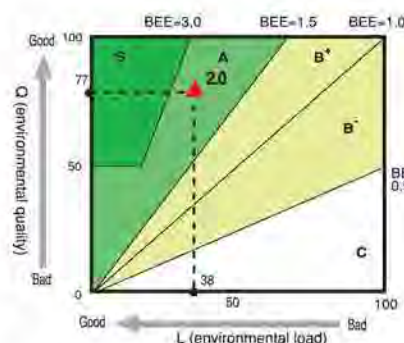


Figure 2 Definition of BEE and the graph

Table 1 BEE value and Ranks of CASBEE

Ranks	Assessment	BEE value, etc.	Expression
S	Excellent	$BEE \geq 3.0, Q \geq 50$	★★★★★
A	Very Good	$3.0 > BEE \geq 1.5$	★★★★
B ⁺	Good	$1.5 > BEE \geq 1.0$	★★★
B ⁻	Slightly Poor	$1.0 > BEE \geq 0.5$	★★
C	Poor	$BEE < 0.5$	★

CASBEE® For New Construction | Assessment Result

Manual: CASBEE for New Construction (2010 Edition)

Software: CASBEE-NC_2010(v.1.5)

1-1 Building Outline		1-2 Appearance	
Building Name	XX Building	Number of Floors	+ XX F
Location	XX city, XX pref.	Structure	S
Area / Zone	Commercial Area	Occupancy	XX persons
Climate Zone	Area Category V	Annual Occupancy	XXX hrs/yr
Building Type	Office	Assessment Phase	Execution design stage
Completion	01-Dec-11 Scheduled	Assessment Date	8-Jul-10
Site Area	XXX m ²	Assessor	XXX
Construction Area	XXX m ²	Date of approval	10-Jul-10
Gross Floor Area	15,000 m ²	Approved by	XXX
		Appearance, Views, etc.	

2-1 Built Environment Efficiency (Rank & c)	2-2 Life Cycle CO ₂ (Global Warming Impact Chart)	2-3 Assessment Result of Major Category (Radar Chart)
BEE = 2.2 ★★★★★★☆☆☆☆ S: ★★★★★★ A: ★★★★★★ B+: ★★★★★ B: ★★★★★ C: ★★★★★	Standard Calculation 1) Reference Value: 100% 2) Building-related initiatives: 89% 3) Above initiatives + other on-site measures: 76% 4) Above initiatives + other: 76% The building's LCCO₂ emissions are assessed under LRS. Consideration of Global Warming with relation to the reference building.	

2-4 Assessment results of Medium-level categories (Bar Charts)		
Environmental Quality Score of Q = 3.5		
Q1 Indoor Environment Score of Q1 = 3.2	Q2 Quality of Service Score of Q2 = 3.3	Q3 Outdoor Environment on Site Score of Q3 = 4.1
LR Environmental Load Reduction Score of LR = 3.8		
LR1 Energy Score of LR1 = 4.3	LR2 Resources & Materials Score of LR2 = 3.4	LR3 Off-site Environment Score of LR3 = 3.7

3 Design considerations		
General Describe briefly comprehensive concept of environmental design of the building.		Other Describe briefly considerations for other than 6 categories above that is not assessed in CASBEE-NC, such as recycling activities at construction site and preservation of historic buildings.
Q1 Indoor Environment Describe briefly considerations for Q1 Indoor Environment of the building.	Q2 Quality of Service Describe briefly considerations for Q2 Quality of Service of the building.	Q3 Outdoor Environment Describe briefly considerations for Q3 Outdoor Environment on Site of the building.
LR1 Energy Describe briefly considerations for LR1 Energy of the building.	LR2 Resources & Materials Describe briefly considerations for LR2 Resources & Materials of the building.	LR3 Off-site Environment Describe briefly considerations for LR3 Off-site Environment of the building.

