

*Dedicated to People Flow™*

**KONE**

DOHA, QATAR

## Design to inspire

An elevator ride should be more than a journey up or down a building. When passengers step into an elevator at Doha Tower, they are immediately wowed by a stylish interior that connects culture, contemporary design and the latest elevator technology. It's a ride to remember.

# KONE References

2012

# KONE References

KONE is proud to present these selected achievements from around the world. Join us on a journey through 2012.

Enjoy your visit.

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THE SHARD – LONDON, UK

# A skyline redefined

Piercing the sky like a shard of glass, The Shard is putting new punctuation to an already famous cityscape. Standing at 310 meters, this landmark building is the tallest in Western Europe and rises to twice the height of the London Eye observation wheel.









Developed by Sellar Property in association with LBQ Ltd. and designed by renowned architect Renzo Piano, The Shard is a multi-use vertical town rising to the equivalent of 95 stories. It brings over 111,000 square meters and 72 habitable floors of premium office space, retail stores, luxury residences, a five-star hotel, restaurants and a public viewing gallery to central London.

### Installation innovation

“One of the biggest logistical challenges during any construction project is getting building workers, materials and goods to the right place at the right time – with maximum safety and efficiency,” says **Michael Williams**, Managing Director of KONE Great Britain.

The Shard faced these typical challenges and more. The size and design of the building combined with a small footprint in an already congested area of central London equaled a challenging construction schedule from the very beginning. This is where KONE truly delivered with its innovative KONE JumpLift solution, maximizing efficiency, productivity and safety on site. The KONE JumpLift is a self-climbing elevator that can be used as an alternative to traditional exterior hoists during the construction phase. This was the first time the technology was used in Great Britain.

Williams elaborates on the numerous benefits of this innovation: “Workers spend less time waiting for exterior hoists and more time working. There is minimal disruption, a safer working environment and the ability to work in all weather conditions. The result is a faster enclosing and completed building, which can ultimately be handed over to the customer sooner.”

**Tony Palgrave**, Construction Director for Mace, adds: “The KONE JumpLift solution is fundamental to our strategy of transporting people and materials quickly and efficiently

to the top of the building and down again in the safest possible way. It represented an ongoing commitment to finding better ways to deliver this landmark project.”

### Seamless design

The architecture of the iconic Shard tower speaks for itself. The interior, including the vertical transportation, is no different.

“A well-designed elevator has a huge impact on the way people feel in a building. Our production factory in Finland created customized elevator cabs that appeal on both an aesthetic and a functional level. They leave a lasting impression on passengers,” says KONE Project Manager **Peter McCartney**.

### Moving efficiently

Thirteen KONE DoubleDeck elevators powered by energy-efficient KONE EcoDisc® hoisting motors contribute to the efficient flow of people within this vertical town. With two elevator cars in the same shaft, one atop the other, the technology creates significant space savings and increases traffic handling capacity in this high-rise building.

The double-deck elevators, and the other KONE elevators and escalators in the building, ensure smooth people flow in this London landmark. “This project further strengthens KONE’s leading position in the European high-rise elevator market,” says Williams.



## SUMMARY

### Challenge

- To provide permanent vertical transportation solutions that can also be used to move people and materials efficiently and safely during the construction process
- To maximize space and traffic handling capacity within the building
- To design custom elevator cabs following specific requirements

### Solution

- KONE JumpLift elevators used during construction enabled a quicker handover
- KONE DoubleDeck elevators for increased passenger handling
- Customized elevator solution designed to complement the building's aesthetics

## FAST FACTS

### The Shard

- Completed: 2012
- Height: 310 m
- Floors: 95 total, 72 occupiable
- Total floor area: 111,484 sqm
- Architect: Renzo Piano Building Workshop
- Building owner: LBQ Ltd.
- Developer: Sellar Property Group
- Contractor: Mace

### KONE Solutions

- 15 KONE MiniSpace™ elevators
- 2 KONE MonoSpace® elevators
- 13 KONE DoubleDeck elevators
- 3 KONE hydraulic elevators
- 3 KONE TransitMaster™ 150 escalators
- 2 KONE EcoMaster™ 130 escalators
- 5 KONE JumpLift construction time elevators





FIRST INTERNATIONAL FINANCIAL CENTER – MUMBAI, INDIA

# Class “A” partnership

First International Financial Center (FIFC) is located in Mumbai’s coveted financial district. Attention to detail plays a key role in the building’s competitiveness as a major headquarters destination for multinational companies.

The lobby is airy with neutral palettes and features a slice of India’s history with stone carvings similar to those found from hand-carved works in ancient Buddhist caves.

The customized design of the KONE MonoSpace® elevators blends in well with the surroundings. Thanks to KONE’s planning, communication and project execution, the customer met its tight construction deadline of one year.

“We were focused on pre-planning from the initial design stage. And although decision making was a team effort, all customer communication was done through a single point of contact,” says KONE Project Manager **Chandrashekhhar Kanthi**.

## A winning first in India

Like other projects in emerging countries, there was a first for KONE. The first KONE Polaris™ Destination Control System (DCS) in India was installed at FIFC. This solution optimizes people flow by incorporating information about desired destination floors and the number of waiting passengers, contributing to increased handling capacity and reduced journey times.

