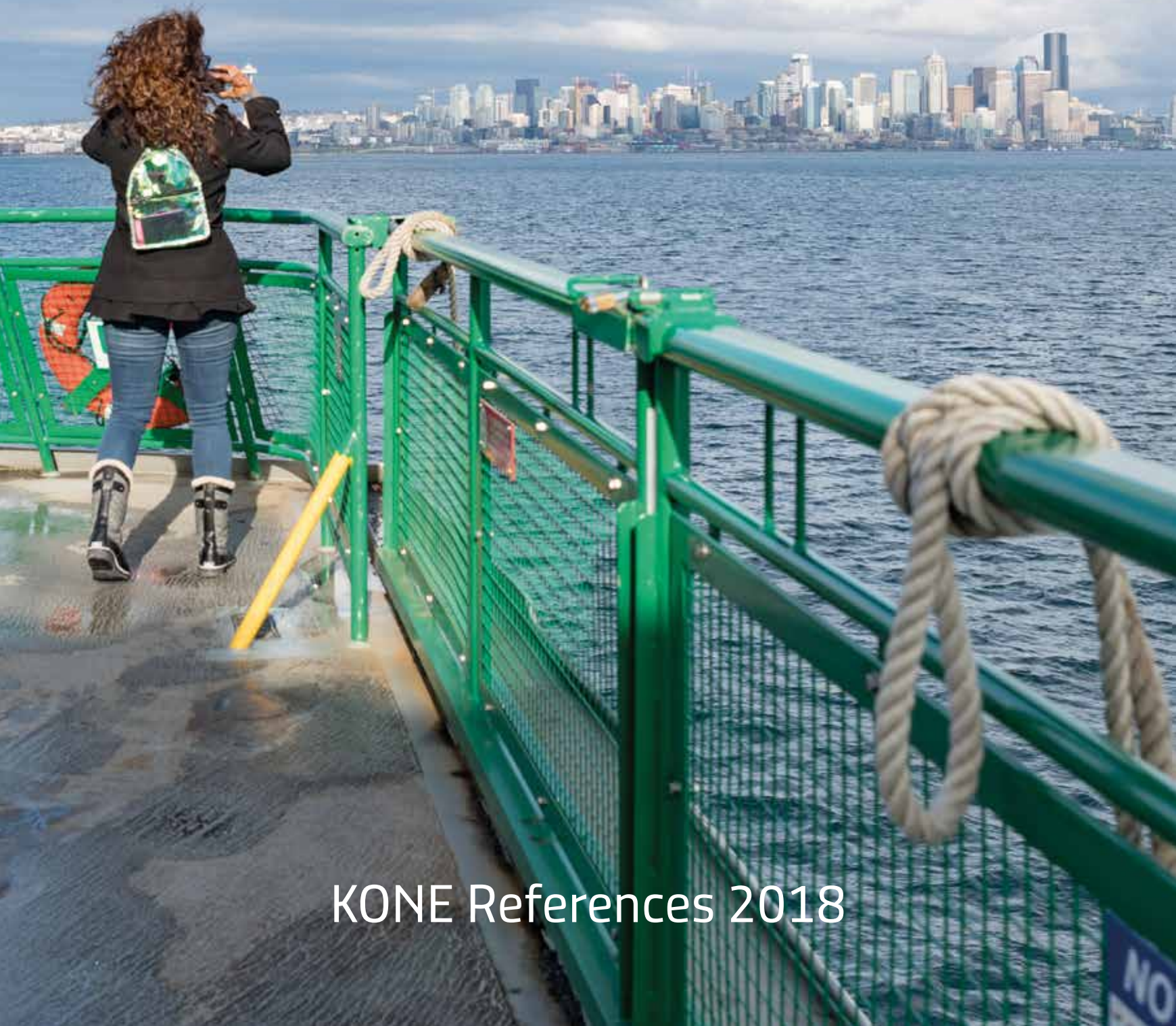


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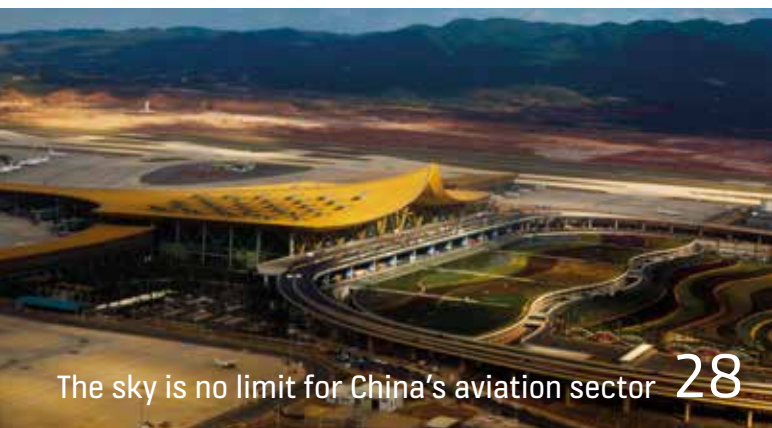




Engineering the project of a lifetime **6**



Supersizing Seattle **14**



The sky is no limit for China's aviation sector **28**



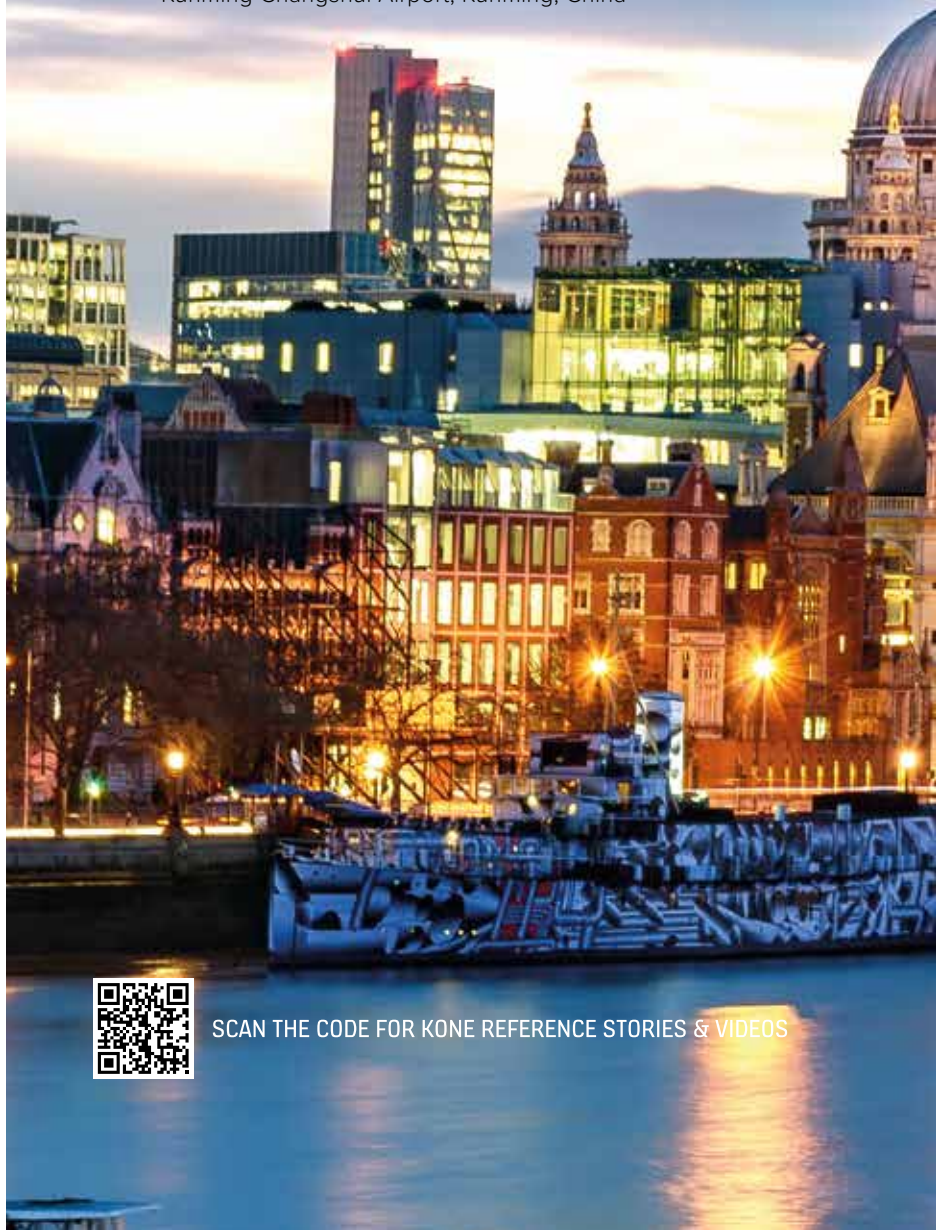
Doing justice to a monumental vision **42**




On top of the world **48**

Contents

- 4 Editorial:**
Building together with our customers
- 6 Engineering the project of a lifetime**
Bloomberg's new European headquarters, London, England
- 12 Insights:**
Timo Tiainen: Designing for the people of tomorrow's cities
- 14 Supersizing Seattle**
Hyatt Regency, Seattle, USA
- 20 Snapshot:**
Mission modernization
Sustainable buildings are the future. Learn more.
- 22 Night shifts and bespoke solutions for a Brisbane icon**
Riverside Centre, Brisbane, Australia
- 26 Insights:**
Antti Koskelin: Building better cities with digital technologies
- 28 The sky is no limit for China's aviation sector**
Kunming Changshui Airport, Kunming, China



SCAN THE CODE FOR KONE REFERENCE STORIES & VIDEOS

- 
- 32 Snapshot:**
Machine conversations
Bringing new levels of service to customers
- 33 Snapshot:**
A star is born
The story of the world's first tweeting escalator
- 34 Creating the home of the future, now**
Golden Square, London, England
- 38 Snapshot:**
Coming home can be easy
New technology makes homes smarter and responsive to residents' needs.
- 40 Insights:**
Hanna Uusitalo: The power of positive energy
- 42 Doing justice to a monumental vision**
Tribunal de Paris, Paris, France
- 48 On top of the world**
Stubai Glacier, Tyrol, Austria
- 54 Growing with green credentials**
Two Rivers Mall, Nairobi, Kenya
- 56 Insights:**
Christopher Choa: Embracing smart solutions for urbanization
- 58 Saving St. Patrick's Day**
Tower City Rapid Station, Cleveland, USA
- 62 Living the Chinese dream**
Tianjin Vanke Wonderland, Tianjin, China
- 66 Lifting in icy extremes**
Arctia's Urho icebreaker, Helsinki, Finland
- 70 Keeping people on the move at the world's biggest sporting event**
Russian stadiums and Sheremetyevo Airport
- 72 The edge of innovation**
KONE high-rise testing laboratory, Tytyri, Finland
- 74 Technology:**
Here come the robot butlers

Urban Journeys - KONE References 2018

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Building better cities together with our customers

Creating value for our customers is the driving force behind everything we do at KONE. When we view things from the customer's perspective, we can help their buildings to become more functional and user friendly, throughout the entire life cycle. Every day, we help to address challenges and embrace the opportunities created by urbanization, demographic change, the need for improved energy efficiency and increased safety demands.

In parallel with this, our customers are using technology to change the way urban environments function and how people live. Increasing building intelligence, new technology and connectivity provide opportunities for facility managers, architects and building owners to be more competitive. Consider the ways our workplaces and transport networks have changed over the past few years. The demand for flexible working and shared spaces in close proximity to retail and leisure hubs, coupled with the use of the latest technologies, has completely reshaped the traditional definition of the office. As working habits change, buildings and workspaces need to adapt to attract new generations of workers.

Advancements in connectivity, mobility and computing power are revolutionizing business,

leading to new expectations for ways of working. For instance, machine learning algorithms are changing the way sensors can detect and diagnose faults, so solutions can be found more easily. New types of computing platforms mean billions of objects can be connected to share information in real time.

At KONE we see technology as an enabler: it means we can develop solutions that fit the individual needs of our customers and create real value for them and their customers. Like making a building more energy-efficient and easier to navigate, or improving people flow. Technology also opens up the possibilities of working in closer collaboration to gain a deeper understanding of different needs. Because to build the best solutions for the future, we need to combine technology and innovation with the insights gained from working together in true partnership with our customers.

In the pages ahead, *Urban Journeys* showcases how we've put this into practice at a broad range of projects in cities across the globe – starting with Bloomberg's visionary new European headquarters in London. /


Henrik Ehrnrooth
President & CEO, KONE Corporation

Engineering the project of a lifetime

Bloomberg's new European headquarters occupies an entire city block in the heart of historic London. Its 18 glass elevators are a centerpiece of the collaboration-focused design, giving people a window into a building billed as the most sustainable office development in the world.

TEXT: William Stones PHOTO: KONE





“These glass lifts are my favorite part of the building. I love them. I love that they had never been done before.”

The elevator cars were constructed entirely from glass, with no essential equipment visible from the outside or the inside.

When financial services giant Bloomberg decided to construct its European headquarters in the heart of London, it set out to create a space respectful to the past, present and future.

Situated on the site of the restored Roman-era Temple of Mithras, Bloomberg was designed to inspire collaboration among the 4,000 employees working there as well as opening up the space to people on the outside. Bloomberg also wanted the building to serve as a working example of sustainable office design, while preserving the rich history of the site.

“The Bloomberg London building is all about looking forward and yet fitting in with the past, which I think is a very challenging thing to achieve architecturally,” says Bloomberg Project Director **Kathryn Mallon**, who oversaw the development.

THE IDEA FOR CREATING BLOOMBERG was sparked in 2010. Architects Foster + Partners worked closely with Michael Bloomberg to bring the vision to life. They designed a two-building structure linked by bridges above three public plazas and a pedestrian arcade. The offices cover a 3.2-acre site that occupies an entire city block.

Bloomberg is defined by its sandstone frame, covered in bronze fins of varying shapes and sizes. Once inside, visitors pass through a high space called the Vortex, a cavern of curved timber and light. From here, glass elevators take them straight up to the building’s sixth floor and The Pantry, a communal space concept common to the arrival experience at all Bloomberg offices. The Pantry offers a breathtaking view of St. Paul’s Cathedral and other London landmarks.



Bloomberg's open-plan floor concept is designed to promote transparency and collaboration, with meeting rooms and offices also made of glass.

"From the outset, we knew we wanted to take the core out of the middle of the building, push it to the edges, and put people at the heart of the structure," says **Michael Jones**, senior partner at Foster + Partners and lead architect for Bloomberg. "It's less about a prescriptive way of moving through buildings, and more about an intuitive way, one that people can enjoy and prosper from."

