



# Schindler 7000

The green power within  
the high-rise elevator.



**Schindler**

Schindler 7000



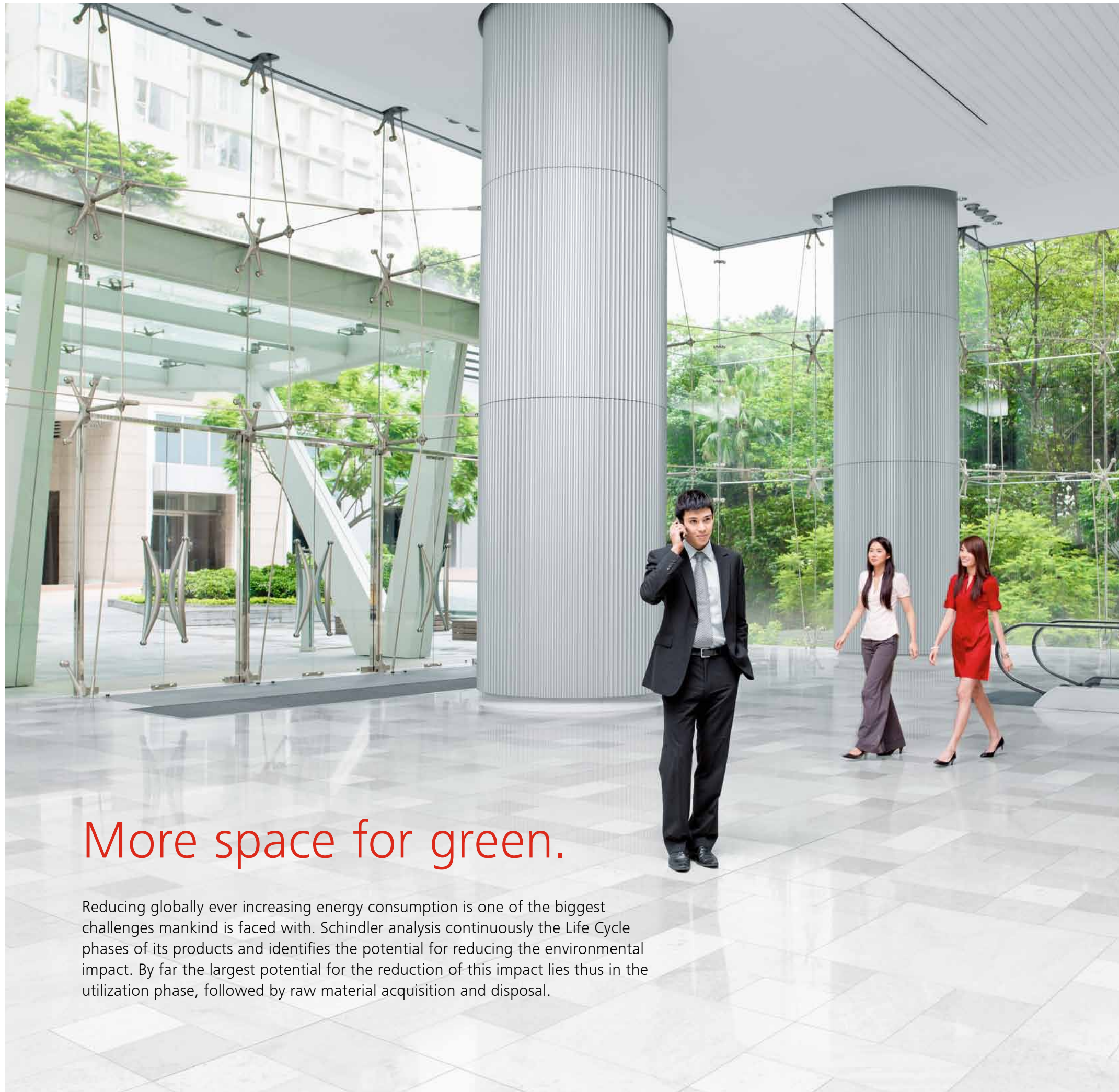


# Mobility begins in the mind. So does ecology.

Mobility is an essential requirement in the world in which we live and work. Schindler stands for mobility and is recognized as a hallmark of quality and safety: every day, more than one billion people across all five continents place their trust in Schindler products and services. To us, mobility is more than just our product: Mobility begins in the mind with focus on ecological aspects. Schindler is committed to continuously improving the environmental impacts of our products and processes.







