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M.Sc. Program in Urban Planning and

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Feasibility of Sustainable Housing in Palestine:

Attira-Birzeit Housing as a Case Study

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The findings, interpretations, and conclusions expressed in this study do not necessarily express the view of Birzeit University, the view of individual members of the M.Sc. Committee or the views of their respective employers.

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Abstract

Sustainable development of any community includes environmental, economical, and social elements. Achieving sustainable development in Palestine is a complex issue, because of many restrictions especially those imposed by the Israeli occupation on the housing development. The main objectives of this study are to highlight the major problems facing the Palestinian housing development and to develop sustainable housing criteria that are applicable for Palestinian communities.

To achieve this objective, Attira Birzeit housing project is taken as a case study. Two specialized questionnaire were developed and distributed on both designers and occupants. Field observations and personal interviews were also made, to collect part of data. The collected data and information from the 45 distributed questionnaires were analyzed and fed into a CASBEE – software, which is a Japanese assessment tool, after screening in adequate criteria.

The result obtained from the CASBEE shows that current Attira housing project has an overall assessment of Good B+, indicating a sustainable housing development. Modifications made on the software input data with focus on adopting liquid and solid waste separation, wastewater reuse and organic waste composting improved the environmental and economical performance. As a result of this modification, a second run of CASBEE revealed a positive impact (Very Good A+) on developed criteria.

The assessment showed that sustainable housing development in Palestine is feasible if the appropriate criteria are adopted in official regulations that are applicable on the ground. Studying the sustainable housing criteria showed that all these criteria can be achieved through modification of our modes and that the modes can be changed according to the culture concerns and duties of society. The adaptation of sustainable criteria will enhance the economic situation in the context of efficient energy uses and water saving practices, which will reduce the cost of the water and energy consumption. To validate the result obtained and adopt the recommendations made, this study suggests further application of the used software in other building types as industrial buildings and large domestic building types.

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List of Abbreviation

BEE	Building Environmental Efficiency
BREEAM	Building Research Establishment Environmental Assessment Method
CASBEE	Comprehensive Assessment System Building Environmental Efficiency
GBC	Green Building Challenge
LEED	Leadership in Energy and Environmental Design
LR-1	Energy
LR-2	Resource and Materials
LR-3	Off site Environment
PCBS	Palestinian center Bureau of Statistic
PNA	Palestinian National Authority
Q1	Indoor Environment
Q2	Quality of Service
Q3	Outdoor Environment On site
SCP	Sustainable Cities Program
UN	United Nations
USGBC	US Green Building Council
WCED	World Commission on Environment and Development

Chapter One: Introduction

1.1 Problem definition

Sustainable housing development increases in importance. Analyzing natural resources and studying rapid increasing population will reveal the severe situation and reveal the importance of sustainable development. Rapid population increase and uncontrolled urbanism, the current environmental and community development in Palestine are faced with several challenges:

(I) Depletion of natural resources.

(II) Landscaping decrease.

(III) Expansion limited of built up areas.

(IV) Week infrastructural services (water, solid waste, and wastewater). In addition, high unemployment, confiscation of land and other natural resources, along with severe restrictions on land use, have a very negative impact on proper housing sector development. According to Salman (2000), the Israeli occupation dispossesses the Palestinians of the opportunity to establish and develop national institutions capable of and responsible for planning. The implementation and management of the much- needed housing activities. Restrictions on the development of existing industries and the establishment of new ones, especially in the area of basic construction materials, increased dependence on the Israeli market and limited the opportunities for local employment. From this reality two questions must be answered, w*hy conceptual environmental planning and why sustainable housing?* These questions are discussed below:

- Conceptual environmental planning: The conceptual environmental planning in Palestine aims at the conservation of the natural resources, keeping it for the future generations, balancing between the needs of the two generations.
- Sustainable housing: Sustainable housing is nature friendly. The building material for sustainable housing should be natural and recyclable, where inhabitant's needs are satisfied; energy consumption and pollution are reduced, while water and energy resources are preserved under adequate management.

1.2 Housing in Palestine

Housing related problems are amongst the most challenges facing the Palestinian communities, in both its qualitative and quantitative aspects. These problems result from an imbalance between the quality of housing supply and demand in both social and economic respects. Ismail (1996) illustrated these problems by a high population density in low-income houses and a low square- meter area per capita. The Israeli policies prohibit the Palestinian housing expansion in the areas defined as areas "C", in addition to declaring large areas of the Palestinian open spaces and escapes in the West Bank as “Military Zones” which exacerbates the Palestinian housing problem.

Table 1 Main indicators for housing conditions in Palestine (PCBS, 2003)

Indicator	1997	2000	2003
Percentage of Households Living in A House	52.0	58.0	67.8
Percentage of Households Living in Apartment	45.2	39.9	28.4
Percentage of Households Living in Housing Units the Construction Material of External Walls is Cleaned Stone	19.8	17.8	13.1
Percentage of Households Living in Owned Housing Units	78.1	85.6	82.9
Percentage of Households Living in Rented Housing Units	9.7	8.5	9.4
Average Monthly Rent (in Jordanian Dinar)	_	85.6	76.1
Average Number of Rooms in the Housing Unit	3.4	3.4	3.4
Percentage of Households Living in the Housing Unit with 1-2 Room	31.2	23.9	20.7
Average Number of Bedrooms in the Housing Unit	_	2.1	2.3
Average Housing Density (Number of Persons Per Room)	2.0	1.9	1.9
Percentage of Households Living in Housing Unit with Housing Density 3+	25.3	20.6	19.2
Percentage of Households who have A kitchen which is Connecting with Water	97.4	93.1	93.8
Percentage of Households who have A Bathroom which is Connecting with Water	95.9	93.1	93.7
Percentage of Households by Connection to Public Water Network	83.6	89.8	89.5
Percentage of Households by Connection to Public Electricity Network	94.6	98.6	96.2
Percentage of Households by Connection to Public Sewage Network	33.7	42.8	50.8
Percentage of Households Depending on Gas for Cooking	96.3	93.3	96.8
Percentage of Households who don't have Central Heating	30.8	18.6	23.7

According to the Palestinian Central Bureau of Statistic (PCBS, 2003), the housing problems in Palestine resulted from the accumulation of a number of factors. Some of which are familiar in many developing countries. Table 1 shows the main indicator for housing conditions in Palestine. However the main causes of the shortage in housing supply and endure the deterioration in the existing stock is a direct result of particular Israeli political conditions.

During the second Intifada (28/09/2000), the housing problems were exacerbated since the erection of the discrimination "Separation Wall". This wall is being built by the

Israel government, in the West Bank, many Palestinian Lands were confiscated for its construction which destroyed the agricultural land and put more pressure on the Palestinian housing development. Touqan (1996) reported the following major obstacles facing Palestinian housing development:

i) Economic Obstacles

- Political instability and discouraged private investment in housing projects.
- Deteriorating economic conditions and increased unemployment rates.
- Increased costs of construction materials and equipment due to border closure, and delays of goods delivery.
- Annual decrease of donor financial aids to the Palestinian National Authority (PNA), allocated for housing projects.

ii) Political Obstacles

- Closures and restrictions imposed by Israel on the Palestinian population (developers) to move freely from one Palestinian area to another, in addition to the Israeli settlements, bypass roads and check points that mainly disconnect the West Bank into three areas; north; middle and south.
- Limitations that developers/builders experience in importing the material and equipment they need for construction projects.
- Long delivery time of goods, double handling and checking procedures by the Israeli Authorities.
- Shortage of land available for housing as a result of the delay in reaching an agreement with the Israeli government on land, borders and ownership rights, and due to the discrimination wall, and settlements.
- Inability of rightful owners (absentees) to return home and claim their land/property.
- Inability of the donors to take necessary measures regarding improvement of the living conditions in the refugee camps.

The Israeli policies on the ground being applied were not tackled by Touqan (1996), which are of equivalent importance as major obstacles heading a sustainable Palestinian

housing development. Based on the current Israeli practices, the major obstacles can be summarized as follows:

iii) Practical

- Housing demolitions is a policy used by the Israeli government that aims to empty the Palestinian land from its original owners. They claimed security reasons or building without licenses for the demolition of Palestinian houses. Its worth to mention that building permits from the Israeli Authorities in area "C" are unattainable. Table 2 shows the number of damaged building from 28/9/2000 to 30/4/2005.
- After the occupation of the West bank by Israel in the year 1967, the confiscation of the Palestinian land became a common policy used by the Israeli government. At present, the erection of the "Separation Wall" exacerbates the land confiscation in the West Bank area (Palestinian Negotiation Committee, 2006).
- To curette of land uprooting of trees: for the wall construction phase, more than 100,000 trees were uprooted (of which 83,000 were olive trees), causing serious damage to more than 2,500 acres of land and more than 30,000 meters of irrigation network and water pipelines have been destroyed.(PCBS, 2005)
- Lacks of normal prerequisites of planning such as a unified land mass and unified legal systems, because Palestinians have never been in control due several colonization eras.

Table 2 Number of damaged Palestinian buildings 2000-2005 (PCBS, 2003)

Governorate/District	Number of Partly Damaged Building	Number of Completely Damaged Building	Number of Damaged Public Building	Number of Damaged Security Building	Total
Palestinian Territory	65,344	7,633	175	415	73,567
West Bank	41,783	2,855	145	75	44,858
Jenin	8,085	1,060	3	6	9,154
Tulkarm	2,820	83	20	5	2,928
Nablus	8,161	894	24	15	9,094
Qalqiliya	1,627	62	11	10	1,710
Salfit	650	19	1	1	671

Continue to table 2

Ramallah & Al-Bireh	6,163	88	63	14	6,328
Jericho	40	18	1	9	68
Jerusalem	47	12	_	_	59
Bethlehem	7,850	188	18	4	8,060
Heborn	6,340	431	4	11	6,786
Gaza Strip	23,561	4,778	30	340	28,709
North Gaza	3,295	500	16	_	3,811
Gaza	2,885	289	10	340	3,524
Deir Al-Balah	1,574	234	1	_	1,809
Khan Yunis	7,430	885	_	_	8,315
Rafah	8,377	2,870	3	_	11,250

In summary, the overall impact of the Israeli policies have negatively affected the Palestinian sustainable housing development and planning. Within the context of sustainability elements associated with ecological, economical, and socio-cultural aspects, the political issues specific to Palestinian conditions play a major role within sustainable housing development.

To reach the sustainable development we must take into account the following driving forces affecting the housing sector:

1.2.1 Driving forces for sustainable Palestinian housing development

High residence densities and inadequate housing facilities and infrastructure have characterized the housing sector. The elements affect to housing project, land prices, cost of site development and equipment and infrastructure are the function for the total investment required to construction residential housings Salman (2000) have reported the following major forces affecting sustainable housing development:

- Land prices

Land prices are generally influenced by demand, zoning regulations, distance from urban centers and services, availability of infrastructure and public utilities and the general economic conditions.

Current land prices in residential zones of major urban towns vary from around 20 US$/m^2 at the border to more than 1000 US$/m^2 in the city center. In the rural areas, the

land price for residential construction may vary depending on the distance situation and settlement patterns from urban centers; distance from main roads, and the availability of basic utilities and infrastructure.

- Building materials and equipment

Stone as an available local building material is still intensively used in the buildings (for facades, stairs, etc.), where as cement is used as a mortar. In addition to stone, concrete is commonly used as a basic element of the building technique and construction.

Most of the materials, machinery and equipment used in construction are imported. While some of the imported construction materials like tiles, marble and certain plastic products have local substitutes, the primary inputs to the construction industry such as cement, wood, steel, glass, and aluminum are provided only through imports. Also, almost all the machinery and equipment used for construction purposes are imported.

The prices of construction materials, therefore, have been subject to frequent fluctuations influenced by local and international market conditions, and variations in the exchange rates between the three currencies used in the local market (The Israeli Shekel, the Jordanian Dinar, and the US$). .

Building materials constitute the single largest input to construction and may account for 40% of the total cost and high as 80% of the direct cost of housing construction. Locally produced building materials include stones, marble, crushed aggregates, sand, concrete cement blocks, terrazzo tiles, plastics, PVC pipes and conduits, concrete pipes, electrical control boards and components, galvanized steel water tanks and solar heating equipment, etc.

- Construction and labor

The cost of construction and labor has been generally influenced by the migration of skilled laborers to neighboring markets (Israel, Jordan, and other Arab markets). Also by the fluctuations in the levels of construction activities locally and in the neighboring markets particularly the Israeli market and the restrictions imposed by the prevailing political conditions in the region. .

The average daily wages for construction workers range from 15-20 US$/day for unskilled workers to 40-60 US$/day for skilled workers. The variations within each range depend on the local socio-economic conditions and the supply demand situation at any particular time.

All of these driving forces for housing developments are restricted by the Israeli policies. The "Separation Wall" has affected the land prices because it has strangulated the Palestinian cites and segregates its surrounding open spaces which have resulted in a sharp increase in land prices within the built up areas and the left open spaces within the sieged areas. On the other hand, the construction materials imported through the Israeli borders have many restrictions, and finally the Palestinian workers were prevented to work in Israel.

1.2.2 General characteristics of the Palestinian housing

The characteristics of housing in Palestine are not homogeneous; there are wide variations in geographic location and type of community. In the northern and central parts of the West Bank (Nablus and Jerusalem districts) towns and villages tend to retain the traditional core structure with relatively lower levels of sporadic periphery expansion than in the southern part (Hebron district). AbdulHadi (1994) reported the following characteristics of the Palestinian housing:

- Traditional buildings

The centre of every town and village in the West Bank contains a number of old buildings, built 50 to 100 years ago, constructed of stone and mud. These consist of several rooms with common facilities, to be shared by extended families. Traditionally, these buildings consisted of a court surrounded by a number of rooms, with external

kitchen and toilet facilities. Owing to improved living standards, coupled with a desire for privacy, people have gradually moved out of these buildings to houses which they owned or rented that had better facilities in the new quarters of towns and villages. In most cases, elderly parents were left behind.

- Renovated buildings

Owing to the socio-economic conditions prevailing in the territory, an increasing number of families both in urban and rural communities have resorted to renovating and upgrading old buildings to meet their pressing housing needs. Renovation and upgrading activities take place both within the core areas of towns and villages as well as beyond. The renovation may involve internal and/or external works.

In towns such as Jenin, Nablus, Tulkarm, Ramallah, Jerusalem, Bethlehem and Hebron, many old buildings have been internally renovated. This work involved the removal of walls and rearrangement of the architectural layout including the construction of a modern kitchen and toilet facilities, the installation of heating systems and modern electric lighting and power networks. In addition, the number of old buildings which were expanded horizontally or vertically increased in an effort to alleviate overcrowding.

- New buildings

Construction for residential purposes had continued in Palestine with varying intensity during the period 1967 to 1990. New buildings are characterized by a number of factors, including locality, socio-economic conditions and planning regulations.

In the West Bank, new housing units in urban communities took the form of detached houses, semi-detached houses or apartment buildings, generally connected to available services and infrastructure such as roads, water, electricity and sewage systems. Construction materials are largely stone and concrete.

As a result of restrictions on town planning activities and refusal to approve requests for expanding present municipal boundaries by Israel, land prices rose remarkably in most

towns. This situation has increased the trend to build multi-storey buildings in order to improve the efficiency of land use and reduce the total construction costs of new buildings.

In Palestine, few attempts (Al-Sa'ed and Mubarak, 2006) were made to introduce sustainable onsite sanitation facilities for Palestinian households in rural communities including effluent reuse schemes. However, no wide scale application has been made yet on the national level. Also, urban design and landscaping have been neglected issues in almost all implemented housing projects. Birzeit University Housing in Attira-Ramallah city is no exception. This housing project entails about 90 households with about 225 inhabitants in the final planning phase. Research questions on the feasibility of introducing sustainable housing as well as the perceptions of Palestinian people about the benefits of this concept constitute the core of this research what sustainable criteria are applicable? How and what are the priorities?

Currently in the 21st century the government policy of housing in Palestine is not based on scientific studies, where the built up housing projects criteria are imposed by donors themselves (Alzahrah city, Gaza). Hence, the first step to have independent Palestinian criteria for the housing project.

1.3 Research goals and objectives

The main goal of this research is to conduct a feasibility study on sustainable housing using Birzeit University Housing as a case study. The specific objectives are to:

- Highlight the main problems facing housing development in Palestine.
- Establish technical sustainable housing criteria for the Palestinian housing sector with special emphasize on energy efficiency; water conservation; indoor environmental quality; construction materials and solid waste.
- Express people perceptions towards waste separation and composting of organic materials as well as wastewater reuse.
- Assess the sustainability of Palestinian housing development by using available tools including software packages.

1.4 Scope

Sustainable development is a complex concept, while concerns a wide range of social; techno-economic and environmental issues. Without addressing all these issues, reaching sustainable development would not be complete. In this research study, technical criteria for the sustainable housing in Palestine will be discussed taking into consideration the CASBEE sustainable tools as a reference for the criteria.

1.5 Materials and Methods

To achieve the above-mentioned goal and specific objectives the following research methodology was adopted:

- A comprehensive literature review on the main problems facing the Palestinians.
- A detailed literature review about the main concepts of sustainable housing.
- Attira housing project as a case study.
- Use of CASBEE software as a tool for sustainable housing assessment.
- Develop questionnaire for both the occupants and designer for the case study.
- Conduction of personal interviews and field observations.

1.6 Output

Based on the research methodology applied the following results are envisaged:

- Technical criteria that determine the sustainable housing in Palestine.
- Recommendations on enhancement of sustainable housing issues within Palestinian housing projects are made.
- The feasibility of sustainable housing in Palestine.

Chapter Two: Literature Review

2.1 Sustainable development

There are about 120 different definitions introduced for sustainable development and the most widely used was first by Brundtland (1987). He suggested that “Sustainable

development is a development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs". The World Commission on Environment and Development (WCED, 1987) has adapted this definition.

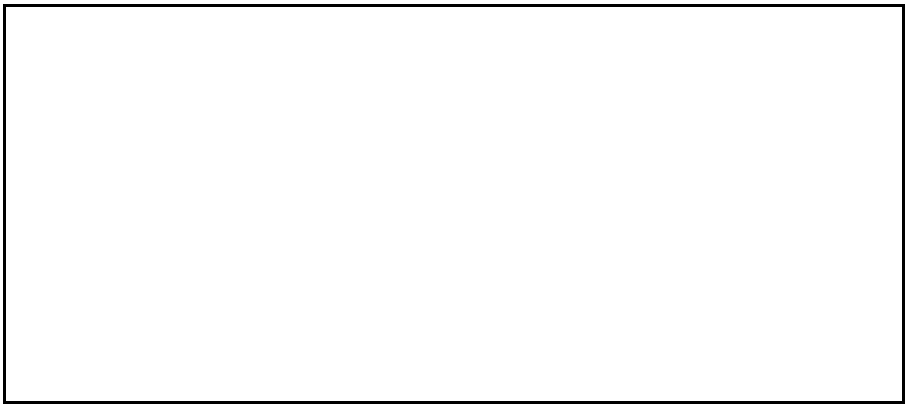


Figure 1 Core elements of sustainable development (WCED, 1987)

Figure: 1 shows the main elements of sustainable development; environmental, economic, and social. Each element has many sub-elements, environment consist of energy, materials, solid waste and water, while economic consists of productivity, and employment, best value, and finally social consists of community, security, and health wellness. Integrated approach to sustainable design must consider reducing air, water and land pollution, as well as social issues, such as reducing operation resource consumption, and reducing environmental impact embodied in materials.

2.2 Concept of housing development

The greening of housing has only recently appeared on the research agenda of housing studies, and therefore only a small amount of literature on the topic can be found. The conference held at Rio de Janeiro in June 1992 has prompted the production of two volumes: Environment and Housing in Third World Cities, edited by Main and Williams, (1994) and Housing and the Environment: A New Agenda, edited by Bhatti, (1994). The former volume presents and analyses the hazardous nature of many urban environments in Third World cities, and their inadequate housing and infrastructure quality and quantity.

Issues such as the application of sustainability concepts to housing development, mechanisms and forms of government action which are necessary for the greening of housing, housing policies and practices conductive to solving environmental problems, and housing inequality issues associated with environmental practices. Of particular significance to this study is Bhatti's discussion on the relationship between housing, the local and global environments, and a housing process model which incorporates an ecological dimension to the life cycle of residential buildings (Bhatti, 1994).

According to Bhatti (1994), socio-ecologicall housing development is a process that involves the transformation of natural resources, via labor power, into livable spaces. Subsequently the housing units so produced provide shelter, use and reproduce energy, and deliver waste to the wider community. It was demonstrated that the production, management and consumption of housing might contribute to global warming, ozone depletion, exhaustion of non renewable resources, as well as human health and well-being.

The creation of a healthy built environment and its adequate management has been defined by Kirbet (1994) as wider definition of sustainable construction based on effective resource utilization and ecological principles. To achieve building sustainability, he emphasized the energy related design concepts in addition to the technical issues such as materials, building components, construction technologies. Nowadays the significance of the non-technical issues including economic, social, and cultural aspects has been emphasized gradually and considered crucial.

2.3 The Concept of zero emission technology

Zero emission technology aims at 100% reuse of all materials; this concept has been introduced by Pauli (2000) for industrial production. The concept entails a practical approach to satisfying humanity's needs for water, food, energy, jobs, in an environmentally sustainable manner, by applying science, urban design and technology. From an environmental perspective, waste minimization and reuse of stabilized biosolids and treated effluent represent the ultimate solution to pollution problems that threaten public health and ecosystems at both local and regional levels. In Lübek-Flintenbreite, Germany, an innovative decentralized sanitation concept has been

realized in a peri-urban area. Currently, 100 inhabitants are connected to the plant and the capacity of the system is up to the 350 persons that shall be living in the settlement. Grey and black water are collected and treated separately. With a very low water, consumption of about (0.7 l) per flush, black water is collected via vacuum toilets in a collection tank. After mixing with shredded biowaste the material is thermally digested under anaerobic conditions. Grey water is drained by gravity and treated in a vertical flow constructed wetland (Otterpohl *et al.,* 1999).

According to Eagle and Lineberger (2000), traditional landscapes may incorporate one or two principles of water conservation, but they do not utilize the entire concept to reduce landscape water use effectively. Creating a water-efficient landscape begins with a well-thought-out landscape design. Yard sketch with locations of existing structures, trees, shrubs and grass areas, then the landscape budget, appearance, function, maintenance and water requirements are considered. Local landscape architects, designers and municipal engineers can help in this decision making. However, landscape design can only be done gradually and continues over several years.

Environmental planning must be adapted in designing our housing project or built up areas, to study the impact of these housing projects on natural resources, to use the potential natural resources in order to keep it and not to deplete it in the future. The environmental planning deals with health, energy, transportation, water, materials, land use ecology and pollution.

The housing rights for each person to have an adequate home with standard of living has been adapted in the united nation resolutions; the policy of publishing and clearing these resolution in schools and universities will improve the awareness of Palestinian people for there rights.

2.4 Housing rights

The housing right had already been on the agenda; Since included in Article 25 of the 1948 Universal Declaration of Human Rights. During the late 1980s, it appeared again in the United Nations General Assembly, which reiterated:

The need to take, national and [at national and international level measures to promote the right of all persons to an adequate standard of living for themselves and their

families (including adequate housing) [resolution 42/46]. As in United Nations human settlements program, (2005)

It was also reaffirmed in the Vienna Declaration on Human rights, which emphasizes: the right of everyone to a standard of living adequate for their health and Well-being including food and medical care, housing and the necessary social services, As in United Nations human settlements program (2005). The Istanbul Human Settlements Summit further reinforced the:

Commitment to the full and progressive realization to adequate housing as provided for in international instruments to that end, tee shall see! The active participation of our public, private and nongovernmental partners at all levels to ensure legal security tenure protection from discrimination and equal or access to affordable adequate housing for all persons and their families). As in United Nations human settlements program, (2005)

AGENDA 21, of the UNCED (Earth Summit), with the title, "Promoting Sustainable Human Settlement Development" identifies the following 8 areas to be the program areas:

- Providing adequate shelter for all.
- Improving human settlement management.
- Promoting sustainable land-use planning and management.
- Promoting the integrated provision of environmental infrastructure (water, sanitation, and drainage, hazardous and solid waste management).
- Promoting sustainable energy and transport systems in human settlements.
- Promoting human settlement planning and management in disaster- prone areas.
- Promoting sustainable construction industry activities.
- Promoting human resource development and capacity building.

From all of the United Nations resolutions protect to all people to have the adequate housing, in Palestine the Israeli occupation regulations and practical policies control on sustainable housing development, and we can see that the Israeli government doesn't comply with the United Nations resolution.

- Example of challenges to sustainable cites

The UN-HABITAT/UNEP joint Sustainable Cities Program (SCP) and the Localizing Agenda 21 Program of UN-HABITAT have evolved into a good example of what the United Nations does best — bringing partners together; cities, programmers and resource institutions from the north and south, to focus collective energies on developing solutions for the common problems facing cities. It is the hope, indeed expectation, that these collaborative activities will bring the benefits of better environmental planning and management—real and visible improvements in living conditions — to urban populations all over the world, especially the urban poor and marginalized groups. (Panorama, 2003)

Example about (SCP) demonstrates the priority issues and the priority projects taken into consideration at Ismailia Governorate (Egypt).
Ismailia Governorate is one of the 26 governorates in Egypt, with a population over 700,000. Through a large tract of reclaimable land, geographically located on the Suez Canal and on the cross roads to Sinai, the Eastern development pole of Egypt, Ismailia occupies an important place in the socio economic development of the country. Its administrative capital, Ismailia city, has a population of about 300,000. Ismailia city's economic base lies in administrative and service functions, with industry employing about 10% of the labor force. As Ismailia relies on a single canal for its water supply, the living environment is completely man-made and must be carefully managed. In tandem with promoting economic growth and diversification, Ismailia city is keen to preserve its environmental ambience, to address the issues of urban encroachment on agricultural land, to conserve water resources, and to protect the fragile ecosystem of its lakes, that are used heavily for tourism, recreation, and fishing.

Priority issues: Urban expansion and land management ,Water resource management, Waste management ,Pollution of lakes, Urban services and infrastructure in slum areas and informal settlements (upgrading), Promotion of economic growth (agriculture, tourism and agro industry) and jobs creation, Managing salt mines, swampy and high water table.

The project leveraged national and local funds to the order of more than US$30million to implement priority projects including:

- Rehabilitation partial replacement of covered drainage
- Reuse of waste water
- Clean up and rubble-stoning of Forsan drain
- Start-up of upgrading activities in 'Kilo Two Haloos and Bahtimi settlements
- Organic waste composting plant
- Treatment of the flow of the Mahsama drainage canal, which is the major source of pollution to Lake Timsah
- Small demonstration initiatives (developing nurseries and reclaiming swampy areas) and tree planting on green areas.
- Establishment of a well equipped local training centre for sustainable urban and housing development

From the example the sustainable development illustrates the important of the natural resources and how can improve these resources. Developing the natural resources means reduce the pollution; saving energy; saving water which reflect on the financial aspect for the community.

2.5 Concepts of sustainable housing development

Hui Sam (2002) reported the following concepts, which deserve to be in a key position in our methodology.

2.5.1 Environmental architecture

Five principles of an environmental architecture

- Healthful interior environment: The measurements are to be taken that ensure building materials and building system does not emit toxic substances and gasses into the interior atmosphere. Like asbestos that causes cancer diseases and the fiber.

- Energy Efficiency: The measurements are to be taken that ensure building's use of energy is minimal, and benefit from the renewable energy like solar panels.
- Ecologically being materials: The measurements are to be taken that ensure building materials and products that minimize destruction of the global environment, using much as possible the recycling materials.
- Environmental form; the measurements are to be taken that ensure that building harmonious relationship between the inhabitants and nature, accommodations are to be made for recycling and energy efficiency. And to be manages with community.
- Good design: The measurements are to be taken that ensure that building achieve an efficient, long lasting and elegant relationship of use areas, circulation, building form, mechanical system appropriate history and construction technology.

2.5.2 Green building

A green advance to the built environment involves a holistic advance to the design of buildings. All the resources that go into a building are they materials, fuels or the contribution of the users need to be considered if a sustainable architecture is to be produced. Producing green buildings involves resolving many conflicting issues and requirements. Each design decision has environmental implications. Measures for green buildings can be divided into four areas:

- reducing energy in use
- minimizing external pollution and environmental damage
- reducing embodied energy and resource depletion
- minimizing internal pollution and damage to health

What Makes a Building Green?

A "green" building places a high priority on health, environmental and resource conservation performance over its life-cycle. These new priorities expand and complement the classical building design concerns: economy, utility, durability, and delight. Green design emphasizes a number of new environmental, resource and occupant health concerns:

- Reduce human exposure to Toxious materials.
- Conserve non-renewable energy and scarce materials.
- Minimize life-cycle ecological impact of energy and materials used.
- Use renewable energy and materials that are sustainably harvested.
- Protect and restore local air, water, soils, flora and fauna.
- Support pedestrians, bicycles, mass transit and other alternatives to fossil-fueled vehicles.

2.5.3 Sustainable design

Sustainable design is the thoughtful integration of architecture with electrical, mechanical, and structural engineering. In addition to concern for the traditional aesthetics of massing, proportion, scale, texture, shadow, and light, the facility design team needs to be concerned with long term costs: environmental, economic, and human. Five elements for sustainable design:

- Planning and design should be thorough. Early decisions have the greatest impact on energy efficiency, passive solar design, day-lighting, and natural cooling.
- Sustainable design is more of a philosophy of building than a prescriptive building style. Sustainable buildings don't have any particular look or style.
- Sustainable buildings don't have to cost more, nor are they more complicated than traditional construction.
- Integrated design, that is design where each component is considered part of a greater whole, is critical to successful sustainable design.
- Minimizing energy consumption and promoting human health should be the organizing principles of sustainable design. The other elements of design can be organized: energy saving architectural features, energy conserving building envelope, and energy and health- promoting mechanical, electrical, and plumbing systems.

2.5.4 Principles of sustainable design

- Understanding Place -Sustainable design begins with an intimate understanding of place. If we are sensitive to the nuances of place, we can inhabit without

destroying it. Understanding place helps determine design practices such as solar orientation of a building on the site, preservation of the natural environment, and access to public transportation.

- Connecting with Nature - Whether the design site is a building in the inner city or in a more natural setting, connecting with nature brings the designed environment back to life. Effective design helps inform us of our place within nature.
- Understanding Natural Processes - In nature there is not waste. The by product of one organism becomes the food for another. In other words, natural systems are made of closed loops. By working with living processes, we respect the needs of all species. Engaging processes that regenerate rather than deplete, we become more alive. Making natural cycles and processes visible, brings the designed environment back to life.
- Understanding Environmental Impact - Sustainable design attempts to have an understanding of the environmental impact of the design by evaluating the site, the embodied energy and toxicity of the materials, and the energy efficiency of design, materials and construction techniques. Negative environmental impact can be mitigated through use of sustainable harvested building materials and finishes, materials with low toxicity in manufacturing and installation, and recycling building materials while on the job site.
- Embracing Co-creative Design Processes - Sustainable designers are finding it is important to listen to every voice. Collaboration with systems consultants, engineers and other experts happens early in the design process, instead of an afterthought. Designers are also listening to the voices of local communities. Design charettes for the end user (neighborhood residents or office employers) are becoming a standard practice.
- Understanding People - Sustainable design must take into consideration the wide range of cultures, races, religions and habits of the people who are going to be using and inhabiting the built environment. This requires sensitivity and empathy on the needs of the people and the community.

2.6 Elements of sustainable housing

The issues are discussion below; site; energy; materials; water; planning; waste.
According to the Austin Green Building Program's (GBP) Sourcebook

2.6.1 Energy

The energy-efficient sitting and design of buildings benefits are economic (saving money), social (reducing fuel poverty); and ecological (reducing resource exploitation and emissions). Every new development ideally should have an explicit energy strategy, setting out how these benefits are to be achieved.
The expanded design team collaborates early in conceptual design to generate many alternative concepts for building form, envelope and landscaping, focusing on minimizing peak energy loads, demand and consumption. Typically, heating and cooling load reductions from better glazing, insulation, efficient lighting, daylighting and other measures allows smaller, resulting in little or no increase in construction cost compared to conventional designs.

2.6.2 Water

Water conservation is the most important issue alert in Palestine and the methods used in water conservations are:

- Toilets: like (Low flush toilets; Dual flush toilets)
- Urinals: like (Urinal controls (infrared, radar, auto flush); Waterless urinals)
- Wash hand basins: like (Push taps; Flow control, self closing)
- Shower: like (Shower mixers; Water saving showerheads; Self closing system)
- Clothes Washers: like (Water saving washers; Control & usage)
- Water supply: like (Rain water and grey water; Rain water recycling systems; Grey water recycling systems)

2.6.3 Materials

The quantity of energy required by all the activities associated with a production process, including the relative proportions consumed in all activities upstream to the acquisition of natural resources and the share of energy used in making equipment and other supporting functions.

The energy input required to quarry, transport and manufacture building materials, plus the energy used in the construction process, can amount to a quarter of the 'lifetime' energy requirement of a very energy-efficient building. To reduce embodied energy, without compromising longevity or efficiency; the following aspect must be considered:

- Re-use existing buildings and structures wherever possible (provided their energy costs in use can be reduced to an acceptable level).
- Design buildings for long life, with ease of maintenance and adaptability to changing needs
- Construct buildings and infrastructure out of local and low- energy materials where possible
- Reduce the proportion of high rise, detached or single-storey developments
- Design layouts which minimize the extent to roadway and utility pipe work per dwelling

2.6.4 Waste

Waste Management Strategies consist from; Waste prevention; Recycling construction and demolition materials; Architectural reuse (include adaptive reuse, conservative disassembly, and reusing salvaged materials); Design for material recovery (durability, disassembly, adaptive reuse). The waste hierarchy which consist from the sustainable development; prevention and reduction the waste, then on-site reuse and on-site recovery, as possible to off-site reuse and off-site recovery then landfill.

Humans are the only species on Earth that produce waste which is not a raw material or nutrient for another species. We are the only species to produce wastes that can be broadly toxic and build up for long periods of time. Waste is not simply an unwanted and sometimes harmful by product of life; it is a raw material out of place. Waste and pollution demonstrate gross inefficiency in the economic system since they represent resources that are no longer available for use and/or create harm in humans and other species.

2.6.5 Assessment

The assessment method is the new way submitted for many countries in order to asses the impact of the construction building to the environment surrounding. These countries developed computer software such as LEED –US, BREEAM- United Kingdom, CASBEE- Japan, and GB Tool -Australia. These software programs are explained below.

- LEED (US)

LEED (Leadership in Energy and Environmental Design) Green Building Rating System is a suite of standards developed by member of the US Green Building Council (USGBC). It is a voluntary, consensus-based national standard for developing high-performance, sustainable buildings. Members of the U.S. Green Building Council representing all segments of the building industry developed LEED and continue to contribute to its evolution. The best known and only fully implemented LEED standard is LEED version 2.1 for commercial buildings, which has evolved into a highly accepted measure of a green building in the U.S. In addition to LEED 2.1 there are several other LEED standards in various stages of development:
LEED-EB: Existing Building Operations (Pilot Version)
LEED-CI: Commercial Interiors (Pilot Version)
LEED-Residential (Under development)
LEED-Retail (Under development)

In addition to the LEED suite of standards, there are also several variants of LEED, for example a version of LEED adopted by the U.S. Army for its facilities. (LEED manual, 2006)

- BREEAM (United Kingdom)

BREEAM (Building Research Establishment Environmental Assessment Method) is by far the oldest building assessment system and until the advent of LEED, easily the most successful system. Developed in 1988 by the Building Research Establishment (BRE), the national building research organization of the UK, it was initially created to help transform the construction of office buildings to high performance standards. BREEAM

has been a highly successful standard for building assessment and it has been adopted in Canada, and several European and Asian countries (BREEAM manual, 2006)

BREEAM assesses the performance of buildings in the following areas:

- Management: overall management policy, commissioning site management and procedural issues
- Energy use: operational energy and carbon dioxide (CO2) issues
- Health and well-being: indoor and external issues affecting health and well-being
- Pollution: air and water pollution issues
- Transport: transport-related CO2 and location-related factors
- Land use: green field and brown field sites
- Ecology: ecological value conservation and enhancement of the site
- Materials: environmental implication of building materials, including life-cycle impacts
- Water: consumption and water efficiency

Credits are awarded in each area according to performance. A set of environmental weightings then enables the credits to be added together to produce a single overall score. The building is then rated on a scale of PASS, GOOD, VERY GOOD or EXCELLENT, and a certificate is awarded that can be used for promotional purposes. (BREEAM manual, 2006)

BREEAM covers primarily offices, homes, and industrial units with assessment methods for each general type of building: BREEAM Office version 2002, BREEAM/New Industrial Units, and a BREEAM Eco-Homes. In 2003 a new version, BREEAM/Retail, will be issued to address the design, construction, and operation of retail stores (BREEAM manual, 2006).

- CASBEE (Japan)

The Japan Sustainable Building Consortium, comprised of academic, industrial, and government entities, is cooperating to develop a building assessment system, CASBEE, designed specifically for Japan and Japanese cultural, social, and political conditions. CASBEE (Comprehensive Assessment System for Building Environmental Efficiency) is actually a suite of assessment tools for the various phases of the building being evaluated: planning, design, completion, operation, renovation:
Tool-0 Pre-Design Assessment Tool; used by owners and planners for identifying the project context, selecting the proper site and determining the basic impact of the project.
Tool-1: (Design for the Environment) Tool; simple check system for designers and engineers to use and improve the Building Environmental Efficiency (BEE) during the design phase. (CASBEE manual, 2006)

Tool-2: Eco-Labeling Tool; used to rate the building in terms of BEE after construction and to determine the basic property of the labeled building in the property market.
Tool-3: Sustainable Operation and Renovation Tool; for use in informing building owners and managers how to improve the BEE of their building during the operation of the building. (CASBEE manual, 2006)

The key concept in CASBEE is Building Environmental Efficiency or BEE which is an attempt to describe the eco-efficiency of the building. The World Business Council on Sustainable Development (WBSCD) defines eco-efficiency as maximizing economic value while minimizing their environmental impacts:

$$\text{Eco-efficiency} = \frac{\text{Value of Products or Services}}{\text{Environmental Loadings for Products or Services}}$$

BEE is simply a modification of the concept of eco-efficiency for application to buildings:

$$\text{BEE} = \frac{\text{Building Environmental Quality \& Performance}}{\text{Building Environmental Loadings}}$$

The Building Environmental Quality and Performance is described as the amenities provided for building users and consists of several quantities:

Q1: Indoor environment
Q2: Quality of service
Q3: Outdoor environment on site.

Similarly, the Building Environmental Loadings consist of several different categories:

L1: Energy
L2: Resources and materials
L3: Off-site environment

The BEE rating is a number, generally in the range of 0.5 to 3, that corresponds to a building class, from class S (highest for BEE of 3.0 or higher) to classes A (BEE of 1.5 to 3.0), B+ (BEE of 1.0 to 1.5), B- (BEE of 0.5 to 1.0) and C (BEE less than 0.5). (CASBEE manual, 2006)

CASBEE and its various tools are still under development and it remains to be seen how it will be accepted in the Japanese marketplace as a tool for transforming the building stock to high performance standards. (CASBEE manual, 2006)

- GB Tool

GB Tool is a very comprehensive and sophisticated building assessment development that was developed for the biannual international Green Building Challenge (GBC) that has been held three times to-date in 1998 (Paris), 2000 (Maastricht), and 2002 (Oslo) with the 2004 event scheduled for Japan. In the latest meeting in Oslo, national teams from 14 countries submitted entries to demonstrate the art and science of green buildings in their countries. GB Tool provides a standard basis of comparison for the wide range of buildings being compared in Green Building Challenge. It requires a

comprehensive set of information not only on the building being assessed, but also for a benchmark building for use in comparing how well the green building performs compared to the norm. GB Tool requires the group using it to establish benchmark values and weights for the various impacts. GB Tool is implemented in the form of a sophisticated Excel spreadsheet that can be downloaded from the website of the International Initiative for a Sustainable Built Environment. GB Tool's output provides an assessment of the building in four different categories: Resource Consumption, Environmental Loadings; Indoor Environmental Quality; Service Quality; Economics; Management; Commuting Transport. Table 3 shows the typical comprehensive assessment systems for building environmental efficiency proposed to the present. (GB Tool manual, 2006)

2.6.6 Example on application of the assessment tools

Figure 2 building assessed by CASBEE (Murakami 2003)

Figure 2 shows building constructed in Kawasaky city in Japan, with site area: 30,003m2, used as an office building, while Gross floor area: 79,554m2 and it was Completed in Jan. 2000. The CASBEE assessment used to asses the building environment efficiency and the result shows that's the BEE= 3.1 (S). That is means the building has high quality construction components and low embodied materials. Figure 3 shows the result of the CASBEE assessment.

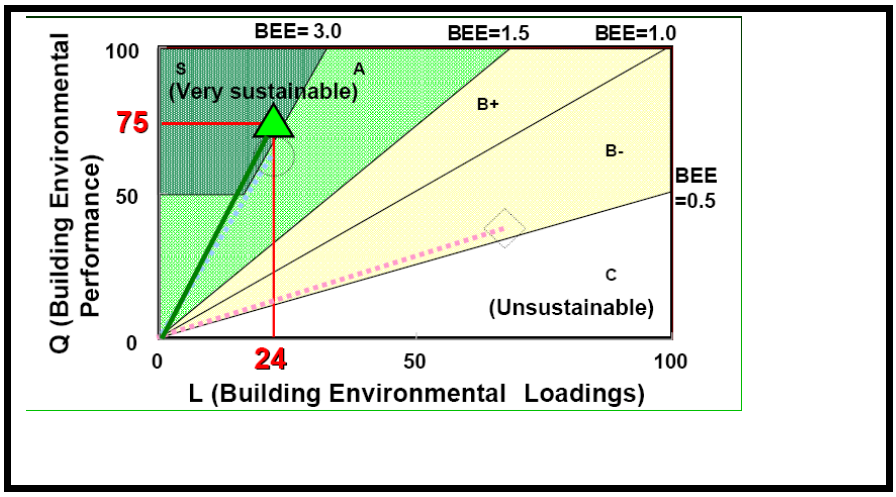


Figure 3 Building Sustainability Rating based on BEE(Murakami 2003)

Table 3 Typical Comprehensive Assessment Systems for Building Environmental Efficiency proposed to the present (LEED, BREEAM, CASBEE, GB, manual (2006))

	LEED	BREEAM	CASBEE	GB
Assessment items	-Sustainable site -Water efficiency - Energy and atmosphere - Material and resources - Quality of indoor environment - Innovation and design process	- Management - Energy use -Health and pollution - Transport - Land use - Ecology - Materials - Water	- Indoor environment - Quality of service - Outdoor environment on site - Energy -Resources and materials - Off-site environment	-Resource Consumption -Environmental Loadings -Indoor Environmental -Quality Service - Economics - Management -Commuting Transport

Chapter Three: Case Study and Data Collection

3.1 Project location and background

Attira housing project, located north-west of Ramallah city, was established by Birzeit University Faculty and Staff Coop Housing Association established in 1982.The project aimed at erecting 90 households of five different designs including a social center (library, green landscaping, and trade center). Serving all association members, the

housing corporation collected a monthly rate from all members to secure the capital cost of the project. These payments in the final phase will represent the cost of apartments.

Figure 4 Overview of Attira housing project

When the corporation was established, the number of members was 185. Through 12 years, the number decrease to be 78 members we now have 90 members. The location of the project decided through the available land, the determined location was the cost and the availability.

The project consists of 90 households with an average of five persons per household. In total, the project has 450 persons living in the Attira housing project.

Figure 5 Overview of the household

3.2 Weather with relation to sustainable housing:

Applied Research Institute-Jerusalem (Arij, 1996), has reported the major weather elements (temperature, rainfall, humidity) which are discussed below:

Temperature in hill regions, which have lower temperature than other places in the West Bank, they varies between (6-12) C in January (coldest month) and (22-27) C during August (hottest month).

Rainfall, winds from the west and southwest, which are saturated, with moisture from the Mediterranean Sea precipitate a mean annual rainfall of 694mm on the Ramallah district.

Humidity, the mean humidity level in 1994/95 was 70.2%, the minimum relative humidity was registered in May at 57.2% and the maximum in December with a value of 77.1%.

Sustainable housing means to get the inhabitants feel more comfortable. In these climate-conditions the collecting and reusing rainwater that is about 700mm/year will save the water consumption. The high temperature in summer can use for solar panels, and water heating. In the future this system will be used for using the solar panel in

providing electric. The wind speed will also be used as a system for developing electric power stations.

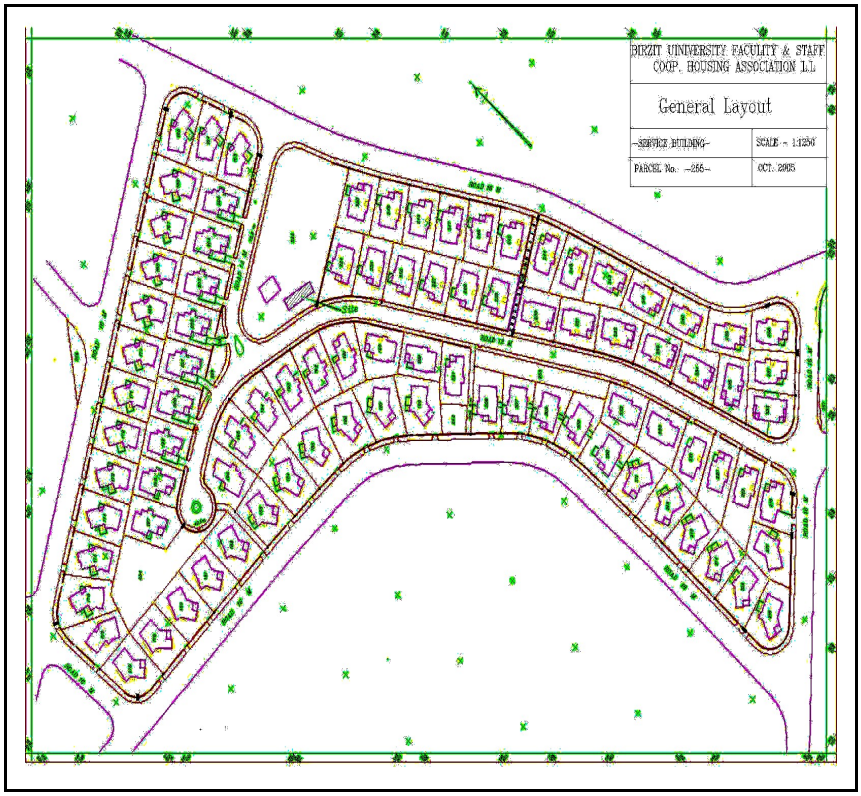


Figure 6 General plan for Birzeit University Faculty & Staff Coop Housing Association (Eng. Ossama Nasser, 2006)

3.3 Data Collection

3.3.1Questionnaire design

All information on sustainable building criteria, discussed below, was obtained from the questionnaire distributed to both designers and occupants. For more details about the developed questionnaire which is distributed to the designer and occupants refer to the (Annexes 1and 2).

- Statistical Information:

The number of constructed households is 90. The distributed questionnaire targeted 45 housing units that are dwelled. The average number of the occupants in each household is 5 persons. Therefore, the total number of inhabitants in Attira housing project at the time of thesis (01/03/2006) is 225. The area for each household varies between 180 to

300 m^2. In these spaces, about 80% of the residents are satisfied from the space of their homes and 20% are not satisfied. About 10% of the residents think that there is a waste of space in their homes due to the large space of terraces.

- Water saving

The entire residents says that there are no systems for saving water, about 10% say that they use a drip irrigation system that conserves water. From field observations and discussion with the inhabitants, there is low concern for saving water or to use any systems for conserve water consumption. From this clarification the savaging water culture doesn't exists in the inhabitants. According to Enshassi (1999), Environmental housing regulation and support of the efficient use of infrastructure projects help reduce bad consequences from existing infrastructure.

- Waste water reuse and solid waste

The reused wastewater can only be used in garden irrigation; the entire residents responded. Cistern rainwater is existed in every household to use it for garden irrigation. The separate solid waste system does not exist, but the entire residents say that they don't have any problem to deal with those systems if it's adopted by the municipality of Ramallh. Use of the composting organic of garbage needs to upgrade the awareness of public about the importance and the benefits of this system; the entire residents responded.

- Community and transportation

The location of the project is far a way from the public transportation; the entire residents say and they used there private cars. The housing is well common with the surrounding society and they have their own privacy at their homes; the entire residents say. Opening windows and large terraces make the quality of indoor air very comfortable; the entire residents responded.

3.3.2 Field data collected and Personal interviews

The Information discussed collected through meeting with Dr. Authman Abu Lebdeh the General Director of the project and Eng. Ossama Nasser, Eng. Khaled Bakker, the Supervising engineer for the project.

- Energy and Resource Consumption

Uncovered use of natural energy, such as light and ventilation, Solar cells, solar panels and other methods for converting natural energy into electricity or heat is utilized to use. In Birzeit Housing Project the solar panels for converting natural energy into water heating is the only common system used not only on the project but in Palestine.

- Materials

Reinforced concrete is the basic material used due to long durability which is more than one hundred years and low in maintenance cost, another material used is the stone produced locally from Aseera quarry, the construction period of time from 1998 to 2002, with insulation materials against water and heating.

- Environmental loadings

Atmospheric emission of halons which cause ozone depletion on a global scale is not preferable to use in housing construction. In the construction phase of the project halons have not been used.

- Water

Systems that are able to save water. For the project the system for collecting rainwater is used, and there is a system for collecting wastewater and it is connected to the sewage system for Ramallah Municipality. The housing is well-equipped with devices that are saving water, there is no system for reusing the wastewater. The collected rainwater is used in irrigation in the summer days.

- Indoor air Quality

The materials used internally and its impact on the interior air like Asbestos which is carcinogenic, must be avoided. And other materials like Glass wool, rock wool and similar materials have longer fibers than asbestos, and they are believed to have less physiological impact, but the dispersion of fibrous substances must be avoided. In the project the asbestos and other materials were not used.

- Ventilation

It concerns about the outside air, intakes designed to take in the best outside air available. The only source of pollution exists is the vehicles. In the project the hilly location; the large openings and the low vehicles movements make the outside air less pollutant.

- Air temperature

Room temperature, is the delegate indicator of the thermal environment, Thermal environment is generally determined by the temperature setting, the heating system used in the housing (heating water through the special pipe that is connected to the rodateris (HVAC) that transmit the heat into room. In summer the air conditions are not used since the climate in Ramallah city would be comfortable.

The thermal zoning is not applied in the project since the insulation for water and heating is used. Kalkal is used as insulation materials for water in foundation and wall, while Randuban is used for heating.

- Day lighting

The positions (orientations) of openings to make efficient use of daylight is concerning. Direct sunlight split into each household through windows were it opened from the south face. No obstacles to enter the light into the buildings. The used of day lighting just in the heavy cloudy winter days.

- Noise

Noise generated by building equipment and services; such as air conditioning equipment and drainage equipment do not exists. The high sound absorption rate in the project attenuates noise entering the interior or generated within the building will reduce noise levels. The double glass windows used in the project made the insulation with high performance against to split the noise in the interior.

- Quality of service

The high quality of construction phase and the design make the building high earthquake resistance.

- Townscape & landscape

The design elements like materials and colors that are responsive to the surroundings environment. The Public space and exterior elements responsive to the neighboring environment; the project colors and materials are very common with the surrounding environment and Measurements for encouraged rainwater percolation to the ground are consider the main elements of townscape and landscape.

Chapter Four: Methodology

4.1 Method of work assessment

The assessment of the Attira Housing project was carried out through:

- Field data collection
- Personal interviews
- Questionnaire survey
- CASBEE software packages

The personal interviews were arranged to overcome some of the particular questions, the questionnaire aimed at collecting data on the real situation and check the applicability of developed sustainable criteria. In addition, the data collected by the questionnaire will be used as input data for the CASBEE software. (Figure 7) illustrate the applied methodology for data analysis, output of the CASBEE and recommendations on the result obtained.

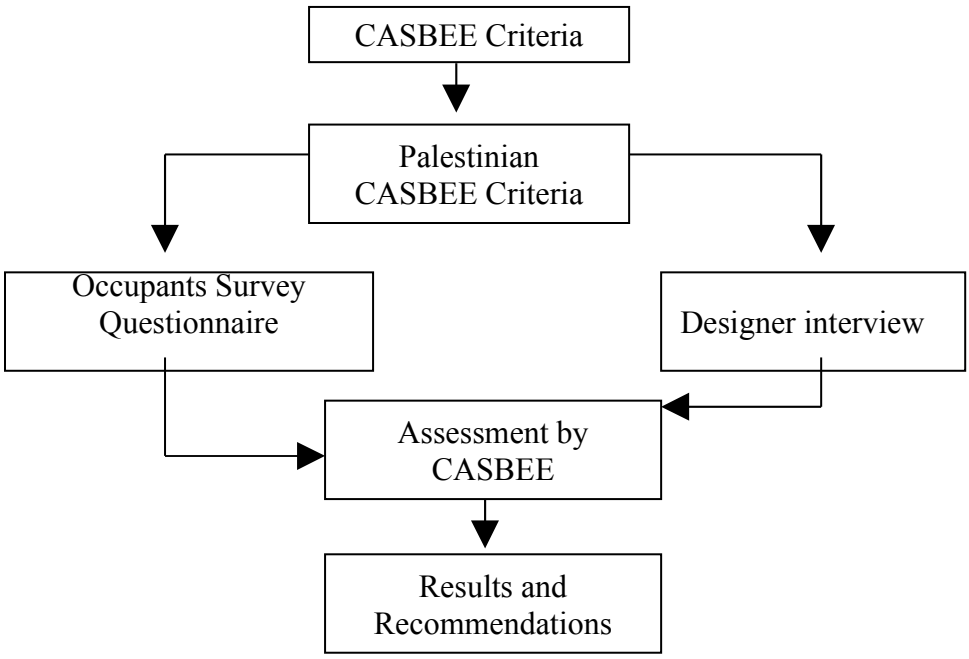


Figure 7 Methodology applied for work assessment

4.2 CASBEE

Comprehensive Assessment System for Building Environment Efficiency is also a building performance assessment tool and created as a workbook in Microsoft Excel. It

was established in Japan as a governmental and academic environmental assessment system for buildings. It covers four assessment aspects: energy consumption, cyclic use of resources, local environments, and indoor environments. The major objective of CASBEE in developing the system is to meet both political requirements and market demands to achieve a sustainable society throughout building lifecycles (Murakami, et al. 2002). CASBEE focuses on the environment areas and is divided into the pre-design tool, the DfE (Design for environment) tool, the eco-labeling tool and the sustainable operation and renovation tool (Japan Sustainable Building Consortium, 2003).

The final building score of CASBEE also originate from the weighted aggregation of four levels, sub-criteria, criteria, categories and performance areas. Since the sub-criteria, considerably based on Japanese domestic building regulations, some of scores for qualitative criteria are given by effort checklists or referred to evaluation methods of domestic regulations.

In CASBEE, the concept of closed ecosystems became essential for determining environmental capacities, while before the 1960s environmental assessment paid no attention to the fact that buildings simply discharged their environmental loadings into their surroundings, as an open system. (Murakami, et al. 2002) Therefore, a hypothetical enclosed space bounded by the borders of the building site.

The hypothetical boundary comprises the border of the site area and from the building top to the basement. Within the boundary, the performance is assessed by aspect of Building Environmental Quality & Performance (Q); out of the boundary, it is assessed by aspect of Building Environmental Loadings (LR). Loadings assess input of material and energy into the site area which is consumed within the site and output of emissions from the site area to the adjacent environment and earth. (Murakami. et al. 2002) Moreover, Q and LR aspects consist of the six following categories and the criteria thereof. (Figure 8)

Q Building Environmental Quality & Performance

- Q-1 Indoor Environment
- Q-2 Quality of Service

Q-3 Outdoor Environment on Site

LR Reduction of Building Environmental Loadings

LR- 1 Energy

LR-2 Resources & Materials

LR-3 Off-site Environment

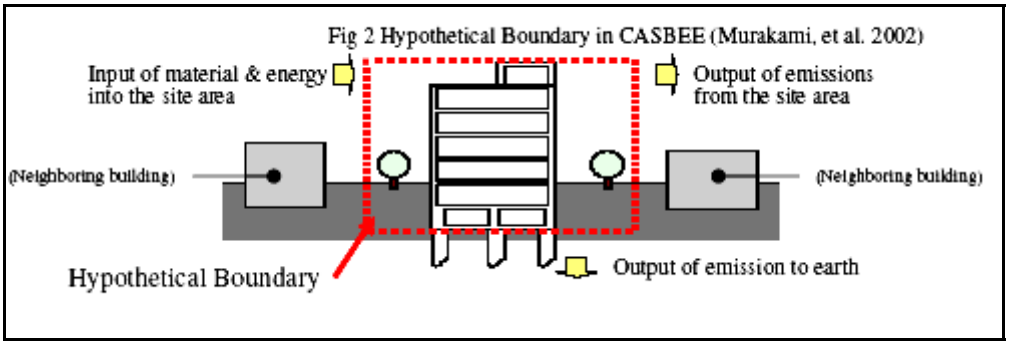


Figure 8 Hypothetical boundaries in CASBEE (Murakami et al. 2002)

4.3 The reasons for using CASBEE Tools

Choosing the CASBEE as a reference for criteria was for these reasons:

1- The CASBEE tool is under construction yet; making it is more flexible.
2- The information for run the software is given from the information services.
3- Easy of insulation the software.
4- The simple of application assessment.
5- Having the password of the assessment; that is help to control with the weighting, excluding sum criteria.

All criteria of CASBEE are considered to be taken, the 20 criteria of CASBEE are used which is applicable in Palestine and the skipped criteria due to the following reasons (Annex 3):

- inapplicable criteria for the other building types, i.e. school and hospital, set by CASBEE Ms-Excel program
- For climatic and geological reasons, like air-conditioning
- Lack of Japanese regulations reference
- The implementation problems of CASBEE digital program itself
- Difficulties of on-site measurement

The discussion for the applicable criteria was for the list below:

- Energy and Resource Consumption
- Materials
- Environmental Loadings
- Water
- Impact on site
- Indoor air quality
- Ventilation
- Air temperature and humidity
- Daylighting and illumination
- Noise
- Quality of service
- Townscape &landscape

Since the Attira housing project have the same system building materials, the same area, under the same weather conditions and geological foundation, the data collected will be represented for the all housing unit into one housing unit, that's for the CASBEE soft packages dealing with one unit household.

4.4 Applicable Palestinian CASBEE criteria

4.4.1 Energy and resource consumption

The field observations revealed that the width of the windows constructed ranged from (1.2 to 1.6) m with high of 1.25m. Therefore, a level 3 according to the CASBEE manual selected to reflect well designed windows allowing lights to split into rooms. Similarly, a level 4 was assigned for the efficient use of renewable energy, which is utilized for water heating through installed roof panel cells, for more information's see Annex 4.1.

4.4.2 Structural materials

From the field observations and the questionnaire distributed the major structural elements are made of non-wood materials (reinforced concrete, steel) according to the

manual level 5 is selected. The existing building skeleton is not reused, or there is no existing building on the site to use score 3 is selected, for more information's see Annex 4.2.

4.4.3 Environmental loadings

From the questionnaire distributed Fire retardants are not used in the project, the score 4 is selected according to the manual, for more information's see Annex 4.3.

4.4.4 Water

From the field observations and the questionnaire distributed, the households were equipped with water saving systems for (heating –recirculation water, toilets). As described in the literature review, level 1 was selected according to the manual. As the housing project includes system for using rain water neither harvesting; however lacks wastewater reuse scheme, level 4 and 3 were selected respectively as described in the manual, for more information's see Annex 4.4.

4.4.5 Indoor air quality:

From the field observations there are no exposed mineral fibers, the décor on at least 50% of the area of floors and external walls has been designed to restrict the growth of mites and mold, or to facilitate cleaning and maintenance, 5 level is given for well architecture design according to the manual, for more information's see Annex 4.5.

4.4.6 Ventilation:

From the field observations and the questionnaire distributed the air intakes are oriented away from pollution sources, considering conditions in areas surrounding the site level 5 is selected according to the manual, for more information's see Annex 4.6.

4.4.7 Air temperature:

During field visits made, it was noticed that the installed equipment for household heating and air condition have a capacity to maintain an inhabitants temperature to 22c

and 26c in winter and summer period respectively. These data allowed the use of level 4 as described in the CASBEE manual, for more information's see Annex 4.7.

4.4.8 Day lighting:

From the field observations and the questionnaire distributed; South and east-facing windows are existing for all building; No glare. And the day lightening devices are not used; according to the manual 5 level will distribute for the openings and day light devices, for more information's see Annex 4.8.

4.4.9 Noise:

From the field observations and the questionnaire distributed Level 3 is selected according to the manual while the sound absorbent materials are in the walls, floor or ceiling, for more information's see Annex 4.9.

4.4.10 Quality of service:

From the field observations and the questionnaire distributed the project design to resist the earthquake; since the skeleton design has many elements that is can resist the earthquake like (foundation, shear wall and the slabs). And no seismic isolation or vibration damping systems are used level 3 is selected according to the manual, for more information's see Annex 4.10.

4.4.11 Service life components:

From the field observations and the questionnaire distributed the durability for the reinforced concrete was more than one hundred years; level 5 is selected according to the manual, for more information's see Annex 4.11.

4.4.12 Townscape & landscape

From the field observations and the questionnaire distributed the measures to encourage rainwater percolation to the ground, Provision of facilities for temporary rainwater

storage (Installation of rainwater storage tanks, drainage basins, drainage facilities etc.) therefore level 5 will be selected according to the manual. Table 4 shows the individual level for different aspects, for more information's see Annex 4.12.

Table 4 the individual level of different aspects:

	Criteria of CASBEE		level
LR-1	Energy		
LR-1.2	Natural Energy Utilization		
	LR-1.2.1	Direct use of natural energy	3
	LR-1.2.2	Converted use of renewable energy	4
LR-2.2	Materials of low environmental load		
	LR-2.2.1	Recycled materials	
		LR-2.2.1.2 Efficiency of reusing Non-Skeleton Materials	5
	LR-2.2.4	Reuse of Existing Building Structure etc.	3
LR2.2.6	Use of CFCs and Halons		
	LR-2.2.6.1	Fire retardant	4
LR-2.1	Water resources		
	LR-2.1.1	Water saving	1
LR-2.1.2	Rainwater and Gray Water		
	LR-2.1.2.1	Rainwater use systems	4
	LR-2.1.2.2	Greywater reuse system	3
Q- 1.4	Air Quality		
Q1- 4.1	Source control		
	Q-1.4.1.2	Mineral Fiber	5
	Q-1.4.1.3	Mites, Mold etc.	5
Q- 1.4.2	Ventilation		
	Q-1.4.2.3	Consideration to outside air intake	5

Continue to Table 4

Q- 1.2	Thermal comfort		
Q1- 2.1	Room Temperature control		
	Q-1.2.1.1	Room Temperature setting	4
Q1.3	Lighting		
Q1- 3.1	Day lighting		
	Q1.3.1.2	Openings by orientations	5
	Q1.3.1.3	Day light devices	5
Q-1	Indoor Environment		
Q1.1.1	Noise		
	Q-1.1.1.2	Equipment Noise	3
Q1.1.3	Sound absorption		3
Q2.1	Earthquake-Resistance		
Q2.1.1	Earthquake Resistance		3
Q2.1.2	Seismic isolation and vibration damping system		3

Q2.2.1	Necessary refurbishment interval for exterior finishes	5
LR-3.6	Load on local infrastructure	5

Chapter Five: Results and Discussion

5.1 Results obtained from CASBEE software

The CASBEE software is designed to assess the sustainability of different buildings types (apartment, hotels, hospitals, schools, factories, and others). As well as single building or mix building types. However, the only building type is apartment. According to the CASBEE software used scale of score is distributed between 0 and 5.

Based on the data fed to the CASBEE, the environmental quality and performance (Q) for Attira housing project was determined. It is worth mentioned that Q contains Q1, Q2, and Q3 theses are illustrated below:

5.1.1 Indoor Environment (Q1)

Noise, thermal comfort, lightning, and air quality are the components of indoor environment. According to the assessment result the air quality and lightning have 5 score due to the large windows, terraces, and the location of the project which was a way from the sources of air pollutions.

Table 5 Aspect of (Q1) with total score

Aspect	Score
Noise	3.0
Thermal comfort	4.0
Lightning	5.0
Air quality	5.0
Total	**4.3**

The total score (4.3) has been obtained as an output of CASBEE program based on specific weighting multiplied with selected scores for aspects under study (CASBEE, 2004). Similar calculations mode will appear for Q2-Q3; LR 1-3.

The thermal comfort has got 4 score since the thermal system used in the project conserve the temperature setting in winter over 22c and the insulation materials are used in the construction phase. The noise got score 3 which is normal score that is because the insulation noise did not used. Table (5) shows the aspects of (Q1) with its result from the CASBEE software.

