SCHÜCO

Schüco Guide to LEED

Supporting information for building certification

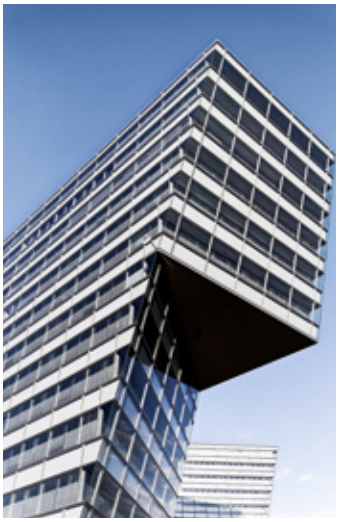
Schüco aluminium systems

Schüco systems for LEED-certified buildings
By using Schüco systems, up to 14 LEED criteria can be influenced positively, which corresponds to 37% in the overall assessment. The feasibility of influencing these credits was analysed and confirmed by an independent and qualified expert engineering company, Drees & Sommer, specialised in optimising building energy design and management.

To assist you in achieving these credits, your Schüco contact can help you to select the most appropriate solutions for your project and provide you with the documents required for the LEED assessment. These will include general documents and certificates, but also project-specific information, all to increase your LEED score.

Selected Schüco reference projects with LEED certificates:

Siemens City,
Vienna, Austria: LEED-certified



Vodafone Campus Center, Düsseldorf,
Germany: LEED gold certificate target

About Schüco International KG

Schüco – system solutions for windows, doors and façades
With its worldwide network of partners, architects, specifiers and investors, Schüco creates sustainable building envelopes which focus on people and their needs in harmony with nature and technology. The highest demands for design, comfort and security can be met, whilst simultaneously reducing CO_2 emissions through energy efficiency, thereby conserving natural resources. The company and its Metal and PVC-U divisions deliver tailored products for new buildings and renovations, designed to meet individual user needs in all climate zones. With 4,800 employees and 12,000 partner companies, Schüco is active in 78 countries and achieved a turnover of 1.5 billion euros in 2013. For more information, visit **www.schueco.com**.

Schüco Aluminium Window Systems

One system for all requirements
With its AWS (Aluminium Window System) generation of windows, Schüco has developed a system to meet all requirements. Functional benefits are combined with architectural and design features. The few perfectly integrated components combine benefits such as high levels of thermal insulation to passive house standard with low basic depths and narrow face widths. On the basis of standardised interfaces, all fittings can be operated manually, mechatronically or centrally via a building management system.

Schüco Aluminium Door Systems

Safe and versatile
A door does not just provide access to a building. It has to meet higher standards of thermal insulation, security, functionality and design than any other building component. The Schüco ADS Door Systems (aluminium door systems) were specifically developed to meet these requirements. They offer excellent thermal values and, due to a comprehensive range of systems, can be used for a variety of solutions in building security and automation. Their timeless design combines effectively with the Schüco AWS aluminium window system. Schüco ADS aluminium door systems fit economically into almost any building design and can be used to create efficient and stylish architectural solutions.

Schüco Aluminium Façade Systems

Efficient solutions for all requirements
Energy-efficient designs will determine the future of construction. Solutions for façades and skylights that harmonise architectural and technological demands will therefore play a key role. Here, Schüco already offers a unique aluminium modular system with which architects, planners and fabricators can also meet the highest requirements in terms of energy, security, automation and design.
From mullion/transom façades using steel and timber add-on constructions to structural glazing and unitised façades – including a wide variety of systems for opening units that can be integrated.

Schüco Aluminium Fire and Smoke Protection Systems

Security systems
The need for buildings that protect human life and property is today of central importance worldwide. This applies to private buildings as well as commercial and public projects. An efficient fire and smoke protection concept is therefore a top priority for architects, developers and clients. Schüco offers complete aluminium system solutions for façades, windows and doors, as well as partition walls with fittings and glazing to fulfil the numerous fire and smoke protection requirements. The compatibility of the Schüco systems allows elegant, concealed transitions between the fire protection and standard series.

Value-driven perspective for green buildings

Schüco supports investors, architects, building consultants and partners through all project phases – from the first idea to the dismantling of a façade. This includes advice on certification, designs using sustainable systems, environmental product declarations and recycling of the building envelope.

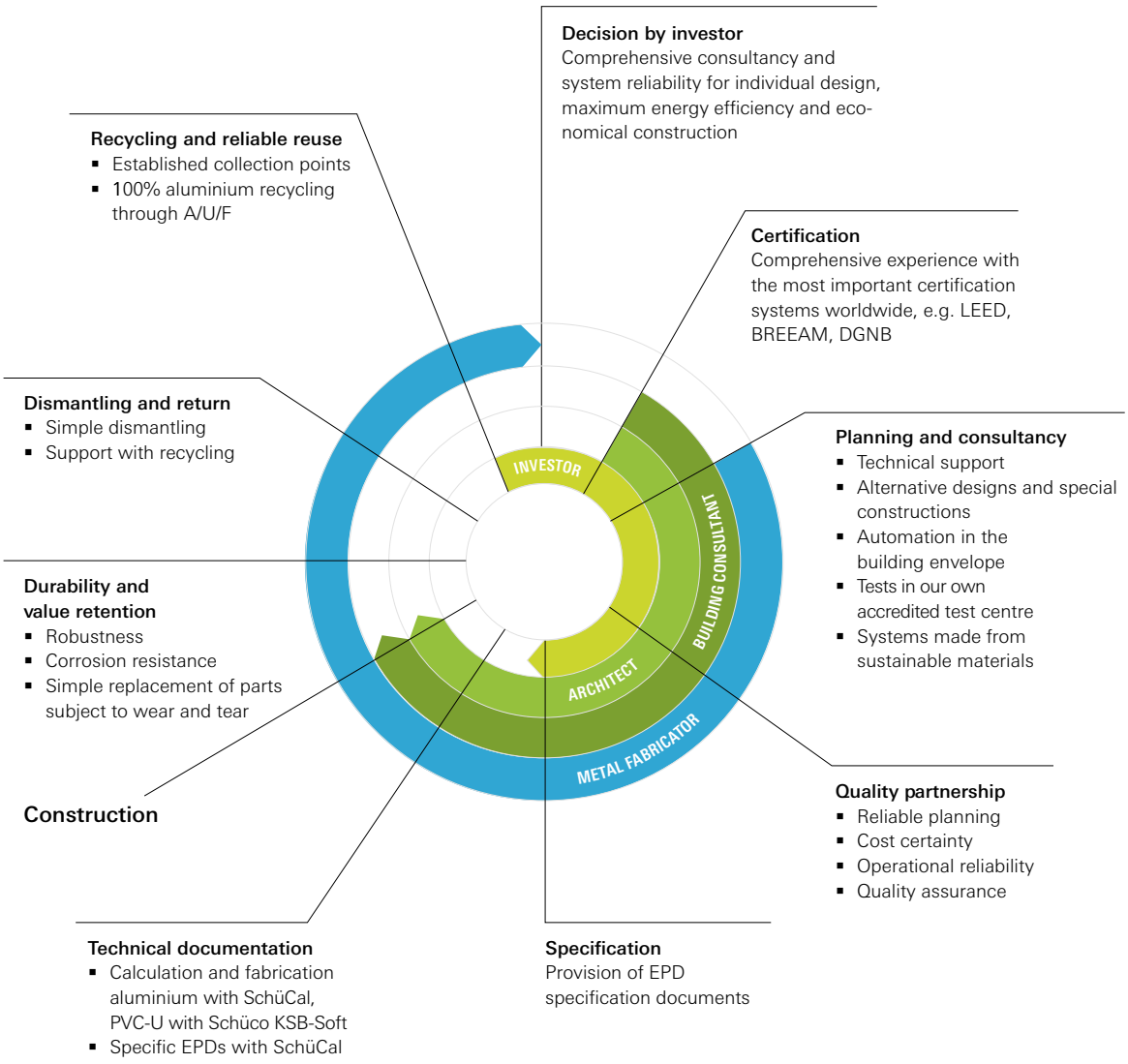
360° sustainability – from the idea to recycling
In the construction sector, sustainability means designing, constructing and operating a property in such a way that it is ecologically, economically and socioculturally future-proof. To this end, it requires high-quality, innovative products and solutions that conserve resources. As a driving force behind innovation, Schüco offers concepts and product solutions with the best possible support for investors, architects, building consultants and metal fabricators in all phases of a project. In practice, this means from the initial idea through to dismantling a façade – support including advice and designs with sustainable systems, environmental product declarations and recycling of the building envelope. Schüco calls this holistic approach, which is guided by the building life cycle, "360° sustainability".

Comparison of materials: potential for recycling aluminium, PVC-U and timber
The use of sustainable products and the use of materials with outstanding recycling properties which allow for dismantling at a later time, and recyclability are important requirements for "360° sustainability". Buildings are the raw material sources of the future. In an independent study carried out by Drees & Sommer with PE International, windows and façades made from different materials – aluminium, PVC-U, timber and timber/aluminium – were compared on the basis of sustainability criteria. The result verified by international experts is that, in terms of ecology, aluminium and PVC-U are as valuable as timber and, overall, yield equivalent results. The excellent recycling potential of aluminium and PVC-U as well as the characteristics of aluminium, i.e. durability, low running costs for the operation of the building and the range of design options combined with a low weight and high stability, are particularly positive.

Focus on certified sustainability for buildings
Building certifications from the market leaders BREEAM, DGNB and LEED are being demanded more and more frequently by investors and building consultants – especially for commercial buildings. An important basis for this is suitable product systems with the requisite documentation and proof of the holistic design and evaluation of the buildings. The Schüco systems, which have been verified for this purpose, are ideally suited for the best possible ratings in building certification. Here, Schüco supports architects, investors and fabricators with detailed documentation for design and product selection. As a special service, specially developed software tools are also available to make it easier for the user to produce the documentation, which can be very complex in part. The SchüCal construction software generates environmental product declarations, U-value calculations and Declarations of performance, amongst others, at the touch of a button.

Future-oriented through sustainability
Sustainability is an integral part of the Schüco company policy, which is designed to deliver long-term success. To this end, Schüco develops high-quality and energy-efficient products and services that conserve resources, set standards and enable Schüco partners to create reliable and long-lasting values. Innovative environmental philosophies are embraced and integrated in products. Suitable products are currently in development. A good basis for fulfilling current requirements and paving the way for future challenges.

360° cycle of sustainability for Schüco and its partners



Fundamental principles of sustainable product development

Sustainability

Saving energy	Conserving resources	Protecting climate and environment	Durability	Resistance	Capacity for repair	End of life	Recycling

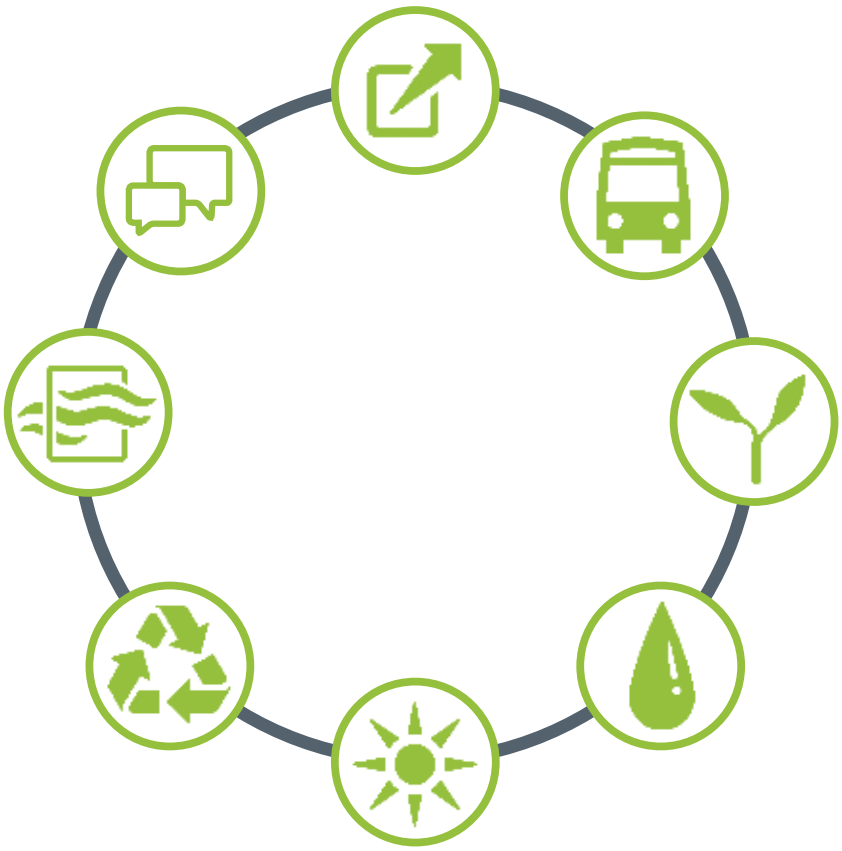
LEED certification system

What is LEED?
Developed by the U.S. Green Building Council, LEED is a framework for identifying, implementing and measuring green building and neighbourhood design, construction operations, and maintenance. LEED is a voluntary, market-driven, consensus-based tool that serves as a guideline and assessment mechanism. LEED rating systems address commercial, institutional, and residential buildings and neighbourhood developments. LEED for New Construction and Major Renovations was developed in 1998 for the commercial building industry and has since been updated several times. Over the years, other rating systems have been developed to meet the needs of different market sectors. LEED sets a challenging yet achievable set of benchmarks that define green building for interior spaces, entire structures and whole neighbourhoods[1].