## More space for green.

Reducing globally ever increasing energy consumption is one of the biggest challenges mankind is faced with. Schindler analysis continuously the Life Cycle phases of its products and identifies the potential for reducing the environmental impact. By far the largest potential for the reduction of this impact lies thus in the utilization phase, followed by raw material acquisition and disposal.







# Thinking ecological. Acting sustainable.

## Development

Product development is the area with by far the greatest scope for ecological leverage, since 80% of the environmental impact of an elevator throughout its lifecycle is determined during the development phase. Therefore the Schindler 7000 high-rise elevator is continuously analyzed and improved regarding energy efficiency and applied materials.

However, during the lifecycle of an elevator, it is the utilization phase that has the most potential for reducing the environmental impact (refer to the chart below). How power consumption can be optimized during the utilization phase is described on the following pages.

## Environmental fact sheet

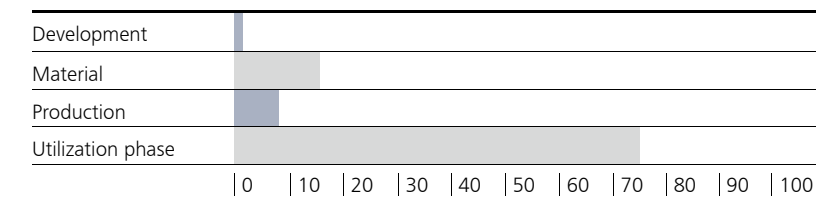
A detailed fact sheet on the environmental performance of a representative Schindler 7000 installation is available. It contains quantitative data on materials used; electricity consumed during the utilization phase, environmental impact assessment for various impact categories, such as global warming and ozone depletion potential, and waste disposal guidelines.

## Recycling and disposal

Schindler 7000 uses carefully selected materials in the design of its products. The high-rise components consist of a high proportion of metals, which are recyclable. Over 85% of the total weight is recyclable material, made out of different alloys of steel, cast iron, and copper.

## Schindler 7000 – environmental impacts

Total environmental impact by product phase [%]



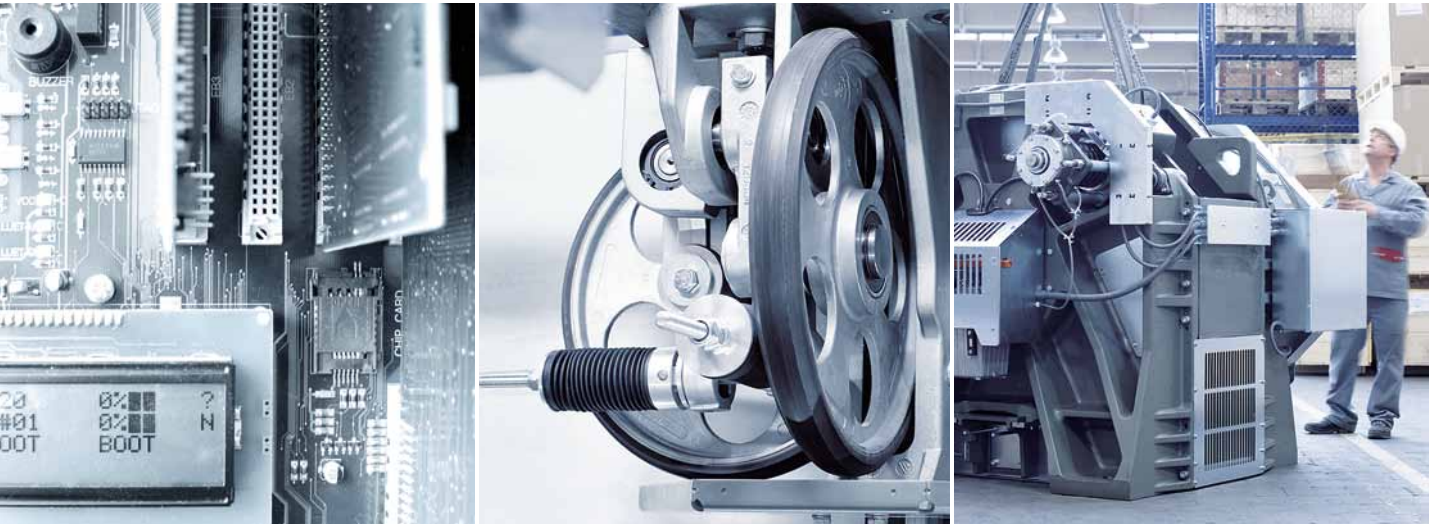
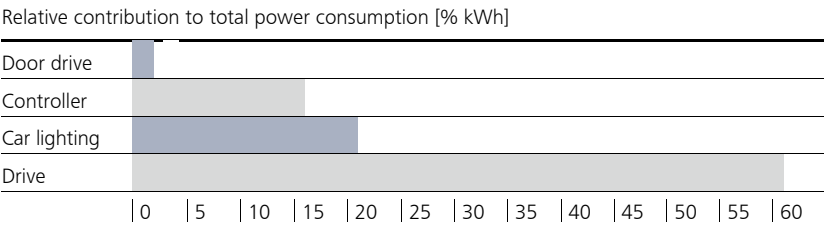
# Less energy consumption. In every way.