"**PUSHING ALL** the core and vertical elements to the perimeter presented a whole series of different challenges, key to which was delivering a set of elevators that were as clean, transparent and visually permeable as possible," says Jones. "The all-glass scenic

KONE elevators are an integral part of the experience, enabling people to see into and out of the building much more fluidly than you can through a typical elevator shaft."

In 2013, KONE was awarded the contracts to design, develop, deliver and maintain all the elevators for the building, including the 18 unique, scenic lifts. This became one of the most ambitious projects ever undertaken by the company.

The design challenge from Foster + Partners was for the elevator cars to be constructed entirely from glass, with no essential equipment visible from the outside or the inside. Other solutions included the building's firefighting and goods delivery elevators as well as an elevator taking visitors to the Temple of Mithras.

"The most unusual part of this job was related to the design of the 32-person elevators themselves, where we have what is known as an unbalanced 'rucksack arrangement'. Here – against all the principles of statically balanced cars required to meet ride comfort criteria – the elevator car is hoisted solely by a sling attached to the rear of the 6,000 kg car!" says KONE Senior Project Manager **Chris Edwards**.

Thanks to extensive testing and product development, including the construction of a three-stop life-sized prototype, the special arrangement offers an incredibly smooth ride while hiding all of the necessary technology under the floor of the elevator car. This allows an unobscured view through the entire glass elevator bank.

"All the door gears, air conditioning and Wi-Fi needed to be underneath the car, whereas they would normally be on top," says Edwards, adding that only a handful of standard elevator features could be used.

"These types of lifts had never been engineered before in the history of lift manufacturing. They were a complete innovation," says Bloomberg's Mallon. "The ride is fantastic. The way it makes you feel like you're floating on air, it comes to such a soft landing at every floor plate, it's quiet, you don't hear a thing. It's a really, really unique experience. I wish everyone in London could ride these lifts."

WHILE CREATING the all-glass elevators presented one set of challenges, transporting them from the factory in Hyvinkää, Finland, and installing them in the new building presented another. Because of their massive size and all-glass structure, they had to be transported to London tipped onto their sides. The fact that KONE needed to join the sling and the car inside the elevator shaft complicated matters further. But KONE succeeded in beating these challenges through careful planning.

"Conceptually we understood what we wanted to do, but we didn't know if it was technically possible," says Foster + Partners' Jones. "KONE was great, though, at coming forward in a very proactive and collaborative way. In many ways, this was the project of a lifetime, with so many new challenges that had never been solved before anywhere in the world."

Jones says that much was invested in the elevators because they are such an integral part of both the interior and the exterior of the building.

"To see these amazing crystalline objects soaring up and down really stops people in their tracks. They are truly something special."

And that, says Mallon, is testament to the effort that KONE put in to make these elevators a work of art.

"These glass lifts are my favorite part of the building. I love them. I love that they had never been done before. I love that the KONE engineers decided to take that on as a challenge and decided to innovate and create something different. And partnered with us. They embraced the spirit of the project, which was to create new boundaries, whether it be in architecture or engineering." /

“The Bloomberg London building is all about looking forward and yet fitting in with the past.”



The most sustainable office in the world?

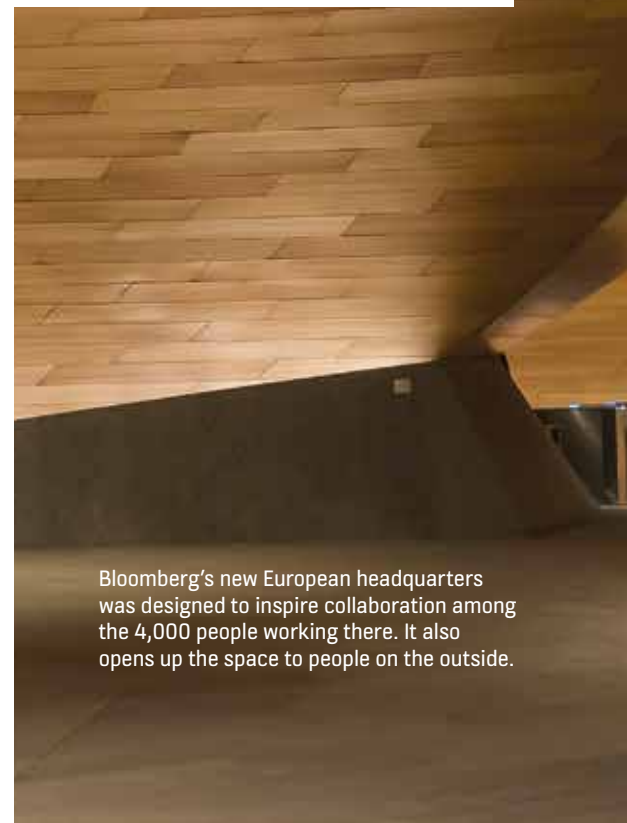
Bloomberg CEO **Michael Bloomberg** wanted the company’s new European headquarters to be the most sustainable office building in the world. A variety of methods were used to make this happen, ranging from incorporating green designs to implementing sustainable processes.

The distinctive bronze blades on the building’s exterior walls can be opened and closed and act as a natural ventilation system. Rainwater and gray-water collection systems coupled with vacuum-flushed toilets allow for net-zero water consumption. The building has over half a million LED lights, resulting in 30-40% energy savings versus conventional alternatives.

All of this led to the building achieving a score of 98.5% in the BREEAM sustainability assessment method – the highest design-stage score ever achieved by a major office development in the world!



[SCAN THE CODE TO SEE A RELATED VIDEO](#)



Bloomberg’s new European headquarters was designed to inspire collaboration among the 4,000 people working there. It also opens up the space to people on the outside.

SUMMARY

BLOOMBERG'S NEW EUROPEAN HEADQUARTERS



LONDON – ENGLAND

FACTS

Year of completion: 2017
Size: 1.1 million ft² (102,000 m²)
Floors: 9
BREEAM sustainability assessment score: 98.5%

CHALLENGE

- Develop and install bespoke elevator solutions that foster openness and collaboration
- Design solutions that complement the unique architecture of the building
- Provide excellent ride comfort and smooth people flow

SOLUTION

- Technically innovative glass elevator design to match building's collaborative office philosophy
- Special rucksack elevator hoisting method
- All technology hidden under elevator car floor
- Bespoke materials to emphasize building architecture
- Destination control system to ensure smooth people flow

KONE SOLUTIONS

- 18 unique scenic elevators based on the KONE MiniSpace™ platform
- 6 firefighting elevators based on the KONE MonoSpace@ platform
- 1 access elevator with adjacent doors leading to the Temple of Mithras
- 6 KONE Transys™ service/goods elevators
- 3 KONE MonoSpace@ service/goods elevators
- KONE Destination Control System™
- KONE E-Link equipment monitoring system



Timo Tainen

Director, Concepts and Design, KONE

Designing for the people of tomorrow's cities

Transformable. Multisensory. Interactive. The elevator of the future will respond to people's individual needs and experiences, and many of the manual actions we now relate to the elevator ride will become automated. Even the remaining interaction will become more human-like, with elevators recognizing speech and gestures.

Will the elevator still be recognizable as an elevator? Sure. I think some of the traditional design, such as the walls and the ceiling, will remain. But even their role has already shifted beyond their traditional function as protective shells. With new and emerging audio-visual technologies, these fundamental structures can already be harnessed to enhance the experience of the elevator ride. We are also beginning to see more unrestricted solutions that will allow us to experience the elevator space differently.

WHEN WE DESIGN SOLUTIONS, we design them for the future. This is why the process always begins with research to understand customer and user needs over the lifespan of a building. We look ahead to what might come a few years down the road. Through design, we can offer solutions that can adjust to the possible changes, and this is a differentiator for us.

When we begin the design process, we look first to the external environment and look for inspiration in our surroundings. As not all trends are universal, we study events and phenomena in different parts of the world. We also look at human behavior, changing values and cultures, and at how we can incorporate our findings on these into design.

Working closely with our customers and the people who use our solutions is extremely

valuable for us. After all, we are not designing solutions for ourselves. Rather than working from our isolated studio, we work on location: we are where the actual service or product will be used. That is how we bring contextual awareness to our solutions.

Right now, we see three major phenomena that impact what we design and how we design it to withstand the passage of time. First is the well-being trend, which is evident in people's values, choices and lifestyles, as well as in architecture and planning.

Second is the growth of digital technology, which is making our environments digitally transformable, and human beings, buildings and machines increasingly interconnected.

The third trend is that of merging cultures, traditions and new technologies driven by the changing infrastructures we see in societies. Old, empty industrial spaces being renovated into ultra-modern developments are an example of this.

WHAT WE ALSO SEE is that the old rule of design, that we should create for the people and with the people, is truer today than even just five years ago. As the starting point for our work going ahead we are looking increasingly to the needs of the people who use our solutions. We will continue to study how people live in cities so that we can understand how values and behavior evolve. Only in this way can we design solutions that improve and meet the needs of urban life today – and in the future. /



SCAN THE CODE FOR A
GLIMPSE OF KONE DESIGN



Supersizing Seattle

The Seattle skyline is undergoing a high-speed facelift. The largest megastructure rising up in the downtown area is the Hyatt Regency. And KONE is helping it rise at an astounding pace.

TEXT: Silja Kudel PHOTO: KONE

HYATT REGENCY





About 334,000 square meters (3.6 million square feet) of office space and 5,700 new homes opened last year in downtown Seattle.

Jackhammers are the ever-present soundtrack of life in downtown Seattle, a city witnessing an explosive construction boom. The building frenzy began half a decade ago, adding density and transforming the skyline with a legion of new high-rise apartments, hotels, and office buildings.

A Downtown Seattle Association report affirms that the record-breaking surge in development surpasses anything seen before in Washington state. About 334,000 square meters (3.6 million square feet) of office space and 5,700 new homes opened last year in downtown Seattle, with an additional 3,600 apartments scheduled for completion this year.

The hotel segment, too, is booming like never before. More than 600 new hotel rooms mushroomed in the city center last year, and this year is set to be even bigger with the opening of Seattle's largest hotel, the Hyatt Regency, which will add a whopping 1,260 new rooms at Eighth and Howell later this year.

While the construction peak is great news for the economy, it can mean headaches for neighbors and commuters, who are subjected to blocked streets and sidewalks, nerve-grating noise and various other disruptions. Mindful to preserve good community relations,

innovative general contractors like Sellen Construction are constantly looking for ways to increase construction speed and efficiencies without sacrificing quality or safety.

AT A SIZE of 136,567 square meters (1.47 million square feet) in total, the 45-story, convention-focused Hyatt Regency is one of the biggest megastructures to ever spring up in the city of Seattle.

"It is by far the largest hotel ever built by Sellen. Everything is on a grander scale – more supersized, if you will, including three of the largest ballrooms in the city. It's being precast on site, which is not something you see every day in Seattle, where most buildings are curtain-wall structures," explains **Mike Ryberg**, senior superintendent at Sellen Construction.

"With a massive, fast-paced project like this, you need efficiency getting manpower and materials into the building," he says.

KONE technology is helping to improve efficiency. The Seattle Hyatt marks the very first project in the USA to utilize the KONE JumpLift™ solution, which offers unprecedented convenience while also minimizing disruption to the surrounding neighborhood.



“It is by far the largest hotel ever built by Sellen. Everything is on a grander scale – more supersized, if you will.”

KONE JUMPLIFT™ is a self-climbing elevator system installed inside the building’s permanent shaft during the construction phase. It progressively ‘jumps’ up the shaft as the building gets taller.

“Having two fully functional elevators inside the building six to eight months before they would normally be ready helps to increase efficiency. The materials go up externally on the main hoist, while craftspeople use the two KONE JumpLifts, which move at four times the speed of the hoist,” explains KONE Executive Project Manager **Daniel Whitlock**.

The math is a no-brainer. If a project has 700 workers on site able to move 3.6 meters per second (700 feet per minute) as opposed to 0.9 meters per second (175 feet per minute) on the exterior hoist, the KONE JumpLift technology can be considered the worksite equivalent of switching to hyperdrive.

“KONE has been very good at collaborating and thinking outside the box.”



That’s not all. The solution enhances occupational safety, speed and convenience in numerous other ways as well.

“With the men moving inside the building, they’re protected from the elements, which is good for morale. And the hotel has been delighted to have the chance to bring in televisions and furniture much sooner than normal, helping them get ready for customers faster,” notes Whitlock.

People visiting the development also benefit as they can be taken up safely in an ordinary elevator instead of being hauled up on the exterior hoist.

EXTENSIVE ADVANCE preparations were made for the American debut of the KONE JumpLift, including in-depth training to make sure the teams had the skills to perform the jobs safely and efficiently. “We had our installer team visit Finland and assemble the lift in a factory, which gave them valuable assembly knowledge,” says Whitlock.

With Seattle being one of the fastest-growing downtown districts in the USA, the Hyatt Regency is a towering showcase demonstrating how the KONE JumpLift can benefit other developers and general contractors in the region. For Sellen Construction, it has increased efficiency and reduced disruption in the crane-crowded downtown area.

“Although KONE JumpLift has been used elsewhere in the world, it’s totally new to the USA. We’re hoping it will change how people assemble buildings over here,” says Whitlock.

“KONE has been very good at collaborating and thinking outside the box. They have been an integral partner in figuring out creative ways I have never seen before in the industry. I would definitely use the KONE JumpLift again, and I have been bringing in project managers from other jobs in the region to show them what it can do,” concludes Ryberg. /

SUMMARY

HYATT REGENCY



SEATTLE – USA

FACTS

Year of completion: 2018
Size: 136,567 m² (1.47 million ft²)
Floors: 45
Number of rooms: 1,260

CHALLENGE

- Help the customer meet an aggressive construction schedule
- Keep people and goods moving in different weather
- Limit disruption of massive construction site to neighboring community in busy downtown location

SOLUTION

- Using the KONE JumpLift™ to transport workers quickly and safely in different weather conditions
- Using external hoists to transport goods
- Extensive planning and coordination with the customer to meet schedules

KONE SOLUTIONS

- ☐ 2 KONE JumpLift™ construction-time elevators
- ☐ 16 KONE MiniSpace™ elevators
- ☞ 12 KONE TravelMaster™ escalators
- ☐ 6 KONE MonoSpace@ elevators
- ☐ 2 large freight elevators

“Although KONE JumpLift has been used elsewhere in the world, it’s totally new to the USA. We’re hoping it will change how people assemble buildings over here.”