Figure 3. Assessment Result Sheet of CASBEE for New Construction

LCCO2 assessment

Since 2008, CASBEE has included LCCO2 assessment, which evaluates CO2 emissions during the entire building life cycle from construction and operation to demolition and disposal. A new "Standard Calculation" method automatically provides a simplified estimation of LCCO2 based on data already entered in a CASBEE spreadsheet. The feature is especially beneficial to assessors who are not familiar with the LCCO2 evaluation. Additionally, the "Individual Calculation" method can be selected for buildings with more extensive CO2 reduction measures.

In the 2010 edition, LCCO2 performance is indicated more clearly by awarding 1 to 5 green stars based on LCCO2 emissions together with the BEE assessment. Specifically, the emissions rate (%) is evaluated relative to the LCCO2 emission level of a reference building (one that meets evaluation standards for building owners according to the Energy Conservation Law). Green stars are awarded based on the criteria below:

- LCCO2 over 100% (non-energy efficient building): 1 green star
- LCCO2 below 100% (current energy efficiency standards are satisfied): 2 green stars
- LCCO2 below 80% (30% energy saving achieved during building operation): 3 green stars
- LCCO2 below 60% (50% energy saving achieved during building operation): 4 green stars
- LCCO2 below 30% (zero energy consumption achieved during building operation): 5 green stars

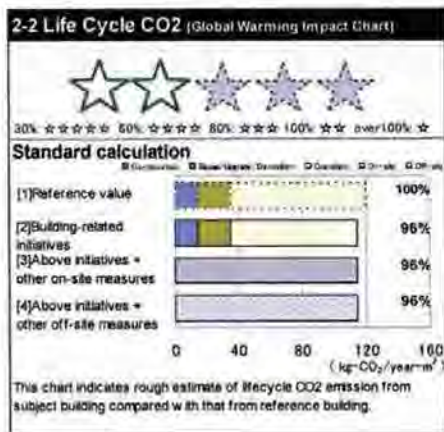


Figure4 LCCO2 calculation result

LCCO2 emissions are evaluated based on the nature of CO2 reduction initiatives: measures for buildings (e.g. energy efficiency improvement, use of ecological materials and extended building lifespan) and the on- and off-site measures. The results are shown individually as below:

- [1] Reference value (LCCO2 emissions of a reference building that satisfies the standards for building owners as referred to in the Energy Conservation Law)
- [2] LCCO2 emissions of a targeted building applied building-related initiatives only. (e.g. energy efficiency improvement, use of ecological materials and extended building lifespan)
- [3] LCCO2 emissions with above initiatives + other on-site measures (e.g. on-site solar power generation)
- [4] LCCO2 emissions with above initiatives + off-site measures (e.g. procurement of green power certificates and carbon credits)

CO2 reduction using off-site measures [4] are currently not included in BEE. As the addition of off-site measures is expected in the future, the 2010 edition allows this assessment in individual calculation of LCCO2.

Assessment Certification System

When the assessment results are provided to third parties, it becomes increasingly important to ensure their reliability and transparency. The assessment certification system was a system

established to ensure reliability and the accuracy of assessment result. Reliability of asset appraisal and labeling for buildings also can be enhanced if the buildings are evaluated by the CASBEE Accredited Professionals. A wide range of buildings are subject to certification, including existing buildings, renovation, urban development and home (detached houses), not just new construction. So far, about 170 buildings have been certified (as of July 2011.)



Figure 5 Certification Mark for certified buildings

Accredited Professional Registration System

Basically, CASBEE assesses the building's environmental performance quantitatively as possible, but it includes assessment items that are qualitative in nature. As such, it requires a specialized engineer with expertise and knowledge in CASBEE's evaluation methods. That is why the CASBEE Accredited Professional Registration System was established. Those aiming to become accredited professionals must attend the training course, pass the examination and complete registration. The current categories of CASBEE-APs are; CASBEE Building Accredited Professionals, who are specialist of CASBEE for New Construction, for Existing Buildings, for Renovation, and these brief versions. CASBEE Detached House Accredited Professionals, who can use CASBEE for Home (detached houses). The qualification for taking the examination for CASBEE Building Accredited Professional is that the examinee must be a Japanese first-class architect. As of August 2011, there are about 10,000 CASBEE-APs in Japan.

