

KONE'S MAGAZINE

ISSUE 11



# people flow



## THE FUTURE OF SMART

AIMING FOR INTUITIVE  
INTELLIGENCE

SMARTER CITIES,  
BRIGHTER BUILDINGS

# Seeking smarter people flow

We at KONE are dedicated to providing the smoothest possible People Flow® experience for our customers and all the people who use elevators, escalators, and automatic doors we provide or maintain. This means enabling people to move through buildings as efficiently and comfortably as possible.

As cities grow, and as the way we live and use various devices in our daily lives changes, the demand for increasingly smarter and more intuitive solutions from us also grows. To meet these demands, we constantly strive to better understand and respond to the varied and diverse requirements of our customers and different building users.

The new KONE People Flow Intelligence family of integrated access control, destination guidance, information communication, and equipment monitoring solutions is a step in that smart direction. Through the integration of these key areas we are able to help optimize the traffic flows within buildings even better than before while at the same time providing a better user experience as the new solutions can be personalized according to individual needs.

Cities and buildings will continue to get more intelligent. As they do, KONE will be there to make the journeys of the people traveling in these cityscapes as smart and as smooth as possible.



**Matti Alahuhta**

President & CEO, KONE Corporation

## KONE IN BRIEF

KONE is one of the global leaders in the elevator and escalator industry. The company has been committed to understanding the needs of its customers for the past century, providing industry-leading elevators, escalators, and automatic building doors as well as innovative solutions for modernization and maintenance. The company's objective is to offer the best People Flow® experience by developing and delivering solutions that enable people to move smoothly, safely, comfortably, and without waiting in buildings in an increasingly urbanizing environment. KONE employs 40,000 dedicated experts to serve you globally and locally. We have activities in close to 150 countries across the globe.

[www.kone.com](http://www.kone.com)



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# SMARTER CITIES, GREENER LIFESTYLE

In the face of unprecedented urbanization, the pressure is on to make our cities smarter and easier to live in. Professors Spiro Pollalis and Carlo Ratti explore why smarter is a good thing.

TEXT CLAIRE PRENTICE

PHOTOS GERASIMOS KOILAKOS/INVISION/MVPHOTOS

AUORE VALADE, MIT, AND GETTY IMAGES

# 75%

CITIES ACCOUNT FOR 75 PERCENT  
OF GLOBAL ENERGY CONSUMPTION.





**P**icture yourself exiting the subway to find the exact number of folding electric cars needed by you and your fellow commuters waiting to take you to your next destinations. Or picture a computer software program which enables you to bring a shop's catalogue to life in your own living room, or which directs you to the nearest available taxi during a sudden downpour of rain.


Far from being science fiction, these are just a few of the technological innovations being developed around the world in a bid to make our cities smarter, more sustainable places to live.

#### PRESSURES OF URBANIZATION

According to the United Nations, by 2030 five billion people will be living in cities – up from 3.6 billion in 2010. Cities currently cover 2 percent of the surface of the planet, yet they already

host more than half of the world's population and account for 75 percent of energy consumption and 80 percent of manmade carbon dioxide emissions.

In the face of unprecedented levels of urbanization, we have no option but to make our cities smarter; if we don't, they will grind to a halt. And with wireless communications, there's nowhere that can't become a smart city, provided the money and the will are there. →



*In Professor Spiro Pollalis' view, New York City is America's most efficient city due to its density.*



**Spiro Pollalis** is Professor of Design Technology and Management at the Harvard Graduate School of Design (HGSD). Professor Pollalis is the chief planner for the new smart city DHA City Karachi and the concept designer of the information infrastructure in the new administrative city, Songdo, in South Korea. The HGSD aims to provide solutions to pressing global issues such as rapid urbanization and the scarcity of resources.

*“The best part of the bridge is the sense of flying when I cross it,” says Professor Spiro Pollalis about the pedestrian bridge over Kifissias Avenue in Athens, Greece, that he designed.*

### WHAT IS SMART?

So what exactly is a smart city? “A smart city has intelligence so we waste fewer resources, we gain time, and we improve the quality of life,” says **Spiro Pollalis**, Professor of Design, Technology

and Management at the Harvard Graduate School of Design. Smart cities use information technology and digital data to operate more efficiently, with a focus on transport systems, energy, and water supplies.

When the term was first coined, it was used to describe gleaming new urban centers in the middle of the desert or on greenfield sites, built from the top down, according to a master plan. But increasingly, smart city is a term being applied to the retrofitting of existing urban centers, growing organically smarter from the bottom up through a variety of innovations.

Professor **Carlo Ratti**, Director of the SENSEable City Laboratory at the Massachusetts Institute of Technology (MIT), compares a smart city, or sensible city, as he prefers to call them, to a Formula One racing car. In the past, success on the circuit was dependent on the skill of the driver and the car’s mechanics, but over the past two decades “the car was transformed into a computer that was monitored in real time by thousands of sensors, becoming ‘intelligent’ and better able to respond to the conditions of the

### BRIGHT BUILDINGS

**Alex Herceg** leads the Efficient Building Systems service at Lux Research, an independent research and advisory firm providing strategic advice and ongoing intelligence for emerging technologies. Here is what he has to say about building intelligence: “A building is like a United Nations delegation: everyone has the same topics on their mind but they need a translator. It’s the same within a building: a lighting system has its own language and so

too does the heating system. In the future we will see all the different systems communicating with each other in a sophisticated way. We are moving down the path to high performance buildings, but there’s still a long way to go. We need to see more innovation in sensors and controls for existing buildings. It’s not about making you live differently, but about making your environment function more smoothly, comfortably, and efficiently.”