SCAN THE CODE TO SEE A RELATED VIDEO



Mission modernization

Sustainability is a crucial aspect of any new building added to a city's skyline. But what about the buildings that have seen their best days? It's likely there is life left in them yet! In fact, it's far more efficient to modernize an old building than build a new one from scratch. Modernizing an existing building can help reduce energy consumption, emissions and the use of natural resources, while at the same time preserving architectural heritage. Modernization also gives old properties a chance to renew themselves and leap ahead with cutting-edge innovations. Read on to learn how the modernization of elevators and escalators has helped transform a Brisbane icon (p. 22), a historic building in London (p. 34), a busy transit hub in Cleveland (p. 58) and an icebreaker (p. 66).

PHOTO: Raphaël de Bengy







Night shifts and bespoke solutions for a Brisbane icon

The elevators of the iconic Riverside Centre in Brisbane, Australia, received a thorough makeover to bring in the latest technology and energy savings. Nocturnal jackhammering and efficient cleaning meant tenants hardly noticed the extent of works that were being undertaken as part of the project.

TEXT: David J. Cord PHOTO: KONE

RIVERSIDE CENTRE



Riverside Centre is one of the most prestigious commercial buildings in Brisbane, Australia. When it was constructed, the building was considered the most technologically advanced in the country. However, 30 years later the elevator system was due for an upgrade.

Yet this was not a simple renovation project. The client and architect required unique solutions for the architecturally significant building. At the same time, it was clear customers should not be disrupted by this major renovation.

“The lift upgrade was primarily driven by life cycle, which was heightened due to Riverside Centre’s requirements to compete in a challenging leasing market,” explains **Clint Francis**, operations manager at Riverside Centre, GPT Group. “It was important that our customer experience was enhanced, and for the modernization to be completed without incident in a safe working environment.”

“The project was meticulously well planned and started a considerable time before any on-site works commenced,” says **Chris Valentine**, modernization project manager, KONE. “The architect **Greg Holman** from Harry Seidler & Associates was involved from the beginning and provided invaluable design input for the refurbishment of the lifts, the placement of destination control panels and the bespoke elevator identifiers.”

AT PROJECT INITIATION, GPT’s requirements for the project were comprehensively detailed within the Norman, Disney & Young Modernization Specification, including complete refurbishment of the 21 elevators with a state-of-the-art destination control system. The resultant intelligent system predicts travel patterns to eliminate overcrowding and unnecessary stops, keeping customers and guests moving quickly and comfortably throughout the building.



The refurbishment also includes five large touch screen monitors, which have been integrated into a beautifully designed bespoke tenancy directory. The directory was designed to allow guests to utilize it as another destination control panel.

“The visitor selects the tenant she wants on the interactive directory and the system tells her which lift to use,” says Valentine, adding that KONE worked together with the customer to come up with new, custom solutions.

“For instance, the car operating panels and hall lanterns had very specific requirements. The interior mirror gives the effect of the handrail disappearing. The elevator identifiers in jambs are completely bespoke.”

The client also wanted a unique system for alerting people not to use an elevator during a fire. Instead of the typical sticker or plaque, this message is displayed on the screen when sensors detect smoke. Special software was developed to make the system work.

Francis states: “Our approach to all capital projects is in keeping with what we believe to be the fundamental spirit of the original development of the site: best-in-class through quality without compromise.”

TOTAL ENERGY SAVING is expected to be 30 to 40 percent.

Francis also points to surveys of lift services satisfaction conducted by Campbell Scholtens. In 2014 the services scored a 57, under a benchmark of 62. In 2017, after the renovation project was completed, this had increased to 73.

All parties involved in the project agree the end result is a spectacular achievement.

IN ADDITION to the unique results, the entire modernization process at Riverside Centre required a unique approach.

“Our goal was to complete the works with minimal customer-facing indicators,” Francis says. “We wanted the 2.5-year lift modernization to be completed in such a way that our customers believed it was business as usual. This required KONE to propose a unique slant to their activities and program.”

A key component of this was regular communication. KONE had weekly meetings with GPT’s Customer Relationship Manager **Jason Scaysbrook**, which allowed him to communicate to the customers about lift works on their floors on a timely basis.



To minimize disruption in the day-to-day activities of tenants, KONE did much of their work at night.

“GPT requested a very high level of detail, down to which door we would be working on at which time,” says Valentine. “Sometimes the tenant would ask us to reschedule, so we worked with the client to maintain a flexible schedule, whilst not compromising the overall program.”

TO MINIMIZE IMPACT on the tenants, KONE did much of their work at night. The 300 elevator doorjambes needed flush-mounted identifiers cut into the existing jambes, which meant hard work with a jackhammer and cutting tools. Extraction fans and sealed areas kept dust to a minimum, and before the doors opened to tenants every morning, the KONE crew cleaned the entire area.

“We also developed a new method to renovate the goods elevator,” Valentine says. “We built a protection platform mid-shaft so we could have two teams safely working above and below simultaneously. This reduced the installation time from 16 weeks to 11.”

The modernized Riverside Centre is something everyone can be proud of.

Francis concludes: “The object of our upgrades is to ensure our customers enjoy the finest experience when interacting with all facets of the Riverside Centre, overarched by a ‘zero harm’ mandate.” /

SUMMARY

RIVERSIDE CENTRE



BRISBANE – AUSTRALIA

FACTS

Modernization completed: 2017
Floors: 42
Number of modernized elevators: 21
Energy savings following renovation: 30-40%

CHALLENGE

- Upgrade elevators to meet with the requirements of modern commercial properties
- Find bespoke solutions that support the vision of the architect
- Limit disruption to tenants during modernization

SOLUTION

- Close collaboration with the customer and architect to find custom solutions for the building
- Installing an intelligent elevator system that predicts travel patterns to eliminate overcrowding and unnecessary stops
- Meticulous planning and cleaning to ensure minimum disruption to tenants, with the most disruptive work carried out at night
- Developing a new renovation method to reduce overall installation time

KONE SOLUTIONS

- ☐ 3 KONE MonoSpace® S elevators
- ☐ 17 KONE ReGenerate™ 800 elevators
- ☐ 1 KONE ReSolve™ 40 hydro
- ⊙ KONE Destination Control System
- Custom KONE E-Link equipment monitoring system



KONE



Antti Koskelin

Chief Information Officer, KONE

Building better cities with digital technologies

Technology and innovation make us human. From the earliest stone tools through to computers and artificial intelligence, people have always sought new and better ways to do things.

Today, the pace of technological development – digitalization in particular – is at an unparalleled level. So much so that it can even seem scary or overwhelming. Are there risks to connected, driverless cars roaming our roads and robots replacing doctors in making diagnoses? Yes, of course, life is always full of risks.

But the real and potential opportunities and human benefits brought by digitalization are arguably far greater. The trick is to not let technology rule what we do and instead make it work to our benefit.

So what has this got to do with the elevator and escalator business? Everything! Digitalization has an impact on every area of our business. And this is very, very exciting. We are moving quickly to ensure we have the best elevator, escalator and door selection for the best people flow experience – as well as the best-performing field service. We will not get there by standing still and relying on past strengths.

INNOVATIONS ARE ALREADY changing our business models and providing us with opportunities for differentiation – opportunities to serve our customers and their customers increasingly better. This is important because user engagement and customer experience are everything in our increasingly digitalized world.

To succeed, we need to understand five crucial areas of digitalization.

The first is the ability to make equipment more intelligent and accessible through the use of sensors. We have been doing this for some time already with access control, integrating sensors in elevators, doors and smartphones. KONE Residential Flow brings these and other technologies together in a package that benefits residents and their visitors as well as the people who manage their buildings.

Second is connectivity. Today's technology enables remote diagnostics, meaning equipment condition can be monitored off-site in real time. What a great development for technicians and building managers who can identify and fix problems before they lead to breakdowns!

The third area of digitalization is data storage. Terabytes of storage are now extremely cheap. Cloud technologies and almost unlimited capacity take things to a whole new level.

Fourth is analytics. With powerful analytics engines and algorithms, we can look at parameters and data in more effective ways, for instance to find solutions for improving people flow in crowded urban areas.

THE FINAL COMPONENT OF DIGITALIZATION

is what I call mobilization. With this I mean being able to bring together a combination of the four others. KONE 24/7 Connected Services is a shining example of mobilization: sensors on elevators and escalators are connected to cloud-based computing to enable real-time data collection and analysis.

If we are able to put all this technology at the disposal of our customers and into the hands of our field service technicians, we can provide superior services to everyone who uses our solutions, whether they are passengers at airports, shoppers at malls, or people going about their day in the office or at home.

Thanks to technology, we can improve the transparency of our work and give our customers peace of mind in the form of real-time information on how we are taking care of people flow in and around their buildings. Improved equipment performance, safety and reliability are arguably benefits that are also valued by our customers' customers.

At KONE, we have high ambitions on this front because at the end of the day, our business is about helping people in cities across the globe move smoothly, safely and efficiently. It's about improving the flow of urban life. /



The sky is no limit for China's aviation sector

Air travel in China is booming. And with millions of people opting to travel by air, airports are already bursting beyond capacity. Technology is stepping in to help keep the ever-increasing number of passengers at Kunming Changshui Airport on the move to their desired destinations.

TEXT: Kim Hunter Gordon PHOTO: Getty Images and KONE



SUMMARY

KUNMING CHANGSHUI AIRPORT



KUNMING – CHINA

FACTS

Year of completion: 2012
 Size: 159,000 square meters
 Passengers in 2017: 45 million

CHALLENGE

- Provide people flow solutions to handle rapidly rising passenger numbers
- Ensure 99% equipment operation rate and complete all maintenance work within specified time limit
- Meet LEED-mandated environmental benchmarks for all equipment

SOLUTION

- Tailor-made maintenance solutions to meet the airport's people flow needs, including the availability of technicians on site at all times
- KONE 24/7 Connected Services to enable real-time equipment monitoring and predictive maintenance
- Sustainable, energy-efficient solutions to meet the airport's LEED benchmarks

KONE SOLUTIONS

- 🛠️ KONE Care™ maintenance solution
- 📞 KONE 24/7 Connected Services
- 📦 90 KONE MonoSpace® elevators
- 🚶 16 KONE TransitMaster™ autowalks

When over 1.4 billion people decide to take to the skies, you can be sure that the aviation sector is in for a very good time. And that is exactly what is happening in China.

“A large part of this can be attributed to the expected increase in the number of middle-class households in the country and further growth in income over the next decade,” says **Albert Tjoeng**, assistant director for corporate communications in Asia Pacific at the International Air Transport Association (IATA)

According to the IATA, in 2017 alone China added a massive 59 million journeys. And within a decade, air travel is predicted to rise by 75 percent to more than a billion journeys per year.

This trend is clearly visible in Yunnan Province in southwestern China. The province attracts millions of domestic and foreign

visitors thanks to its spectacular natural scenery and the unique cultural heritage and cuisine of some of China's most colorful ethnic minorities.

And more visitors are definitely on the horizon. Yunnan is destined to be a regional hub for connections between China and Southeast Asia thanks to its shared borders with Vietnam, Laos and Myanmar. It is also strategically positioned to be a driver for China's ambitious Belt and Road Initiative, a massive program under which billions of dollars are being invested in building infrastructure projects, including the construction of overland and maritime trade routes across the globe.

THE KUNMING CHANGSHUI INTERNATIONAL AIRPORT serves these millions of travelers. It is the fourth-largest airport in China. Built

What is KONE 24/7 Connected Services?

In short: it's a revolution for the elevator and escalator maintenance business! This innovative technology uses the IBM Cloud-based Watson IoT (internet of things) platform and other technologies to monitor and analyze data collected by advanced sensors attached to elevators and escalators.

It can measure up to 200 critical parameters from a connected machine. These include motor performance, escalator handrail temperature, equipment speed, elevator door operations, number of starts, and a whole lot more.

The data is collected and analyzed in real time, meaning any irregularities in performance can be spotted and addressed quickly. This means better visibility to equipment performance for facility managers and service technicians. It also means potential glitches can be fixed before they cause problems. All this lead to less elevator and escalator downtime, and improved safety and reliability for users. /



The remote diagnostics and preventive maintenance enabled by KONE 24/7 Connected Services help prevent breakdowns.



The airport was originally designed to deal with 37 million passengers annually. However, last year passenger volumes rose to 45 million.

in 2012, the terminal building is over a kilometer long. It occupies an area of 159,000 square meters, and was originally designed to deal with 37 million passengers annually. However, last year passenger volumes rose to 45 million, and there is no sign of numbers dwindling.

While a second terminal is scheduled to open in 2021, the airport is currently dependent on existing equipment running smoothly to deal with rising passenger volumes.

When people have a flight to catch, they rely on the 90 KONE MonoSpace® elevators and 16 KONE TransitMaster™ autowalks at the airport to get to their destinations.

“If there are delays, sudden increases in traffic or a breakdown in equipment, there is the potential for complete chaos,” says Yang Lin, who manages KONE’s operations at the Kunming Changshui airport.

TO PREVENT THIS KIND OF CHAOS, the airport opted for KONE 24/7 Connected Services, cutting-edge technology that enables the real-time monitoring and analysis of a range of critical parameters that impact the condition and operation of the elevators and autowalks.

This is significant as airport authorities at Kunming Changshui have mandated an equipment operation rate of over 99%, and require all necessary maintenance work to be completed within four to five hours. For KONE, the ready availability of spare parts and technicians on site

at all times are crucial to ensuring that these requirements are met.

And the remote diagnostics and preventive maintenance enabled by KONE 24/7 Connected Services helps the technicians do their jobs more efficiently. Thanks to the additional information, they have a clearer understanding of what needs to be fixed even before they set to work on the equipment. This helps reduce downtime, increases the life of the machines, and even allows for potential faults to be identified ahead of time so that unexpected breakages can be avoided.

This is all good news for passengers with heavy luggage making their way from one side of the airport to the other.

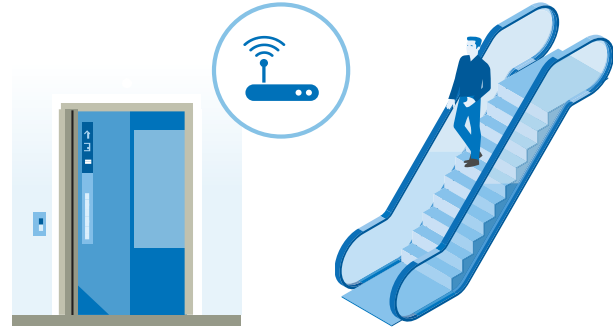
KONE’s efforts to ensure that people flow at the Kunming Changshui airport is smooth and secure have gained the company a lot of praise: **Zheng Chuan**, a manager at the airport, calls KONE’s services “quick and to the mark.”