5.1.2 Quality of service (Q2)

According to the recommendation from the CASBEE service information, the service ability and flexibility are not applied in Palestine and due to Difficulties of on-site measurement. The durability which is concern with the service life components and earthquake resist are the only used. The result of assessment shows 3.8 score for the durability as a result for long life components materials and well design earthquake elements. Table 6 shows the aspects of (Q2) with its result from the CASBEE software.

Table 6 Aspect of (Q2) with total score

Aspect	Score
Service ability	Not applied
Durability	3.8
Flexibility	Not applied
Total	**3.8**

5.1.3 Outdoor environment on site (Q3)

Preservation, townscape and local characteristics are utilized in the outdoor environment. According to the CASBEE service information the townscape is only used due to the materials and colors used in the project which are responsive to the surrounding, 4 score result from the CASBEE software. Table (7) shows the aspects of (Q3) with its result from the CASBEE software.

Table 7 Aspect of (Q3) with total score

Aspect	Score
Preservation	Not applied
townscape	4
local characteristics	Not applied
Total	**4**

Illustrate to the data fed into the CASBEE, the reduction of building environmental loadings (LR) for Attira housing project was determined. It is worth mentioned that LR contains LR-1, LR-2, and LR-3 theses are illustrated below:

5.1.4 Energy (LR-1)

Building thermal load, natural, efficiency in building service and efficient operation are the components of energy.

Table 8 Aspect of (LR-1) with total score

Aspect	Score
Building thermal load	Not applied
natural	5
efficiency in building service	3
efficient operation	Not applied
Total	**3.7**

The building thermal load and the efficient operation are difficult to assess according to the CASBEE service information, and thus skipped. The natural has result of assessment 5 score and the efficiency in building service has result 3 score.

5.1.5 Resource and materials (LR-2)

Water resources and materials with low environmental load are the components of the resources and materials. The water resources have result 3.8 score which can be modified if water saving systems are used. The materials with low environmental load have result 4.1 due to concrete structure that has low environmental load.

Table 9 Aspect of (LR-2) with total score

Aspect	Score
Building thermal load	Not applied
Natural	5
Efficiency in building service	3
efficient operation	Not applied
Total	**3.7**

5.1.6 Off- site environment (LR-3)

Air pollution, noise vibration, wind damage, light pollution, heat island, and load on local infrastructure are the elements of the off site environment. The only component used is in the project is rainwater harvesting system, with result of assessment 1 scores.

Table 10 Aspect of (LR-3) with total score

Aspect	Score
air pollution	Not applied
noise vibration	Not applied
wind damage	Not applied
Light pollution	Not applied
heat island	Not applied
load on local infrastructure	1

Total	1

5.1.7 Calculations

The active weight according to the CASBEE software for the components of building environment quality and performance (Q) are: Indoor environment 40%, quality of service 30%, outdoor environment on site 30% while for the reduction of building environment loading (LR) as the following: energy 40%, resources and materials 30%, offsite environment 30%. Table 11 shows the active weights and the total scores of the main aspect, Q-1, Q-2, Q-3, LR-1, LR-2, and LR-3.

Table 11 Active weights and total scores of the main sustainability assessment aspects

Aspects		***Active Weights***	***Scores***
Q1	Indoor Environment	40%	4.3
Q2	Quality of Service	30%	3.8
Q3	Outdoor Environment on Site	30%	4
Q	Total score of Building Environmental Quality & Performance (Sq)		4.1
LR-1	Energy	40%	3.7
LR-2	Resources & Materials	30%	4.1
LR-3	Off-site Environment	30%	1
LR	Total score of Reduction of Building Environmental Loadings (Slr)		3

$$Building\ \ Environmen\ \ tal\ Efficiency\ \ = \frac{Building\ \ environmen\ \ tal\ quality\ \ and\ \ performanc\ \ e}{Building\ \ environmen\ \ tal\ loadings}$$

SQ: Score of Q category

SQ = 0.4* SQ1 + 0.3 * SQ2 + 0.3 * SQ3

= 0.4*4.3 + 0.3*3.8 + 0.3*4 = 4.1

SLR: Score of LR category

SLR = 0.4 * SLR1 + 0.3 * SLR2 + 0.3 * SLR3

= 0.4 *3.7 + 0.3*4.1 + 0.3*1 = 3

Q = 25*(Sq-1)

= 25*(4.1-1) = **77**

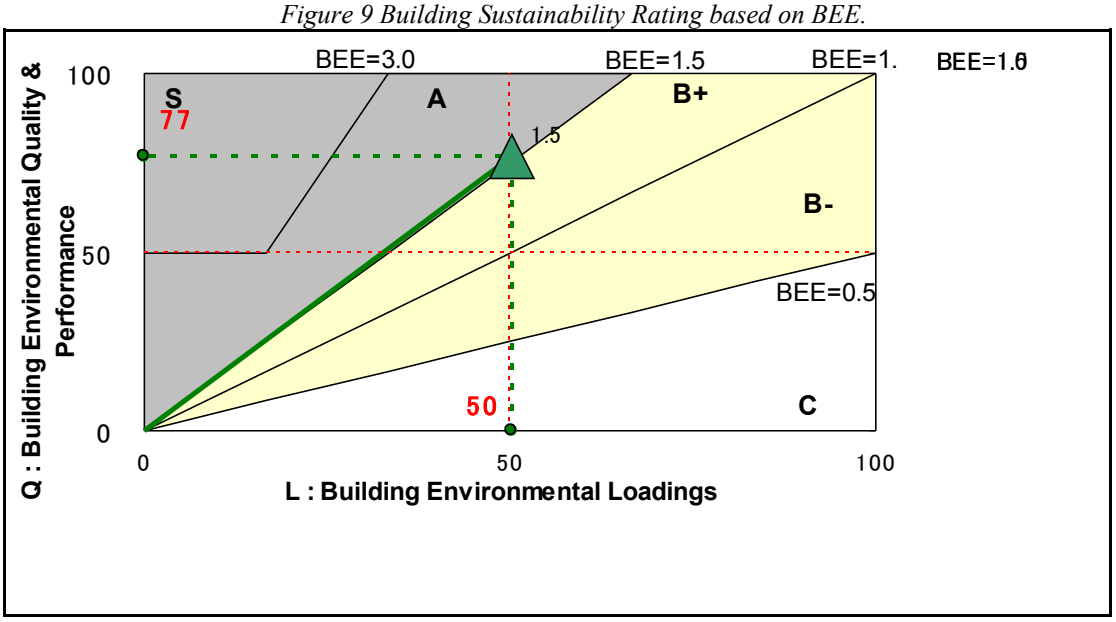
L = 25 * (5 - SLR)

= 25*(5-3) = 50

Building Environmental Efficiency = Q/L = 77/50= 1.5 (B^+) (Figure 9)

More information about the criteria and weighting are introduced in Annex 5.

Figure 9 Building Sustainability Rating based on BEE.



The result of assessment shows that the indoor environment, outdoor environment and resources materials have got scores more than 4. Good design for the noise, thermal, best air quality, town landscape, and using materials with low environmental load justify the score. The offsite environment has got the lowest score since the air pollution, noise vibration; wind damaged, light pollution, heat island and load to local infrastructure have been neglected in the design of the project. Figure 10 shows the relation between the main aspect of the building environment and scores.

The result of assessment shows that the housing construction materials and components with relation to the boundaries around are of good quality. The building environmental efficiency shows that high building environment loadings = 50, and high building environment quality and performance = 77.

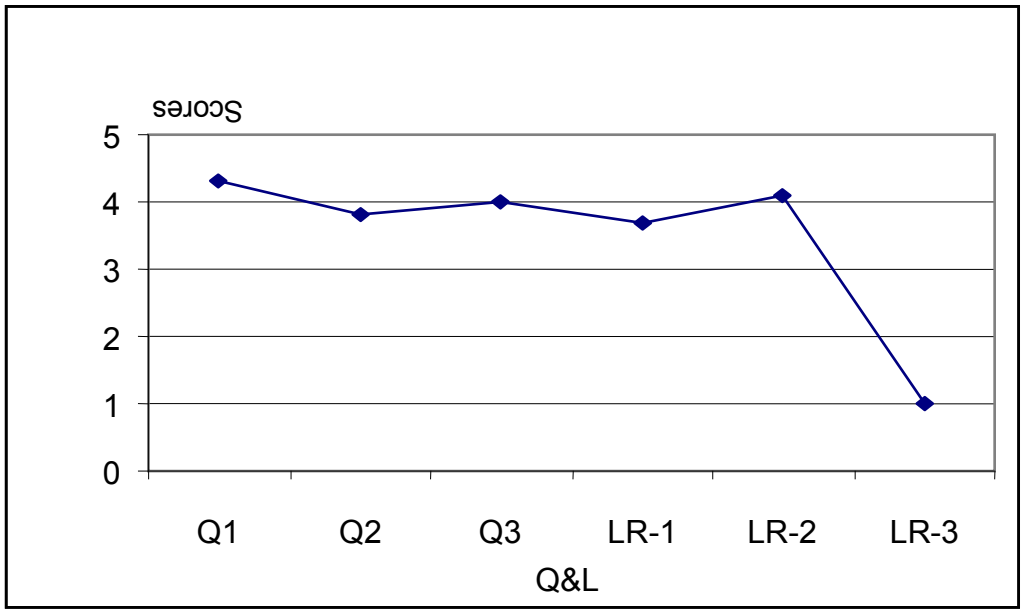


Figure 10 Relation between main aspect and its result scores

5.2 Suggested Modifications to Environmental Building Efficiency Improvement

The revision and suggestion discussed are given from the distributed questionnaire. Applying this suggestion on the case study will modify the result of the building environment efficiency and the suggestions are:

1- Improving infrastructure loading through providing facilities and equipment for sorting and separation garbage.
2- Providing systems for volume reduction and composting of organic garbage.
3- Design a system for using wastewater.

Appling all of these modifications will change the result of the offsite environment (LR-3). Table 12 shows the changing scores with respect to the aspect of (LR-3)

Table 12 Aspect of (LR-3) modified with total score

Aspect	Score
Air pollution	Not applied
Noise vibration	Not applied
Wind damage	Not applied
Light pollution	Not applied
Heat island	Not applied
Load on local infrastructure	2
Total	**2**

Table 14 shows the active weight and the total score of the main sustainable assessments aspects.

Table 13 Modified active weights and total scores of the main sustainability assessment aspects

Aspects		***Active Weights***	***Scores***
Q1	Indoor Environment	40%	4.3
Q2	Quality of Service	30%	3.8
Q3	Outdoor Environment on Site	30%	4
Q	Total score of Building Environmental Quality and Performance (Sq)		4.1
LR-1	Energy	40%	3.7
LR-2	Resources & Materials	30%	4.1
LR-3	Off-site Environment	30%	2
LR	Total score of Reduction of Building Environmental Loadings (Slr)		3

$$Building\ \ Environmen\ \ tal\ Efficiency\ \ = \frac{Building\ \ environmen\ \ tal\ quality\ \ and\ \ performanc\ \ e}{Building\ \ environmen\ \ tal\ loadings}$$

SQ: Score of Q category

SQ = 0.4* SQ1 + 0.3 * SQ2 + 0.3 * SQ3

= 0.4*4.3 + 0.3*3.8 + 0.3*4 = 4.1

SLR: Score of LR category

SLR = 0.4 * SLR1 + 0.3 * SLR2 + 0.3 * SLR3

= 0.4 *3.7 + 0.3*4.1 + 0.3*2 = 3.3

Q = 25*(Sq-1)

= 25*(4.1-1) = **77**

L = 25 * (5 - SLR)

= 25*(5-3.3) = **42**

Building Environmental Efficiency = Q/L = 77.5/42.5= **1.8** (A) (Figure 11)

For more information about the criteria score and weighting refer to the Annex 6

To adopt this result in Palestine will give an excellent indication about the high quality of Palestinian housing. The building environmental efficiency depends on the high

score of Building Environmental Quality and Performance and Building Environmental Loadings. In order to achieve a high score one needs to have high technical criteria, high quality of materials, and skilled professionals.

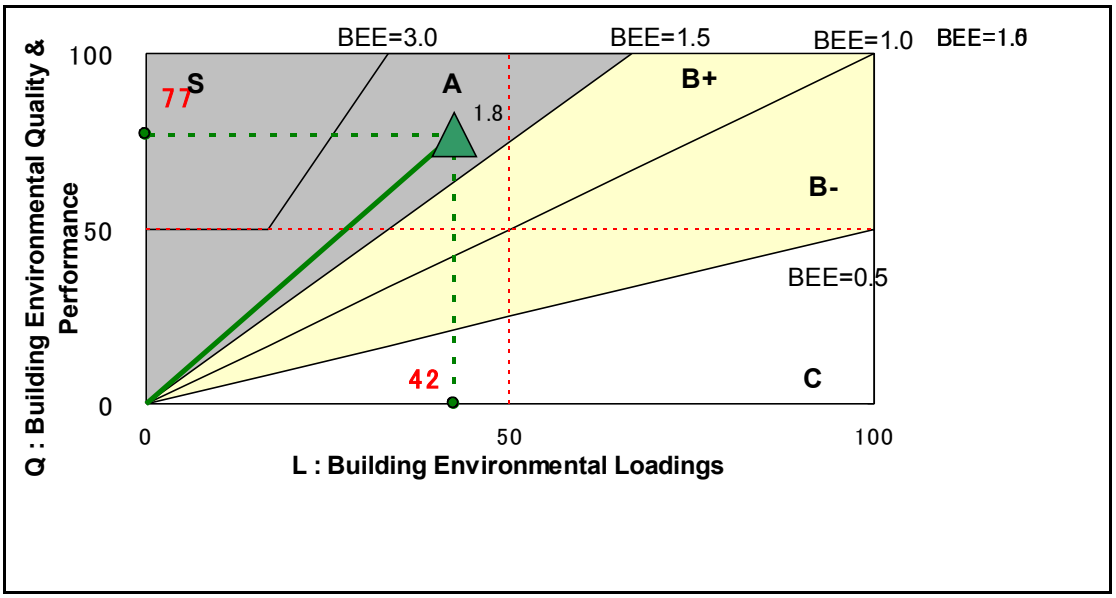


Figure 11 Modified Building Sustainability Rating based on BEE

5.3 Developed sustainability criteria for Palestinian housing

Based on the result obtained from the CASBEE software and questionnaire analysis, the following criteria can be suggested as criteria for the Palestinian housing project. These criteria can be used to assess the future housing projects in Palestine. Table 15 shows the developed sustainable criteria for Palestine housing.

Table 14 Palestinian sustainable housing criteria

	Sustainable criteria		Evaluation tools
1.	Water		
	1.1	Water saving	Using devices that reduce the water consumptions
	1.2	Rainwater use system	Using system that kept the rainwater
	1.3	Greywater reuse system	Using systems for using greywater
	1.4	Black water reuse system	Using systems for using black water.
2	Energy		
	2.1	Energy saving	Putting regulation and instruments that's reducing the consumption of the energy.
	2.2	Passive solar(hot water)	Using the solar panel to produce the hot water.
	2.3	Direct use of natural energy	Using Potential elements for the designer to design the households.
3	Materials		
	3.1	Use recycled materials	Use the recycled materials as possible, and avoid the non-recycled materials.
	3.2	Renovations of existence	Reuse the existence building like the traditional houses

		structures	
	3.3	Non-wood materials	Minimum using of wood materials
4	Environment loadings		
	4.1	Halons and Fire retardant	Avoid materials that causes harmful diseases
5	Indoor air quality		
	5.1	Mineral fiber & Mites	Good architecture design will forbid to growth of theses aspects.
6	Ventilation		
	6.1	Outside air intake	Good architecture design that's take the outside air intake into considerations.
7	Temperature		

Continue to Table 14

	7.1	Thermal design	Thermal design will conserve the energy consumptions and save the energy resources.
8	Noise		
	8.1	Sound absorption	The insulation materials that are absorb the sound generated from the out side homes and arrange the vehicle movement through the night.
9	Quality of service		
	9.1	Earthquake resistance	The high opportunity for the earthquake drives the designer to take in design phase.
10	Service life components		
	10.1	Materials durability	The reinforced concrete must have the materials to conserve and modify there durability
11	Solid waste		
	11.1	Compost system	The compost system must be used through awareness of the inhabitant about the benefits of using.
	11.2	Construction waste	Recycling and separation materials generated from the construction phase and from the using the home by separate the garbage producing from the homes.

Chapter Six: Conclusions and Recommendations

6.1 Conclusions

Based on the result obtained in the research study, the following conclusions are made:

- The building environmental efficiency (BEE= 1.5) at the first run of assessment which reveals feasibility of sustainable housing in Palestine.

- The building environmental efficiency (BEE= 1.8) at the next run of assessment shows that feasibility of sustainable housing in Palestine can be modified by adopting the composting of organic materials, garbage separation, and wastewater reuse.

- Good design for the noise, thermal, best air quality, town landscape, and using materials with low environmental load justify the score. The offsite environment has got the lowest score since the air pollution, noise vibration; wind damaged, light pollution, heat island and load to local infrastructure have been neglected in the design of the project.

- Lack of evaluative comprehensiveness for consideration to outside air intake. Is considered as a limitation of the CASBEE application. Also heat leakage, heat exchanger, environmental efforts of community scale and efforts in construction phase are neglected by the tool.

- The culture of sustainable optimal use and saving of water is not efficient in the Palestinian community.

- The Palestinian building design is not working with the thermal building concept, which is illustrated to save more energy.

- The developed sustainable housing criteria are applicable for the whole Palestinian districts with some changes due to climatologically variations.

- The Palestinian building materials have long service life components with addition to high standard building requirements to excess the resistance earthquakes.

- The result of assessment shows that the housing construction materials and components with relation to the boundaries around are of good quality.

6.2 Recommendations

The following recommendations are suggested to cope with housing challenges and to sustain both housing and environment:

- Governmental polices for supporting the Palestinian natural resources to sustain for the coming generation and keeping from depletion.

- Further studies about the developed sustainable housing criteria and how they change for the districts of Palestine.

- The environmental laws and housing regulations must be updated to improve the housing building materials, and to reduce the consumption of natural resources.

- Advanced training programs and specialized workshops should be conducted to sustain capacity building for engineers involved in sustainable housing sector and thermal building design.

- Public awareness campaigns should be organized and environmental scoping sessions should be encouraged to motivate public involvement, and change environmental attitude, for the benefit of reusing the wastewater, using non-wood materials, and sustainable material use, and supporting the project for reusing the wastewater reuse and compost for the organic materials, and separation the garbage.

- Based on the community needs, environmentally-friendly buildings should be encouraged to preserve the natural resources and achieving human-friendly building strategies. Aiming at public health and environmental protection as well as economically, feasible housing.

- Partnerships between non-government organization and government institutions should be initiated to develop future sustainable housing policies. Local academic and research institutions should be financially supported to explore feasibility of sustainable housing.

- It is believed that private sector involvement can play a major role in advancing sustainable housing in the context of economical and environmental aspects. Practical legislations and regulations can promote financial incentive for the private sector to apply waste minimization technologies.

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ANNEXES

Annex 1: Questionnaire for the designer:

The following questions are from Green building tool to
asses Attira housing project as sustainable housing,
If you cant understand any question don't hesitate to contact me directly:

Derar Sa'ed , M.Sc. Student in UPLD
Mobile No. 0599206407

Energy:

- Is there a system for using solar energy?
- Is the windows design well to enter the sun light in your house?
- Materials:
- Did you use Chemicals equipment or insulation causing Ozone Depleting?
- Do you think the materials on products used are durable?
- Are the materials used in construction having low maintenance?
- Are the materials used produced locally?
- Are the materials used products made from recycled materials?
- Are the Asbestos and Mineral Fiber used in the construction?

Water:

- Is there a wasted space in your house?
- Is there a system for saving water?
- Is there a system for using rainwater?
- Is there a system for using graywater?
- Is there a system for using blackwater?
- Is there a system or collecting rainwater?
- Solid waste:
- Is there a system for recycling and use the solid waste of the house?
- Is there a system for separate the solid waste?

Environment:

- In constructing your house, did you take in consideration the Value site resources?
- Did you take in consideration to minimize its environmental impact?
- Is the house benefiting from existing vegetation?
- If the all system adopted in your house, are you think you will be more satisfied?
- Temperature:
- Is there a system for temperature setting at winter?
- Is there a system for zoned room control?

Day lighting:

- The orientation of openings?
- ventilation:
- Is the outside air intake oriented away from pollution sources?

Noise:

- Water supply and drainage noises from toilets, bathrooms etc.
- Water hammer
- Noise from air conditioning room units
- Noise from air conditioning external units

Ventilation

- non of them
- sound absorbent
- Sound absorbent materials are not used.
- Sound absorbent materials are in either the walls, floor or ceiling.
- Sound absorbent materials are in the walls, floor and ceiling.
- non of them

Fire retardant:

- Halon fire retardant is used.
- (Inapplicable)
- Only used in .Critical-use

- No halon fire retardant is used.

Annex 2: Questionnaire for the Occupants

The following questions are from Green building tool to asses

Attira housing project as sustainable housing,

If you cant understand any question don't hesitate to contact me directly:

Derar Sa'ed , M.Sc. Student in UPLD

Mobile No. 0599206407

Number of family?

Area of house?

Are you satisfied from the space of your house?

Is there a wasted space in your house?

Did you consulate a designer to avoid wasting space and materials?

Is there a system for saving water?

Is there a system for using rainwater?

The water reusing, Do you acceptant to use it in your house?

Is there a system or collecting rainwater?

Is there a system for separate the solid waste?

The location of your house is it near to a public transportation?

Is the house well adapted in the society?

Are you satisfied with the quality of natural ventilation from doors and windows?

Annex 3: Skipped criteria and reasons

1. The inapplicable criteria for the other building types set by CASBEE

Ms-Excel program

Q-1.2.1.7 Allowance for after-hours air conditioning

Q-1.2.2.2 Sound Insulation of partition wall

Q-1.2.2.3 Sound Insulation of floor slabs<light impact>

Q-1.2.2.4 Sound Insulation of floor slabs<heavy impact>

Q-1.3.1.2 Openings by orientation

Q-1.4.2.2 Natural ventilation performance

2. The irrelevant criteria for climatic and geological reasons

Q-1.2.2 Humidity Control

Q-1.2.3 Type of Air Conditioning

LR-1.3.1 HVAC System

3. The skipped criteria due to lack of Japanese regulations

Q-1.2.1.3 Perimeter performance

Q-1.2.2.1 Sound Insulation of openings

Q-1.3.2.1 Glare from light fixtures

Q-1.4.1.1 Chemical pollutants

Q-1.4.2.1 Ventilation air volume

LR-1.1 Building Thermal Load

4. The skipped criteria due to the problems of CASBEE digital program

Q1.2.1.2 Valuable loads and following-up control

LR-1.3.6 Equipments for Improving Energy Efficiency

LR-2.2.2 Timber from sustainable forestry

LR-2.2.5 Predicted Volume of Recyclable Materials

LR-3.3 Wind Damage & sunlight Obstruction

LR-3.4 Light pollution

Q-1.4.1.4 *Legionella*

Q1.3.2.2 Day light control

Q1.3 Lighting and illumination

Q1.3.4 Lighting Controllability

Q-1.2.1 Room temperature control

Q1.2.1.6 Individual control

5. The skipped criteria due to difficulties of on-site measurement

Q 1.1.1.1 Background Noise

6. The skipped criteria due to the focus on non-residential users thereof

LR-1.3.2 Ventilation System

LR-1.3.3 Lighting System

LR-1.3.5 Elevators

Annex: 4.1

● 2.1 Direct Use of Natural Energy Off·Sch·Rtl·Rst·Hal·Hsp·Htl·Apt·Fct

Building type	Apt
Level 1	(Inapplicable)
Level 2	Light intake and natural ventilation are not possible at level 3.
Level 3	Nearly all dwellings (at least 80%) have exterior walls on at least two sides, ensuring effective light intake and natural ventilation.
Level 4	In addition to the above, building measures, such as ventilation voids, have been used to enhance their efficacy. They influence a majority (50% ore more) of residential blocks.
Level 5	The building measures above cover at least 80% of residential blocks.

☐ Commentary

Refer to Preliminary Design Stage LR-1 ●2.1.

● 2.2 Converted Use of Renewable Energy

Off·Sch·Rtl·Rst·Hal·Hsp·Htl·Apt·Fct

Building type	Apt
Level 1	(Inapplicable)
Level 2	(Inapplicable)
Level 3	0≦ Renewable energy usage <1MJ/m^2 * Include planned use for monumental purposes, as well as not using the energy.
Level 4	1MJ/m^2 ≦ Renewable energy usage <15MJ/m^2
Level 5	15MJ/m^2 ≦ Renewable energy usage

☐ Commentary

Evaluate the content of natural energy use, as appropriate for the scale and purpose of the building and its surrounding conditions. At the Execution Design Stage, concentrate on quantitative assessment based on the annual primary energy usage in the building, using the results of the detailed design only for converted use of natural energy.

$$\text{Natural energy usage (MJ/m}^2\cdot\text{yr)} = \frac{\text{Annual converted usage (MJ/yr.)}}{\text{Total floor area (m}^2\text{)}}$$

Annex: 4.2

- 2.1 Recycled Materials
- 2.1.1 Efficiency of Structural Skeleton Material Reuse

Off · Sch · Rtl · Rst · Hal · Hsp · Htl · Apt · Fct

Building type	Off · Sch · Rtl · Rst · Hal · Hsp · Htl · Apt · Fct
Level 1	(Inapplicable)
Level 2	(Inapplicable)
Level 3	Major structural elements are made of non-wood materials (RC/ SRC/ S), and none of the measures below are used.
Level 4	Major structural elements are made of non-wood materials (RC/ SRC/ S), and one or more of the measures below are used.
Level 5	Major structural elements are made of non-wood materials (RC/ SRC/ S), and two or more of the measures below are used.

☐ Commentary

Evaluate according to the total of the point scores for efforts to be evaluated listed below. Score one point for a measure that is used even in part, regardless of the amount of usage.

As shown in appendices 3 and 4, the usage of electric furnace steel in various construction applications stands at 60% of ordinary construction steel. Even for H sections, approximately 60% is electric furnace steel. Therefore if H sections in the design are of sectional dimensions sold by multiple electric furnace steel manufacturers, as shown in appendix 2, assume that electric furnace steel is used.

Point	Efforts to be evaluated
1	- Electric furnace steel used in major structural elements (Other than reinforcement bars)
1	- Portland blast furnace cement used in concrete portions of major structural elements
1	- Recycled aggregate used in concrete portions of major structural elements

Annex: 4.3

● 2.6 Avoidance of CFCs & Halons

● 2.6.1 Fire Retardant Off · Sch · Rtl · Rst · Hal · Hsp · Htl · Apt · Fct

Building type	Off · Sch · Rtl · Rst · Hal · Hsp · Htl · Apt · Fct
Level 1	Halon fire retardant is used.
Level 2	(Inapplicable)
Level 3	Only used in "Critical-use."
Level 4	No halon fire retardant is used.
Level 5	(Inapplicable)

□ Commentary

Refer to Preliminary Design Stage LR-2 ●2.6.1.

● 2.6.2 Insulation Materials Off · Sch · Rtl · Rst · Hal · Hsp · Htl · Apt · Fct

Annex: 4.4

1. Water Resource

1.1 Water Saving

Off · Sch · Rtl · Rst · Hal · Hsp · Htl · Apt · Fct

Building type	Off · Sch · Rtl · Rst · Hal · Hsp · Htl · Apt · Fct
Level 1	No systems for saving water.
Level 2	(Inapplicable)
Level 3	Major faucets are equipped with water-saving valve.
Level 4	In addition to water-saving valve, other water-saving equipment (such as flush-mimicking sound systems, water-saving toilets) is used.
Level 5	(Inapplicable)

☐ Commentary

Evaluate whether the building is equipped with systems able to save water.

1.2 Rainwater & Gray Water

1.2.1 Rainwater Use System

Off · Sch · Rtl · Rst · Hal · Hsp · Htl · Apt · Fct

Building type	Off · Sch · Rtl · Rst · Hal · Hsp · Htl · Apt · Fct
Level 1	(Inapplicable)
Level 2	(Inapplicable)
Level 3	No systems for using rainwater.
Level 4	Rainwater is used.
Level 5	Rainwater usage brings the rainwater usage rate to at least 20%.

☐ Commentary

Evaluate according to the reuse rate.

The rainwater usage rate is calculated by the formula below.

1.2.2 Gray Water Reuse Systems

Off · Sch · Rtl · Rst · Hal · Hsp · Htl · Apt · Fct

Building type	Off · Sch · Rtl · Rst · Hal · Hsp · Htl · Apt · Fct
Level 1	(Inapplicable)
Level 2	(Inapplicable)
Level 3	No systems for reusing graywater.
Level 4	Graywater is reused.
Level 5	In addition to graywater reuse, there is equipment to reuse sewage.

Annex: 4.5

● 4.1.2 Mineral Fibers Off・Sch・Rtl・Rst・Hal・Hsp・Htl・Apt・Fct

Entire Building and Common Properties	
Building type	Off・Sch・Rtl・Rst・Hal・Hsp・Htl・Apt・Fct
Level 1	Not adequate for level 3.
Level 2	(Inapplicable)
Level 3	No exposure in the living room, or in any location from which mineral fibers could enter the living room. Some level of exposure elsewhere.
Level 4	(Inapplicable)
Level 5	Absolutely no exposed mineral fibers.

Residential and Accommodation Sections	
Building type	Hsp・Htl・Apt
Level 1	Not adequate for level 3.
Level 2	(Inapplicable)
Level 3	No exposure in the living room, or in any location from which mineral fibers could enter the living room. Some level of exposure elsewhere.
Level 4	(Inapplicable)
Level 5	Absolutely no exposed mineral fibers.

☐ Commentary

Asbestos is carcinogenic, and interior use of asbestos-containing products must be avoided. Glass wool, rock wool and similar materials have longer fibers than asbestos, and they are believed to have less physiological impact, but the dispersion of fibrous substances must be avoided, at least in areas which will be occupied for extended periods by children and the elderly.

■Bibliography 50), 51)

● 4.1.3 Mites, Mold etc. Off・Sch・Rtl・Rst・Hal・Hsp・Htl・Apt・Fct

Entire Building and Common Properties	
Building type	Off・Sch・Rtl・Rst・Hal・Hsp・Htl・Apt・Fct
Level 1	Not adequate for level 3.
Level 2	(Inapplicable)
Level 3	The décor on at least 50% of the area of floors and external walls has been designed to restrict the growth of mites and mold, or to facilitate cleaning and maintenance.
Level 4	The décor on at least 65% of the area of floors and external walls has been designed to restrict the growth of mites and mold, or to facilitate cleaning and maintenance.
Level 5	The décor on at least 80% of the area of floors and external walls has been designed to restrict the growth of mites and mold, or to facilitate cleaning and maintenance.

Annex: 4.6

- 4.2.3 Consideration of Outside Air Intake Off · Sch · Rtl · Rst · Hal · Hsp · Htl · Apt · Fct

Entire Building and Common Properties	
Building type	Off · Sch · Rtl · Rst · Hal · Hsp · Htl · Fct
Level 1	Not adequate for level 3.
Level 2	(Inapplicable)
Level 3	Considering conditions in areas surrounding the site, the air intakes are oriented away from pollution sources and positioned to keep enough distance from extraction vents. They are also oriented away from extraction vents and positioned at least 3m away.
Level 4	Considering conditions in areas surrounding the site, the air intakes are oriented away from pollution sources and positioned to keep enough distance from extraction vents. They are also positioned at least 6m away.
Level 5	Considering conditions in areas surrounding the site, the air intakes are oriented away from pollution sources and positioned to keep enough distance from extraction vents. They are also oriented away from extraction vents and positioned at least 6m away.

Annex: 4.7

- 2.1.1 Room Temperature Setting — Off · Sch · Rtl · Rst · Hal · Hsp · Htl · Apt · Fct

Entire Building and Common Properties	
Building type	Off · Hsp · Htl · Apt · Fct
Level 1	The minimum equipment capacity is provided to achieve temperatures of 20°C in winter and 28°C in summer, which require tolerance of some discomfort
Level 2	
Level 3	Equipment capacity is provided to achieve temperatures of 22°C in winter and 26°C in summer, which are ordinary settings.
Level 4	
Level 5	Equipment capacity is provided to achieve temperatures of 24°C in winter and 24°C in summer.
Building type	Sch
Level 1	The minimum equipment capacity is provided to achieve temperatures of 10°C or more in winter and less than 30°C in summer, which require tolerance of some discomfort
Level 2	
Level 3	Equipment capacity is provided to achieve temperatures of 18~20°C in winter and 25~28°C in summer, which are ordinary settings.
Level 4	
Level 5	Equipment capacity is provided to achieve temperatures of 24°C in winter and 24°C in summer.
Building type	Rtl · Rst · Hal
Level 1	The minimum equipment capacity is provided to achieve temperatures of 18°C in winter and 28°C in summer, which require tolerance of some discomfort
Level 2	
Level 3	Equipment capacity is provided to achieve temperatures of 20°C in winter and 26°C in summer, which are ordinary settings.
Level 4	
Level 5	Equipment capacity is provided to achieve temperatures of 22°C in winter and 24°C in summer.

NOTE) When it is difficult to decide, choose an intermediate level (level 2 or 4).

Annex: 4.8

- 3.1.3 Daylight Devices — Off · Sch · Rtl · Rst · Hal · Hsp · Htl · Apt · Fct

Entire Building and Common Properties	
Building type	Off · Sch · Fct
Level 1	(Inapplicable)
Level 2	(Inapplicable)
Level 3	There are no daylight devices.
Level 4	There is one type of daylight device.
Level 5	There are two or more types of daylight device, or they have advanced functions.
Building type	Rtl · Rst · Hsp · Htl · Apt
Level 1	(Inapplicable)
Level 2	(Inapplicable)
Level 3	There are no daylight devices.
Level 4	(Inapplicable)
Level 5	There are some daylight devices.

Annex: 4.9

- 1.3 Sound Absorption — Off · Sch · Rtl · Rst · Hal · Hsp · Htl · Apt · Fct

Entire Building and Common Properties	
Building type	Off · Sch · Rtl · Rst · Hsp · Htl · Apt · Fct
Level 1	Sound absorbent materials are not used.
Level 2	
Level 3	Sound absorbent materials are in either the walls, floor or ceiling.
Level 4	
Level 5	Sound absorbent materials are in the walls, floor and ceiling.

Residential and Accommodation Sections	
Building type	Hsp · Htl · Apt
Level 1	Sound absorbent materials are not used.
Level 2	
Level 3	Sound absorbent materials are in either the walls, floor or ceiling.
Level 4	
Level 5	Sound absorbent materials are in the walls, floor and ceiling.

Annex: 4.10

2. Durability & Reliability

2.1 Earthquake-resistance

2.1.1 Earthquake Resistance

Off · Sch · Rtl · Rst · Hal · Hsp · Htl · Apt · Fct

Entire Building and Common Properties	
Building type	Off · Sch · Rtl · Rst · Hal · Hsp · Htl · Apt · Fct
Level 1	(Inapplicable)
Level 2	(Inapplicable)
Level 3	The building's earthquake resistance meets the requirements of the Building Standards Law.
Level 4	The building's earthquake resistance exceeds the requirements of the Building Standards Law by a 20% margin.
Level 5	The building's earthquake resistance exceeds the requirements of the Building Standards Law by a 50% margin. Alternatively, damage control design has been used.

Residential and Accommodation Sections - Inapplicable

☐ Commentary

Refer to Preliminary Design Stage Q-2 ● 2.1.1.

2.1.2 Seismic Isolation & Vibration Damping Systems

Off · Sch · Rtl · Rst · Hal · Hsp · Htl · Apt · Fct

.

Annex: 4.11

2.2 Service Life of Components

- 2.2.1 Necessary Refurbishment Interval for Exterior Finishes

Off · Sch · Rtl · Rst · Hal · Hsp · Htl · Apt · Fct

Entire Building and Common Properties		
Building type	Off · Sch · Rtl · Rst · Hal · Hsp · Htl · Apt · Fct	
Level 1	Necessary refurbishment interval for exterior finishes	Less than 10 years
Level 2	Necessary refurbishment interval for exterior finishes	10 years or more, less than 20 years
Level 3	Necessary refurbishment interval for exterior finishes	20 years
Level 4	Necessary refurbishment interval for exterior finishes	21 years or more, less than 30 years
Level 5	Necessary refurbishment interval for exterior finishes	30 years or more

Residential and Accommodation Sections - Inapplicable

Annex: 4.12

2. Townscape & Landscape

Off · Sch · Rtl · Rst · Hal · Hsp · Htl · Apt · Fct

Building type	Off · Sch · Rtl · Rst · Hal · Hsp · Htl · Apt · Fct
Level 1	On the Efforts to Be Evaluated, 0.0 ≤ Credit Ratio(3) <0.2

Efforts to be evaluated

Level of efforts			Efforts	
High	Low	None		
2	1	0	1) Building placement and orientation responsive to the surrounding environment	
2	1	0	2) Building height and form that are responsive to the surrounding environment	
2	1	0	3) Use design elements, materials and colors that are responsive to the surroundings.	
2	1	0	4) Public space and exterior elements responsive to the surrounding environment	
2	1	0	5) Reflecting views of local residents in plan content	
2	1	-	6) Other	
(1) Total Credits			(2) Maximum Credits	(3) Credit Ratio [(1)/(2)] =

☐ Commentary

CASBEE for New Construction

Comprehensive Assessment System for Building Environmental Efficiency

Assessment Software

CASBEE-NCe_2004v1.02

1) Building Outline Entry

(1) Building Outline

■Building Name	Attira Housing Project	
■Location / Climate	Ramallah	Zone VI
■ Area / Zone	Commercial Area	
■Completion(Scheduled / Completion)	Jan-06	Completion
■Site Area	500.00	m²
■Construction Area	300.00	m²
■Gross Floor Area	300.00	m²
■Building Type ※	Apartments	
(Building Application Name)		
■Number of Floors	2	
■Structure	RC	
■Occupancy	Birzeit University	Occupants(assumed)
■Annual Occupancy	1	hrs /yr(assumed)

(2) Period of Assessment

■Assessment date	17-Mar-06	Construction Completion Stage
■Assessor	Derar Sa'ed	
■Date of confirmation	31-Mar-06	
■Confirmed by	Dr. Maher Abu Madi	

2) Entry of building types

Building type of each sheet	Building Type	Gross Floor Area	
■Building Type 1 (Main Type)	Apartments	300.00	m²
■Building Type 2			m²
■Building Type 3			m²
■Building Type 4			m²
■Entire Building	Apartments	300.00	m²

Ratio of Residential &Accommodation Sec ※Enter rounded values for hospitals, hotels and apartments.

■ Proportion of total floor area of a hospital used for sickrooms.	
■ Proportion of total floor area of a hotel used for guest rooms.	
■ Proportion of total floor area of an apartment used for residences.	0.9

3) Results Output

Assessment Result Sheet	● ☼♏⬧◆●♦
Score Sheet	● ♦♍□❐♏

※ Building Type	Types included
Offices	Offices, government buildings, libraries, museum, post office etc.
Schools	Elementary schools, junior high schools, high schools, universities, technical colleges, higher vocational schools, and other school types.
Retailers	Department stores, supermarket etc.
Restaurants	Restaurant, canteens, café etc.
Halls	Auditoria, meeting halls, bowling lanes, gymnasia, theaters, pachinko parlors etc.
Factories	Plants, garages, storage plants, pavilion, wholesale market etc.
Hospitals	Hospitals, homes for the elderly, welfare homes for the handicapped etc.
Hotels	Hotels, inns etc.
Apartments	Condominiums (detached houses are excluded)

Comprehensive Assessment System for Building Environmental Efficiency

CASBEE for New Construction

CASBEE-NCe_2004v1.02

Assessment sheet of Construction Completion Stage

Assessment date: 17-Mar-06 | Assessor: Derar Sa'ed | Date of approval: 31-Mar-06 | Approved by: Dr. Maher Abu Madi

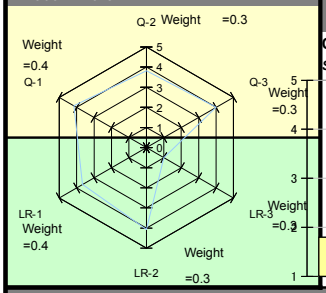
(1) Building Outli *1

Building Name	Attira Housing Project		
Building Type	Apartments		
Location / Climate	Ramallah		Zone VI
Area / Zone	Commercial Area		
Completion	Jan-06 Completion	Number of Floors	2
Site Area	500 m²	Structure	RC
Construction Area	300 m²	Occupancy	Birzeit University persons
Gross Floor Area	300 m²	Annual Occupancy	1 hrs/yr

(2) Results of Comprehensive Assessment for Building Environmental Efficiency *1*2

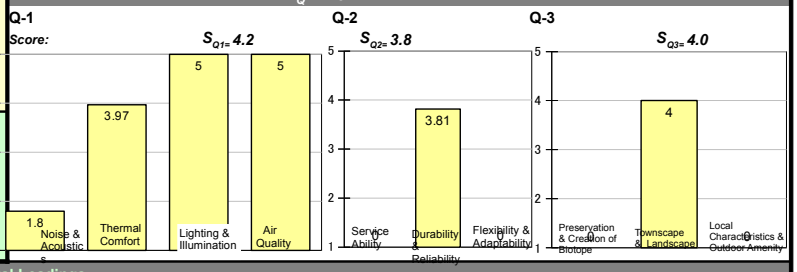
(2)-1 Building Environmental Quality & Performance and Load Reduction (Results by Category)

Radar Chart



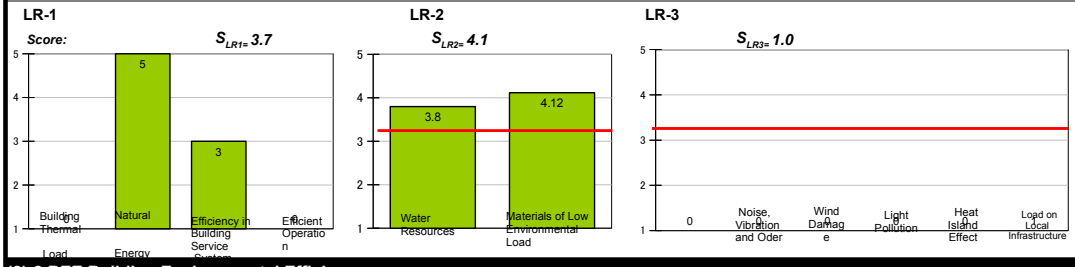
Q. Building Environmental Quality & Performance

Score: $S_Q = 4.0$ *SQ = 0.4* SQ1 + 0.3 * SQ2 + 0.3 * SQ3



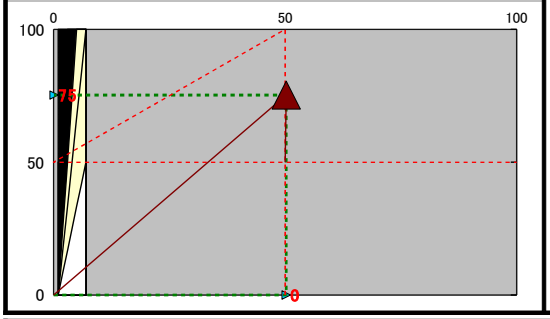
LR. Reduction of Building Environmental Loadings

Score: $S_{LR} = 3.0$ SLR = 0.4 * SLR1 + 0.3 * SLR2 + 0.3 * SLR3



(2)-2 BEE Building Environmental Efficiency

Building Sustainability Rating based on BEE



$$BEE = \frac{\text{Building Environmental Quality \& Performance } Q}{\text{Building Environmental Loadings } L} = \frac{25 * (S_Q - 1)}{25 * (5 - S_{LR})} = \frac{75}{50} = 1.5$$

$Q = 25 * (S_Q - 1)$ *S_Q: Score of Q category
SQ = 0.4* SQ1 + 0.3 * SQ2 + 0.3 * SQ3

$L = 25 * (5 - S_{LR})$ *S_{LR}: Score of LR category
SLR = 0.4 * SLR1 + 0.3 * SLR2 + 0.3 * SLR3

(3) Important Assessment Items Excluded from Comprehensive Assessment for Building Environmental Efficiency *3

(3)-1 Quantitative Assessment Indicators for Typical Building Environmental Loadings

<Input when the detailed assessment is carried out at the Execution Design & Construction Completion Stage >

	Value / y / m²	Value / person / h	Reduction / y / m2	Reduction Rate % 0 10 20 30 40 50 %
Energy consumption in building operation	MJ/y/m²	MJ/person/h	MJ/y/m²	
CO_2 emission in building operation	kg-CO_2/y/m²	kg-CO_2/person/h	kg-CO_2/y/m²	
Water consumption	m³/y/m²	m³/person/h	m³/y/m²	
Lifecycle CO_2 emission	kg-CO_2/y/m²	kg-CO_2/person/h	kg-CO_2/y/m²	
Lifecycle amount of waste disposal	t/y/m²	t/person/h	t/y/m²	
Lifecycle amount of resource consumption	t/y/m²	t/person/h	t/y/m²	

(3)-2 Design Process Assessment

Concerned Items

Design Stage

1 Design by Accredited Professional

Construction Stage

2 Environmental Management Plan

Notes * 1: Essential assessment results are displayed in (1) and (2).

*2: Site - selection - related assessments are not included. A standard building constructed on this site is given the score of 3."NA" denotes that the item is excluded from assessment.

*3: Assessment (3) is optional. If possible, it is recorded only in the execution design stage and the construction completion stage.

CASBEE for New Construction

CASBEE-NCe_2004v1.02

Attira Housing Project

(4) Score Sheet **Construction Completion Stage**

Concerned categories	Brief summary of Design for Environment	Entire Building and Common Properties		Residential and Accomodation sections		Total
		Score	weighting coefficients	Score	weighting coefficients	
Q Building Environmental Quality & Performance						**4.0**
Q-1 Indoor Environment			0.40			4.2
1 Noise & Acoustics		**3.0**	0.15	**1.7**	-	1.8
1.1 Noise		–	-	**1.0**	0.67	
1 Background noise		–	-	–	-	
2 Equipment noise		–	-	1.0	1.00	
1.2 Sound Insulation		–	-	–	-	
1 Sound Insulation of Openings		–	-	–	-	
2 Sound Insulation of Partition Walls		3.0	-	–	-	
3 Sound Insulation of Floor Slabs (light impact)		3.0	-	–	-	
4 Sound Insulation of Floor Slabs (heavy impact)		3.0	-	–	-	
1.3 Sound Absorption		**3.0**	1.00	**3.0**	0.33	
2 Thermal Comfort		**3.7**	0.35	**4.0**	-	4.0
2.1 Room Temperature Control		**3.7**	1.00	**4.0**	1.00	
1 Room Temperature Setting		4.0	0.71	4.0	1.00	
2 Variable Loads & Following-up Control		3.0	-	–	-	
3 Perimeter Performance		–	-	–	-	
4 Zoned Control		3.0	-	–	-	
5 Temperature & Humidity Control		3.0	0.29	3.0	-	
6 Individual Control		–	-	–	-	
7 Allowance for After-hours Air Conditioning		3.0	-	–	-	
8 Monitoring Systems		3.0	-	–	-	
2.2 Humidity Control		–	-	–	-	
2.3 Type of Air Conditioning System		–	-	–	-	
3 Lighting & Illumination		**5.0**	0.25	**5.0**	-	5.0
3.1 Daylighting		**5.0**	1.00	**5.0**	1.00	
1 Daylight Factor		–	-	–	-	
2 Openings by Orientation		5.0	-	–	-	
3 Daylight Devices		5.0	1.00	5.0	1.00	
3.2 Anti-glare Measures		–	-	–	-	
1 Glare from light fixtures		–	-	–	-	
2 Daylight control		–	-	–	-	
3.3 Illuminance Level		–	-	–	-	
1 Illuminance		–	-	–	-	
2 Uniformity Ratio of Illuminance		–	-	3.0	-	
3.4 Lighting Controllability		–	-	–	-	
4 Air Quality		**5.0**	0.25	**5.0**	-	5.0
4.1 Source Control		**5.0**	0.60	**5.0**	0.63	
1 Chemical Pollutants		–	-	–	-	
2 Mineral Fiber		5.0	0.50	5.0	0.50	
3 Mites, Mold etc.		5.0	0.50	5.0	0.50	
4 Legionella		3.0	-	–	-	
4.2 Ventilation		**5.0**	0.40	**5.0**	0.38	
1 Ventilation Rate		–	-	–	-	
2 Natural Ventilation Performance		3.0	-	–	-	
3 Consideration for Outside Air Intake		5.0	1.00	5.0	1.00	
4 Air Supply Planning		3.0	-	–	-	
4.3 Operation Plan		–	-	–	-	
1 CO_2 Monitoring		3.0	-	–	-	
2 Control of Smoking		3.0	-	–	-	
Q-2 Quality of Service			0.30			3.8
1 Service Ability		–	-	–	-	-
1.1 Functionality & Usability		–	-	–	-	
1 Provision of Space & Storage		3.0	-	3.0	-	
2 Adaptation of Building & Services to IT Innovation		3.0	-	–	-	
3 Barrier-free Planning		–	-	–	-	
1.2 Amenity		–	-	–	-	
1 Perceived Spaciousness & Access to View		3.0	-	–	-	
2 Space for Refreshment		3.0	-	–	-	
3 Décor Planning		–	-	–	-	
2 Durability & Reliability		**3.8**	1.00	–	-	3.8
2.1 Earthquake Resistance		**3.0**	0.59	–	-	
1 Earthquake-resistance		3.0	0.80	–	-	
2 Seismic Isolation & Vibration Damping Systems		3.0	0.20	–	-	
2.2 Service Life of Components		**5.0**	0.41	–	-	
1 Necessary Refurbishment Interval for Exterior Finishes		5.0	1.00	–	-	
2 Necessary Renewal Interval for Main Interior Finishes		–	-	–	-	
3 Necessary Renewal Interval for Plumbing & Wiring Materials		–	-	–	-	
4 Necessary Renewal Interval for Major Equipment & Services		–	-	–	-	
2.3 Reliability		–	-	–	-	
1 HVAC System		–	-	–	-	
2 Water Supply & Drainage		–	-	–	-	
3 Electrical Equipment		–	-	–	-	
4 Support Method of Machines & Ducts		–	-	–	-	
5 Communications & IT equipment		–	-	–	-	
3 Flexibility & Adaptability		–	-	–	-	-

	3.1 Spatial Margin			–	-	–	-	
		1	Allowance for Story Height	3.0	-	–	-	
		2	Adaptability of Floor Layout	3.0	-	–	-	
	3.2 Floor Load Margin			3.0	-	–	-	
	3.3 Adaptability of Facilities			–	-	–	-	
		1	Ease of Air Conditioning Duct Renewal	–	-	–	-	
		2	Ease of Water Supply & Drain Pipe Renewal	–	-	–	-	
		3	Ease of Electrical Wiring Renewal	–	-	–	-	
		4	Ease of Communications Cable Renewal	–	-	–	-	
		5	Ease of Equipment Renewal	–	-	–	-	
		6	Provision of Backup Space	–	-	–	-	
Q-3	**Outdoor Environment on Site**				0.30			4.0
	1 Preservation & Creation of Biotope			–	-	–	-	-
	2 Townscape & Landscape			4.0	1.00	–	-	4.0
	3 Local Characteristics & Outdoor Amenity			–	-	–	-	-
	3.1 Attention to Local Character & Improvement of Comfort			–	-	–	-	
	3.2 Improvement of the Thermal Environment on Site			–	-	–	-	
LR	**Reduction of Building Environmental Loadings**				-			3.0
LR-1	**Energy**				0.40			3.7
	1 Building Thermal Load			–	-	–	-	-
	2 Natural Energy Utilization			5.0	0.33	–	-	5.0
	2.1 Direct Use of Natural Energy			5.0	0.50	–	-	
	2.2 Converted Use of Renewable Energy			4.0	0.50	–	-	
	3 Efficiency in Building Service System			3.0	0.67	–	-	3.0
	4 Efficient Operation			–	-	–	-	-
	4.1 Monitoring			3.0	-	–	-	
	4.2 Operational Management System			3.0	-	–	-	
LR-2	**Resources & Materials**				0.30			4.1
	1 Water Resources			3.8	0.15	–	-	3.8
	1.1 Water Saving			4.0	0.40	–	-	
	1.2 Rainwater & Gray Water			3.7	0.60	–	-	
		1	Rainwater Use Systems	4.0	0.67	–	-	
		2	Gray Water Reuse System	3.0	0.33	–	-	
	2 Materials of Low Environmental Load			4.1	0.85	–	-	4.1
	2.1 Recycled Materials			5.0	0.45	–	-	
		1	Reuse Efficiency of Materials Used in Structure	5.0	1.00	–	-	
		2	Reuse Efficiency of Non-structural Materials	–	-	–	-	
	2.2 Timber from Sustainable Forestry			–	-	–	-	
	2.3 Materials with Low Health Risks			3.0	0.10	–	-	
	2.4 Reuse of Existing Building Skeleton etc.			3.0	0.22	–	-	
	2.5 Reusability of Components & Materials			–	-	–	-	
	2.6 Use of CFCs & Halons			4.0	0.22	–	-	
		1	Fire Retardant	4.0	1.00	–	-	
		2	Insulation Materials	–	-	–	-	
		3	Refrigerants	–	-	–	-	
LR-3	**Off-site Environment**				0.30			1.0
	1 Air Pollution			–	-	–	-	-
	2 Noise, Vibration & Odor			–	-	–	-	-
	2.1 Noise & Vibration			–	-	–	-	
	2.2 Odors			–	-	–	-	
	3 Wind Damage & Sunlight Obstruction			–	-	–	-	-
	4 Light Pollution			–	-	–	-	-
	5 Heat island effect			–	-	–	-	-
	6 Load on Local Infrastructure			1.0	1.00	–	-	1.0

■ LR-1 Score book for each building type		Apartments	-	-	-	Overall score on pro-rata area
		300 m²	-	-	-	
1	**Building Thermal Load**	Input Class	-	-	-	–
3	**Efficiency in Building Service System** — **Assessment by ERR**	-	-	-	-	3.0
	Assessment by means other than ERR	3.0	-	-	-	
3.1	HVAC System	-	-	-	-	–
3.2	Ventilation System	-	-	-	-	–
3.3	Lighting System	-	-	-	-	–
3.4	Hot Water Supply System	3.0	-	-	-	–
3.5	Elevators	-	-	-	-	–

Q-1 Indoor environment

Select from pull-down menus or enter figures and comments.

Construction Completion Stage

1 Noise & Acoustics

1.1 Noise

1.1.1 Background Noise

dB(A) Weight (default)= 1.00

Excluded	Entire building and common properties: Offices Hospitals Hotels Apartment Factories	Schools	Retailers Restaurants	Halls
Level 1	more than 50	more than 45	more than 55	more than 40
Level 2	more than 47, 50 or less	more than 42, 45 or less	more than 52, 55 or less	more than 37, 40 or less
Level 3	more than 43, 47 or less	more than 38, 42 or less	more than 48, 52 or less	more than 33, 37 or less
Level 4	more than 40, 43 or less	more than 35, 38 or less	more than 45, 48 or less	more than 30, 33 or less
Level 5	40 or less	35 or less	45 or less	30 or less

dB(A) Weight (default)= 0.50

Excluded	Residential and Accommodation Sections: Hospitals	Hotels Apartments
Level 1	more than 50	more than 45
Level 2	more than 47, 50 or less	more than 42, 45 or less
Level 3	more than 43, 47 or less	more than 38, 42 or less
Level 4	more than 40, 43 or less	more than 35, 38 or less
Level 5	40 or less	35 or less

Background noise Allowable interior noise levels

dB(A)	20	25	30	35	40	45	50	55	60
NC-NR	10~15	15 ~ 20	20~25	25~30	30~35	35~40	40~45	45~50	50~55
Intrusiveness	Silent——— ——————Very Quiet———————				—Not significantly noticeable————Perceived noise— ————Noise cannot be ignored				
Impact on conversation			A whispering voice is audible from 5m away		Possible from 10m apart Telephone use (normal)	————	Possible from 3m apart Telephone use (bearable)	————	Loud conversation (3m) Telephone use (unbearable)
Studios	Silent room	Studio for newsreading etc.	Radio studio	Television studio	Mixing room	General offices			
Venues and halls		Music hall	Theater (medium)	Stage theaters	Movie theater, planetarium		Hotel lobbies		
Hospitals		Hearing test room	Special sickrooms	Sickrooms	Examining room	Laboratories	Waiting rooms		
Hotel and residential				Reading rooms	Bedrooms	Banquet halls	Lobbies		
General offices				Large meeting rooms	Reception rooms	Meeting rooms	General offices		Typing and accounting rooms
Public buildings				Auditorium	Museums	Library	Auditorium/ gymnasium	Indoor sports facilities	
Schools and churches				Music classroom	Chapels	Research rooms and classrooms		Corridors	
Commercial buildings					Music cafes	Book shops	General stores		
					Jewelers and art shops		Banks and restaurants	Canteens	

Refer to Architectural Institute of Japan, Handbook of Building Environmental Design 1 - Environment, 1978. P13

1.1.2 Equipment Noise

Weight (default)= 0.00

Level	Entire Building and Common Properties: Offices Schools Retailers Restaurants Halls Hospitals Hotels Factories
Level 1	No noise countermeasures. (None or only one countermeasure at all among the efforts to be evaluated.)
Level 2	Some measures taken. (Two or three noise countermeasures used from among the efforts to be evaluated.)
■Level 3	Noise countermeasures used. (Four or five noise countermeasures used from among the efforts to be evaluated.)
Level 4	Countermeasures at a moderately high level. (Six or seven noise countermeasures used from among the efforts to be evaluated.)
Level 5	Countermeasures at an advanced level. (All noise countermeasures used from among the efforts to be evaluated.)

Weight (default)= 0.50

Level 1	Residential and Accommodation Sections: Hotels Hospitals	Apartments
■Level 1	No noise countermeasures. (Less than two countermeasures among the efforts to be evaluated for equipment noise.)	No noise countermeasures. (Less than two measures are taken on any of the efforts to be evaluated for equipment noise)
Level 2	Some measures taken. (Two or three equipment noise countermeasures used from among the efforts to be evaluated.)	
Level 3	Noise countermeasures used. (Four of five equipment noise countermeasures used from among the efforts to be evaluated.)	Noise countermeasures used. (2~3 equipment noise countermeasures used from among the efforts to be evaluated)
Level 4	Countermeasures at a moderately high level. (Six or seven equipment noise countermeasures used from among the efforts to be evaluated.)	
Level 5	Countermeasures at an advanced level. (All equipment noise countermeasures used from among the efforts to be evaluated.)	Countermeasures at an advanced level. (All equipment noise countermeasures used from among the efforts to be evaluated)

A1 Efforts for reducing equipment noise in non-residential buildings (examples)

Level 3	Entire building and common properties: Types of equipment	Examples of countermeasures
○	Vents and intakes	Low-noise vents, low-noise intakes, positions, air speed and volume, etc.
○	Interior air conditioning equipment	Noise prevention covers, positions, etc.
○	Noise from the machine room (penetrating noise)	Noise prevention covers, sound absorption and sound insulation for the machine room, positions, etc.
○	As above (Noise transmitted through solids)	Anti-vibration platform, anti-vibration rubber elements, etc.
	Noise from ducts and pipes (penetrating noise)	Sound absorber ducts, sound absorber elbows, sound absorber boxes, sound insulating pipe cladding, position etc.
	As above (noise transmitted through solids)	Anti-vibration suspension or supports, flexible joints, anti-vibration treatment of penetrating parts.

B Efforts for reducing equipment noise in residential buildings (examples)

Level 1	Floor areas for Residential portions 270m² Types of equipment	Examples of countermeasures
○	1) Water supply and drainage noises from toilets, bathrooms etc.	Anti-noise pipe cladding, anti-vibration rubber support fittings, positioning, etc.
	2) Water hammer	Use of appropriate water pressure, selection of preventive fixtures, etc.
	3) Noise from air conditioning room units	Selection of low-noise equipment etc.
	4) Noise from air conditioning external units	Anti-vibration rubber supports, anti-vibration mats, selection of low-noise equipment types, etc.
	5) Ventilation	Selection of low-noise equipment etc.

	(Exterior) Noise from cooling towers	Baffles, anti-vibration support, positions, etc.
	(Exterior) Noise from intakes and vents	Position, appropriate air volume and speed, etc.

A2 Efforts for reducing equipment noise in Hsp, Htl buildings (examples)

Level 3	Floor areas for Hsp, Htl portions m²	
	Types of equipment	Examples of countermeasures
○	Vents and intakes	Low-noise vents, low-noise intakes, positions, air speed and volume, etc.
○	Interior air conditioning equipment	Noise prevention covers, positions, etc.
○	Noise from the machine room (penetrating noise)	Noise prevention covers, sound absorption and sound insulation for the machine room, positions, etc.
○	As above (Noise transmitted through solids)	Anti-vibration platform, anti-vibration rubber elements, etc.
	Noise from ducts and pipes (penetrating noise)	Sound absorber ducts, sound absorber elbows, sound absorber boxes, sound insulating pipe cladding, position etc.
	As above (noise transmitted through solids)	Anti-vibration suspension or supports, flexible joints, anti-vibration treatment of penetrating parts.
	(Exterior) Noise from cooling towers	Baffles, anti-vibration support, positions, etc.
	(Exterior) Noise from intakes and vents	Position, appropriate air volume and speed, etc.

1.2 Sound Insulation

1.2.1 Sound Insulation of Openings

	Weight (default)= 1.00			Weight (default)= 0.30
Excluded	Entire building and common properties		Excluded	Residential and Accommodation Sections
	Preliminary Design Stage	Execution Design and Construction Completion Stage		Preliminary Design Stage / Execution Design and Construction Completion Stage
	Offices Schools Restaurants Hospitals Hotels Apartments Factories	Offices Schools Restaurants Hospitals Hotels Apartments Factories		Hospitals Hotels Apartments / Hospitals Hotels Apartments
Level 1	Noise from ordinary traffic causes annoyance.	Less than T-1	Level 1	Noise from ordinary traffic causes annoyance. / Less than T-1
Level 2		(Inapplicable)	Level 2	(Inapplicable)
Level 3	Noise from ordinary traffic does not cause annoyance.	T-1	Level 3	Noise from ordinary traffic does not cause annoyance. / T-1
Level 4		(Inapplicable)	Level 4	(Inapplicable)
Level 5	Noise from loud means of transport, such as trunk roads and aircraft, does not cause annoyance	T-2 or more	Level 5	Noise from loud means of transport, such as trunk roads and aircraft, does not cause annoyance / T-2 or more

1.2.2 Sound Insulation of Partition Walls

	Weight (default)= 0.00			Weight (default)= 0.30		
Level 3	Entire building and common properties		Excluded	Residential and Accommodation Sections		
	Preliminary Design Stage	Execution Design and Construction Completion Stage		Preliminary Design Stage		
	Offices Schools Restaurants Factories	Offices Schools Restaurants Factories		Hospitals	Hotels	Apartments
Level 1	People's ordinary voices cause annoyance.	Less than D-30	Level 1	The content of TV, radio and conversation can be understood	Ordinary sounds such as TV, radio and conversation can be heard loudly.	Activities in the next home can be clearly heard.
Level 2		D-30	Level 2			
■Level 3	People's ordinary voices do not cause annoyance	D-35	Level 3	The sounds of TV, radio and conversation can be heard at low volume.	Ordinary sounds such as TV, radio and conversation can be heard faintly.	Activities in the next home can be heard but are not intrusive.
Level 4		D-40	Level 4			
Level 5	People's ordinary voices are almost inaudible.	D-45 or more	Level 5	The sounds of TV, radio and conversation can barely be heard.	The sounds of TV, radio and conversation cannot normally be heard.	No sound from the next home.