Aims of LEED
LEED promotes the use of natural resources and regenerative and restorative strategies. It also maximises the positive impact and minimises the environmental impact and effect on public health of the construction industry, and provides high-quality indoor environments for building occupants. LEED emphasises integrative design, integration of existing technology, and state-of-the-art strategies to advance expertise in green building and transform professional practice.

Objectives of LEED
- To reverse the contribution to global climate change
- To enhance individual human health and well-being
- To protect and restore water resources
- To protect, enhance and restore biodiversity and ecosystems
- To promote sustainable and regenerative material resource cycles
- To build a greener economy
- To enhance social equity, environmental justice, community health and quality of life

See also LEED Reference Guide for Building Design and Construction v4, 2013 Edition



Analysis related to the system
Each of these credits was analysed and confirmed by an independent and qualified expert engineering company, Drees & Sommer. The impact of Schüco systems on the credits is shown in this Schüco Guide to LEED.

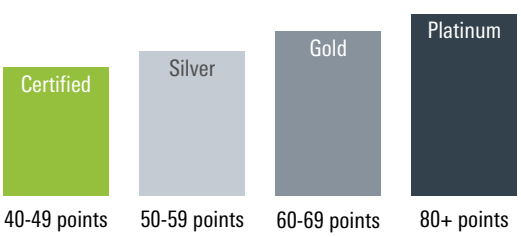
At the beginning of this guide, you will find an explanation of each criterion of the LEED certification system. In the overview of the certification system in detail, the positive product contriubution of Schüco systems is illustrated. In addition, an overview of each category with the included criteria shows all LEED credits where the use of Schüco systems has a positive effect on the overall assessment; the credits where there is no product contribution are also listed. Finally, every LEED criterion that can be positively affected in the certification acording to the LEED system is explained accurately, as well as providing you with information about the intention and requirements of these credits.

Schüco offers the most suitable solution for any criteria. For that reason, Schüco systems can make a positive contribution to the criteria requirements. Schüco systems are the best possible solution for certifying your project with LEED.

System categories
- Integrative process
- [LT] Location and transportation
- [SS] Sustainable sites
- [WE] Water efficiency
- [EA] Energy and atmosphere
- [MR] Materials and resources
- [EQ] Indoor environmental quality
- [IN] Innovation
- [RP] Regional priority

Rating system

The number of credits a project achieves determines the level of LEED certification



The certification system in detail

Content of categories
The LEED certification system is divided into nine categories. The system rates every criteria in each category which contributes to an overall performance in the LEED rating. A brief explanation of each category provides an overview of the content and the scope of the system-relevant criteria.

0.9% **Integrative process**
An integrative process is a comprehensive approach to building systems and equipment. Project team members look for synergies among systems and components – the mutual advantages that can help achieve high levels of building performance, human comfort and environmental benefits. The process should involve rigorous questioning and coordination and challenge typical project assumptions. Team members collaborate to enhance the efficiency and effectiveness of every system.

14.5% **[LT] Location and transportation**
This category rewards thoughtful decisions about building location, with credits that encourage compact development, alternative transportation and connection with amenities, such as restaurants and parks. The LT category is an outgrowth of the Sustainable Sites category, which formerly covered location-related topics. The LT category considers the existing features of the surrounding community and how this infrastructure affects occupants' behaviour and environmental performance.

9.1% **[SS] Sustainable sites**
The Sustainable sites [SS] category rewards decisions about the environment surrounding the building, with credits that emphasise the vital relationships among buildings, ecosystems and ecosystem services. It focuses on restoring project site elements, integrating the site with local and regional ecosystems, and preserving the biodiversity upon which natural systems rely.

10.0% **[WE] Water efficiency**
The Water efficiency [WE] section addresses water holistically, looking at indoor use, outdoor use, specialised uses and metering. The section is based on an "efficiency first" approach to water conservation. As a result, each prerequisite looks at water efficiency and reductions in potable water use alone. The WE credits then additionally recognise the use of non-potable and alternative sources of water.

30.0% **[EA] Energy and atmosphere**
The Energy and Atmosphere [EA] category approaches energy from a holistic perspective, addressing energy use reduction, energy-efficient design strategies, and renewable energy sources. The EA category recognises that the reduction of fossil fuel use extends far beyond the walls of the building. Projects can contribute to increasing the electricity grid's efficiency by enrolling in a demand response programme.

11.8% **[MR] Materials and resources**
The Materials and Resources [MR] credit category focuses on minimising the embodied energy and other impacts associated with the extraction, processing, transport, maintenance and disposal of building materials. The requirements are designed to support a life cycle approach that improves performance and promotes resource efficiency. Each requirement identifies a specific action that fits into the larger context of a life cycle approach to embodied impact reduction.

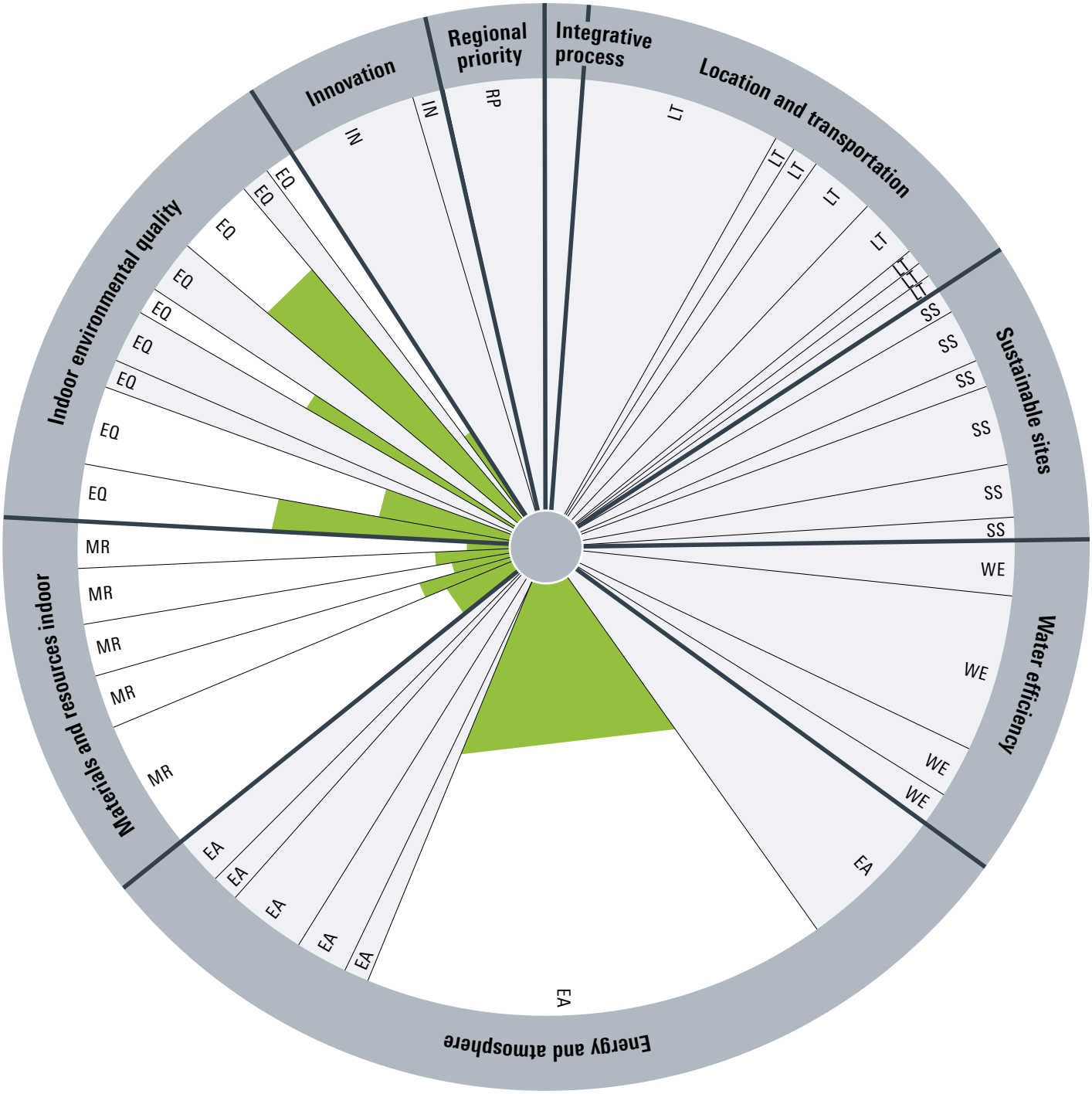
14.5% **[EQ] Indoor environmental quality**
This category rewards decisions made by project teams about indoor air quality and thermal, visual and acoustic comfort. Green buildings with good indoor environmental quality protect the health and comfort of building occupants. High-quality indoor environments also enhance productivity, decrease absenteeism, improve the building's value and reduce liability for building designers and owners.

5.5% **[IN] Innovation**
Sustainable design strategies and measures are constantly evolving and improving. New technologies are continually introduced to the marketplace, and up-to-date scientific research influences building design strategies. The purpose of this LEED category is to recognise projects for innovative building features and sustainable building practices and strategies.

3.6% **[RP] Regional priority**
As some environmental issues are particular to a locale, volunteers from USGBC chapters and the LEED International Roundtable have identified distinct environmental priorities within their areas and the credits that address those issues. These Regional Priority credits encourage project teams to focus on their local environmental priorities.

See also LEED Reference Guide for Building Design and Construction v4, 2013 Edition

Overview of certification system



The pie chart contains all the criteria in the LEED certification system; a tabular view of these criteria can be found on the following pages. The width of the pie slice reflects its weighted influence in the overall evaluation. Every criterion in which Schüco systems make a positive contribution to the overall assessment is highlighted in white.

The product influence (shown in green) refers to the percentage area of the system with regard to the entire building envelope, as well as the requirements of the analysed criterion for the relevant Schüco system.
The product itself is not designed to fulfil the complete list of requirements of every criteria. For this, a wide range of technical requirements is necessary.

System evaluation

Category	Criteria	Max. credits	System influence on category	Criteria influence on category	Weighted degree of fulfilment
Integrative process					**0.9%**
	Integrative process	1	No	100.0%	0.9%
Location and transportation					**14.5%**
LT	LEED for neighbourhood development location	16	No	50.0%	7.3%
LT	Sensitive land protection	1	No	3.1%	0.5%
LT	High-priority site	2	No	6.3%	0.9%
LT	Surrounding density and diverse uses	5	No	15.6%	2.3%
LT	Access to quality transit	5	No	15.6%	2.3%
LT	Bicycle facilities	1	No	3.1%	0.5%
LT	Reduced parking footprint	1	No	3.1%	0.5%
LT	Green vehicles	1	No	3.1%	0.5%
Sustainable sites					**9.1%**
SS	Construction activity pollution prevention	Req'd	No	-	-
SS	Site assessment	1	No	10.0%	0.9%
SS	Site development – protect or restore habitat	2	No	20.0%	1.8%
SS	Open space	1	No	10.0%	0.9%
SS	Rainwater management	3	No	30.0%	2.7%
SS	Heat island reduction	2	No	20.0%	1.8%
SS	Light pollution reduction	1	No	10.0%	0.9%
Water efficiency					**10.0%**
WE	Outdoor water use reduction	Req'd	No	-	-
WE	Indoor water use reduction	Req'd	No	-	-
WE	Building-level water metering	Req'd	No	-	-
WE	Outdoor water use reduction	2	No	18.2%	1.8%
WE	Indoor water use reduction	6	No	54.5%	5.5%
WE	Cooling tower water use	2	No	18.2%	1.8%
WE	Water metering	1	No	9.1%	0.9%

All LEED criteria are listed. Every criterion relevant to Schüco is highlighted in white.