In addition to operational efficiency, the high-profile mass-transit hub can boast about its green credentials. The Kunming Changshui Airport is the first “Green Airport” in China and has received LEED (Leadership in Energy and Environmental Design) certification.

Looking ahead, the Chinese aviation sector could be setting the standard for the development and modernization of airports around the world. /

Machine conversations

KONE elevators and escalators have been given a voice. They keep constant watch and alert technicians to imminent faults. Take a look at how KONE 24/7 Connected Services lets equipment communicate.



1 KONE 24/7 Connected Services uses remote sensors to collect data from connected escalators and elevators.

2 Around 200 critical parameters including equipment usage, downtime, vibrations, temperature and more are monitored in real time.



3 This data is then analyzed by the IBM Watson IoT platform running on IBM Cloud.



4 This gives us real-time analysis on each installation, identifies potential problem areas and generates predictions on the condition of equipment.

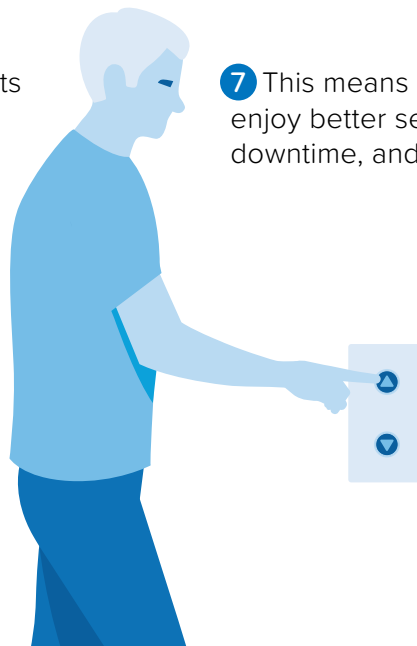


5 Using this information, we can perform better-quality maintenance on site, and identify and fix potential faults before they impact service levels for our customers.

7 This means elevator and escalator users enjoy better service, with less waiting and downtime, and more peace of mind!



6 Our customers can see an overview of past maintenance, and monitor and visualize the behavior of the equipment.



SCAN THE CODE TO LEARN MORE



A star is born

The world's first tweeting escalator took social media by storm in 2018, gathering a small army of followers and well-wishers. This is its story.

TEXT: Kamala Govindan PHOTO: KONE

The Twitter handle of the world's first tweeting escalator says it is @JustAnEscalator. But if the reactions it elicited from the twitterverse are anything to go by, this hard-working machine seems to have left an indelible mark on its followers.

"These tweets made me smile today," one fan tweeted.

"Best entertainment on Twitter," said another.

@JustAnEscalator is the Twitter handle of an actual escalator keeping people moving at a secret location in London, and was part of KONE's campaign to promote its KONE 24/7 Connected Services maintenance solution. For a month and a half, the escalator posted daily tweets about its operations, working conditions and observations about its environment, sending out a total of 3,572 tweets.

So, how did it work? As with other connected escalators and elevators, data on various equipment parameters was collected by sensors and sent to the IBM Watson IoT platform on IBM Cloud.

With a bit of a marketing twist, however, this data was translated into social media terminology and tweeted by the @JustAnEscalator handle.

Tweets such as "I am detecting zero forward vibrations in my gearbox" or "Noise level at motor: -48.4 dBFS, like it should be" may have seemed banal. But they demonstrated how KONE 24/7 Connected Services gives real-time visibility to information on equipment condition and performance to KONE's customers and service technicians.

The tweets also won the escalator a legion of fans from around the world. The account racked up over 1,300 followers and generated a lot of online discussion. Some fans found the tweets to have a Zen-like, calming effect, while others went away knowing more than ever before about escalators, the often-overlooked workhorses of the world's cities. /

Creating the home of the future, now

Smart home technology, ease of use and comfort are key when it comes to luxury living in the heart of London's Soho. In this historic center of culture, trade and diplomacy, new technology is adding fundamental benefits and giving a taste of the future to the residents of 37 Golden Square today.

TEXT: William Stones PHOTO: Alamy Stock Photo



37 GOLDEN SQUARE



Golden Square in Soho is one of the historic squares of Central London.



London-based property-developer Halamar specializes in luxury spaces that bring together the finest in design, craftsmanship, user experience and technology. From modernizing manor houses in the city’s greenbelt to breathing fresh life into downtown apartments, Halamar has built a reputation for class and quality throughout its developments.

One of these developments is Golden Square, an eight-story property in the heart of Soho and London’s vibrant cultural scene that Halamar is transforming into 22 luxury apartments crowned by a triplex penthouse.

“Golden Square is a full refurbishment of an old rag-trade building,” says Halamar’s Technical Director **Andrew McNeill**, alluding to the location’s history as the center for London’s woolen trade. While steeped in history, Golden Square is looking firmly to the future when it comes to maximizing the comfort of living, which McNeill says their customers value most.

“The future tenants of this sort of building will want to feel that they are entering the future, but they are doing it now,” says McNeill.

This is where KONE Residential Flow steps in: a holistic building access and information solution that offers trouble-free access from the building entrance via the elevators to the tenant’s home door.

“Our customers value premium experience and convenient living,” says McNeill, adding that Halamar chose KONE Residential Flow to its specifications for Golden Square because it adds to the “ease of life in the building.”

THAT SENSE OF EASE comes on the back of extensive research and co-creation carried out by KONE with over 200 people to understand the unique needs of residents and building managers in different cities around the world.

Golden Square will feature the full range of smartphone-enabled KONE Residential Flow solutions: KONE Access, KONE Visit and KONE Information. The technology will recognize residents when they arrive at the property and automatically grant them access to their homes. This means residents won’t need to fumble for keys when loaded with shopping bags.

“The future tenants of this building will want to feel that they are entering the future, but they are doing it now.”

SUMMARY

GOLDEN SQUARE



LONDON – ENGLAND

FACTS

Modernization completed: 2018
Floors: 8
Number of units: 22 & triplex penthouse



CHALLENGE

- Maximize the level of ease and comfort for residents
- Enable easy and secure building access for residents and their visitors
- Help the property stand above the competition

SOLUTION

- Integrating cutting-edge KONE Residential Flow technology with the building's elevators and doors for secure and flexible access
- Designating one elevator as a private lift to the penthouses

KONE SOLUTIONS

-  KONE Residential Flow packages: Access, Visit, Information
-  2 KONE MonoSpace® 500 elevators

Through a smartphone-connected intercom system, residents will also be able to greet and grant access to visitors securely – even when they are not at home themselves.

“KONE Residential Flow is a great example of the addition of cutting-edge solutions to modern living,” says McNeill, adding that this fits well with Halamar’s ambition of always trying to tailor their offering to give customers more than their competitors are able to at this time. KONE Residential Flow is one part of that.

Two media screens, one for each of the building’s two elevators, and a media player for the lobby screen will enable residents and building management to share information in the building efficiently.

“The system has brought value to the apartments by being able to offer potential purchasers comfort and ease of accessibility, which we believe at this level in the market is exactly what the customer wants.”

AT GOLDEN SQUARE, Halamar is looking beyond access and people flow solutions to add to the ease of living with a full range of future-proof technologies that are already making buildings smart.

“We’re also taking advantage of the fully automated hands-free systems,” says McNeill. “For instance, we would like our customers to be able to wake up in the morning and say a specific command to make the curtains open, the lights go low, turn on relaxing music and start the coffee machine.”

Aided by machine learning and artificial intelligence, the next step for homes will be to get some “heart” to go with the “smart,” learning our habits and preferences at an individual level to perform accordingly.

“We’re looking to continue being able to offer this premium quality and ease of life to our customers, and KONE’s solutions are pitched at exactly the right level,” says McNeill. “We see great advantages for us in working with a company that is producing such a premium-level of automated, ease-of-use entry systems and residential flow solutions.” /

SNAPSHOT





Coming home can be easy

Tired, fighting kids. A screaming baby in the stroller. Overflowing grocery bags about to burst in your arms. And keys lost somewhere in the depths of your bag. Sound familiar? Coming home doesn't have to be this difficult; KONE has found a way to help make it a breeze.

TEXT: Ronak Kotecha PHOTO: KONE

Flexibility and convenience define the new normal for smart living. With this in mind, KONE decided to study the everyday challenges people face in urban residential environments and to find solutions to relieve stress and make arriving home more intuitive. The company's service design team interviewed over 200 people in four European cities to learn about the challenges people face in and around their homes.

The findings were intriguing, to say the least. For instance, many respondents in the Netherlands and Germany complained about door intercoms, which were apparently so bad that "you never knew who was at the door." Another pain point that came up quite often was the eternal search for home keys while carrying groceries – and possibly guiding a couple of children and a dog through the door on the side.

THE KONE TEAM QUICKLY REALIZED that most concerns revolved primarily around residents' access to their homes, and access to information about their buildings.

They observed that people in France, the Netherlands and Germany entered their homes in very different ways. In Paris coming home often begins with the opening of a gate and a walk through a garden to the lobby door.

In the Netherlands, a strong cycling culture impacts the everyday urban journeys of people and meant that residents of Rotterdam and Amsterdam tended to enter their apartment buildings through the back door for easier access to bicycle storage.

Residents of Berlin, on the other hand, tended to carry their bicycles up to their apartments or down to basements because half-floors without elevator stops are very common in residential buildings.

Making use of the gathered insights, KONE worked together with its customers to create the KONE Residential Flow solution. The

solution connects building doors, elevators, information channels and intercom systems via an easy-to-use smartphone application. The service consists of three components: KONE Access, KONE Visit and KONE Information.

KONE ACCESS controls building doors and automatically calls an elevator to take the user to their home floor, eliminating the need to use physical keys.

With KONE Visit, residents are able to greet their visitors and grant them access to their building remotely using their phones. The building's elevator then takes the visitors automatically to their destination floor. In addition to houseguests, the service works for situations like package deliveries, which are often inconveniently scheduled during working hours.

There is also an option to create temporary electronic keys which can be given to family members and friends. For people with their apartments listed on Airbnb, the kind of convenience this offers is unmatched.

Last but not least, KONE Information enables facility managers to send building-related information directly to residents' phones or to the info screens in the elevators or lobby when it's relevant and timely. Residents can, for example, be informed in advance if their water supply is going to be disrupted or when renovation work has been scheduled, and be reminded of the same again closer to the event.

Convenience for residents and building managers is an obvious benefit. But innovative solutions like these also translate into real, long-term value for a building. Utilizing the newest technology helps make buildings smarter and more responsive to individual residents' needs, and thus more attractive to potential buyers and tenants. Talk about a complete package. /



SCAN THE CODE FOR INFORMATION
ON TOMORROW'S PEOPLE FLOW



Hanna Uusitalo
Environmental Director, KONE

The power of positive energy

What makes you happy? I mean really happy? In all likelihood it's something you can experience rather than something material you can buy. This is a great place to start, because resource wisdom is the guiding philosophy for planning cities that are sustainable and create a good quality of life for all their residents.

In a nutshell, resource wisdom is about creating circular, carbon-neutral regional economies that generate employment, well-being and business competitiveness. In the vast majority of places, we're not quite there yet. Today's global reality is a state of imbalance. When it comes to the use of natural resources, generally speaking those nations and cities that are able to secure the well-being of citizens are using resources at a disproportionately high rate and at the same time producing an excess of waste and emissions.

HOW DO WE FIX THIS IMBALANCE and create cities where people's well-being can be guaranteed without the depletion of resources and the generation of excess waste? Designing positive-energy cities and neighborhoods is a start: creating regions that produce energy in smart and resource-efficient ways and consume less than they produce.

A shift in mindset is also needed. The notion that there is intrinsic value in ownership is deeply ingrained in many societies. But what if we learned to find value in sharing, loaning, leasing and exchanging things? Could schools maintain a communal stock of winter sports equipment for the neighborhood's children? Does everyone need to own a car? Or a bicycle? How could communities share tools? Most of us will agree that libraries are great institutions. Why are other similar initiatives often seen as difficult?

The construction and operation of buildings accounts for about a third of the world's energy consumption and a similar proportion of greenhouse gas emissions. Transportation is responsible for another hefty chunk. Assessing and changing how we live, work and move in

cities is, therefore, critical to the creation of positive energy and happy cities.

THIS MAY MEAN RADICAL CHANGES to the status quo. For example, do basic services like healthcare need to be organized in cities in a way that fixes them to a specific building? Or could they instead be delivered to people where they are, when they need them? Changes like these require a deep understanding and thorough analysis of the individual paths people take in their daily lives. Where and when does it make sense to change the people flows in cities?

In terms of housing, we are already seeing the return of communal living arrangements. Shared living space may become increasingly desirable as the number of single-person households rises in cities across the world. The resource savings from heating one kitchen equipped with one stove versus four are obvious.

At KONE, we aim to be a leader in sustainability. While we do not plan cities or even buildings, we do work closely with those who do. And working together systematically is another critical component of creating low-carbon or even positive-energy, happy cities. We put a lot of work into making sure our elevators, escalators and doors are smooth, safe, efficient and consume the least energy possible. They are also made of nontoxic materials, and our logistics are optimized to limit emissions.

BUT WE ALSO RECOGNIZE that today's global challenges can only be solved through collaboration with a range of actors and organizations. We are proud to work together with companies, research institutes, architects, developers and cities themselves to contribute to the sustainable growth and happiness of cities. Sustainable and smart buildings are already here. I am convinced happy and positive-energy cities will soon be, too! /



SCAN THE CODE TO READ MORE
ABOUT SUSTAINABILITY AT KONE

Doing justice to a monumental vision

Designed by Italian architect Renzo Piano, the mirror-like façade of the new Tribunal de Paris symbolizes the transparency of the multiple judicial entities it houses. High-security lifts and a one-of-a-kind panoramic elevator keep people on the move inside this energy-efficient masterpiece of a building.

TEXT: Sarah Hudson PHOTO: Raphaël de Bengy



TRIBUNAL DE PARIS





The one-of-a-kind, panoramic elevator goes up 30 floors, traveling at a speed of 2.5 meters per second.

The new Tribunal de Paris is literally luminous – a truly exceptional, 160-meter-high structure that holds its own in a city priding itself on visual aesthetic. A glittering, glazed glass feature on the Parisian horizon, the three, stacked layers of this unique construction bring together all the courtrooms and judicial offices that were previously scattered around the city.