*The Dutch capital has set up the Amsterdam Smart City initiative, a good example of an existing city getting smarter.*

race.” In a similar way, over the past decade, digital technologies have begun to blanket our cities, forming the backbone of a large, intelligent infrastructure.

At the heart of smart cities are intelligent buildings. These are buildings which contain systems which talk to each other and are able to sense and respond to different factors, such as changes in the weather and in levels of occupancy.

#### TECHNOLOGY AS LIBERATION

But are smarter cities inherently more livable cities? “In the end all of this is not about technology,” says Ratti. “It’s about how technology can help us live in a different, more flexible way. Five or ten years ago we were chained to a desk or computer and couldn’t move. This is about how can we use this liberating power of technology to live or work in a better way.”

#### TOP DOWN OR BOTTOM UP

Pollalis believes the only way to create a truly smart city is from the top down: provide the infrastructure and the operating environment to enable the applications to enhance quality of life.

He was the concept designer of the information infrastructure in the new administrative city Songdo, in South Korea. It was dubbed the “happy city” before the foundations had been laid, by Koreans who assumed the people living and working in the eco-friendly, high-tech community would be happier. Opened in 2012, and expected to house half a million people by 2030, political wrangling led to the EUR 15 billion project being scaled down.

Other high-profile new smart cities include Masdar in Abu Dhabi, which is built on a huge podium, with the smart infrastructure underneath, including magnetic lanes for self-driving cars. All the big top-down smart city projects have run into difficulties – political, financial or simply a lack of people wanting to live in them – which is perhaps not surprisingly given their ground-breaking nature.

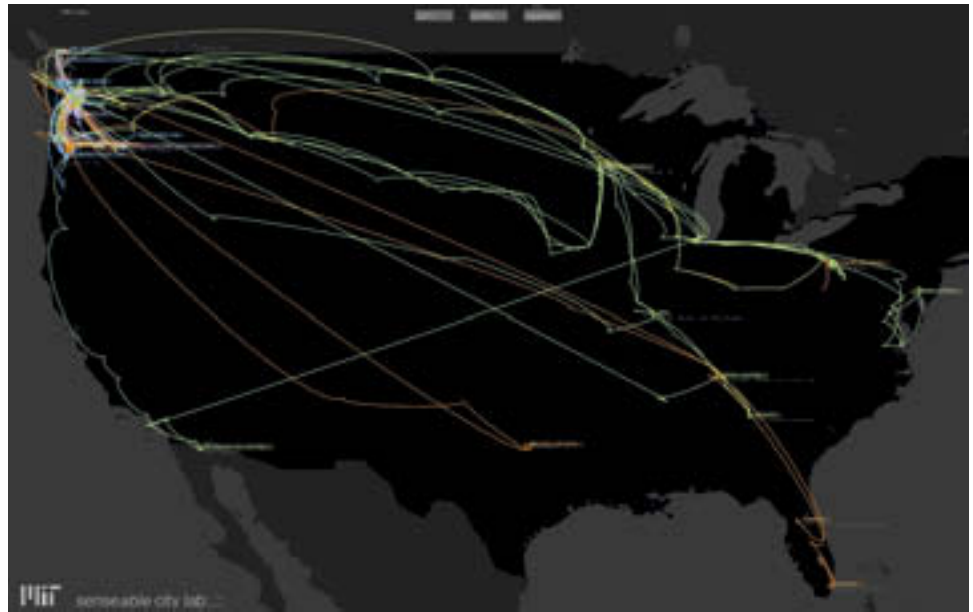


An architect and engineer by training, Professor **Carlo Ratti** practices in Italy and teaches at the Massachusetts Institute of Technology, where he directs the SENSEable City Lab. His projects range from a digital water pavilion in which all the walls are “made from” running water, providing a flexible, multi-functional space, to tracking the volume and frequency of phone calls made between different parts of the world to produce a better understanding of the production and flow of information between global networks of cities. His work has been exhibited worldwide at venues including the Venice Biennale, the Science Museum in London, and the Museum of Modern Art in New York.

→

TRASHTYPE
ELECTRONIC
GLASS
HAZARDOUS
METAL
ORGANIC
PAPER
PLASTIC
RUBBER_LEATHER
TEXTILES
WASTE

*Composite map of the recorded traces of trash type presented by Professor Carlo Ratti and his Trash Track team from the SENSEable City Lab at MIT.*



Advocates hail centrally planned smart cities as the future, but others, including Ratti, insist a bottom-up approach is more sustainable. Amsterdam, Singapore, and Portland are frequently held up as good examples of existing cities getting smarter. The Dutch capital has set up the Amsterdam Smart City initiative, essentially a platform whereby companies, authorities, research institutions, and ordinary citizens can come together to test and develop innovative products and services.