Meaning of abbreviations

Max. credits
Maximum points achievable within the evaluation of the criterion.

System influence on category
Indicates whether Schüco systems can make a positive contribution within the criterion.

Criteria influence on category
In this rating, the percentage of the criterion in each category is shown.

Weighted degree of fulfilment
This value specifies percentage of fulfilment in the overall evaluation.

Category	Criteria	Max. credits	System influence on category	Criteria influence on category	Weighted degree of fulfilment
Energy and Atmosphere					**30.0%**
EA	Fundamental commissioning and verification	Req'd	No	-	-
EA	Minimum energy performance	Req'd	Yes	-	-
EA	Building-level energy metering	Req'd	No	-	-
EA	Fundamental refrigerant management	Req'd	No	-	-
EA	Enhanced commissioning	6	No	18.2%	5.5%
EA	Optimise energy performance	18	Yes	54.5%	16.4%
EA	Advanced energy metering	1	No	3.0%	0.9%
EA	Demand response	2	No	6.1%	1.8%
EA	Renewable energy production	3	No	9.1%	2.7%
EA	Enhanced refrigerant management	1	No	3.0%	0.9%
EA	Green power and carbon offsets	2	No	6.1%	1.8%
Materials and resources					**11.8%**
MR	Storage and collection of recyclables	Req'd	No	-	
MR	Construction and demolition waste management planning	Req'd	Yes	-	
MR	Building life cycle impact reduction	5	Yes	38.5%	4.5%
MR	Building product disclosure and optimisation — environmental product declarations	2	Yes	15.4%	1.8%
MR	Building product disclosure and optimisation — sourcing of raw materials	2	Yes	15.4%	1.8%
MR	Building product disclosure and optimisation — material ingredients	2	Yes	15.4%	1.8%
MR	Construction and demolition waste management	2	Yes	15.4%	1.8%
Indoor environmental quality					**14.5%**
EQ	Minimum indoor air quality performance	Req'd	Yes	-	
EQ	Environmental tobacco smoke control	Req'd	No	-	
EQ	Enhanced indoor air quality strategies	2	Yes	12.5%	1.8%
EQ	Low-emitting materials	3	Yes	18.8%	2.7%
EQ	Construction indoor air quality management plan	1	No	6.3%	0.9%
EQ	Indoor air quality assessment	2	No	12.5%	1.8%
EQ	Thermal comfort	1	Yes	6.3%	0.9%
EQ	Interior lighting	2	No	12.5%	1.8%
EQ	Daylight	3	Yes	18.8%	2.7%
EQ	Quality views	1	No	6.3%	0.9%
EQ	Acoustic performance	1	Yes	6.3%	0.9%
Innovation					**5.5%**
IN	Innovation	5	No	83.3%	4.6%
IN	LEED accredited professional	1	No	16.7%	0.9%
Regional priority					**3.6%**
RP	Regional priority	4	No	100.0%	3.6%

Calculation of criteria influence on category and the weighted degree of fulfilment

$$\text{Criteria influence on category} = \frac{16}{\Sigma(\text{Max. credits})} \times 100$$

$$\text{Weighted degree of fulfilment} = \frac{16}{\Sigma(\text{Max. credits})} \times 100 \times 14.5\%$$

Example: LT LEED for neighbourhood development location

$$\text{Criteria influence on category} = \frac{16}{32} \times 100$$

$$\text{Weighted degree of fulfilment} = \frac{16}{32} \times 100 \times 14.5\%$$

Information documents for LEED criteria

		Tender documents/ bill of quantities	Design drawings	Service and maintenance instructions	Installation and operating instruction (electric)	Declaration of origin
Source of information						
Distribution		■	■	■	■	■
SchüCal						
Website				■	■	
Catalogue			■			
Energy and atmosphere						
EA	Minimum energy performance	■				
EA	Optimise energy performance	■				
Materials and resources						
MR	Construction and demolition waste management planning	■				
MR	Building life cycle impact reduction	■	■			■
MR	Building product disclosure and optimisation — environmental product declarations	■				
MR	Building product disclosure and optimisation — sourcing of raw materials	■				■
MR	Building product disclosure and optimisation — material ingredients	■				■
MR	Construction and demolition waste management	■				
Indoor environmental quality						
EQ	Energy efficiency	■				
EQ	Minimum indoor air quality performance	■			■	
EQ	Enhanced indoor air quality strategies	■			■	
EQ	Low-emitting materials	■				■
EQ	Thermal comfort	■	■		■	
EQ	Daylight	■	■			
EQ	Acoustic performance	■				

Certificate of testing	Bill of material	Environmental product declaration (EPD)	Eco-labels/ certifications	High-quality recycling chain of custody (A/U/F)	Safety datasheet/ VOC data	U-value calculation	Isothermal calculations/ visualisation	Sound insulation values	Schüco general technical advice
■			■	■	■	■	■	■	■
	■	■				■			
■			■	■	■			■	
						■	■		■
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									■
■								■	■

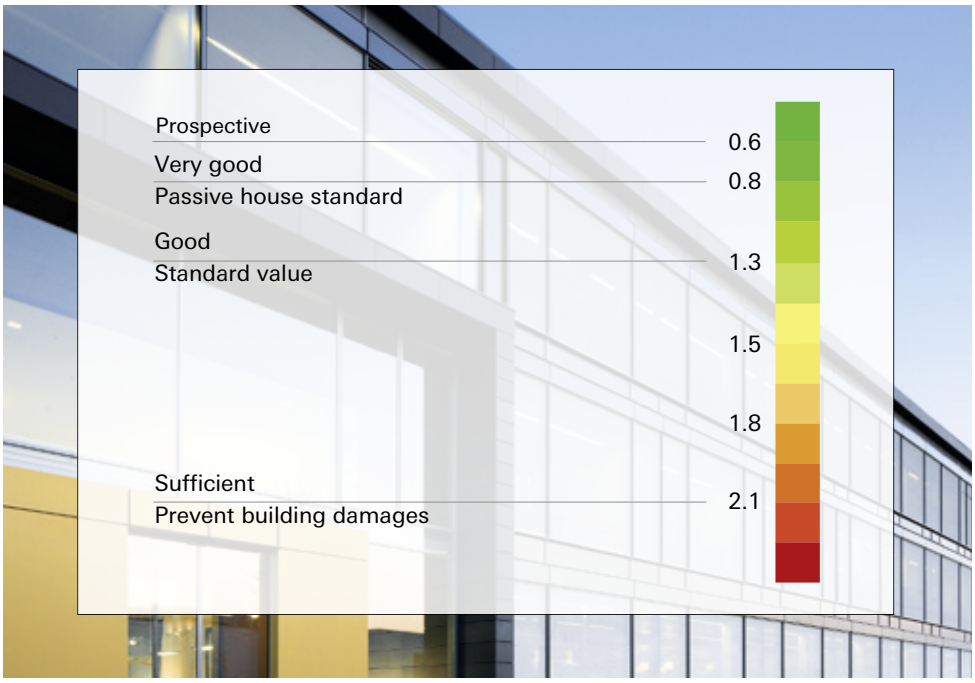
[EA] Minimum energy performance

Intention of criteria
An optimised building design can substantially reduce energy use – often for a modest initial cost with a short payback period – when it includes load reduction, improved mechanical system efficiency and smart operational strategies. An integrated building design can lower operating and maintenance costs and improve indoor air quality, thermal comfort and access to daylight. Either a prescriptive or a performance approach may be used to attain such results.

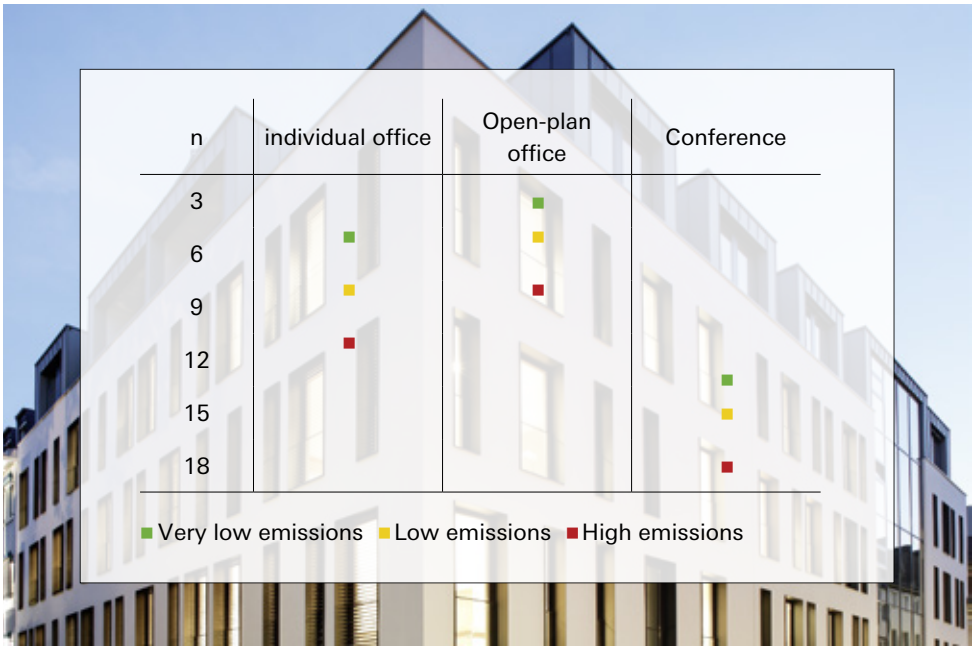
Product influence on criteria
The present review reveals the positive product influence on the overall assessment of the criterion, according to the explanation of product influences on criteria on pages 8–9 of this Schüco Guide to LEED.
The system influence shown refers to the percentage area of the system with regard to the entire building envelope, as well as the requirements of the analysed criterion for the relevant Schüco system.

Schüco systems	Influence
Window systems	Up to **20%**
Door systems	Up to **5%**
Façade systems	Up to **25%**
Fire and smoke protection systems	Up to **25%**

Relevant properties of the systems



Graphic for 1.–3.: Heat transfer coefficient [(W/(m²*K)]
Characteristic values for the heat transfer coefficient U_W of the entire window or U_{CW} value of the façade, taking consideration of the U_f and U_g values.



Graphic for 1.–3.: Hygienic air change rate [m³/(h*m²)]
Recommended hygienic ventilation rates for non-residential buildings for standard occupation density for three categories of emission levels caused by the building itself, in accordance with EN 15251 Table B.2. "Low emissions" is adopted as the standard.

See also LEED Reference Guide for Building Design and Construction v4, 2013 Edition
Graphic according to Green Building - Guideline for sustainable construction, Bauer/Mösle/Schwarz, Springer Vieweg Berlin Heidelberg, 2007, 2013, 2nd edition

Criteria requirements

1. Option 1: Whole-building energy simulation

Demonstrate an improvement of 5% for new construction, 3% for major renovations or 2% for core and shell projects in the proposed building performance rating compared with the baseline building performance rating. Calculate the baseline building performance according to ANSI/ASHRAE/IESNA Standard 90.1–2010, Appendix G, with errata, using a simulation model.