Skyscrapers are rare in the historic French capital, so the very highest of technical and aesthetic standards were required to create the Tribunal de Paris. Enter **Renzo Piano**, whose creations include The Shard in London and the Beaubourg Centre in Paris. His design for an expansive, light-flooded, yet highly functional edifice demanded truly exceptional workmanship and a strict logistical schedule.

“HOUSING COURTROOMS, a secure holding area for litigants, and also public access areas meant having to bring several buildings with different purposes together into one location,” explains **François-Xavier Dutac**, head of the works department of construction contractor Bouygues Construction.

Each section had to comply with completely different regulations, he adds. For example, the court’s primary function is to deal with attorneys, judges, litigants and the general public, while technical services – like maintenance and garbage collection – are carried out discreetly, along entirely different pathways.

“The challenge for KONE was to manage these flows of people in a completely secure way,” explains **Guillaume Fournier Favre**, managing director of KONE France. His team’s job was to help design and deliver the vertical transportation solutions needed in the skyscraper to ensure both security – for example, in transporting detainees – and accessibility to both the public, and to court and administrative employees.

With a complex brief that included tight construction deadlines within a dense urban environment, the full gamut of KONE equipment was utilized, explains Fournier Favre.

“FIRST OF ALL, a KONE JumpLift™ was installed and operated throughout the whole high-rise construction phase,” he says. Traveling faster than exterior hoists, the KONE JumpLift is a safe



SUMMARY

TRIBUNAL DE PARIS



PARIS – FRANCE

FACTS

Year of completion: 2017
 Size: 104,000 square meters
 Floors: 38

CHALLENGE

- Meeting a tight construction schedule in a busy location in the heart of Paris
- Enabling the smooth and secure movement of different types of people in the building, including litigants
- Designing solutions that meet the architect's unique and ambitious vision for the project as well as strict environmental criteria.

SOLUTION

- Using the KONE JumpLift™ construction-time elevator for safe and quick transportation of people and materials
- Collaborating closely with Bouygues Bâtiments and the architect Renzo Piano from the planning phase throughout the construction to find the best people flow solutions and resolve challenges quickly
- Creating custom elevators for different users, including secure detainee lifts and a one-of-a-kind, panoramic, open-shaft elevator
- Using energy-saving regenerative-drive technology

KONE SOLUTIONS

- ☐ 37 KONE MonoSpace® elevators
- ☐ 8 KONE MiniSpace™ elevators
- ☐ 1 KONE MiniSpace™ bespoke open-shaft panoramic elevator
- 🌀 8 KONE TravelMaster™ escalators
- ☐ 1 KONE JumpLift™ construction-time elevator
- 🎯 KONE Destination Control System
- KONE E-Link equipment monitoring system

construction-time elevator that uses the same shaft as the elevators in the finished building. It cut working hours drastically and allowed for speedier installation of the building facades. These are both factors that can have a dramatic effect on deadlines for a project of this scale.

To handle the challenge of different types of people flow, an advanced KONE Destination Control System was installed to optimize traffic. Each elevator was also connected to the building's security hub through the KONE E-Link monitoring system. Since litigants would need to move through the building, the elevator cabins had to be custom made, says Fournier Favre.

"They were made with two compartments inside, separated by bars for the litigant to enter on one side, and law enforcement officials on the other, allowing them to move vertically inside the building in a secure way," he explains.

The result is a painstakingly designed and constructed entity that utilizes 55 KONE elevators and escalators to help some 9,000 people move around the building every day. KONE's crowning solution is a one-of-a-kind, panoramic elevator that goes up



30 floors, traveling a distance of 110 meters at a speed of 2.5 meters per second. The KONE team worked closely with Renzo Piano to ensure the architect's vision was incorporated into a functional design.

"It is unique in the world and is special for having been developed in an open shaft," says Fournier Favre. "The cabin is fully glazed with a red frame. It was manufactured in the KONE factory in Hyvinkää, Finland, and transported and installed in one piece directly into the shaft."

THE INNOVATIVE BUILD also showcases advanced environmental features, such as solar panels, enhanced thermal insulation, rainwater collection and a natural ventilation system.

This was essential for François Xavier Dutac, who considers such solutions fundamental to the construction of any building.

"We often see over-equipped, over-connected buildings that must become more and more energy-efficient," he says.

The features above, coupled with solutions like KONE's energy-recycling regenerative drive technology, were an important part of the picture when it came to the building meeting its energy consumption targets.

The task was indeed monumental – and so is the result. The Tribunal de Paris is a true testament to form and function, standing tall amid the Parisian skyline.

"This type of project is first of all a human adventure," says Fournier Favre. "Some say that we only have one project like this in our lifetime." /



"The Tribunal de Paris is a true testament to form and function. Different flows of people - including attorneys, litigants, the general public and technical service staff - need to be managed in a completely secure way."



[SCAN THE CODE TO SEE A RELATED VIDEO](#)



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On top of the world


It's not every day you see heavy-duty escalators transporting skiers at the top of an Alpine slope. How did they get there? And how do they operate amid the snow, ice and grit?

TEXT: David J. Cord PHOTO: Jan Husar



STUBAI GLACIER





“Visitors bring in snow, salt and little stones, and this is not good for the escalators. We needed a good product with superb quality.”

If you ever go skiing on Stubai Glacier in Tyrol, Austria, you’re in for a treat even before you get to the slopes. The resort features the 3S Eisgratbahn, the Alps’ longest and most comfortable triple-wire cable car. It also features some unique escalators installed at the stations along the side of the mountain.

“We received many offers for the project and had many meetings, because we were not just buying a product, but we were also looking for long-term support and services,” says **Andreas Kleinlercher**, cableway director at Stubai Glacier. “With KONE we knew we were in good hands.”

“**THE PROJECT** called for four escalators: an eighteen-meter escalator at the base station, two fifteen-meter units in the middle, and one eleven-meter unit at the top,” explains **Florian Strele**, sales representative for KONE Austria in Tyrol.

“You can imagine how big those parts are. These four escalators weigh around 37 tonnes, which we had to transport to the site.”

This was no easy task, particularly for the middle and top stations. They were next to a protected nature reserve and the only route up was a steep, narrow road with a 30 percent incline and many curves.

“We had to transfer all items with a special four-by-four truck capable of going up there and then coming down in reverse, because there was no place to turn around!” Strele says.

Of course, in a project of this size KONE was not the only company that needed to use the tiny road. Many other contractors used it for their own tasks.

“Everything went smoothly thanks to the efficient harmony of KONE employees, our construction personnel and electricity technicians,” Kleinlercher says. “Everything worked because it was planned properly. With such a big construction project it is important to plan the several executions of different parts of the project.”

THE LOGISTICS AND INSTALLATION were challenging enough, but there were also special requirements for the escalators.



“The escalators must be really solid and able to withstand rough use,” Kleinlercher explains. “We have around one million visitors per year. Visitors bring in snow, salt and little stones, and this is not good for the escalators. We needed a good product with superb quality. The main requirement was for escalators to last a really long time, but we also needed to have good technical support.”

The KONE TravelMaster™ 120 was perfect for these conditions, Strele says, but even the visitors posed particular challenges. After all, they are not like shoppers on a mall escalator.

“People are wearing ski boots and carrying their poles, skis and snowboards. It is quite difficult to move around with all that equipment,” he explains.

PEOPLE CARRYING SO MUCH GEAR also created a safety concern. KONE wanted to make sure the ride on the escalator was smooth and that visitors were not surprised by its start or finish.

“When people step on the escalator, they go forward three steps

horizontally before it starts to incline. The last three steps are also horizontal so they realize it is time to exit,” Strele says. “Also, a normal stairway might have an incline of 30 to 35 degrees, but these escalators incline at only 27.3 degrees in order to keep people safer.”

Kleinlercher emphasizes how important it is for skiers to be able to move comfortably around the resort so they have a great experience. To avoid bottlenecks, the escalators can even be slowed down to match the speed of the gondolas.

The system is so impressive that it is getting a lot of attention in the industry.

“I have to say, here at Stubai Glacier we have pretty good skiing,” says Kleinlercher. “Many cable car colleagues from around the world are coming here to see our new system. They look up at the gondolas and they look down at the escalators at the three stations, and they see that they work so well.

“They do not believe it; they ask how it is possible to have escalators here! Many want this available for them in the future. I believe it makes people feel good and I think that is really important.” /

Winter is here

Installing and operating escalators at locations that cater to holidaymakers in winter conditions poses a unique set of challenges. At the Stubai Glacier ski resort, for instance, KONE's escalators need to be able to handle passengers' ski equipment, temperature changes from -20C to +20C, and unusually high amounts of salt and grit. Grit has a tendency to get lodged within the escalator's machinery and is the most common reason for equipment to seize up.

During blizzards the escalators even have to withstand snow blowing on them and perhaps getting inside the machinery. The escalators need to be heated because of the cold weather.

To solve these challenges, KONE used the KONE TravelMaster™ 120, a robust solution built to meet special requirements, such as surfaces which can neither damage nor be damaged by ski equipment. This involved using galvanized steel surfaces that differ quite significantly from those of a typical escalator. The inner machinery was also built to be rugged to deal with problems such as grit, making it possible for the escalators to handle the extreme working conditions.

And if there ever is a problem, KONE support dispatches technicians to fix the issue as soon as possible, with minimum disruption to the resort's operations and visitors' holiday plans. /



The Stubai Glacier ski resort features the 3S Eisgratbahn, the longest and most comfortable triple-wire cable car in the Alps.



PHOTO: Andre Schoenherr

SUMMARY

STUBAI GLACIER



TYROL – AUSTRIA

FACTS

Year of completion: 2016

Stubaier Glacier: Austria's largest glacier ski resort

Combined weight of 4 escalators: 37,000 kg


CHALLENGE


- Transport and install escalators on the side of a mountain to heights of up to 2,900 meters above sea level
- Ensure minimum disruption to the adjacent protected nature reserve
- Finish installation within two summers
- Find an escalator solution to handle the stones, ice and dirt found on ski slopes and transport skiers and their equipment safely


SOLUTION

- Using a special 4x4 truck to transport all the equipment to the top of the ski slope
- Working closely with the customer for a comprehensive plan and detailed execution schedule to meet deadlines and limit environmental disruption
- Utilizing specially treated, durable materials and designing extra safety features into the escalators

KONE SOLUTIONS

 1 KONE TransitMaster™ 120 escalator at 1,695 meters above sea level

 2 KONE Transit Master™ 120 escalators at 2,300 meters above sea level

 1 KONE TransitMaster™ 120 escalator at 2,900 meters above sea level



SCAN THE CODE TO SEE A RELATED VIDEO

Growing with green credentials

East Africa's economy is growing and diversifying, and increased awareness means that the focus is on ensuring this happens sustainably. The trend is visible in Kenya's retail segment, especially at the Two Rivers Mall in Nairobi, where KONE's people flow solutions help shoppers get where they're going.

TEXT: David J. Cord PHOTO: Two Rivers Lifestyle Centre

Boosted by investments in infrastructure, new commercial construction and higher domestic consumption, Kenya is today one of the most developed countries in East Africa. "There is a great trend of urbanization in East Africa," says **Ramses Malaty**, deputy head of mission at Finland's embassy in Kenya. "Many big cities are becoming hubs of industry and commerce. Nairobi is probably the largest and fastest-growing hub, driven by investments in industry and new construction."

The numbers look promising. Kenya's construction sector is forecast to grow 6.8 percent annually for the next few years. Infrastructure projects, such as roads, ports and rail lines, are getting a boost from new investments, and the country is expected to need some 350,000 square meters of additional commercial office space.

The Kenyan government is also taking steps to ensure this expected growth is sustainable. It is focused on meeting the United Nations Sustainable Development Goals as well as its own blueprint for national development, the Kenya Vision 2030. The aim is to transform Kenya into a middle-income country providing a high quality of life for all its citizens in a clean and secure environment.

In line with the vision, a government-appointed taskforce is working to encourage investments into remote areas of the country in the hope that these investments will have a domino effect, bringing in further investments and benefiting the region as a whole.

THE TWO RIVERS MALL complex is a good example of one such investment. Located on the periphery of Nairobi, it is the largest mall in Sub-Saharan Africa outside of South Africa.

The Two Rivers Mall is a significant mixed-use development. Already in place are 67,000 square meters of shopping space, 27,000 square meters of office space, a separate office block, an outdoor entertainment arena and a hotel. A residential area is also under development.

KONE supplied 51 elevators and escalators to the shopping and commercial areas and another four to the hotel.

"Tenants are assured of traffic flowing to their shops, and in this way we were able to add value to Two Rivers with our people flow solutions," says KONE East Africa Sales Director **Stanley Musau**. "This was a very good experience for KONE and a huge milestone in this growing market."

Every project has its challenges, and the Two Rivers Mall had more than its fair share. The mall is large and had a complex design, but these weren't the most difficult challenges KONE had to overcome.

"Centum led the Two Rivers project, building it on a greenfield area and taking the challenge to equip it with state-of-the-art infrastructure. At the onset, we encountered power challenges with generators providing an interim solution for testing and commissioning. This did not dampen our spirits as we were deeply committed to deliver our part; Two Rivers currently operates its

own power substation, an ambitious feat for any private developer in the country,” Musau explains.

KONE worked carefully with the developer and other contractors to make things happen and, in spite of the delays, the end results exceeded expectations.

“**WE HAD OVER 200,00** people come along for the opening weekend and we had no equipment problems at all,” Musau says. “You forget about the challenges when you are able to deliver such a superb solution to the client!”

Many people took social media videos of their first trip to the mall during the opening weekend. Over 80 percent of the people entering the mall used the KONE autowalks and escalators to move around the complex. And a surprisingly high number of videos were shot from the KONE escalators.

“Yes, Two Rivers is really a spectacle when viewed from the escalators,” Musau agrees. “This helps to illustrate why the reliability of the equipment is so important. We are not just moving people; we are providing an experience.”

Kenya has a young population – Malaty points out that about half of Kenyans are under the age of 25 – and major development projects such as Two Rivers need to be able to attract these millennials with things to do and see.

“The exquisite design of Two Rivers Mall has its restaurants overlooking a riverfront with numerous activities including exciting dancing fountains, flume rides, bumper boats, aqua play, water zorbing and a skate park, among others, that keep families entertained all day long,” Musau says. “This is a great example of the mall creating an attraction to complement its wide selection of over 120 stores, and our job is to help move those people safely, efficiently and pleasantly.”

