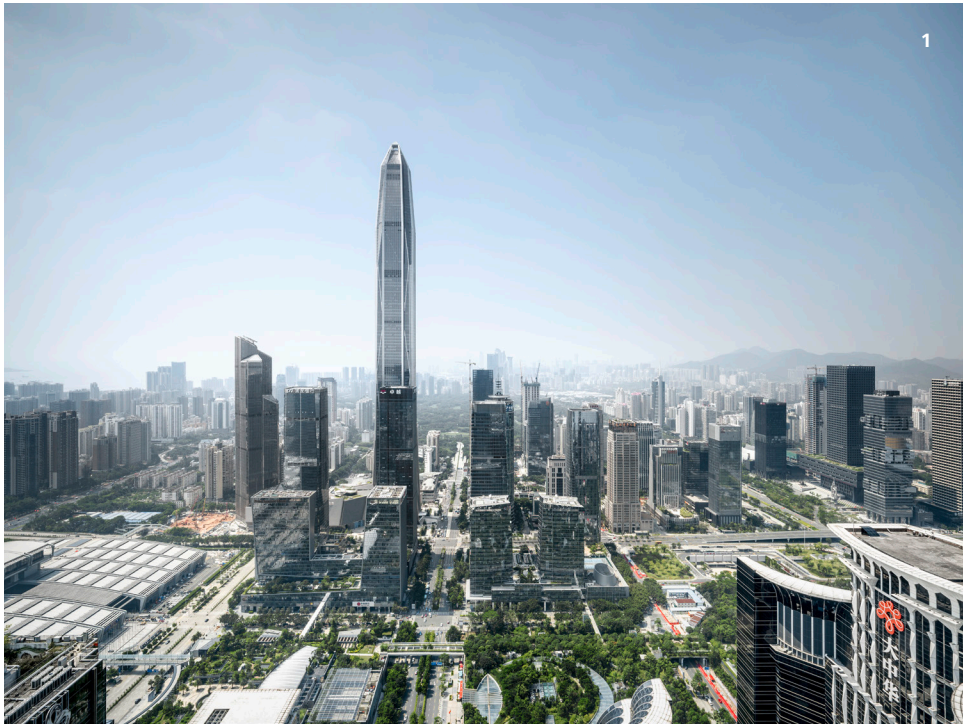




Schindler's contribution to BREEAM

Corporate sustainability





1

1. Certified building under BREEAM.
Rating score: Very good.
High-rise optimized, the Ping An Finance Center features 33 Schindler 7000 series double decker elevators.

2. Certified building under BREEAM.
Rating score: Excellent.
The commercial building of New Fetter Land features 8 Schindler 5500 elevators, including 6 with PORT technology.



2

Our contribution

We're a leading provider of sustainable, smart urban mobility. For us, sustainability means minimizing our own environmental impact and that of our customers.

It also means investing in people and society, something we have done for more than 147 years – and we intend to continue down this path.

BREEAM for elevators, escalators and moving walks

If you are looking to have your building BREEAM certified, we can support you with our energy efficient elevators. We offer configurations supporting various BREEAM credits from energy to material.

How can we support you and protect our environment?



- Improve sustainability in our supply chain
- Optimize the environmental performance of our elevators
- Help your building obtain green building standards



What is BREEAM?

BREEAM is a sustainability assessment method developed by the British Research Establishment (BRE®), first launched in 1990. Internationally recognized as a robust standard, it is widely used in the UK and 50 other countries. Building owners, construction manager and investors choose BREEAM certification because building certifications promote resource efficiency, increase the market value of their building and are shown to support high occupancy rates.

BREEAM Standards

- BREEAM provides different standards for the various development and life cycle stages of a building:
- New construction: for newly built homes and commercial buildings
 - In-use: for existing commercial buildings
 - Refurbishment and fit-out: for home and commercial building fit-outs and refurbishments
 - Communities: for big projects
 - Infrastructure: for new infrastructure projects

The building standard covers various topics, from energy and innovation to transportation and waste management.