### CHANGING BEHAVIOR

Ratti and his team at MIT have conducted a number of studies aimed at mapping the pulse of a city in order to gain unique information about how a city behaves. “We can then use this information to change the city – through planning or through the response of citizens to this information,” he explains. In one project, Ratti’s team tagged 3,000 items of garbage thrown out by 500 residents in Seattle and tracked each item to its final resting place. At the end of the project, one of the participants said seeing where the items he threw out ended up had had a profound impact on his behavior, convincing him to cut down on the amount of solid waste his household produced.

### TOO SMART

Few people would object to innovations which save them time and money, but is there a danger that our cities become too smart, relying too heavily on technology? The 2012 Olympics brought huge fears for Londoners of the possibility of a cyber-terrorist attack which could have brought the whole city to a halt. Meanwhile in New York City, in Pollalis’s view America’s most efficient city due to its density, large swathes of the urban metropolis were left without power for weeks and in some cases months after Hurricane Sandy hit in October 2012.

Pollalis believes that none of the risks are insurmountable, provided the

technology is “used prudently, has been extensively tested, and is well designed, with a proper back-up system.”

### VISIONS OF TOMORROW

So what will the future look like? “From the physical point of view it will not be too different from today. As at the time of Romans 2000 years ago, we still need and will need horizontal planes for living, facades to protect us from the outdoor environment, and so on,” says Ratti. “But the activities that humans will carry out in those cities – the way of navigating the city, meeting, working, accessing knowledge – will be tremendously different.” ■

## SMART PICKS FROM AROUND THE WORLD

As far afield as Edinburgh, New York, and Winnipeg, smart information boards at bus and subway stops give travelers real-time updates on when the next bus or train is due. Research shows these boards encourage people to use public transport, cutting down on congestion and air pollution. Other innovations include a device which integrates with your smartphone so that you can switch on the heating or air conditioning

in your home as you begin your commute, thereby reducing energy wastage and ensuring your home is just the right temperature for your return. In Portland, Oregon, developers are working on a simple sensor that would send data to a command center and then update an application on your smartphone, directing drivers to the nearest available parking space which would have been saved for them.



TEXT JUHA RUDANKO  
PHOTOS AND ILLUSTRATION KONE

# Integrated solutions for smoother, smarter PEOPLE FLOW

Imagine a building that knows where you are going as soon as you enter – and guides you to your desired destination. With the new KONE People Flow Intelligence solutions, this scenario is quickly becoming a reality.

**F**or KONE, building intelligence is about integrating advanced technology and different building systems into one cohesive whole. For example, elevators, automatic doors, or access control systems may already be intelligent on their own – but that is no longer enough. To ensure the best possible experience for the people who visit or live and work in the building, these systems must also communicate with each other.

Integration is at the heart of KONE's people flow intelligence philosophy. It is about using existing technology in new ways, and integrating the solutions that are necessary to enable people to

move around buildings as efficiently and comfortably as possible while simultaneously improving security and the user experience.

“This means we are not only integrating our own solutions, but our solutions will also have interfaces toward other building solutions, such as building management systems,” explains **Ari Virtanen**, who heads KONE's Access Control and Integrated Solutions business. With a swipe of his smartphone, he orders an elevator from the entrance of his office building. We walk in, and the elevator we have been assigned already knows where we are going. No need to push a button. This is KONE People Flow Intelligence in action.

## IMPROVED ACCESS TO YOUR DESTINATION

KONE's new family of People Flow Intelligence solutions covers the four key areas crucial for enabling people to move around the public areas of buildings with as little hassle as possible: access control, destination guidance, equipment monitoring, and information communication. This comprehensive package of modular tools can easily be adapted to a customer's changing needs. This means customers can either take the whole integrated package, or pick and choose the solutions they want and need to complement the existing systems in their building. →



## CALL BUTTON IN YOUR POCKET

A highlight of the KONE People Flow Intelligence family of solutions is KONE RemoteCall™, which allows users to call an elevator using a mobile application installed on their phone.

"This is our real breakthrough innovation," says **Pekka Korhonen**, Director of Business and Offering Development at KONE. "And it's actually something we first created in 2005, before the emergence of app stores, during a time when mobile applications beyond relatively simple games were still rare."

The application allows users to make personalized elevator calls quickly and conveniently from anywhere in the building, reducing waiting times and easing lobby congestion. Once the user has called an

elevator using the application, they will be guided to the correct elevator.

KONE RemoteCall can be programmed for three different types of calls: normal, priority, and accessibility. Favorite or frequently used routes can be saved for quick selection. This means priority service for VIP passengers, and also helping people with special needs.

"If you are visually or hearing impaired, for example, you can use your own device to call an elevator with minimum hassle," says Korhonen. The accessibility function gives passengers more time to reach and enter their assigned elevator. No more crowding around the elevator landing to reach the call button – it's all been taken care of before you reach the lobby.

The new access solutions connect elevators seamlessly with all access points in a building, including turnstiles and automatic doors, to provide maximum security while ensuring a smooth journey. When combined with KONE's upgraded destination solutions, the passage from a turnstile to the most appropriate elevator is hassle-free and involves very little waiting around.