DEVELOPMENT MIGHT BE BOOMING in East Africa, and Kenyans are working hard to make sure the development is sustainable. About 89 percent of Kenya’s electricity comes from renewable sources, chiefly hydroelectric. Geothermal is also important and increasing numbers of wind farms are also coming online.

The roof of Two Rivers boasts solar panels with a 1.2-MW capacity and the owners are currently seeking the 4-star rating from the Green Building Council of Kenya.

Musau says that KONE is now the supplier of choice in East Africa. And not just for retail projects, but also for hospitals, hotels, offices and the rapidly growing residential segment, supporting the Kenyan government’s mid- and low-end affordable housing agenda.

Centum’s portfolio of real estate projects in the region is impressive. And Two Rivers Mall is a flagship project for KONE, too.

“Two Rivers is really a signature project and great reference for KONE in the region,” Musau says. “If someone wants to know what we can do, I ask them if they have been to Two Rivers.” /

SUMMARY

TWO RIVERS MALL



NAIROBI – KENYA

FACTS

Year of completion: 2017

Size: 67,000 square meters

Number of shops: Over 120 international and local retailers

CHALLENGE

- Help create a landmark commercial complex that attracts visitors to a relatively remote suburb
- Ensure smooth people flow at the mall
- Transport materials and labor to the project and install equipment in spite of limited existing infrastructure

SOLUTION

- Effective project management and careful planning to find the right solutions to ensure smooth people flow across the complex
- Close collaboration with other contractors to find shared solutions to problems relating to limited existing infrastructure
- Using equipment monitoring technology to ensure the continued smooth operation of elevators, escalators and autowalks

KONE SOLUTIONS

- 15 KONE Monospace @ 700 elevators
- 14 KONE Transys™ service/goods elevators
- 18 KONE TravelMaster™ 110 escalators
- 4 KONE TravelMaster™ 115 autowalks
- KONE E-Link equipment monitoring system

On the bend of Two Rivers

The Two Rivers Mall is located on the 102-acre Two Rivers Development, a mixed-use destination comprising commercial, retail, entertainment, residential and hospitality facilities. This diverse offering of amenities is supported by investments into state-of-the-art, smart city information and communication technology (ICT) and environmentally sustainable infrastructure, with about 30 percent of the space allocated to green areas.

Already in place are 67,000 square meters of shopping space with 27,000 square meters of office space, a separate office block, an outdoor entertainment arena and a hotel. A residential area is also under development.

Conceptualized by East Africa’s largest listed investment company, Centum Investment Company, the Two Rivers Development has been recognized by the Kenyan government for its contribution to the region’s growth, development and employment. Centum, which had total assets of USD 655 million at the end of March 2018, is in the business of the development of investment-grade opportunities. Its real estate strategy is to participate in the entire development process, beginning with land development and property development through to property portfolio management. /



Embracing smart solutions for urbanization

We are living in an extraordinary age of cities. As a percentage of the total global population, more people live in cities than ever before in history. The most productive cities continue to attract the vast majority of talent, innovation and opportunity. But there's a paradox for high-performing cities: the more attractive cities become, the more challenges they have for housing affordability, travel congestion and environmental quality. These challenges in turn undermine the cities' fundamental draw.

Christopher Choa

Vice President/AECOM, Global Trustee/Urban Land Institute
Advisor to the Mayor of London's Infrastructure Delivery Board

One of the most important things a city can do to maintain its competitive edge is to encourage productive increases in urban density while at the same time improving quality of life and amenities. This balance allows large numbers of people to interact with each other and for trade and exchange in as seamless a way as possible. Smart development strategies are essential, and they range from comprehensive, well-coordinated planning to the integration of digital technologies that minimize transport congestion and improve the ground-up responsiveness of city administration.

THE BEST INNOVATIONS in transport reduce barriers to natural pedestrian-oriented movement. They increase the number of people who can easily access the urban system and they also improve livability – the quality of user experience. Technical innovations combined with good design make buildings and cities more attractive to users. Comprehensive vertical transportation solutions contribute significantly to livability. Addressable elevator systems, for example, with destination dispatch algorithms to answer a given request, are just some of the innovations that allow workplaces and institutions to increase their critical density and vibrancy.

But advances in vertical transport technology are only part of the answer. It is increasingly important to consider the typical user's journey as a whole rather than simply maximizing the performance of any single part of it. Even if an elevator performs exceptionally well, it is of little value to the user if the movements before or after the elevator journey are cumbersome or not well-integrated into the overall trip. If we save 30 seconds waiting for an elevator but waste 30 minutes during the rest of the commute, we will consider our options and perhaps go somewhere else. So we must consider how comprehensive urban planning, including thoughtful consideration of the “in-between” areas between use groups and transport modes, is a big part of a city's success.

HIGH-PERFORMING CITIES across the world, supported by proactive governments, are embracing smart solutions for urbanization. Many European countries like the Netherlands, with hubs like Amsterdam and Rotterdam, were early adopters of smart solutions. But in several cases, cities that digitized their services only recently have greater rates of absorption than cities that initiated similar services earlier. New York City, for example, launched e-government almost a decade ago, but Mexico City has comparatively greater usage in only a few years. São Paulo and Moscow have the highest socialization of e-hailing services, greatly increasing affordability and convenience of mobility. Moscow and Dubai have made great efforts to digitize government services and move them online.

Cities that are challenged by some of the highest historical population growth and densification rates have been the quickest to adopt smart solutions; Shanghai, Hong Kong, Seoul and Singapore

are in a small group of cities where more than 30 percent of the population routinely embraces technology in this way.

While European cities have traditionally defined what “livability” can be like, it's Asian cities that offer lessons in how to deliver the next generation of supporting infrastructure more rapidly. Asian cities have leapfrogged many European ones in smart strategies partly because their governments are more technocratic to begin with, because they are more open to sharing-economy strategies, and also because they had greater urban challenges to overcome.

Many African nations are experiencing massive rural-to-urban migration, and the rapid growth of their related cities is both a response and a driver for economic development; these cities will have to rise up to the challenge. They will increasingly compete with European and Asian cities for global talent and investment and will need to achieve and maintain international standards of livability in order to become relevant and competitive on a world scale. These cities will increasingly seek smart strategies that can help manage urban challenges like traffic congestion, housing unaffordability, environmental degradation and unresponsive governance.

TECHNICAL INNOVATIONS like e-hailing for shared vehicles, smart metering, e-government, and digital payments for real-time services and digitally enabled mobility solutions are some of the tools we can use to overcome urban challenges. Buildings are performing more strongly with environmental systems that anticipate user needs and adapt to users in real time. Advances in vertical transportation will allow buildings to improve their performance by maximizing usable area in ways that are also more attractive to users. Innovations in autonomous mobility (especially driverless vehicles), enabled by 5G data networks, and the increasing socialization of the sharing economy will substantially alter the physical landscape; sidewalks will widen, parking areas will reduce, substantial areas currently given over to private vehicles and commodities will be available for other uses and better experiences. Successful planners will anticipate some of these big spatial shifts and also encourage governance that will balance outcomes and lock in public benefits related to these changes.

But technical innovations and planning improvements are not ends in themselves; they are only a part of the solution. We need to define what we are trying to accomplish in the first place, and then apply broad, integrated urban planning to achieve it. We will increasingly demand that technology supports our needs rather than simply adapting to the operational limitations of technology. As citizens, industrialists, planners and governments, we will come together to define our promises to each other: how will we deliver the greatest urban value, for the most number of people, and with the least amount of public expense?

As the American journalist Herb Caen once said: “A city is not gauged by its length or breadth, but the broadness of its vision and height of its dreams.” /



Saving St. Patrick's Day

Cities are like children: they outgrow themselves. Cleveland's main transport hub underwent an urgent overhaul in time for the biggest street party of the year, and KONE was there to see it through.

TEXT: Silja Kudel PHOTO: Gary S. Yasaki and Getty Images

TOWER CITY RAPID STATION



One of America's oldest St. Patrick's Day parades kicks off on Superior Avenue in Cleveland, Ohio, a growing metropolis that pulls out all the stops when celebrating its Irish heritage. Huge crowds of revelers congregate in the downtown area for a day of pubs and parties. And, with Guinness flowing generously, public transport is packed to the gills come March 17.

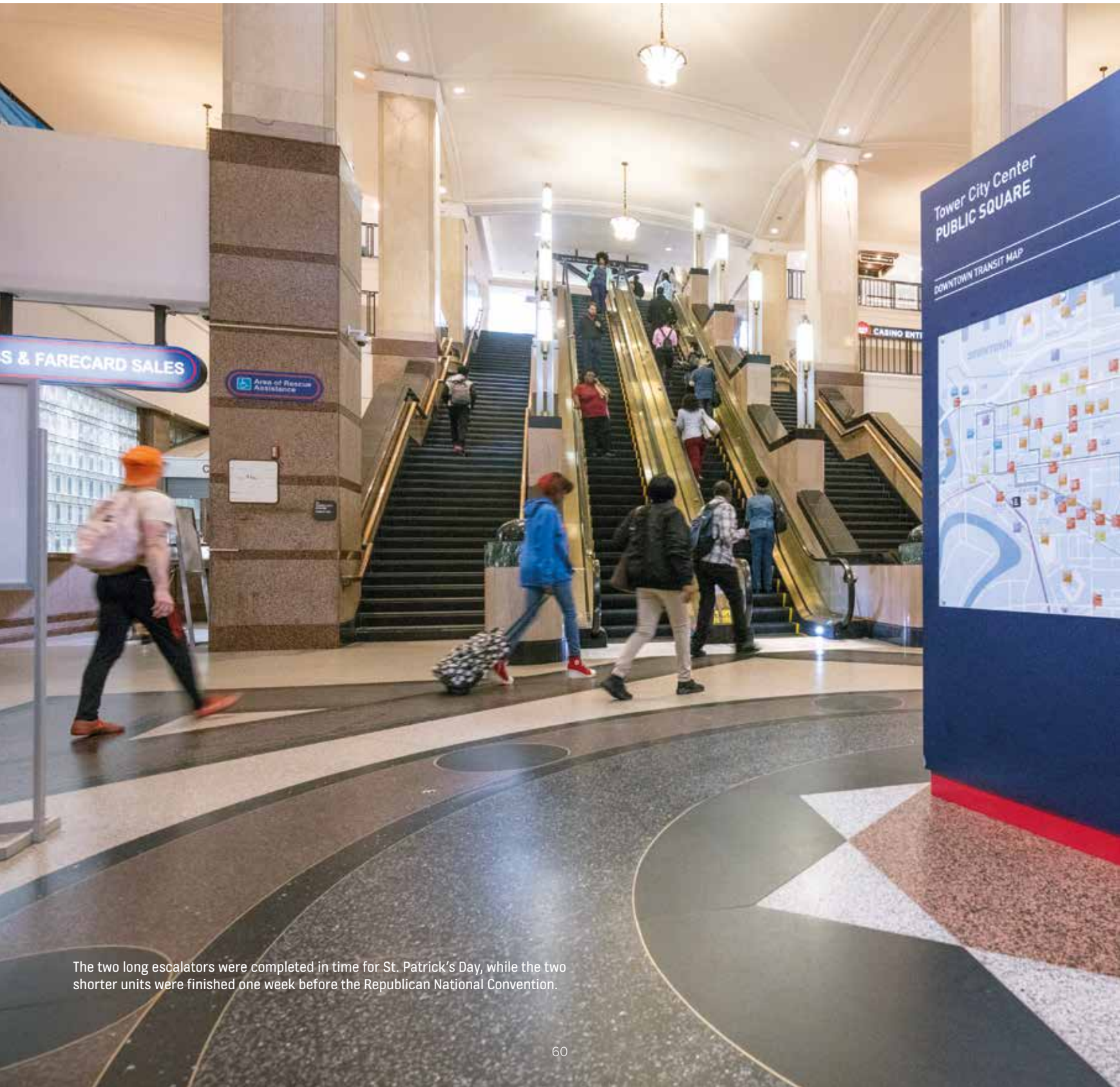
"Packed" is in fact a fitting year-round description for the Tower City Rapid Station, one of Cleveland's key transport hubs. The city's rail lines and main bus routes converge on this ultra-busy terminal, which is integrated with a cluster of hotels, restaurants, shops and

offices. The hub serves a daily average of over 30,000 commuters, with numbers surging to 100,000 on St. Patrick's Day.

IN BUSY TRANSIT HUBS, escalators are the unsung heroes that keep cities running smoothly. Few notice the humble workhorse when everything is flowing, but a stoppage can wreak havoc instantly.

Continual shutdowns were causing bottlenecks in the Tower City Center complex, where the four aging escalators were reaching the end of their useful life.

"The original units were installed around 1981. It was critical to improve their durability to meet rising levels of daily usage and



The two long escalators were completed in time for St. Patrick's Day, while the two shorter units were finished one week before the Republican National Convention.

“It was a huge undertaking. A mistake would have shut down the city.”

achieve compliance with current safety standards,” describes KONE Project Manager **Dan Powers**.

“Out with the old” was the verdict – but “in with the new” involved a catch. Due to space constraints and the need for the station to remain open, full replacement of the old units was out of the question.

The Greater Cleveland Regional Transit Authority (GCRTA) decided – with initial skepticism – to try the KONE EcoMod™ modernization solution, which enabled new-generation escalators to be fitted smoothly and efficiently without removing the original trusses.

AND THERE WAS A SECOND CATCH: two very critical deadlines. “We wanted to replace the four escalators in time for the busiest traffic day of the year, St. Patrick’s Day, and the Republican National Convention (RNC), which brought 50,000 people to the city,” explains **Steve Hershman**, GCRTA’s project manager for the modernization program.

“As the RNC was televised internationally and Cleveland was where Donald Trump accepted his party’s nomination to run for president, we wanted to ensure that people could access trains without any incidents attributable to faulty escalators,” notes Hershman.

The work was performed in two phases. The two long escalators were completed in time for St. Patrick’s Day, while the two shorter units serving the mezzanine were finished one week before the RNC. KONE shut down one unit at a time and erected an eight-foot-high (2.4-meter) wall around the escalators, redirecting pedestrians during installation.

“It was a huge undertaking. A mistake would have shut down the city. We adhered to a very strict schedule and held more than the usual number of meetings to plan and coordinate every detail from barricades to storage,” recalls Powers.

DESPITE CHALLENGES, KONE delivered both pairs of escalators on time. The old equipment was upgraded to robust units complete with modern safety features. A dramatic visual improvement was achieved by switching the solid balustrades to glass.