	Execution Design and Construction Completion Stage	
	Hospitals	Hotels Apartments
Level 1	Worse than D-35	Worse than D-40
Level 2	D-35	D-40
Level 3	D-40	D-45
Level 4	D-45	D-50
Level 5	D-50 or better	D-55 or better

1.2.3 Sound Insulation of Floor Slabs (light-weight impact source)

	Weight (default)= 0.00			Weight (default)= 0.20
Level 3	Entire building and common properties		Excluded	Residential and Accommodation Sections
	Preliminary Design Stage	Execution Design and Construction Completion Stage		Preliminary Design Stage / Execution Design and Construction Completion Stage
	Schools	Schools		Hospitals Hotels Apartments / Hospitals Hotels Apartments
Level 1	Noise of chair movement and falling objects is intrusive.	Worse than L-65	Level 1	Noise of chair movement and falling objects causes considerable annoyance. / Worse than L-55
Level 2		L-65	Level 2	L-55
■Level 3	Noise of chair movement and falling objects causes annoyance.	L-60	Level 3	Noise of chair movement and falling objects is audible but quiet. / L-50
Level 4		L-55	Level 4	L-45
Level 5	Noise of chair movement and falling objects is just audible but quiet.	L-50 or better	Level 5	Noise of chair movement and falling objects is almost inaudible. / L-40 or better

1.2.4 Sound Insulation of Floor Slabs (heavy-weight impact source)

	Weight (default)= 0.00			Weight (default)= 0.20
Level 3	Entire building and common properties		Excluded	Residential and Accommodation Sections
	Preliminary Design Stage	Execution Design and Construction Completion Stage		Preliminary Design Stage / Execution Design and Construction Completion Stage
	Schools	Schools		Hospitals Hotels Apartments / Hospitals Hotels Apartments
Level 1	The noise of people jumping and running causes considerable annoyance.	Worse than L-65	Level 1	The noise of people jumping and running causes annoyance. / Worse than L-60

Level 2		L-65	Level 2		L-60
■Level 3	The noise of people jumping and running is considerably audible.	L-60	Level 3	The noise of people jumping and running is audible.	L-55
Level 4		L-55	Level 4		L-50
Level 5	The noise of people jumping and running is audible but quiet.	L-50 or better	Level 5	The noise of people jumping and running is audible but rarely noticed.	L-45 or better

1.3 Sound Absorption

Weight (default)= 0.20			Weight (default)= 0.20		
Level 3	Entire building and common properties		Level 3	Residential and Accommodation Sections	
	Preliminary Design Stage	Execution Design and Construction Completion Stage		Preliminary Design Stage	Execution Design and Construction Completion Stage
	Offices Schools Retailers Restaurants Hospitals Hotels Apartments Factories	Offices Schools Retailers Restaurants Hospitals Hotels Apartments Factories		Hospitals Hotels Apartments	Hospitals Hotels Apartments
Level 1	Sound absorbent materials are not used.		Level 1	Sound absorbent materials are not used.	Sound absorbent materials are not used.
Level 2			Level 2		
■Level 3	Sound absorbent materials are in either the walls, floor or ceiling.		■Level 3	Sound absorbent materials are in either the walls, floor or ceiling.	Sound absorbent materials are in either the walls, floor or ceiling.
Level 4			Level 4		
Level 5	Sound absorbent materials are in the walls, floor and ceiling.		Level 5	Sound absorbent materials are in the walls, floor and ceiling.	Sound absorbent materials are in the walls, floor and ceiling.

2 Thermal Comfort

2.1 Room Temperature Control

2.1.1 Room Temperature Setting

Weight (default)= 0.50				Weight (default)= 0.50		
Level 4	Entire building and common properties			Level 4	Residential and Accommodation Sections	
	Preliminary Design Stage				Preliminary Design Stage	
	Offices Hospitals Hotels Apartments Factories	Schools	Retailers Restaurants Halls		Hospitals Hotels	Apartments
Level 1	Temperature settings of 20˚C in winter and 28˚C in summer, which require tolerance of some discomfort.	Temperature settings of 10˚C or more in winter and 30˚C or less in summer, which require tolerance of some discomfort.	Temperature settings of 18˚C in winter and 28˚C in summer, which require tolerance of some discomfort.	Level 1	Temperature settings of 20˚C in winter and 28˚C in summer, which require tolerance of some discomfort.	Setting to 18˚C in winter and 28˚C in summer are forced in each room.
Level 2				Level 2		
Level 3	Temperature setting of 22˚C in winter and 26˚C in summer.	Temperature settings of 18~20˚C in winter and 25~28˚C in summer.	Temperature settings of 20˚C in winter and 26˚C in summer.	Level 3	Temperature settings of 22°C in winter and 26°C in summer.	Ordinary setting of 22˚C in winter and 26˚C in summer in each room.
■Level 4				■Level 4		
Level 5	By referring the ASHRAE* Comfortable Room Temperature Range and the POEM-O, it is set ranges of 22~24˚C in winter and 24~26˚C in summer.		By referring the ASHRAE Comfortable Room Temperature Range and the POEM-O, it is set ranges of 20~22˚C in winter and 24~26˚C in summer.	Level 5	By referring the ASHRAE Comfortable Room Temperature Range and the POEM-O, it is set ranges of 22~24˚C in winter and 24~26˚C in summer.	Setting ranges of 22~24˚C in winter and 24~26˚C in summer in each room.
	Execution Design and Construction Completion Stage				Execution Design and Construction Completion Stage	
	Offices Hospitals Hotels Apartments Factories	Schools	Retailers Restaurants Halls		Hospitals Hotels	Apartments
Level 1	The minimum equipment capacity is provided to achieve temperatures of 20˚C in winter and 28˚C in summer, which require tolerance of some discomfort.	The minimum equipment capacity is provided to achieve temperatures of 10˚C or more in winter and less than 30˚C in summer, which require tolerance of some discomfort	The minimum equipment capacity is provided to achieve temperatures of 18˚C in winter and 28˚C in summer, which require tolerance of some discomfor	Level 1	The minimum equipment capacity is provided to achieve temperatures of 20˚C in winter and 28˚C in summer, which require tolerance of some discomfort	The minimum equipment capacity is provided to achieve temperatures of 18˚C in winter and 28˚C in summer, which require tolerance of some discomfort.
Level 2				Level 2		
Level 3	Equipment capacity is provided to achieve temperatures of 22˚C in winter and 26˚C in summer, which are ordinary settings.	Equipment capacity is provided to achieve temperatures of 18~20˚C in winter and 25~28˚C in summer, which are ordinary settings.	Equipment capacity is provided to achieve temperatures of 20˚C in winter and 26˚C in summer, which are ordinary settings.	Level 3	Equipment capacity is provided to achieve temperatures of 22˚C in winter and 26˚C in summer, which are ordinary settings.	Equipment capacity is provided to achieve temperatures of 22˚C in winter and 26˚C in summer, which are ordinary settings.
Level 4				Level 4		
Level 5	Equipment capacity to achieve temperatures of 24˚C in winter and 24˚C in summer.		Equipment capacity to achieve temperatures of 22˚C in winter and 24˚C in summer.	Level 5	Equipment capacity to achieve temperatures of 24˚C in winter and 24˚C in summer.	

2.1.2 Variable Loads & Following-up Control

Weight (default)= 0.00	
Level 3	Entire building and common properties
	Schools Retailers Restaurants Halls
Level 1	No notable consideration has been given to sudden changes in loads.
Level 2	
■Level 3	General load variations are considered, and the system affords some degree of control.
Level 4	
Level 5	The control system allows advanced following control of load variations.

2.1.3 Perimeter Performance

Weight (default)= 0.30			Weight (default)= 0.30		
Excluded	Entire building and common properties		Excluded	Residential and Accommodation Sections	
	Preliminary Design Stage			Preliminary Design Stage	
	Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories			Hospitals Hotels	Apartments

Level 1	Insufficient attention has been paid to the infiltration of heat to the interior through windows, outside walls, roof and floor (particularly where piloti are used), and insolation blocking and insulation performance are poor.	**Level 1**	Insufficient attention has been paid to the infiltration of heat to the interior through windows, outside walls, roof and floor (particularly where piloti are used), and insolation blocking and insulation performance are poor.	Corresponding to energy-efficiency ranking 1 under the Housing Quality Assurance Law.
Level 2		**Level 2**		
Level 3	Attention has been paid to the infiltration of heat to the interior through windows, outside walls, roof and floor (particularly where piloti are used), and there is no practical problem with insolation blocking and insulation performance.	**Level 3**	Attention has been paid to the infiltration of heat to the interior through windows, outside walls, roof and floor (particularly where piloti are used), and there is no practical problem with insolation blocking and insulation performance.	Corresponding to energy-efficiency ranking 2 under the Housing Quality Assurance Law.
Level 4		**Level 4**		Corresponding to energy-efficiency ranking 3 under the Housing Quality Assurance Law.
Level 5	Close attention has been paid to the infiltration of heat to the interior through windows, outside walls, roof and floor (particularly where piloti are used), and the building has the highest level of insolation blocking and insulation performance.	**Level 5**	Close attention has been paid to the infiltration of heat to the interior through windows, outside walls, roof and floor (particularly where piloti are used), and the building has the highest level of insolation blocking and insulation performance.	Corresponding to energy-efficiency ranking 4 under the Housing Quality Assurance Law.

	Execution Design and Construction Completion Stage		Execution Design and Construction Completion Stage	
	Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories		Hospitals Hotels	Apartments
Level 1	No attention has been paid to the infiltration of heat through window systems , outside walls, roof and floor (particularly where piloti are used), and insulation performance is poor. (Window system SC: around 0.7, U=6.0W/(m2K), outer walls and others: U=3.0"/(m2 K))	Level 1	No attention has been paid to the infiltration of heat through window systems , outside walls, roof and floor (particularly where piloti are used), and insulation performance is poor. (Window system SC: around 0.7, U=6.0W/(m2 K), outer walls and others: U=3.0"/(m2 K))	Corresponding to energy-efficiency ranking 1 under the Housing Quality Assurance Law.
Level 2		Level 2		
Level 3	Attention has been paid to the infiltration of heat to the interior through windows, outside walls, roof and floor (particularly where piloti are used), and there is no practical problem with insolation blocking and insulation performance. (Window system SC: around 0.5, U=4.0W/(m2 K), outer walls and others: U=2.0W/(m2 K))	Level 3	Attention has been paid to the infiltration of heat to the interior through windows, outside walls, roof and floor (particularly where piloti are used), and there is no practical problem with insolation blocking and insulation performance. (Window system SC: around 0.5, U=4.0W/(m2 K), outer walls and others: U=2.0W/(m2 K))	Corresponding to energy-efficiency ranking 2 under the Housing Quality Assurance Law.
Level 4		Level 4		Corresponding to energy-efficiency ranking 3 under the Housing Quality Assurance Law.
Level 5	Close attention has been paid to the infiltration of heat to the interior through windows systems, outside walls, roof and floor (particularly where piloti are used), and the building has the highest level of insolation blocking and insulation performance. (Window system SC: around 0.2, U=3.0W/(m2 K), outer walls and others: U=1.0W/(m2 K))	Level 5	Close attention has been paid to the infiltration of heat to the interior through windows systems, outside walls, roof and floor (particularly where piloti are used), and the building has the highest level of insolation blocking and insulation performance. (Window system SC: around 0.2, U=3.0W/(m2 K), outer walls and others: U=1.0W/(m2 K))	Corresponding to energy-efficiency ranking 4 under the Housing Quality Assurance Law.

Thermal Loss Coefficient Q(W/m²K)
of Apartments at Assessment Level 1 to 5

Target category **Zone VI**

Zone*	I	II	III	IV	V	VI
Level 1	2.8<[Q]	4.0<[Q]	4.4<[Q]	4.9<[Q]	7.1<[Q]	7.1<[Q]
Level 2						
Level 3	1.8<[Q]<=2.8	2.7<[Q]<=4.0	3.1<[Q<=4.4	3.6<[Q]<=4.9	3.9<[Q]<=7.1	6.2<[Q]<=7.1
Level 4	1.6<[Q]<=1.8	1.9<[Q]<=2.7	2.4<[Q]<=3.1	2.7<[Q]<=3.6	2.7<[Q<=3.9	3.7<[Q]<=6.2
Level 5	[Q<=1.6	[Q]<=1.9	[Q]<=2.4	[Q]<=2.7	[Q]<=2.7	[Q]<=3.7

*)Regional categories correspond to those used in the "Standard for judgement by Owner Regarding the Rational Use of Energy Relating for Housing."

2.1.4 Zoned Control

Weight (default)= 0.00

Level 3	Entire building and common properties			
	Preliminary Design Stage(Offices Hospitals Hotels Factories)	Preliminary Design Stage(Retailers Restaurants Halls)	Execution Design and Construction Completion Stage(Offices Hospitals Hotels Factories)	Execution Design and Construction Completion Stage (Retailers Restaurants Halls)
Level 1	There is no zoning of heating and cooling within a single floor, and a single-circuit air conditioning system is planned*. Switching between heating and cooling is required for the selection of air conditioning modes.	There is no zoning of heating and cooling within a single floor, and a single-circuit air conditioning system is planned. Switching between heating and cooling is required for the selection of air conditioning modes.	No distinction is made between orientation directions, or between perimeter and interior, and only one air conditioning system is planned, which must be switched between heating and cooling.	There is no zoning of heating and cooling within a single floor, and a single-circuit air conditioning system is planned. Switching between heating and cooling is required for the selection of air conditioning modes.
Level 2				
■Level 3	Each floor is divided into multiple zones according to their orientation or thermal loads, and the air conditioning system is planned to allow either heating or cooling in each zone*.	Each floor is divided into multiple zones according to their thermal loads or other factors, and the air conditioning system is planned to allow either heating or cooling in each zone.	There is air conditioning zoning that differentiates between orientation directions, and between perimeter and interior. The air conditioning system can provide either heating or cooling separately to each zone.	Each floor is divided into multiple zones according to their thermal loads, and the air conditioning system is planned to allow either heating or cooling in each zone.
Level 4				

Level 5	Each floor is divided into many small zones, and the air conditioning system is planned to allow either heating or cooling in zone units*.	Each floor is divided into many small zones for individual sales areas or tenants, and the air conditioning system is planned to allow either heating or cooling in zone units.	There are separate air conditioning systems for each orientation direction, and for perimeter and interior, allowing more detailed zoning (broadly, zones of 40m2 or less). The air conditioning system can provide either heating or cooling separately to each zone.	Each floor is divided into many small zones for individual sales areas or tenants, and the air conditioning system is planned to allow either heating or cooling in zone units.

2.1.5 Temperature & Humidity Control — Weight (default)= 0.20

Level 3	Entire building and common properties Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories
Level 1	On/Off control of temperature and humidity.
Level 2	
■Level 3	Fixed-setting control of interior temperature and humidity settings.
Level 4	
Level 5	Comfort sensors etc. can be used to control temperature and humidiy.(temperature control within the comfort range).

Weight (default)= 0.00

Level 3	Residential and Accommodation Sections Hospitals Hotels
Level 1	On/Off control of temperature and humidity.
Level 2	
■Level 3	Fixed-setting control of interior temperature and humidity settings.
Level 4	
Level 5	Comfort sensors etc. can be used to control temperature and humidity (temperature control within the comfort range).

2.1.6 Individual Control — Weight (default)= 0.20

Excluded	Residential and Accommodation Sections Hospitals Hotels	Apartments
Level 1	Nothing.	No consideration given.
Level 2		
Level 3	Switchable between low, middle and high.	Temperature can be set for each individual room.
Level 4		
Level 5	The temperature for the whole dwelling can be set, and further settings can be made for each individual room.	The temperature for the whole dwelling can be set, and further settings can be made for each individual room.

2.1.7 Allowance for After-hours Air Conditioning — Weight (default)= 0.00

Level 3	Entire building and common properties Offices Schools Hospitals Hotels Factories
Level 1	Air conditioning does not operate after hours, or on holidays.
Level 2	
■Level 3	The air conditioning system can operate for any whole floor that is occupied after hours and on holidays.
Level 4	
Level 5	The air conditioning system can operate for any zone that is occupied after hours and on holidays.

2.1.8 Monitoring Systems — Weight (default)= 0.00

Level 3	Entire building and common properties Retailers Restaurants
Level 1	There is no multiple zoning for separate loads on the same floor, but sensors or other monitoring systems are installed for monitoring a representative zone.
Level 2	
■Level 3	There is multiple zoning for separate loads on the same floor, and sensors or other monitoring systems are installed for monitoring multiple zones.
Level 4	
Level 5	Each floor is zoned in detail for sales areas and tenants, and sensors or other monitoring systems are installed for monitoring those zones in detail.

2.2 Humidity Control — Weight (default)= 0.20

Excluded	Entire building and common properties Preliminary Design Stage Offices Retailers Restaurants Halls Hospitals Hotels Apartments Factories	Schools
Level 1	Humidity is free to vary within the 40~70% range set by the Law for Maintenance of Sanitation in Buildings.	Humidity setting is free to vary within the 30~80% range.
Level 2		
Level 3	The system has humidification functions which are generally set for 40% in winter and 50% in summer.	The system has humidification functions, which are generally set for 40~70% in winter and 50~65% in summer.
Level 4		
Level 5	The system has humidification and dehumidification functions and is set for a range of 45~55% with reference to the ASHRAE Comfortable Room Temperature Range and POEM-O.	
	Execution Design and Construction Completion Stage Offices Retailers Restaurants Halls Hospitals Hotels Apartments	Schools
Level 1	Equipment capacity is sufficient to keep humidity to 70% in summer and 40% in winter.	Equipment capacity is sufficient to keep humidity to 80% or below in summer and 30% or above in winter.
Level 2		

Weight (default)= 0.20

Excluded	Residential and Accommodation Sections Preliminary Design Stage Hospitals Hotels	Apartments
Level 1	Humidity is free to vary within the 40~70% range set by the Law for Maintenance of Sanitation in Buildings.	No consideration given.
Level 2		(inapplicable)
Level 3	The system has humidification functions which are generally set for 40% in winter and 50% in summer*.	Appropriate ventilation functions are provided, and anti-condensation measures have been taken on elements that can act as heat bridges, such as insulation reinforcement, humidity barriers and permeable layers.
Level 4		Dehumidification functions are provided, and anti-condensation measures have been taken on elements that can act as heat bridges, such as insulation reinforcement, humidity barriers and permeable layers.
Level 5	The system has humidification and dehumidification functions and is set for a range of 45~55% with reference to the ASHRAE Comfortable Room Temperature Range and POEM-O.	Dehumidification and humidification functions are provided and set to a comfort range of 45~55%, and anti-condensation measures have been taken on elements that can act as heat bridges, such as insulation reinforcement, humidity barriers and permeable layers.
	Execution Design and Construction Completion Stage Hospitals Hotels	Apartments
Level 1	Equipment capacity is sufficient to keep humidity to 70% in summer and 40% in winter.	No consideration given.
Level 2		(Inapplicable)

Level 3	Humidification equipment is available, and equipment capacity is generally sufficient to keep humidity to 50% in summer and 40% in winter.	Humidification equipment is available, and equipment capacity is generally sufficient to keep humidity to 40~70% in winter and 50~65% in summer.	Level 3	Humidification equipment is available, and equipment capacity is generally sufficient to keep humidity to 50% in summer and 40% in winter.	Appropriate ventilation functions are provided, and anti-condensation measures have been taken on elements that can act as heat bridges, such as insulation reinforcement, humidity barriers and permeable layers.
Level 4			Level 4		Humidification functions are provided, and anti-condensation measures have been taken on elements that can act as heat bridges, such as insulation reinforcement, humidity barriers and permeable layers.
Level 5	Humidification and dehumidification equipment is available, and equipment capacity is sufficient to keep humidity to 50% in summer and 50% in winter.		Level 5	Humidification and dehumidification equipment is available, and equipment capacity is sufficient to keep humidity to 50% in summer and 50% in winter.	Dehumidification and humidification functions are provided and set to a comfort range of 45~55%, and anti-condensation measures have been taken on elements that can act as heat bridges, such as insulation reinforcement, humidity barriers and permeable layers.

2.3 Type of Air Conditioning System

Excluded	Entire building and common properties	Excluded	Residential and Accommodation Sections	
	Preliminary Design Stage		Preliminary Design Stage	
	Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories		Hospitals Hotels	Apartments
Level 1	The air conditioning system was planned with no particular consideration for the vertical temperature difference and air speed in the room.	**Level 1**	The air conditioning system was planned with no particular consideration for the vertical temperature difference and air speed in the room.	The air conditioning system was chosen with no particular consideration for the vertical temperature difference and air speed in air-conditioned rooms, or for temperature differences between air-conditioned and non-air-conditioned rooms.
Level 2		**Level 2**		
Level 3	The air conditioning system is normal, but the air supply and extraction plan considers the vertical temperature difference and air speed in the room.	**Level 3**	The air conditioning system is normal, but the air supply and extraction plan considered the vertical temperature difference and air speed in the room.	The air conditioning system was chosen with consideration for the vertical temperature difference and air speed in air-conditioned rooms, or for temperature differences between air-conditioned and non-air-conditioned rooms.
Level 4		**Level 4**		
Level 5	The air conditioning system (note) was chosen to mitigate the vertical temperature difference and air speed in the room.	**Level 5**	The air conditioning system* was chosen to mitigate the vertical temperature difference and air speed in the room.	The air conditioning system was chosen with consideration to achieve less differences for the vertical temperature and air speed in air-conditioned rooms, or for temperature between air-conditioned and non-air-conditioned rooms.
	Execution Design and Construction Completion Stage		Execution Design and Construction Completion Stage	
	Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories		Hospitals Hotels	Apartments
Level 1	The air conditioning system was planned with no particular consideration for the vertical temperature difference and air speed in the room.	Level 1	The air conditioning system was planned with no particular consideration for the vertical temperature difference and air speed in the room.	The air conditioning system was chosen with no particular consideration for the vertical temperature difference and air speed in air-conditioned rooms, or for temperature difference between air-conditioned and non-air-conditioned rooms.
Level 2		Level 2		
Level 3	The air conditioning system is normal, but the air supply and extraction plan considers the vertical temperature difference and air speed in the room. Targets for vertical temperature difference and air speed are set to within 5°C and 0.35m/s, respectively.	Level 3	The air conditioning system is normal, but the air supply and extraction plan considered the vertical temperature difference and air speed in the room. Targets for vertical temperature difference and air speed are set to within 5˚C and 0.5m/s, respectively.	Targets for vertical temperature difference and air speed within rooms are set to within 4°C and 0.4m/s, respectively. Spot air conditioning is available even in non-air-conditioned areas such as toilets and bathrooms, mitigating temperature difference between rooms.
Level 4		Level 4		
Level 5	The air conditioning system (note) was chosen to mitigate the vertical temperature difference and air speed in the room. Targets for vertical temperature difference and air speed are set to within 2°C and 0.15m/s, respectively.	Level 5	The air conditioning system (note) was chosen to mitigate the vertical temperature difference and air speed in the room. Targets for vertical temperature difference and air speed are set to within 2˚C and 0.15m/s, respectively.	Targets for vertical temperature difference and air speed within rooms are set to within 2°C and 0.2m/s, respectively. Air conditioning is available in all rooms, including rooms such as toilets and bathrooms, making it possible to eliminate temperature difference between rooms.

Note)) This refers to, for example, ceiling and floor radiant and cooling systems, or floor-vented system etc.

3 Lighting & Illumination

3.1 Daylighting

3.1.1 Daylight Factor

Excluded	Entire building and common properties	Excluded	Residential and Accommodation Sections	
	Offices Schools Hospitals Hotels Apartments Factories		Hospitals Hotels	Apartments
Level 1	Daylight factor: Less than 1.0%	**Level 1**	Less than 0.5%	Less than 0.5%
Level 2	Daylight factor: 1.0% or more, less than 1.5%	**Level 2**	0.5% or more ~ less than 0.75%	0.5% or more ~ less than 1.0%
Level 3	Daylight factor: 1.5% or more, less than 2.0%	**Level 3**	0.75% or more ~ less than 1.0%	1.0% or more ~ less than .5%
Level 4	Daylight factor: 2.0% or more, less than 2.5%	**Level 4**	1.0% or more ~ less than 1.25%	1.5% or more ~ less than 2.0%
Level 5	Daylight factor: 2.5% or more	**Level 5**	1.25% or more	2.0% or more

3.1.2 Openings by Orientation — Weight (default)= 0.30

Level 5	Residential and Accommodation Sections
	Apartments
Level 1	No south-facing windows.
Level 2	(Inapplicable)
Level 3	South-facing windows.
Level 4	(Inapplicable)
■Level 5	South and east-facing windows.

3.1.3 Daylight Devices

	Weight (default)= 0.40		Weight (default)= 0.20	
Level 5	Entire building and common properties		Level 5	Residential and Accommodation Sections
	Offices Schools Factories	Retailers Restaurants Hospitals Hotels Apartments		Hospitals Hotels Apartments
Level 1	(Inapplicable)	(Inapplicable)	Level 1	(Inapplicable)
Level 2	(Inapplicable)	(Inapplicable)	Level 2	(Inapplicable)
Level 3	There are no daylight devices.	There are no daylight devices	Level 3	There are no daylight devices
Level 4	There is one type of daylight device.	(Inapplicable)	Level 4	(Inapplicable)
■Level 5	There are two or more types of daylight device, or they have advanced functions.	There are some daylight devices.	■Level 5	There are some daylight devices.

3.2 Anti-glare Measures

3.2.1 Glare from light fixtures

	Weight (default)= 0.40		Weight (default)= 0.40	
Excluded	Entire building and common properties		Excluded	Residential and Accommodation Sections
	Offices Hospitals Hotels Apartments Factories	Schools		Hospitals Hotels Apartments
Level 1	G3,V3	No anti-glare measures	Level 1	G2,V2
Level 2	(Inapplicable)	(Inapplicable)	Level 2	(Inapplicable)
Level 3	G2,V2	G3	Level 3	G1,V1
Level 4	(Inapplicable)	G2	Level 4	(Inapplicable)
Level 5	G1,G0,V1	G1,G0,V1	Level 5	G0

3.2.2 Daylight Control

	Weight (default)= 0.60			Weight (default)= 0.60	
Excluded	Entire building and common properties		Excluded	Residential and Accommodation Sections	
	Preliminary Design Stage	Execution Design and Construction Completion Stage		Preliminary Design Stage	Execution Design and Construction Completion Stage
	Offices Schools Hospitals Hotels Apartments Factories	Offices Schools Hospitals Hotels Apartments Factories		Hospitals Hotels Apartments	Hospitals Hotels Apartments
Level 1	Nothing.	As left	Level 1	Nothing.	Glare when facing south on a clear day.
Level 2	(Inapplicable)	As left	Level 2	(Inapplicable)	(Inapplicable)
Level 3	Controlled by blinds.	As left	Level 3	Controlled by curtains	Slight glare when facing south on a clear day.
Level 4	(Inapplicable)	As left	Level 4	(Inapplicable)	(Inapplicable)
Level 5	Controlled by eaves and blinds.	As left	Level 5	Controlled by eaves and curtains	No glare, even facing south on a clear day.

3.3 Illuminance Level

3.3.1 Illuminance

	Weight (default)= 0.70		Weight (default)= 1.00	
Excluded	Entire building and common properties		Excluded	Residential and Accommodation Sections
	Offices Hospitals Hotels Apartments Factories	Schools		Hospitals	Hotels Apartments
Level 1	Less than 500lx	Less than 400lx	Level 1	Less than 150lx	Less than 100 lx
Level 2	500lx or more, less than 600lx	400lx or more, less than 500lx	Level 2	(Inapplicable)	(Inapplicable)
Level 3	600lx or more, less than 750lx, or 1,500lx or more	500lx or more, less than 600lx, or 1,000lx or more	Level 3	150lx or more	100 lx or more
Level 4	750lx or more, less than 1,000lx	600lx or more, less than 750lx	Level 4	(Inapplicable)	(Inapplicable)
Level 5	1,000lx or more, less than 1,500lx	750lx or more, less than 1,000lx	Level 5	(Inapplicable)	(Inapplicable)

3.3.2 Uniformity Ratio of Illuminance

	Weight (default)= 0.30		Weight (default)= 0.00
Excluded	Entire building and common properties	Level 3	Residential and Accommodation Sections
	Offices Schools Hospitals Hotels Apartments Factories		Hospitals
Level 1	Overall lighting may leave very dark areas in the interior, which can feel uncomfortable.	Level 1	No noise countermeasures. (Less than two countermeasures among the efforts to be evaluated for equipment noise.)
Level 2	Overall lighting may leave dark areas in the interior, which can feel slightly uncomfortable.	Level 2	Some measures taken. (Two or three equipment noise countermeasures used from among the efforts to be evaluated.)
Level 3	Overall lighting may leave dark areas in the interior to an acceptable degree. With task/ambient lighting, the balance between work surface brightness and surrounding brightness is inadequate.	■Level 3	Noise countermeasures used. (Four of five equipment noise countermeasures used from among the efforts to be evaluated.)
Level 4	With overall lighting, there are almost no dark areas in the interior.	Level 4	Countermeasures at a moderately high level. (Six or seven equipment noise countermeasures used from among the efforts to be evaluated.)
Level 5	With overall lighting, there are no dark areas in the interior. With task/ambient lighting, the balance between work surface brightness and surrounding brightness is good.	Level 5	Countermeasures at an advanced level. (All equipment noise countermeasures used from among the efforts to be evaluated.)

3.4 Lighting Controllability

	Weight (default)= 0.25		Weight (default)= 0.25
Excluded	Entire building and common properties	Excluded	Residential and Accommodation Sections
	Preliminary Design Stage		Preliminary Design Stage

	Offices Schools Retailers Hospitals Hotels Apartments Factories		Hospitals	Hotels Apartments
Level 1	No lighting control is possible.	**Level 1**	No lighting control is possible.	No lighting control is possible.
Level 2	(Inapplicable)	**Level 2**	(Inapplicable)	(Inapplicable)
Level 3	Crude lighting control is possible in working rooms, sales areas etc.	**Level 3**	Crude lighting control is possible in units of several beds	Crude lighting control is possible in the entire room
Level 4	(Inapplicable)	**Level 4**	(Inapplicable)	(Inapplicable)
Level 5	Detailed lighting control is possible in individual working rooms, sales areas etc.	**Level 5**	Detailed lighting control is possible for individual bed units.	Detailed lighting control is possible in several areas of the room.
	Execution Design and Construction Completion Stage		Execution Design and Construction Completion Stage	
	Offices Schools Retailers Hospitals Hotels Apartments Factories		Hospitals	Hotels Apartments
Level 1	Control is not zoned and lighting cannot be adjusted from a control panel, from the fixtures or elsewhere.	**Level 1**	No lighting control is possible.	No lighting control is possible.
Level 2	(Inapplicable)	**Level 2**	(Inapplicable)	(Inapplicable)
Level 3	Control is possible in units of 4 working areas. Lighting can be adjusted from a control panel, from the fixtures or elsewhere, and any of the conditions is met.	**Level 3**	Controllable in units of several beds. Lighting can be adjusted from a control panel, from the fixtures or elsewhere, and any of the conditions is met.	There is a lighting control panel, device etc. for broadly controlling overall lighting in the room.
Level 4	(Inapplicable)	**Level 4**	(Inapplicable)	(Inapplicable)
Level 5	Control is possible in units of 1 working area, and adjustment is possible from control terminals, remote controls or similar means.	**Level 5**	Detailed lighting control is possible for individual bed units.	There are terminals, remote control units or other means for detailed control of lighting in several areas of the interior.

4 Air Quality

4.1 Source Control

4.1.1 Chemical Pollutants

Excluded	Weight (default)= 0.33 Entire building and common properties Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories	Excluded	Weight (default)= 0.25 Residential and Accommodation Sections Hospitals Hotels Apartments
Level 1	Not adequate for level 3.	**Level 1**	Not adequate for level 3.
Level 2	(Inapplicable)	**Level 2**	(Inapplicable)
Level 3	Satisfies the Building Standards Law.	**Level 3**	Satisfies the Building Standards Law.
Level 4	Satisfies the Building Standards Law, and nearly all materials used (at least 70% by area of floors, walls and ceilings) are not subject to restriction under the Building Standards Law (JIS/ JAS F‾‾).	**Level 4**	Satisfies the Building Standards Law, and nearly all materials used (at least 70% by area of floors, walls and ceilings) are not subject to restriction under the Building Standards Law (JIS/ JAS F‾‾).
Level 5	Satisfies the Building Standards Law, and nearly all materials used (at least 90% by area of floors, walls and ceilings) are not subject to restriction under the Building Standards Law (JIS/ JAS F‾‾). Furthermore, construction materials used throughout have low emission levels of VOCs other than formaldehyde.	**Level 5**	Satisfies the Building Standards Law, and nearly all materials used (at least 90% by area of floors, walls and ceilings) are not subject to restriction under the Building Standards Law (JIS/ JAS F‾‾). Furthermore, construction materials used throughout have low emission levels of VOCs other than formaldehyde.

4.1.2 Mineral Fiber

Level 5	Weight (default)= 0.33 Entire building and common properties Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories	Level 5	Weight (default)= 0.25 Residential and Accommodation Sections Hospitals Hotels Apartments
Level 1	Not adequate for level 3.	**Level 1**	Not adequate for level 3.
Level 2	(Inapplicable)	**Level 2**	(Inapplicable)
Level 3	No exposure in the living room, or in any location from which mineral fibers could enter the living room. Some level of exposure elsewhere.	**Level 3**	No exposure in the living room, or in any location from which mineral fibers could enter the living room. Some level of exposure elsewhere.
Level 4	(Inapplicable)	**Level 4**	(Inapplicable)
■Level 5	Absolutely no exposed mineral fibers.	**■Level 5**	Absolutely no exposed mineral fibers.

4.1.3 Mites, Mold etc.

Level 5	Weight (default)= 0.33 Entire building and common properties Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories	Level 5	Weight (default)= 0.25 Residential and Accommodation Sections Hospitals Hotels Apartments
Level 1	Not adequate for level 3.	**Level 1**	Not adequate for level 3.
Level 2	(Inapplicable)	**Level 2**	(Inapplicable)
Level 3	The décor on at least 50% of the area of floors and external walls has been designed to restrict the growth of mites and mold, or to facilitate cleaning and maintenance.	**Level 3**	The decor on at least 50% of the area of floors and external walls has been designed to restrict the growth of mites and mold, or to facilitate cleaning and maintenance.
Level 4	The décor on at least 65% of the area of floors and external walls has been designed to restrict the growth of mites and mold, or to facilitate cleaning and maintenance.	**Level 4**	The decor on at least 65% of the area of floors and external walls has been designed to restrict the growth of mites and mold, or to facilitate cleaning and maintenance.
■Level 5	The décor on at least 80% of the area of floors and external walls has been designed to restrict the growth of mites and mold, or to facilitate cleaning and maintenance.	**■Level 5**	The decor on at least 80% of the area of floors and external walls has been designed to restrict the growth of mites and mold, or to facilitate cleaning and maintenance.

4.1.4 Legionella

Level 3	Weight (default)= 0.00 Entire building and common properties Offices Schools Retailers Restaurants Halls Factories	Excluded	Weight (default)= 0.25 Residential and Accommodation Sections Hospitals Hotels Apartments
Level 1	Not adequate for level 3.	**Level 1**	Not adequate for level 3.
Level 2	(Inapplicable)	**Level 2**	(Inapplicable)

■Level 3	There is a mimimum level of measures for water processing in cooling towers, anti-dispersion and hot water supply.	Level 3	There is a mimimum level of measures for water processing in cooling towers, anti-dispersion and hot water supply.
Level 4	There is no water cooling tower, or there is thorough water processing in water cooling towers, thorough measures against dispersion, and a minimum level of measures for water heaters.	Level 4	(Inapplicable)
Level 5	There is no water cooling tower, or water processing in water cooling towers, measures against dispersion, and measures for water heaters are all thorough. There is also a good design for the maintenance of this equipment.	Level 5	There is no water cooling tower. However there are water processing in water cooling towers, measures against dispersion and measures for water heaters are all thorough. There is also a good design for the maintenance of this equipment.

4.2 Ventilation

4.2.1 Ventilation Rate

	Weight (default)= 0.50		Weight (default)= 0.25
Excluded	Entire building and common properties Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories	Excluded	Residential and Accommodation Sections Hospitals Hotels Apartments
Level 1	Not adequate for level 3.	Level 1	Not adequate for level 3.
Level 2	(Inapplicable)	Level 2	(Inapplicable)
Level 3	For rooms equipped with centrally-managed air mixing equipment, the adequate ventilation volume is based on the SHASE-102-1997 ventilation standard and commentary. If not, the volume is the minimum to satisfy the Building Standards Law.	Level 3	For rooms equipped with centrally-managed air mixing equipment, the adequate ventilation volume is based on the SHASE-102-1997 ventilation standard and commentary. If not, the volume is the minimum to satisfy the Building Standards Law.
Level 4	For rooms equipped with centrally-managed air mixing equipment, the ventilation volume is based on the SHASE-102-1997 ventilation standard and commentary. If not, the volume is the 1.2 times that required minimum to satisfy the Building Standards Law.	Level 4	For rooms equipped with centrally-managed air mixing equipment, the ventilation volume is based on the SHASE-102-1997 ventilation standard and commentary. If not, the volume is the 1.2 times that required minimum to satisfy the Building Standards Law.
Level 5	For rooms equipped with centrally-managed air mixing equipment, the ventilation volume is based on the SHASE-102-1997 ventilation standard and commentary. If not, the volume is the 1.4 times that required minimum to satisfy the Building Standards Law.	Level 5	For rooms equipped with centrally-managed air mixing equipment, the ventilation volume is based on the SHASE-102-1997 ventilation standard and commentary. If not, the volume is the 1.4 times that required minimum to satisfy the Building Standards Law.

4.2.2 Natural Ventilation Performance

	Weight (default)= 0.00		Weight (default)= 0.25	
Level 3	Entire building and common properties Offices Schools Factories	Excluded	Residential and Accommodation Sections Hospitals Hotels	Apartments
Level 1	Not adequate for level 3.	Level 1	Not adequate for level 3.	Not adequate for level 3.
Level 2	(Inapplicable)	Level 2	(Inapplicable)	(Inapplicable)
■Level 3	There are no effective openings for natural ventilation in rooms where windows cannot be opened. Or, in rooms with openable windows, the area of effective openings for natural ventilation is at least 1/20 the floor area of the room.	Level 3	In a building with ventilation equipment, there are no effective openings for natural ventilation in rooms. Or in a building with no ventilation equipment, the rooms in Residential and Accommodation Section have openable windows available for at least 1/20 of the floor area of the room.	Openable windows are available for at least 1/10 of the floor area of residential and accommodation sections.
Level 4	In rooms with unopenable windows, the area of effective openings for natural ventilation is at least 50cm²/m² of floor area. Or, in rooms with openable windows, the area of effective openings for natural ventilation is at least 1/15 the floor area of the room.	Level 4	In a building with ventilation equipment, the rooms in Residential and Accommodation Section have openable windows available for at least 50cm2/m2 of the floor area of the room. Or in a building with no ventilation equipment, the rooms in Residential and Accommodation Section have openable windows available for at least 1/15 of the floor area of the room.	Openable windows are available for at least 1/8 of the floor area of residential and accommodation sections.
Level 5	In rooms with unopenable windows, the area of effective openings for natural ventilation is at least 100cm²/m² of floor area. Or, in rooms with openable windows, the area of effective openings for natural ventilation is at least 1/10 the floor area of the room.	Level 5	In a building with ventilation equipment, the rooms in Residential and Accommodation Section have openable windows available for at least 100cm2/m2 of the floor area of the room. Or in a building with no ventilation equipment, the rooms in Residential and Accommodation Section have openable windows available for at least 1/10 of the floor area of the room.	Openable windows are available for at least 1/6 of the floor area of residential and accommodation sections.

4.2.3 Consideration for Outside Air Intake

	Weight (default)= 0.50				Weight (default)= 0.25	
Level 5	Entire building and common properties			Level 5	Residential and Accommodation Sections	
	Preliminary Design Stage (Offices Schools Retailers Restaurants Halls Hospitals Hotels Factories)	Excecution Design Stage (Offices Schools Retailers Restaurants Halls Hospitals Hotels Factories)	Apartments		Hospitals Hotels	Apartments
Level 1	Not adequate for level 3.	Not adequate for level 3.	Not adequate for level 3.	Level 1	Not adequate for level 3.	Not adequate for level 3.
Level 2	(Inapplicable)	(Inapplicable)	(Inapplicable)	Level 2	(Inapplicable)	(Inapplicable)

Level 3	Considering conditions in areas surrounding the site, the air intakes are oriented away from pollution sources and positioned to keep enough distance from extraction vents. They are also oriented away from extraction vents and positioned at least 3m away.	Considering conditions in areas surrounding the site, the air intakes are oriented away from pollution sources and positioned to keep enough distance from extraction vents. They are also oriented away from extraction vents and positioned at least 3m away.	The air intakes are oriented away from pollution sources, considering conditions in areas surrounding the site.	**Level 3**	Considering conditions in areas surrounding the site, the air intakes are oriented away from pollution sources and positioned to keep enough distance from extraction vents. They are also oriented away from extraction vents and positioned at least 3m away.	The air intakes are oriented away from pollution sources, considering conditions in areas surrounding the site.
Level 4	(Inapplicable)	Considering conditions in areas surrounding the site, the air intakes are oriented away from pollution sources and positioned to keep enough distance from extraction vents. They are also positioned at least 6m away.	(Inapplicable)	**Level 4**	(Inapplicable)	(Inapplicable)
■Level 5	Considering conditions in areas surrounding the site, the air intakes are oriented away from pollution sources and positioned to keep enough distance from extraction vents. They are also oriented away from extraction vents and positioned at least 6m away.	Considering conditions in areas surrounding the site, the air intakes are oriented away from pollution sources and positioned to keep enough distance from extraction vents. They are also oriented away from extraction vents and positioned at least 6m away.	The air intakes are oriented away from pollution sources, considering conditions in areas surrounding the site. They are also oriented away from extraction vents and positioned at least 3m away.	**■Level 5**	Considering conditions in areas surrounding the site, the air intakes are oriented away from pollution sources and positioned to keep enough distance from extraction vents. They are also oriented away from extraction vents and positioned at least 6m away.	The air intakes are oriented away from pollution sources, considering conditions in areas surrounding the site. They are also oriented away from extraction vents and positioned at least 3m away.

4.2.4 Air Supply Planning Weight (default)= 0.00 Weight (default)= 0.25

Level 3	Entire building and common properties Offices Schools Retailers Restaurants Halls Hospitals Hotels Factories	Excluded	Residential and Accommodation Sections Hospitals Hotels Apartments
Level 1	Not adequate for level 3.	**Level 1**	Not adequate for level 3.
Level 2	(Inapplicable)	**Level 2**	(Inapplicable)
■Level 3	Outside air is mixed with return air in the air conditioning equipment and supplied to each room in a volume determined by the thermal load in that room, so the system does not guarantee delivery of an adequate volume of outside air to all rooms in all load conditions.	**Level 3**	Outside air is mixed with return air in the air conditioning equipment and supplied to each room in a volume determined by the thermal load in that room.
Level 4	(Inapplicable)	**Level 4**	(Inapplicable)
Level 5	Outside air is not mixed with return air, and is supplied directly to each room in the volume required for ventilation. Therefore, the system guarantees the necessary outside air, delivered to the places where it is needed, regardless of the load conditions in each room.	**Level 5**	Outside air is not mixed with return air, and is supplied directly to each room in the volume required for ventilation.

4.3 Operation Plan

4.3.1 CO_2 Monitoring Weight (default)= 0.00

Level 3	Entire building and common properties Offices Schools Retailers Restaurants Halls Factories
Level 1	Not adequate for level 3.
Level 2	(Inapplicable)
■Level 3	The system is based on manual monitoring.
Level 4	(Inapplicable)
Level 5	The system has constant central monitoring of CO2 to maintain air quality.

4.3.2 Control of Smoking Weight (default)= 0.00

Level 3	Entire building and common properties Offices Schools Retailers Restaurants Halls Hospitals Hotels Factories
Level 1	Not adequate for level 3.
Level 2	(Inapplicable)
■Level 3	There is a minimum level of measures such as smoking booths to avoid exposing non-smokers to smoke.
Level 4	(Inapplicable)
Level 5	Smoking is confirmed to be prohibited in the entire building. Alternatively, there is an adequate level of measures such as smoking booths to avoid exposing non-smokers to smoke.

Q-2 Quality of Service

Select from pull-down menus or enter figures and comments.

Construction Completion Stage

1 Service Ability

1.1 Functionality & Usability

1.1.1 Provision of Space & Storage

Weight (default)= 0.00

Level 3	Entire building and common properties	Level 3	Residential and Accommodation Sections	
	Offices Factories		Hospitals	Hotels
Level 1	Not adequate for level 3.	Level 1	Not adequate for level 3.	Not adequate for level 3.
Level 2	(Inapplicable)	Level 2	(Inapplicable)	(Inapplicable)
■Level 3	Working space per person is at least 6m².	■Level 3	Private rooms at least 8m²/bed, multi-bed rooms at least 6m²/bed.	Single room at least 15m², twin room at least 22m².
Level 4	Working space per person is at least 9m².	Level 4	(Inapplicable)	Single room at least 22m², twin room at least 32m².
Level 5	Working space per person is at least 12m².	Level 5	Private rooms at least 10m²/bed, multi-bed rooms at least 8m²/bed.	Single room at least 30m², twin room at least 40m².

1.1.2 Adaptation of Building Structure & Services to IT Innovatio

Weight (default)= 0.00

1.1.3 Barrier-free Planning

Weight (default)= 1.00

Level 3	Entire building and common properties	Excluded	Entire building and common properties	
	Offices Factories		Retailers Restaurants Halls Hospitals Hotels	Offices Schools Apartments Factories
Level 1	Not adequate for level 3.	Level 1	Not adequate for level 3.	Not adequate for level 3.
Level 2	(Inapplicable)	Level 2	(Inapplicable)	(Inapplicable)
■Level 3	Measures such as OA floors accommodate layout changes, and electrical sockets for OA equipment have at least 30VA/ m² socket capacity.	Level 3	The building satisfies the standard for barrier-free (the minimum level) under the Barrier-free Building Law.	The building satisfies at least half of the items of the standard for barrier-free (the minimum level) under the Barrier-free Building Law.
Level 4	Measures such as OA floors accommodate layout changes, and electrical sockets for OA equipment have at least 40VA/m² socket capacity.	Level 4	The building satisfies the incentive standard for barrier-free (the preferred level) under the Barrier-free Building Law.	The building satisfies the standard for barrier-free (the minimum level) under the Barrier-free Building Law.
Level 5	In addition to OA floors, measures such as pre-wiring are used to facilitate layout changes. Also, electrical sockets for OA equipment have at least 50VA/m² socket capacity.	Level 5	The building exceeds the incentive standard for barrier-free (the preferred level) under the Barrier-free Building Law, achieving the universal design level.	The building satisfies the incentive standard for barrier-free (the preferred level) under the Barrier-free Building Law.

1.2 Amenity

1.2.1 Perceived Spaciousness & Access to View

Weight (default)= 0.00

Weight (default)= 0.50

Level 3	Entire building and common properties			Excluded	Residential and Accommodation Sections
	Offices Factories	Schools	Retailers Restaurants		Hospitals Hotels Apartments
Level 1	Not adequate for level 3.	Not adequate for level 3.	Not adequate for level 3.	Level 1	Not adequate for level 3.
Level 2	(Inapplicable)	(Inapplicable)	(Inapplicable)	Level 2	(Inapplicable)
■Level 3	The ceiling height is at least 2.5m in offices, and the windows are arranged to give all workers an adequate awareness of the outside.	Class room ceiling height is at least 3m.	Sales area ceiling height is at least 3m.	Level 3	Ceiling height at least 2.3m in residential and accommodation sections.
Level 4	The ceiling height is at least 2.7m in offices, and the windows are placed to give all workers an adequate awareness of the outside.	Class room ceiling height is at least 3.1m.	Sales area ceiling height is at least 3.3m.	Level 4	Ceiling height at least 2.5m in residential and accommodation sections.
Level 5	The ceiling height is at least 2.9m in offices, and the windows are placed to give all workers an adequate awareness of the outside.	Class room ceiling height is at least 3.2m.	Sales area ceiling height is at least 3.6m.	Level 5	Ceiling height at least 2.7m in residential and accommodation sections.

1.2.2 Space for Refreshment

Weight (default)= 0.00

Level 3	Entire building and common properties	
	Offices Factories	Retailers
Level 1	Not adequate for level 3.	Not adequate for level 3.
Level 2	(Inapplicable)	(Inapplicable)
■Level 3	Smoking areas are provided.	Rest space is at least 2% of the sales floor area.
Level 4	Space for refreshment* is provided that is separate from smok	Rest space is at least 3% of the sales floor area.
Level 5	Space for refreshment* is provided that is separate from smoking areas, and it is equipped with beverage vending machines and similar equipment.	Rest space is at least 4% of the sales floor area.

1.2.3 Décor Planning

Weight (default)= 1.00

Weight (default)= 0.50

	Entire building and common properties		Residential and Accommodation Sections

Excluded	Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories
Level 1	Not adequate for level 3.
Level 2	(Inapplicable)
Level 3	There has been some degree of interior décor planning, such as color planning of wallpaper and carpets.
Level 4	(Inapplicable)
Level 5	There has been careful interior décor planning, such as color planning of wallpaper and carpets.

Excluded	Hospitals Hotels Apartments
Level 1	Not adequate for level 3.
Level 2	(Inapplicable)
Level 3	There has been some degree of interior decor planning, such as color planning of wallpaper and carpets.
Level 4	(Inapplicable)
Level 5	There has been careful interior decor planning, such as color planning of wallpaper and carpets.

2 Durability & Reliability

2.1 Earthquake Resistance

2.1.1 Earthquake-resistance

Weight (default)= 0.80

Level 3	Entire building and common properties Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories
Level 1	(Inapplicable)
Level 2	(Inapplicable)
■Level 3	The building's earthquake resistance meets the requirements of the Building Standards Law.
Level 4	The building's earthquake resistance exceeds the requirements of the Building Standards Law by a 20% margin.
Level 5	The building's earthquake resistance exceeds the requirements of the Building Standards Law by a 50% margin. Alternatively, damage control design has been used.

2.1.2 Seismic Isolation & Vibration Damping Systems

Weight (default)= 0.20

Level 3	Entire building and common properties Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories
Level 1	(Inapplicable)
Level 2	(Inapplicable)
■Level 3	No seismic isolation or vibration damping system is used.
Level 4	A vibration damping system is used.
Level 5	A seismic isolation system is used.

2.2 Service Life of Components

2.2.1 Necessary Refurbishment Interval for Exterior Finishes

Weight (default)= 0.29

Level 5	Entire building and common properties Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories
Level 1	Less than 10 years
Level 2	10 years or more, less than 20 years
Level 3	20 years
Level 4	21 years or more, less than 30 years
■Level 5	30 years or more

2.2.2 Necessary Renewal Interval for Main Interior Finishes

Weight (default)= 0.12

Excluded	Entire building and common properties Offices Schools Retailers Restaurants Halls Hospitals Hotels Factories	Apartments
Level 1	Less than 5 years	Less than 10 years
Level 2	5 years or more, less than 10 years	10 years or more, less than 15 years
Level 3	10 years	15 years
Level 4	11 years or more, less than 20 years	16 years or more, less than 25 years
Level 5	20 years or more	25 years or more

2.2.3 Necessary Renewal Interval for Plumbing & Wiring Materials

Weight (default)= 0.29

Excluded	Entire building and common properties Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories
Level 1	(Inapplicable)
Level 2	(Inapplicable)
Level 3	15 years
Level 4	16 years or more, less than 30 years
Level 5	30 years or more

2.2.4 Necessary Renewal Interval for Major Equipment & Services

Weight (default)= 0.29

Excluded	Entire building and common properties Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories
Level 1	Less than 7 years
Level 2	7 or more, less than 15 years
Level 3	15 years
Level 4	16 years or more, less than 30 years
Level 5	30 years or more

2.3 Reliability

2.3.1 HVAC System

Weight (default)= 0.20

Level 3	Entire building and common properties Offices Halls Hospitals Hotels Factories	Schools Retailers Restaurants
Level 1	None is applicable to the efforts to be evaluated.	None is applicable to the efforts to be evaluated.
Level 2	(Inapplicable)	(Inapplicable)
■Level 3	Applicable to one of the efforts to be evaluated. Alternatively, there is no centralized HVAC system.	Applicable to one of the efforts to be evaluated. Alternatively, there is no centralized air conditioning and ventilation equipment.
Level 4	Applicable to two of the efforts to be evaluated.	(Inapplicable)

2.3.2 Water Supply & Drainage

Weight (default)= 0.20

Level 1	Entire building and common properties Offices Schools Halls Hospitals Hotels Apartments Factories	Retailers Restaurants
■Level 1	None is applicable to the efforts to be evaluated.	None is applicable to the efforts to be evaluated.
Level 2	(Inapplicable)	(Inapplicable)
Level 3	Applicable to one of the efforts to be evaluated.	Applicable to one of the efforts to be evaluated.
Level 4	Applicable to two of the efforts to be evaluated.	(Inapplicable)

Level 5	Applicable to three or more of the efforts to be evaluated.	Applicable to two of the efforts to be evaluated.	**Level 5**	Applicable to three or more of the efforts to be evaluated.	Applicable to two or more of the efforts to be evaluated

Efforts to improve the reliability of HVAC system

Building Type	Offices Halls Hospitals Hotels Factories	Schools Retailers Restaurants
Floor area	m²	300m²
Score	**Level 3**	**Level 3**
No	The building has centrally-managed air conditioning and ventilation equipment for multiple rooms. If yes, select from the methods below.	
	1) Circuits are divided according to the importance of their ventilation equipment, and more important circuits are given priority in operation after a disaster. Also, ways of running the ventilation with reduced load capacity have been examined.	
	2)Dispersion and duplication of heat source types (electricity, gas etc.), with backups.	
	3) Countermeasures (such as suspended pipes) have been taken to ensure that overall function can continue even when the building is partially damaged by an earthquake.	
O	4) Circuits are divided according to the importance of their air conditioning equipment, and more important circuits are given priority in operation after a disaster. Also, ways of running the air conditioning with reduced load capacity have been planned.	

Efforts to improve the reliability of water supply & drainage

Building Type	Offices Schools Halls Hospitals Hotels Apartments Factories	Retailers Restaurants
Floor area	300m²	m²
Score	**Level 1**	**Level 1**
	1) Water-saving equipment is used. This is limited to cases where it is used on a majority of the installed equipment. Water-saving devices are those approved as Eco Mark products, or those equivalent to water-saving equipment that is the approval standard for Eco Mark products.	
	2) Plumbing systems are separated as far as possible to reduce the portions that become unserviceable in the event of a disaster.	
	3) The building has a pit for temporary waste water storage, in case main sewerage is unavailable after a disaster.	
	4) The building has two separate tanks, one for water reception and one elevated tank.	
	5) Planning enables the use of well water, rainwater, gray water etc.	
	6) Provision of a rainwater storage tank to provide domestic noncommercial water in the event of a disaster. . (Not applied to "Retailers" and "Restaurants.")	
	7) The building is equipped with a simple filtration system allowing conversion of rainwater to potable water in the event of a disaster. (Not applied to "Retailers" and "Restaurants.")	

2.3.3 Electrical Equipment Weight (default)= 0.20

Level 1	Entire building and common properties	
	Offices Halls Hospitals Hotels Factories	Schools Retailers Restaurants
■**Level 1**	None is applicable to the efforts to be evaluated.	None is applicable to the efforts to be evaluated.
Level 2	(Inapplicable)	(Inapplicable)
Level 3	Applicable to one of the efforts to be evaluated.	Applicable to one of the efforts to be evaluated.
Level 4	Applicable to two of the efforts to be evaluated.	(Inapplicable)
Level 5	Applicable to three or more of the efforts to be evaluated.	Applicable to two or more of the efforts to be evaluated.

2.3.4 Support Method of Machines & Ducts Weight (default)= 0.20

Excluded	Entire building and common properties
	Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories
Level 1	Not adequate for level 3
Level 2	(Inapplicable)
Level 3	Earthquake resistance class B (Human safety is assured and secondary damage prevented after a major earthquake.)
Level 4	Earthquake resistance class A (In addition to Level 3, important functions are maintained securely without major repairs.)
Level 5	Earthquake resistance class S (In addition to Level 4, All functions are maintained securely without major repairs.)

Efforts to improve the reliability of electrical equipment

Building Type	Offices Halls Hospitals Hotels Factories	Schools Retailers Restaurants
Floor area	m²	300m²
Score	**Level 1**	**Level 1**
	(1) The building is equipped with emergency generators. (Not applied to Sch, Rtl, Rst and Apt)	
	(2) The building is equipped with uninterruptible power source systems.	
	(3) Power input equipment for important equipment systems has redundancy. (Not applied to Sch, Rtl, Rst and Apt)	
	4) Countermeasures (i) and (ii) have been taken or (iii) applies, in order to avoid power outages due to water percolation into power supply equipment or precision machinery (circuit breaker box, distribution board for Apartments), and to avoid damage to data networks. (i) Installation of power supply equipment and precision machinery below ground is avoided. (ii) Devices to prevent the groundwater percolation (waterproof doors, waterproof panels, embankments, dry ditches) and drainage equipment (pumps etc.) are installed. (iii) No danger of water percolation.	

2.3.5 Communications & IT equipment Weight (default)= 0.20

Level 1	Entire building and common properties		
	Offices Halls Hospitals Hotels Factories	Schools Retailers Restaurants	Apartments
■**Level 1**	None is applicable to the efforts to be evaluated.	None is applicable to the efforts to be evaluated.	None is applicable to the efforts to be evaluated.
Level 2	(Inapplicable)	(Inapplicable)	(Inapplicable)
Level 3	Applicable to one of the efforts to be evaluated.	Applicable to one of the efforts to be evaluated.	Applicable to one of the efforts to be evaluated.
Level 4	Applicable to two of the efforts to be evaluated.	(Inapplicable)	Applicable to two of the efforts to be evaluated.

Level 5	Applicable to three of the efforts to be evaluated.	Applicable to two of the efforts to be evaluated.	(Inapplicable)

Approach for Reliability of Communications & IT equipment

Building Type	Offices Halls Hospitals Hotels Factories	Schools Retailers Restaurants	Apartments
Floor area	m²	m²	300m²
Score	**Level 1**	**Level 1**	**Level 1**
	1) Communications methods are diversified, using optical fiber cable, metal cable, cellular telephone network, PHS network and others.		
	2) Connections are made from two telephone exchanges to secure two communications links.		
	3) Countermeasures (i) and (ii) have been taken or (iii) applies, in order to avoid damage to data networks due to water percolation into precision devices (data transfer equipment, relay equipment and converters. MDF, optical fiber, Ethernet etc.). (i) Installation of precision machinery below ground is avoided. (ii) Devices to prevent the groundwater percolation (waterproof doors, waterproof panels, embankments, dry ditches) and drainage equipment (pumps etc.) are installed. (iii) No danger of water percolation.		

3 Flexibility & Adaptability

3.1 Spatial Margin

3.1.1 Allowance for Story Height

Weight (default)= 0.00 | Weight (default)= 0.60

Level 3	Entire building and common properties Offices Schools Retailers Restaurants Factories	Excluded	Residential and Accommodation Sections Hospitals Hotels	 Apartments
Level 1	Less than 3.3m	**Level 1**	Less than 3.3m	Less than 2.7m
Level 2	3.3m or more, less than 3.5m	**Level 2**	3.3m or more, less than 3.5m	2.7m or more, less than 2.8m
■**Level 3**	3.5m or more, less than 3.7m	**Level 3**	3.5m or more, less than 3.7m	2.8 m or more, less than 2.9m
Level 4	3.7m or more, less than 3.9m	**Level 4**	3.7m or more, less than 3.9m	2.9 m or more, less than 3.0m
Level 5	3.9m or more	**Level 5**	3.9m or more	3.0m or more

3.1.2 Adaptability of Floor Layout

Weight (default)= 0.00 | Weight (default)= 0.40

Level 3	Entire building and common properties Offices Schools Retailers Restaurants Halls Factories	Excluded	Residential and Accommodation Sections Hospitals Hotels Apartments
Level 1	Wall length ratio 0.7 or above	**Level 1**	Wall length ratio 0.7 or above
Level 2	Wall length ratio 0.5 or more, less than 0.7	**Level 2**	Wall length ratio 0.5 or above, less than 0.7
■**Level 3**	Wall length ratio 0.3 or more, less than 0.5	**Level 3**	Wall length ratio 0.3 or above, less than 0.5
Level 4	Wall length ratio 0.1or more, less than 0.3	**Level 4**	Wall length ratio 0.1 or above, less than 0.3
Level 5	Wall length ratio less than 0.1	**Level 5**	Wall length ratio less than 0.1

$$\text{Wall length/area ratio} = \frac{\text{Length of perimeter walls (m) + length of bearing walls (m)}}{\text{Exclusive area (m2)}}$$

3.2 Floor Load Margin

Weight (default)= 0.00 | Weight (default)= 0.50

Level 3	Entire building and common properties Offices Retailers Restaurants Halls Factories	 Halls(when seatings unfixed)	 Schools	Excluded	Residential and Accommodation Sections Hospitals Hotels Apartments
Level 1	(Inapplicable)	(Inapplicable)	(Inapplicable)	**Level 1**	(Inapplicable)
Level 2	Less than 2,900N/m²	Less than 3,500N/m²	Less than 2,300N/m²	**Level 2**	Less than 1,800N/m²
■**Level 3**	2,900N/m² or more	3,500N/m² or more	2,300N/m² or more	**Level 3**	At least 1,800N/m²
Level 4	3,500N/m² or more	4,200N/m² or more	2,900N/m² or more	**Level 4**	At least 2,100N/m²
Level 5	4,500N/m² or more	5,200N/m² or more	3,500N/m² or more	**Level 5**	At least 2,900N/m²

3.3 Adaptability of Facilities

3.3.1 Ease of Air Conditioning Duct Renewal

Weight (default)= 0.17

Excluded	Entire building and common properties Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories
Level 1	Air conditioning ducts cannot be replaced without damaging structural elements.
Level 2	In some cases the air conditioning ducts can be replaced without damaging structural elements, if spare sleeves are used, but that method cannot be applied to all ducts.
Level 3	Space and routes for future use (future replacement work) have been provided, so that nearly all air conditioning ducts can be replaced without damaging structural elements.
Level 4	Exterior air conditioning ducts are used or ceiling space provided so that ducts can be replaced without damaging either structural elements or surface finishes.
Level 5	ISS, equipment floor installation or other measures allow easy replacement of air conditioning ducts without damaging surface finishes.

3.3.2 Ease of Water Supply & Drain Pipe Renewal

Weight (default)= 0.17

Excluded	Entire building and common properties Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories
Level 1	Pipes cannot be replaced without damaging structural elements.
Level 2	In some cases pipes can be replaced without damaging structural elements, if spare sleeves are used, but that method cannot be applied to all ducts.
Level 3	Space and routes for future use (future replacement work) have been provided, so that nearly all water supply and drain pipes can be replaced without damaging structural elements.
Level 4	Wall plumbing or ceiling space provided, so that water supply and drain pipes can be replaced without damaging either structural elements or surface finishes.
Level 5	Unit pipes, system WCs and other measures allow easy replacement of water supply and drain pipes without damaging surface finishes.

3.3.3 Ease of Electrical Wiring Renewal Weight (default)= 0.11

Excluded	Entire building and common properties Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories
Level 1	Wiring cannot be replaced without damaging structural elements.
Level 2	(Inapplicable)
Level 3	Wiring can be replaced without damaging structural elements.
Level 4	(Inapplicable)
Level 5	Wiring can be replaced without damaging structural elements or surface finishes.

3.3.4 Ease of Communications Cable Renewal Weight(default)= 0.11

Excluded	Entire building and common properties Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories
Level 1	Communications cables cannot be replaced without damaging structural elements.
Level 2	(Inapplicable)
Level 3	Communications cables can be replaced without damaging structural elements.
Level 4	(Inapplicable)
Level 5	Communications cable can be replaced without damaging structural elements or surface finishes.

3.3.5 Ease of Equipment Renewal Weight (default)= 0.22

Excluded	Entire building and common properties Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories
Level 1	There are no routes or machine hatches for replacing major equipment, so it cannot be replaced without demolishing exterior walls or other elements.
Level 2	(Inapplicable)
Level 3	There are routes or machine hatches for replacing major equipment
Level 4	(Inapplicable)
Level 5	There are routes or machine hatches for replacing major equipment, and there is backup equipment (or equipment with backup function) to be used during the replacement period.