KONE destination solutions take into account the number of people wanting to use the elevators and their

destination floors when it assigns and guides individual users to the elevator that will take them to their desired floor most efficiently. This means enhanced elevator traffic handling capacity and performance: less crowded elevator cars, shorter travel times, and fewer unnecessary stops.

### FLEXIBLE

Flexibility – for both building users and KONE's customers – is one of the biggest benefits of the new range.

**"THE ELEVATORS OF THE FUTURE ARE MORE LIKE TAXIS AND LESS LIKE BUSES."**

Solutions can be programmed according to individual needs. If, for example, a person requires more room in an elevator, they will be directed to one with few other passengers. If they need more time to reach the elevator, the doors will stay open longer.

"It is not the same elevator journey for everyone," says Virtanen, adding that user information can be changed in the system as needed. "If you hurt your leg, that can be entered into the system, and this will ensure that the elevator waits for you a bit longer than usual. When you are well again, your default settings can be restored."

In creating the new range of solutions, KONE's starting point was to understand customers' and building users' varied needs. With the full KONE People Flow Intelligence package, customers receive an easy-to-manage, end-to-end solution from a single provider. And if customers want additional third-party features to be integrated into their access system – such as iris scans, parking management, or canteen payments – this is possible.

### INTUITIVE

"Design is also very important for us, both in terms of the visual appeal and the user experience," says Virtanen, adding that the entire product range has a consistent look and feel. Calling and using an elevator happens through intuitive, state-of-the-art touchscreens designed to ensure accessibility for all users.

During the elevator ride – or on the way to it – KONE's information screens can guide you in the right





direction, provide information about the building, or serve as a platform for news or advertising. And the performance of both KONE and third-party equipment across multiple locations can be observed and configured remotely in real time using KONE's monitoring solutions.

#### EASY NAVIGATION

KONE People Flow Intelligence will make buildings easier to navigate, and Virtanen envisions a future of even smoother people flow. He sees buildings recognizing regular users through a wireless connection with a device such as the phone in their pocket, and automatically guiding them to their destination.

"The elevators of the future are more like taxis and less like buses. We want to get people to the right destination with the least number of stops possible," he says.

No waiting, no hassle, just smoother, smarter people flow. ■

#### 1 KONE ACCESS SOLUTIONS

- Scalable access management system with access solutions that connect elevators with all access points in a building, including turnstiles and automatic doors.

#### 2 KONE DESTINATION SOLUTIONS

- User friendly guidance system integrated with personalized settings that direct individual users to the elevator that will take them to their desired floor.
- KONE's mobile application allows users to call an elevator from a smartphone.

#### 3 KONE INFORMATION SOLUTIONS

- KONE information screens inside elevators and/or in the lobby and elsewhere in the building provide information for tenants and visitors.

#### 4 KONE MONITORING SOLUTIONS

- Monitoring system for all elevators and escalators in one or several buildings.

Find out more from your  
KONE representative or visit  
[www.kone.com/peopleflowintelligence](http://www.kone.com/peopleflowintelligence)

# SECOND LIFE FOR TOUR FIRST

## URBAN TRENDS – PARIS

### FARMER'S MARKET IN A BAG

It's an image many people have in their minds of Parisians: stopping at an open-air market to select the best produce for a gourmet dinner.

But picking up fruit and vegetables from a florist? Or a wine bar? Or even an environmentally friendly cosmetics and paint shop?

Organic schemes have been hitching local stores in Paris to their wagon, making it more convenient to buy bio and regional food in the city that considers itself the world's capital of gastronomy.

Online orders for a *panier bio* bring a delivery to the corner store, with some also offering meat or dairy products.

And just in case culinary inspiration is harder to find, the schemes include recipes to show off the best qualities of the season's finest.





# 50%

THE KONE DESTINATION CONTROL SYSTEM HAS IMPROVED ELEVATOR PERFORMANCE SIGNIFICANTLY AND INCREASED ELEVATOR HANDLING CAPACITY BY NEARLY 50 PERCENT.

TEXT REX MERRIFIELD PHOTO ANTOINE DOYEN

**T**our First is France's tallest skyscraper, peaking above La Défense business district in northwestern Paris. The office tower was built in 1974 and after three decades needed transformation to meet the digital-era demands of its occupants and ensure eco-efficiency. It took four years to strip the tower to its core and construct an expanded, taller design.

KONE took on a particular challenge in the project: the number of elevators, shaft sizes and car dimensions had to stay the same, but they had to be able to carry many more passengers. The building, inaugurated in 2011, is now a workplace for up to 5,700 people, compared to 3,500 previously.

KONE's destination control system ensures smooth passenger flows, even during the lunchtime peak. Tenants and visitors choose their

destination floors using keypads stationed en route to the elevator halls. This reduces waiting times and guides passengers to the right cars; it also cuts out struggling to press a button in a crowded elevator.

The smart KONE destination system combines maximum efficiency and capacity use by ensuring passengers share their journeys only with people heading for a limited range of floors – a major task in a 231-meter tower with 52 floors. Fewer intermediate stops make for quicker trips and cut energy use. To help reduce power consumption KONE also installed systems to capture energy otherwise lost during elevator braking, and standby modes that switch off the lights in idle cars.