“The project progressed extremely well. I have never seen such a dedicated, focused group of professionals who know their craft,” notes Hershman.

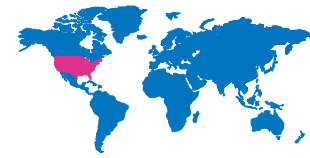
The GCRTA has received nothing but praise for the state-of-the-art escalators, which now provide reliable vertical transportation for commuters as well as patrons of Tower City Center for the long term.

“There’s no question this is an incredible, well-designed piece of mechanical apparatus. The escalators are now under a rigorous preventive maintenance program to ensure their longevity,” says Hershman.

In recognition of how the KONE EcoMod solution makes modernization easier for building owners, the Tower City Rapid Station project received *Elevator World’s* “Project of the Year” Award earlier this year. /

SUMMARY

TOWER CITY RAPID STATION



CLEVELAND – USA

FACTS

Modernization completed: 2016
Original escalators installed: 1981
Average daily number of commuters: 30,000


CHALLENGE

- Modernize four outdated escalators in Cleveland’s busiest transport hub
- Improve performance and safety significantly to comply with modern transit escalator standards
- Enable the station to remain open throughout the modernization
- Meet two critical deadlines: St. Patrick’s Day and the Republican National Convention

SOLUTION

- Using the KONE EcoMod™ modernization solution to provide brand-new escalator technology using existing trusses to limit disruption and save costs
- Adding several safety features to bring the new escalators up to current codes
- Replacing units one at a time on a strict, speedy schedule, with minimal disruption thanks to detailed planning

KONE SOLUTIONS

 KONE EcoMod™ escalator modernization solution for 4 escalators



Living the Chinese dream

Rising incomes have prompted many Chinese to move to cities. And this increasing affluence is also impacting their housing preferences with many, like those living in the lush Tianjin Vanke Wonderland development, now opting for sparsely populated residential communities.

TEXT: Kim Hunter Gordon PHOTO: KONE



SUMMARY

TIANJIN VANKE WONDERLAND



TIANJIN – CHINA

FACTS

Year of completion: 2015
 Size: 240,000 square meters
 Number of buildings: 119
 Number of units: 5,229

CHALLENGE

- Provide reliable and efficient elevators for a unique and vast residential compound comprising both mid-rise and high-rise apartment buildings
- Target of zero elevator entrapments across the complex
- Enable maximum uptime for all elevators on the site

SOLUTION

- Tailored elevator maintenance solution to meet the specific needs of the complex
- Dedicated team of technicians living on site and available to respond to urgent maintenance requests around the clock
- Open communication with facility managers and building residents to provide superior service

KONE SOLUTIONS

- 📦 Customized KONE Care™ maintenance, including 6 KONE technicians on call at the site
- 📦 227 KONE MonoSpace® elevators

Urbanization is driving economic development in China. The World Bank has estimated that by 2030, up to 70 percent of the Chinese population will be living in cities. New building projects tend to be residential, with data from the National Bureau of Statistics indicating investments of 6.59 trillion yuan in the real estate sector. Some 70.5 percent of that total is pumped into residential projects.

Rising incomes have also led to homebuyers demanding improved safety, better service and, most importantly, reduced densities of fellow dwellers. The most sought-after apartments right now are either in 16-to-18-story high-rises or in detached blocks of Yang Fang or “tenement-style” buildings of five to eight floors.

This trend is illustrated in Tianjin, a port city of over 15 million residents, that is part of the increasingly integrated Jingjinji metropolitan area just east of Beijing. Here Vanke, one of the

largest developers of high-end residential real estate in China, has developed the Tianjin Vanke Wonderland project, billed as the largest “Western-style” residential community in the region.

Consisting of rows of Yang Fang buildings with a few high-rise buildings dotted in between, the complex boasts well-manicured lawns, playgrounds, exercise areas and cycling paths. As such, it is a good example of modern housing projects in China that use scale, quality of life and the promise of exclusivity to attract homebuyers by the droves.

SURROUNDED BY two industrial parks and a higher education zone, the demographics of the residents here are relatively broad: a combination of young people who work in the vicinity, children and – as is common in China – their grandparents, who usually take over childcare responsibilities.



Tianjin Vanke Wonderland residents rely on 227 KONE elevators across the vast compound to get to their homes safely and efficiently.

While current residency rates are now at roughly 80 percent, the whole project has been sold out. The final group of around 1,700 residents are expected to move in in October 2018, bringing the compound to full capacity.

Vanke has chosen KONE as its national strategic partner for elevator installation and maintenance, and Tianjin Vanke Wonderland residents rely on a total of 227 KONE MonoSpace® elevators across the vast compound to get to their homes safely and efficiently.

The large number of elevators is explained by the size of the community. Most of the buildings house, on average, two families per floor and individual buildings are generally served by a single elevator. It is therefore crucial that the elevators remain operational at all times as stairs are the only alternative in case of an outage.

THIS IS ALSO WHY Vanke has mandated that the Tianjin Vanke Wonderland project have a zero rate of elevator entrapments,

with technicians expected to be on site within fifteen minutes of equipment faults occurring.

KONE's response is a team of service technicians living on site within the luxury complex. This means someone nearby is always on call, 24 hours a day, seven days a week. This also makes it easier for the service technicians to conduct routine maintenance checks and carry out repairs.

"When it's my turn to be on call in case something happens, even if I take a shower, I'll have my mobile phone with me in a waterproof case so that I can respond to emergencies quickly," says KONE technician **Liu Jian**.

And unexpected things do happen, even in carefully crafted new buildings and plush communities like this one.

"Most recently, we had water from the fire sprinkler system leak onto the elevators of one of the taller buildings, and we had to scramble to fix the problem," says **Qiao Lijao**, head of the KONE maintenance team based at the site.



While in most such cases elevators are left to dry out naturally, the on-site KONE technicians worked overtime to fix the problem as quickly as possible, using industrial-scale blow-dryers to dry out the equipment.

THIS IS NOT THE ONLY OCCASION the commitment and service mindset of the Wonderland team have impressed Vanke and the residents of Wonderland. All agree that clear communication goes a long way to alleviating anxiety when something goes wrong.

The KONE team once monitored an elevator continuously over 24 hours to identify the source of and fix an unexpected problem reported to building management by a frustrated tenant. And while they did, they also established efficient three-way communication to let the residents and building management know they were on the case.

“In the end, the resident was satisfied with our work and retracted his complaint. We were able to impress both Vanke and the district government with how hard we were working to fix it,” beams Qiao.

Quick and on-demand service like this is important, especially when you consider the tastes of Chinese homebuyers. The idea of living in gated communities with like-minded people, landscaped gardens and other amenities which promote the good life is highly sought after. With it, residents have come to expect sound facility management.

This makes the kind of exclusive service and care offered by KONE a role model for other housing projects in the region. /

Call of duty

Technician **Liu Jian** is one of the six KONE maintenance technicians stationed at Tianjin Vanke Wonderland for on-call duties.

A typical day in his life starts with morning meetings with the team to identify and work on potential maintenance issues.

“We have daily meetings among ourselves, with the Vanke building management and with subsidiary teams to discuss any issues affecting the buildings as a whole and to report on the functionality of elevators.”

Liu and his colleagues operate on a system where they regularly inspect elevators to ensure there are no potential problems that could influence elevator operations.

Some of the most common problems they encounter range from loose screws and connections to objects like wood chips and cardboard obstructing the lock and key mechanism on elevator doors.

Once identified, these problems are fixed quickly with the details passed on to the facility managers using the Vanke app. This, in turn, also lets the residents know what’s going on.

“As a technician, I feel most gratified in knowing that the elevator I have service is functioning well, that the property management and the residents are happy,” says Liu. /

Lifting in icy extremes

Far out on the freezing seas, there's only room for top-notch equipment. KONE took up the frosty challenge of modernizing the elevators of Finnish icebreakers.

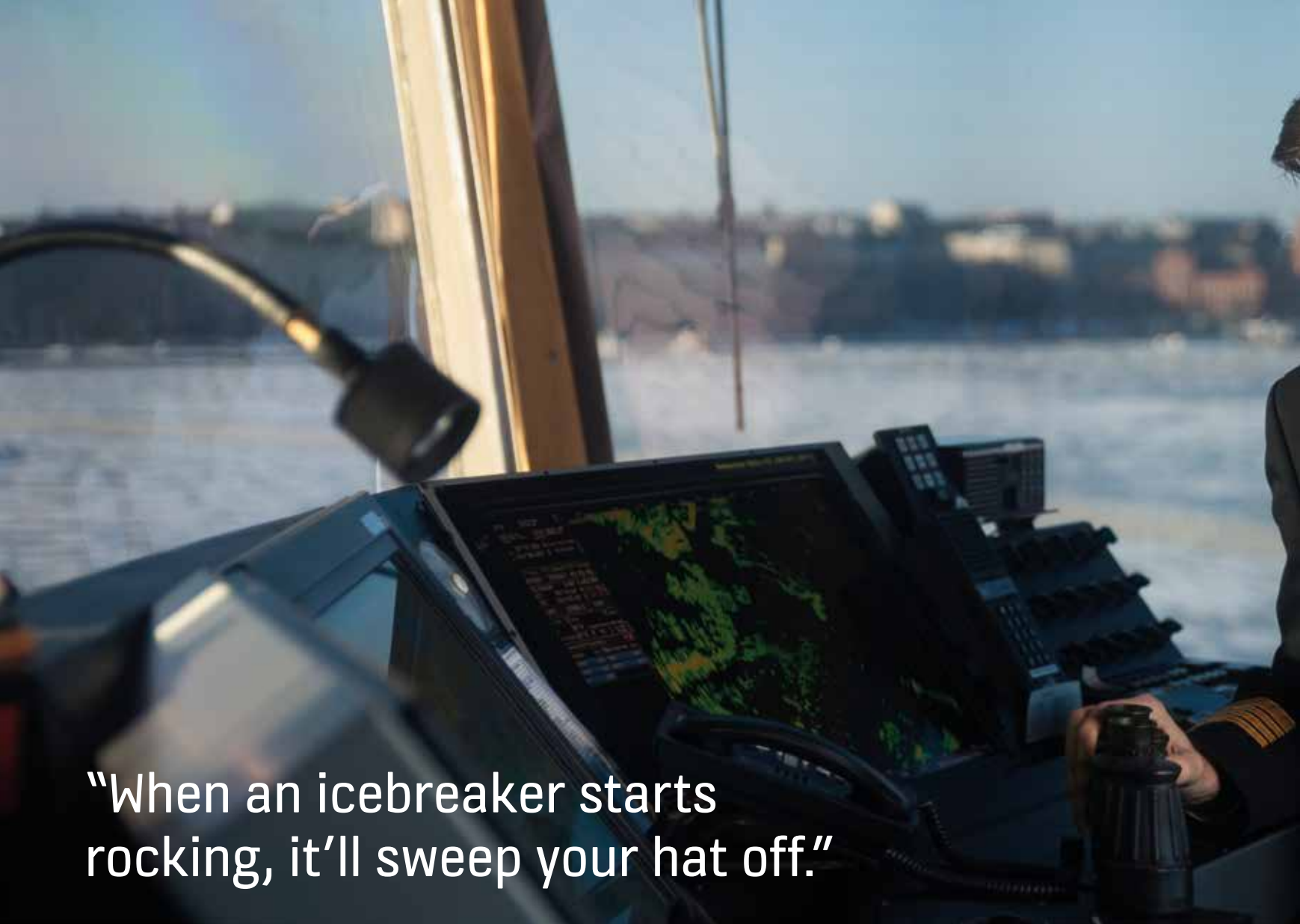
TEXT: Anne Salomäki PHOTO: Arctia and KONE



ARCTIA ICEBREAKERS



PHOTO: Flying Focus and Arctia Ltd



“When an icebreaker starts rocking, it’ll sweep your hat off.”

Breaking ice is no smooth business. **Timo Aaltonen**, master of Arctia’s Urho icebreaker, should know: for over 30 years, he’s spent his winters on frozen seas, making sure ships make it to their destination without interruptions.

Battling through pack ice and ice fields, Aaltonen describes the life on a vessel as “loud and trembling” – and he loves it.

“It’s probably because all winters are different, and you can’t predict what the season might bring,” he notes. “The only thing you know for sure is that the ice will be gone by midsummer, and then it’s time for holidays.”

Conditions can get rough, meaning that the ships and their equipment as well as the crew need to be of the finest quality. Unlike holiday cruise ships, icebreakers operate in remote areas, rough waters and extreme weather. Hence Aaltonen’s decades-long career is full of stories.

“In the late ‘80s, we were on the open sea in a storm. Let me tell you, these vessels aren’t made for open waters,” he says. “The bottom of the ship is like an egg and its center of gravity very low, so when an icebreaker starts rocking, it’ll sweep your hat off.”

THROUGHOUT THE YEARS, Arctia’s vessels have been renovated on several occasions. Most recently, KONE modernized all of the original elevators on board four of its icebreakers to meet today’s standards, particularly in terms of safety.

Key Account Manager **Jarno Kallioinen** calls the project challenging yet interesting. Timing was an important consideration: the vessels are out at sea on duty from October to April.

In the case of Urho, KONE’s task was to upgrade the elevator while conserving its historical characteristics. With KONE ReSolve™ T40, the elevator’s stopping accuracy improved, boosting both safety and comfort. The KONE ReFresh™ 200 elevator car and its KONE ReNova™ folding door solution suited the extremely challenging space requirements, as there was no elevator car door in the existing elevator and the shaft was small and narrow.

“Finding the room for the new elevator car door was difficult, but our team succeeded,” says Kallioinen. “This reduces the risk of wedging remarkably.”

THE ROUGH SEAS and trembling routines bring additional requirements to the equipment on board. Kallioinen points out that on ships, elevators don’t only move upwards and downwards, but from side to side, too.

“The conditions icebreakers operate in are particularly demanding, as the vessel shakes and shudders,” he explains. “All components need to be attached very carefully and secured with extra insulation.”

KONE also had the opportunity to spice up Urho’s visual appearance. Now, the elevator pays tribute to the ship’s eventful history. The walls of the new elevator are decorated with photos, one showing the ship on duty, the other portraying former Finnish President **Urho Kekkonen** shaking hands with his U.S. counterpart **Gerald Ford** on board the icebreaker.



Having photographs or art on elevator walls is a common request from KONE's customers. Kallioinen says that architects often ask for unique solutions – which KONE is happy to provide.