The utilization phase clearly causes the highest environmental impact due to the energy consumption during operation and standby of the elevator. Energy consumption is therefore a key factor to observe. Besides the power consumption of the drive, the car light, can contribute significantly to the overall power consumption during the utilization phase.

**Green solutions within Schindler 7000**  
Today, all Schindler high-rise components are backwards compatible. All new components can be replaced or newly installed into existing installations, which increases the lifetime of the elevator system.

Schindler 7000 offers as a standard solution the energy saving standby power operating mode. The compact system design reduces shaft and machine room size, which provides energy efficiency and more rentable space. The clever machine design of Schindler 7000 allows all parts to be replaced for repair and modernization, which affords you material savings, energy saving and increases the life of the machine. With our compact high-reliability components, we cut maintenance and energy costs to a minimum.

Schindler 7000 – power consumption during utilization phase (30 years)



### Sustainability today

Sustainable urban development is a major challenge for planners and architects in the 21<sup>st</sup> century. Schindler supports visions and plans for sustainable buildings with energy-efficient and ecologically sound mobility solutions. The Schindler 7000 high-rise elevators ensure mobility in commercial and residential buildings.

### Efficient operation

Schindler high-rise elevators are built to be highly efficient in every respect: be it in performance, space or energy usage. From the first steps of development, to smart material use in production, through to optimizing energy consumption during utilization, Schindler is securing ecologically sound solutions today and for the future.

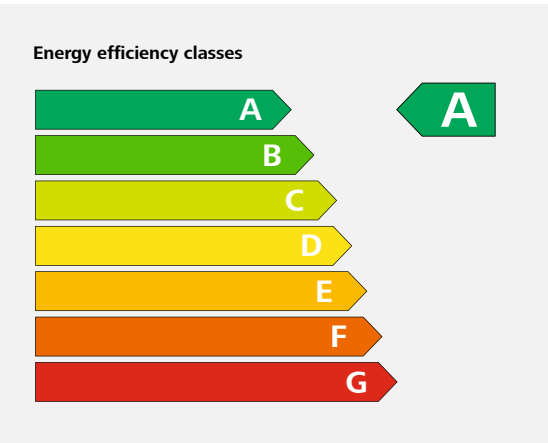
The energy required for daily operation of a building has the biggest impact on the environment – the same applies to elevators. The amount of energy an elevator consumes while in service is crucial to determining its environmental impact; energy efficiency is therefore an important feature of Schindler 7000 elevators.

### Energy efficiency classification

Seven consumption classes provide a transparent and factual overview when rating elevators according to their energy performance. They range from “A” to “G” with “A” being the best-in-class system. The rating combines measurements of both stand-by and travel energy. The elevator’s frequency of use, travel height and speed are also considered as they have a strong influence on the rating.

The measurements and classification are a guideline for Schindler to further contribute to sustainable building development.

Measurements run by TÜV prove that the Schindler 7000 can provide the best energy efficiency classification “A”.



