Dedicated to People Flow™

KONE

PLANNING FOR 2050

KONE Eco-efficient™ solutions

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Meeting the environmental challenge of urbanisation

For the first time in human history, half the people in the world live in cities. In 2050, the world's population will have grown to 9 billion people, with almost 2/3 of them living in cities. As urban areas grow and the cost of energy keeps rising, the challenge is to design buildings that are environmentally efficient and ensure smooth people flow.

KONE is meeting this challenge by developing innovations for managing people flow and by improving the environmental efficiency of our solutions. The KONE elevator or escalator that you buy today is built to last for a life-cycle extending even to 2050 and beyond. It incorporates energy-saving solutions that keep the total cost of ownership low while reducing the ecological footprint of your building. Our maintenance and modernisation services help you keep your equipment operating efficiently and looking good for its entire lifetime.

We are pioneers

KONE machine room-less elevators, since their launch in 1998, have saved as much electricity as is produced by a typical 250 MW power plant. This is equivalent to the consumption of two million barrels of oil or the CO2 emissions of 100,000 cars driving around the world. We are still pioneers today, for example in developing regenerating systems that recover braking energy and convert it into electricity. And we are developing solar-powered elevators that will run partly or entirely free of any power source other than the sun.

Eco-efficiency is not a trade-off

KONE Eco-efficient™ solutions not only save energy and reduce the carbon footprint, they also improve performance, safety, and comfort. And they take you to the top in style.

Did you know?

Over the lifetime of a KONE elevator, the energy savings can amount to more than the initial cost of the equipment.

The KONE EcoDisc® hoisting machine uses up to 50% less energy than a traction drive and 70% less energy than a hydraulic drive.

50% of the energy used by an elevator can be recovered by KONE regenerative solutions.

You can save up to 30% of the energy consumed by running KONE escalators at standby speed or in on-demand start mode when they're not in use.

LED lights use 80% less energy and last up to 10 times longer than halogen lights.

You can achieve 50–70% energy savings with full modernisation of your elevator.

A modernised KONE escalator uses 2/3 less oil.

Global References

THE EMILY MORGAN HOTEL
SAN ANTONIO, TEXAS, USA

In addition to cutting electricity consumption by 46% in kW/h, the KONE solution also enhances service with improved passenger handling capacity and modern controls.

"The energy savings this product delivers is a windfall for us. It wasn't on our radar. We were used to paying our electric bill and were interested in an upgrade to improve service and reliability. KONE showed us we could have more. I am comforted in knowing we will have elevator service for the foreseeable future that costs less and is more reliable."