The proposed design must meet the following criteria:

- Compliance with the mandatory provisions
- Inclusion of all energy consumption and costs
- Comparison against a baseline building

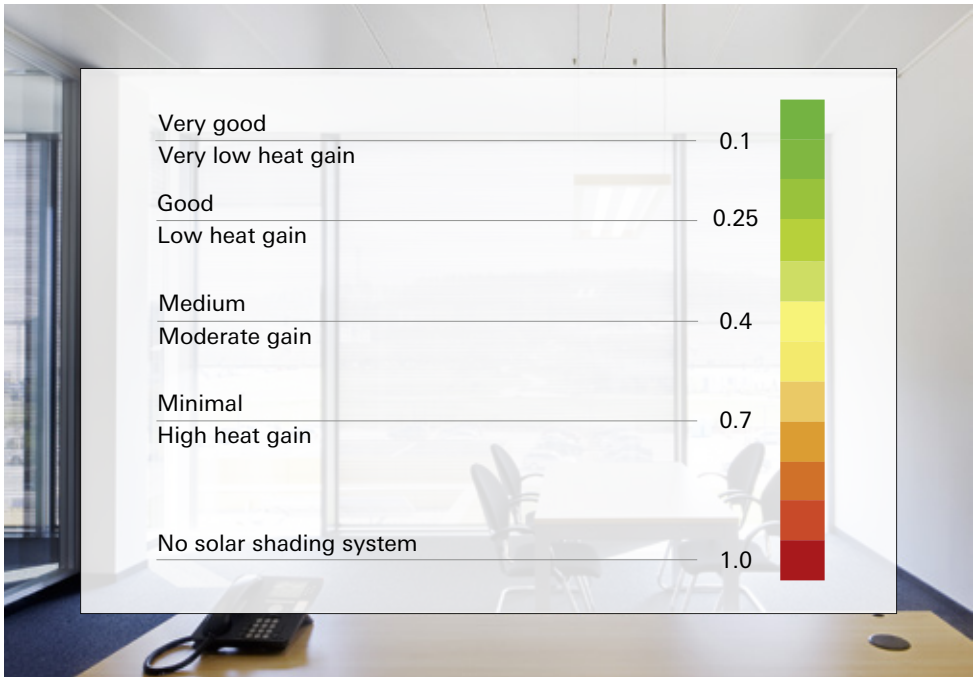
2. Option 2: Prescriptive compliance: ASHRAE 50% advanced energy design guide

Provide compliance with the mandatory and prescriptive provisions of ANSI/ASHRAE/IESNA Standard 90.1–2010, with errata (or a USGBC-approved equivalent standard for the project outside the US). And comply with the HVAC and service water heating requirements, including equipment efficiency, economisers, ventilation, and ducts and dampers.

3. Option 3: Prescriptive compliance: advanced buildings™ core performance™ guide

Comply with the mandatory and prescriptive provisions of ANSI/ASHRAE/IESNA Standard 90.1-2010, with errata (or a USGBC-approved equivalent standard for projects outside the US). Comply with Section 1: Design Process Strategies, Section 2: Core Performance Requirements, and the following three strategies from Section 3: Enhanced Performance Strategies, as applicable.

To be eligible for Option 3, the project must be less than 100,000 square feet (9,290 square metres).



Graphic for 1.–3.: Solar shading
Characteristic values for reduction factors F_c of external shading systems.

[EA] Optimise energy performance

Intention of criteria
This credit rewards an increasing level of energy performance beyond the prerequisite standard. An integrated building design can reduce environmental and economic harms associated with excessive energy use.

Product influence on criteria
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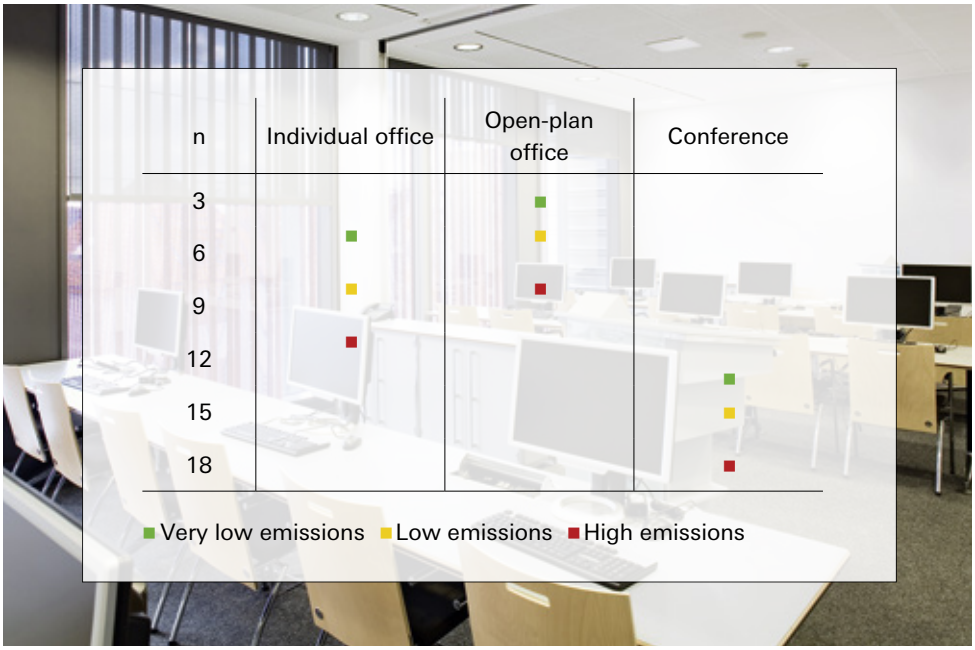


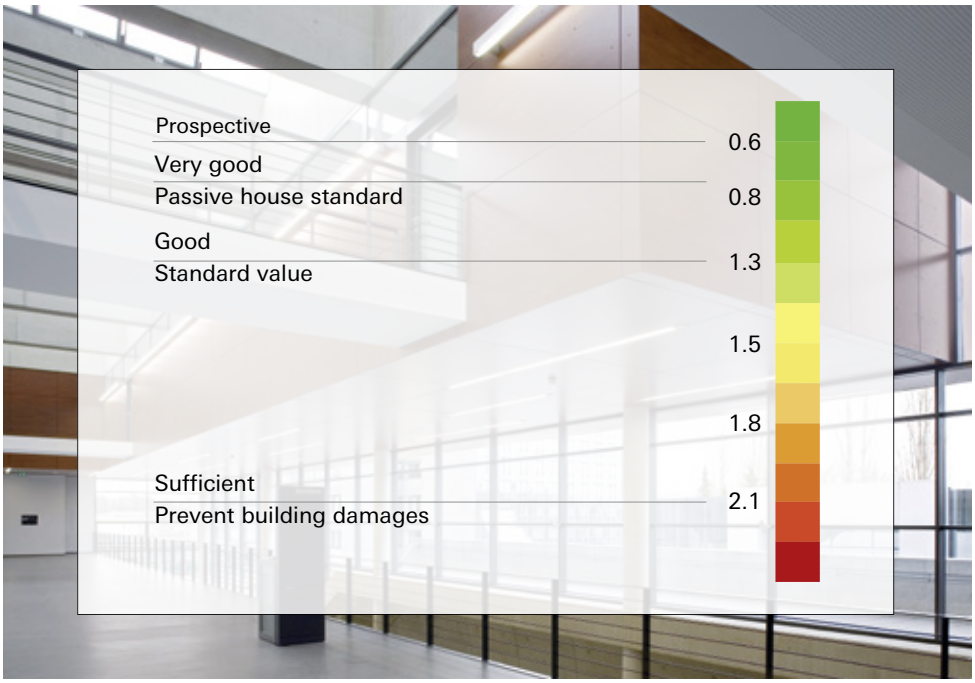
Graphic for 1.–2: Hygienic air change rate [$m^3/(h*m^2)$]
Recommended hygienic ventilation rates for non-residential buildings for standard occupation density for three categories of emission levels caused by the building itself, in accordance with EN 15251 Table B.2. "Low emissions" is adopted as the standard.

Criteria requirements
An energy performance target should be established no later than the schematic design phase.

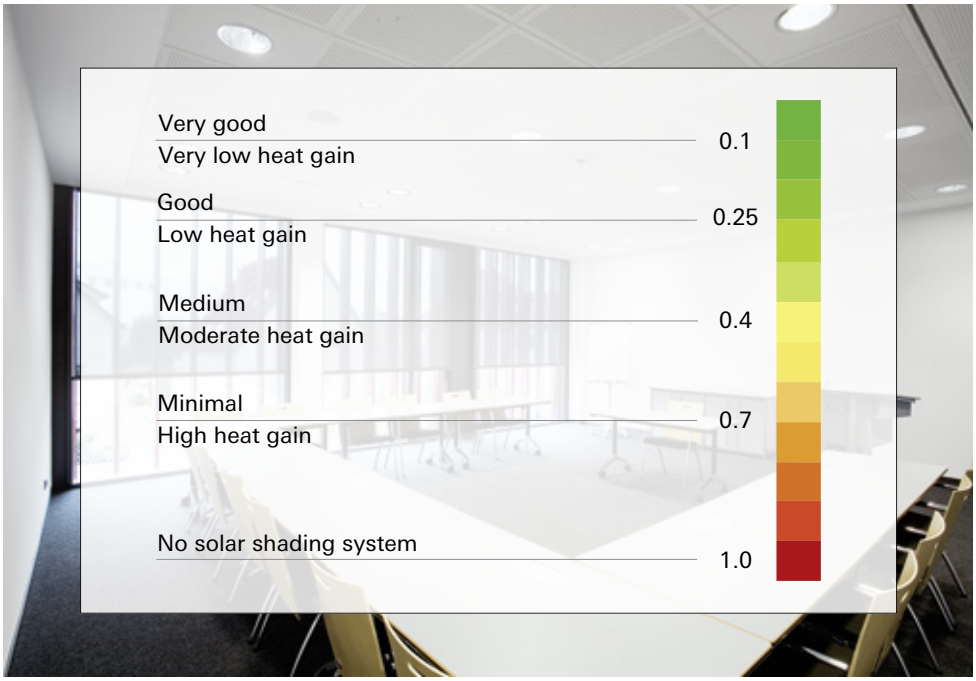
1. Option 1: Whole-Building Energy Simulation (1–18 Points)
During the design process, efficiency measures have to be analysed and the results accounted for in design decision-making. Energy simulation of efficiency opportunities, past energy simulation analyses for similar buildings, or published data from analyses for similar buildings have to be used. Efficiency measures, focusing on load reduction and HVAC-related strategies appropriate for the facility, project potential energy savings and holistic project cost implications have to be analysed.
To demonstrate a percentage improvement of the building against the baseline building, the criteria EA prerequisite minimum energy performance have to be followed.

2. Option 2: Prescriptive Compliance ASHRAE Advanced Energy Design Guide (1–6 Points)
To be eligible for Option 2, projects must use Option 2 in EA prerequisite minimum energy performance. Compliance with the applicable recommendations and standards in Chapter 4, Design Strategies and Recommendations by Climate Zone, for the appropriate ASHRAE 50% Advanced Energy Design Guide and climate zone have to be implemented and documented. For projects outside the US, consult ASHRAE/IESNA Standard 90.1–2010, Appendixes B and D, to determine the appropriate climate zone.

Relevant properties of the systems



Graphic for 1. and 2.: Heat transfer coefficient [(W/(m²*K)]
Characteristic values for the heat transfer coefficient U_W of the entire window or U_{CW} value of the façade, taking consideration of the U_f and U_g values.



Graphic for 1. and 2.: Solar shading
Characteristic values for reduction factors F_C of external shading systems.

See also LEED Reference Guide for Building Design and Construction v4, 2013 Edition
Graphic according to Green Building - Guideline for sustainable construction, Bauer/Mösle/Schwarz, Springer Vieweg Berlin Heidelberg, 2007, 2013, 2nd edition

[MR] Construction and demolition waste management planning criteria

Intention of criteria
Waste management services vary widely from one location to another. Therefore, in the early design stages, the technologies, hauliers and facilities in the area of the project should be identified. Planning for construction waste management (CWM) before construction allows time to identify the most effective waste diversion strategies available. A well-devised CWM plan can also minimise costs and maximise return by decreasing tipping fees, selling high-valued scrap materials or identifying materials for reuse.

Criteria requirements
A construction and demolition waste management plan has to be developed and implemented:

- Waste diversion goals for the project have to be established by identifying at least five materials targeted for diversion. Approximate a percentage of the overall project waste that these materials represent.
- Specifications whether materials will be separated or commingled and description of the diversion strategies planned for the project. Where the material will be taken and how the recycling facility will process the material must be described.