### Reference measurements Schindler 7000

Load (kg)	1 600	1 150
Speed (m/s)	7.0	3.5
Number of stops	9	9
Travel height (m)	154	80
Trips per year	500 000	350 000
Usage category	5	4
Efficiency class	A	A

The measurement standard is VDI 4707 established in March 2009 by the Association of German Engineers. The VDI standard applies to the assessment of energy efficiency of elevators. Installed units were measured as per a standard configuration.



# Efficient mobility. On its highest level.

### Efficient system

Schindler strives to contribute to sustainable and energy-efficient buildings. The Schindler 7000 high-rise elevators therefore follow an efficient system approach, resulting in clever, fully engineered products in which all parts harmoniously interplay and are perfectly adjusted to each other. Schindler systems convince planners and operators alike, through their optimized energy demands, ecologically responsible production and material usage, convenient planning, fast installation and trouble-free maintenance.

### Drive

- Synchronous and asynchronous gearless motor technology
- Outstanding ACVF technology
- Best in class Power factor 1 technology and THD (total harmonic distortion) of  $\leq 3\%$
- Top efficiency factors
- Reduction of energy consumption
- Return of regenerated energy to power line

### Car and hoistway

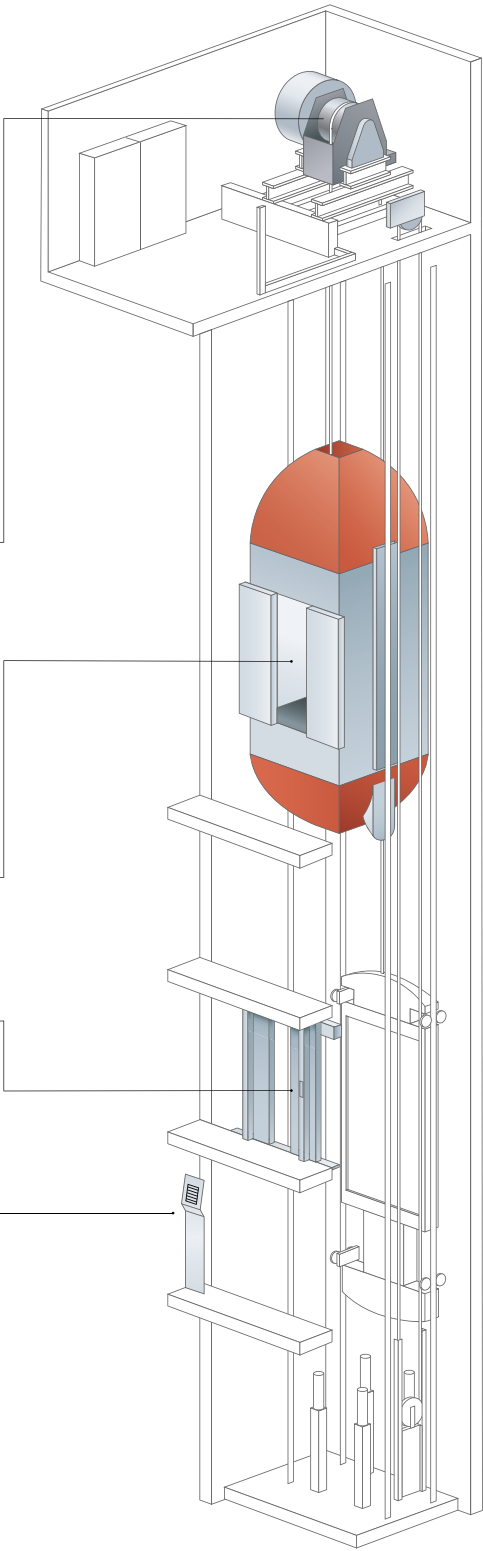
- Car
- Automatic switch-off of car lighting if elevators are not in use
  - LED car lighting technology
  - Use of highly efficient roller guide shoe

### Door

- Highly efficient synchronous and asynchronous motor
- Low-friction mechanics

### Control

- Transit Management System
- Schindler development: intelligent, energy-saving application thanks to latest microprocessor technology
- More performance with fewer elevators
- Direct travel with minimum stops (Destination Control)
- Faster availability of cars
- Reduction of empty car operation
- Automatic switch-off display of landing operating panel
- Eco mode