3.3.6 Provision of Backup Space Weight (default)= 0.22

Excluded	Entire building and common properties Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories
Level 1	(Inapplicable)
Level 2	(Inapplicable)
Level 3	There is no planned provision of space for backup equipment.
Level 4	There is planned provision of space for backup equipment.
Level 5	(Inapplicable)

Q-3 Outdoor Environment on Site

Select from pull-down menus or enter figures and comments. **Construction Completion Stage**

1 Preservation & Creation of Biotope

Weight (default)= 0.30

Level 1	Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories
■Level 1	On the Efforts to be evaluated , 0<= Credit Ratio (3) <0.2
Level 2	On the Efforts to be evaluated , 0.2<= Credit Ratio (3)<0.4
Level 3	On the Efforts to be evaluated , 0.4<= Credit Ratio (3) <0.6
Level 4	On the Efforts to be evaluated , 0.6<= Credit Ratio (3)<0.8
Level 5	On the Efforts to be evaluated , 0.8<= Credit Ratio (3)

Efforts to be evaluated

Credits	Level of efforts			Efforts
	High	Low	None	
0	2	1	0	I) A survey has been made of surrounding habitat (state of inhabiting flora and fauna, etc.)
0	2	1	0	II) Conservation of existing ecological resources Conservation of existing topography, topsoil, trees, bodies of water etc.
				III) Extensive greening
0	2	1	0	1) Thorough greening of exterior (surface) on site
0	2	1	0	2) Greening the building (roofs and walls)
0	2	1	0	3) Landscaping of green space Placement of continuous green land and voluminous vegetation to form ecological networks in the local area.
0	2	1	0	4) Consideration for habitat for small animals Planting of feed trees, biotopes and bird sanctuaries, use of porous materials etc.
0	2	1	0	IV) Preparation of monitoring plan and management of flora and fauna habitat
0	2	1	0	V) Efforts to improve contacts between users and animals (Creation of water parks and other contact spaces, provision of information on related measures, etc.).
Excluded	2	1	-	VI) Others ( )

(1) Total Credits= **Credits** | (2) Maximum Credits = **16 Credits** | (3) Credits Ratio ((1) / (2)) = **0.00**

2 Townscape & Landscape

Weight (default) = 0.40

Level 4	Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories
Level 1	On the Efforts to be evaluated , 0<= Credit Ratio (3) <0.2
Level 2	On the Efforts to be evaluated , 0.2<= Credit Ratio (3)<0.4
Level 3	On the Efforts to be evaluated , 0.4<= Credit Ratio (3) <0.6
■Level 4	On the Efforts to be evaluated , 0.6<= Credit Ratio (3)<0.8
Level 5	On the Efforts to be evaluated , 0.8<= Credit Ratio (3)

Efforts to be evaluated

Credits	Level of efforts			Efforts (High: 3 articles or more applied., Low: 1 item applied)
	High	Low	None	
0	2	1	0	1) Building placement and orientation responsive to the surrounding environment
0	2	1	0	2) Building height and form that are responsive to the surrounding environment
2	2	1	0	3) Use design elements, materials and colors that are responsive to the surroundings.
2	2	1	0	4) Public space and exterior elements responsive to the surrounding environment
2	2	1	0	5) Reflecting views of local residents in plan content
Excluded	2	1	-	6) Others ( )

(1) Total Credits = **6 Credits** | (2) Maximum Credits = **10 Credits** | (3) Credits Ratio ((1) / (2)) = **0.60**

3 Local Characteristics & Outdoor Amenity

3.1 Attention to Local Character & Improvement of Comfort

Weight (default) = 0.50

Level 1	Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories Floor Area of Offices Schools Retailers Restaurants Halls Factories= m² Floor Area of Hospitals Hotels= m² Floor Area of Apartments= 300m²
■Level 1	On the Efforts to be evaluated , 0<= Credit Ratio((3) or (6) or (9)) <0.2
Level 2	On the Efforts to be evaluated , 0.2<= Credit Ratio((3) or (6) or (9)) <0.4
Level 3	On the Efforts to be evaluated , 0.4<= Credit Ratio((3) or (6) or (9)) <0.6
Level 4	On the Efforts to be evaluated , 0.6<= Credit Ratio((3) or (6) or (9)) <0.8
Level 5	On the Efforts to be evaluated , 0.8<= Credit Ratio((3) or (6) or (9))

Efforts to be evaluated

Credits	Level of efforts High	Low	None	Efforts
				I. Consideration for memories of previous uses of the land and the continuation of local culture
0	2	1	0	a) The plan of the building and its exterior reflects aspects of local context, such as climate, history and culture for its function, selection of materials and opelation planning.
0	2	1	0	b) Use of local industries, personnel and skills
Excluded	2	1	-	c) Others ( )
				II. Consideration of relation between interior and exterior (Mitigation of psychological stress on occupants, etc.)
0	2	1	0	d) Formation of semi-outdoor or intermediate spaces (balconies, peripheral corridors, formation of spaces to take in outside light and air movement, securing spaces for local residents to use, etc.)
0	2	1	0	e) Providing buffer zones (Formation of psychologically rich living spaces, sentimental expression, reconciliation between public and private, for example, entry porches for each dwelling, design measures around entrances, etc) (Applied to “Hospitals”, “Hotels” and “apartments” only.)
Excluded	2	1	-	f) Others ( )
				III. Consideration for community formation in local society and among residents
0	2	1	0	g) Development of community spaces and facilities that serve as centers for exchanges between residents and local society (halls, leisure rooms, community centers etc.)
0	2	1	0	h) Creation of spaces within the exterior space that will help to foster community relations with local residents (such as courtyard spaces open to the community)
	2	1	0	i) Design of common spaces (public corridors, entrances, plazas etc.) to increase residents' contacts with local residents in daily life. (Applied to “Hospitals”, “Hotels” and “apartments” only.)
Excluded	2	1	-	j) Others ( )
				IV. Participation between residents and local people
0	2	1	0	k) Encouraging occupants to participate in building maintenance management.
	2	1	0	l) Participation of occupants in the design process. (Applied to “Hospitals”, “Hotels” and “apartments” only.)
Excluded	2	1	-	m) Others ( )
				V. Improvement of health and comfort
	2	1	0	n) Spatial design that is aware of children's growth, and consideration for the elderly and handicapped. (Applied to “apartments” only)
0	2	1	0	o) Improvement of exterior space comfort
Excluded	2	1	-	p) Others ( )

(1) Total Credits =	**Credit**	(2) Maximum Credits =	**14 Credit**	(3) Credits Ratio ((1) / (2)) =	**0.00**	←Offices Schools Retailers Restaurants Halls Factories
(4) Total Credits =	**Credit**	(5) Maximum Credits =	**16 Credit**	(6) Credits Ratio ((4) / (5)) =	**0.00**	←Hospitals Hotels
(7) Total Credits =	**Credit**	(8) Maximum Credits =	**16 Credit**	(9) Credits Ratio ((7) / (8)) =	**0.00**	←Apartments

3.2 Improvement of the Thermal Environment on Site

Weight (default) = 0.5

Level 1	Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories
■Level 1	On the Efforts to be evaluated , 0.0<= Credit Ratio (3) <0.2
Level 2	On the Efforts to be evaluated , 0.2<= Credit Ratio (3)<0.4
Level 3	On the Efforts to be evaluated , 0.4<= Credit Ratio (3) <0.6
Level 4	On the Efforts to be evaluated , 0.6<= Credit Ratio (3)<0.8
Level 5	On the Efforts to be evaluated , 0.8<= Credit Ratio (3)

Efforts to be evaluated

Credits	Level of efforts			Efforts
	Present		None	
0	2		0	1) Using the surrounding airflow environment to encourage air movement within the site. a) Building layout designed to draw in air movement from surrounding vegetation and open space. b) Appropriate provision of open/ green space to encourage air movement. c) Formation of routes within the site to encourage air movement.
	2		0	2) Providing green space, water surfaces and other elements within the site to alleviate the thermal environment. a) Provide as much green space (including tall trees) as possible on the site. b) Provide surface water on the site. c) Limit the range of use of materials with large heat capacities, such as asphalt concrete for paved surfaces etc.
	2		0	3) Use building greening to alleviate the thermal environment on the site. a) Building skin greening(on open decks, balconies etc.).
	2		0	4) Consider artificial heat venting positions etc. to alleviate the thermal environment on the site. a) Artificial heat venting points should be placed as high as possible. b) High-temperature heat venting points should be placed as high as possible. c) The temperature of artificial heat venting should be as low as possible.

(1) Total Credits =	**Credit**	(2) Maximum Credits =	**2 Credit**	(3) Credits Ratio ((1) / (2)) =	**0.00**

LR-1 Energy

Select from pull-down menus or enter figures and comments. **Construction Completion Stage**

Select Assessment standard type, and Transfer the necessary entries from the report of "Energy-saving plan"&"the Housing Performance Assessment"

	Building Type	Apartments			
	Floor area for each building type	300 m²			
Building plan	For each assessment standard type	**PAL Value**	**PAL Value**	**PAL Value**	**PAL Value**
	PAL value, Point value, Insulation class	**300.0** class	**2.0**		
	The standard for judgment by owner				
HVAC system	For each assessment standard type	**CEC/AC Value**	**CEC/AC Value**	**CEC/AC Value**	**CEC/AC Value**
	CEC/AC value, Point value	**1.5**			
	Annual Hypothetical Air Conditioning Load or correction point	**150**			
	The standard for judgment by owner	(-)			
Ventilation System	For each assessment standard type	**CEC/V Value**	**CEC/V Value**	**CEC/V Value**	**CEC/V Value**
	CEC/V value, Point value	**1.0**			
	Hypothetical energy consumption for ventilation per year	**150**			
	The standard for judgment by owner	(-)			
Lighting System	For each assessment standard type	**CEC/L Value**	**CEC/L Value**	**CEC/L Value**	**CEC/L Value**
	CEC/L value, Point value	**1.0**			
	Hypothetical energy consumption for lighting per year	**150**			
	The standard for judgment by owner	(-)			
Hot Water Supply System	For each assessment standard type	**CEC/HW Value**	**CEC/HW Value**	**CEC/HW Value**	**CEC/HW Value**
	CEC/HW value,Point value,	**1.7** (-)			
	Hypothetical hot water supply load per year	**300**			
	Ix value	**15** m/(m3/day)			
	The standard for judgment by owner	1.7 (-)			
Elevators	For each assessment standard type	**CEC/EV Value**	**CEC/EV Value**	**CEC/EV Value**	**CEC/EV Value**
	CEC/EV value, Point value	**1.0**			
	Hypothetical energy consumption for elevator per year	**1,000,000**			
	The standard for judgment by owner	(-)			
Equipment of enhanced energy usage efficiency (*)	Annual Energy Saving Volume Using Efficient Equipment (A)	**0** MJ/y	MJ/y	MJ/y	MJ/y
	Annual Energy Saving for the Entire Building (B)	**8,000,000** MJ/y	MJ/y	MJ/y	MJ/y
	Energy Saving rate K value A/B	**0.00**	**0.00**	**0.00**	**0.00**
ERR	Choice of method	**Method other than ERR**	**Method other than ERR**	**Method other than ERR**	**Method other than ERR**
	Rate of reduction in primary energy consumption ERR	**Excluded**	**Excluded**	**Excluded**	**Excluded**

*) Such as solar energy generation system and cogeneration system

"The Standard for judgment by Owner Regarding the Rational Use of Energy Relating to Building" for performance standard based on Energy Saving Law

Building Type	PAL(MJ/m²/y)	CEC/AC(-)	CEC/V(-)	CEC/L(-)	CEC/EV(-)	Ix value range	CEC/HW(-)
Offices	300	1.5	1.0	1.0	1.0	Ix<=7	1.5
Schools	320	1.5	0.8	1.0	-	7<Ix<=12	1.6
Retailers	380	1.7	0.9	1.0	-	12<Ix<=17	1.7
Restaurants	550	2.2	1.5	1.0	-	17<Ix<=22	1.8
Halls	550	2.2	1.0	1.0	-	22<Ix	1.9
Hospitals	340	2.5	1.0	1.0	-	The judgment standard for hot water supply system is Ix value (daily average value from annual hypothetical water supply load, against hot water supply pipe length), irrespective of building type.	
Hotels	420	2.5	1.0	1.0	1.0		
Factories	-	-	-	1.0	-		

Note : "The judgment standard for the building owner under the specification standard (Point method) is a flat 100 points

1 Building Thermal Load

Weight (default) = 0.40

Apartments				Offices Schools Retailers Restaurants Halls Hospitals Hotels		Apartments
Input Class	**Level**	**Level**	**Level**	Assessment using the performance standard	Assessment using the specification standard	Evaluate by Housing Quality Assurance Law class
Level 1				5%< [PAL value]	[Point value]<80 points	(Inapplicable)
Level 2				0%< [PAL value]<=5%	80 points<= [Point value]<100 points	Class 1:Fall short of Level 3
Level 3				-10%<[PAL value]<= 0%	100 points<= [Point value]< 130 points	Class 2:1980 standards (Energy Saving Standards)
Level 4				-25%< [PAL value]<= -10%	130 points<= [Point value]< 160 points	Class 3:1992 standards (New Energy Saving Standards)
Level 5				[PAL value]<= -25%	160 points<= [Point value]	Class 4:1999 standards (Current next- generation standards)

Reference: Comparison between residential energy-saving standards and the Housing Quality Assurance Law

Annual heating and cooling load MJ/m2yr				Target building: **Zone VI**		
Zone*	I	II	III	IV	V	VI
Class 1	Fall short of Class 2					
Class 2	840 or less	980 or less	980 or less	980 or less	980 or less	980 or less
Class 3	470 or less	610 or less	640 or less	660 or less	510 or less	420 or less
Class 4	390 or less	390 or less	460 or less	460 or less	350 or less	290 or less

*) Classified by "The Standard for Judgement by Owner Regarding the Rational Use of Energy Relating to Housing"

2 Natural Energy Utilization

Weight (default) = 1.00

*Assessment for Execution Design Stage & Construction Completion Stage except Apartments

Level 5	**Level 3**	Offices Schools Retailers Restaurants Halls Hospitals Hotels Factories m²
Level 1	**Level 1**	(Inapplicable)
Level 2	**Level 2**	(Inapplicable)
Level 3	**■Level 3**	0<= Natural energy usage <1MJ/m² * Includes no usage or planned use for monumental purposes only.
Level 4	**Level 4**	1MJ/m² <= Natural energy usage <20MJ/m²

■Level 5	Level 5	20MJ/m² <= Natural energy usage

2.1 Direct Use of Natural Energy

*Assessment only for Preliminary Design Stage

Weight (default) = 0.50

*Assessment for Preliminary Design Stage, Execution Design Stage & Construction Completion Stage only for Apartments

Level 5	Level 3	Offices Schools Retailers Restaurants Halls Hospitals Hotels Factories m²	Level 5	Apartments 300m²
Level 1	Level 1	(Inapplicable)	Level 1	(Inapplicable)
Level 2	Level 2	(Inapplicable)	Level 2	Light intake and natural ventilation at level 3 are not possible.
Level 3	■Level 3	Of the efforts to be evaluated, none of the methods is used, or any of the methods is used even if only partially.	Level 3	Nearly all dwellings (at least 80%) have exterior walls on at least two sides, ensuring effective light intake and natural ventilation.
Level 4	Level 4	Of the efforts to be evaluated, any of the methods is used in a majority of the building.	Level 4	In addition to the above, building measures, such as ventilation voids, have been used to enhance their efficacy. They influence a majority (50%+) of residential blocks.
■Level 5	Level 5	Of the efforts to be evaluated, two or more of the methods are used in a majority of the building.	■Level 5	The building measures above cover at least 80% of residential blocks.

Efforts to be evaluated Total 0 items

Executed	NO.	Efforts to be evaluated *
	1	Use of natural light: Planning for natural light systems that use sunlight in place of lighting equipment. E.g. Light shelves, top lights, high side lights etc.
	2	Use of natural ventilation: Planning for the use of natural ventilation and ventilation systems that are effective in replacing the use of air conditioning equipment and reducing cooling loads. E.g. Automatic dampers, night purging, ventilation systems linked to atria, solar chimney ventilation towers etc.
	3	Use of geothermal energy: Planning for the use of geothermal heat usage systems that are effective in replacing the use of heat sources and air conditioning equipment and reducing heating and cooling loads. E.g. Cool and heat tubes and pits etc.
	4	Miscellaneous: Planning for the effective use of nature in other systems.

*) Put ○, if executed in a majority of the building.

2.2 Converted Use of Renewable Energy

Weight (default) = 0.50

Level 4	Preliminary Design Stage Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories	Level 5	Execution Design Stage & Construction Completion Stage Apartments 300 m²
Level 1	(Inapplicable)	Level 1	(Inapplicable)
Level 2	(Inapplicable)	Level 2	(Inapplicable)
Level 3	Of the efforts to be evaluated, none of the methods is used, or any of a method is used even if only partially.	Level 3	0<= Natural energy usage <1MJ/m² * Includes no usage or planned use for monumental purposes only.
■Level 4	Of the efforts to be evaluated, any of the methods is used in a majority of the building.	Level 4	1MJ/m² <= Natural energy usage <15MJ/m²
Level 5	Of the efforts to be evaluated, two or more of the methods are used in a majority of the building.	■Level 5	15MJ/m² <= Natural energy usage

Efforts to be evaluated Total 1 items

Executed	NO.	Efforts to be evaluated *
○	1	Use of sunlight: Planning for solar generation systems used in place of electrical power equipment. E.g. Solar panels etc.
	2	Use of solar heat: Planning for effective use of solar heat systems in heating equipment to reduce heating loads. E.g. Solar panels, vacuum-type water heaters.
	3	Use of unused heat: Planning for effective use of unused-heat systems to improve heat source efficiency in heating equipment. E.g. Heat pumps using well water or river water etc.
	4	Miscellaneous: Planning for the effective use of nature in other systems.

*) Put ○, if executed in a majority of the building.

3 Efficiency in Building Service System

Weight (default) = 0.40

3a Assessment by ERR

Apartments				
Level	Level	Level	Level	Assessment by ERR
Level 1				[ERR]< -5%
Level 2				-5%<= [ERR] < 0%
Level 3				0%<= [ERR]<10%
Level 4				10%<=[ERR]<25%
Level 5				25%<= [ERR]

3b Assessment by means other than ERR

Apartments							
Level 3		Level		Level		Level	
Score	Weight	Score	Weight	Score	Weight	Score	Weight
3	1.00						

3.1 HVAC System

Weight(default)=	Weight (default) =	Weight (default) =	Weight (default) =			
Apartments				Offices Schools Retailers Restaurants Halls Hospitals Hotels		Apartments
Level	Level	Level	Level	Assessment using the performance standard	Assessment using the specification standard	Factories
Level 1				5%<=[CEC value]	Below the corrected points(K_0)	(Excluded)
Level 2				0%<[CEC value]<5%	Above the corrected points(K0) and (Points)<100pts	
Level 3				-10%<[CEC value]<= 0%	100 points<=[Point value]<130 points	
Level 4				-25%<[CEC value]<= -10%	130 points<=[Point value]<160 points	
Level 5				[CEC value]<=-25%	160 points<=[Point value]	

3.2 Ventilation System

Weight(default)=	Weight(default)=	Weight(default)=	Weight(default)=			
Apartments				Offices Schools Retailers Restaurants Halls Hospitals Hotels		Apartments
Level	Level	Level	Level	Assessment using the performance standard	Assessment using the specification standard	Factories

Level 1				5%<=[CEC value]	[Point value]<90 points	(Excluded)
Level 2				0%<[CEC value]<5%	90 points<=[Point value]<100 points	
Level 3				-10%<[CE Cvalue]<= 0%	100 points<=[Point value]<120 points	
Level 4				-25%<[CEC value]<= -10%	120 points<=[Point value]<140 points	
Level 5				'[CEC value]<=-25%	140 points<=[Point value]	

3.3 Lighting System

Weight(default)=	Weight(default)=	Weight(default)=	Weight(default)=			
Apartments				Offices Schools Retailers Restaurants Halls Hospitals Hotels Factories		Apartments
Level	**Level**	**Level**	**Level**	Assessment using the performance standard	Assessment using the specification standard	
Level 1				5%<=[CEC value]	[Point value]<90points	(Excluded)
Level 2				0%<[CEC value]<5%	90 points<=[Point value]<100 points	
Level 3				-10%<[CEC value]<= 0%	100 points<=[Point value]<120 points	
Level 4				-25%<[CEC value]<= -10%	120 points<=[Point value]<140 points	
Level 5				[CEC value]<=-25%	140 points<=[Point value]	

3.4 Hot Water Supply System

Weight(default)= 1.00	Weight(default)=	Weight(default)=	Weight(default)=			
Apartments						
Level 3	**Level**	**Level**	**Level**	Offices Schools Retailers Restaurants Halls Hospitals Hotels Factories	Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories	Apartments
Level 3	**Level 2**	**Level 2**	**Level 3**	Assessment using the performance standard	Assessment using the specification standard	Individual supply system
Level 1				5%<=[CEC value]	[Point value]<90 points	(Inapplicable)
Level 2				0%<[CEC value]<5%	90 points <=[Point value]<100 points	Other than those below
■Level 3				-10%<[CEC value]<= 0%	100 points <=[Point value]<130 points	Electric water heater(electric control type)
Level 4				-25%<[CEC value]<= -10%	130 points <=[Point value]<160 points	Fuel-burning instant-supply water heater
Level 5				'[CEC value]<=-25%	160 points<=[Point value]	Fuel-burning latent heat recovery instant-supply hot water heaters, Electric CO_2 refrigerant water heater(late-night electricity water storage heater)

3.5 Elevators

Weight(default)=	Weight (default) =	Weight (default) =	Weight (default) =			
Apartments				Offices Hotels		Schools Retailers Restaurants Halls Hospitals Apartments Factories
Level	**Level**	**Level**	**Level**	Assessment using the performance standard	Assessment using the specification standard	
Level 1				5%<=[CEC value]	[Point value]<90 points	(Excluded)
Level 2				0%<[CEC value]<5%	90 points<=[Point value]<100 points	
Level 3				-10%<[CEC value]<= 0%	100 points<=[Point value]<120 points	
Level 4				-25%<[CEC value]<= -10%	120 points<=[Point value]<140 points	
Level 5				[CEC value]<=-25%	140 points<=[Point value]	

4 Efficient Operation

4.1 Monitoring

Weight (default) = 0.00

Level 3	Offices Schools Retailers Restaurants Halls Hospitals Hotels Factories	
	Preliminary Design Stage	Execution Design Stage
Level 1	(Inapplicable)	(Inapplicable)
Level 2	(Inapplicable)	(Inapplicable)
■Level 3	The plan must make it possible to have a clear grasp of total energy consumption.	The system must afford knowledge of the total quantity of energy consumption, so that energy-saving effects can be verified in operation
Level 4	The plan policy must allow for measurement equipment for each energy type used. Note 1)	There must be equipment to measure quantities of heating and cooling, gas, electricity and water for all types of energy used. Note1)
Level 5	Introduction of a management system such as BEMS should be planned, with a structure able to measure the energy consumption for each system and device. Note 2)	If detailed plans for energy-saving operation are to be drawn up, there must be systems to enable measurement of energy consumption volumes for each system and each piece of equipment, and a management system such as BEMS must be introduced. Note 2)

Measurement item

	Note 1) Measurement of each type of energy	Note 2) Energy measurement for each system
Quantity of cooling and heating	Quantities of heating and cooling	Quantities of cooling and heating for each air conditioning system.
Gas volume	Gas volume for heating and kitchen uses.	Gas volumes for each heat source and device, and for special uses that consume large volumes.
Electrical power quantity	Electrical power for heat sources, air conditioning secondary equipment, ventilation, lighting, sockets and special loads (computer loads in office buildings, kitchen loads in restaurants, and other loads that account for high proportions of power consumption in applicable buildings).	Power consumption for each air conditioning and ventilation device, and for each hygiene-related pump.
Water supply volume	Water supply for heat sources and hygiene.	Water supply volume for each water supply demand (drinking and washing, toilet flushing, etc.).

4.2 Operational Management System

Weight(default)= 0.00

Level 3	Offices Schools Retailers Restaurants Halls Hospitals Hotels Factories	
	Preliminary Design Stage	Execution Design Stage
Level 1	(Inapplicable)	No operation and management system has been planned.
Level 2	(Inapplicable)	Organizations, systems or management policies have been planned for operation and management.

■**Level 3**	No significant moves (proposals) have been made towards an operation and management system.	In addition to level 2, there must be an organized operation and management system, with a designated manager.
Level 4	Basic guidelines on operation, maintenance and preservation have been planned.	In addition to level 3, target values for energy consumption in the whole buildings have been planned and presented to the building owner, based on calculation of annual energy consumption
Level 5	In addition to the above, target values have been planned for annual energy consumption.	In addition to level 4, there must be regular verification of equipment performance during building operation, with specific actions planned for repair of malfunctions etc. (commissioning system).

LR-2 Resources & Materials

Select from pull-down menus or enter figures and comments.

Construction Completion Stage

1 Water Resources

1.1 Water Saving

Weight(default)= 0.40

Level 4	Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories
Level 1	No systems for saving water.
Level 2	(Inapplicable)
Level 3	Major faucets are equipped with water-saving valve.
■Level 4	In addition to water-saving valve, other water-saving equipment (such as flush-mimicking sound systems, water-saving toilets) is used.
Level 5	(Inapplicable)

1.2 Rainwater & Gray Water

1.2.1 Rainwater Use System

Weight(default)= 0.67

Level 4	Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories
Level 1	(Inapplicable)
Level 2	(Inapplicable)
Level 3	No systems for using rainwater.
■Level 4	Rainwater is used.
Level 5	Rainwater usage brings the rainwater usage rate to at least 20%.

1.2.2 Gray Water Reuse System

Weight(default)= 0.33

Level 3	Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories
Level 1	(Inapplicable)
Level 2	(Inapplicable)
■Level 3	No systems for reusing gray water.
Level 4	Gray water is reused.
Level 5	In addition to gray water reuse, there is equipment to reuse sewage.

Rainwater usage rate = Predicted rainwater usage volume / Total predicted water usage (main water + rainwater use)

2 Materials of Low Environmental Load

2.1 Recycled Materials

2.1.1 Efficiency on Structural Materials Reuse

Weight(default)= 0.67

Level 5	Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories
Level 1	(Inapplicable)
Level 2	(Inapplicable)
Level 3	Main structure is non-wooden structure(RC,SRC,Sstructure) and any measurement for assessment is not taken.(See Table A)
Level 4	Main structure is non-wooden structure(RC,SRC,Sstructure) and measurements for assessment are taken at the level of point 1 or more.(See Table A)
■Level 5	Main structure is non-wooden structure(RC,SRC,Sstructure) and any measurements for assessment are taken at the level of point 2 or more.(See Table A)

2.1.2 Efficiency of Non-structural Materials Reuse

Weight(default)= 0.33

Level 1	Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories
■Level 1	Total point score for reused materials(Table B+ Table C) is 0.
Level 2	(Inapplicable)
Level 3	Total point score for reused materials(Table B+ Table C) is 1.
Level 4	Total point score for reused materials(Table B+ Table C) is 2.
Level 5	Total point score for reused materials(Table B+ Table C) is 3 or more.

Table A: Measurements for assessing non-wooden skeleton

Total Points **2 points**

Point	Efforts to be evaluated
○	Electric furnace steel used for the main structure.(Other than reinforcement bars)
○	Portland blast furnace cement used in concrete portions of major structural elements
	Recycled aggregate used in concrete portions of major structural elements

Table B: Table of reused construction materials which score 1 point

Total Points **points**

Type	Materials used	Name	Use	Name of raw materials used
Heat-resistant and fire-resistant materials		Regular brick	Sidewalks, cycle paths, parking lots etc.	Sewage sludge
		Regular brick	Entire building outer shell	Metal scraps (aluminum dross)
Waterproof materials		Urethane film waterproof material	General building roof waterproofing Overall waterproofing repair for old impermeable layers.	Waste glass
		Asphalt waterproof material	Building waterproofing materials	Waste tires
		Impermeable layer protection materi	Concrete roofing Impermeable layer protection materials	Waste tires
Staircase components		Staircase anti-slip treatment	Resilient rubber finishes for staircases	Waste tires, construction waste etc.
Finishing paints		Finishing paints	Interior décor finishing materials	Waste glass
		PC curtain-wall	PC curtain-wall	Waste glass (cullet)
		Sound absorption materials	Acoustic board for walls and ceilings	Expanded polystyrene waste
		Sound absorption materials	Acoustic board for walls and ceilings	Waste glass (cullet)

Interior and exterior décor materials		Acoustic insulation panel	Reduction of noise on building staircases	Waste tires
		Press-formed flooring	Direct-laid resilient rubber flooring	Waste tires
		Flooring	Floors for food processing factories etc.	Waste glass
		False floor	Dry false floor underlay for sound insulation	Waste particle board
		False floor	Floor panels	Waste polypropylene resin
		False floor	False floor wiring storage systems	Waste glass (cullet)
		False floor	False floors for offices	Waste glass (cullet)
		False floor	Floor panels	Fused slag from urban garbage incinerators
		Veneer	For indoor and outdoor sports facilities Laminated roof board	Waste from domestic thinned timber (Cedar, cypress, pine)
		Decking	Promenade decking, play equipment	Wood scraps from demolition, reused plastics
		Medium-density fiber (MDF) board	For buildings, fixtures and furniture etc.	Sawmill waste, plywood waste, thinned timber
		Thermal insulation	General residential and non-residential insulation materials	Waste paper
		Eco-bricks (walls)	Interior and exterior wall finishes	Waste glass
Paving materials		Paving tiles	Paving of sidewalks etc.	Tile fragments
		Paving tiles	Exterior walls, interior walls, outside walls and floors	Waste glass
		Paving tiles	Permeable, non-slip tiles(General sidewalks etc.)	Scallop shells
		Resilient paving materials	Permeable paving, playing fields, promenades	Waste tires

Table C Table of reused construction materials which score 2 points Total Points **points**

Type	Materials used	Name	Use	Name of raw materials used
Interior and exterior décor materials		Particle board	Floors and furniture	Wood chips
Paving materials		Paving material blocks	Sidewalks, terraces, approach roads	Waste tires
		Paving material blocks	Sidewalks, terraces, approach roads	Sewage sludge slag
		Paving material blocks	Sidewalks, terraces, approach roads	Waste glass
		Paving material blocks	Paving of sidewalks, parking lots etc.	Waste plastic
		Interlocking blocks	Paving bricks	Waste clay from kilns etc.
		Interlocking blocks	Paving bricks	Fire-resistant brick fragments
		Interlocking blocks	Paving bricks	Waste glass

See: 1) "Guide to Recycled Construction Materials"The committee for the Promotion of Recycling of Construction By-product, 1999
2) "The Encyclopedia of Recycling" Maruzen Co., Ltd., 2001

2.2 Timber from Sustainable Forestry

Weight(default)= 0.04

Excluded	Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories
Level 1	(Inapplicable)
Level 2	Timber from sustainably managed forests is not used.
Level 3	Timber from sustainably managed forests supplies less than 10% of timber usage. Or, timber is not used, even in the structure.
Level 4	Timber from sustainably managed forests supplies 10~50% of timber usage.
Level 5	Timber from sustainably managed forests supplies 50% or more of timber usage.

2.3 Materials with Low Health Risks

Weight(default)= 0.08

Level 3	Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories
Level 1	(Inapplicable)
Level 2	(Inapplicable)
■Level 3	There is no building material category (indicated in Reference 1) without substances specified in the Pollutant Release and Transfer Register Law. Or the inspection has not been carried out.
Level 4	There are 1~3 building material categories (indicated in Reference 1) without substances specified in the Pollutant Release and Transfer Register Law.
Level 5	There are 4 or more building material categories (indicated in Reference 1) without substances specified in the Pollutant Release and Transfer Register Law.

■ Reference 1) Building materials to be evaluated Total **0** items

Materials used	Categories	Building materials to be evaluated
	Adhesive	For vinyl tile floors and seating
		For tiles
		For wall paper
		For floor board
	Sealants	For sash
		For Glass
		For tile joint
		For wall joint
	Waterproofing agents	Primer for waterproofing
		For paint (surface coating)
	Paint	For fittings (wooden and metal)
		For wooden parts（frames for floor and ceiling）
		For structural materials

		For walls
	Anti-corrosion treatment	For skeleton
		For materials other than skeleton
	Undercoats	For materials for coated floors
	Floor coverings	For finishing wax
	Preservatives	For wooden parts

2.4 Reuse of Existing Building Skeleton etc

Weight (default) = 0.18

Level 3	Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories
Level 1	(Inapplicable)
Level 2	(Inapplicable)
■Level 3	The existing building skeleton is not reused, or there is no existing building skelton on the site to use.
Level 4	The existing building skeleton is partially reused.
Level 5	The existing building skeleton is completely reused.

2.5 Reusability of Components & Materials

Weight (default) = 0.18

Level 3	Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories
Level 1	(Inapplicable)
Level 2	(Inapplicable)
■Level 3	None of the evaluated measures to encourage recycling of materials on demolition has been used.
Level 4	One or more of the evaluated measures to encourage recycling of materials on demolition has been used.
Level 5	Two or more of the evaluated measures to encourage recycling of materials on demolition have been used.

Efforts to be evaluated Total 0 items

Point	Efforts to be evaluated
	The structure and finishing materials can be separated easily.
	Interior finishes and equipment are not entangled, and each can easily be removed separately for demolition, refurbishment and remodeling.
	Reusable unit materials are used.

2.6 Use of CFCs & Halons

2.6.1 Fire Retardant

Weight (default) = 0.33

Level 4	Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories
Level 1	Halon fire retardant is used.
Level 2	(Inapplicable)
Level 3	Only used in “Critical-uses.”
■Level 4	No halon fire retardant is used.
Level 5	(Inapplicable)

2.6.2 Insulation Materials

Weight (default) = 0.33

Excluded	Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories
Level 1	Insulation foaming materials with OPD= 0.2 or above are used.
Level 2	Insulation foaming materials with OPD= 0.01~0.2 are used.
Level 3	Insulation foaming materials with OPD= 0.0~0.01 are used.
Level 4	(Inapplicable)
Level 5	Insulation foaming materials with ODP=0 and low GWP (less than 50, by 100-yr GWP), or natural materials are used. Or no insulation foaming material is used.

2.6.3 Refrigerants

Weight (default) = 0.33

Excluded	Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories
Level 1	(Inapplicable)
Level 2	HCFC is used as the refrigerant
Level 3	Refrigerant of ODP=0 is used as the refrigerant.
Level 4	Natural refrigerants and new chilling systems (ODP=0) are used.
Level 5	(Inapplicable)

Critical-uses for which halon fire retardants may be used (Prevention Notification No.155, Hazard Notification No.61, 16th May 2001)

Types of facility		Examples of facility
Communications equipment etc.	Communications equipment rooms etc.	Communications equipment rooms, wireless equipment rooms, telephone exchange rooms, magnetic disk rooms, computer rooms, telex rooms, telephone exchange switching rooms, communications equipment control rooms, dataprint rooms
	Broadcasting studios etc.	TV relay rooms, remote centers, studios, lighting control rooms, musical equipment rooms, adjustment rooms, monitor rooms, broadcasting equipment rooms
	Control rooms etc.	Electrical power control rooms, operation rooms, control rooms, management rooms, disaster prevention centers, dynamometer rooms
	Film storerooms	Film storage rooms, lighting control rooms, relay desks, VTR rooms, tape rooms, projector rooms, tape storerooms
	Measurement equipment rooms in hazardous material handling facilities	Measurement equipment rooms in hazardous material handling facilities
Historical assets	Exhibition rooms etc.	Important cultural assets, artwork repositories, exhibition rooms, showrooms
Others	Workshops etc.	Print rooms containing rotary presses

Foaming agents used in expanded plastic insulating materials

Application		Chemical name	ODP	GWP(100-year average)
Urethane foam	Prior to 1995	CFC-11	1	4000
	Beginning of 2000	HCFC-141b	0.11	630
Urethane modified isocyanurate foam	Next Generation	HFC-134a	0	1300
		HFC-245fa	0	560
		Cyclopentane C_5H_{10}	0	3
Styrene Olefin foam	Prior to 1995	CFC-12	1	8500

	Beginning of 2000	HCFC-142b	0.07	2000
	Next Generation	HFC-134a	0	1300
Phenol foam	Prior to 1995	CFC-113	0.8	5000
	After 2000	Dichloromethane CH_2Cl_2	0	

LR-3 Off-site Environment

Select from pull-down menus or enter figures and comments. **Construction Completion St**

1 Air Pollution

Weight Coefficient (default) = 0.10

Level 1	Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories Floor Area of "Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories"= 300m² Floor Area of Apartments = 300m²	Offices Schools Retailers Restaurants Halls Hospitals Hotels Factories Floor Area of "Offices Schools Retailers Restaurants Halls Hospitals Hotels Factories"= m²
	Preliminary Design Stage"Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories" Execution Design Stage & Construction Completion Stage "Apartments"	**Level 3** Execution Design Stage & Construction Completion Stage "Offices Schools Retailers Restaurants Halls Hospitals Hotels Factories"
■**Level 1**	On the Efforts to be evaluated , 0.0<= Credit Ratio (3)<0.2	**Level 1** Gas and dust concentrations at sources of NOx, SOx and dust exceed the emission standards set by the Clean Air Law or local ordinances.
Level 2	On the Efforts to be evaluated , 0.2<= Credit Ratio (3)<0.4	**Level 2** (Inapplicable)
Level 3	On the Efforts to be evaluated , 0.4<= Credit Ratio (3) <0.6	**Level 3** Gas and dust concentrations at sources of NOx, SOx and dust are reduced to below the emission standards*1 set by the Clean Air Law or local ordinances.
Level 4	On the Efforts to be evaluated , 0.6<= Credit Ratio (3)<0.8	**Level 4** Gas and dust concentrations at sources of NOx, SOx and dust are considerably reduced to below the emission standards*2 set by the Clean Air Law or local ordinances to a large extent.
Level 5	On the Efforts to be evaluated , 0.8<= Credit Ratio (3)	**Level 5** No combustion equipment is used and no air pollutant is generated from hypothetical enclosed space of target building and discharged to outside space.

Note) The criterion for concentration level is the Clean Air Law or the local ordinance, whichever is more stringent.
*1) For level 3, the concentration level should be limited to below the standard value and over 90% of the standrd value.
*2) For level 4, the emission concentration should be limited to below 90% of the standard value.

Efforts to be evaluated

Credits	Level of efforts			Efforts
	High	Low	None	
				I. Efforts within the building or the residential section.
Excluded	2	1	0	1) Selection of low-NOx and low-SOx equipment types (For systems installed in each dwelling)
Excluded	2	1	0	2) Selection of low-NOx and low-SOx equipment types. (Centralized type equipment)
Excluded	2	1	0	3) Use of clean fuels, such as low-sulfur fuel and natural gas.
Excluded	2	1	0	4) Existence of an operation monitoring plan.
Excluded	2	1	-	5) Others( )
				II. Efforts within the exterior
0	1	1	0	6) Use of plants to absorb NOx, SOx and dust.
Excluded	1	1	0	7)Use of atmospheric purification systems, such as photocatalysis and soil cleaning.
Excluded	1	1	-	8) Others ( )
'(1) Total Credits = **points**	(2) Maximum Credits = **1 points**			(3) Credits Ratio ((1) / (2)) = **0.00**

1) Select “Exclude” when only centralized systems are used.
2) Select “Exclude” when only systems for each dwelling are used

2 Noise, Vibration & Odor

2.1 Noise & Vibration

Weight Coefficient(default)== 0.50

Level 1	Offices Schools Retailers Restaurants Halls Factories Floor Area of "Offices Schools Retailers Restaurants Halls Factories"= m²	Hospitals Hotels Apartments Floor Area of "Hospitals Hotels"= m² Floor Area of "Apartments"= 300m²
■**Level 1**	On the Efforts to be evaluated , 0.0<= Credit Ratio (3)<0.2	On the Efforts to be evaluated , 0.0<= Credit Ratio (3)<0.1
Level 2	On the Efforts to be evaluated , 0.2<= Credit Ratio (3)<0.4	On the Efforts to be evaluated , 0.1<= Credit Ratio (3)<0.2
Level 3	On the Efforts to be evaluated , 0.4<= Credit Ratio (3) <0.6	On the Efforts to be evaluated , 0.2<= Credit Ratio (3)<0.4
Level 4	On the Efforts to be evaluated , 0.6<= Credit Ratio (3)<0.8	On the Efforts to be evaluated , 0.4<= Credit Ratio (3)<0.6
Level 5	On the Efforts to be evaluated , 0.8<= Credit Ratio (3)	On the Efforts to be evaluated , 0.6<= Credit Ratio (3)

Efforts to be evaluated

Credits	Level of efforts			Efforts
	High	Low	None	
				I. Dwellings section
0	2	1	0	1) Noise generated by the exterior machinery of air conditioning systems for individual dwellings should be evaluated according to the type of equipment, the installation location, installation spacing and the presence of noise countermeasures. (Applied to “apartments” only.)
Excluded	2	1	-	2) Others(Applied to “apartments” only.)
				II.Entire building and common properties
0	2	1	0	3) Use of low-noise and low-vibration equipment
0	2	1	0	4) Consideration of the installation positions of equipment that generates vibration and noise, and countermeasures against those sources (sound absorbers, sound-absorbent lagging* , vibration-damping construction, earthquake resistance processing etc.).
0	2	1	0	5) Consideration for extractor fan noise and other background noise generated in the building (positioning of extractor, ventilation and other openings, measures taken on fans, etc.).

0	2	1	0	6) Presence of measures to reduce wind roar from building exterior finishes
0	2	1	0	7) Measures to prevent the propagation of noise to adjacent land (anti-noise measures such as sound-baffling walls and trees etc.)
0	2	1	0	8) Presence of measures to reduce noise from on-site car parking to adjacent plots.
Excluded	2	1	-	9 Others ( )

(1) Total Credits = **points**	(2) Maximum Credits =	**12 points**	(3) Credits Ratio ((1) / (2)) =	**0.00**	←"Offices Schools Retailers Restaurants Halls Hospitals Hotels Factories"
(4) Total Credits = **points**	(5) Maximum Credits =	**14 points**	(6) Credits Ratio ((4) / (5)) =	**0.00**	←"Apartments"

2.2 Odors

Weight Coefficient (default) = 0.50

Level 1	Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories Floor Area of "Offices Schools Retailers Restaurants Halls Hospitals Hotels Factories" m² Floor Area of "Apartments"= 300m²
■**Level 1**	On the Efforts to be evaluated , 0.0<= Credit Ratio (3) or (6)<0.2
Level 2	On the Efforts to be evaluated , 0.2<= Credit Ratio (3) or (6)<0.4
Level 3	On the Efforts to be evaluated , 0.4<= Credit Ratio (3) or (6) <0.6
Level 4	On the Efforts to be evaluated , 0.6<= Credit Ratio (3) or (6)<0.8
Level 5	On the Efforts to be evaluated , 0.8<= Credit Ratio (3) or (6)

Efforts to be evaluated

Credits	Level of efforts			Efforts
	High	Low	None	
2	2	1	0	1) Measures targeting sources of odor. (Not applied to “apartments.”)
0	2	1	0	2) Installation of equipment to eliminate or reduce offensive odors. (Not applied to “apartments.”)
0	2	1	0	3) Measures against waste (organic etc.) generated by building operation
Excluded	2	1	-	4) Others ( )

(1) Total Credits = **2 points**	(2) Maximum Credits =	**6 points**	(3) Credits Ratio ((1) / (2)) =	**0.33**	←"Offices Schools Retailers Restaurants Halls Hospitals Hotels Factories"
(4) Total Credits = **points**	(5) Maximum Credits =	**2 points**	(6) Credits Ratio ((4) / (5)) =	**0.00**	←"Apartments"

3 Wind Damage & Sunlight Obstruction

Weight Coefficient (default) = 0.15

Level 1	Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories
■**Level 1**	On the Efforts to be evaluated , 0.0<= Credit Ratio (3)<0.2
Level 2	On the Efforts to be evaluated , 0.2<= Credit Ratio (3)<0.4
Level 3	On the Efforts to be evaluated , 0.4<= Credit Ratio (3) <0.6
Level 4	On the Efforts to be evaluated , 0.6<= Credit Ratio (3)<0.8
Level 5	On the Efforts to be evaluated , 0.8<= Credit Ratio (3)

Efforts to be evaluated

Credits	Level of efforts			Efforts
	High	Low	None	
				I. Prediction of wind damage
0	2	1	0	1) Conduct a preliminary survey of wind speed and direction and related factors in the area.
0	2	1	0	2) Use of simulations and other tools to predict wind damage.
				II. Restriction of wind damage
0	2	1	0	3) Measures to restrict wind damage
0	2	1	0	4) Measures to reduce the impact of wind damage
				III Restriction of sunlight obstruction
0	2	1	0	5 Consideration of shade cast on adjacent sites
Excluded	2	1	-	6 Others ( )

(1) Total Credits = **points**	(2) Maximum Credits =	**10 points**	(3) Credits Ratio ((1) / (2)) =	**0.00**	

4 Light Pollution

Weight Coefficient(default)= 0.10

Level 3	Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories
Level 1	(Inapplicable)
Level 2	(Inapplicable)
■**Level 3**	On the Efforts to Be Evaluated , 0 <=Credit Ratio (3)< 0.3
Level 4	On the Efforts to be evaluated , 0.3<= Credit Ratio (3)<0.6
Level 5	On the Efforts to be evaluated , 0.6<= Credit Ratio (3)

Efforts to be evaluated

Credits	Level of efforts			Efforts
	High	Low	None	
0	2	1	0	1) Outdoor illumination and light that spills from interiors
0	2	1	0	2) Light pollution from advertising displays
0	2	1	0	3) Reflected solar glare from building walls

(1) Total Credits = **points**	(2) Maximum Credits =	**6 points**	(3) Credits Ratio ((1) / (2)) =	**0.00**	

5 Heat Island Effect

Weight Coefficient(default)= 0.30

Level 1	Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories
■Level 1	On the Efforts to be evaluated , 0.0<= Credit Ratio (3)<0.2
Level 2	On the Efforts to be evaluated , 0.2<= Credit Ratio (3)<0.4
Level 3	On the Efforts to be evaluated , 0.4<= Credit Ratio (3) <0.6
Level 4	On the Efforts to be evaluated , 0.6<= Credit Ratio (3)<0.8
Level 5	On the Efforts to be evaluated , 0.8<= Credit Ratio (3)

Efforts to be evaluated

Credits	Level of efforts			Efforts
	Present		None	
0	2		0	1) Air movement leaving the site has been considered, and efforts have been made to reduce thermal impact. [1] Buildings are arranged so that they do not block existing paths of air movement. [2] Buildings are arranged so that they do not block paths of air movement in midsummer. [3] Provision of paths within the site, and provision of adequate spacing between buildings. [4] Appropriate building height and form for block spacing to avoid blocking air movement.
0	2		0	2) Exterior cladding materials have been considered, and efforts have been made to reduce thermal impact outside the site. [1] Select highly water-retaining and water-permeable path paving materials (paved surfaces). [2] Selection of paving materials for paths etc. with low solar absorption rate
0	2		0	3) Cladding materials of outside wall have been considered, and efforts have been made to reduce thermal impact outside the site. [1] Selection of building roofing materials with low solar absorption rate and high long-wavelength emission rates. [2] Selection of wall materials with low solar absorption rates. [3] Promotion of greening on building exterior surfaces (roof and wall).
0	2		0	4) Efforts have been made to reduce artificial heat emissions. [1] Use of energy-saving perimeter materials. [2] Use of energy-saving equipment. [3] Exploitation of natural energy (sunlight, wind, etc.) [4] Exploitation of unused energy (urban waste heat present in areas near the site, etc.). [5] Introduction of high-efficiency infrastructure[6] Shifting the heat discharge peak. * On evaluate when considering daytime conditions.
(1) Total Credits = **points**	(2) Maximum Credits = **8 points**		(3) Credits Ratio ((1) / (2)) =	**0.00**

6 Load on Local Infrastructure

Weight Coefficient (default) = 0.25

Level 1	Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories Floor Area of "Offices Schools Retailers Restaurants Halls Hospitals Hotels Factories"= m² Floor Area of "Apartments"= 300m²
■Level 1	On the Efforts to be evaluated , 0.0<= Credit Ratio (3)<0.2
Level 2	On the Efforts to be evaluated , 0.2<= Credit Ratio (3)<0.4
Level 3	On the Efforts to be evaluated , 0.4<= Credit Ratio (3)<0.6
Level 4	On the Efforts to be evaluated , 0.6<= Credit Ratio (3)<0.8
Level 5	On the Efforts to be evaluated , 0.8<= Credit Ratio (3)

Efforts to be evaluated

Credits	Level of efforts			Efforts
	High	Low	None	
				I .Efforts to reduce rainwater drainage load
2	2	1	0	1) Measures to encourage rainwater percolation to the ground surface (Topsoil conservation, permeable paving, percolation tanks, percolation pipes, etc.)
0	2	1	0	2) Provision of facilities for temporary rainwater storage (Installation of rainwater storage tanks, drainage basins, drainage facilities etc.)
Excluded	2	1	-	3) Others ( )
				II. Efforts to reduce sewage treatment load
0	2	1	0	4) Advanced purification of sewage and reduction of the discharge volume
Excluded	2	1	-	5) Others ( )
				III. Efforts to reduce automobile usage
				IIIa. Use of bicycles (use of alternative modes of transport)
0	2	1	0	6) Provision of bicycle parking space for building users
0	2	1	0	7) Consideration for the convenience of bicycle parking area users (Make sure the parking area is easy to move in and out of, and is in a convenient location).
Excluded	2	1	-	8) Others ( )
				IIIb. Efforts to provide car parking space.
0	2	1	0	9) Calculation of traffic loads generated on surrounding roads (when planning car parking)
0	2	1	0	10) Provision of an appropriate number of parking spaces (As a way of avoiding congestion and street parking in nearby roads)
0	2	1	0	11) Provision of parking facilities for unloading goods vehicles. (Not applied to “apartments.”)
0	2	1	0	12) Consideration for the placement of parking lot access roads
Excluded	2	1	-	13 Others ( )
				IV. Efforts to reduce garbage treatment load
0	2	1	0	14 Provide facilities and equipment for sorting and separation. (separate garbage boxes, a stock yard for sorted garbage, etc.).
0	2	1	0	15 Introduction of systems for volume reduction and composting of organic garbage (disposers, composters etc).

Excluded	2	1	-	16 Others ( )		
(1) Total Credits = **2 points**	(2) Maximum Credits = **22 points**			(3) Credits Ratio ((1) / (2)) =	**0.09**	←"Offices Schools Retailers Restaurants Halls Hospitals Hotels Factories"
(4) Total Credits = **2 points**	(5) Maximum Credits = **20 points**			(6) Credits Ratio ((1) / (2)) =	**0.10**	←"Apartments"

Weighting coefficients

		After correction		Before correction		Total (Before correction)		Select "Excluded"		Default weighting coefficients	
		Entire Building and Common Properties	Residential and Accomodation sections	Entire Building and Common Properties	Residential and Accomodation sections	Entire Building and Common Properties	Residential and Accomodation sections	Entire Building and Common Properties	Residential and Accomodation sections	Entire Building and Common Properties	Residential and Accomodation sections
Ratio of total floor area		0.100	0.90								
Q	Building Environmental Quality & Performance					1.00	0.00				
Q-1	**Indoor Environment**	**0.400**	**0.000**	**0.400**	**0.000**	**1.000**	**0.000**	**1.000**	**0.000**	**0.400**	**0.000**
1	**Noise & Acoustics**	**0.150**	**0.000**	**0.150**	**0.000**	0.200	0.600	**1.000**	**1.000**	**0.150**	**0.000**
1.1	Noise	0.000	0.667	0.000	0.400	0.000	0.500	0.000	1.000	0.400	0.400
1.1.1	Background noise	0.000	0.000	0.000	0.000			0.000	0.000	1.000	0.500
1.1.2	Equipment noise	0.000	1.000	0.000	0.500			0.000	1.000	0.000	0.500
1.2	Sound Insulation	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.400	0.400
1.2.1	Sound Insulation of Openings	0.000	0.000	0.000	0.000			0.000	0.000	1.000	0.300
1.2.2	Sound Insulation of Partition Walls	0.000	0.000	0.000	0.000			1.000	0.000	0.000	0.300
1.2.3	Sound Insulation of Floor Slabs (light-imp	0.000	0.000	0.000	0.000			1.000	0.000	0.000	0.200
1.2.4	Sound Insulation of Floor Slabs (heavy-in	0.000	0.000	0.000	0.000			1.000	0.000	0.000	0.200
1.3	Sound Absorption	1.000	0.333	0.200	0.200			1.000	1.000	0.200	0.200
2	**Thermal Comfort**	**0.350**	**0.000**	**0.350**	**0.000**	**0.500**	**0.500**	**1.000**	**1.000**	**0.350**	**0.000**
2.1	Room Temperature Control	1.000	1.000	0.500	0.500	0.700	0.500	1.000	1.000	0.500	0.500
2.1.1	Room Temperature Setting	0.714	1.000	0.500	0.500			1.000	1.000	0.500	0.500
2.1.2	Variable Loads & Following-up Control	0.000	0.000	0.000	0.000			1.000	0.000	0.000	0.000
2.1.3	Perimeter Performance	0.000	0.000	0.000	0.000			0.000	0.000	0.300	0.300
2.1.4	Zoned Control	0.000	0.000	0.000	0.000			1.000	0.000	0.000	0.000
2.1.5	Temperature & Humidity Control	0.286	0.000	0.200	0.000			1.000	1.000	0.200	0.000
2.1.6	Individual Control	0.000	0.000	0.000	0.000			0.000	0.000	0.000	0.200
2.1.7	Allowance for After-hours Air Conditioning	0.000	0.000	0.000	0.000			1.000	0.000	0.000	0.000
2.1.8	Monitoring Systems	0.000	0.000	0.000	0.000			1.000	0.000	0.000	0.000
2.2	Humidity Control	0.000	0.000	0.000	0.000			0.000	0.000	0.200	0.200
2.3	Type of Air Conditioning	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.300	0.300
2.3.1	Type of Air Conditioning	0.000	0.000	0.000	0.000			0.000	0.000	0.000	0.000
		0.000	0.000	0.000	0.000			0.000	0.000	0.000	0.000
3	**Lighting & Illumination**	**0.250**	**0.000**	**0.250**	**0.000**	**0.300**	**0.300**	**1.000**	**1.000**	**0.250**	**0.000**
3.1	Daylighting	1.000	1.000	0.300	0.300	0.400	0.200	1.000	1.000	0.300	0.300
3.1.1	Daylight Factor	0.000	0.000	0.000	0.000			0.000	0.000	0.600	0.500
3.1.2	Openings by Orientation	0.000	0.000	0.000	0.000			1.000	0.000	0.000	0.300
3.1.3	Daylight Devices	1.000	1.000	0.400	0.200			1.000	1.000	0.400	0.200
3.2	Anti-glare Measures	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.300	0.300
3.2.1	Glare from light fixtures	0.000	0.000	0.000	0.000			0.000	0.000	0.400	0.400
3.2.2	Daylight control	0.000	0.000	0.000	0.000			0.000	0.000	0.600	0.600
3.3	Illuminance Level	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.150	0.150
3.3.1	Illuminance Level	0.000	0.000	0.000	0.000			0.000	0.000	0.700	1.000
3.3.2	Uniformity Ratio of Illuminance	0.000	0.000	0.000	0.000			0.000	1.000	0.300	0.000
3.4	Lighting Controllability	0.000	0.000	0.000	0.000			0.000	0.000	0.250	0.250
4	**Air Quality**	**0.250**	**0.000**	**0.250**	**0.000**	**1.000**	**1.000**	**1.000**	**1.000**	**0.250**	**0.000**
4.1	Source Control	0.600	0.625	0.600	0.625	0.667	0.500	1.000	1.000	0.600	0.625
4.1.1	Chemical Pollutants	0.000	0.000	0.000	0.000			0.000	0.000	0.333	0.250
4.1.2	Mineral Fiber	0.500	0.500	0.333	0.250			1.000	1.000	0.333	0.250
4.1.3	Mites, Mold etc.	0.500	0.500	0.333	0.250			1.000	1.000	0.333	0.250
4.1.4	Legionella	0.000	0.000	0.000	0.000			1.000	0.000	0.000	0.250
4.2	Ventilation	0.400	0.375	0.400	0.375	0.500	0.250	1.000	1.000	0.400	0.375
4.2.1	Ventilation Rate	0.000	0.000	0.000	0.000			0.000	0.000	0.500	0.250
4.2.2	Natural Ventilation Performance	0.000	0.000	0.000	0.000			1.000	0.000	0.000	0.250
4.2.3	Consideration for Outside Air Intake	1.000	1.000	0.500	0.250			1.000	1.000	0.500	0.250
4.2.4	Air Supply Planning	0.000	0.000	0.000	0.000			1.000	0.000	0.000	0.250
4.3	Operation Plan	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4.3.1	CO_2 Monitoring	0.000	0.000	0.000	0.000			1.000	0.000	0.000	0.000
4.3.2	Control of Smoking	0.000	0.000	0.000	0.000			1.000	0.000	0.000	0.000
Q-2	**Quality of Service**	**0.300**	**0.000**	**0.300**	**0.000**	**0.312**	**0.000**	**1.000**	**0.000**	**0.300**	**0.000**
1	**Service Ability**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.400**	**0.000**
1.1	Functionality & Usability	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.600	0.000
1.1.1	Provision of Space & Storage	0.000	0.000	0.000	0.000			1.000	1.000	0.000	0.000
1.1.2	Adaptation of Building Structure & Services to IT Innovation	0.000	0.000	0.000	0.000			1.000	0.000	0.000	0.000
1.1.3	Barrier-free Planning	0.000	0.000	0.000	0.000			0.000	0.000	1.000	0.000
1.2	Amenity	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.400	1.000
1.2.1	Perceived Spaciousness & Access to Vie	0.000	0.000	0.000	0.000			1.000	0.000	0.000	0.500
1.2.2	Space for refreshment	0.000	0.000	0.000	0.000			1.000	0.000	0.000	0.000

Simplified weighting coefficients

		Weighting coefficients			Weighting coefficients of Residential and Accomodation Sections (simplified)		
		After correction	Before correction	Total (Before correction)	Hospitals	Hotels	Apartments
Ratio of total floor area					0.00	0.00	0.90
Q	Building Environmental Quality & Performance			1.00			
Q-1	**Indoor Environment**	**0.400**	**0.400**	1.000	**0.40**	**0.40**	**0.40**
1	**Noise & Acoustics**	**0.150**	**0.150**	0.200	**0.15**	**0.15**	**0.15**
1.1	Noise	0.000	0.000	0.000	0.40	0.40	0.40
1.1.1	Background noise	0.000	0.000		0.50	0.50	0.55
1.1.2	Equipment noise	0.000	0.000		0.50	0.50	0.45
1.2	Sound Insulation	0.000	0.000	0.630	0.40	0.40	0.40
1.2.1	Sound Insulation of Openings	0.000	0.000		1.00	1.00	0.37
1.2.2	Sound Insulation of Partition Walls	0.429	0.270		–	–	0.27
1.2.3	Sound Insulation of Floor Slabs (light-imp	0.286	0.180		–	–	0.18
1.2.4	Sound Insulation of Floor Slabs (heavy-in	0.286	0.180		–	–	0.18
1.3	Sound Absorption	1.000	0.200		0.20	0.20	0.20
2	**Thermal Comfort**	**0.350**	**0.350**	0.500	**0.35**	**0.35**	**0.35**
2.1	Room Temperature Control	1.000	0.500	0.520	0.50	0.50	0.50
2.1.1	Room Temperature Setting	0.962	0.500		0.30	0.30	0.50
2.1.2	Variable Loads & Following-up Control	0.000	0.000		–	–	–
2.1.3	Perimeter Performance	0.000	0.000		0.20	0.20	0.30
2.1.4	Zoned Control	0.000	0.000		0.30	0.30	–
2.1.5	Temperature & Humidity Control	0.038	0.020		0.10	0.10	0.02
2.1.6	Individual Control	0.000	0.000		–	–	0.18
2.1.7	Allowance for After-hours Air Conditioning	0.000	0.000		0.10	0.10	–
2.1.8	Monitoring Systems	0.000	0.000		–	–	–
2.2	Humidity Control	0.000	0.000		0.20	0.20	0.20
2.3	Type of Air Conditioning	0.000	0.000	0.000	0.30	0.30	0.30
2.3.1	Type of Air Conditioning	0.000	0.000		–	–	–
		0.000	0.000		–	–	–
3	**Lighting & Illumination**	**0.250**	**0.250**	0.300	**0.25**	**0.25**	**0.25**
3.1	Daylighting	1.000	0.300	0.490	0.30	0.30	0.30
3.1.1	Daylight Factor	0.000	0.000		0.60	0.60	0.51
3.1.2	Openings by Orientation	0.551	0.270		–	–	0.27
3.1.3	Daylight Devices	0.449	0.220		0.40	0.40	0.22
3.2	Anti-glare Measures	0.000	0.000	0.000	0.30	0.30	0.30
3.2.1	Glare from light fixtures	0.000	0.000		0.40	0.40	0.40
3.2.2	Daylight control	0.000	0.000		0.60	0.60	0.60
3.3	Illuminance Level	0.000	0.000	0.000	0.15	0.15	0.15
3.3.1	Illuminance Level	0.000	0.000		0.70	0.70	0.97
3.3.2	Uniformity Ratio of Illuminance	0.000	0.000		0.30	0.30	0.03
3.4	Lighting Controllability	0.000	0.000		0.25	0.25	0.25
4	**Air Quality**	**0.250**	**0.250**	1.000	**0.25**	**0.25**	**0.25**
4.1	Source Control	0.623	0.623	0.742	0.50	0.50	0.62
4.1.1	Chemical Pollutants	0.000	0.000		0.33	0.33	0.26
4.1.2	Mineral Fiber	0.348	0.258		0.33	0.33	0.26
4.1.3	Mites, Mold etc.	0.348	0.258		0.33	0.33	0.26
4.1.4	Legionella	0.303	0.225		–	–	0.23
4.2	Ventilation	0.378	0.378	0.725	0.30	0.30	0.38
4.2.1	Ventilation Rate	0.000	0.000		0.33	0.33	0.28
4.2.2	Natural Ventilation Performance	0.310	0.225		–	–	0.23
4.2.3	Consideration for Outside Air Intake	0.379	0.275		0.33	0.33	0.28
4.2.4	Air Supply Planning	0.310	0.225		0.33	0.33	0.23
4.3	Operation Plan	0.000	0.000	0.000	0.20	0.20	–
4.3.1	CO_2 Monitoring	0.000	0.000		–	–	–
4.3.2	Control of Smoking	0.000	0.000		1.00	1.00	–
Q-2	**Quality of Service**	**0.300**	**0.300**	0.312	**0.30**	**0.30**	**0.30**
1	**Service Ability**	**0.000**	**0.000**	0.000	**0.40**	**0.40**	**0.40**
1.1	Functionality & Usability	0.000	0.000	0.000	0.60	0.60	0.06
1.1.1	Provision of Space & Storage	0.000	0.000		–	–	–
1.1.2	Adaptation of Building Structure & Services to IT Innovation	0.000	0.000		–	–	–
1.1.3	Barrier-free Planning	0.000	0.000		1.00	1.00	0.10
1.2	Amenity	0.000	0.000	0.450	0.40	0.40	0.94
1.2.1	Perceived Spaciousness & Access to Vie	1.000	0.450		–	–	0.45
1.2.2	Space for refreshment	0.000	0.000		–	–	–

Weighting coefficients(default)