CASBEE Assessment Tools

1) For Houses

CASBEE for Home (Detached House)

CASBEE for Home (Detached House) was developed in 2007. There are various stakeholders surrounding housing construction industry such as clients, designers, contractors, and builders. Therefore "CASBEE for Home" especially focuses on making users easy to understand. Among CASBEE tools, CASBEE for Home first introduced five-star indicator as a new expression of the five BEE ranks in addition to the BEE chart. It includes 54 sub-criteria that are modified from the other standards in Japan. These assessment items for comprehensive assessment consider not only house itself but also outdoor space of the house, home appliances, provided information to the occupants from house suppliers and the environmental strategies at the material production stage and the construction stage.

2) For Buildings

CASBEE for New Construction (CASBEE-NC)

CASBEE-NC is mainly used by architects and engineers to increase the BEE value of a building during the design process. This can be used as a design support tool as well as a self check list. This tool, formerly named DfE (Design for Environment) tool, makes assessments based on the design specifications and the anticipated performance. Rebuilding projects are also assessed by CASBEE-NC. At the Preliminary Design, Execution Design and Construction Completion phases, the environmental quality and performance of the building and its load reduction performance are evaluated. As environmental performance and assessment criteria change over time, the results of assessments only remain valid for three years after the completion of construction.

CASBEE for Existing Building (CASBEE-EB)

CASBEE-EB targets existing building stock, based on operation records for at least one year after completion. The tool was also developed to be applicable to asset value assessment. This assessment tool evaluates achieved performance when the assessment is made. The result is valid for 5 years, and requires assessment using the latest version of the assessment tool, because the condition of the building may change over time. It can be used as a labeling tool to declare the environmental performance of buildings. CASBEE-EB is also utilized to support building maintenance. Building owners, such as the real estate sector and large enterprises, may use it as a self-evaluation tool for mid-term and long-term management plans.

CASBEE for Renovation (CASBEE-RN)

CASBEE-RN is designed to evaluate the performances of existing buildings based on predicted performance and specifications with renovation. It can be used for building-stock renovation, and to generate proposals for building-operation monitoring, commissioning and upgrade design with a view to ESCO (Energy Service Company) projects. It is valid for three years after completion of the renovation work, and assessment must be made with the latest version of CASBEE-RN at the point of assessment. This tool can be used to evaluate the degree of improvement of the environmental performance, relative to the level that preceded renovation. CASBEE-RN may also assess improvement of specific performance in relation to the purpose of the renovation. For instance, the BEE for energy saving can also be evaluated, that is determined by the scores for assessment categories especially related to energy saving renovation, such as Energy(LR1) and Indoor environment(Q1).

CASBEE for Temporary Construction

CASBEE for Temporary Construction was developed as an extension to CASBEE for New Construction for evaluating temporary buildings constructed specifically for short-term use,

such as expo pavilions. Buildings of this type have short-term lifecycles, and therefore consideration must concentrate largely on material use and recycling in the construction and the demolition phases. The scoring criteria and weighting reflect the features of temporary building.

CASBEE -HI (for Heat Island Relaxation)

Assessment of the heat island effect is essential in major urban areas, such as Tokyo and Osaka. CASBEE for Heat Island Relaxation is a tool aiming for more detailed quantitative assessment of heat island relaxation measures in building design. In CASBEE-HI, the criteria deal with more detailed conditions in the outdoor thermal environment and the heat island load to surroundings. (These are also addressed in CASBEE-NC.)

Brief versions

Brief versions of CASBEE tools were developed to meet the growing need for a tool to set goals of the Built Environment Efficiency more easily and prepare documents for submission to government agencies. Brief versions are available for most CASBEE tools, such as CASBEE-NC, CASBEE-EB, CASBEE-RN and CASBEE-UD.

Local Edition

Flexible response to regional characters is a common feature of all tools of the CASBEE family. CASBEE for New Construction (Brief version) can be used by local authorities in construction administration. Local authorities using this tool can tailor it to local conditions, such as climate and prioritized policies. Building owners must report the CASBEE assessment result to the local authority in the same way as an Energy Saving Plan and the building approval application. This system is introduced to the local authorities as a way to improve the environmental efficiency of buildings in the region. One example is "CASBEE-Nagoya," which began in April 2004 under building environmental consideration system of Nagoya city.