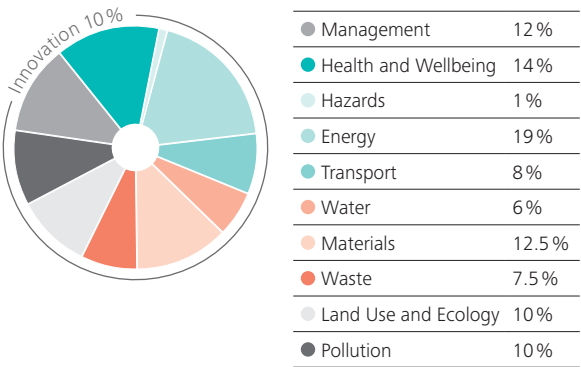
BREEAM’s categories and performance rating

- | | |
|--|--|
|  Energy |  Management |
|  Health & wellbeing |  Pollution |
|  Innovation |  Transport |
|  Land use |  Waste |
|  Materials |  Water |

If the criteria of a category have been met, it is then possible to gain credits; if the sub-criteria of the category have been met, it is possible to obtain more credits. The overall performance rating is determined in relation to the total score of the weighted category once the development has been fully evaluated.

Unclassified	Less than 30 credits
Pass	30–44 credits
Good	45–54 credits
Very Good	55–69 credits
Excellent	70–84 credits
Outstanding	More than 85 credits

Category weighting schemes according to BREEAM International New Construction 2016



More information is available at www.breeam.com

Credits available for elevators

The following pages serve as a guide to show you which categories our products contribute to. The content in this document is based on the BREEAM New Construction International Scheme 2016.

The sections below provide information on the credits that have been identified as relevant to elevators. The selection of an elevator alone can earn 2 credits;

one additional credit can be earned for using escalators and moving walks, according to the energy efficient transportation systems section under the energy category.

We would be happy to support you in choosing the right configuration of our product lines to fulfill the requirements listed below:

Category	Assessment Criteria	Schindler's Contribution	Available Documentation
Energy Ene 06: Energy efficient transportation systems	One credit – Energy consumption One credit can be achieved when the elevators, escalators, or moving walks meet the following evaluation criteria: 1.a An analysis of the transport demand and usage patterns for the building has been carried out to determine the optimum number and size of elevators, escalators or moving walks 1.b The energy consumption has been estimated in accordance with ISO/DIS 25745 Energy performance of elevators escalators and moving walks, Part 2: Energy calculation and classification for elevators or Part 3: Energy calculation and classification for escalators and moving walks, for one of the following: – At least two types of system (for each transport type required); OR – An arrangement of systems (e.g. for elevators, hydraulic, traction, machine room-less elevator (MRL)); OR – A system strategy which is 'fit for purpose'. – The use of regenerative drives should be considered, subject to the requirements in CN6 – The transport system with the lowest energy consumption is specified	Our sales representatives will advise you on the analysis and documentation required for the energy consumption assessment criteria. 1.a Schindler provides: traffic analysis report incl. proposal for no. of elevators, sizes and counter-balancing 1.b Schindler energy efficiency calculations and evaluation corresponds to ISO 25745-2 and additional information regarding express zones are considered according c-PCR-008 complementary Product Category Rules (PCR) for elevators.	1.a. Traffic analysis report available 1.b Energy efficiency calculations report available out of configurator (for ISO and VDI)
Energy Ene 06: Energy efficient transportation systems	Two credits – Energy efficient features When the first credit for energy consumption has been achieved, an additional credit can be achieved by elevators, and another one credit for escalators or moving walks, if they meet the following criteria: 3.a The elevators operate in a standby condition during off-peak periods. For example, the power side of the elevator controller and other operating equipment such as elevator car lighting, user displays, and ventilation fans switch off when the elevator has been idle for a prescribed length of time 3.b The elevator car lighting and display lighting provides an average lamp efficacy (across all fittings in the car) of > 55 lamp lumens/circuit Watt 3.c The elevator uses a drive controller capable of variable speed, variable-voltage, and variable-frequency (VVVF) control of the drive motor. 4 Where the use of regenerative drives is demonstrated to save energy, they are specified.	Our sales representatives will provide you with an energy calculation comparison to advise you on the energy-efficient configurations most suitable for needs. 3.a Standby mode available: Control switches off car light, control, fan and inverter at various intervals: shortly after the trip (sleep mode) and after a longer period of non-use (deep sleep). In addition, energy efficient components such as LED and regenerative drive are standard components 3.b All elevator cars are equipped with energy efficient LED lamps by default 3.c / 4 Schindler elevators offer a reduction of energy consumption by return of regenerated energy to power drive system with frequency converter and gearless motor technology. All our elevators are equipped with our standard VAF inverters, which are recuperative in accordance with EN 12015. In addition, we offer our best in class converters PF1 with a very good Total Harmonic Current Distortion THD(I) ≤ 5 %.	3.a See Product documentation 3.b. See Product documentation 3.b. See Product documentation
	Escalators or moving walks Each escalator or moving walk complies with at least one of the following: 5 It is fitted with a load sensing device that synchronises motor output to passenger demand through a variable speed drive; OR 6 It is fitted with a passenger sensing device for automated operation (auto walk), so the escalator operates in standby mode when there is no passenger demand	5 Schindler escalators support energy saving by using a frequency converter that reduces the escalator nominal speed to slow speed when no passengers are being carried. The speed is controlled by a radar sensor which senses approaching passengers. As soon as a passenger is detected by the radar sensor, the escalator switches from slow speed to nominal speed. 6 On top to the slow speed function above, the units also can go to complete stop in case of absence of passengers. The radar sensor detects approaching passengers and re-starts the escalator. The units move into operating speed according to EN 115.	