2

			Entire building and common properties									Residential and Accomodation sections		
	Item	Item name	Offices	Schools	Retailers	Restaurants	Hospitals	Hotels	Apartments	Halls	Factories	Hospitals-o	Hotels-o	Apartments-o
	Total floor area	Ratio of Total floor area							1.00					1.00
Q-1	1	**Indoor Environment**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.30**			
1	1.1	**Noise & Acoustics**	**0.15**	**0.15**	**0.15**	**0.15**	**0.15**	**0.15**	**0.15**	**0.23**	**0.15**			
1.1	1.1.1	Noise	0.40	0.40	0.70	0.40	0.40	0.40	0.40	1.00	0.40	0.40	0.40	0.40
1.1.1	1.1.1.1	Background noise	0.50	0.50	0.50	0.50	0.50	0.50	1.00	0.50	0.50	0.50	0.50	0.50
1.1.2	1.1.1.1	Equipment noise	0.50	0.50	0.50	0.50	0.50	0.50		0.50	0.50	0.50	0.50	0.50
1.2	1.1.1	Sound Insulation	0.40	0.40		0.40	0.40	0.40	0.40		0.40	0.40	0.40	0.40
1.2.1	1.1.1.2	Sound Insulation of Openings	0.60	0.30		0.60	1.00	1.00	1.00		0.60	0.30	0.30	0.30
1.2.2	1.1.1.2	Sound Insulation of Partition Walls	0.40	0.30		0.40					0.40	0.30	0.30	0.30
1.2.3	1.1.1.2	Sound Insulation of Floor Slabs (light-i		0.20								0.20	0.20	0.20
1.2.4	1.1.1.2	Sound Insulation of Floor Slabs (heavy		0.20								0.20	0.20	0.20
1.3	1.1.1	Sound Absorption	0.20	0.20	0.30	0.20	0.20	0.20	0.20		0.20	0.20	0.20	0.20
2	1.1	**Thermal Comfort**	**0.35**	**0.35**	**0.35**	**0.35**	**0.35**	**0.35**	**0.35**	**0.44**	**0.35**			
2.1	1.1.2	Room Temperature Control	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
2.1.1	1.1.2.1	Room Temperature Setting	0.30	0.30	0.30	0.30	0.30	0.30	0.50	0.30	0.30	0.40	0.40	0.50
2.1.2	1.1.2.1	Variable Loads & Following-up Control		0.20	0.20	0.20				0.30				
2.1.3	1.1.2.1	Perimeter Performance	0.20	0.20	0.10	0.10	0.20	0.20	0.30	0.10	0.20	0.30	0.30	0.30
2.1.4	1.1.2.1	Zoned Control	0.30		0.20	0.20	0.30	0.30		0.20	0.30			
2.1.5	1.1.2.1	Temperature & Humidity Control	0.10	0.10	0.10	0.10	0.10	0.10	0.20	0.10	0.10	0.20	0.20	
2.1.6	1.1.2.1	Consideration for overtime work & holi										0.10	0.10	0.20
2.1.7	1.1.2.1	Allowance for After-hours Air Condition	0.10	0.20			0.10	0.10			0.10			
2.1.8	1.1.2.1	Monitoring Systems			0.10	0.10								
2.2	1.1.2	Humidity Control	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
2.3	1.1.2	Type of Air Conditioning	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
2.3.1	1.1.2.3	Type of Air Conditioning												
0	1.1.2.3	0												
3	1.1	**Lighting & Illumination**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**		**0.25**			
3.1	1.1.3	Daylighting	0.30	0.30	0.50	1.00	0.30	0.30	0.30		0.30	0.30	0.30	0.30
3.1.1	1.1.3.1	Daylight Factor	0.60	0.60			0.60	0.60	0.60		0.60	0.60	0.60	0.50
3.1.2	1.1.3.1	Openings by Orientation												0.30
3.1.3	1.1.3.1	Daylight Devices	0.40	0.40	1.00	1.00	0.40	0.40	0.40		0.40	0.40	0.40	0.20
3.2	1.1.3	Anti-glare Measures	0.30	0.30			0.30	0.30	0.30		0.30	0.30	0.30	0.30
3.2.1	1.1.3.2	Glare from light fixtures	0.40	0.40			0.40	0.40	0.40		0.40	0.40	0.40	0.40
3.2.2	1.1.3.2	Daylight control	0.60	0.60			0.60	0.60	0.60		0.60	0.60	0.60	0.60
3.3	1.1.3	Illuminance Level	0.15	0.15			0.15	0.15	0.15		0.15	0.15	0.15	0.15
3.3.1	1.1.3.3	Illuminance Level	0.70	0.70			0.70	0.70	0.70		0.70	0.70	1.00	1.00
3.3.2	1.1.3.3	Uniformity Ratio of Illuminance	0.30	0.30			0.30	0.30	0.30		0.30	0.30		
3.4	1.1.3	Lighting Controllability	0.25	0.25	0.50		0.25	0.25	0.25		0.25	0.25	0.25	0.25
4	1.1	**Air Quality**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.33**	**0.25**			
4.1	1.1.4	Source Control	0.50	0.50	0.50	0.50	0.50	0.50	0.60	0.50	0.50	0.63	0.63	0.63
4.1.1	1.1.4.1	Chemical Pollutants	0.25	0.25	0.25	0.25	0.33	0.33	0.33	0.25	0.25	0.25	0.25	0.25
4.1.2	1.1.4.1	Mineral Fiber	0.25	0.25	0.25	0.25	0.33	0.33	0.33	0.25	0.25	0.25	0.25	0.25
4.1.3	1.1.4.1	Mites, Mold etc.	0.25	0.25	0.25	0.25	0.33	0.33	0.33	0.25	0.25	0.25	0.25	0.25
4.1.4	1.1.4.1	Legionella	0.25	0.25	0.25	0.25				0.25	0.25	0.25	0.25	0.25
4.2	1.1.4	Ventilation	0.30	0.30	0.30	0.30	0.30	0.30	0.40	0.30	0.30	0.38	0.38	0.38
4.2.1	1.1.4.2	Ventilation Rate	0.25	0.25	0.33	0.33	0.33	0.33	0.50	0.33	0.25	0.25	0.25	0.25
4.2.2	1.1.4.2	Natural Ventilation Performance	0.25	0.25							0.25	0.25	0.25	0.25
4.2.3	1.1.4.2	Consideration for Outside Air Intake	0.25	0.25	0.33	0.33	0.33	0.33	0.50	0.33	0.25	0.25	0.25	0.25
4.2.4	1.1.4.2	Air Supply Planning	0.25	0.25	0.33	0.33	0.33	0.33		0.33	0.25	0.25	0.25	0.25
4.3	1.1.4	Operation Plan	0.20	0.20	0.20	0.20	0.20	0.20		0.20	0.20			
4.3.1	1.1.4.3	CO2 Monitoring	0.50	0.50	0.50	0.50				0.50	0.50			
4.3.2	1.1.4.3	Control of Smoking	0.50	0.50	0.50	0.50	1.00	1.00		0.50	0.50			
Q-2	1	**Quality of Service**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**			
1	1.2	**Service Ability**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**			
1.1	1.2.1	Functionality & Usability	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	
1.1.1	1.2.1.1	Provision of Space & Storage	0.33								0.33	1.00	1.00	
1.1.2	1.2.1.1	Adaptation of Building Structure & Ser	0.33								0.33			
1.1.3	1.2.1.1	Barrier-free Planning	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33			
1.2	1.2.1	Amenity	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	1.00
1.2.1	1.2.1.2	Perceived Spaciousness & Access to V	0.33	0.50	0.33	0.50					0.33	0.50	0.50	0.50
1.2.2	1.2.1.2	Space for refreshment	0.33		0.33						0.33			

		After correction		Before correction		Total (Before correction)		Select "Excluded"		Default weighting coefficients		Weighting coefficients			Weighting coefficients of Residential and Accomodation Sections (simplified)		
		Entire Building and Common Properties	Residential and Accomodation sections	Entire Building and Common Properties	Residential and Accomodation sections	Entire Building and Common Properties	Residential and Accomodation sections	Entire Building and Common Properties	Residential and Accomodation sections	Entire Building and Common Properties	Residential and Accomodation sections	After correction	Before correction	Total (Before correction)	Hospitals	Hotels	Apartments
1.2.3	Décor Planning	0.000	0.000	0.000	0.000			0.000	0.000	1.000	0.500	0.000	0.000		1.00	1.00	0.55
2	Durability & Reliability	1.000	0.000	0.312	0.000	0.810	0.000	1.000	0.000	0.312	0.000	1.000	0.312	0.081	0.31	0.31	0.31
2.1	Earthquake Resistance	0.593	0.000	0.480	0.000	1.000	0.000	1.000	0.000	0.480	0.000	0.593	0.048	0.100	0.48	0.48	0.05
2.1.1	Earthquake-resistance	0.800	0.000	0.800	0.000			1.000	0.000	0.800	0.000	0.800	0.080		0.80	0.80	0.08
2.1.2	Seismic Isolation & Vibration Damping Systen	0.200	0.000	0.200	0.000			1.000	0.000	0.200	0.000	0.200	0.020		0.20	0.20	0.02
2.2	Service Life of Components	0.407	0.000	0.330	0.000	0.294	0.000	1.000	0.000	0.330	0.000	0.407	0.033	0.029	0.33	0.33	0.03
2.2.1	Necessary Refurbishment Interval for Exterior Finish	1.000	0.000	0.294	0.000			1.000	0.000	0.294	0.000	1.000	0.029		0.29	0.29	0.03
2.2.2	Necessary Renewal Interval for Main Interior Finishe	0.000	0.000	0.000	0.000			0.000	0.000	0.118	0.000	0.000	0.000		0.12	0.12	0.01
2.2.3	Necessary Renewal Interval for Plumbing & Wiring Material	0.000	0.000	0.000	0.000			0.000	0.000	0.294	0.000	0.000	0.000		0.29	0.29	0.03
2.2.4	Necessary Renewal Interval for Major Equipment & Service	0.000	0.000	0.000	0.000			0.000	0.000	0.294	0.000	0.000	0.000		0.29	0.29	0.03
2.3	Reliability	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.190	0.000	0.000	0.000	0.000	0.19	0.19	0.02
2.3.1	HVAC System	0.000	0.000	0.000	0.000			0.000	0.000	0.200	0.000	0.000	0.000		0.20	0.20	0.02
2.3.2	Water Supply & Drainage	0.000	0.000	0.000	0.000			0.000	0.000	0.200	0.000	0.000	0.000		0.20	0.20	0.02
2.3.3	Electrical Equipment	0.000	0.000	0.000	0.000			0.000	0.000	0.200	0.000	0.000	0.000		0.20	0.20	0.02
2.3.4	Support method of machines & ducts	0.000	0.000	0.000	0.000			0.000	0.000	0.200	0.000	0.000	0.000		0.20	0.20	0.02
2.3.5	Communications & IT equipment	0.000	0.000	0.000	0.000			0.000	0.000	0.200	0.000	0.000	0.000		0.20	0.20	0.02
3	Flexibility & Adaptability	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.288	0.000	0.000	0.000	0.450	0.29	0.29	0.29
3.1	Spatial Margin	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.000	0.900	–	–	0.45
3.1.1	Allowance for Story Height	0.000	0.000	0.000	0.000			1.000	0.000	0.000	0.600	0.600	0.540		–	–	0.54
3.1.2	Adaptability of Floor Layout	0.000	0.000	0.000	0.000			1.000	0.000	0.000	0.400	0.400	0.360		–	–	0.36
3.2	Floor Load Margin	0.000	0.000	0.000	0.000			1.000	0.000	0.000	0.500	1.000	0.450		–	–	0.45
3.3	Adaptability of Facilities	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000	1.00	1.00	0.10
3.3.1	Ease of Air Conditioning Duct Renewal	0.000	0.000	0.000	0.000			0.000	0.000	0.167	0.000	0.000	0.000		0.17	0.17	0.02
3.3.2	Ease of water supply & drain pipe renewa	0.000	0.000	0.000	0.000			0.000	0.000	0.167	0.000	0.000	0.000		0.17	0.17	0.02
3.3.3	Ease of Electrical Wiring Renewal	0.000	0.000	0.000	0.000			0.000	0.000	0.111	0.000	0.000	0.000		0.11	0.11	0.01
3.3.4	Ease of Communications Cable Renewal	0.000	0.000	0.000	0.000			0.000	0.000	0.111	0.000	0.000	0.000		0.11	0.11	0.01
3.3.5	Ease of Equipment Renewal	0.000	0.000	0.000	0.000			0.000	0.000	0.222	0.000	0.000	0.000		0.22	0.22	0.02
3.3.6	Provision of backup space	0.000	0.000	0.000	0.000			0.000	0.000	0.222	0.000	0.000	0.000		0.22	0.22	0.02
Q-3	Outdoor Environment on Site	0.300	0.000	0.300	0.000	0.400	0.000	1.000	0.000	0.300	0.000	0.300	0.300	0.400	0.30	0.30	0.30
1	Preservation & Creation of Biotope	0.000	0.000	0.000	0.000			0.000	0.000	0.300	0.000	0.000	0.000		0.30	0.30	0.30
2	Townscape & Landscape	1.000	0.000	0.400	0.000			1.000	0.000	0.400	0.000	1.000	0.400		0.40	0.40	0.40
3	Local Characteristics & Outdoor Amenity	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.300	0.000	0.000	0.000	0.000	0.30	0.30	0.30
3.1	Attention to Local Character & Improvement of Com	0.000	0.000	0.000	0.000			0.000	0.000	0.500	0.000	0.000	0.000		0.50	0.50	0.05
3.2	Improvement of the Thermal Environment on	0.000	0.000	0.000	0.000			0.000	0.000	0.500	0.000	0.000	0.000		0.50	0.50	0.05
LR	Reduction of Building Environmental Loadings			0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00		0.00	1.00			
LR-1	Energy	0.400	0.000	0.400	0.000	0.600	0.000	1.000	0.000	0.400	0.000	0.400	0.400	0.600	0.40	0.40	0.40
1	Building Thermal Load	0.000	0.000	0.000	0.000			0.000	0.000	0.400	0.000	0.000	0.000		0.30	0.30	0.40
2	Natural Energy Utilization	0.333	0.000	0.200	0.000	1.000	0.000	1.000	0.000	0.200	0.000	0.333	0.200		0.20	0.20	0.20
2.1	Direct use of natural energy	0.500	0.000	0.500	0.000			1.000	0.000	0.500	0.000	0.500	0.050		–	–	0.05
2.2	Converted Use of Renewable Energy	0.500	0.000	0.500	0.000			1.000	0.000	0.500	0.000	0.500	0.050		–	–	0.05
3	Efficiency in Building Service System	0.667	0.000	0.400	0.000	0.000	0.000	1.000	0.000	0.400	0.000	0.667	0.400	0.000	0.30	0.30	0.40
3.1	HVAC System	0.000	0.000	0.000	0.000			0.000	0.000	0.000	0.000	0.000	0.000		0.55	0.40	–
3.2	Ventilation System	0.000	0.000	0.000	0.000			0.000	0.000	0.000	0.000	0.000	0.000		0.10	0.15	–
3.3	Lighting System	0.000	0.000	0.000	0.000			0.000	0.000	0.000	0.000	0.000	0.000		0.20	0.20	–
3.4	Hot Water Supply System	1.000	0.000	1.000	0.000			1.000	0.000	1.000	0.000	1.000	0.100		0.15	0.20	0.10
3.5	Elevators	0.000	0.000	0.000	0.000			0.000	0.000	0.000	0.000	0.000	0.000		–	0.05	–
4	Efficient Operation	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.20	0.20	–
4.1	Monitoring	0.000	0.000	0.000	0.000			1.000	0.000	0.000	0.000	0.000	0.000		0.50	0.50	–
4.2	Operational Management System	0.000	0.000	0.000	0.000			1.000	0.000	0.000	0.000	0.000	0.000		0.50	0.50	–
LR-2	Resources & Materials	0.300	0.000	0.300	0.000	1.000	0.000	1.000	0.000	0.300	0.000	0.300	0.300	1.000	0.30	0.30	0.30
1	Water Resources	0.150	0.000	0.150	0.000	1.000	0.000	1.000	0.000	0.150	0.000	0.150	0.150	0.100	0.15	0.15	0.15
1.1	Water Saving	0.400	0.000	0.400	0.000			1.000	0.000	0.400	0.000	0.400	0.040		0.40	0.40	0.04
1.2	Rainwater & Gray Water	0.600	0.000	0.600	0.000	1.000	0.000	1.000	0.000	0.600	0.000	0.600	0.060	0.100	0.60	0.60	0.06
1.2.1	Rainwater Use Systems	0.667	0.000	0.667	0.000			1.000	0.000	0.667	0.000	0.667	0.067		0.67	0.67	0.07
1.2.2	Gray Water Reuse System	0.333	0.000	0.333	0.000			1.000	0.000	0.333	0.000	0.333	0.033		0.33	0.33	0.03
2	Materials of Low Environmental Load	0.850	0.000	0.850	0.000	0.788	0.000	1.000	0.000	0.850	0.000	0.850	0.850	0.079	0.85	0.85	0.85
2.1	Recycled Materials	0.448	0.000	0.353	0.000	0.667	0.000	1.000	0.000	0.353	0.000	0.448	0.035		0.35	0.35	0.04
2.1.1	Reuse Efficiency of Materials Used in Structu	1.000	0.000	0.667	0.000			1.000	0.000	0.667	0.000	0.667	0.067		0.67	0.67	0.07
2.1.2	Reuse Efficiency of Non-structural Materials	0.000	0.000	0.000	0.000			0.000	0.000	0.333	0.000	0.000	0.000		0.33	0.33	0.03
2.2	Timber from Sustainable Forestry	0.000	0.000	0.000	0.000			0.000	0.000	0.035	0.000	0.000	0.000		0.04	0.04	0.00
2.3	Materials with Low Health Risks	0.104	0.000	0.082	0.000			1.000	0.000	0.082	0.000	0.104	0.008		0.08	0.08	0.01
2.4	Reuse of Existing Building Structure etc.	0.224	0.000	0.176	0.000			1.000	0.000	0.176	0.000	0.224	0.018		0.18	0.18	0.02
2.5	Predicted Volume of Recyclable Materials	0.000	0.000	0.000	0.000			0.000	0.000	0.176	0.000	0.000	0.000		0.18	0.18	0.02
2.6	Use of CFCs & Halons	0.224	0.000	0.176	0.000	0.333	0.000	1.000	0.000	0.176	0.000	0.224	0.018	0.033	0.18	0.18	0.02
2.6.1	Fire Retardant	1.000	0.000	0.333	0.000			1.000	0.000	0.333	0.000	1.000	0.033		0.33	0.33	0.03
2.6.2	Insulation Materials	0.000	0.000	0.000	0.000			0.000	0.000	0.333	0.000	0.000	0.000		0.33	0.33	0.03
2.6.3	Refrigerants	0.000	0.000	0.000	0.000			0.000	0.000	0.333	0.000	0.000	0.000		0.33	0.33	0.03
LR-3	Off-site Environment	0.300	0.000	0.300	0.000	0.250	0.000	1.000	0.000	0.300	0.000	0.300	0.300	0.250	0.30	0.30	0.30
1	Air Pollution	0.000	0.000	0.000	0.000			0.000	0.000	0.100	0.000	0.000	0.000		0.10	0.10	0.10
2	Noise, Vibration & Odor	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.100	0.000	0.000	0.000	0.000	0.10	0.10	0.10
2.1	Noise & Vibration	0.000	0.000	0.000	0.000			0.000	0.000	0.500	0.000	0.000	0.000		0.50	0.50	0.05
2.2	Odors	0.000	0.000	0.000	0.000			0.000	0.000	0.500	0.000	0.000	0.000		0.50	0.50	0.05
3	Wind Damage & Sunlight Obstruction	0.000	0.000	0.000	0.000			0.000	0.000	0.150	0.000	0.000	0.000		0.15	0.15	0.15
4	Light Pollution	0.000	0.000	0.000	0.000			0.000	0.000	0.100	0.000	0.000	0.000		0.10	0.10	0.10
5	Heat Island Effect	0.000	0.000	0.000	0.000			0.000	0.000	0.300	0.000	0.000	0.000		0.30	0.30	0.30
6	Load on Local Infrastructure	1.000	0.000	0.250	0.000			1.000	0.000	0.250	0.000	1.000	0.250		0.25	0.25	0.25

			Entire building and common properties									Residential and Accomodation sections		
	Item	Item name	Offices	Schools	Retailers	Restaurants	Hospitals	Hotels	Apartments	Halls	Factories	Hospitals-o	Hotels-o	Apartments-o
1.2.3	1.2.1.2	Décor Planning	0.33	0.50	0.33	0.50	1.00	1.00	1.00	1.00	0.33	0.50	0.50	0.50
2	1.2	Durability & Reliability	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31			
2.1	1.2.2	Earthquake Resistance	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48			
2.1.1	1.2.2.1	Earthquake-resistance	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80			
2.1.2	1.2.2.1	Seismic Isolation & Vibration Damping	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20			
2.2	1.2.2	Service Life of Components	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33			
2.2.1	1.2.2.2	Necessary Refurbishment Interval for E	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29			
2.2.2	1.2.2.2	Necessary Renewal Interval for Main In	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12			
2.2.3	1.2.2.2	Necessary Renewal Interval for Plumbi	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29			
2.2.4	1.2.2.2	Necessary Renewal Interval for Major	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29			
2.3	1.2.2	Reliability	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19			
2.3.1	1.2.2.3	HVAC System	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20			
2.3.2	1.2.2.3	Water Supply & Drainage	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20			
2.3.3	1.2.2.3	Electrical Equipment	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20			
2.3.4	1.2.2.3	Support method of machines & ducts	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20			
2.3.5	1.2.2.3	Communications & IT equipment	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20			
3	1.2	Flexibility & Adaptability	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29			
3.1	1.2.3	Spatial Margin	0.31	0.31	0.31	0.31				0.31	0.31	0.50	0.50	0.50
3.1.1	1.2.3.1	Allowance for Story Height	0.60	0.60	0.60	0.60					0.60	0.60	0.60	0.60
3.1.2	1.2.3.1	Adaptability of Floor Layout	0.40	0.40	0.40	0.40				1.00	0.40	0.40	0.40	0.40
3.2	1.2.3	Floor Load Margin	0.31	0.31	0.31	0.31				0.31	0.31	0.50	0.50	0.50
3.3	1.2.3	Adaptability of Facilities	0.38	0.38	0.38	0.38	1.00	1.00	1.00	0.38	0.38			
3.3.1	1.2.3.3	Ease of Air Conditioning Duct Renewa	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17			
3.3.2	1.2.3.3	Ease of water supply & drain pipe rene	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17			
3.3.3	1.2.3.3	Ease of Electrical Wiring Renewal	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11			
3.3.4	1.2.3.3	Ease of Communications Cable Renew	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11			
3.3.5	1.2.3.3	Ease of Equipment Renewal	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22			
3.3.6	1.2.3.3	Provision of backup space	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22			
Q-3	1	Outdoor Environment on Site	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.40			
1	1.3	Preservation & Creation of Biotope	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30			
2	1.3	Townscape & Landscape	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40			
3	1.3	Local Characteristics & Outdoor Am	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30			
3.1	1.3.3	Attention to Local Character & Improve	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50			
3.2	1.3.3	Improvement of the Thermal Environm	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50			
0	0	tion of Building Environmental Lo												
LR-1	2	Energy	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40			
1	2.1	Building Thermal Load	0.30	0.30	0.30	0.30	0.30	0.30	0.40	0.30				
2	2.1	Natural Energy Utilization	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.29			
2.1	2.1.2	Direct use of natural energy							0.50					
2.2	2.1.2	Converted Use of Renewable Energy							0.50					
3	2.1	Efficiency in Building Service Syster	0.30	0.30	0.30	0.30	0.30	0.30	0.40	0.30	0.43			
3.1	2.1.3	HVAC System	0.45	0.65	0.40	0.40	0.55	0.40		0.40				
3.2	2.1.3	Ventilation System	0.15	0.10	0.10	0.10	0.10	0.15		0.10				
3.3	2.1.3	Lighting System	0.30	0.20	0.35	0.35	0.20	0.20		0.35	0.85			
3.4	2.1.3	Hot Water Supply System	0.05	0.05	0.15	0.15	0.15	0.20	1.00	0.15	0.15			
3.5	2.1.3	Elevators	0.05					0.05						
4	2.1	Efficient Operation	0.20	0.20	0.20	0.20	0.20	0.20		0.20	0.29			
4.1	2.1.4	Monitoring	0.50	0.50	0.50	0.50	0.50	0.50		0.50	0.50			
4.2	2.1.4	Operational Management System	0.50	0.50	0.50	0.50	0.50	0.50		0.50	0.50			
LR-2	2	Resources & Materials	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30			
1	2.2	Water Resources	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15			
1.1	2.2.1	Water Saving	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40			
1.2	2.2.1	Rainwater & Gray Water	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60			
1.2.1	2.2.1.2	Rainwater Use Systems	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67			
1.2.2	2.2.1.2	Gray Water Reuse System	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33			
2	2.2	Materials of Low Environmental Loa	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85			
2.1	2.2.2	Recycled Materials	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35			
2.1.1	2.2.2.1	Reuse Efficiency of Materials Used in S	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67			
2.1.2	2.2.2.1	Reuse Efficiency of Non-structural Mat	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33			
2.2	2.2.2	Timber from Sustainable Forestry	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04			
2.3	2.2.2	Materials with Low Health Risks	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08			
2.4	2.2.2	Reuse of Existing Building Structure et	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18			
2.5	2.2.2	Predicted Volume of Recyclable Mater	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18			
2.6	2.2.2	Use of CFCs & Halons	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18			
2.6.1	2.2.2.6	Fire Retardant	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33			
2.6.2	2.2.2.6	Insulation Materials	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33			
2.6.3	2.2.2.6	Refrigerants	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33			
LR-3	2	Off-site Environment	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30			
1	2.3	Air Pollution	0.15	0.15	0.15	0.15	0.10	0.10	0.10	0.15	0.15			
2	2.3	Noise, Vibration & Odor	0.15	0.15	0.15	0.15	0.10	0.10	0.10	0.15	0.15			
2.1	2.3.2	Noise & Vibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50			
2.2	2.3.2	Odors	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50			
3	2.3	Wind Damage & Sunlight Obstructio	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15			
4	2.3	Light Pollution	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10			
5	2.3	Heat Island Effect	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30			
6	2.3	Load on Local Infrastructure	0.15	0.15	0.15	0.15	0.25	0.25	0.25	0.15	0.15			

1. Preliminary Design

	Item	Item name	Entire building and common properties									Residential and Accomodation sections		
			Offices	Schools	Retailers	Restaurants	Hospitals	Hotels	Apartments	Halls	Factories	Hospitals-d	Hotels-o	Apartments-o
		Building Environmental Quality & Performance												
Q-1	**1**	**Indoor Environment**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.30**			
1	**1.1**	**Noise & Acoustics**	**0.15**	**0.15**	**0.15**	**0.15**	**0.15**	**0.15**	**0.15**	**0.23**	**0.15**			
1.1	1.1.1	Noise								1.00				
1.1.1	1.1.1.1	Background noise								1.00				
1.1.2	1.1.1.1	Equipment noise												
1.2	1.1.1	Sound Insulation	0.70	0.70		0.70	0.70	0.70	0.70		0.70	0.70	0.70	0.70
1.2.1	1.1.1.2	Sound Insulation of Openings	0.60	0.40		0.60	1.00	1.00	1.00		0.60	0.30	0.30	0.30
1.2.2	1.1.1.2	Sound Insulation of Partition Walls	0.40	0.30		0.40					0.40	0.30	0.30	0.30
1.2.3	1.1.1.2	Sound Insulation of Floor Slabs (light-impact)		0.15								0.20	0.20	0.20
1.2.4	1.1.1.2	Sound Insulation of Floor Slabs (heavy-impact)		0.15								0.20	0.20	0.20
1.3	1.1.1	Sound Absorption	0.30	0.30	1.00	0.30	0.30	0.30	0.30		0.30	0.30	0.30	0.30
2	**1.1**	**Thermal Comfort**	**0.35**	**0.35**	**0.35**	**0.35**	**0.35**	**0.35**	**0.35**	**0.44**	**0.35**			
2.1	1.1.2	Room Temperature Control	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
2.1.1	1.1.2.1	Room Temperature Setting	0.30	0.60	0.30	0.30	0.30	0.30	0.60	0.30	0.30	0.60	0.60	0.60
2.1.2	1.1.2.1	Variable Loads & Following-up Control												
2.1.3	1.1.2.1	Perimeter Performance	0.20	0.40	0.20	0.20	0.20	0.20	0.40	0.20	0.20	0.40	0.40	0.40
2.1.4	1.1.2.1	Zoned Control	0.50		0.50	0.50	0.50	0.50		0.50	0.50			
2.1.5	1.1.2.1	Temperature & Humidity Control												
2.1.6	1.1.2.1	Consideration for overtime work & holidays												
2.1.7	1.1.2.1	Allowance for After-hours Air Conditioning												
2.1.8	1.1.2.1	Monitoring Systems												
2.2	1.1.2	Humidity Control	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
2.3	1.1.2	Type of Air Conditioning	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
2.3.1	1.1.2.3	Type of Air Conditioning												
	1.1.2.3													
3	**1.1**	**Lighting & Illumination**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**		**0.25**			
3.1	1.1.3	Daylighting	0.30	0.30	0.50	1.00	0.30	0.30	0.30		0.30	0.30	0.30	0.30
3.1.1	1.1.3.1	Daylight Factor	0.60	0.60			0.60	0.60	0.60		0.60	0.60	0.60	0.50
3.1.2	1.1.3.1	Openings by Orientation												0.30
3.1.3	1.1.3.1	Daylight Devices	0.40	0.40	1.00	1.00	0.40	0.40	0.40		0.40	0.40	0.40	0.20
3.2	1.1.3	Anti-glare Measures	0.30	0.30			0.30	0.30	0.30		0.30	0.30	0.30	0.30
3.2.1	1.1.3.2	Glare from light fixtures												
3.2.2	1.1.3.2	Daylight control	1.00	1.00			1.00	1.00	1.00		1.00	1.00	1.00	1.00
3.3	1.1.3	Illuminance Level	0.15	0.15			0.15	0.15	0.15		0.15	0.15	0.15	0.15
3.3.1	1.1.3.3	Illuminance Level	1.00	1.00			1.00	1.00	1.00		1.00	1.00	1.00	1.00
3.3.2	1.1.3.3	Uniformity Ratio of Illuminance												
3.4	1.1.3	Lighting Controllability	0.25	0.25	0.50	0.00	0.25	0.25	0.25		0.25	0.25	0.25	0.25
4	**1.1**	**Air Quality**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.33**	**0.25**			
4.1	1.1.4	Source Control	0.50	0.50	0.50	0.50	0.50	0.50	0.60	0.50	0.50	0.63	0.63	0.63
4.1.1	1.1.4.1	Chemical Pollutants	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
4.1.2	1.1.4.1	Mineral Fiber												
4.1.3	1.1.4.1	Mites, Mold etc.												
4.1.4	1.1.4.1	Legionella												
4.2	1.1.4	Ventilation	0.30	0.30	0.30	0.30	0.30	0.30	0.40	0.30	0.30	0.38	0.38	0.38
4.2.1	1.1.4.2	Ventilation Rate	0.33	0.33	0.50	0.50	0.50	0.50	0.50	0.50	0.33	0.33	0.33	0.33
4.2.2	1.1.4.2	Natural Ventilation Performance	0.33	0.33							0.33	0.33	0.33	0.33
4.2.3	1.1.4.2	Consideration for Outside Air Intake	0.33	0.33	0.50	0.50	0.50	0.50	0.50	0.50	0.33	0.33	0.33	0.33
4.2.4	1.1.4.2	Air Supply Planning												
4.3	1.1.4	Operation Plan	0.20	0.20	0.20	0.20	0.20	0.20		0.20	0.20			
4.3.1	1.1.4.3	CO_2 Monitoring	0.50	0.50	0.50	0.50				0.50	0.50			
4.3.2	1.1.4.3	Control of Smoking	0.50	0.50	0.50	0.50	1.00	1.00		0.50	0.50			
Q-2	**1**	**Quality of Service**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**			
1	**1.2**	**Service Ability**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**			
1.1	1.2.1	Functionality & Usability	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	
1.1.1	1.2.1.1	Provision of Space & Storage	0.33								0.33	1.00	1.00	
1.1.2	1.2.1.1	Adaptation of Building Structure & Services to IT Innovation	0.33								0.33			
1.1.3	1.2.1.1	Barrier-free Planning	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33			
1.2	1.2.1	Amenity	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	1.00
1.2.1	1.2.1.2	Perceived Spaciousness & Access to Vie	0.33	0.50	0.33	0.50					0.33	0.50	0.50	0.50
1.2.2	1.2.1.2	Space for refreshment	0.33	0.00	0.33						0.33			

2. Execution design & Construction completion stage

	Item	Item name	Entire building and common properties									Residential and Accomodation section		
			Offices	Schools	Retailers	Restaurants	Hospitals	Hotels	Apartments	Halls	Factories	Hospitals-d	Hotels-o	Apartments-o
		Building Environmental Quality & Performance												
Q-1	**1**	**Indoor Environment**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.30**			
1	**1.1**	**Noise & Acoustics**	**0.15**	**0.15**	**0.15**	**0.15**	**0.15**	**0.15**	**0.15**	**0.23**	**0.15**			
1.1	1.1.1	Noise	0.40	0.40	0.70	0.40	0.40	0.40	0.40	1.00	0.40	0.40	0.40	0.40
1.1.1	1.1.1.1	Background noise	0.50	0.50	0.50	0.50	0.50	0.50	1.00	0.50	0.50	0.50	0.50	0.50
1.1.2	1.1.1.1	Equipment noise	0.50	0.50	0.50	0.50	0.50	0.50		0.50	0.50	0.50	0.50	0.50
1.2	1.1.1	Sound Insulation	0.40	0.40		0.40	0.40	0.40	0.40		0.40	0.40	0.40	0.40
1.2.1	1.1.1.2	Sound Insulation of Openings	0.60	0.30		0.60	1.00	1.00	1.00		0.60	0.30	0.30	0.30
1.2.2	1.1.1.2	Sound Insulation of Partition Walls	0.40	0.30		0.40					0.40	0.30	0.30	0.30
1.2.3	1.1.1.2	Sound Insulation of Floor Slabs (light-impact)		0.20								0.20	0.20	0.20
1.2.4	1.1.1.2	Sound Insulation of Floor Slabs (heavy-impact)		0.20								0.20	0.20	0.20
1.3	1.1.1	Sound Absorption	0.20	0.20	0.30	0.20	0.20	0.20	0.20		0.20	0.20	0.20	0.20
2	**1.1**	**Thermal Comfort**	**0.35**	**0.35**	**0.35**	**0.35**	**0.35**	**0.35**	**0.35**	**0.44**	**0.35**			
2.1	1.1.2	Room Temperature Control	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
2.1.1	1.1.2.1	Room Temperature Setting	0.30	0.30	0.30	0.30	0.30	0.30	0.50	0.30	0.30	0.40	0.40	0.50
2.1.2	1.1.2.1	Variable Loads & Following-up Control		0.20	0.20	0.20				0.30				
2.1.3	1.1.2.1	Perimeter Performance	0.20	0.20	0.10	0.10	0.20	0.20	0.30	0.10	0.20	0.30	0.30	0.30
2.1.4	1.1.2.1	Zoned Control	0.30		0.20	0.20	0.30	0.30		0.20	0.30			
2.1.5	1.1.2.1	Temperature & Humidity Control	0.10	0.10	0.10	0.10	0.10	0.10	0.20	0.10	0.10	0.20	0.20	
2.1.6	1.1.2.1	Consideration for overtime work & holidays										0.10	0.10	0.20
2.1.7	1.1.2.1	Allowance for After-hours Air Conditioning	0.10	0.20			0.10	0.10			0.10			
2.1.8	1.1.2.1	Monitoring Systems			0.10	0.10								
2.2	1.1.2	Humidity Control	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
2.3	1.1.2	Type of Air Conditioning	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
2.3.1	1.1.2.3	Type of Air Conditioning												
	1.1.2.3													
3	**1.1**	**Lighting & Illumination**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.00**	**0.25**			
3.1	1.1.3	Daylighting	0.30	0.30	0.50	1.00	0.30	0.30	0.30		0.30	0.30	0.30	0.30
3.1.1	1.1.3.1	Daylight Factor	0.60	0.60			0.60	0.60	0.60		0.60	0.60	0.60	0.50
3.1.2	1.1.3.1	Openings by Orientation												0.30
3.1.3	1.1.3.1	Daylight Devices	0.40	0.40	1.00	1.00	0.40	0.40	0.40		0.40	0.40	0.40	0.20
3.2	1.1.3	Anti-glare Measures	0.30	0.30			0.30	0.30	0.30		0.30	0.30	0.30	0.30
3.2.1	1.1.3.2	Glare from light fixtures	0.40	0.40			0.40	0.40	0.40		0.40	0.40	0.40	0.40
3.2.2	1.1.3.2	Daylight control	0.60	0.60			0.60	0.60	0.60		0.60	0.60	0.60	0.60
3.3	1.1.3	Illuminance Level	0.15	0.15			0.15	0.15	0.15		0.15	0.15	0.15	0.15
3.3.1	1.1.3.3	Illuminance Level	0.70	0.70			0.70	0.70	0.70		0.70	0.70	1.00	1.00
3.3.2	1.1.3.3	Uniformity Ratio of Illuminance	0.30	0.30			0.30	0.30	0.30		0.30	0.30		
3.4	1.1.3	Lighting Controllability	0.25	0.25	0.50		0.25	0.25	0.25		0.25	0.25	0.25	0.25
4	**1.1**	**Air Quality**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.33**	**0.25**			
4.1	1.1.4	Source Control	0.50	0.50	0.50	0.50	0.50	0.50	0.60	0.50	0.50	0.63	0.63	0.63
4.1.1	1.1.4.1	Chemical Pollutants	0.25	0.25	0.25	0.25	0.33	0.33	0.33	0.25	0.25	0.25	0.25	0.25
4.1.2	1.1.4.1	Mineral Fiber	0.25	0.25	0.25	0.25	0.33	0.33	0.33	0.25	0.25	0.25	0.25	0.25
4.1.3	1.1.4.1	Mites, Mold etc.	0.25	0.25	0.25	0.25	0.33	0.33	0.33	0.25	0.25	0.25	0.25	0.25
4.1.4	1.1.4.1	Legionella	0.25	0.25	0.25	0.25	0.00	0.00	0.00	0.25	0.25	0.25	0.25	0.25
4.2	1.1.4	Ventilation	0.30	0.30	0.30	0.30	0.30	0.30	0.40	0.30	0.30	0.38	0.38	0.38
4.2.1	1.1.4.2	Ventilation Rate	0.25	0.25	0.33	0.33	0.33	0.33	0.50	0.33	0.25	0.25	0.25	0.25
4.2.2	1.1.4.2	Natural Ventilation Performance	0.25	0.25							0.25	0.25	0.25	0.25
4.2.3	1.1.4.2	Consideration for Outside Air Intake	0.25	0.25	0.33	0.33	0.33	0.33	0.50	0.33	0.25	0.25	0.25	0.25
4.2.4	1.1.4.2	Air Supply Planning	0.25	0.25	0.33	0.33	0.33	0.33		0.33	0.25	0.25	0.25	0.25
4.3	1.1.4	Operation Plan	0.20	0.20	0.20	0.20	0.20	0.20		0.20	0.20			
4.3.1	1.1.4.3	CO2 Monitoring	0.50	0.50	0.50	0.50				0.50	0.50			
4.3.2	1.1.4.3	Control of Smoking	0.50	0.50	0.50	0.50	1.00	1.00		0.50	0.50			
Q-2	**1**	**Quality of Service**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**			
1	**1.2**	**Service Ability**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**			
1.1	1.2.1	Functionality & Usability	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	
1.1.1	1.2.1.1	Provision of Space & Storage	0.33				0.33	1.00	1.00					
1.1.2	1.2.1.1	Adaptation of Building Structure & Service	0.33				0.33							
1.1.3	1.2.1.1	Barrier-free Planning	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33			
1.2	1.2.1	Amenity	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	1.00
1.2.1	1.2.1.2	Perceived Spaciousness & Access to Vie	0.33	0.50	0.33	0.50					0.33	0.50	0.50	0.50
1.2.2	1.2.1.2	Space for refreshment	0.33		0.33						0.33			

			Entire building and common properties									Residential and Accomodation sections		
	Item	Item name	Offices	Schools	Retailers	Restaurants	Hospitals	Hotels	Apartments	Halls	Factories	Hospitals-o	Hotels-o	Apartments-o
1.2.3	1.2.1.2	Décor Planning	0.33	0.50	0.33	0.50	1.00	1.00	1.00	1.00	0.33	0.50	0.50	0.50
2	**1.2**	**Durability & Reliability**	**0.31**	**0.31**	**0.31**	**0.31**	**0.31**	**0.31**	**0.31**	**0.31**	**0.31**			
2.1	1.2.2	Earthquake Resistance	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48			
2.1.1	1.2.2.1	Earthquake Resistance	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80			
2.1.2	1.2.2.1	Seismic Isolation & Vibration Damping Syste	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20			
2.2	1.2.2	Service Life of Components	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33			
2.2.1	1.2.2.2	Necessary Refurbishment Interval for Exterior Finis	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29			
2.2.2	1.2.2.2	Necessary Renewal Interval for Main Interior Finish	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12			
2.2.3	1.2.2.2	Necessary Renewal Interval for Plumbing & Wiring Materia	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29			
2.2.4	1.2.2.2	Necessary Renewal Interval for Major Equipment & Servic	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29			
2.3	1.2.2	Reliability	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19			
2.3.1	1.2.2.3	HVAC System	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20			
2.3.2	1.2.2.3	Water Supply & Drainage	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20			
2.3.3	1.2.2.3	Electrical Equipment	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20			
2.3.4	1.2.2.3	Support method of machines & ducts	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20			
2.3.5	1.2.2.3	Communications & IT equipment	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20			
3	**1.2**	**Flexibility & Adaptability**	**0.29**	**0.29**	**0.29**	**0.29**	**0.29**	**0.29**	**0.29**	**0.29**	**0.29**			
3.1	1.2.3	Spatial Margin	0.31	0.31	0.31	0.31				0.31	0.31	0.50	0.50	0.50
3.1.1	1.2.3.1	Allowance for Story Height	0.60	0.60	0.60	0.60				0.00	0.60	0.60	0.60	0.60
3.1.2	1.2.3.1	Adaptability of Floor Layout	0.40	0.40	0.40	0.40				1.00	0.40	0.40	0.40	0.40
3.2	1.2.3	Floor Load Margin	0.31	0.31	0.31	0.31				0.31	0.31	0.50	0.50	0.50
3.3	1.2.3	Adaptability of Facilities	0.38	0.38	0.38	0.38	1.00	1.00	1.00	0.38	0.38			
3.3.1	1.2.3.3	Ease of Air Conditioning Duct Renewal	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17			
3.3.2	1.2.3.3	Ease of water supply & drain pipe renew	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17			
3.3.3	1.2.3.3	Ease of Electrical Wiring Renewal	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11			
3.3.4	1.2.3.3	Ease of Communications Cable Renewa	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11			
3.3.5	1.2.3.3	Ease of Equipment Renewal	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22			
3.3.6	1.2.3.3	Provision of backup space	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22			
Q-3	**1**	**Outdoor Environment on Site**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.40**			
1	**1.3**	**Preservation & Creation of Biotope**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**			
2	**1.3**	**Townscape & Landscape**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**			
3	**1.3**	**Local Characteristics & Outdoor Amenity**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**			
3.1	1.3.3	Attention to Local Character & Improvement of Con	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50			
3.2	1.3.3	Improvement of the Thermal Environment on	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50			
		Reduction of Building Environmental Loadings												
LR-1	**2**	**Energy**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**			
1	**2.1**	**Building Thermal Load**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.40**	**0.30**	**0.00**			
2	**2.1**	**Natural Energy Utilization**	**0.20**	**0.20**	**0.20**	**0.20**	**0.20**	**0.20**	**0.20**	**0.20**	**0.29**			
2.1	2.1.2	Direct use of natural energy	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50			
2.2	2.1.2	Converted Use of Renewable Energy	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50			
3	**2.1**	**Efficiency in Building Service System**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.40**	**0.30**	**0.43**			
3.1	2.1.3	HVAC System	0.45	0.65	0.40	0.40	0.55	0.40		0.40				
3.2	2.1.3	Ventilation System	0.15	0.10	0.10	0.10	0.10	0.15		0.10				
3.3	2.1.3	Lighting System	0.30	0.20	0.35	0.35	0.20	0.20		0.35	0.85			
3.4	2.1.3	Hot Water Supply System	0.05	0.05	0.15	0.15	0.15	0.20	1.00	0.15	0.15			
3.5	2.1.3	Elevators	0.05					0.05						
4	**2.1**	**Efficient Operation**	**0.20**	**0.20**	**0.20**	**0.20**	**0.20**	**0.20**		**0.20**	**0.29**			
4.1	2.1.4	Monitoring	0.50	0.50	0.50	0.50	0.50	0.50		0.50	0.50			
4.2	2.1.4	Operational Management System	0.50	0.50	0.50	0.50	0.50	0.50		0.50	0.50			
LR-2	**2**	**Resources & Materials**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**			
1	**2.2**	**Water Resources**	**0.15**	**0.15**	**0.15**	**0.15**	**0.15**	**0.15**	**0.15**	**0.15**	**0.15**			
1.1	2.2.1	Water Saving	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40			
1.2	2.2.1	Rainwater & Gray Water	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60			
1.2.1	2.2.1.2	Rainwater Use Systems	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67			
1.2.2	2.2.1.2	Gray Water Reuse System	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33			
2	**2.2**	**Materials of Low Environmental Load**	**0.85**	**0.85**	**0.85**	**0.85**	**0.85**	**0.85**	**0.85**	**0.85**	**0.85**			
2.1	2.2.2	Recycled Materials	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35			
2.1.1	2.2.2.1	Reuse Efficiency of Materials Used in Structu	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
2.1.2	2.2.2.1	Reuse Efficiency of Non-structural Materials												
2.2	2.2.2	Timber from Sustainable Forestry	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04			
2.3	2.2.2	Materials with Low Health Risks	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08			
2.4	2.2.2	Reuse of Existing Building Structure etc.	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18			
2.5	2.2.2	Predicted Volume of Recyclable Material	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18			
2.6	2.2.2	Use of CFCs & Halons	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18			
2.6.1	2.2.2.6	Fire Retardant	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33			
2.6.2	2.2.2.6	Insulation Materials	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33			
2.6.3	2.2.2.6	Refrigerants	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33			
LR-3	**2**	**Off-site Environment**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**			
1	**2.3**	**Air Pollution**	**0.15**	**0.15**	**0.15**	**0.15**	**0.10**	**0.10**	**0.10**	**0.15**	**0.15**			
2	**2.3**	**Noise, Vibration & Odor**	**0.15**	**0.15**	**0.15**	**0.15**	**0.10**	**0.10**	**0.10**	**0.15**	**0.15**			
2.1	2.3.2	Noise & Vibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50			
2.2	2.3.2	Odors	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50			
3	**2.3**	**Wind Damage & Sunlight Obstruction**	**0.15**	**0.15**	**0.15**	**0.15**	**0.15**	**0.15**	**0.15**	**0.15**	**0.15**			
4	**2.3**	**Light Pollution**	**0.10**	**0.10**	**0.10**	**0.10**	**0.10**	**0.10**	**0.10**	**0.10**	**0.10**			
5	**2.3**	**Heat Island Effect**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**			
6	**2.3**	**Load on Local Infrastructure**	**0.15**	**0.15**	**0.15**	**0.15**	**0.25**	**0.25**	**0.25**	**0.15**	**0.15**			

			Entire building and common properties									Residential and Accomodation section		
	Item	Item name	Offices	Schools	Retailers	Restaurants	Hospitals	Hotels	Apartments	Halls	Factories	Hospitals-o	Hotels-o	Apartments-o
1.2.3	1.2.1.2	Décor Planning	0.33	0.50	0.33	0.50	1.00	1.00	1.00	1.00	0.33	0.50	0.50	0.50
2	**1.2**	**Durability & Reliability**	**0.31**	**0.31**	**0.31**	**0.31**	**0.31**	**0.31**	**0.31**	**0.31**	**0.31**			
2.1	1.2.2	Earthquake Resistance	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48			
2.1.1	1.2.2.1	Earthquake-resistance	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80			
2.1.2	1.2.2.1	Seismic Isolation & Vibration Damping Systen	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20			
2.2	1.2.2	Service Life of Components	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33			
2.2.1	1.2.2.2	Necessary Refurbishment Interval for Exterior Finish	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29			
2.2.2	1.2.2.2	Necessary Renewal Interval for Main Interior Finishe	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12			
2.2.3	1.2.2.2	Necessary Renewal Interval for Plumbing & Wiring Material	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29			
2.2.4	1.2.2.2	Necessary Renewal Interval for Major Equipment & Service	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29			
2.3	1.2.2	Reliability	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19			
2.3.1	1.2.2.3	HVAC System	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20			
2.3.2	1.2.2.3	Water Supply & Drainage	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20			
2.3.3	1.2.2.3	Electrical Equipment	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20			
2.3.4	1.2.2.3	Support method of machines & ducts	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20			
2.3.5	1.2.2.3	Communications & IT equipment	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20			
3	**1.2**	**Flexibility & Adaptability**	**0.29**	**0.29**	**0.29**	**0.29**	**0.29**	**0.29**	**0.29**	**0.29**	**0.29**			
3.1	1.2.3	Spatial Margin	0.31	0.31	0.31	0.31				0.31	0.31	0.50	0.50	0.50
3.1.1	1.2.3.1	Allowance for Story Height	0.60	0.60	0.60	0.60				0.00	0.60	0.60	0.60	0.60
3.1.2	1.2.3.1	Adaptability of Floor Layout	0.40	0.40	0.40	0.40				1.00	0.40	0.40	0.40	0.40
3.2	1.2.3	Floor Load Margin	0.31	0.31	0.31	0.31				0.31	0.31	0.50	0.50	0.50
3.3	1.2.3	Adaptability of Facilities	0.38	0.38	0.38	0.38	1.00	1.00	1.00	0.38	0.38			
3.3.1	1.2.3.3	Ease of Air Conditioning Duct Renewal	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17			
3.3.2	1.2.3.3	Ease of water supply & drain pipe renewa	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17			
3.3.3	1.2.3.3	Ease of Electrical Wiring Renewal	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11			
3.3.4	1.2.3.3	Ease of Communications Cable Renewal	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11			
3.3.5	1.2.3.3	Ease of Equipment Renewal	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22			
3.3.6	1.2.3.3	Provision of backup space	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22			
Q-3	**1**	**Outdoor Environment on Site**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.40**			
1	**1.3**	**Preservation & Creation of Biotope**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**			
2	**1.3**	**Townscape & Landscape**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**			
3	**1.3**	**Local Characteristics & Outdoor Amenity**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**			
3.1	1.3.3	Attention to Local Character & Improvement of Comt	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50			
3.2	1.3.3	Improvement of the Thermal Environment on	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50			
		Reduction of Building Environmental Loadings												
LR-1	**2**	**Energy**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**			
1	**2.1**	**Building Thermal Load**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.40**	**0.30**	**0.00**			
2	**2.1**	**Natural Energy Utilization**	**0.20**	**0.20**	**0.20**	**0.20**	**0.20**	**0.20**	**0.20**	**0.20**	**0.29**			
2.1	2.1.2	Direct use of natural energy							0.50					
2.2	2.1.2	Converted Use of Renewable Energy							0.50					
3	**2.1**	**Efficiency in Building Service System**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.40**	**0.30**	**0.43**			
3.1	2.1.3	HVAC System	0.45	0.65	0.40	0.40	0.55	0.40		0.40				
3.2	2.1.3	Ventilation System	0.15	0.10	0.10	0.10	0.10	0.15		0.10				
3.3	2.1.3	Lighting System	0.30	0.20	0.35	0.35	0.20	0.20		0.35	0.85			
3.4	2.1.3	Hot Water Supply System	0.05	0.05	0.15	0.15	0.15	0.20	1.00	0.15	0.15			
3.5	2.1.3	Elevators	0.05					0.05						
4	**2.1**	**Efficient Operation**	**0.20**	**0.20**	**0.20**	**0.20**	**0.20**	**0.20**		**0.20**	**0.29**			
4.1	2.1.4	Monitoring	0.50	0.50	0.50	0.50	0.50	0.50		0.50	0.50			
4.2	2.1.4	Operational Management System	0.50	0.50	0.50	0.50	0.50	0.50		0.50	0.50			
LR-2	**2**	**Resources & Materials**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**			
1	**2.2**	**Water Resources**	**0.15**	**0.15**	**0.15**	**0.15**	**0.15**	**0.15**	**0.15**	**0.15**	**0.15**			
1.1	2.2.1	Water Saving	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40			
1.2	2.2.1	Rainwater & Gray Water	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60			
1.2.1	2.2.1.2	Rainwater Use Systems	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67			
1.2.2	2.2.1.2	Gray Water Reuse System	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33			
2	**2.2**	**Materials of Low Environmental Load**	**0.85**	**0.85**	**0.85**	**0.85**	**0.85**	**0.85**	**0.85**	**0.85**	**0.85**			
2.1	2.2.2	Recycled Materials	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35			
2.1.1	2.2.2.1	Reuse Efficiency of Materials Used in Structur	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67			
2.1.2	2.2.2.1	Reuse Efficiency of Non-structural Materials	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33			
2.2	2.2.2	Timber from Sustainable Forestry	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04			
2.3	2.2.2	Materials with Low Health Risks	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08			
2.4	2.2.2	Reuse of Existing Building Structure etc.	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18			
2.5	2.2.2	Predicted Volume of Recyclable Materials	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18			
2.6	2.2.2	Use of CFCs & Halons	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18			
2.6.1	2.2.2.6	Fire Retardant	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33			
2.6.2	2.2.2.6	Insulation Materials	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33			
2.6.3	2.2.2.6	Refrigerants	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33			
LR-3	**2**	**Off-site Environment**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**			
1	**2.3**	**Air Pollution**	**0.15**	**0.15**	**0.15**	**0.15**	**0.10**	**0.10**	**0.10**	**0.15**	**0.15**			
2	**2.3**	**Noise, Vibration & Odor**	**0.15**	**0.15**	**0.15**	**0.15**	**0.10**	**0.10**	**0.10**	**0.15**	**0.15**			
2.1	2.3.2	Noise & Vibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50			
2.2	2.3.2	Odors	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50			
3	**2.3**	**Wind Damage & Sunlight Obstruction**	**0.15**	**0.15**	**0.15**	**0.15**	**0.15**	**0.15**	**0.15**	**0.15**	**0.15**			
4	**2.3**	**Light Pollution**	**0.10**	**0.10**	**0.10**	**0.10**	**0.10**	**0.10**	**0.10**	**0.10**	**0.10**			
5	**2.3**	**Heat Island Effect**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**			
6	**2.3**	**Load on Local Infrastructure**	**0.15**	**0.15**	**0.15**	**0.15**	**0.25**	**0.25**	**0.25**	**0.15**	**0.15**			

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CASBEE for New Construction Assessment Software

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CASBEE for New Construction

Comprehensive Assessment System for Building Environmental Efficiency

Assessment Software

CASBEE-NCe_2004v1.02

1) Building Outline Entry

(1) Building Outline

■Building Name	Attira Housing Project	
■Location / Climate	Ramallah	Zone VI
■ Area / Zone	Commercial Area	
■Completion(Scheduled / Completion)	Jan-06	Completion
■Site Area	500.00	m²
■Construction Area	300.00	m²
■Gross Floor Area	300.00	m²
■Building Type ※	Apartments	
(Building Application Name)		
■Number of Floors	2	
■Structure	RC	
■Occupancy	Birzeit University	Occupants(assumed)
■Annual Occupancy	1	hrs /yr(assumed)

(2) Period of Assessment

■Assessment date	17-Mar-06	Construction Completion Stage
■Assessor	Derar Sa'ed	
■Date of confirmation	31-Mar-06	
■Confirmed by	Dr. Maher Abu Madi	

2) Entry of building types

Building type of each sheet	Building Type	Gross Floor Area	
■Building Type 1 (Main Type)	Apartments	300.00	m²
■Building Type 2			m²
■Building Type 3			m²
■Building Type 4			m²
■Entire Building	Apartments	300.00	m²

Ratio of Residential &Accommodation Sec ※Enter rounded values for hospitals, hotels and apartments.

■ Proportion of total floor area of a hospital used for sickrooms.	
■ Proportion of total floor area of a hotel used for guest rooms.	
■ Proportion of total floor area of an apartment used for residences.	0.9

3) Results Output

Assessment Result Sheet	● ☼♏⬧◆●♦
Score Sheet	● ♦♍□❐♏

※ Building Type	Types included
Offices	Offices, government buildings, libraries, museum, post office etc.
Schools	Elementary schools, junior high schools, high schools, universities, technical colleges, higher vocational schools, and other school types.
Retailers	Department stores, supermarket etc.
Restaurants	Restaurant, canteens, café etc.
Halls	Auditoria, meeting halls, bowling lanes, gymnasia, theaters, pachinko parlors etc.
Factories	Plants, garages, storage plants, pavilion, wholesale market etc.
Hospitals	Hospitals, homes for the elderly, welfare homes for the handicapped etc.
Hotels	Hotels, inns etc.
Apartments	Condominiums (detached houses are excluded)

CASBEE for New Construction

CASBEE-NCe_2004v1.02

Attira Housing Project

(4) Score Sheet **Construction Completion Stage**

Concerned categories	Brief summary of Design for Environment	Entire Building and Common Properties		Residential and Accomodation sections		Total
		Score	weighting coefficients	Score	weighting coefficients	
Q Building Environmental Quality & Performance						**4.1**
Q-1 Indoor Environment			0.40			4.3
1 Noise & Acoustics		**3.0**	0.15	**3.0**	-	3.0
1.1 Noise		–	-	**3.0**	0.67	
1 Background noise		–	-	–	-	
2 Equipment noise		–	-	3.0	1.00	
1.2 Sound Insulation		–	-	–	-	
1 Sound Insulation of Openings		–	-	–	-	
2 Sound Insulation of Partition Walls		3.0	-	–	-	
3 Sound Insulation of Floor Slabs (light impact)		3.0	-	–	-	
4 Sound Insulation of Floor Slabs (heavy impact)		3.0	-	–	-	
1.3 Sound Absorption		**3.0**	1.00	**3.0**	0.33	
2 Thermal Comfort		**3.7**	0.35	**4.0**	-	4.0
2.1 Room Temperature Control		**3.7**	1.00	**4.0**	1.00	
1 Room Temperature Setting		4.0	0.71	4.0	1.00	
2 Variable Loads & Following-up Control		3.0	-	–	-	
3 Perimeter Performance		–	-	–	-	
4 Zoned Control		3.0	-	–	-	
5 Temperature & Humidity Control		3.0	0.29	3.0	-	
6 Individual Control		–	-	–	-	
7 Allowance for After-hours Air Conditioning		3.0	-	–	-	
8 Monitoring Systems		3.0	-	–	-	
2.2 Humidity Control		–	-	–	-	
2.3 Type of Air Conditioning System		–	-	–	-	
3 Lighting & Illumination		**5.0**	0.25	**5.0**	-	5.0
3.1 Daylighting		**5.0**	1.00	**5.0**	1.00	
1 Daylight Factor		–	-	–	-	
2 Openings by Orientation		5.0	-	–	-	
3 Daylight Devices		5.0	1.00	5.0	1.00	
3.2 Anti-glare Measures		–	-	–	-	
1 Glare from light fixtures		–	-	–	-	
2 Daylight control		–	-	–	-	
3.3 Illuminance Level		–	-	–	-	
1 Illuminance		–	-	–	-	
2 Uniformity Ratio of Illuminance		–	-	3.0	-	
3.4 Lighting Controllability		–	-	–	-	
4 Air Quality		**5.0**	0.25	**5.0**	-	5.0
4.1 Source Control		**5.0**	0.60	**5.0**	0.63	
1 Chemical Pollutants		–	-	–	-	
2 Mineral Fiber		5.0	0.50	5.0	0.50	
3 Mites, Mold etc.		5.0	0.50	5.0	0.50	
4 Legionella		3.0	-	–	-	
4.2 Ventilation		**5.0**	0.40	**5.0**	0.38	
1 Ventilation Rate		–	-	–	-	
2 Natural Ventilation Performance		3.0	-	–	-	
3 Consideration for Outside Air Intake		5.0	1.00	5.0	1.00	
4 Air Supply Planning		3.0	-	–	-	
4.3 Operation Plan		–	-	–	-	
1 CO_2 Monitoring		3.0	-	–	-	
2 Control of Smoking		3.0	-	–	-	
Q-2 Quality of Service			0.30			3.8
1 Service Ability		–	-	–	-	-
1.1 Functionality & Usability		–	-	–	-	
1 Provision of Space & Storage		3.0	-	3.0	-	
2 Adaptation of Building & Services to IT Innovation		3.0	-	–	-	
3 Barrier-free Planning		–	-	–	-	
1.2 Amenity		–	-	–	-	
1 Perceived Spaciousness & Access to View		3.0	-	–	-	
2 Space for Refreshment		3.0	-	–	-	
3 Décor Planning		–	-	–	-	
2 Durability & Reliability		**3.8**	1.00	–	-	3.8
2.1 Earthquake Resistance		**3.0**	0.59	–	-	
1 Earthquake-resistance		3.0	0.80	–	-	
2 Seismic Isolation & Vibration Damping Systems		3.0	0.20	–	-	
2.2 Service Life of Components		**5.0**	0.41	–	-	
1 Necessary Refurbishment Interval for Exterior Finishes		5.0	1.00	–	-	
2 Necessary Renewal Interval for Main Interior Finishes		–	-	–	-	
3 Necessary Renewal Interval for Plumbing & Wiring Materials		–	-	–	-	
4 Necessary Renewal Interval for Major Equipment & Services		–	-	–	-	
2.3 Reliability		–	-	–	-	
1 HVAC System		–	-	–	-	
2 Water Supply & Drainage		–	-	–	-	
3 Electrical Equipment		–	-	–	-	
4 Support Method of Machines & Ducts		–	-	–	-	
5 Communications & IT equipment		–	-	–	-	
3 Flexibility & Adaptability		–	-	–	-	-

	3.1 Spatial Margin			–	-	–	-	
		1	Allowance for Story Height	3.0	-	–	-	
		2	Adaptability of Floor Layout	3.0	-	–	-	
	3.2 Floor Load Margin			3.0	-	–	-	
	3.3 Adaptability of Facilities			–	-	–	-	
		1	Ease of Air Conditioning Duct Renewal	–	-	–	-	
		2	Ease of Water Supply & Drain Pipe Renewal	–	-	–	-	
		3	Ease of Electrical Wiring Renewal	–	-	–	-	
		4	Ease of Communications Cable Renewal	–	-	–	-	
		5	Ease of Equipment Renewal	–	-	–	-	
		6	Provision of Backup Space	–	-	–	-	
Q-3	**Outdoor Environment on Site**				0.30			4.0
	1 Preservation & Creation of Biotope			–	-	–	-	-
	2 Townscape & Landscape			4.0	1.00	–	-	4.0
	3 Local Characteristics & Outdoor Amenity			–	-	–	-	-
	3.1 Attention to Local Character & Improvement of Comfort			–	-	–	-	
	3.2 Improvement of the Thermal Environment on Site			–	-	–	-	
LR	**Reduction of Building Environmental Loadings**				-			3.3
LR-1	**Energy**				0.40			3.7
	1 Building Thermal Load			–	-	–	-	-
	2 Natural Energy Utilization			5.0	0.33	–	-	5.0
	2.1 Direct Use of Natural Energy			5.0	0.50	–	-	
	2.2 Converted Use of Renewable Energy			3.0	0.50	–	-	
	3 Efficiency in Building Service System			3.0	0.67	–	-	3.0
	4 Efficient Operation			–	-	–	-	-
	4.1 Monitoring			3.0	-	–	-	
	4.2 Operational Management System			3.0	-	–	-	
LR-2	**Resources & Materials**				0.30			4.1
	1 Water Resources			4.2	0.15	–	-	4.2
	1.1 Water Saving			4.0	0.40	–	-	
	1.2 Rainwater & Gray Water			4.3	0.60	–	-	
		1	Rainwater Use Systems	4.0	0.67	–	-	
		2	Gray Water Reuse System	5.0	0.33	–	-	
	2 Materials of Low Environmental Load			4.1	0.85	–	-	4.1
	2.1 Recycled Materials			5.0	0.45	–	-	
		1	Reuse Efficiency of Materials Used in Structure	5.0	1.00	–	-	
		2	Reuse Efficiency of Non-structural Materials	–	-	–	-	
	2.2 Timber from Sustainable Forestry			–	-	–	-	
	2.3 Materials with Low Health Risks			3.0	0.10	–	-	
	2.4 Reuse of Existing Building Skeleton etc.			3.0	0.22	–	-	
	2.5 Reusability of Components & Materials			–	-	–	-	
	2.6 Use of CFCs & Halons			4.0	0.22	–	-	
		1	Fire Retardant	4.0	1.00	–	-	
		2	Insulation Materials	–	-	–	-	
		3	Refrigerants	–	-	–	-	
LR-3	**Off-site Environment**				0.30			2.0
	1 Air Pollution			–	-	–	-	-
	2 Noise, Vibration & Odor			–	-	–	-	-
	2.1 Noise & Vibration			–	-	–	-	
	2.2 Odors			–	-	–	-	
	3 Wind Damage & Sunlight Obstruction			–	-	–	-	-
	4 Light Pollution			–	-	–	-	-
	5 Heat island effect			–	-	–	-	-
	6 Load on Local Infrastructure			2.0	1.00	–	-	2.0

■ LR-1 Score book for each building type		Apartments	-	-	-	Overall score on pro-rata area
		300 m²	-	-	-	
1	**Building Thermal Load**	Input Class	-	-	-	–
3	**Efficiency in Building Service System** — **Assessment by ERR**	-	-	-	-	3.0
	Assessment by means other than ERR	3.0	-	-	-	
3.1	HVAC System	-	-	-	-	–
3.2	Ventilation System	-	-	-	-	–
3.3	Lighting System	-	-	-	-	–
3.4	Hot Water Supply System	3.0	-	-	-	–
3.5	Elevators	-	-	-	-	–

Q-1 Indoor environment

Select from pull-down menus or enter figures and comments.