### Schindler 7000 – All-embracing ecology

Schindler works with the most experienced project managers worldwide, who guarantee efficient project management with just-on-time deliveries. We are therefore able to save energy and time due to less interim storage being required for each project phase. Schindler 7000 can be sourced through a host of sourcing locations worldwide, which

minimizes transportation and the associated energy consumption. We guarantee optimized packaging of all high-rise components, using recycled materials to reduce the waste on the construction site. The implementation of all these energy saving measures means that with the use of the Schindler 7000, the environmental impact is reduced to a significant extent.

Subsystem	Ecologically qualifying factor	Positive Impact on			
		Material resource savings	Hazardous substances reduction	Durability	Recyclability
Drive system	THD (total harmonic distortion) $\leq 3\%$				
	Line impedance $< 50\text{ m}\Omega$				
	Minimum heat dissipation due to energy recuperation				
	More compact design: footprints smaller than shaft size; reduced drive weight (e.g. FM560 30% lighter than preceding machine)				
	Large diameter increases life time of traction sheave and ropes				
	Amount of epoxy resin for stator winding reduced				
	Substitution of lead by steel for balancing weight of traction sheave				
	Can be dismantled much faster into parts than preceding machine				
	Major parts are made of steel and cast iron: high recycled content; high recyclability				
	Elimination of DC-commutator carbon brushes				
Car	No oil required				
	Brake lining free of any harmful material				
	Water-soluble undercoats and paints				
Door system	Minimal use of oil and grease				
	Optimal production of door panels (less waste material)				
Transit Management System	No oil and grease required				
	Leads the person vertical and horizontal directly through the building.				
	Machine-, hoistway- and traveling-cables partially available in halogen-free quality, depending on controller type and manufacturing				
	The cabinet is now more compact in the layout of its electronic components				
	Eco mode saves energy during low traffic				

# Green high-rise buildings. All over the world.



Our Technology and Strategic Supply Management group operates an environmental management system (EMS). It has been certified in accordance with ISO 14001 since December 2000. This area covers Corporate Research & Development and Corporate Purchasing. Schindler 7000 was developed under the auspices of the above EMS.

### LEED®

The Leadership in Energy and Environmental Design (LEED) Green Building Rating System™ is the internationally accepted benchmark for the design, construction, and operation of high performance green buildings. LEED gives building owners and operators the tools they need to have an immediate and measurable impact on their buildings' performance. LEED promotes a «whole-building» approach to sustainability by recognizing performance in five key areas of human and environmental health: sustainable site development, water savings, energy efficiency, materials selection, and indoor environmental quality.

Schindler high-rise products and services can also contribute to the achievement of various LEED credits. Our high-rise experts will advise you professionally on all further certificates, such as BREEAM, BCA Green Mark, BEAM, GBCA.

### Visit our corporate citizenship report

Numerous initiatives reducing the environmental impact of products and processes have been realized. For more information visit the environmental section of our corporate citizenship report on <http://corpcit.schindler.com>

At Schindler, we never stand still – driven by our aim to be the partner of choice for our customers and to deliver a substantial contribution to the environment.



**At a soaring 118-story height (490m) the International Commerce Centre (ICC) is Hong Kong's latest distinctive landmark.**

ICC stands for uncompromising design and building quality. It encapsulates today's paradigm of modern living - from sumptuous retail locations to luxury boutique residences and revitalizing green spaces. ICC offers the tallest hotel in the world, observation deck, 2.5 million square feet of Grade-A offices, a 1-million square feet shopping mall, luxury residences and serviced apartments.

The building has received platinum rating from the HK-BEAM Society, based on over 100 criteria including design, construction, operation, maintenance and property management. Schindler provided a total of 110 energy efficient elevators and escalators, as well as a transit management system, significantly reducing elevator journeys and thus the overall energy consumption.

**Awarded as Gold in LEED certification, the tallest building in Beijing, China World Trade Center III (CWTCIII) is now the symbol for green buildings.**

The 46-floor office building utilizes plenty of advanced interior technologies, such as stable double-channel power supply and smart communication system. The ice storage technology saves energy, cooling is from the ice stored in duration of low power use. The building outer walls realize warm reservation and hotness separation.