A final report detailing all major waste streams generated, including disposal and diversion rates must be provided.

Product influence on criteria
The present review reveals the positive product influence on the overall assessment of the criterion, according to the explanation of product influences on criteria on pages 8–9 of this Schüco Guide to LEED.
The system influence shown refers to the percentage area of the system with regard to the entire building envelope, as well as the requirements of the analysed criterion for the relevant Schüco system.

Schüco systems	Influence
Window systems	Up to **5%**
Door systems	Up to **5%**
Façade systems	Up to **5%**
Fire and smoke protection systems	Up to **5%**

[MR] Building life cycle impact reduction

Intention of criteria
Over their lifetimes, buildings have local, regional and global environmental effects. Some occur during the harvest, extraction, manufacture and transportation of materials; others involve construction and operations; still others take place at demolition and disposal. A life cycle assessment (LCA) examines as many of these environmental effects as possible. This credit identifies several strategies for reducing damage done to the environment over a building's entire life cycle: restoring existing buildings, reusing building components, and reducing a building's environmental footprint through LCA.

Criteria requirements
Reduced environmental effects during initial project decision-making by reusing existing building resources or demonstrating a reduction in material use through life cycle assessment have to be demonstrated.

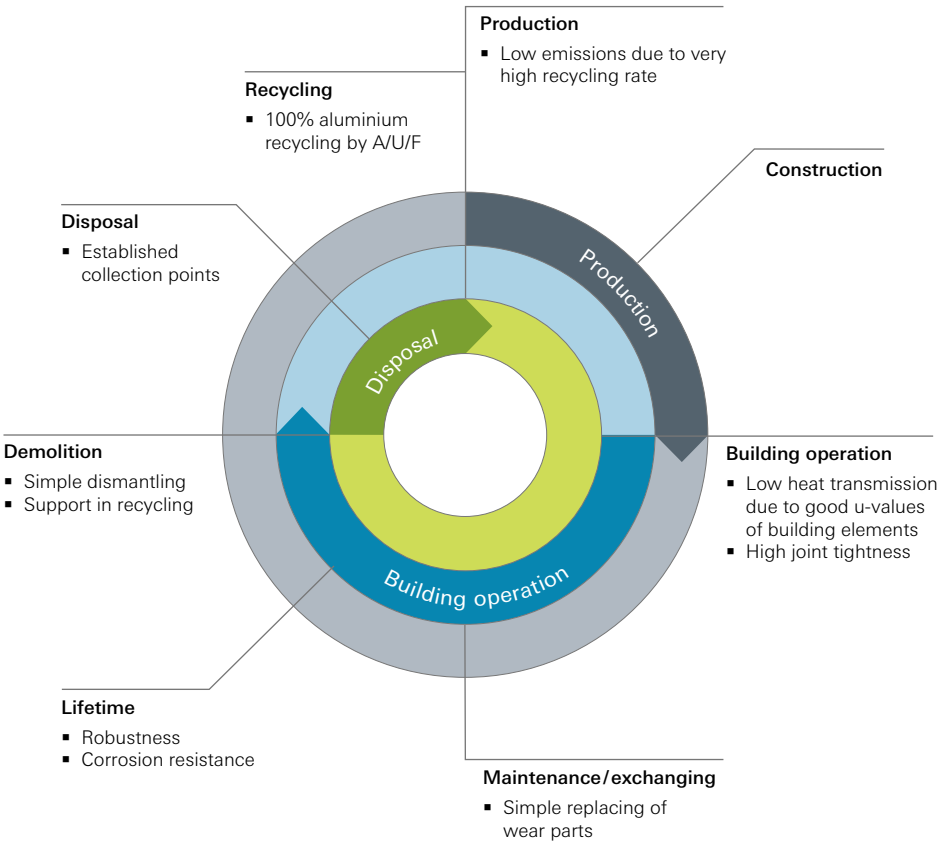
1. Option 1: Historic building reuse
The existing building structure, envelope and interior non-structural elements of a historic building or contributing building in a historic district have to be maintained. Any alteration of a historic building must be done in accordance with local or national standards for rehabilitation, whichever are applicable.

2. Option 2: Renovation of abandoned or blighted building
Maintain at least 50%, by surface area, of the existing building structure, enclosure and interior structural elements for buildings that meet local criteria of abandoned or are considered blight. The building must be renovated to a state of productive occupancy.

3. Option 3: Building and material reuse
Reuse or salvage building materials from off-site or on-site as a percentage of the surface area, either 25%, 50% or 75% of completed project surface area. Include structural elements, enclosure materials and permanently installed interior elements.

4. Option 4: Whole building life cycle assessment
For new construction, conduct a life cycle assessment for at least 60 years of the project's structure and enclosure that demonstrates a minimum of 10% reduction in environmental impact compared with a baseline building. The baseline and proposed buildings must be of comparable size, function, orientation, and operating energy performance as defined in EA prerequisite minimum energy performance.

Relevant properties of the systems
Graphic for 4.: Life cycle assessment



Product influence on criteria
The present review reveals the positive product influence on the overall assessment of the criterion, according to the explanation of product influences on criteria on pages 8–9 of this Schüco Guide to LEED.
The system influence shown refers to the percentage area of the system with regard to the entire building envelope, as well as the requirements of the analysed criterion for the relevant Schüco system.

Schüco systems	Influence
Window systems	Up to **15%**
Door systems	Up to **5%**
Façade systems	Up to **15%**
Fire and smoke protection systems	Up to **15%**

See also LEED Reference Guide for Building Design and Construction v4, 2013 Edition

[MR] Building product disclosure and optimisation – environmental product declarations

Intention of criteria
This credit recognises the selection of products for which the environmental impacts are well known because of industry standard life cycle information and reporting protocols. Environmental product declarations (EPDs) are a standardised way of communicating the environmental effects associated with a product or system's raw material extraction, energy use, chemical make-up, waste generation, and emissions to air, soil and water.

Criteria requirements
1. Option 1: Environmental Product Declaration
At least 20 different permanently installed products sourced from at least five different manufacturers have to meet one of the disclosure criteria below.
- Product-specific declaration
- Environmental Product Declarations which conform to ISO 14025, 14040, 14044 and EN 15804 or ISO 21930 and have at least a cradle-to-gate scope
- USGBC-approved programme

2. Option 2: Multi-Attribute Optimisation
Use products that comply with one of the criteria below for 50%, by cost, of the total value of permanently installed products in the project.
- Third-party-certified products that demonstrate impact reduction below industry average
- USGBC-approved programme

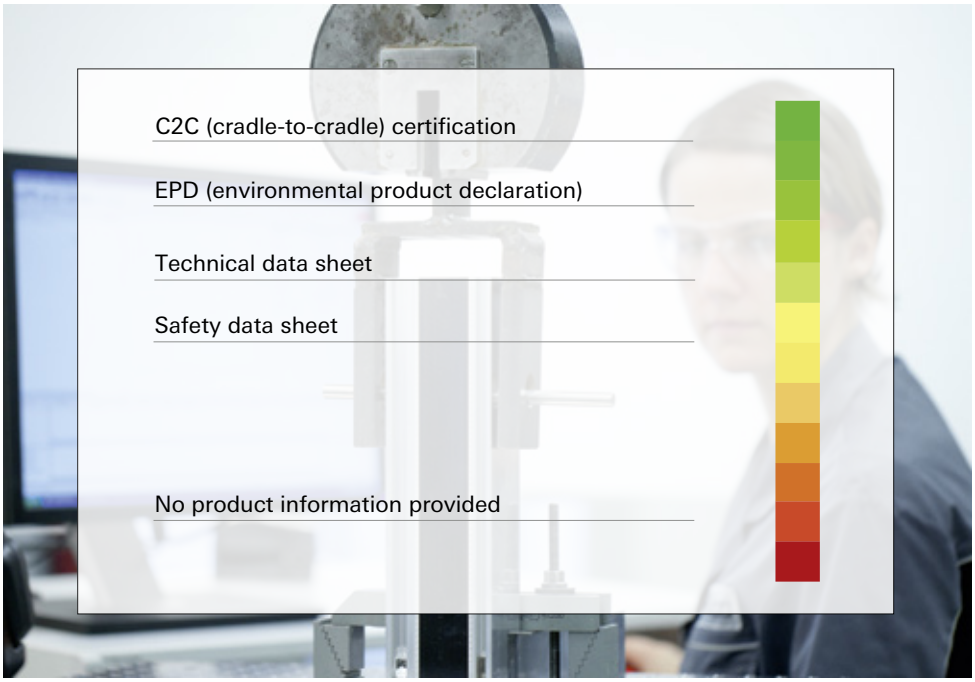
For calculating credits, products sourced within 100 miles (160 km) of the project site are valued at 200 % of their base contributing cost.

Product influence on criteria
The present review reveals the positive product influence on the overall assessment of the criterion, according to the explanation of product influences on criteria on pages 8–9 of this Schüco Guide to LEED.
The system influence shown refers to the percentage area of the system with regard to the entire building envelope, as well as the requirements of the analysed criterion for the relevant Schüco system.

Schüco systems	Influence
Window systems	Up to **15%**
Door systems	Up to **5%**
Façade systems	Up to **20%**
Fire and smoke protection systems	Up to **20%**

See also LEED Reference Guide for Building Design and Construction v4, 2013 Edition
Graphic according to Green Building - Guideline for sustainable construction, Bauer/Mösle/Schwarz, Springer Vieweg Berlin Heidelberg, 2007, 2013, 2nd edition

Relevant properties of the systems



Graphic for 1. and 2.: Declaration of products
Opportunities for how to provide information about products. Therefore, safe handling and disposal is ensured.

[MR] Building product disclosure and optimisation – sourcing of raw materials

Intention of criteria
This credit encourages the use of responsibly sourced and extracted materials through reporting and demonstration of responsible extraction practices. Corporate sustainability reports (CSRs), based on widely recognised frameworks and standards, can shed light on product supply chains and identify sources of raw material extraction.

Criteria requirements
1. Option 1: Raw Material Source and Extraction Reporting
Products from manufacturers should be used that have publicly released a report from their raw material suppliers which include raw material supplier extraction locations, a commitment to long-term ecologically responsible land use, a commitment to reducing environmental harms from extraction and/or manufacturing processes, and a commitment to meeting applicable standards or programmes voluntarily that address responsible sourcing criteria.

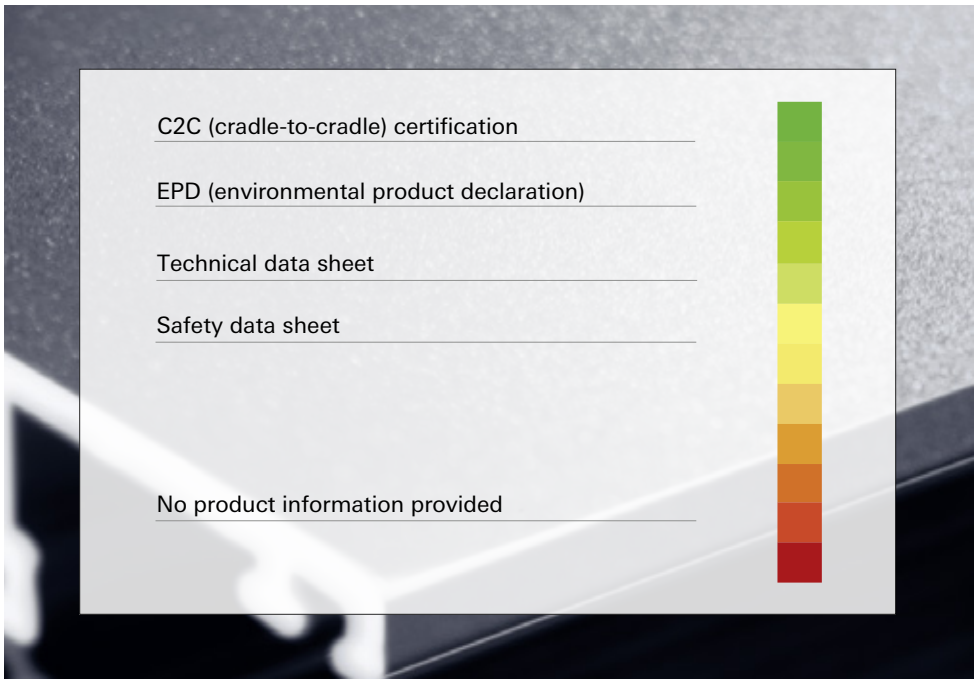
2. Option 2: Leadership Extraction Practices
Products should be used that meet at least one of the responsible extraction criteria below for at least 25%, by cost, of the total value of permanently installed building products in the project
- Extended producer responsibility
- Bio-based materials
- Wood products
- Materials reuse
- Recycled content
- USGBC-approved programme

Product influence on criteria
The present review reveals the positive product influence on the overall assessment of the criterion, according to the explanation of product influences on criteria on pages 8–9 of this Schüco Guide to LEED.
The system influence shown refers to the percentage area of the system with regard to the entire building envelope, as well as the requirements of the analysed criterion for the relevant Schüco system.