Construction Completion Stage

1 Noise & Acoustics

1.1 Noise

1.1.1 Background Noise

dB(A) Weight (default)= 1.00 dB(A) Weight (default)= 0.50

Excluded	Entire building and common properties: Offices Hospitals Hotels Apartment Factories	Schools	Retailers Restaurants	Halls	Excluded	Residential and Accommodation Sections: Hospitals	Hotels Apartments
Level 1	more than 50	more than 45	more than 55	more than 40	Level 1	more than 50	more than 45
Level 2	more than 47, 50 or less	more than 42, 45 or less	more than 52, 55 or less	more than 37, 40 or less	Level 2	more than 47, 50 or less	more than 42, 45 or less
Level 3	more than 43, 47 or less	more than 38, 42 or less	more than 48, 52 or less	more than 33, 37 or less	Level 3	more than 43, 47 or less	more than 38, 42 or less
Level 4	more than 40, 43 or less	more than 35, 38 or less	more than 45, 48 or less	more than 30, 33 or less	Level 4	more than 40, 43 or less	more than 35, 38 or less
Level 5	40 or less	35 or less	45 or less	30 or less	Level 5	40 or less	35 or less

Background noise Allowable interior noise levels

dB(A)	20	25	30	35	40	45	50	55	60
NC-NR	10~15	15 ~ 20	20~25	25~30	30~35	35~40	40~45	45~50	50~55
Intrusiveness	Silent——— ——————Very Quiet———————				—Not significantly noticeable————Perceived noise— ————Noise cannot be ignored				
Impact on conversation			A whispering voice is audible from 5m away		Possible from 10m apart Telephone use (normal)	————	Possible from 3m apart Telephone use (bearable)	————	Loud conversation (3m) Telephone use (unbearable)
Studios	Silent room	Studio for newsreading etc.	Radio studio	Television studio	Mixing room	General offices			
Venues and halls		Music hall	Theater (medium)	Stage theaters	Movie theater, planetarium		Hotel lobbies		
Hospitals		Hearing test room	Special sickrooms	Sickrooms	Examining room	Laboratories	Waiting rooms		
Hotel and residential				Reading rooms	Bedrooms	Banquet halls	Lobbies		
General offices				Large meeting rooms	Reception rooms	Meeting rooms	General offices		Typing and accounting rooms
Public buildings				Auditorium	Museums	Library	Auditorium/ gymnasium	Indoor sports facilities	
Schools and churches				Music classroom	Chapels	Research rooms and classrooms		Corridors	
Commercial buildings					Music cafes	Book shops	General stores		
					Jewelers and art shops		Banks and restaurants	Canteens	

Refer to Architectural Institute of Japan, Handbook of Building Environmental Design 1 - Environment, 1978. P13

1.1.2 Equipment Noise

Weight (default)= 0.00 Weight (default)= 0.50

Level	Entire Building and Common Properties: Offices Schools Retailers Restaurants Halls Hospitals Hotels Factories	Level 3	Residential and Accommodation Sections: Hotels Hospitals	Apartments
Level 1	No noise countermeasures. (None or only one countermeasure at all among the efforts to be evaluated.)	Level 1	No noise countermeasures. (Less than two countermeasures among the efforts to be evaluated for equipment noise.)	No noise countermeasures. (Less than two measures are taken on any of the efforts to be evaluated for equipment noise)
Level 2	Some measures taken. (Two or three noise countermeasures used from among the efforts to be evaluated.)	Level 2	Some measures taken. (Two or three equipment noise countermeasures used from among the efforts to be evaluated.)	
■Level 3	Noise countermeasures used. (Four or five noise countermeasures used from among the efforts to be evaluated.)	■Level 3	Noise countermeasures used. (Four of five equipment noise countermeasures used from among the efforts to be evaluated.)	Noise countermeasures used. (2~3 equipment noise countermeasures used from among the efforts to be evaluated)
Level 4	Countermeasures at a moderately high level. (Six or seven noise countermeasures used from among the efforts to be evaluated.)	Level 4	Countermeasures at a moderately high level. (Six or seven equipment noise countermeasures used from among the efforts to be evaluated.)	
Level 5	Countermeasures at an advanced level. (All noise countermeasures used from among the efforts to be evaluated.)	Level 5	Countermeasures at an advanced level. (All equipment noise countermeasures used from among the efforts to be evaluated.)	Countermeasures at an advanced level. (All equipment noise countermeasures used from among the efforts to be evaluated)

A1 Efforts for reducing equipment noise in non-residential buildings (examples)

B Efforts for reducing equipment noise in residential buildings (examples)

Level 3	Entire building and common properties: Types of equipment	Examples of countermeasures	Level 3	Floor areas for Residential portions 270m² Types of equipment	Examples of countermeasures
○	Vents and intakes	Low-noise vents, low-noise intakes, positions, air speed and volume, etc.	○	1) Water supply and drainage noises from toilets, bathrooms etc.	Anti-noise pipe cladding, anti-vibration rubber support fittings, positioning, etc.
○	Interior air conditioning equipment	Noise prevention covers, positions, etc.	○	2) Water hammer	Use of appropriate water pressure, selection of preventive fixtures, etc.
○	Noise from the machine room (penetrating noise)	Noise prevention covers, sound absorption and sound insulation for the machine room, positions, etc.		3) Noise from air conditioning room units	Selection of low-noise equipment etc.
○	As above (Noise transmitted through solids)	Anti-vibration platform, anti-vibration rubber elements, etc.		4) Noise from air conditioning external units	Anti-vibration rubber supports, anti-vibration mats, selection of low-noise equipment types, etc.
	Noise from ducts and pipes (penetrating noise)	Sound absorber ducts, sound absorber elbows, sound absorber boxes, sound insulating pipe cladding, position etc.		5) Ventilation	Selection of low-noise equipment etc.
	As above (noise transmitted through solids)	Anti-vibration suspension or supports, flexible joints, anti-vibration treatment of penetrating parts.			

	(Exterior) Noise from cooling towers	Baffles, anti-vibration support, positions, etc.
	(Exterior) Noise from intakes and vents	Position, appropriate air volume and speed, etc.

A2 Efforts for reducing equipment noise in Hsp, Htl buildings (examples)

Level 3	Floor areas for Hsp, Htl portions m²	
	Types of equipment	Examples of countermeasures
○	Vents and intakes	Low-noise vents, low-noise intakes, positions, air speed and volume, etc.
○	Interior air conditioning equipment	Noise prevention covers, positions, etc.
○	Noise from the machine room (penetrating noise)	Noise prevention covers, sound absorption and sound insulation for the machine room, positions, etc.
○	As above (Noise transmitted through solids)	Anti-vibration platform, anti-vibration rubber elements, etc.
	Noise from ducts and pipes (penetrating noise)	Sound absorber ducts, sound absorber elbows, sound absorber boxes, sound insulating pipe cladding, position etc.
	As above (noise transmitted through solids)	Anti-vibration suspension or supports, flexible joints, anti-vibration treatment of penetrating parts.
	(Exterior) Noise from cooling towers	Baffles, anti-vibration support, positions, etc.
	(Exterior) Noise from intakes and vents	Position, appropriate air volume and speed, etc.

1.2 Sound Insulation

1.2.1 Sound Insulation of Openings

	Weight (default)= 1.00			Weight (default)= 0.30	
Excluded	Entire building and common properties		Excluded	Residential and Accommodation Sections	
	Preliminary Design Stage	Execution Design and Construction Completion Stage		Preliminary Design Stage	Execution Design and Construction Completion Stage
	Offices Schools Restaurants Hospitals Hotels Apartments Factories	Offices Schools Restaurants Hospitals Hotels Apartments Factories		Hospitals Hotels Apartments	Hospitals Hotels Apartments
Level 1	Noise from ordinary traffic causes annoyance.	Less than T-1	Level 1	Noise from ordinary traffic causes annoyance.	Less than T-1
Level 2		(Inapplicable)	Level 2		(Inapplicable)
Level 3	Noise from ordinary traffic does not cause annoyance.	T-1	Level 3	Noise from ordinary traffic does not cause annoyance.	T-1
Level 4		(Inapplicable)	Level 4		(Inapplicable)
Level 5	Noise from loud means of transport, such as trunk roads and aircraft, does not cause annoyance	T-2 or more	Level 5	Noise from loud means of transport, such as trunk roads and aircraft, does not cause annoyance	T-2 or more

1.2.2 Sound Insulation of Partition Walls

	Weight (default)= 0.00			Weight (default)= 0.30		
Level 3	Entire building and common properties		Excluded	Residential and Accommodation Sections		
	Preliminary Design Stage	Execution Design and Construction Completion Stage		Preliminary Design Stage		
	Offices Schools Restaurants Factories	Offices Schools Restaurants Factories		Hospitals	Hotels	Apartments
Level 1	People's ordinary voices cause annoyance.	Less than D-30	Level 1	The content of TV, radio and conversation can be understood	Ordinary sounds such as TV, radio and conversation can be heard loudly.	Activities in the next home can be clearly heard.
Level 2		D-30	Level 2			
■Level 3	People's ordinary voices do not cause annoyance	D-35	Level 3	The sounds of TV, radio and conversation can be heard at low volume.	Ordinary sounds such as TV, radio and conversation can be heard faintly.	Activities in the next home can be heard but are not intrusive.
Level 4		D-40	Level 4			
Level 5	People's ordinary voices are almost inaudible.	D-45 or more	Level 5	The sounds of TV, radio and conversation can barely be heard.	The sounds of TV, radio and conversation cannot normally be heard.	No sound from the next home.

	Execution Design and Construction Completion Stage	
	Hospitals	Hotels Apartments
Level 1	Worse than D-35	Worse than D-40
Level 2	D-35	D-40
Level 3	D-40	D-45
Level 4	D-45	D-50
Level 5	D-50 or better	D-55 or better

1.2.3 Sound Insulation of Floor Slabs (light-weight impact source)

	Weight (default)= 0.00			Weight (default)= 0.20	
Level 3	Entire building and common properties		Excluded	Residential and Accommodation Sections	
	Preliminary Design Stage	Execution Design and Construction Completion Stage		Preliminary Design Stage	Execution Design and Construction Completion Stage
	Schools	Schools		Hospitals Hotels Apartments	Hospitals Hotels Apartments
Level 1	Noise of chair movement and falling objects is intrusive.	Worse than L-65	Level 1	Noise of chair movement and falling objects causes considerable annoyance.	Worse than L-55
Level 2		L-65	Level 2		L-55
■Level 3	Noise of chair movement and falling objects causes annoyance.	L-60	Level 3	Noise of chair movement and falling objects is audible but quiet.	L-50
Level 4		L-55	Level 4		L-45
Level 5	Noise of chair movement and falling objects is just audible but quiet.	L-50 or better	Level 5	Noise of chair movement and falling objects is almost inaudible.	L-40 or better

1.2.4 Sound Insulation of Floor Slabs (heavy-weight impact source)

	Weight (default)= 0.00			Weight (default)= 0.20	
Level 3	Entire building and common properties		Excluded	Residential and Accommodation Sections	
	Preliminary Design Stage	Execution Design and Construction Completion Stage		Preliminary Design Stage	Execution Design and Construction Completion Stage
	Schools	Schools		Hospitals Hotels Apartments	Hospitals Hotels Apartments
Level 1	The noise of people jumping and running causes considerable annoyance.	Worse than L-65	Level 1	The noise of people jumping and running causes annoyance.	Worse than L-60

Level 2		L-65	Level 2		L-60
■Level 3	The noise of people jumping and running is considerably audible.	L-60	Level 3	The noise of people jumping and running is audible.	L-55
Level 4		L-55	Level 4		L-50
Level 5	The noise of people jumping and running is audible but quiet.	L-50 or better	Level 5	The noise of people jumping and running is audible but rarely noticed.	L-45 or better

1.3 Sound Absorption

	Weight (default)= 0.20				Weight (default)= 0.20
	Entire building and common properties			Residential and Accommodation Sections	
Level 3	Preliminary Design Stage	Execution Design and Construction Completion Stage	Level 3	Preliminary Design Stage	Execution Design and Construction Completion Stage
	Offices Schools Retailers Restaurants Hospitals Hotels Apartments Factories	Offices Schools Retailers Restaurants Hospitals Hotels Apartments Factories		Hospitals Hotels Apartments	Hospitals Hotels Apartments
Level 1	Sound absorbent materials are not used.		Level 1	Sound absorbent materials are not used.	Sound absorbent materials are not used.
Level 2			Level 2		
■Level 3	Sound absorbent materials are in either the walls, floor or ceiling.		■Level 3	Sound absorbent materials are in either the walls, floor or ceiling.	Sound absorbent materials are in either the walls, floor or ceiling.
Level 4			Level 4		
Level 5	Sound absorbent materials are in the walls, floor and ceiling.		Level 5	Sound absorbent materials are in the walls, floor and ceiling.	Sound absorbent materials are in the walls, floor and ceiling.

2 Thermal Comfort

2.1 Room Temperature Control

2.1.1 Room Temperature Setting

	Weight (default)= 0.50				Weight (default)= 0.50
	Entire building and common properties			Residential and Accommodation Sections	
	Preliminary Design Stage			Preliminary Design Stage	
Level 4	Offices Hospitals Hotels Apartments Factories	Schools	Retailers Restaurants Halls	Level 4	Hospitals Hotels	Apartments
Level 1	Temperature settings of 20˚C in winter and 28˚C in summer, which require tolerance of some discomfort.	Temperature settings of 10˚C or more in winter and 30˚C or less in summer, which require tolerance of some discomfort.	Temperature settings of 18˚C in winter and 28˚C in summer, which require tolerance of some discomfort.	Level 1	Temperature settings of 20˚C in winter and 28˚C in summer, which require tolerance of some discomfort.	Setting to 18˚C in winter and 28˚C in summer are forced in each room.
Level 2				Level 2		
Level 3	Temperature setting of 22˚C in winter and 26˚C in summer.	Temperature settings of 18~20˚C in winter and 25~28˚C in summer.	Temperature settings of 20˚C in winter and 26˚C in summer.	Level 3	Temperature settings of 22°C in winter and 26°C in summer.	Ordinary setting of 22˚C in winter and 26˚C in summer in each room.
■Level 4				■Level 4		
Level 5	By referring the ASHRAE* Comfortable Room Temperature Range and the POEM-O, it is set ranges of 22~24˚C in winter and 24~26˚C in summer.		By referring the ASHRAE Comfortable Room Temperature Range and the POEM-O, it is set ranges of 20~22˚C in winter and 24~26˚C in summer.	Level 5	By referring the ASHRAE Comfortable Room Temperature Range and the POEM-O, it is set ranges of 22~24˚C in winter and 24~26˚C in summer.	Setting ranges of 22~24˚C in winter and 24~26˚C in summer in each room.
	Execution Design and Construction Completion Stage				Execution Design and Construction Completion Stage	
	Offices Hospitals Hotels Apartments Factories	Schools	Retailers Restaurants Halls		Hospitals Hotels	Apartments
Level 1	The minimum equipment capacity is provided to achieve temperatures of 20˚C in winter and 28˚C in summer, which require tolerance of some discomfort.	The minimum equipment capacity is provided to achieve temperatures of 10˚C or more in winter and less than 30˚C in summer, which require tolerance of some discomfort	The minimum equipment capacity is provided to achieve temperatures of 18˚C in winter and 28˚C in summer, which require tolerance of some discomfor	Level 1	The minimum equipment capacity is provided to achieve temperatures of 20˚C in winter and 28˚C in summer, which require tolerance of some discomfort	The minimum equipment capacity is provided to achieve temperatures of 18˚C in winter and 28˚C in summer, which require tolerance of some discomfort.
Level 2				Level 2		
Level 3	Equipment capacity is provided to achieve temperatures of 22˚C in winter and 26˚C in summer, which are ordinary settings.	Equipment capacity is provided to achieve temperatures of 18~20˚C in winter and 25~28˚C in summer, which are ordinary settings.	Equipment capacity is provided to achieve temperatures of 20˚C in winter and 26˚C in summer, which are ordinary settings.	Level 3	Equipment capacity is provided to achieve temperatures of 22˚C in winter and 26˚C in summer, which are ordinary settings.	Equipment capacity is provided to achieve temperatures of 22˚C in winter and 26˚C in summer, which are ordinary settings.
Level 4				Level 4		
Level 5	Equipment capacity to achieve temperatures of 24˚C in winter and 24˚C in summer.		Equipment capacity to achieve temperatures of 22˚C in winter and 24˚C in summer.	Level 5	Equipment capacity to achieve temperatures of 24˚C in winter and 24˚C in summer.	

2.1.2 Variable Loads & Following-up Control

	Weight (default)= 0.00
Level 3	Entire building and common properties
	Schools Retailers Restaurants Halls
Level 1	No notable consideration has been given to sudden changes in loads.
Level 2	
■Level 3	General load variations are considered, and the system affords some degree of control.
Level 4	
Level 5	The control system allows advanced following control of load variations.

2.1.3 Perimeter Performance

	Weight (default)= 0.30		Weight (default)= 0.30
	Entire building and common properties		Residential and Accommodation Sections
Excluded	Preliminary Design Stage	Excluded	Preliminary Design Stage
	Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories		Hospitals Hotels	Apartments

Level 1	Insufficient attention has been paid to the infiltration of heat to the interior through windows, outside walls, roof and floor (particularly where piloti are used), and insolation blocking and insulation performance are poor.	**Level 1**	Insufficient attention has been paid to the infiltration of heat to the interior through windows, outside walls, roof and floor (particularly where piloti are used), and insolation blocking and insulation performance are poor.	Corresponding to energy-efficiency ranking 1 under the Housing Quality Assurance Law.
Level 2		**Level 2**		
Level 3	Attention has been paid to the infiltration of heat to the interior through windows, outside walls, roof and floor (particularly where piloti are used), and there is no practical problem with insolation blocking and insulation performance.	**Level 3**	Attention has been paid to the infiltration of heat to the interior through windows, outside walls, roof and floor (particularly where piloti are used), and there is no practical problem with insolation blocking and insulation performance.	Corresponding to energy-efficiency ranking 2 under the Housing Quality Assurance Law.
Level 4		**Level 4**		Corresponding to energy-efficiency ranking 3 under the Housing Quality Assurance Law.
Level 5	Close attention has been paid to the infiltration of heat to the interior through windows, outside walls, roof and floor (particularly where piloti are used), and the building has the highest level of insolation blocking and insulation performance.	**Level 5**	Close attention has been paid to the infiltration of heat to the interior through windows, outside walls, roof and floor (particularly where piloti are used), and the building has the highest level of insolation blocking and insulation performance.	Corresponding to energy-efficiency ranking 4 under the Housing Quality Assurance Law.

	Execution Design and Construction Completion Stage		Execution Design and Construction Completion Stage	
	Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories		Hospitals Hotels	Apartments
Level 1	No attention has been paid to the infiltration of heat through window systems , outside walls, roof and floor (particularly where piloti are used), and insulation performance is poor. (Window system SC: around 0.7, U=6.0W/(m2K), outer walls and others: U=3.0"/(m2 K))	Level 1	No attention has been paid to the infiltration of heat through window systems , outside walls, roof and floor (particularly where piloti are used), and insulation performance is poor. (Window system SC: around 0.7, U=6.0W/(m2 K), outer walls and others: U=3.0"/(m2 K))	Corresponding to energy-efficiency ranking 1 under the Housing Quality Assurance Law.
Level 2		Level 2		
Level 3	Attention has been paid to the infiltration of heat to the interior through windows, outside walls, roof and floor (particularly where piloti are used), and there is no practical problem with insolation blocking and insulation performance. (Window system SC: around 0.5, U=4.0W/(m2 K), outer walls and others: U=2.0W/(m2 K))	Level 3	Attention has been paid to the infiltration of heat to the interior through windows, outside walls, roof and floor (particularly where piloti are used), and there is no practical problem with insolation blocking and insulation performance. (Window system SC: around 0.5, U=4.0W/(m2 K), outer walls and others: U=2.0W/(m2 K))	Corresponding to energy-efficiency ranking 2 under the Housing Quality Assurance Law.
Level 4		Level 4		Corresponding to energy-efficiency ranking 3 under the Housing Quality Assurance Law.
Level 5	Close attention has been paid to the infiltration of heat to the interior through windows systems, outside walls, roof and floor (particularly where piloti are used), and the building has the highest level of insolation blocking and insulation performance. (Window system SC: around 0.2, U=3.0W/(m2 K), outer walls and others: U=1.0W/(m2 K))	Level 5	Close attention has been paid to the infiltration of heat to the interior through windows systems, outside walls, roof and floor (particularly where piloti are used), and the building has the highest level of insolation blocking and insulation performance. (Window system SC: around 0.2, U=3.0W/(m2 K), outer walls and others: U=1.0W/(m2 K))	Corresponding to energy-efficiency ranking 4 under the Housing Quality Assurance Law.

Thermal Loss Coefficient Q(W/m²K)
of Apartments at Assessment Level 1 to 5

Target category **Zone VI**

Zone*	I	II	III	IV	V	VI
Level 1	2.8<[Q]	4.0<[Q]	4.4<[Q]	4.9<[Q]	7.1<[Q]	7.1<[Q]
Level 2						
Level 3	1.8<[Q]<=2.8	2.7<[Q]<=4.0	3.1<[Q<=4.4	3.6<[Q]<=4.9	3.9<[Q]<=7.1	6.2<[Q]<=7.1
Level 4	1.6<[Q]<=1.8	1.9<[Q]<=2.7	2.4<[Q]<=3.1	2.7<[Q]<=3.6	2.7<[Q<=3.9	3.7<[Q]<=6.2
Level 5	[Q<=1.6	[Q]<=1.9	[Q]<=2.4	[Q]<=2.7	[Q]<=2.7	[Q]<=3.7

*)Regional categories correspond to those used in the "Standard for judgement by Owner Regarding the Rational Use of Energy Relating for Housing."

2.1.4 Zoned Control

Weight (default)= 0.00

Level 3	Entire building and common properties			
	Preliminary Design Stage(Offices Hospitals Hotels Factories)	Preliminary Design Stage(Retailers Restaurants Halls)	Execution Design and Construction Completion Stage(Offices Hospitals Hotels Factories)	Execution Design and Construction Completion Stage (Retailers Restaurants Halls)
Level 1	There is no zoning of heating and cooling within a single floor, and a single-circuit air conditioning system is planned*. Switching between heating and cooling is required for the selection of air conditioning modes.	There is no zoning of heating and cooling within a single floor, and a single-circuit air conditioning system is planned. Switching between heating and cooling is required for the selection of air conditioning modes.	No distinction is made between orientation directions, or between perimeter and interior, and only one air conditioning system is planned, which must be switched between heating and cooling.	There is no zoning of heating and cooling within a single floor, and a single-circuit air conditioning system is planned. Switching between heating and cooling is required for the selection of air conditioning modes.
Level 2				
■Level 3	Each floor is divided into multiple zones according to their orientation or thermal loads, and the air conditioning system is planned to allow either heating or cooling in each zone*.	Each floor is divided into multiple zones according to their thermal loads or other factors, and the air conditioning system is planned to allow either heating or cooling in each zone.	There is air conditioning zoning that differentiates between orientation directions, and between perimeter and interior. The air conditioning system can provide either heating or cooling separately to each zone.	Each floor is divided into multiple zones according to their thermal loads, and the air conditioning system is planned to allow either heating or cooling in each zone.
Level 4				

Level 5	Each floor is divided into many small zones, and the air conditioning system is planned to allow either heating or cooling in zone units*.	Each floor is divided into many small zones for individual sales areas or tenants, and the air conditioning system is planned to allow either heating or cooling in zone units.	There are separate air conditioning systems for each orientation direction, and for perimeter and interior, allowing more detailed zoning (broadly, zones of 40m2 or less). The air conditioning system can provide either heating or cooling separately to each zone.	Each floor is divided into many small zones for individual sales areas or tenants, and the air conditioning system is planned to allow either heating or cooling in zone units.

2.1.5 Temperature & Humidity Control — Weight (default)= 0.20

Level 3	Entire building and common properties: Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories	Level 3	Residential and Accommodation Sections: Hospitals Hotels
Level 1	On/Off control of temperature and humidity.	**Level 1**	On/Off control of temperature and humidity.
Level 2		**Level 2**	
■Level 3	Fixed-setting control of interior temperature and humidity settings.	**■Level 3**	Fixed-setting control of interior temperature and humidity settings.
Level 4		**Level 4**	
Level 5	Comfort sensors etc. can be used to control temperature and humidiy.(temperature control within the comfort range).	**Level 5**	Comfort sensors etc. can be used to control temperature and humidity (temperature control within the comfort range).

2.1.6 Individual Control — Weight (default)= 0.20

Excluded	Residential and Accommodation Sections: Hospitals Hotels	Apartments
Level 1	Nothing.	No consideration given.
Level 2		
Level 3	Switchable between low, middle and high.	Temperature can be set for each individual room.
Level 4		
Level 5	The temperature for the whole dwelling can be set, and further settings can be made for each individual room.	The temperature for the whole dwelling can be set, and further settings can be made for each individual room.

2.1.7 Allowance for After-hours Air Conditioning — Weight (default)= 0.00

Level 3	Entire building and common properties: Offices Schools Hospitals Hotels Factories
Level 1	Air conditioning does not operate after hours, or on holidays.
Level 2	
■Level 3	The air conditioning system can operate for any whole floor that is occupied after hours and on holidays.
Level 4	
Level 5	The air conditioning system can operate for any zone that is occupied after hours and on holidays.

2.1.8 Monitoring Systems — Weight (default)= 0.00

Level 3	Entire building and common properties: Retailers Restaurants
Level 1	There is no multiple zoning for separate loads on the same floor, but sensors or other monitoring systems are installed for monitoring a representative zone.
Level 2	
■Level 3	There is multiple zoning for separate loads on the same floor, and sensors or other monitoring systems are installed for monitoring multiple zones.
Level 4	
Level 5	Each floor is zoned in detail for sales areas and tenants, and sensors or other monitoring systems are installed for monitoring those zones in detail.

2.2 Humidity Control — Weight (default)= 0.20

Excluded	Entire building and common properties: Preliminary Design Stage: Offices Retailers Restaurants Halls Hospitals Hotels Apartments Factories	Schools
Level 1	Humidity is free to vary within the 40~70% range set by the Law for Maintenance of Sanitation in Buildings.	Humidity setting is free to vary within the 30~80% range.
Level 2		
Level 3	The system has humidification functions which are generally set for 40% in winter and 50% in summer.	The system has humidification functions, which are generally set for 40~70% in winter and 50~65% in summer.
Level 4		
Level 5	The system has humidification and dehumidification functions and is set for a range of 45~55% with reference to the ASHRAE Comfortable Room Temperature Range and POEM-O.	

	Execution Design and Construction Completion Stage: Offices Retailers Restaurants Halls Hospitals Hotels Apartments	Schools
Level 1	Equipment capacity is sufficient to keep humidity to 70% in summer and 40% in winter.	Equipment capacity is sufficient to keep humidity to 80% or below in summer and 30% or above in winter.
Level 2		

Excluded	Residential and Accommodation Sections: Preliminary Design Stage: Hospitals Hotels	Apartments
Level 1	Humidity is free to vary within the 40~70% range set by the Law for Maintenance of Sanitation in Buildings.	No consideration given.
Level 2		(inapplicable)
Level 3	The system has humidification functions which are generally set for 40% in winter and 50% in summer*.	Appropriate ventilation functions are provided, and anti-condensation measures have been taken on elements that can act as heat bridges, such as insulation reinforcement, humidity barriers and permeable layers.
Level 4		Dehumidification functions are provided, and anti-condensation measures have been taken on elements that can act as heat bridges, such as insulation reinforcement, humidity barriers and permeable layers.
Level 5	The system has humidification and dehumidification functions and is set for a range of 45~55% with reference to the ASHRAE Comfortable Room Temperature Range and POEM-O.	Dehumidification and humidification functions are provided and set to a comfort range of 45~55%, and anti-condensation measures have been taken on elements that can act as heat bridges, such as insulation reinforcement, humidity barriers and permeable layers.

	Execution Design and Construction Completion Stage: Hospitals Hotels	Apartments
Level 1	Equipment capacity is sufficient to keep humidity to 70% in summer and 40% in winter.	No consideration given.
Level 2		(Inapplicable)

Level 3	Humidification equipment is available, and equipment capacity is generally sufficient to keep humidity to 50% in summer and 40% in winter.	Humidification equipment is available, and equipment capacity is generally sufficient to keep humidity to 40~70% in winter and 50~65% in summer.	Level 3	Humidification equipment is available, and equipment capacity is generally sufficient to keep humidity to 50% in summer and 40% in winter.	Appropriate ventilation functions are provided, and anti-condensation measures have been taken on elements that can act as heat bridges, such as insulation reinforcement, humidity barriers and permeable layers.
Level 4			Level 4		Humidification functions are provided, and anti-condensation measures have been taken on elements that can act as heat bridges, such as insulation reinforcement, humidity barriers and permeable layers.
Level 5	Humidification and dehumidification equipment is available, and equipment capacity is sufficient to keep humidity to 50% in summer and 50% in winter.		Level 5	Humidification and dehumidification equipment is available, and equipment capacity is sufficient to keep humidity to 50% in summer and 50% in winter.	Dehumidification and humidification functions are provided and set to a comfort range of 45~55%, and anti-condensation measures have been taken on elements that can act as heat bridges, such as insulation reinforcement, humidity barriers and permeable layers.

2.3 Type of Air Conditioning System

Excluded	Entire building and common properties	Excluded	Residential and Accommodation Sections	
	Preliminary Design Stage		Preliminary Design Stage	
	Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories		Hospitals Hotels	Apartments
	Weight(default)= 0.30		Weight(default)= 0.30	
Level 1	The air conditioning system was planned with no particular consideration for the vertical temperature difference and air speed in the room.	**Level 1**	The air conditioning system was planned with no particular consideration for the vertical temperature difference and air speed in the room.	The air conditioning system was chosen with no particular consideration for the vertical temperature difference and air speed in air-conditioned rooms, or for temperature differences between air-conditioned and non-air-conditioned rooms.
Level 2		**Level 2**		
Level 3	The air conditioning system is normal, but the air supply and extraction plan considers the vertical temperature difference and air speed in the room.	**Level 3**	The air conditioning system is normal, but the air supply and extraction plan considered the vertical temperature difference and air speed in the room.	The air conditioning system was chosen with consideration for the vertical temperature difference and air speed in air-conditioned rooms, or for temperature differences between air-conditioned and non-air-conditioned rooms.
Level 4		**Level 4**		
Level 5	The air conditioning system (note) was chosen to mitigate the vertical temperature difference and air speed in the room.	**Level 5**	The air conditioning system* was chosen to mitigate the vertical temperature difference and air speed in the room.	The air conditioning system was chosen with consideration to achieve less differences for the vertical temperature and air speed in air-conditioned rooms, or for temperature between air-conditioned and non-air-conditioned rooms.
	Execution Design and Construction Completion Stage		Execution Design and Construction Completion Stage	
	Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories		Hospitals Hotels	Apartments
Level 1	The air conditioning system was planned with no particular consideration for the vertical temperature difference and air speed in the room.	Level 1	The air conditioning system was planned with no particular consideration for the vertical temperature difference and air speed in the room.	The air conditioning system was chosen with no particular consideration for the vertical temperature difference and air speed in air-conditioned rooms, or for temperature difference between air-conditioned and non-air-conditioned rooms.
Level 2		Level 2		
Level 3	The air conditioning system is normal, but the air supply and extraction plan considers the vertical temperature difference and air speed in the room. Targets for vertical temperature difference and air speed are set to within 5°C and 0.35m/s, respectively.	Level 3	The air conditioning system is normal, but the air supply and extraction plan considered the vertical temperature difference and air speed in the room. Targets for vertical temperature difference and air speed are set to within 5˚C and 0.5m/s, respectively.	Targets for vertical temperature difference and air speed within rooms are set to within 4°C and 0.4m/s, respectively. Spot air conditioning is available even in non-air-conditioned areas such as toilets and bathrooms, mitigating temperature difference between rooms.
Level 4		Level 4		
Level 5	The air conditioning system (note) was chosen to mitigate the vertical temperature difference and air speed in the room. Targets for vertical temperature difference and air speed are set to within 2°C and 0.15m/s, respectively.	Level 5	The air conditioning system (note) was chosen to mitigate the vertical temperature difference and air speed in the room. Targets for vertical temperature difference and air speed are set to within 2˚C and 0.15m/s, respectively.	Targets for vertical temperature difference and air speed within rooms are set to within 2°C and 0.2m/s, respectively. Air conditioning is available in all rooms, including rooms such as toilets and bathrooms, making it possible to eliminate temperature difference between rooms.

Note)) This refers to, for example, ceiling and floor radiant and cooling systems, or floor-vented system etc.

3 Lighting & Illumination

3.1 Daylighting

3.1.1 Daylight Factor

Excluded	Entire building and common properties	Excluded	Residential and Accommodation Sections	
	Offices Schools Hospitals Hotels Apartments Factories		Hospitals Hotels	Apartments
	Weight (default)= 0.60		Weight (default)= 0.50	
Level 1	Daylight factor: Less than 1.0%	**Level 1**	Less than 0.5%	Less than 0.5%
Level 2	Daylight factor: 1.0% or more, less than 1.5%	**Level 2**	0.5% or more ~ less than 0.75%	0.5% or more ~ less than 1.0%
Level 3	Daylight factor: 1.5% or more, less than 2.0%	**Level 3**	0.75% or more ~ less than 1.0%	1.0% or more ~ less than .5%
Level 4	Daylight factor: 2.0% or more, less than 2.5%	**Level 4**	1.0% or more ~ less than 1.25%	1.5% or more ~ less than 2.0%
Level 5	Daylight factor: 2.5% or more	**Level 5**	1.25% or more	2.0% or more

3.1.2 Openings by Orientation — Weight (default)= 0.30

Level 5	Residential and Accommodation Sections
	Apartments
Level 1	No south-facing windows.
Level 2	(Inapplicable)
Level 3	South-facing windows.
Level 4	(Inapplicable)
■Level 5	South and east-facing windows.

3.1.3 Daylight Devices

	Weight (default)= 0.40		Weight (default)= 0.20	
Level 5	Entire building and common properties		Level 5	Residential and Accommodation Sections
	Offices Schools Factories	Retailers Restaurants Hospitals Hotels Apartments		Hospitals Hotels Apartments
Level 1	(Inapplicable)	(Inapplicable)	Level 1	(Inapplicable)
Level 2	(Inapplicable)	(Inapplicable)	Level 2	(Inapplicable)
Level 3	There are no daylight devices.	There are no daylight devices	Level 3	There are no daylight devices
Level 4	There is one type of daylight device.	(Inapplicable)	Level 4	(Inapplicable)
■Level 5	There are two or more types of daylight device, or they have advanced functions.	There are some daylight devices.	■Level 5	There are some daylight devices.

3.2 Anti-glare Measures

3.2.1 Glare from light fixtures

	Weight (default)= 0.40		Weight (default)= 0.40	
Excluded	Entire building and common properties		Excluded	Residential and Accommodation Sections
	Offices Hospitals Hotels Apartments Factories	Schools		Hospitals Hotels Apartments
Level 1	G3,V3	No anti-glare measures	Level 1	G2,V2
Level 2	(Inapplicable)	(Inapplicable)	Level 2	(Inapplicable)
Level 3	G2,V2	G3	Level 3	G1,V1
Level 4	(Inapplicable)	G2	Level 4	(Inapplicable)
Level 5	G1,G0,V1	G1,G0,V1	Level 5	G0

3.2.2 Daylight Control

	Weight (default)= 0.60			Weight (default)= 0.60	
Excluded	Entire building and common properties		Excluded	Residential and Accommodation Sections	
	Preliminary Design Stage	Execution Design and Construction Completion Stage		Preliminary Design Stage	Execution Design and Construction Completion Stage
	Offices Schools Hospitals Hotels Apartments Factories	Offices Schools Hospitals Hotels Apartments Factories		Hospitals Hotels Apartments	Hospitals Hotels Apartments
Level 1	Nothing.	As left	Level 1	Nothing.	Glare when facing south on a clear day.
Level 2	(Inapplicable)	As left	Level 2	(Inapplicable)	(Inapplicable)
Level 3	Controlled by blinds.	As left	Level 3	Controlled by curtains	Slight glare when facing south on a clear day.
Level 4	(Inapplicable)	As left	Level 4	(Inapplicable)	(Inapplicable)
Level 5	Controlled by eaves and blinds.	As left	Level 5	Controlled by eaves and curtains	No glare, even facing south on a clear day.

3.3 Illuminance Level

3.3.1 Illuminance

	Weight (default)= 0.70		Weight (default)= 1.00	
Excluded	Entire building and common properties		Excluded	Residential and Accommodation Sections
	Offices Hospitals Hotels Apartments Factories	Schools		Hospitals	Hotels Apartments
Level 1	Less than 500lx	Less than 400lx	Level 1	Less than 150lx	Less than 100 lx
Level 2	500lx or more, less than 600lx	400lx or more, less than 500lx	Level 2	(Inapplicable)	(Inapplicable)
Level 3	600lx or more, less than 750lx, or 1,500lx or more	500lx or more, less than 600lx, or 1,000lx or more	Level 3	150lx or more	100 lx or more
Level 4	750lx or more, less than 1,000lx	600lx or more, less than 750lx	Level 4	(Inapplicable)	(Inapplicable)
Level 5	1,000lx or more, less than 1,500lx	750lx or more, less than 1,000lx	Level 5	(Inapplicable)	(Inapplicable)

3.3.2 Uniformity Ratio of Illuminance

	Weight (default)= 0.30		Weight (default)= 0.00
Excluded	Entire building and common properties	Level 3	Residential and Accommodation Sections
	Offices Schools Hospitals Hotels Apartments Factories		Hospitals
Level 1	Overall lighting may leave very dark areas in the interior, which can feel uncomfortable.	Level 1	No noise countermeasures. (Less than two countermeasures among the efforts to be evaluated for equipment noise.)
Level 2	Overall lighting may leave dark areas in the interior, which can feel slightly uncomfortable.	Level 2	Some measures taken. (Two or three equipment noise countermeasures used from among the efforts to be evaluated.)
Level 3	Overall lighting may leave dark areas in the interior to an acceptable degree. With task/ambient lighting, the balance between work surface brightness and surrounding brightness is inadequate.	■Level 3	Noise countermeasures used. (Four of five equipment noise countermeasures used from among the efforts to be evaluated.)
Level 4	With overall lighting, there are almost no dark areas in the interior.	Level 4	Countermeasures at a moderately high level. (Six or seven equipment noise countermeasures used from among the efforts to be evaluated.)
Level 5	With overall lighting, there are no dark areas in the interior. With task/ambient lighting, the balance between work surface brightness and surrounding brightness is good.	Level 5	Countermeasures at an advanced level. (All equipment noise countermeasures used from among the efforts to be evaluated.)

3.4 Lighting Controllability

	Weight (default)= 0.25		Weight (default)= 0.25
Excluded	Entire building and common properties	Excluded	Residential and Accommodation Sections
	Preliminary Design Stage		Preliminary Design Stage

	Offices Schools Retailers Hospitals Hotels Apartments Factories		Hospitals	Hotels Apartments
Level 1	No lighting control is possible.	**Level 1**	No lighting control is possible.	No lighting control is possible.
Level 2	(Inapplicable)	**Level 2**	(Inapplicable)	(Inapplicable)
Level 3	Crude lighting control is possible in working rooms, sales areas etc.	**Level 3**	Crude lighting control is possible in units of several beds	Crude lighting control is possible in the entire room
Level 4	(Inapplicable)	**Level 4**	(Inapplicable)	(Inapplicable)
Level 5	Detailed lighting control is possible in individual working rooms, sales areas etc.	**Level 5**	Detailed lighting control is possible for individual bed units.	Detailed lighting control is possible in several areas of the room.
	Execution Design and Construction Completion Stage		Execution Design and Construction Completion Stage	
	Offices Schools Retailers Hospitals Hotels Apartments Factories		Hospitals	Hotels Apartments
Level 1	Control is not zoned and lighting cannot be adjusted from a control panel, from the fixtures or elsewhere.	**Level 1**	No lighting control is possible.	No lighting control is possible.
Level 2	(Inapplicable)	**Level 2**	(Inapplicable)	(Inapplicable)
Level 3	Control is possible in units of 4 working areas. Lighting can be adjusted from a control panel, from the fixtures or elsewhere, and any of the conditions is met.	**Level 3**	Controllable in units of several beds. Lighting can be adjusted from a control panel, from the fixtures or elsewhere, and any of the conditions is met.	There is a lighting control panel, device etc. for broadly controlling overall lighting in the room.
Level 4	(Inapplicable)	**Level 4**	(Inapplicable)	(Inapplicable)
Level 5	Control is possible in units of 1 working area, and adjustment is possible from control terminals, remote controls or similar means.	**Level 5**	Detailed lighting control is possible for individual bed units.	There are terminals, remote control units or other means for detailed control of lighting in several areas of the interior.

4 Air Quality

4.1 Source Control

4.1.1 Chemical Pollutants

	Weight (default)= 0.33		Weight (default)= 0.25
Excluded	Entire building and common properties Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories	**Excluded**	Residential and Accommodation Sections Hospitals Hotels Apartments
Level 1	Not adequate for level 3.	**Level 1**	Not adequate for level 3.
Level 2	(Inapplicable)	**Level 2**	(Inapplicable)
Level 3	Satisfies the Building Standards Law.	**Level 3**	Satisfies the Building Standards Law.
Level 4	Satisfies the Building Standards Law, and nearly all materials used (at least 70% by area of floors, walls and ceilings) are not subject to restriction under the Building Standards Law (JIS/ JAS F☐☐).	**Level 4**	Satisfies the Building Standards Law, and nearly all materials used (at least 70% by area of floors, walls and ceilings) are not subject to restriction under the Building Standards Law (JIS/ JAS F☐☐).
Level 5	Satisfies the Building Standards Law, and nearly all materials used (at least 90% by area of floors, walls and ceilings) are not subject to restriction under the Building Standards Law (JIS/ JAS F☐☐). Furthermore, construction materials used throughout have low emission levels of VOCs other than formaldehyde.	**Level 5**	Satisfies the Building Standards Law, and nearly all materials used (at least 90% by area of floors, walls and ceilings) are not subject to restriction under the Building Standards Law (JIS/ JAS F☐☐). Furthermore, construction materials used throughout have low emission levels of VOCs other than formaldehyde.

4.1.2 Mineral Fiber

	Weight (default)= 0.33		Weight (default)= 0.25
Level 5	Entire building and common properties Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories	**Level 5**	Residential and Accommodation Sections Hospitals Hotels Apartments
Level 1	Not adequate for level 3.	**Level 1**	Not adequate for level 3.
Level 2	(Inapplicable)	**Level 2**	(Inapplicable)
Level 3	No exposure in the living room, or in any location from which mineral fibers could enter the living room. Some level of exposure elsewhere.	**Level 3**	No exposure in the living room, or in any location from which mineral fibers could enter the living room. Some level of exposure elsewhere.
Level 4	(Inapplicable)	**Level 4**	(Inapplicable)
■Level 5	Absolutely no exposed mineral fibers.	**■Level 5**	Absolutely no exposed mineral fibers.

4.1.3 Mites, Mold etc.

	Weight (default)= 0.33		Weight (default)= 0.25
Level 5	Entire building and common properties Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories	**Level 5**	Residential and Accommodation Sections Hospitals Hotels Apartments
Level 1	Not adequate for level 3.	**Level 1**	Not adequate for level 3.
Level 2	(Inapplicable)	**Level 2**	(Inapplicable)
Level 3	The décor on at least 50% of the area of floors and external walls has been designed to restrict the growth of mites and mold, or to facilitate cleaning and maintenance.	**Level 3**	The decor on at least 50% of the area of floors and external walls has been designed to restrict the growth of mites and mold, or to facilitate cleaning and maintenance.
Level 4	The décor on at least 65% of the area of floors and external walls has been designed to restrict the growth of mites and mold, or to facilitate cleaning and maintenance.	**Level 4**	The decor on at least 65% of the area of floors and external walls has been designed to restrict the growth of mites and mold, or to facilitate cleaning and maintenance.
■Level 5	The décor on at least 80% of the area of floors and external walls has been designed to restrict the growth of mites and mold, or to facilitate cleaning and maintenance.	**■Level 5**	The decor on at least 80% of the area of floors and external walls has been designed to restrict the growth of mites and mold, or to facilitate cleaning and maintenance.

4.1.4 Legionella

	Weight (default)= 0.00		Weight (default)= 0.25
Level 3	Entire building and common properties Offices Schools Retailers Restaurants Halls Factories	**Excluded**	Residential and Accommodation Sections Hospitals Hotels Apartments
Level 1	Not adequate for level 3.	**Level 1**	Not adequate for level 3.
Level 2	(Inapplicable)	**Level 2**	(Inapplicable)

■Level 3	There is a mimimum level of measures for water processing in cooling towers, anti-dispersion and hot water supply.	Level 3	There is a mimimum level of measures for water processing in cooling towers, anti-dispersion and hot water supply.
Level 4	There is no water cooling tower, or there is thorough water processing in water cooling towers, thorough measures against dispersion, and a minimum level of measures for water heaters.	Level 4	(Inapplicable)
Level 5	There is no water cooling tower, or water processing in water cooling towers, measures against dispersion, and measures for water heaters are all thorough. There is also a good design for the maintenance of this equipment.	Level 5	There is no water cooling tower. However there are water processing in water cooling towers, measures against dispersion and measures for water heaters are all thorough. There is also a good design for the maintenance of this equipment.

4.2 Ventilation

4.2.1 Ventilation Rate

	Weight (default)= 0.50		Weight (default)= 0.25
Excluded	Entire building and common properties Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories	Excluded	Residential and Accommodation Sections Hospitals Hotels Apartments
Level 1	Not adequate for level 3.	Level 1	Not adequate for level 3.
Level 2	(Inapplicable)	Level 2	(Inapplicable)
Level 3	For rooms equipped with centrally-managed air mixing equipment, the adequate ventilation volume is based on the SHASE-102-1997 ventilation standard and commentary. If not, the volume is the minimum to satisfy the Building Standards Law.	Level 3	For rooms equipped with centrally-managed air mixing equipment, the adequate ventilation volume is based on the SHASE-102-1997 ventilation standard and commentary. If not, the volume is the minimum to satisfy the Building Standards Law.
Level 4	For rooms equipped with centrally-managed air mixing equipment, the ventilation volume is based on the SHASE-102-1997 ventilation standard and commentary. If not, the volume is the 1.2 times that required minimum to satisfy the Building Standards Law.	Level 4	For rooms equipped with centrally-managed air mixing equipment, the ventilation volume is based on the SHASE-102-1997 ventilation standard and commentary. If not, the volume is the 1.2 times that required minimum to satisfy the Building Standards Law.
Level 5	For rooms equipped with centrally-managed air mixing equipment, the ventilation volume is based on the SHASE-102-1997 ventilation standard and commentary. If not, the volume is the 1.4 times that required minimum to satisfy the Building Standards Law.	Level 5	For rooms equipped with centrally-managed air mixing equipment, the ventilation volume is based on the SHASE-102-1997 ventilation standard and commentary. If not, the volume is the 1.4 times that required minimum to satisfy the Building Standards Law.

4.2.2 Natural Ventilation Performance

	Weight (default)= 0.00		Weight (default)= 0.25	
Level 3	Entire building and common properties Offices Schools Factories	Excluded	Residential and Accommodation Sections Hospitals Hotels	Apartments
Level 1	Not adequate for level 3.	Level 1	Not adequate for level 3.	Not adequate for level 3.
Level 2	(Inapplicable)	Level 2	(Inapplicable)	(Inapplicable)
■Level 3	There are no effective openings for natural ventilation in rooms where windows cannot be opened. Or, in rooms with openable windows, the area of effective openings for natural ventilation is at least 1/20 the floor area of the room.	Level 3	In a building with ventilation equipment, there are no effective openings for natural ventilation in rooms. Or in a building with no ventilation equipment, the rooms in Residential and Accommodation Section have openable windows available for at least 1/20 of the floor area of the room.	Openable windows are available for at least 1/10 of the floor area of residential and accommodation sections.
Level 4	In rooms with unopenable windows, the area of effective openings for natural ventilation is at least 50cm²/m² of floor area. Or, in rooms with openable windows, the area of effective openings for natural ventilation is at least 1/15 the floor area of the room.	Level 4	In a building with ventilation equipment, the rooms in Residential and Accommodation Section have openable windows available for at least 50cm2/m2 of the floor area of the room. Or in a building with no ventilation equipment, the rooms in Residential and Accommodation Section have openable windows available for at least 1/15 of the floor area of the room.	Openable windows are available for at least 1/8 of the floor area of residential and accommodation sections.
Level 5	In rooms with unopenable windows, the area of effective openings for natural ventilation is at least 100cm²/m² of floor area. Or, in rooms with openable windows, the area of effective openings for natural ventilation is at least 1/10 the floor area of the room.	Level 5	In a building with ventilation equipment, the rooms in Residential and Accommodation Section have openable windows available for at least 100cm2/m2 of the floor area of the room. Or in a building with no ventilation equipment, the rooms in Residential and Accommodation Section have openable windows available for at least 1/10 of the floor area of the room.	Openable windows are available for at least 1/6 of the floor area of residential and accommodation sections.

4.2.3 Consideration for Outside Air Intake

	Weight (default)= 0.50				Weight (default)= 0.25	
Level 5	Entire building and common properties			Level 5	Residential and Accommodation Sections	
	Preliminary Design Stage (Offices Schools Retailers Restaurants Halls Hospitals Hotels Factories)	Excecution Design Stage (Offices Schools Retailers Restaurants Halls Hospitals Hotels Factories)	Apartments		Hospitals Hotels	Apartments
Level 1	Not adequate for level 3.	Not adequate for level 3.	Not adequate for level 3.	Level 1	Not adequate for level 3.	Not adequate for level 3.
Level 2	(Inapplicable)	(Inapplicable)	(Inapplicable)	Level 2	(Inapplicable)	(Inapplicable)

Level 3	Considering conditions in areas surrounding the site, the air intakes are oriented away from pollution sources and positioned to keep enough distance from extraction vents. They are also oriented away from extraction vents and positioned at least 3m away.	Considering conditions in areas surrounding the site, the air intakes are oriented away from pollution sources and positioned to keep enough distance from extraction vents. They are also oriented away from extraction vents and positioned at least 3m away.	The air intakes are oriented away from pollution sources, considering conditions in areas surrounding the site.	**Level 3**	Considering conditions in areas surrounding the site, the air intakes are oriented away from pollution sources and positioned to keep enough distance from extraction vents. They are also oriented away from extraction vents and positioned at least 3m away.	The air intakes are oriented away from pollution sources, considering conditions in areas surrounding the site.
Level 4	(Inapplicable)	Considering conditions in areas surrounding the site, the air intakes are oriented away from pollution sources and positioned to keep enough distance from extraction vents. They are also positioned at least 6m away.	(Inapplicable)	**Level 4**	(Inapplicable)	(Inapplicable)
■Level 5	Considering conditions in areas surrounding the site, the air intakes are oriented away from pollution sources and positioned to keep enough distance from extraction vents. They are also oriented away from extraction vents and positioned at least 6m away.	Considering conditions in areas surrounding the site, the air intakes are oriented away from pollution sources and positioned to keep enough distance from extraction vents. They are also oriented away from extraction vents and positioned at least 6m away.	The air intakes are oriented away from pollution sources, considering conditions in areas surrounding the site. They are also oriented away from extraction vents and positioned at least 3m away.	**■Level 5**	Considering conditions in areas surrounding the site, the air intakes are oriented away from pollution sources and positioned to keep enough distance from extraction vents. They are also oriented away from extraction vents and positioned at least 6m away.	The air intakes are oriented away from pollution sources, considering conditions in areas surrounding the site. They are also oriented away from extraction vents and positioned at least 3m away.

4.2.4 Air Supply Planning Weight (default)= 0.00 Weight (default)= 0.25

Level 3	Entire building and common properties Offices Schools Retailers Restaurants Halls Hospitals Hotels Factories	Excluded	Residential and Accommodation Sections Hospitals Hotels Apartments
Level 1	Not adequate for level 3.	**Level 1**	Not adequate for level 3.
Level 2	(Inapplicable)	**Level 2**	(Inapplicable)
■Level 3	Outside air is mixed with return air in the air conditioning equipment and supplied to each room in a volume determined by the thermal load in that room, so the system does not guarantee delivery of an adequate volume of outside air to all rooms in all load conditions.	**Level 3**	Outside air is mixed with return air in the air conditioning equipment and supplied to each room in a volume determined by the thermal load in that room.
Level 4	(Inapplicable)	**Level 4**	(Inapplicable)
Level 5	Outside air is not mixed with return air, and is supplied directly to each room in the volume required for ventilation. Therefore, the system guarantees the necessary outside air, delivered to the places where it is needed, regardless of the load conditions in each room.	**Level 5**	Outside air is not mixed with return air, and is supplied directly to each room in the volume required for ventilation.

4.3 Operation Plan

4.3.1 CO_2 Monitoring Weight (default)= 0.00 **4.3.2 Control of Smoking** Weight (default)= 0.00

Level 3	Entire building and common properties Offices Schools Retailers Restaurants Halls Factories	Level 3	Entire building and common properties Offices Schools Retailers Restaurants Halls Hospitals Hotels Factories
Level 1	Not adequate for level 3.	**Level 1**	Not adequate for level 3.
Level 2	(Inapplicable)	**Level 2**	(Inapplicable)
■Level 3	The system is based on manual monitoring.	**■Level 3**	There is a minimum level of measures such as smoking booths to avoid exposing non-smokers to smoke.
Level 4	(Inapplicable)	**Level 4**	(Inapplicable)
Level 5	The system has constant central monitoring of CO2 to maintain air quality.	**Level 5**	Smoking is confirmed to be prohibited in the entire building. Alternatively, there is an adequate level of measures such as smoking booths to avoid exposing non-smokers to smoke.

Q-2 Quality of Service

Select from pull-down menus or enter figures and comments.

Construction Completion Stage

1 Service Ability

1.1 Functionality & Usability

1.1.1 Provision of Space & Storage

Weight (default)= 0.00

Level 3	Entire building and common properties	Level 3	Residential and Accommodation Sections	
	Offices Factories		Hospitals	Hotels
Level 1	Not adequate for level 3.	Level 1	Not adequate for level 3.	Not adequate for level 3.
Level 2	(Inapplicable)	Level 2	(Inapplicable)	(Inapplicable)
■Level 3	Working space per person is at least 6m².	■Level 3	Private rooms at least 8m²/bed, multi-bed rooms at least 6m²/bed.	Single room at least 15m², twin room at least 22m².
Level 4	Working space per person is at least 9m².	Level 4	(Inapplicable)	Single room at least 22m², twin room at least 32m².
Level 5	Working space per person is at least 12m².	Level 5	Private rooms at least 10m²/bed, multi-bed rooms at least 8m²/bed.	Single room at least 30m², twin room at least 40m².

1.1.2 Adaptation of Building Structure & Services to IT Innovatio

Weight (default)= 0.00

1.1.3 Barrier-free Planning

Weight (default)= 1.00

Level 3	Entire building and common properties	Excluded	Entire building and common properties	
	Offices Factories		Retailers Restaurants Halls Hospitals Hotels	Offices Schools Apartments Factories
Level 1	Not adequate for level 3.	Level 1	Not adequate for level 3.	Not adequate for level 3.
Level 2	(Inapplicable)	Level 2	(Inapplicable)	(Inapplicable)
■Level 3	Measures such as OA floors accommodate layout changes, and electrical sockets for OA equipment have at least 30VA/ m² socket capacity.	Level 3	The building satisfies the standard for barrier-free (the minimum level) under the Barrier-free Building Law.	The building satisfies at least half of the items of the standard for barrier-free (the minimum level) under the Barrier-free Building Law.
Level 4	Measures such as OA floors accommodate layout changes, and electrical sockets for OA equipment have at least 40VA/m² socket capacity.	Level 4	The building satisfies the incentive standard for barrier-free (the preferred level) under the Barrier-free Building Law.	The building satisfies the standard for barrier-free (the minimum level) under the Barrier-free Building Law.
Level 5	In addition to OA floors, measures such as pre-wiring are used to facilitate layout changes. Also, electrical sockets for OA equipment have at least 50VA/m² socket capacity.	Level 5	The building exceeds the incentive standard for barrier-free (the preferred level) under the Barrier-free Building Law, achieving the universal design level.	The building satisfies the incentive standard for barrier-free (the preferred level) under the Barrier-free Building Law.

1.2 Amenity

1.2.1 Perceived Spaciousness & Access to View

Weight (default)= 0.00

Weight (default)= 0.50

Level 3	Entire building and common properties			Excluded	Residential and Accommodation Sections
	Offices Factories	Schools	Retailers Restaurants		Hospitals Hotels Apartments
Level 1	Not adequate for level 3.	Not adequate for level 3.	Not adequate for level 3.	Level 1	Not adequate for level 3.
Level 2	(Inapplicable)	(Inapplicable)	(Inapplicable)	Level 2	(Inapplicable)
■Level 3	The ceiling height is at least 2.5m in offices, and the windows are arranged to give all workers an adequate awareness of the outside.	Class room ceiling height is at least 3m.	Sales area ceiling height is at least 3m.	Level 3	Ceiling height at least 2.3m in residential and accommodation sections.
Level 4	The ceiling height is at least 2.7m in offices, and the windows are placed to give all workers an adequate awareness of the outside.	Class room ceiling height is at least 3.1m.	Sales area ceiling height is at least 3.3m.	Level 4	Ceiling height at least 2.5m in residential and accommodation sections.
Level 5	The ceiling height is at least 2.9m in offices, and the windows are placed to give all workers an adequate awareness of the outside.	Class room ceiling height is at least 3.2m.	Sales area ceiling height is at least 3.6m.	Level 5	Ceiling height at least 2.7m in residential and accommodation sections.

1.2.2 Space for Refreshment

Weight (default)= 0.00

Level 3	Entire building and common properties	
	Offices Factories	Retailers
Level 1	Not adequate for level 3.	Not adequate for level 3.
Level 2	(Inapplicable)	(Inapplicable)
■Level 3	Smoking areas are provided.	Rest space is at least 2% of the sales floor area.
Level 4	Space for refreshment* is provided that is separate from smok	Rest space is at least 3% of the sales floor area.
Level 5	Space for refreshment* is provided that is separate from smoking areas, and it is equipped with beverage vending machines and similar equipment.	Rest space is at least 4% of the sales floor area.

1.2.3 Décor Planning

Weight (default)= 1.00

Weight (default)= 0.50

	Entire building and common properties		Residential and Accommodation Sections

Excluded	Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories
Level 1	Not adequate for level 3.
Level 2	(Inapplicable)
Level 3	There has been some degree of interior décor planning, such as color planning of wallpaper and carpets.
Level 4	(Inapplicable)
Level 5	There has been careful interior décor planning, such as color planning of wallpaper and carpets.

Excluded	Hospitals Hotels Apartments
Level 1	Not adequate for level 3.
Level 2	(Inapplicable)
Level 3	There has been some degree of interior decor planning, such as color planning of wallpaper and carpets.
Level 4	(Inapplicable)
Level 5	There has been careful interior decor planning, such as color planning of wallpaper and carpets.

2 Durability & Reliability

2.1 Earthquake Resistance

2.1.1 Earthquake-resistance

Weight (default)= 0.80

Level 3	Entire building and common properties Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories
Level 1	(Inapplicable)
Level 2	(Inapplicable)
■Level 3	The building's earthquake resistance meets the requirements of the Building Standards Law.
Level 4	The building's earthquake resistance exceeds the requirements of the Building Standards Law by a 20% margin.
Level 5	The building's earthquake resistance exceeds the requirements of the Building Standards Law by a 50% margin. Alternatively, damage control design has been used.

2.1.2 Seismic Isolation & Vibration Damping Systems

Weight (default)= 0.20

Level 3	Entire building and common properties Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories
Level 1	(Inapplicable)
Level 2	(Inapplicable)
■Level 3	No seismic isolation or vibration damping system is used.
Level 4	A vibration damping system is used.
Level 5	A seismic isolation system is used.

2.2 Service Life of Components

2.2.1 Necessary Refurbishment Interval for Exterior Finishes

Weight (default)= 0.29

Level 5	Entire building and common properties Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories
Level 1	Less than 10 years
Level 2	10 years or more, less than 20 years
Level 3	20 years
Level 4	21 years or more, less than 30 years
■Level 5	30 years or more

2.2.2 Necessary Renewal Interval for Main Interior Finishes

Weight (default)= 0.12

Excluded	Entire building and common properties Offices Schools Retailers Restaurants Halls Hospitals Hotels Factories	Apartments
Level 1	Less than 5 years	Less than 10 years
Level 2	5 years or more, less than 10 years	10 years or more, less than 15 years
Level 3	10 years	15 years
Level 4	11 years or more, less than 20 years	16 years or more, less than 25 years
Level 5	20 years or more	25 years or more

2.2.3 Necessary Renewal Interval for Plumbing & Wiring Materials

Weight (default)= 0.29

Excluded	Entire building and common properties Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories
Level 1	(Inapplicable)
Level 2	(Inapplicable)
Level 3	15 years
Level 4	16 years or more, less than 30 years
Level 5	30 years or more

2.2.4 Necessary Renewal Interval for Major Equipment & Services

Weight (default)= 0.29

Excluded	Entire building and common properties Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories
Level 1	Less than 7 years
Level 2	7 or more, less than 15 years
Level 3	15 years
Level 4	16 years or more, less than 30 years
Level 5	30 years or more

2.3 Reliability

2.3.1 HVAC System

Weight (default)= 0.20

Level 3	Entire building and common properties Offices Halls Hospitals Hotels Factories	Schools Retailers Restaurants
Level 1	None is applicable to the efforts to be evaluated.	None is applicable to the efforts to be evaluated.
Level 2	(Inapplicable)	(Inapplicable)
■Level 3	Applicable to one of the efforts to be evaluated. Alternatively, there is no centralized HVAC system.	Applicable to one of the efforts to be evaluated. Alternatively, there is no centralized air conditioning and ventilation equipment.
Level 4	Applicable to two of the efforts to be evaluated.	(Inapplicable)

2.3.2 Water Supply & Drainage

Weight (default)= 0.20

Level 1	Entire building and common properties Offices Schools Halls Hospitals Hotels Apartments Factories	Retailers Restaurants
■Level 1	None is applicable to the efforts to be evaluated.	None is applicable to the efforts to be evaluated.
Level 2	(Inapplicable)	(Inapplicable)
Level 3	Applicable to one of the efforts to be evaluated.	Applicable to one of the efforts to be evaluated.
Level 4	Applicable to two of the efforts to be evaluated.	(Inapplicable)

Level 5	Applicable to three or more of the efforts to be evaluated.	Applicable to two of the efforts to be evaluated.	**Level 5**	Applicable to three or more of the efforts to be evaluated.	Applicable to two or more of the efforts to be evaluated

Efforts to improve the reliability of HVAC system

Building Type	Offices Halls Hospitals Hotels Factories	Schools Retailers Restaurants
Floor area	m²	300m²
Score	**Level 3**	**Level 3**
No	The building has centrally-managed air conditioning and ventilation equipment for multiple rooms. If yes, select from the methods below.	
	1) Circuits are divided according to the importance of their ventilation equipment, and more important circuits are given priority in operation after a disaster. Also, ways of running the ventilation with reduced load capacity have been examined.	
	2)Dispersion and duplication of heat source types (electricity, gas etc.), with backups.	
	3) Countermeasures (such as suspended pipes) have been taken to ensure that overall function can continue even when the building is partially damaged by an earthquake.	
O	4) Circuits are divided according to the importance of their air conditioning equipment, and more important circuits are given priority in operation after a disaster. Also, ways of running the air conditioning with reduced load capacity have been planned.	

Efforts to improve the reliability of water supply & drainage

Building Type	Offices Schools Halls Hospitals Hotels Apartments Factories	Retailers Restaurants
Floor area	300m²	m²
Score	**Level 1**	**Level 1**
	1) Water-saving equipment is used. This is limited to cases where it is used on a majority of the installed equipment. Water-saving devices are those approved as Eco Mark products, or those equivalent to water-saving equipment that is the approval standard for Eco Mark products.	
	2) Plumbing systems are separated as far as possible to reduce the portions that become unserviceable in the event of a disaster.	
	3) The building has a pit for temporary waste water storage, in case main sewerage is unavailable after a disaster.	
	4) The building has two separate tanks, one for water reception and one elevated tank.	
	5) Planning enables the use of well water, rainwater, gray water etc.	
	6) Provision of a rainwater storage tank to provide domestic noncommercial water in the event of a disaster. . (Not applied to "Retailers" and "Restaurants.")	
	7) The building is equipped with a simple filtration system allowing conversion of rainwater to potable water in the event of a disaster. (Not applied to "Retailers" and "Restaurants.")	

2.3.3 Electrical Equipment Weight (default)= 0.20

Level 1	Entire building and common properties	
	Offices Halls Hospitals Hotels Factories	Schools Retailers Restaurants
■**Level 1**	None is applicable to the efforts to be evaluated.	None is applicable to the efforts to be evaluated.
Level 2	(Inapplicable)	(Inapplicable)
Level 3	Applicable to one of the efforts to be evaluated.	Applicable to one of the efforts to be evaluated.
Level 4	Applicable to two of the efforts to be evaluated.	(Inapplicable)
Level 5	Applicable to three or more of the efforts to be evaluated.	Applicable to two or more of the efforts to be evaluated.

2.3.4 Support Method of Machines & Ducts Weight (default)= 0.20

Excluded	Entire building and common properties Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories
Level 1	Not adequate for level 3
Level 2	(Inapplicable)
Level 3	Earthquake resistance class B (Human safety is assured and secondary damage prevented after a major earthquake.)
Level 4	Earthquake resistance class A (In addition to Level 3, important functions are maintained securely without major repairs.)
Level 5	Earthquake resistance class S (In addition to Level 4, All functions are maintained securely without major repairs.)