Smart solutions like KONE's destination control help Tour First meet the demands of its tenants and visitors, with more efficient elevator journeys, happier passengers, and smoother people flow. ■

## KONE SOLUTIONS

- 18 KONE MiniSpace™ passenger elevators
- 2 KONE MiniSpace™ freight elevators
- 1 KONE MonoSpace® elevator
- 3 KONE MonoSpace® freight elevators
- 4 KONE MonoSpace® parking elevators
- 2 KONE TravelMaster™ 110 escalators
- KONE Polaris® destination control system

## TOUR FIRST

Modernization completed: 2011

Height: 231 m

Floors: 52

Total floor area: 80,000 m<sup>2</sup>

Architect: Kohn Pedersen Fox and SRA

Building owner: Beacon Capital Partners

Developer: Altarea Cogedim

Contractor: Bouygues Bâtiment Ile de France



# Buildings with A SIXTH SENSE

Smart buildings will soon  
be able to read your mind.

TEXT SILJA KUDEL PHOTOS KIMMO HÄKKINEN/PIXOI OY





**A** warm welcome – from your elevator – awaits you when you arrive at the office in the morning. It has registered your movements and knows exactly when to expect you. Understanding your craving for caffeine, it politely waits five minutes while you visit the coffee shop. Your elevator, in other words, knows you like an old friend.

This vision of the not-too-distant future is painted by **Timo Tainen**, Director of Design Solutions at KONE. “Buildings are getting smarter and more automated. They can think for themselves and respond automatically to people’s needs.”

Tainen describes it as inevitable that offices and residential buildings will eventually recognize the identity of their occupants by mobile device or name tag. “When this happens, the building can guess where you might be heading. It then starts to make things happen for you. It opens doors, turns on lights and shows you the most convenient route to your destination. Everything is done for you without you even noticing.”

In essence, intelligent systems learn from our behavior patterns.

#### **THIS WAY, PLEASE**

Intelligent building technology enables centralized control of everything from keyless access to temperature, lighting, and ventilation. This is only the start of a seismic change underway in building automation.

“With GPS, people no longer get lost on city streets, but they still lose their way inside buildings. Intelligent guidance is the hottest up-and-coming trend.”

In the future, intelligent signage systems will serve as personal navigation aids just like mobile devices, predicts Tainen. “People want easy navigability, but they also value their privacy: not everyone wants to provide free access to their personal device. A face recognition system may be able to track individuals without needing to know their identity.”

### **“INTELLIGENT GUIDANCE IS THE HOTTEST UP-AND-COMING TREND.”**

By taking the stress out of navigation in public spaces such as malls, intelligent signage systems will offer abundant new commercial opportunities.

“Shoppers will be offered personalized tips borrowing strategies from the internet. After tracking someone who has just visited three shoe stores, the system might suggest: Would you like to see two more shoe stores, or how about taking a break?”

#### **TOUCHSCREEN WORLD**

Tainen and his team of 30 designers in Finland, Italy, China, India, and Mexico carry out extensive conceptual research on megatrends such as urbanization, population aging, and digitalization. →

“We then develop future-forward solutions that are as intuitive to use as possible.”

By intuitive, Tiainen means a device that anyone can operate. A good example is the new KONE Destination Operating Panel (DOP), which replaces traditional up and down buttons with an advanced touchscreen. As you approach the panel in the lobby, it wakes up and invites you to move a circle to your destination floor. The rest happens automatically. When your elevator arrives, it lights up as if to say “I’m yours” and takes you directly to your floor without any further machine interfacing.

“Touchscreens are influencing our interaction with devices more than anything I have seen in my whole career,” says Tiainen, adding this is also true in the world of elevators.

### SWIPE REVOLUTION

Swiping comes naturally to most of us, yet the relentless march of touchscreen technology is not universally embraced by the elderly and other groups with special needs. KONE strives to help them on board with extensive user experience research.

“We perform rigorous usability testing with different target groups to ensure that our solutions are equally comfortable for everyone to use, young and old,” says Tiainen.

Population aging is in fact one of the global megatrends driving demand for intelligent control systems. This applies especially in markets such as China, where millions of elderly people living in high-rises are becoming increasingly elevator-dependent.



*Timo Tiainen, Director of Design Solutions at KONE, demonstrates the KONE Destination Operating Panel to Marja Mikola, a visually impaired test user, at KONE's interactive showroom in Hyvinkää, Finland.*

### GUIDED BY THE LIGHT

When asked to predict the next big thing in building automation, Tiainen enthusiastically replies: “Exciting things can be done by guiding people with interactive surroundings. Technology enables compact and energy efficient solutions that can be controlled in various ways. In the future, the environment will recognize your presence and guide you accordingly.”

One of the main challenges of smart technology is taking away people’s

control. “Modern elevators operate so smoothly you can barely tell they are moving. Lighting can help here. A rolling light panel showing the precise position of the elevator can help to reassure people who feel nervous if there are no buttons inside the car.”