William P. Brendel
General Manager, Emily Morgan Hotel

UNIVERSITY HOSPITAL
LUND, SWEDEN

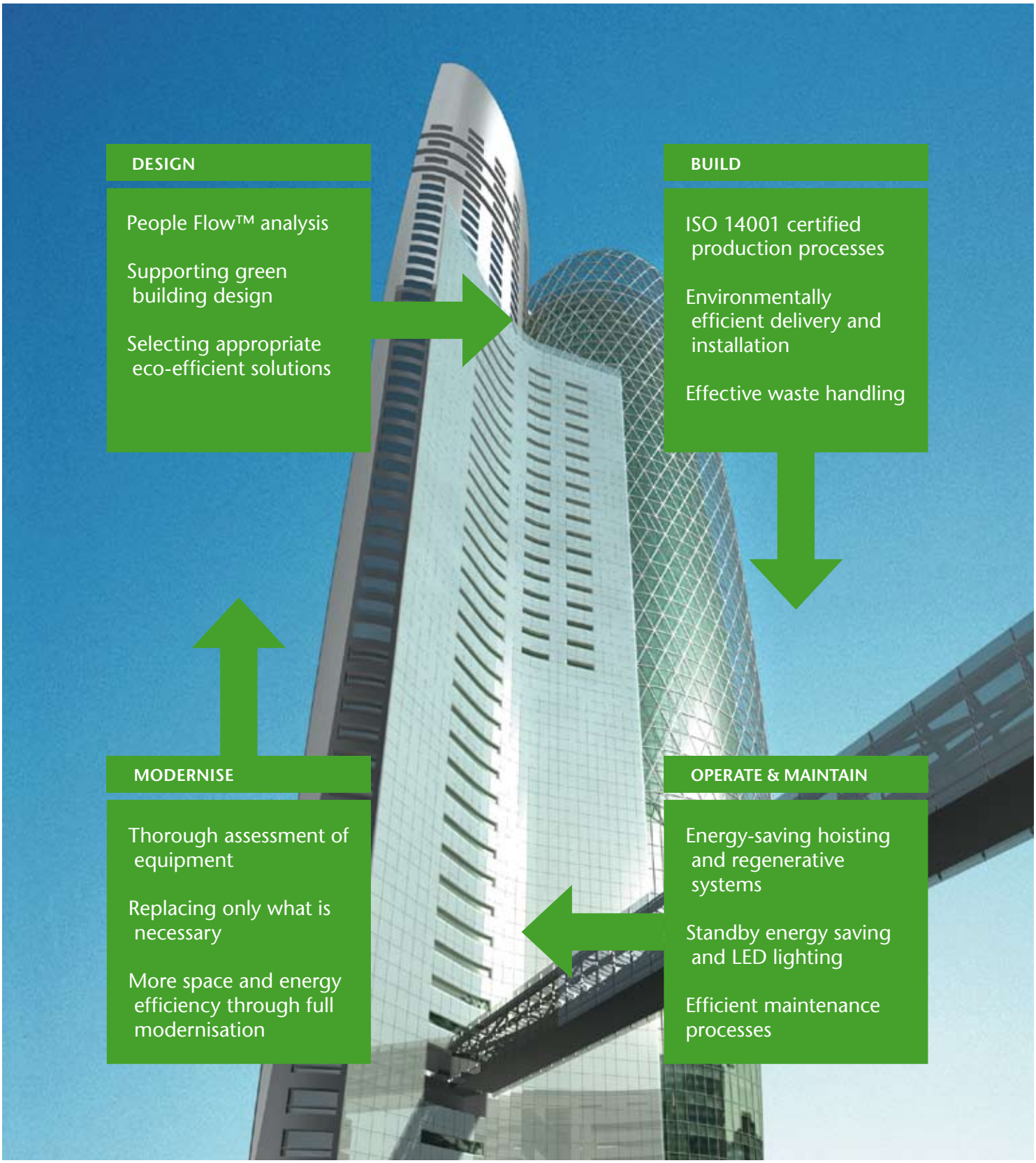
The new elevators will decrease the energy consumption of the elevators by about 30%. They will be equipped with the latest energy regenerating technology.

"It is the hospital's policy that everything we do must take the environmental impact into account. I am happy to state that KONE has products and solutions that meet our stringent environmental policy, while providing reliable service for patients."

Arne Pettersson, University Hospital Project Manager

KONE Eco-efficient™ solutions

For the lifetime of your building



DESIGN

People Flow™ analysis

Supporting green building design

Selecting appropriate eco-efficient solutions

BUILD

ISO 14001 certified production processes

Environmentally efficient delivery and installation

Effective waste handling

OPERATE & MAINTAIN

Energy-saving hoisting and regenerative systems

Standby energy saving and LED lighting

Efficient maintenance processes

MODERNISE

Thorough assessment of equipment

Replacing only what is necessary

More space and energy efficiency through full modernisation

▶ Design

Elevators and escalators account for 2–10% of a building's entire energy consumption – and buildings account for 40% of the world's energy consumption.

Green building design. In order to improve the environmental efficiency of buildings, KONE cooperates with green building organisations. We help customers design buildings that are functional and environmentally efficient throughout their lifecycle. By analysing the flow of people in buildings, we help our customers match the building size and traffic patterns with the right solutions. These solutions help our customers achieve energy-efficiency standards for their buildings.

▶ Build

In addition to supporting the design of green buildings, KONE is improving the environmental efficiency of its delivery and installation processes.

ISO 14001 certification. At the end of March 2008, 90% of our production operations where certified according to the ISO 14001 standard. Several of the country operating units also hold the environmental certificate. ISO 14001 is a series of international standards on environmental management. It provides a framework for the development of an environmental management system that helps companies deal efficiently with environmentally related issues. These include, for example, materials selection, installation, reduction of oil usage, and waste handling.

Courtesy of the Gold Coast Bulletin

▶ Operate

The initial investment is only part of the total cost. When you look at the long term, KONE solutions provide lower total cost of ownership, due to their energy-efficiency. KONE Eco-efficient™ solutions can help you reduce the elevators' and escalators' energy consumption by as much as three-quarters. Over the lifetime of the equipment, the savings can amount to more than the cost of the equipment itself.