The CASBEE Family

Basic Tools

Derived Tools

Support Documents

For Houses

		Basic Tools			Derived Tools
Category	Name of tools/versions	for New Construction	for Existing Buildings	for Renovation	Checklist for Healthcare
CASBEE for Detached House	Standard version	✓(J)(E) ●	✓(J)	-	✓(J)
CASBEE for Dwelling Unit	Standard version	○	-	-	

For Buildings

		Basic Tools			Derived Tools		
Category	Name of tools/versions	for New Construction	for Existing Buildings	for Renovation	for Temporary Construction	for Heat Island Relaxation	for Site Assessment
CASBEE for Non-residential Buildings*	Standard version	✓(J)(E)	✓(J)	✓(J)	✓(J)	✓(J)	○
	Brief version	✓(J) ●	✓(J) ●	✓(J) ●	-	-	
	for Market Promotion	○			-	-	

*Applicable building types: Offices, Schools, Retailers, Restaurants, Halls, Factories, Hospitals, Apartment Buildings

Support Documents

CASBEE Property Appraisal Manual

CASBEE BIM Guideline

For Urban Blocks

		Basic Tools	
Category	Name of tools/versions	for Urban Development	for Urban Development + Buildings
CASBEE for Urban Development	Standard version	✓(J)(E)	✓(J)(E)
	Brief version	✓(J)	

For Cities

		Basic Tools
Category	Name of tools/versions	for City
CASBEE for City	Standard version	✓(J)(E)
	Brief version	○

Legend

- ✓: Developed Tools
- (J): Japanese version
- (E): English version
- : Under Development
- : Applied to local governments
- : No Tool

Figure 6 CASBEE Tools and Manuals

CASBEE for Schools

CASBEE for Schools was developed to assess primary schools, junior high and high schools. There are enormous number of old school facilities in Japan, waiting for renovation, that were built in 1960's or earlier. CASBEE for schools are designed for use especially on the planning stage and the operation stage of buildings. Main target users are administrative officers who are in charge of planning of education facility. To promote Eco-school facilities, it was modified from CASBEE brief versions to assess their facilities more easily.

CASBEE for Market Promotion (tentative version)

The present CASBEE tools are used mainly as design support tool, but not widely used as a tool that promotes green buildings to the property market. Recently UNEP-SBCI, United Nations Environment Programme - Sustainable Buildings and Climate Initiative, proposed the world common metrics, called "the Sustainable Building Index". Simple, comparable and compatible systems are crucial to making decisions on investing in green buildings. Investors would also need to cover common metrics which UNEP SBCI proposed. (So we are connecting CASBEE tools to property appraisal.)

With this in mind, a very simple version of CASBEE has been studied to be launched in Japan. This tool has two aspects. One is the aspect of evaluating environmental performance. Another is the aspect of disclosing environmental performance value (index). Clearly indicating environmental performance value is required from the property market, and it is important to disseminate such idea.

Five issues, namely energy/GHG, water, materials, biodiversity/Sustainable site, and indoor environment, are classified as main categories of the tool, including five of the Sustainable Building Index. With 16 assessment items in total, each of the five categories contains the prerequisite item. In regard to energy/GHG, item of "Public transportation access" is taken account. "Soil Environmental Quality / Regeneration of Brown Field" and "Measures to Risk of Natural Disaster" contribute to biodiversity/Sustainable site, as assessment items related to the site quality.