Better yet, a holographic avatar would be the ideal ambassador to help people embrace smart technology, he quips. “But really it’s just a matter of time before everyone gets used to smart buildings that predict our needs.” ■





## EVERY NEED IS SPECIAL

Many of us take for granted that we can move through an unfamiliar building without a problem. But what if you did not have use of your eyes? How would you find the elevator call button? How would you know when you have arrived at the right floor?

“Elevators are the most challenging part of the building for visually impaired people. A combination of audio cues and tactile guidance should come as standard components,” says **Hanna-Leena Rissanen**, Accessibility Representative for the Finnish Federation of the Visually Impaired.

KONE collaborated with the Federation in developing the new KONE Destination Operating Panel (DOP), a sophisticated control system that replaces the traditional up and down buttons with an advanced touchscreen. Because

swiping is impossible for the blind, the panel is equipped with a tactile disability button that activates an audio system. The device begins to speak, inviting the user to select a floor. A gong then directs the passenger to the correct elevator.

Rissanen describes the new panel as more logical than anything currently available. “The black-and-white screen is also large enough and offers clear contrasts. Low-vision people can see the numbers quite well.”

Although Rissanen applauds the advances being made in inclusive technology, it is early days as far as building codes are concerned. “Every device in every public building should be equipped with an accessibility button that activates an audio system, combined with tactile numbers and braille. This should be required by law.”

## ACCESSIBILITY FOR EVERYONE

It is estimated that one billion people have special needs related to a disability. This presents a positive challenge for KONE where even the smallest changes can greatly improve convenience for users.

**Kirsti Pesola**, Director of the Accessibility Centre ESKE at the Finnish Association of People with Physical Disabilities, supports this view. Pesola provides advisory services and promotes professionalism on behalf of anyone with any kind of accessibility challenge.

“My main message is that everyone profits from good accessibility. If wheelchair users can move

smoothly in a public space, so too can large crowds and people with heavy suitcases.”

Pesola welcomes intelligent destination control systems as very good news for people with special needs, especially elderly people challenged by new technology.

“When everything is automated, you don’t need to learn anything new. The system recognizes you and automatically takes you directly to where you want to go.”

Investing in access-friendly automation also benefits the wider public, she emphasizes. “When I come home with heavy bags of groceries,

I would love to be whisked to my apartment without having to press any buttons or fish for keys.”

KONE’s design team meets at least once a year with ESKE’s representatives to hear their views and gain input for new design solutions.

“We discuss button heights, railing widths, and other accessibility details. KONE’s team recently conducted a user experience study among people from our organization to gather ideas for future designs. They have a long history of listening carefully to the needs of special groups,” says ESKE’s Accessibility Ombudsman **Harri Leivo**.

A man in a dark blue pinstriped suit, white shirt, and patterned tie stands in front of industrial machinery. He has his hands clasped in front of him and is smiling slightly. The background shows large green metal cabinets and pipes.

# Partnering for **BRIGHTER BUILDINGS**

Together, KONE and CapitaLand Singapore explore new technologies for intelligent buildings that enable residents to move smoothly through their day.

TEXT RADHA CHITALE  
PHOTOS ZAKARIA ZAINAL/CAPTURED  
AND KONE



**W**hat do people expect from the technology that moves them up and down in a building? Actually, they probably don't expect to think about it at all.

Whether it is summoning an elevator with a smartphone or using eco-efficient elevator systems that use less energy, buildings across the board – from residences and offices to shopping malls – are becoming more complex. Users also expect more out of the spaces in which they spend their days.

One goal of intelligently designed buildings is that they become intuitive to a person's needs to provide a seamless journey from point A to point B.

KONE and CapitaLand Singapore, a subsidiary of one of Asia's largest real estate companies, CapitaLand Limited, are exploring how to make that happen.

#### INNOVATION SUPPORTS CONVENIENCE

"We would love to have an elevator dispatched to the right floor to fetch the resident as soon as he enters the garage," says **Heang Fine Wong**, CEO of CapitaLand Singapore's Residential business. "At the same time, his home lights and air conditioning are activated. That's the new generation of residential homes that we see."

**Noud Veeger**, Executive Vice President at KONE and Area Director for Asia-Pacific and the Middle East, says destination guidance, access control, and equipment monitoring are the driving principles for elevator and escalator design in new projects.

Convenience is an important aim of innovative technologies that talk among themselves. Features such as being able to summon an elevator with a remote application, for example, minimize waiting time and create a personalized system. Using such an application, a resident could, for example, authorize →

*KONE's Noud Veeger (left) and CapitaLand Singapore's Heang Fine Wong discuss future collaboration prospects at CapitaLand's office in Singapore.*



**“WE MAY HAVE A DREAM BUT IF WE DON’T HAVE A PARTNER WHO UNDERSTANDS OUR VISION, THAT DREAM WILL NEVER BE REALIZED.”**

– Heang Fine Wong, CEO (Residential) CapitaLand Singapore

a guest up to a floor without having to inform a security guard or having the elevator stop on different floors on the way up.

But different building segments have different requirements. An automatically dispatched elevator that would work well in a residence would be difficult to operate in a high-volume office building.