Energy-saving hoisting solutions. The heart of our eco-efficient solutions, the KONE EcoDisc® hoisting machine, introduced in 1996, uses significantly less energy than conventional hydraulic or traction drives.

Key figures for different hoisting solutions

Item		Traction	
Speed (m/s)	0.63	1.0	1.0
Load (kg)	630	630	630
Motor size (kW)	11	5.5	3.7
Main fuse size (A)	50	35	16
Energy consumption (kWh/y)	7000	5000	3000
Thermal losses (kW) *)	3.8	3.0	1.0
Oil requirements (l)	200	3.5	0
Weight (kg) **)	650	430	230
Typical noise level (dB) ***)	65–70	66–75	50–55
Typical machine-room (m^2)	5	12	0

*) 180 starts/h
**) Hydraulic: pump, motor, oil, container and lift jack included
Traction: hoisting unit and bed plate included
EcoDisc®: hoisting unit and fixing brackets included
***) Measured 1 m from machine

Recovering energy. Our regenerative systems can recover up to 50% of the total energy used by an elevator and use it for lighting the building, for example.

Standby energy saving. Up to 80% of an elevator's energy consumption occurs when the elevator is idle. We have developed solutions that, at a preset time after the car has been used, turn off the lights and fan and switch the signalisation to standby mode. In the case of KONE escalators, a good way to save energy is to run the escalators at standby speed or in on-demand start mode when they're not in use. Tests show this can save up to 30% of the energy used.

Preserving warm and cool air. For automatic building doors, we offer various solutions to reduce the loss of warm or cool air from the building, making the building heating or cooling more energy efficient.

Energy-efficient lighting. LED lights consume 80% less energy than halogen lights. If every elevator, escalator and automatic door light in a major city was replaced with LED lights, it would save thousands of megawatt hours a year.

Less oil and hazardous substances. In addition to saving energy, KONE Eco-efficient™ solutions use less oil than standard elevators and escalators. We also avoid using hazardous substances in our solutions.

▶ Maintain

Our comprehensive maintenance services help keep the equipment safe and efficient throughout its lifetime. When the equipment is well maintained and running reliably, it's also running energy-efficiently. Our maintenance services are designed with environmental efficiency in mind – to minimise service calls, utilise the latest technology and optimise the routes of the technicians.

Reducing the amount of service calls. Our globally harmonised preventive maintenance method reduces the amount of unforeseen breakdowns and unnecessary visits.

Utilising the latest technology. We use wireless technology to exchange information between the KONE Customer Care Centre™ and technicians. Technicians have the right information and equipment to fix the problem during the first service visit.

Optimising routes. We also use the latest technology to optimise the technician's route, not only to save time but also to reduce fuel consumption and the carbon footprint of our service operations.

▶ Modernise

Before starting a major modernisation project, it makes sense to take a close look at what really needs to be done. KONE Care for Life™ is a thorough analysis of the condition of the equipment, focusing on accessibility, safety, aesthetics and performance. Based on this assessment, we recommend a modernisation plan.

Replace only what's necessary. Mechanical systems such as gears and hoisting machines can last for decades, but electronic systems and safety regulations could change considerably over time. With modular modernisation, you keep the components that work and modernise the rest.

Substantial benefits from full modernisation. With more extensive modernisation, you can achieve energy savings of 50-70% compared to the old equipment. The KONE MaxiSpace™, for example, enables you to have a larger elevator car in the same shaft and save energy at the same time. Our KONE EcoMod™ modernisation solution for escalators provides substantial energy savings and reduces oil consumption by two-thirds. When modernising your equipment, we also take responsibility for the safe, environmentally-efficient removal and disposal of the old equipment.

KONE provides innovative and eco-efficient solutions for elevators, escalators and doors. We support our customers every step of the way; from design, manufacturing and installation to maintenance and modernisation. KONE is a global leader in helping our customers manage the smooth flow of people and goods throughout their buildings. Our commitment to customers is present in all KONE solutions. This makes us a reliable partner throughout the life-cycle of the building. We challenge the conventional wisdom of the industry. We are fast, flexible, and we have a well-deserved reputation as a technology leader, with such innovations as KONE MonoSpace®, KONE MaxiSpace™, and KONE InnoTrack™. You can experience these innovations in architectural landmarks such as the Trump Tower in Chicago, the 30 St Mary Axe building in London, the Schiphol Airport in Amsterdam and the Beijing National Grand Theatre in China. KONE employs over 30,000 dedicated experts to serve you globally and locally in 49 countries.

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