Credits available for elevators

The selection of an elevator can also contribute to gaining certain credits in the life cycle impacts of materials, waste management and health and wellbeing categories. One way we can support this is with our verified EPDs for our product lines, which can win one credit in the life cycle impacts category.¹ Moreover, we can provide supplier declarations of hazardous substances listed under REACH and RoHS,

as well as certificates assuring eco-friendliness, such as FSC certificates for wood used in our products and packaging.²

Our Clean Mobility Solutions and our Smart Traffic Control Solutions PORT may contribute to additional credits in Innovation, although these are not specific to elevators and escalators

Category	Assessment Criteria	Schindler's Contribution	Available Documentation
Materials Mat 01: Life cycle impacts	Environmental Product Declaration (EPD) 5 One credit for EPD where a range of at least five products specified at Design Stage (DS) and installed by Post-Construction Stage (PCS) are covered by verified EPD.	5 There are independently verified Environmental Product Declarations (i.e. ISO Type III label) according to the requirements of ISO 14025 and EN 15804 A2 for the Schindler elevator product lines available. They can therefore be included in the calculations in accordance.	5 EPDs available for several program lines
Materials Mat 03: Responsible sourcing of materials Responsible construction practices	Prerequisite This is a prerequisite; therefore, no additional credits can be achieved 1 All timber and timber-based products used on the project and during construction process of project are legally harvested and traded timber.	1 Schindler provides supplier declarations for its products such as FSC® certificates. In Europe we only use FSC® certified wood for packaging. For other areas please contact us.	1 FSC certificates. Supplier Declarations of Hazardous Substances

Category	Assessment Criteria	Schindler's Contribution	Available Documentation
Waste Wst 01: Construction waste management	8 Potential applications and any related issues for the reuse and recycling of the key refurbishment materials	8 Most materials are suitable for recycling, for example metal and glass, where a recycling rate of 74 % is assumed. Plastic and wood are assumed to be disposed of using waste incineration. We minimize all our plastic packaging and replaced it with wood packaging. In Europe we only use FSC® certified wood. For other areas please contact us.	

Category	Assessment Criteria	Schindler's Contribution	Available Documentation
Health and Wellbeing Hea 02: Indoor air quality	Prerequisite This is a prerequisite; therefore, no additional credits can be achieved 1 Materials containing asbestos are prohibited from being specified and used within the building.	1 We confirm that there is no asbestos present in any of our products.	
	Indoor air quality (IAQ) plan 2 An indoor air quality plan has been produced and implemented, with the objective of facilitating a process that leads to design, specification and installation decisions and actions that minimize indoor air pollution during the design, construction and occupation of the building. The indoor air quality plan must consider the following: 2.a Removal of contaminant sources 2.b Dilution and control of contaminant sources 2.c Procedures for pre-occupancy flush out 2.d Third party testing and analysis 2.e Maintaining indoor air quality in-use	2 On-site applied adhesives, paints and coatings need to be evaluated and reported. No Volatile Organic Compounds (VOCs) or other harmful substances are emitted from our elevators and escalators once they leave our factory.	2 Template available for declaration if needed

¹ EPD: Environmental Product Declaration.

² REACH: Registration, Evaluation, Authorization, and Restriction of Chemicals. RoHS: Restriction of Hazardous Substances. FSC: Forest Stewardship Council.



Sustainability

We Elevate... Our World

Sustainability at Schindler is more than striving to minimize the use of natural resources. We facilitate sustainable, smart urban mobility, while committing to a sustainable supply chain for all our products and driving innovation for green building management.

Sustainability at Schindler also means enabling an inclusive work environment where our workforce, which is as diverse as our customers and passengers, can thrive. It also means creating value in the communities where we operate, by helping develop young talent through education and training, by fostering lifelong learning for our technicians, and by supporting inclusive urban development.

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We Elevate

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