“That’s where close collaboration between suppliers and developers is essential,” Wong says. “We do not need an elevator with a lot of features for serving an office when we are buying for a residential building. This is where

KONE can help us optimize solutions so that we deliver the best products to our buyers.”

Different markets require different products as well. The Rihan Heights residential complex in Abu Dhabi in the United Arab Emirates is an example of a building with separate elevators for residents and freight so that heavy items, such as large jugs of water, can be transported without interference or inconvenience to residents.

**INTEGRATING ENERGY EFFICIENCY**

Innovations that improve efficiency are critical at multiple stages of design, and for KONE improving efficiency starts before construction begins. Normal-speed, operational elevators constructed in tandem with a building can speed up construction time movement up and down the structure compared with slower, external construction elevators. They can also shave a significant amount of time off the construction process.

“We’ve turned that into a standardized process and it improves logistics, which is how we try to think along with partners like CapitaLand,” Veeger says.

Energy efficiency is an important area where KONE and CapitaLand Singapore seek to innovate. Patterns of people movement in a building can help

determine when to keep elevators on standby mode, and when they should be performing at their best.

In residential buildings housing many professionals, peak hours for traffic flow would be in the morning and evening when people leave for work and come home again. This understanding enables lights and other energy consuming features to be modulated based on use.

“One of the reasons we reduced our energy consumption by 30 percent in the elevator models launched last year is that we can put the cars on standby,” Veeger says. “When the elevator is not in use, it turns off.”

*Rihan Heights in Abu Dhabi*



H. LINHO PHOTOGRAPHY



## REFLECTING TO IMPROVE

The continuous monitoring of building activity once tenants and other building users are in place helps show how a building is really used, Veeger says, and can be valuable to developers and suppliers for future projects.

Wong agrees, saying, “We still go back in and try and understand what we can learn because a lot of the time, the assumptions we made at the start of the project may not be so relevant.”

Such follow up, through design and construction to maintenance and modernization, is a key element of KONE’s life cycle approach to business.

But while important, improved systems are not necessarily visible to users in the way that design and ride comfort are. Here again KONE is prepared to innovate and accommodate CapitaLand’s requests. For example, the elevator operating panels in Rihan Heights were designed to resemble a smartphone interface to make them more unique, Veeger says.

“That’s why we see our suppliers, contractors, and consultants as partners and not merely as service providers – because they have to execute our ideas,” says Wong. “We may have a dream but if we don’t have a partner who understands our vision, that dream will never be realized.”

In addition to Rihan Heights, KONE and CapitaLand Singapore have worked together on the Raffles City Chengdu, a mixed-use building in the capital of Sichuan Province, China, and a number of office, retail, and mixed development projects around Singapore.

## PARTNERS IN PROGRESS

Working well together has been a priority for both companies.

“The most important part is that we never stop listening... that we always think, ‘what can we do better?’” Veeger says. “When unavoidable challenges come up during projects, we have a good understanding of how to work together to solve them.”

A significant part of the partnership has been to exchange ideas. Veeger describes a recent session in which key technology representatives from KONE presented some innovations they were busy with to CapitaLand Singapore.

CapitaLand Singapore heard how new products like KONE UltraRope™ – a super light and durable elevator hoisting technology – break the limitations of traditional heavy elevator cables, allowing buildings to soar higher.

Wong notes that such innovations are important for places like Singapore, where the expected boom in residential

## CAPITALAND SINGAPORE

CapitaLand Singapore is a wholly-owned subsidiary of CapitaLand Limited, one of Asia’s largest real estate companies. CapitaLand Singapore is one of Singapore’s leading developers and owners of homes, offices and mixed-use buildings. It is the sponsor and manager of two listed commercial real estate investment trusts, CapitaCommercial Trust and Quill Capita Trust, which are separately listed in Singapore and Malaysia. Over the years, CapitaLand Singapore has garnered several awards for excellence in architecture and design, construction, and energy efficiency in its homes, offices, and mixed-use properties.

development and limited land area require upward movement.

“As developers, we like to build iconic buildings, but that may be restricted by technology at the product level,” Wong says. “When you work with like-minded partners who share your vision, that drives the product to a different level, and we appreciate that.” ■

## RESPONDING TO CUSTOMER NEEDS ACROSS THE GLOBE

KONE has a demonstrated commitment to working with developers like CapitaLand Singapore to adapt products to fit customers’ needs.

“We have a global offering that we partly localize and that is what has made us grow,” says **Noud Veeger**, Executive Vice President at KONE and Area Director for Asia-Pacific and the Middle East.

CapitaLand Singapore’s Rihan

Heights residential complex in Abu Dhabi in the United Arab Emirates features 20 KONE MiniSpace™ elevators, a card reader system to control residents’ access to their floors, and an intercom integrated elevator call system that allows residents to authorize visitors up to their floor – a first-of-its-kind offering in the Middle East.

“Trends like energy efficiency are global,” Veeger says. This is evident in

the five towers of Raffles City Chengdu, a mixed-use landmark building in the capital of Sichuan Province in China. KONE collaborated with CapitaLand to provide 38 elevators, 22 escalators and 6 autowalks there. The project received LEED Gold Pre-Certification by the US Green Building Council to acknowledge its energy saving features, in which KONE solutions featured prominently.