3) For Urban Blocks

CASBEE for Urban Development (CASBEE-UD)

CASBEE for Urban Development covers groups of buildings; it considers the human efforts and effects of group of buildings which improve the environmental performance of the urban area as a whole. For convenience, CASBEE for houses and buildings are referred as "building-scale CASBEE," to distinguish them from CASBEE for Urban Development. CASBEE-UD carries on the concepts of building-scale CASBEE, and it is one of the expanded CASBEE tools, developed with reference to the Q3 (Outdoor Environment on Site) and LR3 (Off-site Environment) assessment items of CASBEE for New Construction. However, CASBEE-UD is for whole groups of buildings and it is focusing on the phenomena that can be occurred by conglomeration of buildings. It is also a standalone system, independent of the building-scale CASBEE. CASBEE-UD excludes the interior of buildings from assessment (although there are exceptions in some assessment items). Therefore, this configuration makes it possible to use CASBEE-UD to assess an area of development as a whole, while building-scale CASBEE assesses the environmental performance of individual buildings within the designated area.

4) For Cities

CASBEE for City

Conducting city assessments and disclosing those results to the public is important for supporting citizens' understanding of the actual condition of their city. Such assessment and disclosure could introduce a market mechanism that can be expected to provide city governments with strong incentives to improve their city conditions and it also recognize that local policy and strategy can be the most appropriate way to address specific urban and environmental problems.

CASBEE for Cities (hereinafter referred to as CASBEE City) is a system for comprehensively evaluating the environmental performance of cities, using a triple bottom-line approach of "environment," "society" and "economy." We have developed this new tool with the cooperation of the Promotion Council of Low Carbon Cities (PCLCC) (Secretary: The Regional Revitalization Bureau of Cabinet Secretariat). The PCLCC consists of Eco-Model Cities and other local governments, government related organizations, relevant ministries and agencies, private companies and other bodies in Japan.

CASBEE City measures the current BEE of a city and estimates the future BEE after the implementation of policies. By comparing the two values, CASBEE City quantitatively evaluates (estimates) the effectiveness of city policies and presents the results in an easy-to-understand form. We hope this new tool will help administrative officers and other stakeholders to share a common understanding of the current state and cooperate together in setting goals and pursuing them in order to create a low-carbon society.

5) Support Documents

CASBEE BIM Guideline

Building Information Modeling (BIM), a digital, three-dimensional model linked to a database of project information, is one of the most powerful tools supporting Integrated Project Delivery (IPD). It is getting gradually used for building design and construction management, and affecting a wide range of works on design and construction industries.

We have made a guideline for embedding CASBEE in BIM software which describes the rules and methods for evaluation of CASBEE in the software. The first product applied the guideline has been released in 2009. Autodesk Revit Extension for CASBEE is an extension module for the software, and it can automatically evaluate some assessment items of CASBEE which require heavy loads on assessors. We hope it can make CASBEE a more easy to use and more powerful tool in building design and construction industries.

CASBEE Property Appraisal Manual

In the current property transaction market, green buildings highly assessed by CASBEE are not necessarily achieving higher trading prices. This means that the assessment itself does not work as an incentive to promote constructing green buildings in relevant markets. One reason for this is that there has been no tool available for bridging CASBEE developed in the construction industry, and the property appraisal system used in the property transaction market.

CASBEE Property Appraisal Manual has been developed to cope with this issue. To sum up, it is an appraisal support tool that measures the building's specification and provision for green building affecting the property value.

Publication

CASBEE Technical Manuals

All of the manuals are provided by Japan Sustainable Building Consortium (JSBC) and Institute for Building Environment and Energy Conservation (IBEC).

The English versions can be downloaded from CASBEE website: <http://www.ibec.or.jp/CASBEE/english/index.htm>



CASBEE for
Detached House
(for New Construction)



CASBEE for
Detached House
(for Existing Building)



CASBEE for
New Construction
(English ver. available)



CASBEE for
Existing Building



CASBEE for
Renovation



CASBEE for
Heat Island
Relaxation



CASBEE for
Temporary
Construction



CASBEE for
New Construction
(Brief version)



CASBEE for
Existing Building
(Brief version)



CASBEE for
Renovation
(Brief version)



CASBEE for Urban
Development
(English ver. available)



CASBEE for Urban
Development
(Brief version)



CASBEE for Urban
Area+Buildings
(English ver. available)



CASBEE for
Property Appraisal
(English ver. available)



CASBEE for
Market Promotion
(temporary version)
(English ver. available)



CASBEE for Cities
(English ver. available)

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