Efforts to improve the reliability of electrical equipment

Building Type	Offices Halls Hospitals Hotels Factories	Schools Retailers Restaurants
Floor area	m²	300m²
Score	**Level 1**	**Level 1**
	(1) The building is equipped with emergency generators. (Not applied to Sch, Rtl, Rst and Apt)	
	(2) The building is equipped with uninterruptible power source systems.	
	(3) Power input equipment for important equipment systems has redundancy. (Not applied to Sch, Rtl, Rst and Apt)	
	4) Countermeasures (i) and (ii) have been taken or (iii) applies, in order to avoid power outages due to water percolation into power supply equipment or precision machinery (circuit breaker box, distribution board for Apartments), and to avoid damage to data networks. (i) Installation of power supply equipment and precision machinery below ground is avoided. (ii) Devices to prevent the groundwater percolation (waterproof doors, waterproof panels, embankments, dry ditches) and drainage equipment (pumps etc.) are installed. (iii) No danger of water percolation.	

2.3.5 Communications & IT equipment Weight (default)= 0.20

Level 1	Entire building and common properties		
	Offices Halls Hospitals Hotels Factories	Schools Retailers Restaurants	Apartments
■**Level 1**	None is applicable to the efforts to be evaluated.	None is applicable to the efforts to be evaluated.	None is applicable to the efforts to be evaluated.
Level 2	(Inapplicable)	(Inapplicable)	(Inapplicable)
Level 3	Applicable to one of the efforts to be evaluated.	Applicable to one of the efforts to be evaluated.	Applicable to one of the efforts to be evaluated.
Level 4	Applicable to two of the efforts to be evaluated.	(Inapplicable)	Applicable to two of the efforts to be evaluated.

Level 5	Applicable to three of the efforts to be evaluated.	Applicable to two of the efforts to be evaluated.	(Inapplicable)

Approach for Reliability of Communications & IT equipment

Building Type	Offices Halls Hospitals Hotels Factories	Schools Retailers Restaurants	Apartments
Floor area	m²	m²	300m²
Score	**Level 1**	**Level 1**	**Level 1**
	1) Communications methods are diversified, using optical fiber cable, metal cable, cellular telephone network, PHS network and others.		
	2) Connections are made from two telephone exchanges to secure two communications links.		
	3) Countermeasures (i) and (ii) have been taken or (iii) applies, in order to avoid damage to data networks due to water percolation into precision devices (data transfer equipment, relay equipment and converters. MDF, optical fiber, Ethernet etc.). (i) Installation of precision machinery below ground is avoided. (ii) Devices to prevent the groundwater percolation (waterproof doors, waterproof panels, embankments, dry ditches) and drainage equipment (pumps etc.) are installed. (iii) No danger of water percolation.		

3 Flexibility & Adaptability

3.1 Spatial Margin

3.1.1 Allowance for Story Height

Weight (default)= 0.00 | Weight (default)= 0.60

Level 3	Entire building and common properties Offices Schools Retailers Restaurants Factories	Excluded	Residential and Accommodation Sections Hospitals Hotels	 Apartments
Level 1	Less than 3.3m	**Level 1**	Less than 3.3m	Less than 2.7m
Level 2	3.3m or more, less than 3.5m	**Level 2**	3.3m or more, less than 3.5m	2.7m or more, less than 2.8m
■**Level 3**	3.5m or more, less than 3.7m	**Level 3**	3.5m or more, less than 3.7m	2.8 m or more, less than 2.9m
Level 4	3.7m or more, less than 3.9m	**Level 4**	3.7m or more, less than 3.9m	2.9 m or more, less than 3.0m
Level 5	3.9m or more	**Level 5**	3.9m or more	3.0m or more

3.1.2 Adaptability of Floor Layout

Weight (default)= 0.00 | Weight (default)= 0.40

Level 3	Entire building and common properties Offices Schools Retailers Restaurants Halls Factories	Excluded	Residential and Accommodation Sections Hospitals Hotels Apartments
Level 1	Wall length ratio 0.7 or above	**Level 1**	Wall length ratio 0.7 or above
Level 2	Wall length ratio 0.5 or more, less than 0.7	**Level 2**	Wall length ratio 0.5 or above, less than 0.7
■**Level 3**	Wall length ratio 0.3 or more, less than 0.5	**Level 3**	Wall length ratio 0.3 or above, less than 0.5
Level 4	Wall length ratio 0.1or more, less than 0.3	**Level 4**	Wall length ratio 0.1 or above, less than 0.3
Level 5	Wall length ratio less than 0.1	**Level 5**	Wall length ratio less than 0.1

$$\text{Wall length/area ratio} = \frac{\text{Length of perimeter walls (m) + length of bearing walls (m)}}{\text{Exclusive area (m2)}}$$

3.2 Floor Load Margin

Weight (default)= 0.00 | Weight (default)= 0.50

Level 3	Entire building and common properties Offices Retailers Restaurants Halls Factories	 Halls(when seatings unfixed)	 Schools	Excluded	Residential and Accommodation Sections Hospitals Hotels Apartments
Level 1	(Inapplicable)	(Inapplicable)	(Inapplicable)	**Level 1**	(Inapplicable)
Level 2	Less than 2,900N/m²	Less than 3,500N/m²	Less than 2,300N/m²	**Level 2**	Less than 1,800N/m²
■**Level 3**	2,900N/m² or more	3,500N/m² or more	2,300N/m² or more	**Level 3**	At least 1,800N/m²
Level 4	3,500N/m² or more	4,200N/m² or more	2,900N/m² or more	**Level 4**	At least 2,100N/m²
Level 5	4,500N/m² or more	5,200N/m² or more	3,500N/m² or more	**Level 5**	At least 2,900N/m²

3.3 Adaptability of Facilities

3.3.1 Ease of Air Conditioning Duct Renewal

Weight (default)= 0.17

Excluded	Entire building and common properties Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories
Level 1	Air conditioning ducts cannot be replaced without damaging structural elements.
Level 2	In some cases the air conditioning ducts can be replaced without damaging structural elements, if spare sleeves are used, but that method cannot be applied to all ducts.
Level 3	Space and routes for future use (future replacement work) have been provided, so that nearly all air conditioning ducts can be replaced without damaging structural elements.
Level 4	Exterior air conditioning ducts are used or ceiling space provided so that ducts can be replaced without damaging either structural elements or surface finishes.
Level 5	ISS, equipment floor installation or other measures allow easy replacement of air conditioning ducts without damaging surface finishes.

3.3.2 Ease of Water Supply & Drain Pipe Renewal

Weight (default)= 0.17

Excluded	Entire building and common properties Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories
Level 1	Pipes cannot be replaced without damaging structural elements.
Level 2	In some cases pipes can be replaced without damaging structural elements, if spare sleeves are used, but that method cannot be applied to all ducts.
Level 3	Space and routes for future use (future replacement work) have been provided, so that nearly all water supply and drain pipes can be replaced without damaging structural elements.
Level 4	Wall plumbing or ceiling space provided, so that water supply and drain pipes can be replaced without damaging either structural elements or surface finishes.
Level 5	Unit pipes, system WCs and other measures allow easy replacement of water supply and drain pipes without damaging surface finishes.

3.3.3 Ease of Electrical Wiring Renewal	Weight (default)= 0.11
Excluded	Entire building and common properties Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories
Level 1	Wiring cannot be replaced without damaging structural elements.
Level 2	(Inapplicable)
Level 3	Wiring can be replaced without damaging structural elements.
Level 4	(Inapplicable)
Level 5	Wiring can be replaced without damaging structural elements or surface finishes.

3.3.4 Ease of Communications Cable Renewal	Weight(default)= 0.11
Excluded	Entire building and common properties Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories
Level 1	Communications cables cannot be replaced without damaging structural elements.
Level 2	(Inapplicable)
Level 3	Communications cables can be replaced without damaging structural elements.
Level 4	(Inapplicable)
Level 5	Communications cable can be replaced without damaging structural elements or surface finishes.

3.3.5 Ease of Equipment Renewal	Weight (default)= 0.22
Excluded	Entire building and common properties Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories
Level 1	There are no routes or machine hatches for replacing major equipment, so it cannot be replaced without demolishing exterior walls or other elements.
Level 2	(Inapplicable)
Level 3	There are routes or machine hatches for replacing major equipment
Level 4	(Inapplicable)
Level 5	There are routes or machine hatches for replacing major equipment, and there is backup equipment (or equipment with backup function) to be used during the replacement period.

3.3.6 Provision of Backup Space	Weight (default)= 0.22
Excluded	Entire building and common properties Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories
Level 1	(Inapplicable)
Level 2	(Inapplicable)
Level 3	There is no planned provision of space for backup equipment.
Level 4	There is planned provision of space for backup equipment.
Level 5	(Inapplicable)

Q-3 Outdoor Environment on Site

Select from pull-down menus or enter figures and comments. **Construction Completion Stage**

1 Preservation & Creation of Biotope

Weight (default)= 0.30

Level 1	Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories
■Level 1	On the Efforts to be evaluated , 0<= Credit Ratio (3) <0.2
Level 2	On the Efforts to be evaluated , 0.2<= Credit Ratio (3)<0.4
Level 3	On the Efforts to be evaluated , 0.4<= Credit Ratio (3) <0.6
Level 4	On the Efforts to be evaluated , 0.6<= Credit Ratio (3)<0.8
Level 5	On the Efforts to be evaluated , 0.8<= Credit Ratio (3)

Efforts to be evaluated

Credits	Level of efforts			Efforts
	High	Low	None	
0	2	1	0	I) A survey has been made of surrounding habitat (state of inhabiting flora and fauna, etc.)
0	2	1	0	II) Conservation of existing ecological resources Conservation of existing topography, topsoil, trees, bodies of water etc.
				III) Extensive greening
0	2	1	0	1) Thorough greening of exterior (surface) on site
0	2	1	0	2) Greening the building (roofs and walls)
0	2	1	0	3) Landscaping of green space Placement of continuous green land and voluminous vegetation to form ecological networks in the local area.
0	2	1	0	4) Consideration for habitat for small animals Planting of feed trees, biotopes and bird sanctuaries, use of porous materials etc.
0	2	1	0	IV) Preparation of monitoring plan and management of flora and fauna habitat
0	2	1	0	V) Efforts to improve contacts between users and animals (Creation of water parks and other contact spaces, provision of information on related measures, etc.).
Excluded	2	1	-	VI) Others ( )

(1) Total Credits= **Credits** | (2) Maximum Credits = **16 Credits** | (3) Credits Ratio ((1) / (2)) = **0.00**

2 Townscape & Landscape

Weight (default) = 0.40

Level 4	Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories
Level 1	On the Efforts to be evaluated , 0<= Credit Ratio (3) <0.2
Level 2	On the Efforts to be evaluated , 0.2<= Credit Ratio (3)<0.4
Level 3	On the Efforts to be evaluated , 0.4<= Credit Ratio (3) <0.6
■Level 4	On the Efforts to be evaluated , 0.6<= Credit Ratio (3)<0.8
Level 5	On the Efforts to be evaluated , 0.8<= Credit Ratio (3)

Efforts to be evaluated

Credits	Level of efforts			Efforts (High: 3 articles or more applied., Low: 1 item applied)
	High	Low	None	
0	2	1	0	1) Building placement and orientation responsive to the surrounding environment
0	2	1	0	2) Building height and form that are responsive to the surrounding environment
2	2	1	0	3) Use design elements, materials and colors that are responsive to the surroundings.
2	2	1	0	4) Public space and exterior elements responsive to the surrounding environment
2	2	1	0	5) Reflecting views of local residents in plan content
Excluded	2	1	-	6) Others ( )

(1) Total Credits = **6 Credits** | (2) Maximum Credits = **10 Credits** | (3) Credits Ratio ((1) / (2)) = **0.60**

3 Local Characteristics & Outdoor Amenity

3.1 Attention to Local Character & Improvement of Comfort

Weight (default) = 0.50

Level 1	Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories Floor Area of Offices Schools Retailers Restaurants Halls Factories= m² Floor Area of Hospitals Hotels= m² Floor Area of Apartments= 300m²
■Level 1	On the Efforts to be evaluated , 0<= Credit Ratio((3) or (6) or (9)) <0.2
Level 2	On the Efforts to be evaluated , 0.2<= Credit Ratio((3) or (6) or (9)) <0.4
Level 3	On the Efforts to be evaluated , 0.4<= Credit Ratio((3) or (6) or (9)) <0.6
Level 4	On the Efforts to be evaluated , 0.6<= Credit Ratio((3) or (6) or (9)) <0.8
Level 5	On the Efforts to be evaluated , 0.8<= Credit Ratio((3) or (6) or (9))

Efforts to be evaluated

Credits	Level of efforts			Efforts
	High	Low	None	
				I. Consideration for memories of previous uses of the land and the continuation of local culture
0	2	1	0	a) The plan of the building and its exterior reflects aspects of local context, such as climate, history and culture for its function, selection of materials and opelation planning.
0	2	1	0	b) Use of local industries, personnel and skills
Excluded	2	1	-	c) Others ( )
				II. Consideration of relation between interior and exterior (Mitigation of psychological stress on occupants, etc.)
0	2	1	0	d) Formation of semi-outdoor or intermediate spaces (balconies, peripheral corridors, formation of spaces to take in outside light and air movement, securing spaces for local residents to use, etc.)
0	2	1	0	e) Providing buffer zones (Formation of psychologically rich living spaces, sentimental expression, reconciliation between public and private, for example, entry porches for each dwelling, design measures around entrances, etc) (Applied to “Hospitals”, “Hotels” and “apartments” only.)
Excluded	2	1	-	f) Others ( )
				III. Consideration for community formation in local society and among residents
0	2	1	0	g) Development of community spaces and facilities that serve as centers for exchanges between residents and local society (halls, leisure rooms, community centers etc.)
0	2	1	0	h) Creation of spaces within the exterior space that will help to foster community relations with local residents (such as courtyard spaces open to the community)
	2	1	0	i) Design of common spaces (public corridors, entrances, plazas etc.) to increase residents' contacts with local residents in daily life. (Applied to “Hospitals”, “Hotels” and “apartments” only.)
Excluded	2	1	-	j) Others ( )
				IV. Participation between residents and local people
0	2	1	0	k) Encouraging occupants to participate in building maintenance management.
	2	1	0	l) Participation of occupants in the design process. (Applied to “Hospitals”, “Hotels” and “apartments” only.)
Excluded	2	1	-	m) Others ( )
				V. Improvement of health and comfort
	2	1	0	n) Spatial design that is aware of children's growth, and consideration for the elderly and handicapped. (Applied to “apartments” only)
0	2	1	0	o) Improvement of exterior space comfort
Excluded	2	1	-	p) Others ( )

(1) Total Credits =	**Credit**	(2) Maximum Credits =	**14 Credit**	(3) Credits Ratio ((1) / (2)) =	**0.00**	←Offices Schools Retailers Restaurants Halls Factories
(4) Total Credits =	**Credit**	(5) Maximum Credits =	**16 Credit**	(6) Credits Ratio ((4) / (5)) =	**0.00**	←Hospitals Hotels
(7) Total Credits =	**Credit**	(8) Maximum Credits =	**16 Credit**	(9) Credits Ratio ((7) / (8)) =	**0.00**	←Apartments

3.2 Improvement of the Thermal Environment on Site

Weight (default) = 0.5

Level 1	Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories
■Level 1	On the Efforts to be evaluated , 0.0<= Credit Ratio (3) <0.2
Level 2	On the Efforts to be evaluated , 0.2<= Credit Ratio (3)<0.4
Level 3	On the Efforts to be evaluated , 0.4<= Credit Ratio (3) <0.6
Level 4	On the Efforts to be evaluated , 0.6<= Credit Ratio (3)<0.8
Level 5	On the Efforts to be evaluated , 0.8<= Credit Ratio (3)

Efforts to be evaluated

Credits	Level of efforts			Efforts
	Present		None	
0	2		0	1) Using the surrounding airflow environment to encourage air movement within the site. a) Building layout designed to draw in air movement from surrounding vegetation and open space. b) Appropriate provision of open/ green space to encourage air movement. c) Formation of routes within the site to encourage air movement.
	2		0	2) Providing green space, water surfaces and other elements within the site to alleviate the thermal environment. a) Provide as much green space (including tall trees) as possible on the site. b) Provide surface water on the site. c) Limit the range of use of materials with large heat capacities, such as asphalt concrete for paved surfaces etc.
	2		0	3) Use building greening to alleviate the thermal environment on the site. a) Building skin greening(on open decks, balconies etc.).
	2		0	4) Consider artificial heat venting positions etc. to alleviate the thermal environment on the site. a) Artificial heat venting points should be placed as high as possible. b) High-temperature heat venting points should be placed as high as possible. c) The temperature of artificial heat venting should be as low as possible.

(1) Total Credits =	**Credit**	(2) Maximum Credits =	**2 Credit**	(3) Credits Ratio ((1) / (2)) =	**0.00**

LR-1 Energy

Select from pull-down menus or enter figures and comments. **Construction Completion Stage**

Select Assessment standard type, and Transfer the necessary entries from the report of "Energy-saving plan"&"the Housing Performance Assessment"

	Building Type	Apartments			
	Floor area for each building type	300 m²			
Building plan	For each assessment standard type	**PAL Value**	**PAL Value**	**PAL Value**	**PAL Value**
	PAL value, Point value, Insulation class	**300.0** class	**2.0**		
	The standard for judgment by owner				
HVAC system	For each assessment standard type	**CEC/AC Value**	**CEC/AC Value**	**CEC/AC Value**	**CEC/AC Value**
	CEC/AC value, Point value	**1.5**			
	Annual Hypothetical Air Conditioning Load or correction point	**150**			
	The standard for judgment by owner	(-)			
Ventilation System	For each assessment standard type	**CEC/V Value**	**CEC/V Value**	**CEC/V Value**	**CEC/V Value**
	CEC/V value, Point value	**1.0**			
	Hypothetical energy consumption for ventilation per year	**150**			
	The standard for judgment by owner	(-)			
Lighting System	For each assessment standard type	**CEC/L Value**	**CEC/L Value**	**CEC/L Value**	**CEC/L Value**
	CEC/L value, Point value	**1.0**			
	Hypothetical energy consumption for lighting per year	**150**			
	The standard for judgment by owner	(-)			
Hot Water Supply System	For each assessment standard type	**CEC/HW Value**	**CEC/HW Value**	**CEC/HW Value**	**CEC/HW Value**
	CEC/HW value,Point value,	**1.7** (-)			
	Hypothetical hot water supply load per year	**300**			
	Ix value	**15** m/(m3/day)			
	The standard for judgment by owner	1.7 (-)			
Elevators	For each assessment standard type	**CEC/EV Value**	**CEC/EV Value**	**CEC/EV Value**	**CEC/EV Value**
	CEC/EV value, Point value	**1.0**			
	Hypothetical energy consumption for elevator per year	**1,000,000**			
	The standard for judgment by owner	(-)			
Equipment of enhanced energy usage efficiency (*)	Annual Energy Saving Volume Using Efficient Equipment (A)	**0** MJ/y	MJ/y	MJ/y	MJ/y
	Annual Energy Saving for the Entire Building (B)	**8,000,000** MJ/y	MJ/y	MJ/y	MJ/y
	Energy Saving rate K value A/B	**0.00**	**0.00**	**0.00**	**0.00**
ERR	Choice of method	**Method other than ERR**	**Method other than ERR**	**Method other than ERR**	**Method other than ERR**
	Rate of reduction in primary energy consumption ERR	**Excluded**	**Excluded**	**Excluded**	**Excluded**

*) Such as solar energy generation system and cogeneration system

"The Standard for judgment by Owner Regarding the Rational Use of Energy Relating to Building" for performance standard based on Energy Saving Law

Building Type	PAL(MJ/m²/y)	CEC/AC(-)	CEC/V(-)	CEC/L(-)	CEC/EV(-)	Ix value range	CEC/HW(-)
Offices	300	1.5	1.0	1.0	1.0	Ix<=7	1.5
Schools	320	1.5	0.8	1.0	-	7<Ix<=12	1.6
Retailers	380	1.7	0.9	1.0	-	12<Ix<=17	1.7
Restaurants	550	2.2	1.5	1.0	-	17<Ix<=22	1.8
Halls	550	2.2	1.0	1.0	-	22<Ix	1.9
Hospitals	340	2.5	1.0	1.0	-	The judgment standard for hot water supply system is Ix value (daily average value from annual hypothetical water supply load, against hot water supply pipe length), irrespective of building type.	
Hotels	420	2.5	1.0	1.0	1.0		
Factories	-	-	-	1.0	-		

Note : "The judgment standard for the building owner under the specification standard (Point method) is a flat 100 points

1 Building Thermal Load

Weight (default) = 0.40

Apartments				Offices Schools Retailers Restaurants Halls Hospitals Hotels		Apartments
Input Class	**Level**	**Level**	**Level**	Assessment using the performance standard	Assessment using the specification standard	Evaluate by Housing Quality Assurance Law class
Level 1				5%< [PAL value]	[Point value]<80 points	(Inapplicable)
Level 2				0%< [PAL value]<=5%	80 points<= [Point value]<100 points	Class 1:Fall short of Level 3
Level 3				-10%<[PAL value]<= 0%	100 points<= [Point value]< 130 points	Class 2:1980 standards (Energy Saving Standards)
Level 4				-25%< [PAL value]<= -10%	130 points<= [Point value]< 160 points	Class 3:1992 standards (New Energy Saving Standards)
Level 5				[PAL value]<= -25%	160 points<= [Point value]	Class 4:1999 standards (Current next- generation standards)

Reference: Comparison between residential energy-saving standards and the Housing Quality Assurance Law

Annual heating and cooling load MJ/m2yr				Target building: **Zone VI**		
Zone*	I	II	III	IV	V	VI
Class 1	Fall short of Class 2					
Class 2	840 or less	980 or less	980 or less	980 or less	980 or less	980 or less
Class 3	470 or less	610 or less	640 or less	660 or less	510 or less	420 or less
Class 4	390 or less	390 or less	460 or less	460 or less	350 or less	290 or less

*) Classified by "The Standard for Judgement by Owner Regarding the Rational Use of Energy Relating to Housing"

2 Natural Energy Utilization

Weight (default) = 1.00

*Assessment for Execution Design Stage & Construction Completion Stage except Apartments

Level 5	**Level 3**	Offices Schools Retailers Restaurants Halls Hospitals Hotels Factories m²
Level 1	**Level 1**	(Inapplicable)
Level 2	**Level 2**	(Inapplicable)
Level 3	**■Level 3**	0<= Natural energy usage <1MJ/m² * Includes no usage or planned use for monumental purposes only.
Level 4	**Level 4**	1MJ/m² <= Natural energy usage <20MJ/m²

■Level 5	Level 5	20MJ/m² <= Natural energy usage

2.1 Direct Use of Natural Energy

*Assessment only for Preliminary Design Stage

Weight (default) = 0.50

*Assessment for Preliminary Design Stage, Execution Design Stage & Construction Completion Stage only for Apartments

Level 5	Level 3	Offices Schools Retailers Restaurants Halls Hospitals Hotels Factories m²	Level 5	Apartments 300m²
Level 1	Level 1	(Inapplicable)	Level 1	(Inapplicable)
Level 2	Level 2	(Inapplicable)	Level 2	Light intake and natural ventilation at level 3 are not possible.
Level 3	■Level 3	Of the efforts to be evaluated, none of the methods is used, or any of the methods is used even if only partially.	Level 3	Nearly all dwellings (at least 80%) have exterior walls on at least two sides, ensuring effective light intake and natural ventilation.
Level 4	Level 4	Of the efforts to be evaluated, any of the methods is used in a majority of the building.	Level 4	In addition to the above, building measures, such as ventilation voids, have been used to enhance their efficacy. They influence a majority (50%+) of residential blocks.
■Level 5	Level 5	Of the efforts to be evaluated, two or more of the methods are used in a majority of the building.	■Level 5	The building measures above cover at least 80% of residential blocks.

Efforts to be evaluated Total 0 items

Executed	NO.	Efforts to be evaluated *
	1	Use of natural light: Planning for natural light systems that use sunlight in place of lighting equipment. E.g. Light shelves, top lights, high side lights etc.
	2	Use of natural ventilation: Planning for the use of natural ventilation and ventilation systems that are effective in replacing the use of air conditioning equipment and reducing cooling loads. E.g. Automatic dampers, night purging, ventilation systems linked to atria, solar chimney ventilation towers etc.
	3	Use of geothermal energy: Planning for the use of geothermal heat usage systems that are effective in replacing the use of heat sources and air conditioning equipment and reducing heating and cooling loads. E.g. Cool and heat tubes and pits etc.
	4	Miscellaneous: Planning for the effective use of nature in other systems.

*) Put ○, if executed in a majority of the building.

2.2 Converted Use of Renewable Energy

Weight (default) = 0.50

Level 3	Preliminary Design Stage: Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories	Level 5	Execution Design Stage & Construction Completion Stage: Apartments 300 m²
Level 1	(Inapplicable)	Level 1	(Inapplicable)
Level 2	(Inapplicable)	Level 2	(Inapplicable)
■Level 3	Of the efforts to be evaluated, none of the methods is used, or any of a method is used even if only partially.	Level 3	0<= Natural energy usage <1MJ/m² * Includes no usage or planned use for monumental purposes only.
Level 4	Of the efforts to be evaluated, any of the methods is used in a majority of the building.	Level 4	1MJ/m² <= Natural energy usage <15MJ/m²
Level 5	Of the efforts to be evaluated, two or more of the methods are used in a majority of the building.	■Level 5	15MJ/m² <= Natural energy usage

Efforts to be evaluated Total 0 items

Executed	NO.	Efforts to be evaluated *
	1	Use of sunlight: Planning for solar generation systems used in place of electrical power equipment. E.g. Solar panels etc.
	2	Use of solar heat: Planning for effective use of solar heat systems in heating equipment to reduce heating loads. E.g. Solar panels, vacuum-type water heaters.
	3	Use of unused heat: Planning for effective use of unused-heat systems to improve heat source efficiency in heating equipment. E.g. Heat pumps using well water or river water etc.
	4	Miscellaneous: Planning for the effective use of nature in other systems.

*) Put ○, if executed in a majority of the building.

3 Efficiency in Building Service System

Weight (default) = 0.40

3a Assessment by ERR

Apartments				
Level	Level	Level	Level	Assessment by ERR
Level 1				[ERR]< -5%
Level 2				-5%<= [ERR] < 0%
Level 3				0%<= [ERR]<10%
Level 4				10%<=[ERR]<25%
Level 5				25%<= [ERR]

3b Assessment by means other than ERR

Apartments							
Level 3		Level		Level		Level	
Score	Weight	Score	Weight	Score	Weight	Score	Weight
3	1.00						

3.1 HVAC System

Weight(default)=	Weight (default) =	Weight (default) =	Weight (default) =			
Apartments				Offices Schools Retailers Restaurants Halls Hospitals Hotels		Apartments
Level	Level	Level	Level	Assessment using the performance standard	Assessment using the specification standard	Factories
Level 1				5%<=[CEC value]	Below the corrected points(K_0)	(Excluded)
Level 2				0%<[CEC value]<5%	Above the corrected points(K0) and (Points)<100pts	
Level 3				-10%<[CEC value]<= 0%	100 points<=[Point value]<130 points	
Level 4				-25%<[CEC value]<= -10%	130 points<=[Point value]<160 points	
Level 5				[CEC value]<=-25%	160 points<=[Point value]	

3.2 Ventilation System

Weight(default)=	Weight(default)=	Weight(default)=	Weight(default)=			
Apartments				Offices Schools Retailers Restaurants Halls Hospitals Hotels		Apartments
Level	Level	Level	Level	Assessment using the performance standard	Assessment using the specification standard	Factories

Level 1				5%<=[CEC value]	[Point value]<90 points	(Excluded)
Level 2				0%<[CEC value]<5%	90 points<=[Point value]<100 points	
Level 3				-10%<[CE Cvalue]<= 0%	100 points<=[Point value]<120 points	
Level 4				-25%<[CEC value]<= -10%	120 points<=[Point value]<140 points	
Level 5				'[CEC value]<=-25%	140 points<=[Point value]	

3.3 Lighting System

Weight(default)=	Weight(default)=	Weight(default)=	Weight(default)=			
Apartments				Offices Schools Retailers Restaurants Halls Hospitals Hotels Factories		Apartments
Level	**Level**	**Level**	**Level**	Assessment using the performance standard	Assessment using the specification standard	
Level 1				5%<=[CEC value]	[Point value]<90points	(Excluded)
Level 2				0%<[CEC value]<5%	90 points<=[Point value]<100 points	
Level 3				-10%<[CEC value]<= 0%	100 points<=[Point value]<120 points	
Level 4				-25%<[CEC value]<= -10%	120 points<=[Point value]<140 points	
Level 5				[CEC value]<=-25%	140 points<=[Point value]	

3.4 Hot Water Supply System

Weight(default)= 1.00	Weight(default)=	Weight(default)=	Weight(default)=			
Apartments						
Level 3	**Level**	**Level**	**Level**	Offices Schools Retailers Restaurants Halls Hospitals Hotels Factories	Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories	Apartments
Level 3	**Level 2**	**Level 2**	**Level 3**	Assessment using the performance standard	Assessment using the specification standard	Individual supply system
Level 1				5%<=[CEC value]	[Point value]<90 points	(Inapplicable)
Level 2				0%<[CEC value]<5%	90 points <=[Point value]<100 points	Other than those below
■Level 3				-10%<[CEC value]<= 0%	100 points <=[Point value]<130 points	Electric water heater(electric control type)
Level 4				-25%<[CEC value]<= -10%	130 points <=[Point value]<160 points	Fuel-burning instant-supply water heater
Level 5				'[CEC value]<=-25%	160 points<=[Point value]	Fuel-burning latent heat recovery instant-supply hot water heaters, Electric CO_2 refrigerant water heater(late-night electricity water storage heater)

3.5 Elevators

Weight(default)=	Weight (default) =	Weight (default) =	Weight (default) =			
Apartments				Offices Hotels		Schools Retailers Restaurants Halls Hospitals Apartments Factories
Level	**Level**	**Level**	**Level**	Assessment using the performance standard	Assessment using the specification standard	
Level 1				5%<=[CEC value]	[Point value]<90 points	(Excluded)
Level 2				0%<[CEC value]<5%	90 points<=[Point value]<100 points	
Level 3				-10%<[CEC value]<= 0%	100 points<=[Point value]<120 points	
Level 4				-25%<[CEC value]<= -10%	120 points<=[Point value]<140 points	
Level 5				[CEC value]<=-25%	140 points<=[Point value]	

4 Efficient Operation

4.1 Monitoring

Weight (default) = 0.00

Level 3	Offices Schools Retailers Restaurants Halls Hospitals Hotels Factories	
	Preliminary Design Stage	Execution Design Stage
Level 1	(Inapplicable)	(Inapplicable)
Level 2	(Inapplicable)	(Inapplicable)
■Level 3	The plan must make it possible to have a clear grasp of total energy consumption.	The system must afford knowledge of the total quantity of energy consumption, so that energy-saving effects can be verified in operation
Level 4	The plan policy must allow for measurement equipment for each energy type used. Note 1)	There must be equipment to measure quantities of heating and cooling, gas, electricity and water for all types of energy used. Note1)
Level 5	Introduction of a management system such as BEMS should be planned, with a structure able to measure the energy consumption for each system and device. Note 2)	If detailed plans for energy-saving operation are to be drawn up, there must be systems to enable measurement of energy consumption volumes for each system and each piece of equipment, and a management system such as BEMS must be introduced. Note 2)

Measurement item

	Note 1) Measurement of each type of energy	Note 2) Energy measurement for each system
Quantity of cooling and heating	Quantities of heating and cooling	Quantities of cooling and heating for each air conditioning system.
Gas volume	Gas volume for heating and kitchen uses.	Gas volumes for each heat source and device, and for special uses that consume large volumes.
Electrical power quantity	Electrical power for heat sources, air conditioning secondary equipment, ventilation, lighting, sockets and special loads (computer loads in office buildings, kitchen loads in restaurants, and other loads that account for high proportions of power consumption in applicable buildings).	Power consumption for each air conditioning and ventilation device, and for each hygiene-related pump.
Water supply volume	Water supply for heat sources and hygiene.	Water supply volume for each water supply demand (drinking and washing, toilet flushing, etc.).

4.2 Operational Management System

Weight(default)= 0.00

Level 3	Offices Schools Retailers Restaurants Halls Hospitals Hotels Factories	
	Preliminary Design Stage	Execution Design Stage
Level 1	(Inapplicable)	No operation and management system has been planned.
Level 2	(Inapplicable)	Organizations, systems or management policies have been planned for operation and management.

■**Level 3**	No significant moves (proposals) have been made towards an operation and management system.	In addition to level 2, there must be an organized operation and management system, with a designated manager.
Level 4	Basic guidelines on operation, maintenance and preservation have been planned.	In addition to level 3, target values for energy consumption in the whole buildings have been planned and presented to the building owner, based on calculation of annual energy consumption
Level 5	In addition to the above, target values have been planned for annual energy consumption.	In addition to level 4, there must be regular verification of equipment performance during building operation, with specific actions planned for repair of malfunctions etc. (commissioning system).

LR-2 Resources & Materials

Select from pull-down menus or enter figures and comments.

Construction Completion Stage

1 Water Resources

1.1 Water Saving

Weight(default)= 0.40

Level 4	Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories
Level 1	No systems for saving water.
Level 2	(Inapplicable)
Level 3	Major faucets are equipped with water-saving valve.
■Level 4	In addition to water-saving valve, other water-saving equipment (such as flush-mimicking sound systems, water-saving toilets) is used.
Level 5	(Inapplicable)

1.2 Rainwater & Gray Water

1.2.1 Rainwater Use System

Weight(default)= 0.67

Level 4	Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories
Level 1	(Inapplicable)
Level 2	(Inapplicable)
Level 3	No systems for using rainwater.
■Level 4	Rainwater is used.
Level 5	Rainwater usage brings the rainwater usage rate to at least 20%.

1.2.2 Gray Water Reuse System

Weight(default)= 0.33

Level 5	Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories
Level 1	(Inapplicable)
Level 2	(Inapplicable)
Level 3	No systems for reusing gray water.
Level 4	Gray water is reused.
■Level 5	In addition to gray water reuse, there is equipment to reuse sewage.

Rainwater usage rate = Predicted rainwater usage volume / Total predicted water usage (main water + rainwater use)

2 Materials of Low Environmental Load

2.1 Recycled Materials

2.1.1 Efficiency on Structural Materials Reuse

Weight(default)= 0.67

Level 5	Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories
Level 1	(Inapplicable)
Level 2	(Inapplicable)
Level 3	Main structure is non-wooden structure(RC,SRC,Sstructure) and any measurement for assessment is not taken.(See Table A)
Level 4	Main structure is non-wooden structure(RC,SRC,Sstructure) and measurements for assessment are taken at the level of point 1 or more.(See Table A)
■Level 5	Main structure is non-wooden structure(RC,SRC,Sstructure) and any measurements for assessment are taken at the level of point 2 or more.(See Table A)

2.1.2 Efficiency of Non-structural Materials Reuse

Weight(default)= 0.33

Level 1	Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories
■Level 1	Total point score for reused materials(Table B+ Table C) is 0.
Level 2	(Inapplicable)
Level 3	Total point score for reused materials(Table B+ Table C) is 1.
Level 4	Total point score for reused materials(Table B+ Table C) is 2.
Level 5	Total point score for reused materials(Table B+ Table C) is 3 or more.

Table A: Measurements for assessing non-wooden skeleton

Total Points **2 points**

Point	Efforts to be evaluated
○	Electric furnace steel used for the main structure.(Other than reinforcement bars)
○	Portland blast furnace cement used in concrete portions of major structural elements
	Recycled aggregate used in concrete portions of major structural elements

Table B: Table of reused construction materials which score 1 point

Total Points **points**

Type	Materials used	Name	Use	Name of raw materials used
Heat-resistant and fire-resistant materials		Regular brick	Sidewalks, cycle paths, parking lots etc.	Sewage sludge
		Regular brick	Entire building outer shell	Metal scraps (aluminum dross)
Waterproof materials		Urethane film waterproof material	General building roof waterproofing Overall waterproofing repair for old impermeable layers.	Waste glass
		Asphalt waterproof material	Building waterproofing materials	Waste tires
		Impermeable layer protection materi	Concrete roofing Impermeable layer protection materials	Waste tires
Staircase components		Staircase anti-slip treatment	Resilient rubber finishes for staircases	Waste tires, construction waste etc.
Finishing paints		Finishing paints	Interior décor finishing materials	Waste glass
		PC curtain-wall	PC curtain-wall	Waste glass (cullet)
		Sound absorption materials	Acoustic board for walls and ceilings	Expanded polystyrene waste
		Sound absorption materials	Acoustic board for walls and ceilings	Waste glass (cullet)

Interior and exterior décor materials		Acoustic insulation panel	Reduction of noise on building staircases	Waste tires
		Press-formed flooring	Direct-laid resilient rubber flooring	Waste tires
		Flooring	Floors for food processing factories etc.	Waste glass
		False floor	Dry false floor underlay for sound insulation	Waste particle board
		False floor	Floor panels	Waste polypropylene resin
		False floor	False floor wiring storage systems	Waste glass (cullet)
		False floor	False floors for offices	Waste glass (cullet)
		False floor	Floor panels	Fused slag from urban garbage incinerators
		Veneer	For indoor and outdoor sports facilities Laminated roof board	Waste from domestic thinned timber (Cedar, cypress, pine)
		Decking	Promenade decking, play equipment	Wood scraps from demolition, reused plastics
		Medium-density fiber (MDF) board	For buildings, fixtures and furniture etc.	Sawmill waste, plywood waste, thinned timber
		Thermal insulation	General residential and non-residential insulation materials	Waste paper
		Eco-bricks (walls)	Interior and exterior wall finishes	Waste glass
Paving materials		Paving tiles	Paving of sidewalks etc.	Tile fragments
		Paving tiles	Exterior walls, interior walls, outside walls and floors	Waste glass
		Paving tiles	Permeable, non-slip tiles(General sidewalks etc.)	Scallop shells
		Resilient paving materials	Permeable paving, playing fields, promenades	Waste tires

Table C Table of reused construction materials which score 2 points Total Points **points**

Type	Materials used	Name	Use	Name of raw materials used
Interior and exterior décor materials		Particle board	Floors and furniture	Wood chips
Paving materials		Paving material blocks	Sidewalks, terraces, approach roads	Waste tires
		Paving material blocks	Sidewalks, terraces, approach roads	Sewage sludge slag
		Paving material blocks	Sidewalks, terraces, approach roads	Waste glass
		Paving material blocks	Paving of sidewalks, parking lots etc.	Waste plastic
		Interlocking blocks	Paving bricks	Waste clay from kilns etc.
		Interlocking blocks	Paving bricks	Fire-resistant brick fragments
		Interlocking blocks	Paving bricks	Waste glass

See: 1) "Guide to Recycled Construction Materials"The committee for the Promotion of Recycling of Construction By-product, 1999
2) "The Encyclopedia of Recycling" Maruzen Co., Ltd., 2001

2.2 Timber from Sustainable Forestry

Weight(default)= 0.04

Excluded	Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories
Level 1	(Inapplicable)
Level 2	Timber from sustainably managed forests is not used.
Level 3	Timber from sustainably managed forests supplies less than 10% of timber usage. Or, timber is not used, even in the structure.
Level 4	Timber from sustainably managed forests supplies 10~50% of timber usage.
Level 5	Timber from sustainably managed forests supplies 50% or more of timber usage.

2.3 Materials with Low Health Risks

Weight(default)= 0.08

Level 3	Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories
Level 1	(Inapplicable)
Level 2	(Inapplicable)
■Level 3	There is no building material category (indicated in Reference 1) without substances specified in the Pollutant Release and Transfer Register Law. Or the inspection has not been carried out.
Level 4	There are 1~3 building material categories (indicated in Reference 1) without substances specified in the Pollutant Release and Transfer Register Law.
Level 5	There are 4 or more building material categories (indicated in Reference 1) without substances specified in the Pollutant Release and Transfer Register Law.

■ Reference 1) Building materials to be evaluated Total **0** items

Materials used	Categories	Building materials to be evaluated
	Adhesive	For vinyl tile floors and seating
		For tiles
		For wall paper
		For floor board
	Sealants	For sash
		For Glass
		For tile joint
		For wall joint
	Waterproofing agents	Primer for waterproofing
		For paint (surface coating)
	Paint	For fittings (wooden and metal)
		For wooden parts（frames for floor and ceiling）
		For structural materials

		For walls
	Anti-corrosion treatment	For skeleton
		For materials other than skeleton
	Undercoats	For materials for coated floors
	Floor coverings	For finishing wax
	Preservatives	For wooden parts

2.4 Reuse of Existing Building Skeleton etc

Weight (default) = 0.18

Level 3	Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories
Level 1	(Inapplicable)
Level 2	(Inapplicable)
■Level 3	The existing building skeleton is not reused, or there is no existing building skelton on the site to use.
Level 4	The existing building skeleton is partially reused.
Level 5	The existing building skeleton is completely reused.

2.5 Reusability of Components & Materials

Weight (default) = 0.18

Level 3	Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories
Level 1	(Inapplicable)
Level 2	(Inapplicable)
■Level 3	None of the evaluated measures to encourage recycling of materials on demolition has been used.
Level 4	One or more of the evaluated measures to encourage recycling of materials on demolition has been used.
Level 5	Two or more of the evaluated measures to encourage recycling of materials on demolition have been used.

Efforts to be evaluated Total 0 items

Point	Efforts to be evaluated
	The structure and finishing materials can be separated easily.
	Interior finishes and equipment are not entangled, and each can easily be removed separately for demolition, refurbishment and remodeling.
	Reusable unit materials are used.

2.6 Use of CFCs & Halons

2.6.1 Fire Retardant

Weight (default) = 0.33

Level 4	Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories
Level 1	Halon fire retardant is used.
Level 2	(Inapplicable)
Level 3	Only used in “Critical-uses.”
■Level 4	No halon fire retardant is used.
Level 5	(Inapplicable)

2.6.2 Insulation Materials

Weight (default) = 0.33

Excluded	Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories
Level 1	Insulation foaming materials with OPD= 0.2 or above are used.
Level 2	Insulation foaming materials with OPD= 0.01~0.2 are used.
Level 3	Insulation foaming materials with OPD= 0.0~0.01 are used.
Level 4	(Inapplicable)
Level 5	Insulation foaming materials with ODP=0 and low GWP (less than 50, by 100-yr GWP), or natural materials are used. Or no insulation foaming material is used.

2.6.3 Refrigerants

Weight (default) = 0.33

Excluded	Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories
Level 1	(Inapplicable)
Level 2	HCFC is used as the refrigerant
Level 3	Refrigerant of ODP=0 is used as the refrigerant.
Level 4	Natural refrigerants and new chilling systems (ODP=0) are used.
Level 5	(Inapplicable)

Critical-uses for which halon fire retardants may be used (Prevention Notification No.155, Hazard Notification No.61, 16th May 2001)

Types of facility		Examples of facility
Communications equipment etc.	Communications equipment rooms etc.	Communications equipment rooms, wireless equipment rooms, telephone exchange rooms, magnetic disk rooms, computer rooms, telex rooms, telephone exchange switching rooms, communications equipment control rooms, dataprint rooms
	Broadcasting studios etc.	TV relay rooms, remote centers, studios, lighting control rooms, musical equipment rooms, adjustment rooms, monitor rooms, broadcasting equipment rooms
	Control rooms etc.	Electrical power control rooms, operation rooms, control rooms, management rooms, disaster prevention centers, dynamometer rooms
	Film storerooms	Film storage rooms, lighting control rooms, relay desks, VTR rooms, tape rooms, projector rooms, tape storerooms
	Measurement equipment rooms in hazardous material handling facilities	Measurement equipment rooms in hazardous material handling facilities
Historical assets	Exhibition rooms etc.	Important cultural assets, artwork repositories, exhibition rooms, showrooms
Others	Workshops etc.	Print rooms containing rotary presses

Foaming agents used in expanded plastic insulating materials

Application		Chemical name	ODP	GWP(100-year average)
Urethane foam	Prior to 1995	CFC-11	1	4000
	Beginning of 2000	HCFC-141b	0.11	630
Urethane modified isocyanurate foam	Next Generation	HFC-134a	0	1300
		HFC-245fa	0	560
		Cyclopentane C_5H_{10}	0	3
Styrene Olefin foam	Prior to 1995	CFC-12	1	8500

	Beginning of 2000	HCFC-142b	0.07	2000
	Next Generation	HFC-134a	0	1300
Phenol foam	Prior to 1995	CFC-113	0.8	5000
	After 2000	Dichloromethane CH_2Cl_2	0	

LR-3 Off-site Environment

Select from pull-down menus or enter figures and comments.

Construction Completion St

1 Air Pollution

Weight Coefficient (default) = 0.10

Level 1	Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories Floor Area of "Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories"= 300m² Floor Area of Apartments = 300m²	Offices Schools Retailers Restaurants Halls Hospitals Hotels Factories Floor Area of "Offices Schools Retailers Restaurants Halls Hospitals Hotels Factories"= m²
	Preliminary Design Stage"Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories" Execution Design Stage & Construction Completion Stage "Apartments"	**Level 3** Execution Design Stage & Construction Completion Stage "Offices Schools Retailers Restaurants Halls Hospitals Hotels Factories"
■**Level 1**	On the Efforts to be evaluated , 0.0<= Credit Ratio (3)<0.2	**Level 1** Gas and dust concentrations at sources of NOx, SOx and dust exceed the emission standards set by the Clean Air Law or local ordinances.
Level 2	On the Efforts to be evaluated , 0.2<= Credit Ratio (3)<0.4	**Level 2** (Inapplicable)
Level 3	On the Efforts to be evaluated , 0.4<= Credit Ratio (3) <0.6	**Level 3** Gas and dust concentrations at sources of NOx, SOx and dust are reduced to below the emission standards*1 set by the Clean Air Law or local ordinances.
Level 4	On the Efforts to be evaluated , 0.6<= Credit Ratio (3)<0.8	**Level 4** Gas and dust concentrations at sources of NOx, SOx and dust are considerably reduced to below the emission standards*2 set by the Clean Air Law or local ordinances to a large extent.
Level 5	On the Efforts to be evaluated , 0.8<= Credit Ratio (3)	**Level 5** No combustion equipment is used and no air pollutant is generated from hypothetical enclosed space of target building and discharged to outside space.

Note) The criterion for concentration level is the Clean Air Law or the local ordinance, whichever is more stringent.
*1) For level 3, the concentration level should be limited to below the standard value and over 90% of the standrd value.
*2) For level 4, the emission concentration should be limited to below 90% of the standard value.

Efforts to be evaluated

Credits	Level of efforts			Efforts
	High	Low	None	
				I. Efforts within the building or the residential section.
Excluded	2	1	0	1) Selection of low-NOx and low-SOx equipment types (For systems installed in each dwelling)
Excluded	2	1	0	2) Selection of low-NOx and low-SOx equipment types. (Centralized type equipment)
Excluded	2	1	0	3) Use of clean fuels, such as low-sulfur fuel and natural gas.
Excluded	2	1	0	4) Existence of an operation monitoring plan.
Excluded	2	1	-	5) Others( )
				II. Efforts within the exterior
0	1	1	0	6) Use of plants to absorb NOx, SOx and dust.
Excluded	1	1	0	7)Use of atmospheric purification systems, such as photocatalysis and soil cleaning.
Excluded	1	1	-	8) Others ( )
'(1) Total Credits = **points**	(2) Maximum Credits = **1 points**			(3) Credits Ratio ((1) / (2)) = **0.00**

1) Select “Exclude” when only centralized systems are used.
2) Select “Exclude” when only systems for each dwelling are used

2 Noise, Vibration & Odor

2.1 Noise & Vibration

Weight Coefficient(default)== 0.50

Level 1	Offices Schools Retailers Restaurants Halls Factories Floor Area of "Offices Schools Retailers Restaurants Halls Factories"= m²	Hospitals Hotels Apartments Floor Area of "Hospitals Hotels"= m² Floor Area of "Apartments"= 300m²
■**Level 1**	On the Efforts to be evaluated , 0.0<= Credit Ratio (3)<0.2	On the Efforts to be evaluated , 0.0<= Credit Ratio (3)<0.1
Level 2	On the Efforts to be evaluated , 0.2<= Credit Ratio (3)<0.4	On the Efforts to be evaluated , 0.1<= Credit Ratio (3)<0.2
Level 3	On the Efforts to be evaluated , 0.4<= Credit Ratio (3) <0.6	On the Efforts to be evaluated , 0.2<= Credit Ratio (3)<0.4
Level 4	On the Efforts to be evaluated , 0.6<= Credit Ratio (3)<0.8	On the Efforts to be evaluated , 0.4<= Credit Ratio (3)<0.6
Level 5	On the Efforts to be evaluated , 0.8<= Credit Ratio (3)	On the Efforts to be evaluated , 0.6<= Credit Ratio (3)

Efforts to be evaluated

Credits	Level of efforts			Efforts
	High	Low	None	
				I. Dwellings section
0	2	1	0	1) Noise generated by the exterior machinery of air conditioning systems for individual dwellings should be evaluated according to the type of equipment, the installation location, installation spacing and the presence of noise countermeasures. (Applied to “apartments” only.)
Excluded	2	1	-	2) Others(Applied to “apartments” only.)
				II.Entire building and common properties
0	2	1	0	3) Use of low-noise and low-vibration equipment
0	2	1	0	4) Consideration of the installation positions of equipment that generates vibration and noise, and countermeasures against those sources (sound absorbers, sound-absorbent lagging* , vibration-damping construction, earthquake resistance processing etc.).
0	2	1	0	5) Consideration for extractor fan noise and other background noise generated in the building (positioning of extractor, ventilation and other openings, measures taken on fans, etc.).

0	2	1	0	6) Presence of measures to reduce wind roar from building exterior finishes
0	2	1	0	7) Measures to prevent the propagation of noise to adjacent land (anti-noise measures such as sound-baffling walls and trees etc.)
0	2	1	0	8) Presence of measures to reduce noise from on-site car parking to adjacent plots.
Excluded	2	1	-	9 Others ( )

(1) Total Credits = **points**	(2) Maximum Credits =	**12 points**	(3) Credits Ratio ((1) / (2)) =	**0.00**	←"Offices Schools Retailers Restaurants Halls Hospitals Hotels Factories"
(4) Total Credits = **points**	(5) Maximum Credits =	**14 points**	(6) Credits Ratio ((4) / (5)) =	**0.00**	←"Apartments"

2.2 Odors

Weight Coefficient (default) = 0.50

Level 1	Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories Floor Area of "Offices Schools Retailers Restaurants Halls Hospitals Hotels Factories" m² Floor Area of "Apartments"= 300m²
■**Level 1**	On the Efforts to be evaluated , 0.0<= Credit Ratio (3) or (6)<0.2
Level 2	On the Efforts to be evaluated , 0.2<= Credit Ratio (3) or (6)<0.4
Level 3	On the Efforts to be evaluated , 0.4<= Credit Ratio (3) or (6) <0.6
Level 4	On the Efforts to be evaluated , 0.6<= Credit Ratio (3) or (6)<0.8
Level 5	On the Efforts to be evaluated , 0.8<= Credit Ratio (3) or (6)

Efforts to be evaluated

Credits	Level of efforts			Efforts
	High	Low	None	
2	2	1	0	1) Measures targeting sources of odor. (Not applied to “apartments.”)
0	2	1	0	2) Installation of equipment to eliminate or reduce offensive odors. (Not applied to “apartments.”)
0	2	1	0	3) Measures against waste (organic etc.) generated by building operation
Excluded	2	1	-	4) Others ( )

(1) Total Credits = **2 points**	(2) Maximum Credits =	**6 points**	(3) Credits Ratio ((1) / (2)) =	**0.33**	←"Offices Schools Retailers Restaurants Halls Hospitals Hotels Factories"
(4) Total Credits = **points**	(5) Maximum Credits =	**2 points**	(6) Credits Ratio ((4) / (5)) =	**0.00**	←"Apartments"

3 Wind Damage & Sunlight Obstruction

Weight Coefficient (default) = 0.15

Level 1	Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories
■**Level 1**	On the Efforts to be evaluated , 0.0<= Credit Ratio (3)<0.2
Level 2	On the Efforts to be evaluated , 0.2<= Credit Ratio (3)<0.4
Level 3	On the Efforts to be evaluated , 0.4<= Credit Ratio (3) <0.6
Level 4	On the Efforts to be evaluated , 0.6<= Credit Ratio (3)<0.8
Level 5	On the Efforts to be evaluated , 0.8<= Credit Ratio (3)

Efforts to be evaluated

Credits	Level of efforts			Efforts
	High	Low	None	
				I. Prediction of wind damage
0	2	1	0	1) Conduct a preliminary survey of wind speed and direction and related factors in the area.
0	2	1	0	2) Use of simulations and other tools to predict wind damage.
				II. Restriction of wind damage
0	2	1	0	3) Measures to restrict wind damage
0	2	1	0	4) Measures to reduce the impact of wind damage
				III Restriction of sunlight obstruction
0	2	1	0	5 Consideration of shade cast on adjacent sites
Excluded	2	1	-	6 Others ( )

(1) Total Credits = **points**	(2) Maximum Credits =	**10 points**	(3) Credits Ratio ((1) / (2)) =	**0.00**

4 Light Pollution

Weight Coefficient(default)= 0.10

Level 3	Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories
Level 1	(Inapplicable)
Level 2	(Inapplicable)
■**Level 3**	On the Efforts to Be Evaluated , 0 <=Credit Ratio (3)< 0.3
Level 4	On the Efforts to be evaluated , 0.3<= Credit Ratio (3)<0.6
Level 5	On the Efforts to be evaluated , 0.6<= Credit Ratio (3)

Efforts to be evaluated

Credits	Level of efforts			Efforts
	High	Low	None	
0	2	1	0	1) Outdoor illumination and light that spills from interiors
0	2	1	0	2) Light pollution from advertising displays
0	2	1	0	3) Reflected solar glare from building walls

(1) Total Credits = **points**	(2) Maximum Credits =	**6 points**	(3) Credits Ratio ((1) / (2)) =	**0.00**

5 Heat Island Effect

Weight Coefficient(default)= 0.30

Level 1	Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories
■Level 1	On the Efforts to be evaluated , 0.0<= Credit Ratio (3)<0.2
Level 2	On the Efforts to be evaluated , 0.2<= Credit Ratio (3)<0.4
Level 3	On the Efforts to be evaluated , 0.4<= Credit Ratio (3) <0.6
Level 4	On the Efforts to be evaluated , 0.6<= Credit Ratio (3)<0.8
Level 5	On the Efforts to be evaluated , 0.8<= Credit Ratio (3)

Efforts to be evaluated

Credits	Level of efforts: Present		None	Efforts
0	2		0	1) Air movement leaving the site has been considered, and efforts have been made to reduce thermal impact. [1] Buildings are arranged so that they do not block existing paths of air movement. [2] Buildings are arranged so that they do not block paths of air movement in midsummer. [3] Provision of paths within the site, and provision of adequate spacing between buildings. [4] Appropriate building height and form for block spacing to avoid blocking air movement.
0	2		0	2) Exterior cladding materials have been considered, and efforts have been made to reduce thermal impact outside the site. [1] Select highly water-retaining and water-permeable path paving materials (paved surfaces). [2] Selection of paving materials for paths etc. with low solar absorption rate
0	2		0	3) Cladding materials of outside wall have been considered, and efforts have been made to reduce thermal impact outside the site. [1] Selection of building roofing materials with low solar absorption rate and high long-wavelength emission rates. [2] Selection of wall materials with low solar absorption rates. [3] Promotion of greening on building exterior surfaces (roof and wall).
0	2		0	4) Efforts have been made to reduce artificial heat emissions. [1] Use of energy-saving perimeter materials. [2] Use of energy-saving equipment. [3] Exploitation of natural energy (sunlight, wind, etc.) [4] Exploitation of unused energy (urban waste heat present in areas near the site, etc.). [5] Introduction of high-efficiency infrastructure[6] Shifting the heat discharge peak. * On evaluate when considering daytime conditions.
(1) Total Credits = **points**		(2) Maximum Credits = **8 points**		(3) Credits Ratio ((1) / (2)) = **0.00**

6 Load on Local Infrastructure

Weight Coefficient (default) = 0.25

Level 2	Offices Schools Retailers Restaurants Halls Hospitals Hotels Apartments Factories Floor Area of "Offices Schools Retailers Restaurants Halls Hospitals Hotels Factories"= m² Floor Area of "Apartments"= 300m²
Level 1	On the Efforts to be evaluated , 0.0<= Credit Ratio (3)<0.2
■Level 2	On the Efforts to be evaluated , 0.2<= Credit Ratio (3)<0.4
Level 3	On the Efforts to be evaluated , 0.4<= Credit Ratio (3)<0.6
Level 4	On the Efforts to be evaluated , 0.6<= Credit Ratio (3)<0.8
Level 5	On the Efforts to be evaluated , 0.8<= Credit Ratio (3)

Efforts to be evaluated

Credits	Level of efforts: High	Low	None	Efforts
				I .Efforts to reduce rainwater drainage load
2	2	1	0	1) Measures to encourage rainwater percolation to the ground surface (Topsoil conservation, permeable paving, percolation tanks, percolation pipes, etc.)
0	2	1	0	2) Provision of facilities for temporary rainwater storage (Installation of rainwater storage tanks, drainage basins, drainage facilities etc.)
Excluded	2	1	-	3) Others ( )
				II. Efforts to reduce sewage treatment load
0	2	1	0	4) Advanced purification of sewage and reduction of the discharge volume
Excluded	2	1	-	5) Others ( )
				III. Efforts to reduce automobile usage
				IIIa. Use of bicycles (use of alternative modes of transport)
0	2	1	0	6) Provision of bicycle parking space for building users
0	2	1	0	7) Consideration for the convenience of bicycle parking area users (Make sure the parking area is easy to move in and out of, and is in a convenient location).
Excluded	2	1	-	8) Others ( )
				IIIb. Efforts to provide car parking space.
0	2	1	0	9) Calculation of traffic loads generated on surrounding roads (when planning car parking)
0	2	1	0	10) Provision of an appropriate number of parking spaces (As a way of avoiding congestion and street parking in nearby roads)
0	2	1	0	11) Provision of parking facilities for unloading goods vehicles. (Not applied to “apartments.”)
0	2	1	0	12) Consideration for the placement of parking lot access roads
Excluded	2	1	-	13 Others ( )
				IV. Efforts to reduce garbage treatment load
2	2	1	0	14 Provide facilities and equipment for sorting and separation. (separate garbage boxes, a stock yard for sorted garbage, etc.).
2	2	1	0	15 Introduction of systems for volume reduction and composting of organic garbage (disposers, composters etc).