ISTOCKPHOTO

# TOWARD SMARTER URBAN FUTURES

As cities and buildings become more intelligent, so too does KONE.

**D**igitization has transformed the way KONE operates, evolving from its modest beginnings as a manufacturing-centric organization to technological leadership as one of the world's most innovative companies.

In the early 1950s, developments like automatic doors and call buttons on landings meant that elevators could be increasingly used to move people in addition to goods.

But it was in 1971 with the introduction of the first microprocessor that technology really started to take off and transform the elevator industry. In 1979, KONE was the first elevator company to introduce a micro-processor group control system.

Digitization enabled more sophisticated elevator controllers and motor drives, which in turn were the catalyst for huge advances in traffic handling capacity, passenger convenience, and

energy efficiency. It was thanks to this highly compact digital technology together with the use of permanent magnet motors, that the need for a separate machine room for volume-range elevators was eliminated.

The next big step was regenerative drive technology for high-speed elevators, which allowed previously wasted braking energy to be captured and redistributed around the building.

By the 1990s the enormous computing power available meant improved passenger service level through the use of forecasts, fuzzy logic, artificial intelligence, and genetic algorithms in elevator group controls. These allow the elevator system to learn the way people move within a building, and optimize their waiting and journey times.

At the turn of the 20th century, elevator group control technology took its next great leap forward with the introduction of the destination

control system. The ability to choose your destination before entering an elevator delivered a significant performance boost for handling rush-hour traffic in the busy office buildings of modern megacities with smaller elevator arrangements than earlier.

Digitization has also dramatically changed maintenance and field operations. With instant access to equipment history data, and spare parts ordering, technicians have all the data they need at their fingertips wherever they are.

By 2050, 70 percent of the world's population will be living in cities. Elevators and escalators will continue to integrate more and more with other systems – both inside the building and out. Better passenger guidance, more control, and smarter navigation – from front door to destination.

This is a trend that will continue as digitization presses on in exciting new directions. ■

To view KONE's digital story in its entirety, visit [http://bitbang.fi/kone/KONE\\_BiPF\\_En\\_1280\\_720\\_4.mp4](http://bitbang.fi/kone/KONE_BiPF_En_1280_720_4.mp4)



## Turning to the public for intuitive solutions

Great ideas and innovations often spur from seemingly small observations in real-life situations. One way KONE gathers these important insights is through the annually organized People Flow Day.

The KONE researchers-for-a-day observe people's movements and use of elevators, escalators, and automatic building doors in different types of buildings, and interview customers to better understand

their needs and wishes when it comes to smoother, smarter people flow. The valuable data obtained during the event is passed on to KONE's research and development teams, who use it to develop new, increasingly intelligent solutions.

Last year, the emphasis of research was on design. In 2013 we focus on safety. KONE celebrates People Flow Day 2013 on October 30. ■



Read the full 2012 report and check out images from the day on [www.kone.com](http://www.kone.com) > News & events > Events > People Flow Day



## Gadgets galore

We at KONE thrive on innovation. Although our primary products may seem old-school, they contain surprising amounts of technology, and every now and then you might get a glimpse of our love for gadgets. The World Expo held in Shanghai in 2010 was the perfect platform to showcase one of these devices.

Visitors to Finland's *Kirnu* (Giant's Kettle) pavilion were treated to a unique elevator calling experience. Special access cards made of cardboard and based on Radio Frequency Identification (RFID)

technology enabled VIP guests to order an elevator remotely and access the exclusive top floor of the pavilion.

"Kirnu gave us a unique opportunity for concept testing in a truly global context," says **Jukka Salmikuukka**, who managed KONE's smart device portfolio at the Expo. "Based on test results, the feedback from Kirnu, and detailed technical evaluations by KONE's R&D unit, we decided to go for an alternative approach – the KONE RemoteCall™ mobile phone application." ■

## KONE's innovation recognized

KONE was recognized as one of the world's most innovative companies for the third consecutive year by US-based business magazine *Forbes* in 2013. KONE's ranking rose to 37 (42). Of the European companies listed, KONE is ranked as 12.

KONE has been an industry forerunner with its innovative solutions for several decades. For example, KONE was the first company to introduce machine-

room-less elevators in 1996. KONE's latest ground breaking solution is its new high-rise elevator hoisting technology, KONE UltraRope™, enabling future elevator travel heights of one kilometer – twice the distance currently feasible.

*Forbes* magazine's ranking is based on a metric called the "Innovation Premium". One of the developers of the metric is Harvard Business School Professor **Clayton Christensen**. ■



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Dedicated to People Flow™



08:25  
OFFICE BUILDING, LONDON

## Helping Sue and her colleagues spend more time working, less time waiting.

Every day KONE People Flow Intelligence solutions enable millions of people to move smoothly and safely in cities. In high-rise buildings, the KONE Polaris™ destination control system optimizes traveling times by grouping passengers according to destination, while our new, intuitive touchscreen destination operating panel provides an effortless user experience. For Sue, and everyone else in her building, there couldn't be a smoother way to start the day.