The Schindler 7000 elevators also present advanced green technologies, e.g. PF1 which returns energy generated by the movement of the elevators back into the building's power grid. Meanwhile, 10m/s running speed guarantees efficient transportation; it also makes Schindler 7000 the fastest elevator in Beijing.

# Faster, higher, greener.



**The largest refurbishment of a building undertaken in Europe created one of the most eco-friendly high-rise buildings in the world – the New Deutsche Bank Towers in Frankfurt.**

The prominent 155-meter twin towers were transformed into a visible symbol that stands for the efficient use of resources and, simultaneously, a high-quality working environment. Schindler modernized 20 high-rise elevators as well as a large service elevator, and supplied 12 new elevators and a platform for disabled passengers.

The Schindler 7000 elevator system features a series of advanced energy-saving technologies, e.g. a power-recuperation facility which returns energy generated by the movement of the elevators back into the building's power grid. Furthermore, the advanced Transit Management System with user-access technology significantly increases the transport capacity of the existing elevators by optimizing journeys, minimizing travel times and taking account of passengers with special needs. The overall annual power consumption of the elevators has been reduced by more than 50% or 160 MWh p.a., which corresponds to the power use of approx. 40 households.

The New Deutsche Bank Towers are the world's first renovated high-rise building to be awarded the highest-possible certifications of LEED Platinum and DGNB Gold for resource and energy efficiency.

**London's Heron Tower, with its Schindler 7000 elevators sets a new standard in environmental design.**

Apart from the aesthetic impact on London's skyline, the structure will have a significant influence on its immediate surroundings, not least with the creation of a green public space around its base.

The building's environmental credentials are every bit as impressive as its architectural ones. The glass façades and the open-plan atria, each three-stories high, allow daylight deep into the interior of the structure, keeping artificial lighting to a minimum. The double-deck Schindler 7000 elevators and the staircases on the perimeter wall are also lit by daylight, and in mid-season ventilated naturally.

The Schindler 7000 elevators play an important part too: all are equipped with the facility to regenerate excess energy back into the system. Moreover, Schindler's state-of-the-art Traffic Management System saves energy by directing users to elevator taking the most direct route to their floor.



**The Hearst Tower, with Schindler 7000 elevators, is New York's first Gold LEED® certified building.**

The 46-story tower in Midtown New York is unmistakable thanks to its energy-saving, diamond-shaped bands of glass and steel. Designed to be 26 percent more energy-efficient than a standard office building, 90 percent of the steel is recycled.

The Hearst Tower boasts numerous energy-saving features, including:

- glass coating to reduce solar radiation and consequently the need for air conditioning;
- a limestone atrium floor with embedded polyethylene for circulating water for cooling in the summer and heating in the winter;
- high-efficiency heating and air-conditioning equipment that uses outside air for cooling and ventilation for nine months of the year;
- the «Icefall»: a two-story waterfall that chills the 10-story atrium, drawing off warm-season heat using rainwater from the roof.

The 15 Schindler 7000 high-rise elevators installed in the building operate with a maximum of energy efficiency. The entire passenger traffic is controlled by the revolutionary Traffic Management System, therefore the number of necessary journeys is reduced. This permits significant savings in overall energy consumption by the elevator systems.

**The Torre Titanium, equipped with Schindler 7000 elevators, is the first building in Chile to be certified by the U.S. Green Building Council.**

The building sets an entirely new benchmark in terms of environmentally sound construction and energy utilization.

The Torre Titanium's energy-saving features are equally impressive. Not only does the tower permit energy to be recovered, it is constructed from environmentally friendly building materials and makes use of recycled material wherever possible. These innovations, along with an array of additional features, led to the Torre Titanium's pre-certification as a «Green-Building».

Schindler is supplying 20 high-rise elevators for this prestigious building. Their entire concept has also been drawn up to meet exacting environmental requirements – not only in terms of design but also with regard to efficient use of energy during operation and subsequent removal and refurbishment. Schindler 7000 elevator systems have been thought through down to the last detail, and make a beneficial contribution to the positive energy balance of the building.



# A partnership which takes you to the top.

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