Excluded	2	1	-	16 Others ( )		
(1) Total Credits = **6 points**		(2) Maximum Credits = **22 points**		(3) Credits Ratio ((1) / (2)) =	**0.27**	←"Offices Schools Retailers Restaurants Halls Hospitals Hotels Factories"
(4) Total Credits = **6 points**		(5) Maximum Credits = **20 points**		(6) Credits Ratio ((1) / (2)) =	**0.30**	←"Apartments"

Weighting coefficients

		After correction		Before correction		Total (Before correction)		Select "Excluded"		Default weighting coefficients	
		Entire Building and Common Properties	Residential and Accomodation sections	Entire Building and Common Properties	Residential and Accomodation sections	Entire Building and Common Properties	Residential and Accomodation sections	Entire Building and Common Properties	Residential and Accomodation sections	Entire Building and Common Properties	Residential and Accomodation sections
Ratio of total floor area		0.100	0.90								
Q	Building Environmental Quality & Performance					1.00	0.00				
Q-1	**Indoor Environment**	**0.400**	**0.000**	**0.400**	**0.000**	**1.000**	**0.000**	**1.000**	**0.000**	**0.400**	**0.000**
1	**Noise & Acoustics**	**0.150**	**0.000**	**0.150**	**0.000**	0.200	0.600	**1.000**	**1.000**	**0.150**	**0.000**
1.1	Noise	0.000	0.667	0.000	0.400	0.000	0.500	0.000	1.000	0.400	0.400
1.1.1	Background noise	0.000	0.000	0.000	0.000			0.000	0.000	1.000	0.500
1.1.2	Equipment noise	0.000	1.000	0.000	0.500			0.000	1.000	0.000	0.500
1.2	Sound Insulation	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.400	0.400
1.2.1	Sound Insulation of Openings	0.000	0.000	0.000	0.000			0.000	0.000	1.000	0.300
1.2.2	Sound Insulation of Partition Walls	0.000	0.000	0.000	0.000			1.000	0.000	0.000	0.300
1.2.3	Sound Insulation of Floor Slabs (light-imp	0.000	0.000	0.000	0.000			1.000	0.000	0.000	0.200
1.2.4	Sound Insulation of Floor Slabs (heavy-in	0.000	0.000	0.000	0.000			1.000	0.000	0.000	0.200
1.3	Sound Absorption	1.000	0.333	0.200	0.200			1.000	1.000	0.200	0.200
2	**Thermal Comfort**	**0.350**	**0.000**	**0.350**	**0.000**	**0.500**	**0.500**	**1.000**	**1.000**	**0.350**	**0.000**
2.1	Room Temperature Control	1.000	1.000	0.500	0.500	0.700	0.500	1.000	1.000	0.500	0.500
2.1.1	Room Temperature Setting	0.714	1.000	0.500	0.500			1.000	1.000	0.500	0.500
2.1.2	Variable Loads & Following-up Control	0.000	0.000	0.000	0.000			1.000	0.000	0.000	0.000
2.1.3	Perimeter Performance	0.000	0.000	0.000	0.000			0.000	0.000	0.300	0.300
2.1.4	Zoned Control	0.000	0.000	0.000	0.000			1.000	0.000	0.000	0.000
2.1.5	Temperature & Humidity Control	0.286	0.000	0.200	0.000			1.000	1.000	0.200	0.000
2.1.6	Individual Control	0.000	0.000	0.000	0.000			0.000	0.000	0.000	0.200
2.1.7	Allowance for After-hours Air Conditioning	0.000	0.000	0.000	0.000			1.000	0.000	0.000	0.000
2.1.8	Monitoring Systems	0.000	0.000	0.000	0.000			1.000	0.000	0.000	0.000
2.2	Humidity Control	0.000	0.000	0.000	0.000			0.000	0.000	0.200	0.200
2.3	Type of Air Conditioning	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.300	0.300
2.3.1	Type of Air Conditioning	0.000	0.000	0.000	0.000			0.000	0.000	0.000	0.000
		0.000	0.000	0.000	0.000			0.000	0.000	0.000	0.000
3	**Lighting & Illumination**	**0.250**	**0.000**	**0.250**	**0.000**	**0.300**	**0.300**	**1.000**	**1.000**	**0.250**	**0.000**
3.1	Daylighting	1.000	1.000	0.300	0.300	0.400	0.200	1.000	1.000	0.300	0.300
3.1.1	Daylight Factor	0.000	0.000	0.000	0.000			0.000	0.000	0.600	0.500
3.1.2	Openings by Orientation	0.000	0.000	0.000	0.000			1.000	0.000	0.000	0.300
3.1.3	Daylight Devices	1.000	1.000	0.400	0.200			1.000	1.000	0.400	0.200
3.2	Anti-glare Measures	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.300	0.300
3.2.1	Glare from light fixtures	0.000	0.000	0.000	0.000			0.000	0.000	0.400	0.400
3.2.2	Daylight control	0.000	0.000	0.000	0.000			0.000	0.000	0.600	0.600
3.3	Illuminance Level	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.150	0.150
3.3.1	Illuminance Level	0.000	0.000	0.000	0.000			0.000	0.000	0.700	1.000
3.3.2	Uniformity Ratio of Illuminance	0.000	0.000	0.000	0.000			0.000	1.000	0.300	0.000
3.4	Lighting Controllability	0.000	0.000	0.000	0.000			0.000	0.000	0.250	0.250
4	**Air Quality**	**0.250**	**0.000**	**0.250**	**0.000**	**1.000**	**1.000**	**1.000**	**1.000**	**0.250**	**0.000**
4.1	Source Control	0.600	0.625	0.600	0.625	0.667	0.500	1.000	1.000	0.600	0.625
4.1.1	Chemical Pollutants	0.000	0.000	0.000	0.000			0.000	0.000	0.333	0.250
4.1.2	Mineral Fiber	0.500	0.500	0.333	0.250			1.000	1.000	0.333	0.250
4.1.3	Mites, Mold etc.	0.500	0.500	0.333	0.250			1.000	1.000	0.333	0.250
4.1.4	Legionella	0.000	0.000	0.000	0.000			1.000	0.000	0.000	0.250
4.2	Ventilation	0.400	0.375	0.400	0.375	0.500	0.250	1.000	1.000	0.400	0.375
4.2.1	Ventilation Rate	0.000	0.000	0.000	0.000			0.000	0.000	0.500	0.250
4.2.2	Natural Ventilation Performance	0.000	0.000	0.000	0.000			1.000	0.000	0.000	0.250
4.2.3	Consideration for Outside Air Intake	1.000	1.000	0.500	0.250			1.000	1.000	0.500	0.250
4.2.4	Air Supply Planning	0.000	0.000	0.000	0.000			1.000	0.000	0.000	0.250
4.3	Operation Plan	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4.3.1	CO_2 Monitoring	0.000	0.000	0.000	0.000			1.000	0.000	0.000	0.000
4.3.2	Control of Smoking	0.000	0.000	0.000	0.000			1.000	0.000	0.000	0.000
Q-2	**Quality of Service**	**0.300**	**0.000**	**0.300**	**0.000**	**0.312**	**0.000**	**1.000**	**0.000**	**0.300**	**0.000**
1	**Service Ability**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.400**	**0.000**
1.1	Functionality & Usability	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.600	0.000
1.1.1	Provision of Space & Storage	0.000	0.000	0.000	0.000			1.000	1.000	0.000	0.000
1.1.2	Adaptation of Building Structure & Services to IT Innovation	0.000	0.000	0.000	0.000			1.000	0.000	0.000	0.000
1.1.3	Barrier-free Planning	0.000	0.000	0.000	0.000			0.000	0.000	1.000	0.000
1.2	Amenity	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.400	1.000
1.2.1	Perceived Spaciousness & Access to Vie	0.000	0.000	0.000	0.000			1.000	0.000	0.000	0.500
1.2.2	Space for refreshment	0.000	0.000	0.000	0.000			1.000	0.000	0.000	0.000

Simplified weighting coefficients

		Weighting coefficients			Weighting coefficients of Residential and Accomodation Sections (simplified)		
		After correction	Before correction	Total (Before correction)	Hospitals	Hotels	Apartments
Ratio of total floor area					0.00	0.00	0.90
Q	Building Environmental Quality & Performance			1.00			
Q-1	**Indoor Environment**	**0.400**	**0.400**	1.000	**0.40**	**0.40**	**0.40**
1	**Noise & Acoustics**	**0.150**	**0.150**	0.200	**0.15**	**0.15**	**0.15**
1.1	Noise	0.000	0.000	0.000	0.40	0.40	0.40
1.1.1	Background noise	0.000	0.000		0.50	0.50	0.55
1.1.2	Equipment noise	0.000	0.000		0.50	0.50	0.45
1.2	Sound Insulation	0.000	0.000	0.630	0.40	0.40	0.40
1.2.1	Sound Insulation of Openings	0.000	0.000		1.00	1.00	0.37
1.2.2	Sound Insulation of Partition Walls	0.429	0.270		–	–	0.27
1.2.3	Sound Insulation of Floor Slabs (light-imp	0.286	0.180		–	–	0.18
1.2.4	Sound Insulation of Floor Slabs (heavy-in	0.286	0.180		–	–	0.18
1.3	Sound Absorption	1.000	0.200		0.20	0.20	0.20
2	**Thermal Comfort**	**0.350**	**0.350**	0.500	**0.35**	**0.35**	**0.35**
2.1	Room Temperature Control	1.000	0.500	0.520	0.50	0.50	0.50
2.1.1	Room Temperature Setting	0.962	0.500		0.30	0.30	0.50
2.1.2	Variable Loads & Following-up Control	0.000	0.000		–	–	–
2.1.3	Perimeter Performance	0.000	0.000		0.20	0.20	0.30
2.1.4	Zoned Control	0.000	0.000		0.30	0.30	–
2.1.5	Temperature & Humidity Control	0.038	0.020		0.10	0.10	0.02
2.1.6	Individual Control	0.000	0.000		–	–	0.18
2.1.7	Allowance for After-hours Air Conditioning	0.000	0.000		0.10	0.10	–
2.1.8	Monitoring Systems	0.000	0.000		–	–	–
2.2	Humidity Control	0.000	0.000		0.20	0.20	0.20
2.3	Type of Air Conditioning	0.000	0.000	0.000	0.30	0.30	0.30
2.3.1	Type of Air Conditioning	0.000	0.000		–	–	–
		0.000	0.000		–	–	–
3	**Lighting & Illumination**	**0.250**	**0.250**	0.300	**0.25**	**0.25**	**0.25**
3.1	Daylighting	1.000	0.300	0.490	0.30	0.30	0.30
3.1.1	Daylight Factor	0.000	0.000		0.60	0.60	0.51
3.1.2	Openings by Orientation	0.551	0.270		–	–	0.27
3.1.3	Daylight Devices	0.449	0.220		0.40	0.40	0.22
3.2	Anti-glare Measures	0.000	0.000	0.000	0.30	0.30	0.30
3.2.1	Glare from light fixtures	0.000	0.000		0.40	0.40	0.40
3.2.2	Daylight control	0.000	0.000		0.60	0.60	0.60
3.3	Illuminance Level	0.000	0.000	0.000	0.15	0.15	0.15
3.3.1	Illuminance Level	0.000	0.000		0.70	0.70	0.97
3.3.2	Uniformity Ratio of Illuminance	0.000	0.000		0.30	0.30	0.03
3.4	Lighting Controllability	0.000	0.000		0.25	0.25	0.25
4	**Air Quality**	**0.250**	**0.250**	1.000	**0.25**	**0.25**	**0.25**
4.1	Source Control	0.623	0.623	0.742	0.50	0.50	0.62
4.1.1	Chemical Pollutants	0.000	0.000		0.33	0.33	0.26
4.1.2	Mineral Fiber	0.348	0.258		0.33	0.33	0.26
4.1.3	Mites, Mold etc.	0.348	0.258		0.33	0.33	0.26
4.1.4	Legionella	0.303	0.225		–	–	0.23
4.2	Ventilation	0.378	0.378	0.725	0.30	0.30	0.38
4.2.1	Ventilation Rate	0.000	0.000		0.33	0.33	0.28
4.2.2	Natural Ventilation Performance	0.310	0.225		–	–	0.23
4.2.3	Consideration for Outside Air Intake	0.379	0.275		0.33	0.33	0.28
4.2.4	Air Supply Planning	0.310	0.225		0.33	0.33	0.23
4.3	Operation Plan	0.000	0.000	0.000	0.20	0.20	–
4.3.1	CO_2 Monitoring	0.000	0.000		–	–	–
4.3.2	Control of Smoking	0.000	0.000		1.00	1.00	–
Q-2	**Quality of Service**	**0.300**	**0.300**	0.312	**0.30**	**0.30**	**0.30**
1	**Service Ability**	**0.000**	**0.000**	0.000	**0.40**	**0.40**	**0.40**
1.1	Functionality & Usability	0.000	0.000	0.000	0.60	0.60	0.06
1.1.1	Provision of Space & Storage	0.000	0.000		–	–	–
1.1.2	Adaptation of Building Structure & Services to IT Innovation	0.000	0.000		–	–	–
1.1.3	Barrier-free Planning	0.000	0.000		1.00	1.00	0.10
1.2	Amenity	0.000	0.000	0.450	0.40	0.40	0.94
1.2.1	Perceived Spaciousness & Access to Vie	1.000	0.450		–	–	0.45
1.2.2	Space for refreshment	0.000	0.000		–	–	–

Weighting coefficients(default)

2

			Entire building and common properties									Residential and Accomodation sections		
	Item	Item name	Offices	Schools	Retailers	Restaurants	Hospitals	Hotels	Apartments	Halls	Factories	Hospitals-o	Hotels-o	Apartments-o
	Total floor area	Ratio of Total floor area							1.00					1.00
Q-1	1	**Indoor Environment**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.30**			
1	1.1	**Noise & Acoustics**	**0.15**	**0.15**	**0.15**	**0.15**	**0.15**	**0.15**	**0.15**	**0.23**	**0.15**			
1.1	1.1.1	Noise	0.40	0.40	0.70	0.40	0.40	0.40	0.40	1.00	0.40	0.40	0.40	0.40
1.1.1	1.1.1.1	Background noise	0.50	0.50	0.50	0.50	0.50	0.50	1.00	0.50	0.50	0.50	0.50	0.50
1.1.2	1.1.1.1	Equipment noise	0.50	0.50	0.50	0.50	0.50	0.50		0.50	0.50	0.50	0.50	0.50
1.2	1.1.1	Sound Insulation	0.40	0.40		0.40	0.40	0.40	0.40		0.40	0.40	0.40	0.40
1.2.1	1.1.1.2	Sound Insulation of Openings	0.60	0.30		0.60	1.00	1.00	1.00		0.60	0.30	0.30	0.30
1.2.2	1.1.1.2	Sound Insulation of Partition Walls	0.40	0.30		0.40					0.40	0.30	0.30	0.30
1.2.3	1.1.1.2	Sound Insulation of Floor Slabs (light-i		0.20								0.20	0.20	0.20
1.2.4	1.1.1.2	Sound Insulation of Floor Slabs (heavy		0.20								0.20	0.20	0.20
1.3	1.1.1	Sound Absorption	0.20	0.20	0.30	0.20	0.20	0.20	0.20		0.20	0.20	0.20	0.20
2	1.1	**Thermal Comfort**	**0.35**	**0.35**	**0.35**	**0.35**	**0.35**	**0.35**	**0.35**	**0.44**	**0.35**			
2.1	1.1.2	Room Temperature Control	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
2.1.1	1.1.2.1	Room Temperature Setting	0.30	0.30	0.30	0.30	0.30	0.30	0.50	0.30	0.30	0.40	0.40	0.50
2.1.2	1.1.2.1	Variable Loads & Following-up Control		0.20	0.20	0.20				0.30				
2.1.3	1.1.2.1	Perimeter Performance	0.20	0.20	0.10	0.10	0.20	0.20	0.30	0.10	0.20	0.30	0.30	0.30
2.1.4	1.1.2.1	Zoned Control	0.30		0.20	0.20	0.30	0.30		0.20	0.30			
2.1.5	1.1.2.1	Temperature & Humidity Control	0.10	0.10	0.10	0.10	0.10	0.10	0.20	0.10	0.10	0.20	0.20	
2.1.6	1.1.2.1	Consideration for overtime work & holi										0.10	0.10	0.20
2.1.7	1.1.2.1	Allowance for After-hours Air Condition	0.10	0.20			0.10	0.10			0.10			
2.1.8	1.1.2.1	Monitoring Systems			0.10	0.10								
2.2	1.1.2	Humidity Control	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
2.3	1.1.2	Type of Air Conditioning	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
2.3.1	1.1.2.3	Type of Air Conditioning												
0	1.1.2.3	0												
3	1.1	**Lighting & Illumination**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**		**0.25**			
3.1	1.1.3	Daylighting	0.30	0.30	0.50	1.00	0.30	0.30	0.30		0.30	0.30	0.30	0.30
3.1.1	1.1.3.1	Daylight Factor	0.60	0.60			0.60	0.60	0.60		0.60	0.60	0.60	0.50
3.1.2	1.1.3.1	Openings by Orientation												0.30
3.1.3	1.1.3.1	Daylight Devices	0.40	0.40	1.00	1.00	0.40	0.40	0.40		0.40	0.40	0.40	0.20
3.2	1.1.3	Anti-glare Measures	0.30	0.30			0.30	0.30	0.30		0.30	0.30	0.30	0.30
3.2.1	1.1.3.2	Glare from light fixtures	0.40	0.40			0.40	0.40	0.40		0.40	0.40	0.40	0.40
3.2.2	1.1.3.2	Daylight control	0.60	0.60			0.60	0.60	0.60		0.60	0.60	0.60	0.60
3.3	1.1.3	Illuminance Level	0.15	0.15			0.15	0.15	0.15		0.15	0.15	0.15	0.15
3.3.1	1.1.3.3	Illuminance Level	0.70	0.70			0.70	0.70	0.70		0.70	0.70	1.00	1.00
3.3.2	1.1.3.3	Uniformity Ratio of Illuminance	0.30	0.30			0.30	0.30	0.30		0.30	0.30		
3.4	1.1.3	Lighting Controllability	0.25	0.25	0.50		0.25	0.25	0.25		0.25	0.25	0.25	0.25
4	1.1	**Air Quality**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.33**	**0.25**			
4.1	1.1.4	Source Control	0.50	0.50	0.50	0.50	0.50	0.50	0.60	0.50	0.50	0.63	0.63	0.63
4.1.1	1.1.4.1	Chemical Pollutants	0.25	0.25	0.25	0.25	0.33	0.33	0.33	0.25	0.25	0.25	0.25	0.25
4.1.2	1.1.4.1	Mineral Fiber	0.25	0.25	0.25	0.25	0.33	0.33	0.33	0.25	0.25	0.25	0.25	0.25
4.1.3	1.1.4.1	Mites, Mold etc.	0.25	0.25	0.25	0.25	0.33	0.33	0.33	0.25	0.25	0.25	0.25	0.25
4.1.4	1.1.4.1	Legionella	0.25	0.25	0.25	0.25				0.25	0.25	0.25	0.25	0.25
4.2	1.1.4	Ventilation	0.30	0.30	0.30	0.30	0.30	0.30	0.40	0.30	0.30	0.38	0.38	0.38
4.2.1	1.1.4.2	Ventilation Rate	0.25	0.25	0.33	0.33	0.33	0.33	0.50	0.33	0.25	0.25	0.25	0.25
4.2.2	1.1.4.2	Natural Ventilation Performance	0.25	0.25							0.25	0.25	0.25	0.25
4.2.3	1.1.4.2	Consideration for Outside Air Intake	0.25	0.25	0.33	0.33	0.33	0.33	0.50	0.33	0.25	0.25	0.25	0.25
4.2.4	1.1.4.2	Air Supply Planning	0.25	0.25	0.33	0.33	0.33	0.33		0.33	0.25	0.25	0.25	0.25
4.3	1.1.4	Operation Plan	0.20	0.20	0.20	0.20	0.20	0.20		0.20	0.20			
4.3.1	1.1.4.3	CO2 Monitoring	0.50	0.50	0.50	0.50				0.50	0.50			
4.3.2	1.1.4.3	Control of Smoking	0.50	0.50	0.50	0.50	1.00	1.00		0.50	0.50			
Q-2	1	**Quality of Service**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**			
1	1.2	**Service Ability**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**			
1.1	1.2.1	Functionality & Usability	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	
1.1.1	1.2.1.1	Provision of Space & Storage	0.33								0.33	1.00	1.00	
1.1.2	1.2.1.1	Adaptation of Building Structure & Ser	0.33								0.33			
1.1.3	1.2.1.1	Barrier-free Planning	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33			
1.2	1.2.1	Amenity	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	1.00
1.2.1	1.2.1.2	Perceived Spaciousness & Access to V	0.33	0.50	0.33	0.50					0.33	0.50	0.50	0.50
1.2.2	1.2.1.2	Space for refreshment	0.33		0.33						0.33			

		After correction		Before correction		Total (Before correction)		Select "Excluded"		Default weighting coefficients	
		Entire Building and Common Properties	Residential and Accomodation sections	Entire Building and Common Properties	Residential and Accomodation sections	Entire Building and Common Properties	Residential and Accomodation sections	Entire Building and Common Properties	Residential and Accomodation sections	Entire Building and Common Properties	Residential and Accomodation sections
1.2.3	Décor Planning	0.000	0.000	0.000	0.000			0.000	0.000	1.000	0.500
2	Durability & Reliability	1.000	0.000	0.312	0.000	0.810	0.000	1.000	0.000	0.312	0.000
2.1	Earthquake Resistance	0.593	0.000	0.480	0.000	1.000	0.000	1.000	0.000	0.480	0.000
2.1.1	Earthquake-resistance	0.800	0.000	0.800	0.000			1.000	0.000	0.800	0.000
2.1.2	Seismic Isolation & Vibration Damping Systen	0.200	0.000	0.200	0.000			1.000	0.000	0.200	0.000
2.2	Service Life of Components	0.407	0.000	0.330	0.000	0.294	0.000	1.000	0.000	0.330	0.000
2.2.1	Necessary Refurbishment Interval for Exterior Finish	1.000	0.000	0.294	0.000			1.000	0.000	0.294	0.000
2.2.2	Necessary Renewal Interval for Main Interior Finishe	0.000	0.000	0.000	0.000			0.000	0.000	0.118	0.000
2.2.3	Necessary Renewal Interval for Plumbing & Wiring Material	0.000	0.000	0.000	0.000			0.000	0.000	0.294	0.000
2.2.4	Necessary Renewal Interval for Major Equipment & Service	0.000	0.000	0.000	0.000			0.000	0.000	0.294	0.000
2.3	Reliability	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.190	0.000
2.3.1	HVAC System	0.000	0.000	0.000	0.000			0.000	0.000	0.200	0.000
2.3.2	Water Supply & Drainage	0.000	0.000	0.000	0.000			0.000	0.000	0.200	0.000
2.3.3	Electrical Equipment	0.000	0.000	0.000	0.000			0.000	0.000	0.200	0.000
2.3.4	Support method of machines & ducts	0.000	0.000	0.000	0.000			0.000	0.000	0.200	0.000
2.3.5	Communications & IT equipment	0.000	0.000	0.000	0.000			0.000	0.000	0.200	0.000
3	Flexibility & Adaptability	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.288	0.000
3.1	Spatial Margin	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500
3.1.1	Allowance for Story Height	0.000	0.000	0.000	0.000			1.000	0.000	0.000	0.600
3.1.2	Adaptability of Floor Layout	0.000	0.000	0.000	0.000			1.000	0.000	0.000	0.400
3.2	Floor Load Margin	0.000	0.000	0.000	0.000			1.000	0.000	0.000	0.500
3.3	Adaptability of Facilities	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000
3.3.1	Ease of Air Conditioning Duct Renewal	0.000	0.000	0.000	0.000			0.000	0.000	0.167	0.000
3.3.2	Ease of water supply & drain pipe renewa	0.000	0.000	0.000	0.000			0.000	0.000	0.167	0.000
3.3.3	Ease of Electrical Wiring Renewal	0.000	0.000	0.000	0.000			0.000	0.000	0.111	0.000
3.3.4	Ease of Communications Cable Renewal	0.000	0.000	0.000	0.000			0.000	0.000	0.111	0.000
3.3.5	Ease of Equipment Renewal	0.000	0.000	0.000	0.000			0.000	0.000	0.222	0.000
3.3.6	Provision of backup space	0.000	0.000	0.000	0.000			0.000	0.000	0.222	0.000
Q-3	Outdoor Environment on Site	0.300	0.000	0.300	0.000	0.400	0.000	1.000	0.000	0.300	0.000
1	Preservation & Creation of Biotope	0.000	0.000	0.000	0.000			0.000	0.000	0.300	0.000
2	Townscape & Landscape	1.000	0.000	0.400	0.000			1.000	0.000	0.400	0.000
3	Local Characteristics & Outdoor Amenity	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.300	0.000
3.1	Attention to Local Character & Improvement of Comf	0.000	0.000	0.000	0.000			0.000	0.000	0.500	0.000
3.2	Improvement of the Thermal Environment on	0.000	0.000	0.000	0.000			0.000	0.000	0.500	0.000
LR	Reduction of Building Environmental Loadings			0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
LR-1	Energy	0.400	0.000	0.400	0.000	0.600	0.000	1.000	0.000	0.400	0.000
1	Building Thermal Load	0.000	0.000	0.000	0.000			0.000	0.000	0.400	0.000
2	Natural Energy Utilization	0.333	0.000	0.200	0.000	1.000	0.000	1.000	0.000	0.200	0.000
2.1	Direct use of natural energy	0.500	0.000	0.500	0.000			1.000	0.000	0.500	0.000
2.2	Converted Use of Renewable Energy	0.500	0.000	0.500	0.000			1.000	0.000	0.500	0.000
3	Efficiency in Building Service System	0.667	0.000	0.400	0.000	0.000	0.000	1.000	0.000	0.400	0.000
3.1	HVAC System	0.000	0.000	0.000	0.000			0.000	0.000	0.000	0.000
3.2	Ventilation System	0.000	0.000	0.000	0.000			0.000	0.000	0.000	0.000
3.3	Lighting System	0.000	0.000	0.000	0.000			0.000	0.000	0.000	0.000
3.4	Hot Water Supply System	1.000	0.000	1.000	0.000			1.000	0.000	1.000	0.000
3.5	Elevators	0.000	0.000	0.000	0.000			0.000	0.000	0.000	0.000
4	Efficient Operation	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4.1	Monitoring	0.000	0.000	0.000	0.000			1.000	0.000	0.000	0.000
4.2	Operational Management System	0.000	0.000	0.000	0.000			1.000	0.000	0.000	0.000
LR-2	Resources & Materials	0.300	0.000	0.300	0.000	1.000	0.000	1.000	0.000	0.300	0.000
1	Water Resources	0.150	0.000	0.150	0.000	1.000	0.000	1.000	0.000	0.150	0.000
1.1	Water Saving	0.400	0.000	0.400	0.000			1.000	0.000	0.400	0.000
1.2	Rainwater & Gray Water	0.600	0.000	0.600	0.000	1.000	0.000	1.000	0.000	0.600	0.000
1.2.1	Rainwater Use Systems	0.667	0.000	0.667	0.000			1.000	0.000	0.667	0.000
1.2.2	Gray Water Reuse System	0.333	0.000	0.333	0.000			1.000	0.000	0.333	0.000
2	Materials of Low Environmental Load	0.850	0.000	0.850	0.000	0.788	0.000	1.000	0.000	0.850	0.000
2.1	Recycled Materials	0.448	0.000	0.353	0.000	0.667	0.000	1.000	0.000	0.353	0.000
2.1.1	Reuse Efficiency of Materials Used in Structur	1.000	0.000	0.667	0.000			1.000	0.000	0.667	0.000
2.1.2	Reuse Efficiency of Non-structural Materials	0.000	0.000	0.000	0.000			0.000	0.000	0.333	0.000
2.2	Timber from Sustainable Forestry	0.000	0.000	0.000	0.000			0.000	0.000	0.035	0.000
2.3	Materials with Low Health Risks	0.104	0.000	0.082	0.000			1.000	0.000	0.082	0.000
2.4	Reuse of Existing Building Structure etc.	0.224	0.000	0.176	0.000			1.000	0.000	0.176	0.000
2.5	Predicted Volume of Recyclable Materials	0.000	0.000	0.000	0.000			0.000	0.000	0.176	0.000
2.6	Use of CFCs & Halons	0.224	0.000	0.176	0.000	0.333	0.000	1.000	0.000	0.176	0.000
2.6.1	Fire Retardant	1.000	0.000	0.333	0.000			1.000	0.000	0.333	0.000
2.6.2	Insulation Materials	0.000	0.000	0.000	0.000			0.000	0.000	0.333	0.000
2.6.3	Refrigerants	0.000	0.000	0.000	0.000			0.000	0.000	0.333	0.000
LR-3	Off-site Environment	0.300	0.000	0.300	0.000	0.250	0.000	1.000	0.000	0.300	0.000
1	Air Pollution	0.000	0.000	0.000	0.000			0.000	0.000	0.100	0.000
2	Noise, Vibration & Odor	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.100	0.000
2.1	Noise & Vibration	0.000	0.000	0.000	0.000			0.000	0.000	0.500	0.000
2.2	Odors	0.000	0.000	0.000	0.000			0.000	0.000	0.500	0.000
3	Wind Damage & Sunlight Obstruction	0.000	0.000	0.000	0.000			0.000	0.000	0.150	0.000
4	Light Pollution	0.000	0.000	0.000	0.000			0.000	0.000	0.100	0.000
5	Heat Island Effect	0.000	0.000	0.000	0.000			0.000	0.000	0.300	0.000
6	Load on Local Infrastructure	1.000	0.000	0.250	0.000			1.000	0.000	0.250	0.000

		Weighting coefficients			Weighting coefficients of Residential and Accomodation Sections (simplified)		
		After correction	Before correction	Total (Before correction)	Hospitals	Hotels	Apartments
1.2.3	Décor Planning	0.000	0.000		1.00	1.00	0.55
2	Durability & Reliability	1.000	0.312	0.081	0.31	0.31	0.31
2.1	Earthquake Resistance	0.593	0.048	0.100	0.48	0.48	0.05
2.1.1	Earthquake-resistance	0.800	0.080		0.80	0.80	0.08
2.1.2	Seismic Isolation & Vibration Damping Systen	0.200	0.020		0.20	0.20	0.02
2.2	Service Life of Components	0.407	0.033	0.029	0.33	0.33	0.03
2.2.1	Necessary Refurbishment Interval for Exterior Finish	1.000	0.029		0.29	0.29	0.03
2.2.2	Necessary Renewal Interval for Main Interior Finishe	0.000	0.000		0.12	0.12	0.01
2.2.3	Necessary Renewal Interval for Plumbing & Wiring Material	0.000	0.000		0.29	0.29	0.03
2.2.4	Necessary Renewal Interval for Major Equipment & Service	0.000	0.000		0.29	0.29	0.03
2.3	Reliability	0.000	0.000	0.000	0.19	0.19	0.02
2.3.1	HVAC System	0.000	0.000		0.20	0.20	0.02
2.3.2	Water Supply & Drainage	0.000	0.000		0.20	0.20	0.02
2.3.3	Electrical Equipment	0.000	0.000		0.20	0.20	0.02
2.3.4	Support method of machines & ducts	0.000	0.000		0.20	0.20	0.02
2.3.5	Communications & IT equipment	0.000	0.000		0.20	0.20	0.02
3	Flexibility & Adaptability	0.000	0.000	0.450	0.29	0.29	0.29
3.1	Spatial Margin	0.000	0.000	0.900	–	–	0.45
3.1.1	Allowance for Story Height	0.600	0.540		–	–	0.54
3.1.2	Adaptability of Floor Layout	0.400	0.360		–	–	0.36
3.2	Floor Load Margin	1.000	0.450		–	–	0.45
3.3	Adaptability of Facilities	0.000	0.000	0.000	1.00	1.00	0.10
3.3.1	Ease of Air Conditioning Duct Renewal	0.000	0.000		0.17	0.17	0.02
3.3.2	Ease of water supply & drain pipe renewa	0.000	0.000		0.17	0.17	0.02
3.3.3	Ease of Electrical Wiring Renewal	0.000	0.000		0.11	0.11	0.01
3.3.4	Ease of Communications Cable Renewal	0.000	0.000		0.11	0.11	0.01
3.3.5	Ease of Equipment Renewal	0.000	0.000		0.22	0.22	0.02
3.3.6	Provision of backup space	0.000	0.000		0.22	0.22	0.02
Q-3	Outdoor Environment on Site	0.300	0.300	0.400	0.30	0.30	0.30
1	Preservation & Creation of Biotope	0.000	0.000		0.30	0.30	0.30
2	Townscape & Landscape	1.000	0.400		0.40	0.40	0.40
3	Local Characteristics & Outdoor Amenity	0.000	0.000	0.000	0.30	0.30	0.30
3.1	Attention to Local Character & Improvement of Comf	0.000	0.000		0.50	0.50	0.05
3.2	Improvement of the Thermal Environment on	0.000	0.000		0.50	0.50	0.05
LR	Reduction of Building Environmental Loadings		0.00	1.00			
LR-1	Energy	0.400	0.400	0.600	0.40	0.40	0.40
1	Building Thermal Load	0.000	0.000		0.30	0.30	0.40
2	Natural Energy Utilization	0.333	0.200		0.20	0.20	0.20
2.1	Direct use of natural energy	0.500	0.050		–	–	0.05
2.2	Converted Use of Renewable Energy	0.500	0.050		–	–	0.05
3	Efficiency in Building Service System	0.667	0.400	0.000	0.30	0.30	0.40
3.1	HVAC System	0.000	0.000		0.55	0.40	–
3.2	Ventilation System	0.000	0.000		0.10	0.15	–
3.3	Lighting System	0.000	0.000		0.20	0.20	–
3.4	Hot Water Supply System	1.000	0.100		0.15	0.20	0.10
3.5	Elevators	0.000	0.000		–	0.05	–
4	Efficient Operation	0.000	0.000	0.000	0.20	0.20	–
4.1	Monitoring	0.000	0.000		0.50	0.50	–
4.2	Operational Management System	0.000	0.000		0.50	0.50	–
LR-2	Resources & Materials	0.300	0.300	1.000	0.30	0.30	0.30
1	Water Resources	0.150	0.150	0.100	0.15	0.15	0.15
1.1	Water Saving	0.400	0.040		0.40	0.40	0.04
1.2	Rainwater & Gray Water	0.600	0.060	0.100	0.60	0.60	0.06
1.2.1	Rainwater Use Systems	0.667	0.067		0.67	0.67	0.07
1.2.2	Gray Water Reuse System	0.333	0.033		0.33	0.33	0.03
2	Materials of Low Environmental Load	0.850	0.850	0.079	0.85	0.85	0.85
2.1	Recycled Materials	0.448	0.035		0.35	0.35	0.04
2.1.1	Reuse Efficiency of Materials Used in Structur	0.667	0.067		0.67	0.67	0.07
2.1.2	Reuse Efficiency of Non-structural Materials	0.000	0.000		0.33	0.33	0.03
2.2	Timber from Sustainable Forestry	0.000	0.000		0.04	0.04	0.00
2.3	Materials with Low Health Risks	0.104	0.008		0.08	0.08	0.01
2.4	Reuse of Existing Building Structure etc.	0.224	0.018		0.18	0.18	0.02
2.5	Predicted Volume of Recyclable Materials	0.000	0.000		0.18	0.18	0.02
2.6	Use of CFCs & Halons	0.224	0.018	0.033	0.18	0.18	0.02
2.6.1	Fire Retardant	1.000	0.033		0.33	0.33	0.03
2.6.2	Insulation Materials	0.000	0.000		0.33	0.33	0.03
2.6.3	Refrigerants	0.000	0.000		0.33	0.33	0.03
LR-3	Off-site Environment	0.300	0.300	0.250	0.30	0.30	0.30
1	Air Pollution	0.000	0.000		0.10	0.10	0.10
2	Noise, Vibration & Odor	0.000	0.000	0.000	0.10	0.10	0.10
2.1	Noise & Vibration	0.000	0.000		0.50	0.50	0.05
2.2	Odors	0.000	0.000		0.50	0.50	0.05
3	Wind Damage & Sunlight Obstruction	0.000	0.000		0.15	0.15	0.15
4	Light Pollution	0.000	0.000		0.10	0.10	0.10
5	Heat Island Effect	0.000	0.000		0.30	0.30	0.30
6	Load on Local Infrastructure	1.000	0.250		0.25	0.25	0.25

			Entire building and common properties									Residential and Accomodation sections		
	Item	Item name	Offices	Schools	Retailers	Restaurants	Hospitals	Hotels	Apartments	Halls	Factories	Hospitals-o	Hotels-o	Apartments-o
1.2.3	1.2.1.2	Décor Planning	0.33	0.50	0.33	0.50	1.00	1.00	1.00	1.00	0.33	0.50	0.50	0.50
2	1.2	Durability & Reliability	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31			
2.1	1.2.2	Earthquake Resistance	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48			
2.1.1	1.2.2.1	Earthquake-resistance	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80			
2.1.2	1.2.2.1	Seismic Isolation & Vibration Damping	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20			
2.2	1.2.2	Service Life of Components	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33			
2.2.1	1.2.2.2	Necessary Refurbishment Interval for E	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29			
2.2.2	1.2.2.2	Necessary Renewal Interval for Main Ir	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12			
2.2.3	1.2.2.2	Necessary Renewal Interval for Plumbi	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29			
2.2.4	1.2.2.2	Necessary Renewal Interval for Major I	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29			
2.3	1.2.2	Reliability	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19			
2.3.1	1.2.2.3	HVAC System	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20			
2.3.2	1.2.2.3	Water Supply & Drainage	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20			
2.3.3	1.2.2.3	Electrical Equipment	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20			
2.3.4	1.2.2.3	Support method of machines & ducts	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20			
2.3.5	1.2.2.3	Communications & IT equipment	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20			
3	1.2	Flexibility & Adaptability	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29			
3.1	1.2.3	Spatial Margin	0.31	0.31	0.31	0.31				0.31	0.31	0.50	0.50	0.50
3.1.1	1.2.3.1	Allowance for Story Height	0.60	0.60	0.60	0.60					0.60	0.60	0.60	0.60
3.1.2	1.2.3.1	Adaptability of Floor Layout	0.40	0.40	0.40	0.40				1.00	0.40	0.40	0.40	0.40
3.2	1.2.3	Floor Load Margin	0.31	0.31	0.31	0.31				0.31	0.31	0.50	0.50	0.50
3.3	1.2.3	Adaptability of Facilities	0.38	0.38	0.38	0.38	1.00	1.00	1.00	0.38	0.38			
3.3.1	1.2.3.3	Ease of Air Conditioning Duct Renewal	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17			
3.3.2	1.2.3.3	Ease of water supply & drain pipe rene	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17			
3.3.3	1.2.3.3	Ease of Electrical Wiring Renewal	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11			
3.3.4	1.2.3.3	Ease of Communications Cable Renev	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11			
3.3.5	1.2.3.3	Ease of Equipment Renewal	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22			
3.3.6	1.2.3.3	Provision of backup space	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22			
Q-3	1	Outdoor Environment on Site	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.40			
1	1.3	Preservation & Creation of Biotope	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30			
2	1.3	Townscape & Landscape	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40			
3	1.3	Local Characteristics & Outdoor Am	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30			
3.1	1.3.3	Attention to Local Character & Improve	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50			
3.2	1.3.3	Improvement of the Thermal Environm	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50			
0	0	tion of Building Environmental Lo												
LR-1	2	Energy	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40			
1	2.1	Building Thermal Load	0.30	0.30	0.30	0.30	0.30	0.30	0.40	0.30				
2	2.1	Natural Energy Utilization	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.29			
2.1	2.1.2	Direct use of natural energy							0.50					
2.2	2.1.2	Converted Use of Renewable Energy							0.50					
3	2.1	Efficiency in Building Service Syster	0.30	0.30	0.30	0.30	0.30	0.30	0.40	0.30	0.43			
3.1	2.1.3	HVAC System	0.45	0.65	0.40	0.40	0.55	0.40		0.40				
3.2	2.1.3	Ventilation System	0.15	0.10	0.10	0.10	0.10	0.15		0.10				
3.3	2.1.3	Lighting System	0.30	0.20	0.35	0.35	0.20	0.20		0.35	0.85			
3.4	2.1.3	Hot Water Supply System	0.05	0.05	0.15	0.15	0.15	0.20	1.00	0.15	0.15			
3.5	2.1.3	Elevators	0.05					0.05						
4	2.1	Efficient Operation	0.20	0.20	0.20	0.20	0.20	0.20		0.20	0.29			
4.1	2.1.4	Monitoring	0.50	0.50	0.50	0.50	0.50	0.50		0.50	0.50			
4.2	2.1.4	Operational Management System	0.50	0.50	0.50	0.50	0.50	0.50		0.50	0.50			
LR-2	2	Resources & Materials	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30			
1	2.2	Water Resources	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15			
1.1	2.2.1	Water Saving	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40			
1.2	2.2.1	Rainwater & Gray Water	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60			
1.2.1	2.2.1.2	Rainwater Use Systems	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67			
1.2.2	2.2.1.2	Gray Water Reuse System	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33			
2	2.2	Materials of Low Environmental Loa	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85			
2.1	2.2.2	Recycled Materials	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35			
2.1.1	2.2.2.1	Reuse Efficiency of Materials Used in S	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67			
2.1.2	2.2.2.1	Reuse Efficiency of Non-structural Mat	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33			
2.2	2.2.2	Timber from Sustainable Forestry	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04			
2.3	2.2.2	Materials with Low Health Risks	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08			
2.4	2.2.2	Reuse of Existing Building Structure et	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18			
2.5	2.2.2	Predicted Volume of Recyclable Materi	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18			
2.6	2.2.2	Use of CFCs & Halons	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18			
2.6.1	2.2.2.6	Fire Retardant	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33			
2.6.2	2.2.2.6	Insulation Materials	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33			
2.6.3	2.2.2.6	Refrigerants	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33			
LR-3	2	Off-site Environment	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30			
1	2.3	Air Pollution	0.15	0.15	0.15	0.15	0.10	0.10	0.10	0.15	0.15			
2	2.3	Noise, Vibration & Odor	0.15	0.15	0.15	0.15	0.10	0.10	0.10	0.15	0.15			
2.1	2.3.2	Noise & Vibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50			
2.2	2.3.2	Odors	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50			
3	2.3	Wind Damage & Sunlight Obstructio	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15			
4	2.3	Light Pollution	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10			
5	2.3	Heat Island Effect	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30			
6	2.3	Load on Local Infrastructure	0.15	0.15	0.15	0.15	0.25	0.25	0.25	0.15	0.15			

1. Preliminary Design

	Item	Item name	Entire building and common properties									Residential and Accomodation sections		
			Offices	Schools	Retailers	Restaurants	Hospitals	Hotels	Apartments	Halls	Factories	Hospitals-d	Hotels-o	Apartments-o
		Building Environmental Quality & Performance												
Q-1	**1**	**Indoor Environment**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.30**			
1	**1.1**	**Noise & Acoustics**	**0.15**	**0.15**	**0.15**	**0.15**	**0.15**	**0.15**	**0.15**	**0.23**	**0.15**			
1.1	1.1.1	Noise								1.00				
1.1.1	1.1.1.1	Background noise								1.00				
1.1.2	1.1.1.1	Equipment noise												
1.2	1.1.1	Sound Insulation	0.70	0.70		0.70	0.70	0.70	0.70		0.70	0.70	0.70	0.70
1.2.1	1.1.1.2	Sound Insulation of Openings	0.60	0.40		0.60	1.00	1.00	1.00		0.60	0.30	0.30	0.30
1.2.2	1.1.1.2	Sound Insulation of Partition Walls	0.40	0.30		0.40					0.40	0.30	0.30	0.30
1.2.3	1.1.1.2	Sound Insulation of Floor Slabs (light-impact)		0.15								0.20	0.20	0.20
1.2.4	1.1.1.2	Sound Insulation of Floor Slabs (heavy-impact)		0.15								0.20	0.20	0.20
1.3	1.1.1	Sound Absorption	0.30	0.30	1.00	0.30	0.30	0.30	0.30		0.30	0.30	0.30	0.30
2	**1.1**	**Thermal Comfort**	**0.35**	**0.35**	**0.35**	**0.35**	**0.35**	**0.35**	**0.35**	**0.44**	**0.35**			
2.1	1.1.2	Room Temperature Control	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
2.1.1	1.1.2.1	Room Temperature Setting	0.30	0.60	0.30	0.30	0.30	0.30	0.60	0.30	0.30	0.60	0.60	0.60
2.1.2	1.1.2.1	Variable Loads & Following-up Control												
2.1.3	1.1.2.1	Perimeter Performance	0.20	0.40	0.20	0.20	0.20	0.20	0.40	0.20	0.20	0.40	0.40	0.40
2.1.4	1.1.2.1	Zoned Control	0.50		0.50	0.50	0.50	0.50		0.50	0.50			
2.1.5	1.1.2.1	Temperature & Humidity Control												
2.1.6	1.1.2.1	Consideration for overtime work & holidays												
2.1.7	1.1.2.1	Allowance for After-hours Air Conditioning												
2.1.8	1.1.2.1	Monitoring Systems												
2.2	1.1.2	Humidity Control	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
2.3	1.1.2	Type of Air Conditioning	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
2.3.1	1.1.2.3	Type of Air Conditioning												
	1.1.2.3													
3	**1.1**	**Lighting & Illumination**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**		**0.25**			
3.1	1.1.3	Daylighting	0.30	0.30	0.50	1.00	0.30	0.30	0.30		0.30	0.30	0.30	0.30
3.1.1	1.1.3.1	Daylight Factor	0.60	0.60			0.60	0.60	0.60		0.60	0.60	0.60	0.50
3.1.2	1.1.3.1	Openings by Orientation												0.30
3.1.3	1.1.3.1	Daylight Devices	0.40	0.40	1.00	1.00	0.40	0.40	0.40		0.40	0.40	0.40	0.20
3.2	1.1.3	Anti-glare Measures	0.30	0.30			0.30	0.30	0.30		0.30	0.30	0.30	0.30
3.2.1	1.1.3.2	Glare from light fixtures												
3.2.2	1.1.3.2	Daylight control	1.00	1.00			1.00	1.00	1.00		1.00	1.00	1.00	1.00
3.3	1.1.3	Illuminance Level	0.15	0.15			0.15	0.15	0.15		0.15	0.15	0.15	0.15
3.3.1	1.1.3.3	Illuminance Level	1.00	1.00			1.00	1.00	1.00		1.00	1.00	1.00	1.00
3.3.2	1.1.3.3	Uniformity Ratio of Illuminance												
3.4	1.1.3	Lighting Controllability	0.25	0.25	0.50	0.00	0.25	0.25	0.25		0.25	0.25	0.25	0.25
4	**1.1**	**Air Quality**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.33**	**0.25**			
4.1	1.1.4	Source Control	0.50	0.50	0.50	0.50	0.50	0.50	0.60	0.50	0.50	0.63	0.63	0.63
4.1.1	1.1.4.1	Chemical Pollutants	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
4.1.2	1.1.4.1	Mineral Fiber												
4.1.3	1.1.4.1	Mites, Mold etc.												
4.1.4	1.1.4.1	Legionella												
4.2	1.1.4	Ventilation	0.30	0.30	0.30	0.30	0.30	0.30	0.40	0.30	0.30	0.38	0.38	0.38
4.2.1	1.1.4.2	Ventilation Rate	0.33	0.33	0.50	0.50	0.50	0.50	0.50	0.50	0.33	0.33	0.33	0.33
4.2.2	1.1.4.2	Natural Ventilation Performance	0.33	0.33							0.33	0.33	0.33	0.33
4.2.3	1.1.4.2	Consideration for Outside Air Intake	0.33	0.33	0.50	0.50	0.50	0.50	0.50	0.50	0.33	0.33	0.33	0.33
4.2.4	1.1.4.2	Air Supply Planning												
4.3	1.1.4	Operation Plan	0.20	0.20	0.20	0.20	0.20	0.20		0.20	0.20			
4.3.1	1.1.4.3	CO_2 Monitoring	0.50	0.50	0.50	0.50				0.50	0.50			
4.3.2	1.1.4.3	Control of Smoking	0.50	0.50	0.50	0.50	1.00	1.00		0.50	0.50			
Q-2	**1**	**Quality of Service**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**			
1	**1.2**	**Service Ability**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**			
1.1	1.2.1	Functionality & Usability	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	
1.1.1	1.2.1.1	Provision of Space & Storage	0.33								0.33	1.00	1.00	
1.1.2	1.2.1.1	Adaptation of Building Structure & Services to IT Innovation	0.33								0.33			
1.1.3	1.2.1.1	Barrier-free Planning	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33			
1.2	1.2.1	Amenity	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	1.00
1.2.1	1.2.1.2	Perceived Spaciousness & Access to Vie	0.33	0.50	0.33	0.50					0.33	0.50	0.50	0.50
1.2.2	1.2.1.2	Space for refreshment	0.33	0.00	0.33						0.33			

2. Execution design & Construction completion stage

	Item	Item name	Entire building and common properties									Residential and Accomodation section		
			Offices	Schools	Retailers	Restaurants	Hospitals	Hotels	Apartments	Halls	Factories	Hospitals-d	Hotels-o	Apartments-o
		Building Environmental Quality & Performance												
Q-1	**1**	**Indoor Environment**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.30**			
1	**1.1**	**Noise & Acoustics**	**0.15**	**0.15**	**0.15**	**0.15**	**0.15**	**0.15**	**0.15**	**0.23**	**0.15**			
1.1	1.1.1	Noise	0.40	0.40	0.70	0.40	0.40	0.40	0.40	1.00	0.40	0.40	0.40	0.40
1.1.1	1.1.1.1	Background noise	0.50	0.50	0.50	0.50	0.50	0.50	1.00	0.50	0.50	0.50	0.50	0.50
1.1.2	1.1.1.1	Equipment noise	0.50	0.50	0.50	0.50	0.50	0.50		0.50	0.50	0.50	0.50	0.50
1.2	1.1.1	Sound Insulation	0.40	0.40		0.40	0.40	0.40	0.40		0.40	0.40	0.40	0.40
1.2.1	1.1.1.2	Sound Insulation of Openings	0.60	0.30		0.60	1.00	1.00	1.00		0.60	0.30	0.30	0.30
1.2.2	1.1.1.2	Sound Insulation of Partition Walls	0.40	0.30		0.40					0.40	0.30	0.30	0.30
1.2.3	1.1.1.2	Sound Insulation of Floor Slabs (light-impact)		0.20								0.20	0.20	0.20
1.2.4	1.1.1.2	Sound Insulation of Floor Slabs (heavy-impact)		0.20								0.20	0.20	0.20
1.3	1.1.1	Sound Absorption	0.20	0.20	0.30	0.20	0.20	0.20	0.20		0.20	0.20	0.20	0.20
2	**1.1**	**Thermal Comfort**	**0.35**	**0.35**	**0.35**	**0.35**	**0.35**	**0.35**	**0.35**	**0.44**	**0.35**			
2.1	1.1.2	Room Temperature Control	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
2.1.1	1.1.2.1	Room Temperature Setting	0.30	0.30	0.30	0.30	0.30	0.30	0.50	0.30	0.30	0.40	0.40	0.50
2.1.2	1.1.2.1	Variable Loads & Following-up Control		0.20	0.20	0.20				0.30				
2.1.3	1.1.2.1	Perimeter Performance	0.20	0.20	0.10	0.10	0.20	0.20	0.30	0.10	0.20	0.30	0.30	0.30
2.1.4	1.1.2.1	Zoned Control	0.30		0.20	0.20	0.30	0.30		0.20	0.30			
2.1.5	1.1.2.1	Temperature & Humidity Control	0.10	0.10	0.10	0.10	0.10	0.10	0.20	0.10	0.10	0.20	0.20	
2.1.6	1.1.2.1	Consideration for overtime work & holidays										0.10	0.10	0.20
2.1.7	1.1.2.1	Allowance for After-hours Air Conditioning	0.10	0.20			0.10	0.10			0.10			
2.1.8	1.1.2.1	Monitoring Systems			0.10	0.10								
2.2	1.1.2	Humidity Control	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
2.3	1.1.2	Type of Air Conditioning	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
2.3.1	1.1.2.3	Type of Air Conditioning												
	1.1.2.3													
3	**1.1**	**Lighting & Illumination**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.00**	**0.25**			
3.1	1.1.3	Daylighting	0.30	0.30	0.50	1.00	0.30	0.30	0.30		0.30	0.30	0.30	0.30
3.1.1	1.1.3.1	Daylight Factor	0.60	0.60			0.60	0.60	0.60		0.60	0.60	0.60	0.50
3.1.2	1.1.3.1	Openings by Orientation												0.30
3.1.3	1.1.3.1	Daylight Devices	0.40	0.40	1.00	1.00	0.40	0.40	0.40		0.40	0.40	0.40	0.20
3.2	1.1.3	Anti-glare Measures	0.30	0.30			0.30	0.30	0.30		0.30	0.30	0.30	0.30
3.2.1	1.1.3.2	Glare from light fixtures	0.40	0.40			0.40	0.40	0.40		0.40	0.40	0.40	0.40
3.2.2	1.1.3.2	Daylight control	0.60	0.60			0.60	0.60	0.60		0.60	0.60	0.60	0.60
3.3	1.1.3	Illuminance Level	0.15	0.15			0.15	0.15	0.15		0.15	0.15	0.15	0.15
3.3.1	1.1.3.3	Illuminance Level	0.70	0.70			0.70	0.70	0.70		0.70	0.70	1.00	1.00
3.3.2	1.1.3.3	Uniformity Ratio of Illuminance	0.30	0.30			0.30	0.30	0.30		0.30	0.30		
3.4	1.1.3	Lighting Controllability	0.25	0.25	0.50		0.25	0.25	0.25		0.25	0.25	0.25	0.25
4	**1.1**	**Air Quality**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.33**	**0.25**			
4.1	1.1.4	Source Control	0.50	0.50	0.50	0.50	0.50	0.50	0.60	0.50	0.50	0.63	0.63	0.63
4.1.1	1.1.4.1	Chemical Pollutants	0.25	0.25	0.25	0.25	0.33	0.33	0.33	0.25	0.25	0.25	0.25	0.25
4.1.2	1.1.4.1	Mineral Fiber	0.25	0.25	0.25	0.25	0.33	0.33	0.33	0.25	0.25	0.25	0.25	0.25
4.1.3	1.1.4.1	Mites, Mold etc.	0.25	0.25	0.25	0.25	0.33	0.33	0.33	0.25	0.25	0.25	0.25	0.25
4.1.4	1.1.4.1	Legionella	0.25	0.25	0.25	0.25	0.00	0.00	0.00	0.25	0.25	0.25	0.25	0.25
4.2	1.1.4	Ventilation	0.30	0.30	0.30	0.30	0.30	0.30	0.40	0.30	0.30	0.38	0.38	0.38
4.2.1	1.1.4.2	Ventilation Rate	0.25	0.25	0.33	0.33	0.33	0.33	0.50	0.33	0.25	0.25	0.25	0.25
4.2.2	1.1.4.2	Natural Ventilation Performance	0.25	0.25							0.25	0.25	0.25	0.25
4.2.3	1.1.4.2	Consideration for Outside Air Intake	0.25	0.25	0.33	0.33	0.33	0.33	0.50	0.33	0.25	0.25	0.25	0.25
4.2.4	1.1.4.2	Air Supply Planning	0.25	0.25	0.33	0.33	0.33	0.33		0.33	0.25	0.25	0.25	0.25
4.3	1.1.4	Operation Plan	0.20	0.20	0.20	0.20	0.20	0.20		0.20	0.20			
4.3.1	1.1.4.3	CO2 Monitoring	0.50	0.50	0.50	0.50				0.50	0.50			
4.3.2	1.1.4.3	Control of Smoking	0.50	0.50	0.50	0.50	1.00	1.00		0.50	0.50			
Q-2	**1**	**Quality of Service**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**			
1	**1.2**	**Service Ability**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**			
1.1	1.2.1	Functionality & Usability	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	
1.1.1	1.2.1.1	Provision of Space & Storage	0.33				0.33	1.00	1.00					
1.1.2	1.2.1.1	Adaptation of Building Structure & Service	0.33				0.33							
1.1.3	1.2.1.1	Barrier-free Planning	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33			
1.2	1.2.1	Amenity	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	1.00
1.2.1	1.2.1.2	Perceived Spaciousness & Access to Vie	0.33	0.50	0.33	0.50					0.33	0.50	0.50	0.50
1.2.2	1.2.1.2	Space for refreshment	0.33		0.33						0.33			

			Entire building and common properties									Residential and Accomodation sections		
	Item	Item name	Offices	Schools	Retailers	Restaurants	Hospitals	Hotels	Apartments	Halls	Factories	Hospitals-o	Hotels-o	Apartments-o
1.2.3	1.2.1.2	Décor Planning	0.33	0.50	0.33	0.50	1.00	1.00	1.00	1.00	0.33	0.50	0.50	0.50
2	**1.2**	**Durability & Reliability**	**0.31**	**0.31**	**0.31**	**0.31**	**0.31**	**0.31**	**0.31**	**0.31**	**0.31**			
2.1	1.2.2	Earthquake Resistance	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48			
2.1.1	1.2.2.1	Earthquake Resistance	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80			
2.1.2	1.2.2.1	Seismic Isolation & Vibration Damping Syste	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20			
2.2	1.2.2	Service Life of Components	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33			
2.2.1	1.2.2.2	Necessary Refurbishment Interval for Exterior Finis	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29			
2.2.2	1.2.2.2	Necessary Renewal Interval for Main Interior Finish	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12			
2.2.3	1.2.2.2	Necessary Renewal Interval for Plumbing & Wiring Materia	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29			
2.2.4	1.2.2.2	Necessary Renewal Interval for Major Equipment & Servic	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29			
2.3	1.2.2	Reliability	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19			
2.3.1	1.2.2.3	HVAC System	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20			
2.3.2	1.2.2.3	Water Supply & Drainage	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20			
2.3.3	1.2.2.3	Electrical Equipment	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20			
2.3.4	1.2.2.3	Support method of machines & ducts	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20			
2.3.5	1.2.2.3	Communications & IT equipment	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20			
3	**1.2**	**Flexibility & Adaptability**	**0.29**	**0.29**	**0.29**	**0.29**	**0.29**	**0.29**	**0.29**	**0.29**	**0.29**			
3.1	1.2.3	Spatial Margin	0.31	0.31	0.31	0.31				0.31	0.31	0.50	0.50	0.50
3.1.1	1.2.3.1	Allowance for Story Height	0.60	0.60	0.60	0.60				0.00	0.60	0.60	0.60	0.60
3.1.2	1.2.3.1	Adaptability of Floor Layout	0.40	0.40	0.40	0.40				1.00	0.40	0.40	0.40	0.40
3.2	1.2.3	Floor Load Margin	0.31	0.31	0.31	0.31				0.31	0.31	0.50	0.50	0.50
3.3	1.2.3	Adaptability of Facilities	0.38	0.38	0.38	0.38	1.00	1.00	1.00	0.38	0.38			
3.3.1	1.2.3.3	Ease of Air Conditioning Duct Renewal	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17			
3.3.2	1.2.3.3	Ease of water supply & drain pipe renew	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17			
3.3.3	1.2.3.3	Ease of Electrical Wiring Renewal	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11			
3.3.4	1.2.3.3	Ease of Communications Cable Renewa	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11			
3.3.5	1.2.3.3	Ease of Equipment Renewal	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22			
3.3.6	1.2.3.3	Provision of backup space	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22			
Q-3	**1**	**Outdoor Environment on Site**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.40**			
1	**1.3**	**Preservation & Creation of Biotope**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**			
2	**1.3**	**Townscape & Landscape**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**			
3	**1.3**	**Local Characteristics & Outdoor Amenity**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**			
3.1	1.3.3	Attention to Local Character & Improvement of Con	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50			
3.2	1.3.3	Improvement of the Thermal Environment on	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50			
		Reduction of Building Environmental Loadings												
LR-1	**2**	**Energy**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**			
1	**2.1**	**Building Thermal Load**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.40**	**0.30**	**0.00**			
2	**2.1**	**Natural Energy Utilization**	**0.20**	**0.20**	**0.20**	**0.20**	**0.20**	**0.20**	**0.20**	**0.20**	**0.29**			
2.1	2.1.2	Direct use of natural energy	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50			
2.2	2.1.2	Converted Use of Renewable Energy	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50			
3	**2.1**	**Efficiency in Building Service System**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.40**	**0.30**	**0.43**			
3.1	2.1.3	HVAC System	0.45	0.65	0.40	0.40	0.55	0.40		0.40				
3.2	2.1.3	Ventilation System	0.15	0.10	0.10	0.10	0.10	0.15		0.10				
3.3	2.1.3	Lighting System	0.30	0.20	0.35	0.35	0.20	0.20		0.35	0.85			
3.4	2.1.3	Hot Water Supply System	0.05	0.05	0.15	0.15	0.15	0.20	1.00	0.15	0.15			
3.5	2.1.3	Elevators	0.05					0.05						
4	**2.1**	**Efficient Operation**	**0.20**	**0.20**	**0.20**	**0.20**	**0.20**	**0.20**		**0.20**	**0.29**			
4.1	2.1.4	Monitoring	0.50	0.50	0.50	0.50	0.50	0.50		0.50	0.50			
4.2	2.1.4	Operational Management System	0.50	0.50	0.50	0.50	0.50	0.50		0.50	0.50			
LR-2	**2**	**Resources & Materials**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**			
1	**2.2**	**Water Resources**	**0.15**	**0.15**	**0.15**	**0.15**	**0.15**	**0.15**	**0.15**	**0.15**	**0.15**			
1.1	2.2.1	Water Saving	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40			
1.2	2.2.1	Rainwater & Gray Water	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60			
1.2.1	2.2.1.2	Rainwater Use Systems	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67			
1.2.2	2.2.1.2	Gray Water Reuse System	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33			
2	**2.2**	**Materials of Low Environmental Load**	**0.85**	**0.85**	**0.85**	**0.85**	**0.85**	**0.85**	**0.85**	**0.85**	**0.85**			
2.1	2.2.2	Recycled Materials	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35			
2.1.1	2.2.2.1	Reuse Efficiency of Materials Used in Structu	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
2.1.2	2.2.2.1	Reuse Efficiency of Non-structural Materials												
2.2	2.2.2	Timber from Sustainable Forestry	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04			
2.3	2.2.2	Materials with Low Health Risks	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08			
2.4	2.2.2	Reuse of Existing Building Structure etc.	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18			
2.5	2.2.2	Predicted Volume of Recyclable Material	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18			
2.6	2.2.2	Use of CFCs & Halons	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18			
2.6.1	2.2.2.6	Fire Retardant	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33			
2.6.2	2.2.2.6	Insulation Materials	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33			
2.6.3	2.2.2.6	Refrigerants	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33			
LR-3	**2**	**Off-site Environment**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**			
1	**2.3**	**Air Pollution**	**0.15**	**0.15**	**0.15**	**0.15**	**0.10**	**0.10**	**0.10**	**0.15**	**0.15**			
2	**2.3**	**Noise, Vibration & Odor**	**0.15**	**0.15**	**0.15**	**0.15**	**0.10**	**0.10**	**0.10**	**0.15**	**0.15**			
2.1	2.3.2	Noise & Vibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50			
2.2	2.3.2	Odors	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50			
3	**2.3**	**Wind Damage & Sunlight Obstruction**	**0.15**	**0.15**	**0.15**	**0.15**	**0.15**	**0.15**	**0.15**	**0.15**	**0.15**			
4	**2.3**	**Light Pollution**	**0.10**	**0.10**	**0.10**	**0.10**	**0.10**	**0.10**	**0.10**	**0.10**	**0.10**			
5	**2.3**	**Heat Island Effect**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**			
6	**2.3**	**Load on Local Infrastructure**	**0.15**	**0.15**	**0.15**	**0.15**	**0.25**	**0.25**	**0.25**	**0.15**	**0.15**			

			Entire building and common properties									Residential and Accomodation section		
	Item	Item name	Offices	Schools	Retailers	Restaurants	Hospitals	Hotels	Apartments	Halls	Factories	Hospitals-o	Hotels-o	Apartments-o
1.2.3	1.2.1.2	Décor Planning	0.33	0.50	0.33	0.50	1.00	1.00	1.00	1.00	0.33	0.50	0.50	0.50
2	**1.2**	**Durability & Reliability**	**0.31**	**0.31**	**0.31**	**0.31**	**0.31**	**0.31**	**0.31**	**0.31**	**0.31**			
2.1	1.2.2	Earthquake Resistance	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48			
2.1.1	1.2.2.1	Earthquake-resistance	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80			
2.1.2	1.2.2.1	Seismic Isolation & Vibration Damping Systen	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20			
2.2	1.2.2	Service Life of Components	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33			
2.2.1	1.2.2.2	Necessary Refurbishment Interval for Exterior Finish	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29			
2.2.2	1.2.2.2	Necessary Renewal Interval for Main Interior Finishe	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12			
2.2.3	1.2.2.2	Necessary Renewal Interval for Plumbing & Wiring Material	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29			
2.2.4	1.2.2.2	Necessary Renewal Interval for Major Equipment & Service	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29			
2.3	1.2.2	Reliability	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19			
2.3.1	1.2.2.3	HVAC System	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20			
2.3.2	1.2.2.3	Water Supply & Drainage	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20			
2.3.3	1.2.2.3	Electrical Equipment	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20			
2.3.4	1.2.2.3	Support method of machines & ducts	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20			
2.3.5	1.2.2.3	Communications & IT equipment	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20			
3	**1.2**	**Flexibility & Adaptability**	**0.29**	**0.29**	**0.29**	**0.29**	**0.29**	**0.29**	**0.29**	**0.29**	**0.29**			
3.1	1.2.3	Spatial Margin	0.31	0.31	0.31	0.31				0.31	0.31	0.50	0.50	0.50
3.1.1	1.2.3.1	Allowance for Story Height	0.60	0.60	0.60	0.60				0.00	0.60	0.60	0.60	0.60
3.1.2	1.2.3.1	Adaptability of Floor Layout	0.40	0.40	0.40	0.40				1.00	0.40	0.40	0.40	0.40
3.2	1.2.3	Floor Load Margin	0.31	0.31	0.31	0.31				0.31	0.31	0.50	0.50	0.50
3.3	1.2.3	Adaptability of Facilities	0.38	0.38	0.38	0.38	1.00	1.00	1.00	0.38	0.38			
3.3.1	1.2.3.3	Ease of Air Conditioning Duct Renewal	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17			
3.3.2	1.2.3.3	Ease of water supply & drain pipe renewa	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17			
3.3.3	1.2.3.3	Ease of Electrical Wiring Renewal	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11			
3.3.4	1.2.3.3	Ease of Communications Cable Renewal	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11			
3.3.5	1.2.3.3	Ease of Equipment Renewal	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22			
3.3.6	1.2.3.3	Provision of backup space	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22			
Q-3	**1**	**Outdoor Environment on Site**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.40**			
1	**1.3**	**Preservation & Creation of Biotope**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**			
2	**1.3**	**Townscape & Landscape**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**			
3	**1.3**	**Local Characteristics & Outdoor Amenity**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**			
3.1	1.3.3	Attention to Local Character & Improvement of Comt	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50			
3.2	1.3.3	Improvement of the Thermal Environment on	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50			
		Reduction of Building Environmental Loadings												
LR-1	**2**	**Energy**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**			
1	**2.1**	**Building Thermal Load**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.40**	**0.30**	**0.00**			
2	**2.1**	**Natural Energy Utilization**	**0.20**	**0.20**	**0.20**	**0.20**	**0.20**	**0.20**	**0.20**	**0.20**	**0.29**			
2.1	2.1.2	Direct use of natural energy							0.50					
2.2	2.1.2	Converted Use of Renewable Energy							0.50					
3	**2.1**	**Efficiency in Building Service System**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.40**	**0.30**	**0.43**			
3.1	2.1.3	HVAC System	0.45	0.65	0.40	0.40	0.55	0.40		0.40				
3.2	2.1.3	Ventilation System	0.15	0.10	0.10	0.10	0.10	0.15		0.10				
3.3	2.1.3	Lighting System	0.30	0.20	0.35	0.35	0.20	0.20		0.35	0.85			
3.4	2.1.3	Hot Water Supply System	0.05	0.05	0.15	0.15	0.15	0.20	1.00	0.15	0.15			
3.5	2.1.3	Elevators	0.05					0.05						
4	**2.1**	**Efficient Operation**	**0.20**	**0.20**	**0.20**	**0.20**	**0.20**	**0.20**		**0.20**	**0.29**			
4.1	2.1.4	Monitoring	0.50	0.50	0.50	0.50	0.50	0.50		0.50	0.50			
4.2	2.1.4	Operational Management System	0.50	0.50	0.50	0.50	0.50	0.50		0.50	0.50			
LR-2	**2**	**Resources & Materials**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**			
1	**2.2**	**Water Resources**	**0.15**	**0.15**	**0.15**	**0.15**	**0.15**	**0.15**	**0.15**	**0.15**	**0.15**			
1.1	2.2.1	Water Saving	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40			
1.2	2.2.1	Rainwater & Gray Water	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60			
1.2.1	2.2.1.2	Rainwater Use Systems	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67			
1.2.2	2.2.1.2	Gray Water Reuse System	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33			
2	**2.2**	**Materials of Low Environmental Load**	**0.85**	**0.85**	**0.85**	**0.85**	**0.85**	**0.85**	**0.85**	**0.85**	**0.85**			
2.1	2.2.2	Recycled Materials	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35			
2.1.1	2.2.2.1	Reuse Efficiency of Materials Used in Structur	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67			
2.1.2	2.2.2.1	Reuse Efficiency of Non-structural Materials	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33			
2.2	2.2.2	Timber from Sustainable Forestry	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04			
2.3	2.2.2	Materials with Low Health Risks	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08			
2.4	2.2.2	Reuse of Existing Building Structure etc.	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18			
2.5	2.2.2	Predicted Volume of Recyclable Materials	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18			
2.6	2.2.2	Use of CFCs & Halons	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18			
2.6.1	2.2.2.6	Fire Retardant	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33			
2.6.2	2.2.2.6	Insulation Materials	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33			
2.6.3	2.2.2.6	Refrigerants	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33			
LR-3	**2**	**Off-site Environment**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**			
1	**2.3**	**Air Pollution**	**0.15**	**0.15**	**0.15**	**0.15**	**0.10**	**0.10**	**0.10**	**0.15**	**0.15**			
2	**2.3**	**Noise, Vibration & Odor**	**0.15**	**0.15**	**0.15**	**0.15**	**0.10**	**0.10**	**0.10**	**0.15**	**0.15**			
2.1	2.3.2	Noise & Vibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50			
2.2	2.3.2	Odors	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50			
3	**2.3**	**Wind Damage & Sunlight Obstruction**	**0.15**	**0.15**	**0.15**	**0.15**	**0.15**	**0.15**	**0.15**	**0.15**	**0.15**			
4	**2.3**	**Light Pollution**	**0.10**	**0.10**	**0.10**	**0.10**	**0.10**	**0.10**	**0.10**	**0.10**	**0.10**			
5	**2.3**	**Heat Island Effect**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**			
6	**2.3**	**Load on Local Infrastructure**	**0.15**	**0.15**	**0.15**	**0.15**	**0.25**	**0.25**	**0.25**	**0.15**	**0.15**			

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