Schüco systems	Influence
Window systems	Up to **10%**
Door systems	Up to **5%**
Façade systems	Up to **10%**
Fire and smoke protection systems	Up to **10%**

See also LEED Reference Guide for Building Design and Construction v4, 2013 Edition
Graphic according to Green Building - Guideline for sustainable construction, Bauer/Mösle/Schwarz, Springer Vieweg Berlin Heidelberg, 2007, 2013, 2nd edition

Relevant properties of the systems



Graphic for 1. and 2.: Declaration of products
Opportunities for how to provide information about products. Therefore, safe handling and disposal is ensured.

[MR] Building product disclosure and optimisation – material ingredients

Intention of criteria
By adhering to the precautionary principle and supporting green chemistry, this credit encourages project teams to avoid products containing potentially harmful chemicals, which will ultimately spur on innovation in materials from manufacturers. This credit aims to support manufacturers that disclose information about the ingredients in their products, allowing project teams to make better-informed decisions.

Criteria requirements

1. Option 1: Material Ingredient Reporting
At least 20 different permanently installed products from at least five different manufacturers should be used that use any of the following programmes to demonstrate the chemical inventory of the product to at least 0.1% (1,000 ppm).

- Manufacturer inventory
- Health product declaration
- Cradle-to-cradle
- USGBC-approved programme

2. Option 2: Material Ingredient Optimisation
Products that document their material ingredient optimisation using the paths below for at least 25%, by cost, of the total value of permanently installed products in the project have to be used.

- GreenScreen v1.2 Benchmark
- Cradle-to-Cradle Certified
- International Alternative Compliance Path – REACH Optimisation
- USGBC-approved programme

3. Option 3: Product Manufacturer Supply Chain Optimisation
Building products for at least 25%, by cost, of the total value of permanently installed products in the project should be used that:

- Are sourced from product manufacturers who engage in validated and robust safety, health, hazard and risk programmes
- Are sourced from product manufacturers with independent third-party verification of their supply chain

Products are valued at 100% of their cost for the purposes of credit achievement calculation.

Product influence on criteria
The present review reveals the positive product influence on the overall assessment of the criterion, according to the explanation of product influences on criteria on pages 8–9 of this Schüco Guide to LEED.
The system influence shown refers to the percentage area of the system with regard to the entire building envelope, as well as the requirements of the analysed criterion for the relevant Schüco system.

Schüco systems	Influence
Window systems	Up to **10%**
Door systems	Up to **5%**
Façade systems	Up to **15%**
Fire and smoke protection systems	Up to **15%**

[MR] Construction and demolition waste management

Intention of criteria
This credit rewards projects that implement the plan created in MR Prerequisite Construction and Demolition Waste Management Planning. It encourages the diversion of a greater quantity and diversity of materials across multiple material streams by setting thresholds for both an overall diversion percentage and a minimum number of material streams.

Criteria requirements
1. Requirements
Non-hazardous construction and demolition materials should be recycled and/or salvaged. Calculations can be by weight or volume but must be consistent throughout. However, for projects that cannot meet credit requirements using reuse and recycling methods, waste-to-energy systems may be considered.

2. Option 1: Diversion
Divert at least 50% (1 point) or 75% (2 points) of the total construction and demolition material; diverted materials must include at least three (1 point) or four (2 points) material streams.

3. Option 2: Reduction of Total Waste Material
Preventing the generation of more than 2.5 pounds of construction waste per square foot (12.2 kilograms of waste per square metre) of the building's floor area.

Product influence on criteria
The present review reveals the positive product influence on the overall assessment of the criterion, according to the explanation of product influences on criteria on pages 8–9 of this Schüco Guide to LEED.
The system influence shown refers to the percentage area of the system with regard to the entire building envelope, as well as the requirements of the analysed criterion for the relevant Schüco system.

Schüco systems	Influence
Window systems	Up to **5%**
Door systems	Up to **5%**
Façade systems	Up to **5%**
Fire and smoke protection systems	Up to **5%**

[EQ] Minimum indoor air quality performance

Intention of criteria
By diluting pollutants created by a building's occupants and other contaminant sources, ventilation contributes to the occupants' comfort and well-being. Maintaining good indoor air quality (IAQ) depends on controlling pollutant sources, removing contaminants from outdoor air, and supplying at least some outdoor air, among other factors. The standards referenced in this prerequisite outline well-tested methods for determining the amount of outdoor air each type of space requires.

Product influence on criteria
The present review reveals the positive product influence on the overall assessment of the criterion, according to the explanation of product influences on criteria on pages 8–9 of this Schüco Guide to LEED.
The system influence shown refers to the percentage area of the system with regard to the entire building envelope, as well as the requirements of the analysed criterion for the relevant Schüco system.

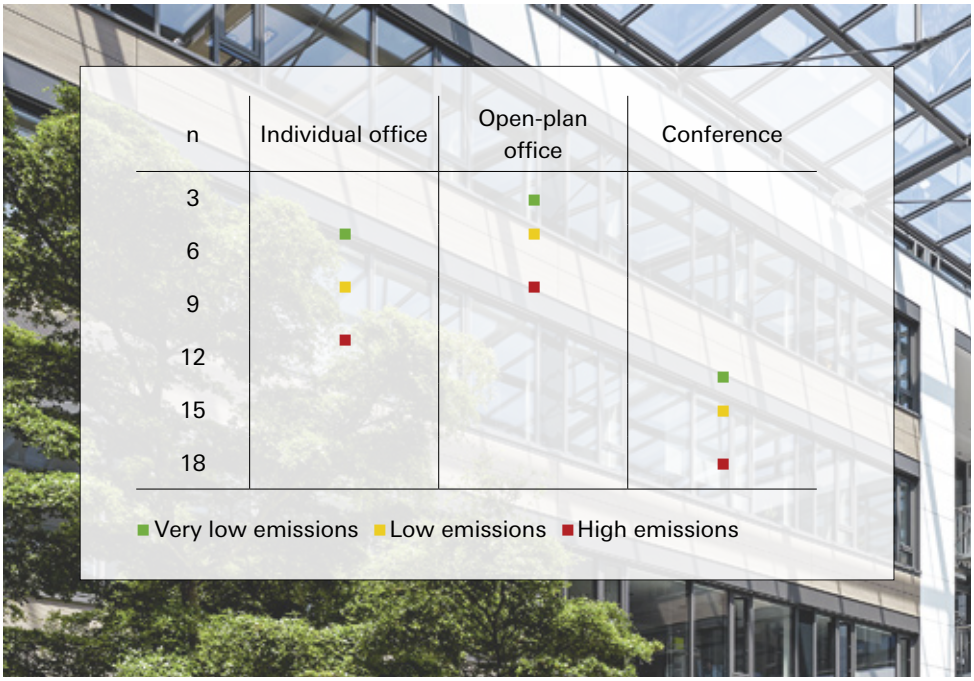
Schüco systems	Influence
Window systems	Up to **50%**
Door systems	Up to **5%**
Façade systems	Up to **50%**
Fire and smoke protection systems	Up to **50%**

Criteria requirements
1. Ventilation
a. Mechanically ventilated spaces
Option 1: For mechanically ventilated spaces, determine the minimum outdoor air intake flow for mechanical ventilation systems using the ventilation rate procedure from ASHRAE 62.1–2010 or a local equivalent, whichever is more stringent and meet the minimum requirements.
OR Option 2: Projects outside the US may instead meet the minimum outdoor air requirements of Annex B of EN 15251 and the relevant requirements of EN 13779.
b. Naturally ventilated spaces
For naturally ventilated spaces, determine the minimum outdoor air opening and space configuration requirements and confirm that natural ventilation is an effective strategy. Natural ventilation procedure from ASHRAE Standard 62.1–2010 or a local equivalent, whichever is more stringent, should be used.

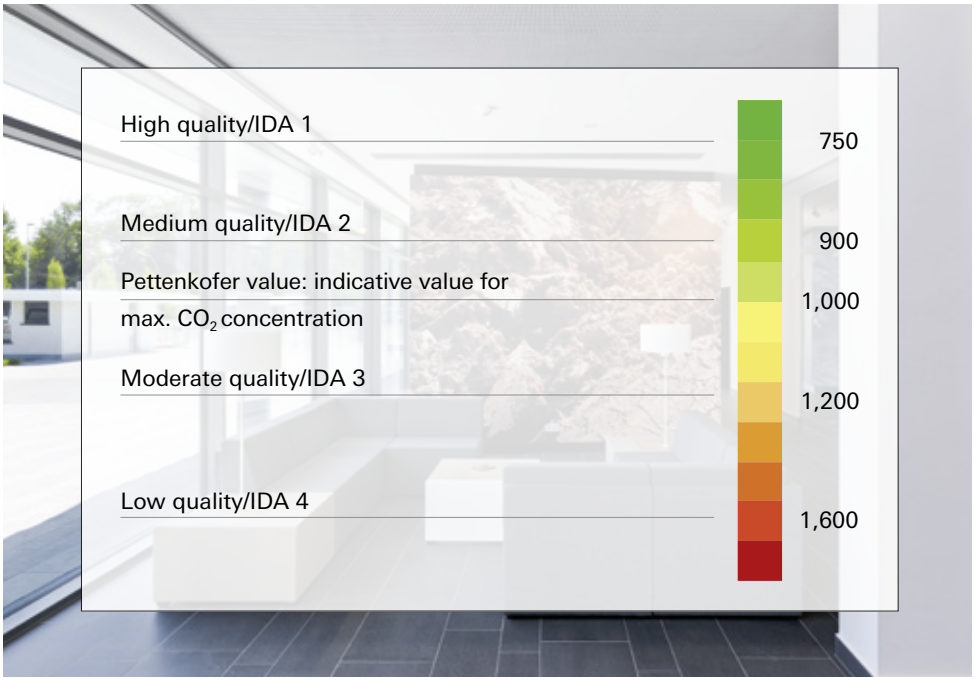
2. Monitoring
a. Mechanically ventilated spaces
For mechanically ventilated spaces, outdoor air intake flows have to be monitored.
b. Naturally ventilated spaces
For naturally ventilated spaces a direct exhaust airflow measurement device or automatic indication devices on all natural ventilation openings should be provided or each thermal zone will be equipped with carbon dioxide (CO_2) monitors.

See also LEED Reference Guide for Building Design and Construction v4, 2013 Edition
Graphic according to Green Building - Guideline for sustainable construction, Bauer/Mösle/Schwarz, Springer Vieweg Berlin Heidelberg, 2007, 2013, 2nd edition

Relevant properties of the systems



Graphic for 1b.: Hygienic air change rate [$m^3/(h*m^2)$]
Recommended hygienic ventilation rates for non-residential buildings for standard occupation density for three categories of emission levels caused by the building itself, in accordance with EN 15251 Table B.2. "Low-emissions" is adopted as the standard.



Graphic for 2b.: CO_2 concentration [ppm]
Room air categories (Indoor air) and characteristic values for the absolute CO_2 emissions in the air in accordance with EN 15251 and EN 13779 (standard values) for an external air CO_2 concentration of 400 ppm.

[EQ] Enhanced indoor air quality strategies

Intention of criteria
Indoor pollutants and particulates are brought indoors by occupants, through ventilation system intakes or building openings, and from activities conducted within the building. Designing for effective indoor air quality (IAQ) can help produce a comfortable indoor environment for building occupants and prevent the human health problems associated with poor indoor air quality. This credit identifies IAQ strategies that extend beyond the outdoor air requirements of EQ prerequisite minimum indoor air quality performance.