"Arctia's icebreakers are an iconic sight on the shore of Helsinki," he says. "It was a wonderful opportunity for KONE to have the chance to modernize their elevators and increase the safety of their crew and visitors."

WHEN URHO JOINED ARCTIA'S FLEET in 1975, it was Finland's largest and most powerful icebreaker. Urho's master Aaltonen says that its four propellers make it a four-wheel drive, to borrow car industry terminology.

Urho has 40-odd working winters under its belt, each lasting several months, and the vessel has stood the test of time.

"Technically, it's in excellent condition and fit for fight," Aaltonen emphasizes.

The presidential visit by Kekkonen and Ford hasn't been the only high-level meeting that's taken place on board Urho. Aaltonen says that in addition to being an operating icebreaker, the ship is also a showcase of Finnish expertise in the field.

"Urho has hosted plenty of high-ranking officials," he says. "One could say that its elevators are like business cards, drawing attention to the vessel's long history and high technology."/>



SCAN THE CODE TO SEE A RELATED VIDEO

SUMMARY

ARCTIA'S URHO ICEBREAKER



HELSINKI – FINLAND

FACTS

Modernization completed: 2018

Original elevator installed: 1975 (IB Urho)

Number of modernized elevators: 4 (1 per icebreaker)

CHALLENGE

- Modernize the decades-old elevators aboard Arctia's fleet of icebreakers
- Work within a limited timeframe determined by the icebreakers being at sea between October and April
- Find solutions to accommodate the extreme and remote operating conditions for elevators when vessels are at sea
- Find a solution to improve safety as original elevators lacked elevator car doors
- Preserve the vessels' historical characteristics

SOLUTION

- Adding extra insulation to ensure the equipment endures extreme conditions
- Improving the accuracy and safety of elevators with controller equipment
- Increasing safety by installing modern elevators that have elevator car doors
- Adding historical photographs to the elevators

KONE SOLUTIONS

 KONE ReFresh™ 200 car

 KONE ReNova™ folding door

KONE ReSolve™ T40 controller

KONE KSS signalization



Keeping people on the move at the world's biggest sporting event

Football has the remarkable ability to draw crowds, all the more so when it comes to the biggest tournament of the sport. When the elevators and escalators at the stadiums operate as they should, the focus remains on the game – not on getting to your seat.

TEXT: David J. Cord PHOTO: Shutterstock

When millions of football fans packed into stadiums across Russia last summer, little did they know that KONE technology and service teams were working in the background. Six of the 12 stadiums where matches were held feature KONE elevators and escalators as well as maintenance services. These include the 80,000-seat Luzhniki Stadium in Moscow, which hosted the opening match as well as the final that ended in France's 4-2 victory over Croatia.

But many of the players and fans were moving with a little help from KONE even before they got to the stadiums. Moscow's Sheremetyevo

airport was expanded by an additional terminal ahead of the tournament. Autowalks, elevators and escalators help make sure passengers and airport employees can travel smoothly through the new Terminal B and cargo terminal, as well as the north and south stations.

PREPARING FOR A MASS-SCALE, international sporting event is a complex undertaking. Apart from making sure the right equipment is in place to handle enormous peaks in the number of people making their way around the stadium, there are additional security aspects to consider.

RUSSIAN STADIUMS

SUMMARY

RUSSIAN STADIUMS & SHEREMETYEVO AIRPORT



RUSSIA

SOLUTIONS AT RUSSIAN STADIUMS & SHEREMETYEVO AIRPORT

- Nizhny Novgorod Stadium: 42 elevators & maintenance
- Luzhniki Stadium: 40 elevators & maintenance
- Volgograd Arena: 42 elevators & maintenance
- Rostov Arena: 41 elevators, 4 escalators & maintenance
- Spartak Stadium: 16 elevators, 2 escalators & maintenance
- Kaliningrad Stadium: 15 elevators & maintenance
- Sheremetyevo Airport: 56 elevators, 26 escalators, 3 autowalks

“A lot of inspections were held in the stadiums before the tournament, some of them in cooperation with Russian security services,” says **Sergey Brazhnikov**, KONE project manager and football fan. “They checked everything, including the shafts.”

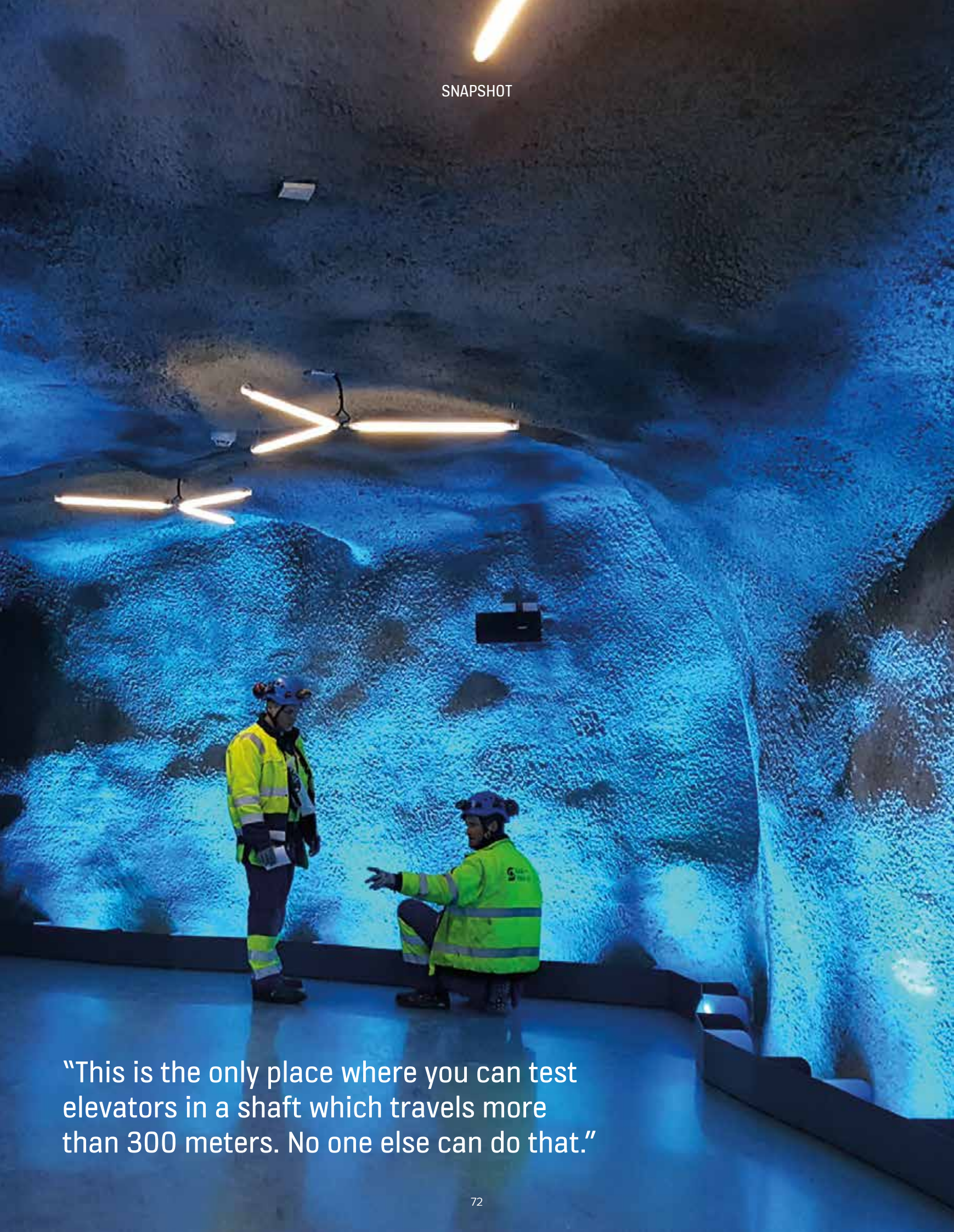
Getting the equipment installed was just the start. Regular monitoring and maintenance is critical to keeping it in top-notch running order. During the tournament, teams of KONE service technicians were on site at the stadiums to make sure the elevators and escalators operated smoothly when the players, coaches, journalists, stadium employees and fans needed them.

“All of our service people required accreditation for the tournament and for each game they needed new permits to stadium zones, including VIP areas,” Brazhnikov explains.

Demanding deadlines, intense scrutiny, tight security and high expectations from both the organizers and fans made the event one to remember.

“The most rewarding thing is that everything was done on time and the customers were satisfied,” says Brazhnikov. “We have to guarantee smooth people flow for everybody.” /

SNAPSHOT



“This is the only place where you can test elevators in a shaft which travels more than 300 meters. No one else can do that.”

The edge of innovation

Deep underground, in an active limestone mine in southern Finland, lies a research facility dedicated to pushing machines to extreme limits. At KONE's high-rise testing laboratory in Tytyri, the most innovative elevator technologies are put to the test.

TEXT: Kamala Govindan PHOTO: KONE

The setting could be straight out of a science-fiction movie. Cavernous limestone caves filled with high-tech equipment and serious-looking men and women monitoring and calibrating different machines. The high-rise elevator testing laboratory in Tytyri is where KONE tests elevators for the world's tallest buildings. It first started operations 20 years ago, and the facility was recently upgraded and expanded to ensure the testing of advanced concepts and equipment can continue.

"This is our secret place," says **Tomio Pihkala**, chief technology officer, KONE Corporation. "This is the only place where you can test elevators in a shaft which travels more than 300 meters. No one else can do that."

MAKING USE OF THE SHAFTS left behind by the limestone mining operations – which continue in other parts of the site – the KONE laboratory consists of 11 test shafts with a combined length of approximately 1.6 kilometers. The deepest shaft lies 350 meters below the ground, making it the perfect place to test elevators for modern day, supertall skyscrapers.

So why is travel distance such a big deal? During elevator testing, all the phases of an elevator journey – acceleration, travel speed, deceleration – must be tested. To reach a high enough travel speed, the elevator shaft must have a long enough travel distance. Testing high speeds in a controlled manner is not possible in a short shaft. The length of the test shafts at Tytyri enables elevators speeds of up to 19 meters per second. This allows for the testing of elevators in real-world conditions.

"As plans for tall and mega-tall buildings reach new heights, we will be able to use new materials to simulate the demands of tomorrow's buildings, today," explains Pihkala.

In addition to speed, other elevator features tested at the facility include ride comfort, acceleration, deceleration, mileage, material durability, and of course braking tests, which are critical to ensuring an elevator's safety and reliability.

ONE WAY KONE ENSURES its elevator safety gears are up to the mark is through a free-fall test. Here, an elevator is quite literally dropped into free-fall from a height of 200 meters, allowing it to reach speeds of up to 25 meters per second, just to see if its safety equipment can stop it successfully. That's the equivalent of putting the brakes on a car traveling at a speed of 90 kilometers per hour, and hoping that it stops before it hits the wall. The Tytyri facility is the only one in the world where free-fall tests of this magnitude can be conducted.

"We have a dedicated rig made for the free-fall test where we can adjust the weights to represent the mass of different elevators, and then simulate an uncontrolled drop," says **Antti Hoppania**, who headed quality and reliability at KONE at the time of the high-rise laboratory renovation. "In the sense that we are really going to the extremes in terms of weights, speeds, in everything – the Tytyri testing laboratory is where we push the boundaries of our technology."

THIS FACILITY is also where KONE tests groundbreaking technologies like the super-light KONE UltraRope® carbon fiber elevator hoisting cable. Durable and resistant to wear and abrasion, KONE UltraRope is also less sensitive to building sway than conventional steel cables. The significantly smaller moving masses involved in using KONE UltraRope mean that in the future, elevator travel heights of up to 1,000 meters become possible.

"It won't get as heavy as steel ropes when you go high, so you can go further than you can go with steel ropes," explains **Hilkka Hämäläinen**, design engineer at KONE. "We have been pulling it and bending it and pretty much doing all that is possible to it to see where the limits are."

And pushing the limits is exactly what the facility was designed for. From super-high-rise technologies and double-deck elevators to sophisticated remote monitoring and destination control systems, the world's most impressive buildings are running on the KONE innovations that have been developed at this testing laboratory in a deep cave in southern Finland. /

The world's most innovative elevator and escalator company



When Forbes business magazine published the 2018 edition of its annual ranking of the most innovative companies in the world, KONE stood out as the only elevator and escalator company to make the list. Ranking 59th, KONE was the seventh most innovative company in Europe.

Recent innovations include KONE 24/7 Connected Services, which uses cutting-edge technologies to enable the efficient and real-time maintenance of elevators and escalators (read more on

pp. 30 & 32). KONE Residential Flow brings ease and intuition into the experience of entering your home building (read more on p. 38). And KONE's expertise in assessing people flow and using new technology to create tailored solutions to match the needs and ambitions of its customers is second to none.

What's next from the company that revolutionized the industry 30 years ago with its machine-room-less KONE MonoSpace® elevator, and again with the introduction of KONE UltraRope® hoisting technology? Watch this space – creative disruption and innovation are the name of the game! /



Here come the robot butlers

The robots are coming, and they are here to serve you. KONE and Savioke have collaborated to provide service robots for the hospitality industry, helping make people flow smoother and way more futuristic than ever before.

Meet Relay, Savioke's autonomous delivery robot!

It runs on a wheeled platform & is equipped with an internal map.

Radar technology helps it navigate through buildings and crowds of people.

Relay is ready to serve! When hotel guests order snacks, coffee, fresh towels and the like, Relay delivers.

Relay can travel between floors as it is integrated with the KONE elevators in the building.

This integration is possible thanks to KONE using cloud and Internet of Things (IoT) technologies in their elevators.

Next time you order room service, you may get to meet Relay in person.



[SCAN THE CODE TO LEARN MORE ABOUT ELEVATOR-RIDING ROBOTS](#)



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At KONE, our mission is to improve the flow of urban life. As a global leader in the elevator and escalator industry, KONE provides elevators, escalators and automatic building doors, as well as solutions for maintenance and modernization to add value to buildings throughout their life cycle. Through more effective People Flow®, we make people's journeys safe, convenient and reliable, in taller, smarter buildings. In 2017, KONE had annual net sales of EUR 8.9 billion, and at the end of the year over 55,000 employees. KONE class B shares are listed on the Nasdaq Helsinki Ltd. in Finland. www.kone.com



Dedicated to People Flow™



KONE UltraRope®

It's all about a rope!

Traveling a kilometer is no huge feat – unless you want to make the journey upwards in a single elevator ride. The secret lies in the ropes.



Learn more about KONE UltraRope®