Product influence on criteria
The present review reveals the positive product influence on the overall assessment of the criterion, according to the explanation of product influences on criteria on pages 8–9 of this Schüco Guide to LEED.
The system influence shown refers to the percentage area of the system with regard to the entire building envelope, as well as the requirements of the analysed criterion for the relevant Schüco system.

Schüco systems	Influence
Window systems	Up to **50%**
Door systems	Up to **5%**
Façade systems	Up to **50%**
Fire and smoke protection systems	Up to **50%**

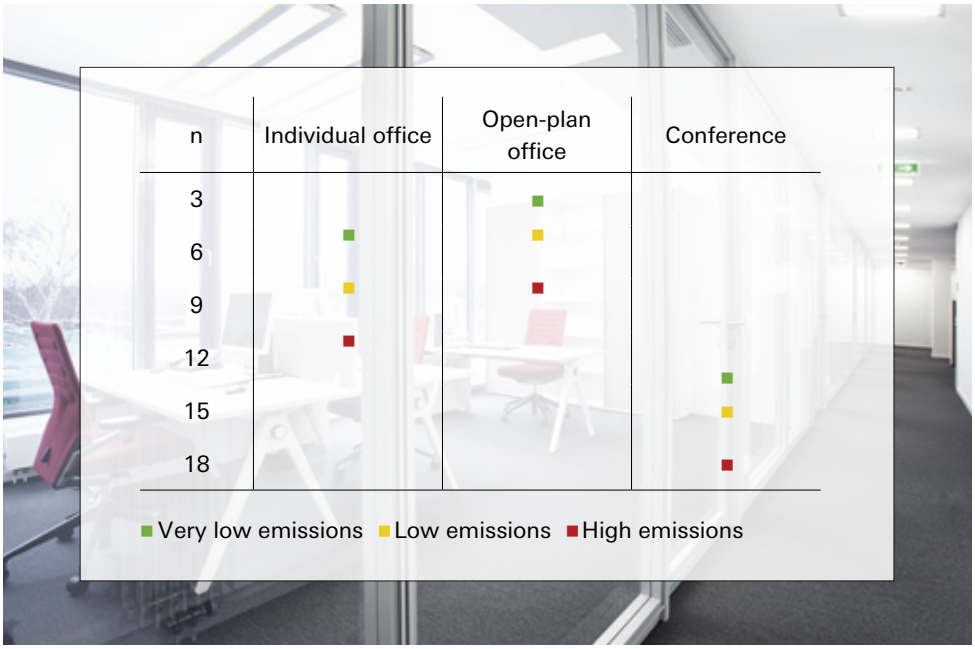
Criteria requirements
Determination whether the project will use mechanical ventilation, natural ventilation or a mixed-mode approach (see EQ prerequisite minimum indoor air quality performance).

1. **For Option 1: Enhanced IAQ strategies** provide compliance with all of the following relevant requirements, as applicable.
   a. Mechanically ventilated spaces
   Entryway systems, interior cross-contamination prevention and filtration.
   b. Naturally ventilated spaces
   Entryway systems and natural ventilation design calculations.
   c. Mixed-mode system
   Entryway systems, interior cross-contamination prevention and filtration, natural ventilation design calculations and mixed-mode design calculations.

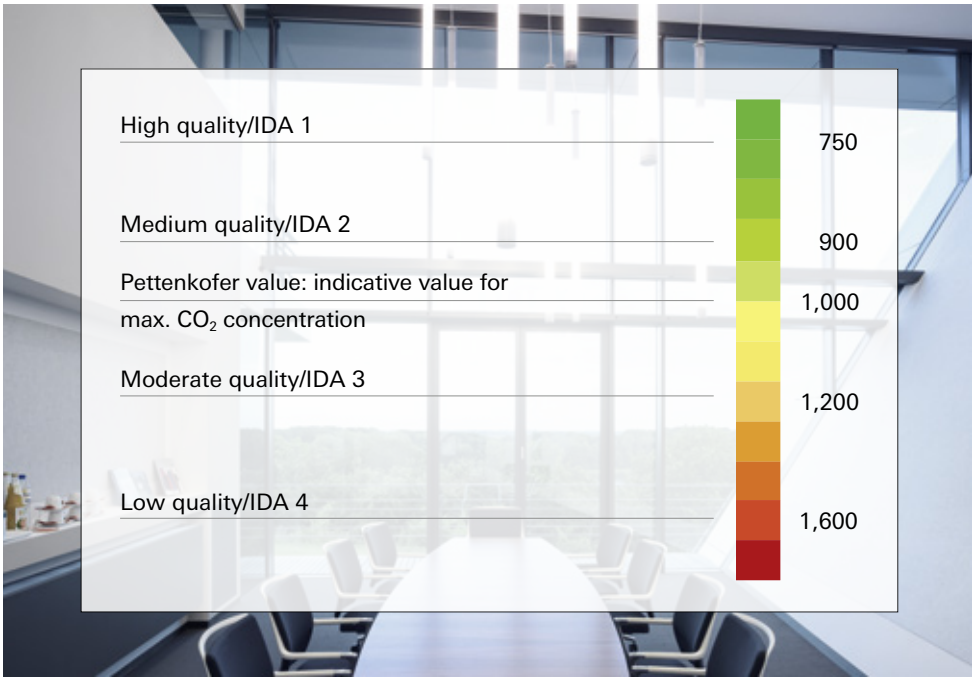
2. **For Option 2: Additional enhanced IAQ strategies** provide compliance with all of the following relevant requirements, as applicable.
   a. Mechanically ventilated spaces
   Exterior contamination prevention, increased ventilation, carbon dioxide monitoring or additional source control and monitoring.
   b. Naturally ventilated spaces
   Exterior contamination prevention, additional source control and monitoring or natural ventilation room-by-room calculations.
   c. Mixed-mode system
   Exterior contamination prevention, increased ventilation, additional source control and monitoring or natural ventilation room-by-room calculations.

See also LEED Reference Guide for Building Design and Construction v4, 2013 Edition
Graphic according to Green Building - Guideline for sustainable construction, Bauer/Mösle/Schwarz, Springer Vieweg Berlin Heidelberg, 2007, 2013, 2nd edition

Relevant properties of the systems



Graphic for 1b. and 2b.: Hygienic air change rate [$m^3/(h*m^2)$]
Recommended hygienic ventilation rates for non-residential buildings for standard occupation density for three categories of emission levels caused by the building itself, in accordance with EN 15251 Table B.2. "Low-emissions" is adopted as the standard.



Graphic for 1b. and 2b.: CO_2 concentration [ppm]
Room air categories (Indoor Air) and characteristic values for the absolute CO_2 emissions in the air in accordance with EN 15251 and EN 13779 (standard values) for an external air CO_2 concentration of 400 ppm.

[EQ] Low-emitting materials

Intention of criteria
Many types of chemicals, both engineered and naturally occurring, are present everywhere. Volatile organic compounds (VOCs) are chemicals that are released into the air from numerous materials – some of them natural, man-made, plant-based and from animals, including people. Project teams should specify products that meet the compliance thresholds established by recognised standards or choose products classified as inherently non-emitting. This credit addresses each layer of wall, flooring and ceiling interior finish – a methodology that is conservatively protective of occupants, given that the emissions from layers that are not directly exposed to air are tested separately.

Criteria requirements

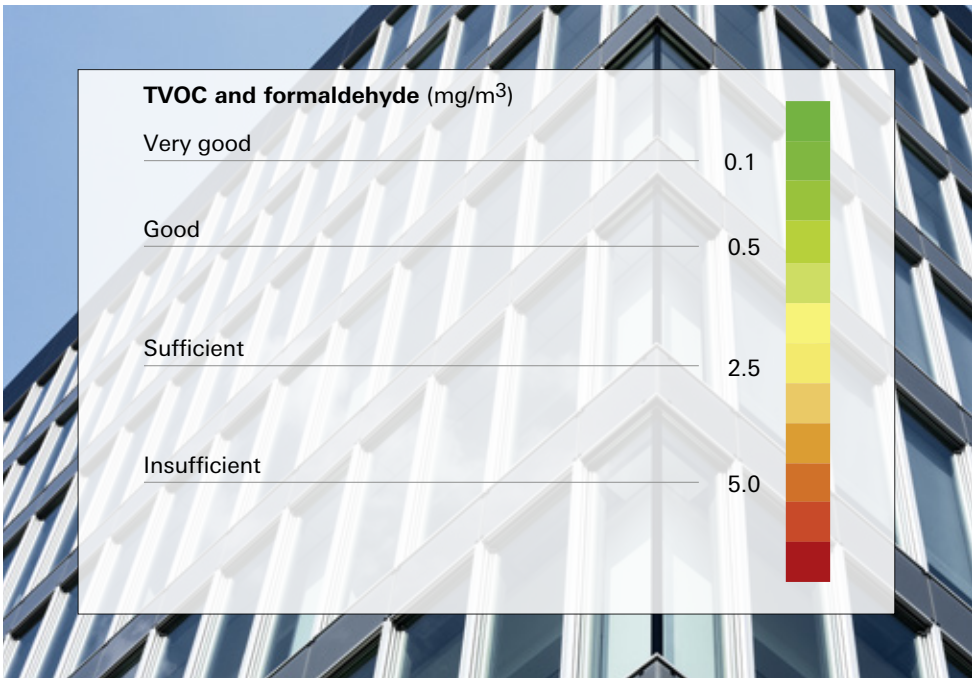
1. Option 1: Product category calculations
Threshold levels of compliance with emissions and content standards, defined in the LEED Reference Guide criteria EQ Low-Emission Materials should be achieved. Building elements (determined in seven categories) will be evaluated regarding the general emission levels and the VOC content of the product.

2. Option 2: Budget calculation method
The budget method organises the building interior into six assemblies: flooring, ceilings, walls, thermal and acoustic insulation, furniture (and exterior applied products). The percentage of compliant materials has to be determined and the surface area of assembly layers calculated.

3. Emissions and content requirements
- Inherently non-emitting sources.
  Products that are inherently non-emitting sources of VOCs are considered fully compliant without any testing.
- General emissions evaluation. Building products must be tested and determined compliant in accordance with California Department of Public Health (CDPH) Standard Method v1.1–2010, using the applicable exposure scenario.
- Additional VOC content requirements for wet-applied products.
  On-site wet-applied products must not contain excessive levels of VOCs, disclosure of VOC content must be made by the manufacturer.
- Composite wood evaluation.
  Wood products must be documented to have low formaldehyde emissions.
- Furniture evaluation.
  New furniture and furnishing items must be tested using either the concentration modelling approach or the emissions factor approach.

See also LEED Reference Guide for Building Design and Construction v4, 2013 Edition
Graphic according to Green Building - Guideline for sustainable construction, Bauer/Mösle/Schwarz, Springer Vieweg Berlin Heidelberg, 2007, 2013, 2nd edition

Relevant properties of the systems



Graphic for 3.:
Total volatile organic compound (TVOC) levels of building products in accordance with California Department of Public Health (CDPH) Standard Method v1.1–2010. The measurement of TVOC concentration is carried out after 14 days (336 hours).

Product influence on criteria

The present review reveals the positive product influence on the overall assessment of the criterion, according to the explanation of product influences on criteria on pages 8–9 of this Schüco Guide to LEED.
The system influence shown refers to the percentage area of the system with regard to the entire building envelope, as well as the requirements of the analysed criterion for the relevant Schüco system.

Schüco systems	Influence
Window systems	Up to **15%**
Door systems	Up to **5%**
Façade systems	Up to **20%**
Fire and smoke protection systems	Up to **20%**

[EQ] Thermal comfort

Intention of criteria
This credit promotes occupants' productivity, comfort and well-being by providing quality thermal comfort. Occupants who are able to modify their thermal environment through thermal controls will perceive greater comfort regardless of conditioning strategy, and they may exhibit additional satisfaction and productivity.

Criteria requirements
1. Thermal Comfort Design
a. Option 1: Heating, ventilation and air-conditioning (HVAC) systems and the building envelope have to be designed to meet the requirements of ASHRAE Standard 55–2010, with errata or a local equivalent.
b. Option 2: HVAC systems and the building envelope have to be designed to meet the requirements of the applicable standard of ISO 7730:2005 and CEN Standard EN 15251:2007.

2. Thermal Comfort Control
Individual thermal comfort controls for at least 50% of individual occupant spaces should be provided. For all shared multi-occupant spaces group, thermal comfort controls should be provided. Thermal comfort controls allow occupants, whether in individual spaces or shared multi-occupant spaces, to adjust at least one of the following in their local environment: air temperature, radiant temperature, air speed and humidity.

Product influence on criteria
The present review reveals the positive product influence on the overall assessment of the criterion, according to the explanation of product influences on criteria on pages 8–9 of this Schüco Guide to LEED.
The system influence shown refers to the percentage area of the system with regard to the entire building envelope, as well as the requirements of the analysed criterion for the relevant Schüco system.

Schüco systems	Influence
Window systems	Up to **40%**
Door systems	Up to **5%**
Façade systems	Up to **50%**
Fire and smoke protection systems	Up to **50%**

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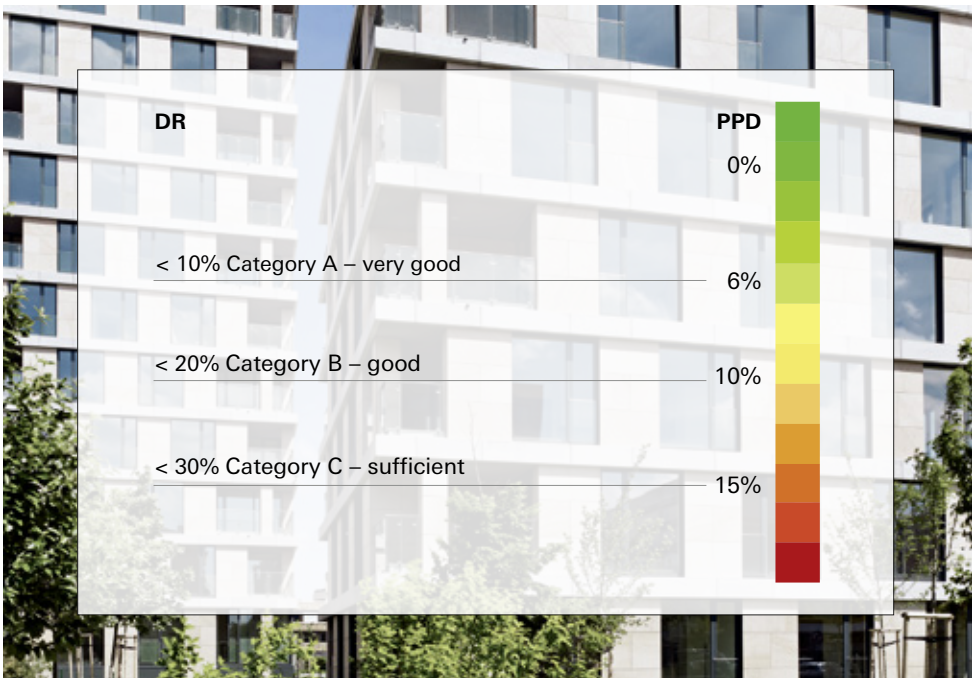
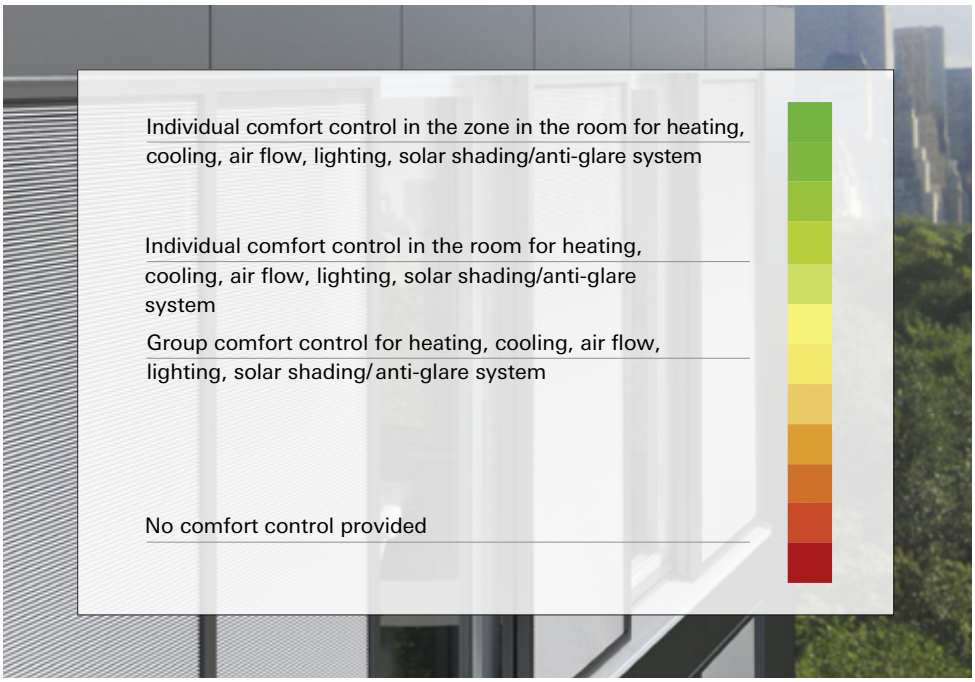
Relevant properties of the systems



Graphic for 1.: Thermal comfort levels
Examples for the requirements on thermal comfort for different environmental categories and room types, in accordance with ISO 7730:2005.



Graphic for 2.: Comfort control
Examples for the requirements on thermal comfort for different environmental categories and room types.

[EQ] Daylight

Intention of criteria
Increased access to daylight has positive human behavioural and health effects because it reinforces our circadian rhythms. A well-designed daylit building also uses less electric lighting energy, conserving natural resources and reducing air pollution. This credit has evolved significantly and now focuses on using simulated daylight analysis and actual measurement to estimate daylight quality and daylight levels. These methods more accurately predict daylight access and support the design process for optimising daylight.

Criteria requirements
Manual or automatic glare-control devices for all regularly occupied spaces have to be provided.

1. **Option 1: Simulation:**
   Spatial Daylight Autonomy and Annual Sunlight Exposure (2–3 points)
   Demonstrate through annual computer simulations that spatial daylight autonomy $_{300/50\%}$ ($sDA_{300/50\%}$) of at least 55%, 75%, or 90% is achieved. Annual sunlight exposure of no more than 10% has to be achieved.
2. **Option 2: Simulation:**
   Illuminance Calculations (1–2 points)
   Demonstration through computer modelling that illuminance levels will be between 300 lux and 3,000 lux between 9 a.m. and 3 p.m. for 75% or 90% of the regularly occupied floor area. Blinds and shades are executed from the model.
3. **Option 3: Measurement (2–3 points)**
   Achieve illuminance levels between 300 lux and 3,000 lux for 75% or 90% of the regularly occupied floor area.

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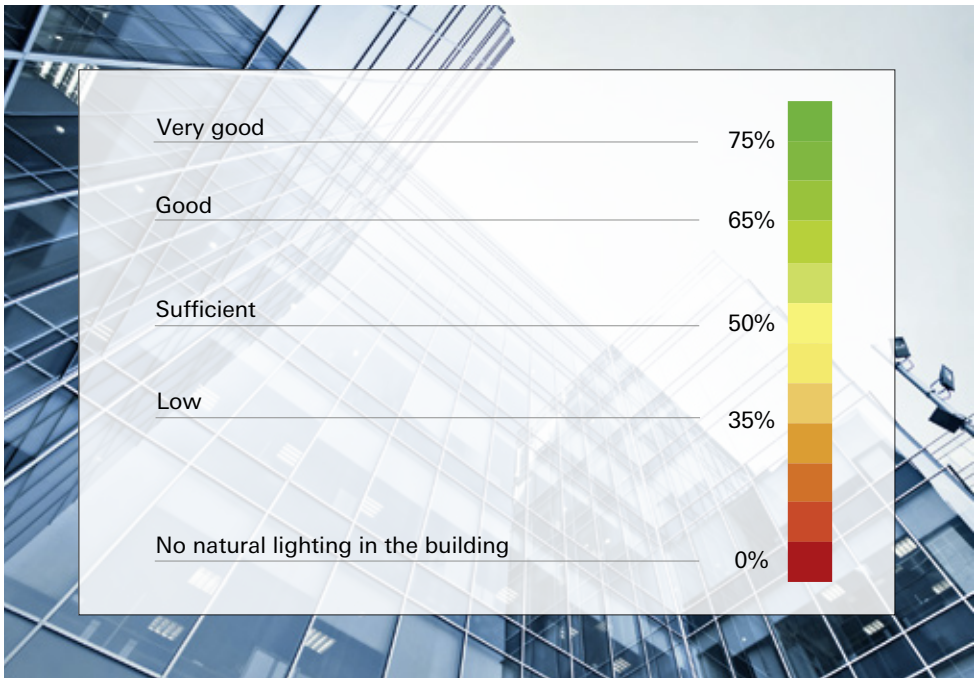
Relevant properties of the systems



Graphic for 1. and 2.:
Daylight transmittance τ_v [%]
The daylight transmission coefficient of the glazing indicates what percentage of the sunlight shining on the façade penetrates the interior of the building.

Product influence on criteria

The present review reveals the positive product influence on the overall assessment of the criterion, according to the explanation of product influences on criteria on pages 8–9 of this Schüco Guide to LEED.
The system influence shown refers to the percentage area of the system with regard to the entire building envelope, as well as the requirements of the analysed criterion for the relevant Schüco system.

Schüco systems	Influence
Window systems	Up to **75%**
Door systems	-
Façade systems	Up to **75%**
Fire and smoke protection systems	Up to **75%**

[EQ] Acoustic performance

Intention of criteria
This credit challenges project teams to address best practices in acoustic design as an indoor environmental quality imperative that complements other green building practice.

Criteria requirements
1. HVAC Background Noise
Engineers or acoustic experts have to analyse background noise levels from heating, ventilation, and air-conditioning (HVAC) systems.

2. Sound Transmission
The composite sound transmission class (STC_C) ratings, which are between 45 and 60 depending on the usage of the building, or local building code, whichever is more stringent, have to be met.

3. Reverberation Time
The reverberation time requirements with maximum values between 0.6 and 2.0, depending on the usage of the building, for the testing requirements T60 (sec), at 500 Hz, 1,000 Hz and 2,000 Hz have to be met. (All requirements listed in Table 9.1 in the Performance Measurement Protocols for Commercial Buildings.)

4. Sound Reinforcement and Masking Systems
For all large conference rooms and auditoria seating more than 50 persons, an evaluation is needed as to whether sound reinforcement and AV playback capabilities are necessary. For projects that use masking systems, the design levels must not exceed 48 dBA. It must be ensured that loudspeaker coverage provides uniformity of +/–2 dBA and that speech spectra are effectively masked.

Noise level range	Relevant external noise level dBA	Room types		
		Wards in hospitals and sanatoria	Living rooms in apartments, overnight accommodation, teaching rooms and similar	Offices and similar[1)]
		Required $R'_{w,res}$ value of the external building component in dB		
I	≤ 55	35	30	–
II	56 – 60	35	30	30
III	61 – 65	40	35	30
IV	66 – 70	45	40	35
V	71 – 75	50	45	40
VI	76 – 80	2)	50	45
VII	> 80	2)	2)	50

1) No requirements are laid down for the external building components of rooms where the traffic noise only makes an insignificant impact on the internal noise level in a room, on account of the activities carried out there.

2) The requirements must be laid down in this case based on local conditions.

Sources: DIN 4109, Table 8

Product influence on criteria

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The system influence shown refers to the percentage area of the system with regard to the entire building envelope, as well as the requirements of the analysed criterion for the relevant Schüco system.

Schüco systems	Influence
Window systems	Up to **10%**
Door systems	Up to **5%**
Façade systems	Up to **15%**
Fire and smoke protection systems	Up to **15%**

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By using Schüco systems, up to 14 LEED criteria can be influenced positively, which corresponds to 37% in the overall assessment. The feasibility of influencing the credits awarded was analysed and confirmed by an independent and qualified expert engineering company, Drees & Sommer, specialised in optimising building energy design and management. To assist you in achieving these credits, your Schüco contact can help you to select the most appropriate solutions for your project and provide you with the documents required for the LEED assessment. This will include general documents and certificates, but also project-specific information, all to increase your LEED score.

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