“It was important that the passenger waiting time be efficient. The customer chose KONE Polaris based on the number of people using the elevators. These elevators also offer smart grouping in which transfer time between floors is reduced,” Kanthi says.

KONE’s DCS technology and accompanying equipment were not familiar to local service technicians. “We trained technicians for six months before installation, after which our team was current on the procedures and technology,” Kanthi proudly explains.

But that wasn’t the only challenge. Initially, the building was to be 15 floors, but the local authorities decided that FIFC should only have 14 floors.

“By that stage, we were already working on floor number nine, which meant we had to modify our plans,” Kanthi describes.

The customer, however, was impressed by KONE’s ability to deliver on time, regardless of the last minute disruption.





## SUMMARY

### Challenge

- To install KONE's first destination control system in India on a tight schedule
- To remain flexible as building plans changed during construction

### Solution

- Synchronized destination control system to improve passenger handling capacity
- Close cooperation between KONE and the customer, including training for local technicians in order to meet expectations

## FAST FACTS

### First International Financial Center

- Completed: 2012
- Size: 61,000 sqm
- Floors: 14
- Certification: LEED
- Architect: Kohn Pederson Fox
- Building owner: Earnest Towers Private Limited
- Developer: Earnest Towers Private Limited
- Contractor: Altus Page Kirkland

### KONE Solutions

- 16 KONE MonoSpace® elevators
- KONE Polaris™ Destination Control System
- KONE E-Link™ monitoring system

“KONE has been a dependable partner in terms of their flexibility in responding to changing site conditions and for their ability to meet our stringent scheduling requirements,” says **Jeffrey MacNeill**, Director of Construction for Earnest Towers Private Limited.

### The green advantage

As more buildings seek to achieve LEED certification, FIFC is no different. The KONE MonoSpace elevators deliver A-class energy efficiency, cutting energy costs and lowering the building's carbon footprint.

“Our energy efficient solutions were an advantage we had over competitors. We understood the customer's requirements and because we were involved right from the start, we were also able to deliver on our promises,” Kanthi concludes.





PRINCESS TOWER – DUBAI, UNITED ARAB EMIRATES

# Record-setting design in Dubai

Dubai never ceases to amaze. The prestigious Princess Tower, the tallest residential building in the world to date, is a world-class example of modern building design and construction.











After its completion in 2012, the Princess Tower was recognized by Guinness World Records and the Council on Tall Buildings and Urban Habitat (CTBUH) as the tallest residential building in the world.

“Dubai is continuously building attention-grabbing structures,” says **Daniel Abraham**, KONE Project Manager. “Standing at 414 meters, the Princess Tower is destined to be a prominent icon in the real estate sector.”

KONE has a long-standing relationship with both the developer and contractor. “After yet another landmark project together, our relationship continues to be outstanding,” says **Srinivas Pidugu**, KONE Installation Manager.

This project, started in 2008, saw a lot of firsts for KONE. New methods and procedures, and even new solutions were developed and tested to meet customer requirements.

#### **Five-star custom solution**

Tenants will be awed by the elegance of this building. The passenger elevator cabs were custom finished with veneer and stainless steel panels matching the lobby design. “The interiors really provide that luxury feeling,” says Pidugu.

Building facilities at 350 meters above ground required a custom elevator. Using both standard and tailored components, KONE installed its first high-capacity elevator to access the full height of such a tall building.

“The design, engineering and installation of the elevator were of course challenging,” recalls Abraham. “We took special measures to ensure the elevator operates during excessive building sway.”

“We also had to develop solutions on site, such as new mega high-rise roping methods, to get this 4,800 kilogram capacity elevator to work just right,” adds Pidugu.

#### **Right from the jump**

The people flow pattern at Princess Tower is similar to that of any residential building, with peak traffic in the mornings and evenings. This is an established scenario for KONE. The more challenging scenario came during construction.

Because some elevators were needed as the building was erected, KONE’s JumpLift solutions, a first for the Middle East region, were critical to the project’s vertical transportation strategy.

KONE’s temporary machine rooms, which move (jump) upwards in the hoistway as a floor is added, enabled a faster and safer construction process. The construction time elevators were the nucleus of the emerging building, operating 24 hours a day throughout the project.

“KONE executed their work with extreme professionalism, very good technical control and superb management,” affirms **Asaad Abbas**, Project Manager for Arabian Construction Company. “On many occasions, they went beyond what was required.”

With handover complete, KONE looks forward to maintaining the elevators.





## SUMMARY

### Challenge

- To install a high-capacity elevator that can reach the top of the building
- To complete installation of two high-rise elevators before the permanent machine rooms were ready

### Solution

- Development of a mega high-rise roping method to accommodate the high-capacity elevator
- KONE JumpLift construction time elevators provided construction workers with safe and fast access to new floors once added

## FAST FACTS

### Princess Tower

- Completed: 2012
- Size: 170,000 sqm
- Height: 414 m
- Floors: 101 + 6 basement floors
- Architect: Eng. Adnan Saffarini Office
- Building owner: Tameer Holding Investment LLC
- Developer: Tameer Holding Investment LLC
- Contractor: Arabian Construction Company

### KONE Solutions

- 11 KONE MiniSpace™ elevators
- 2 KONE MonoSpace® elevators
- 2 KONE JumpLift construction time elevators

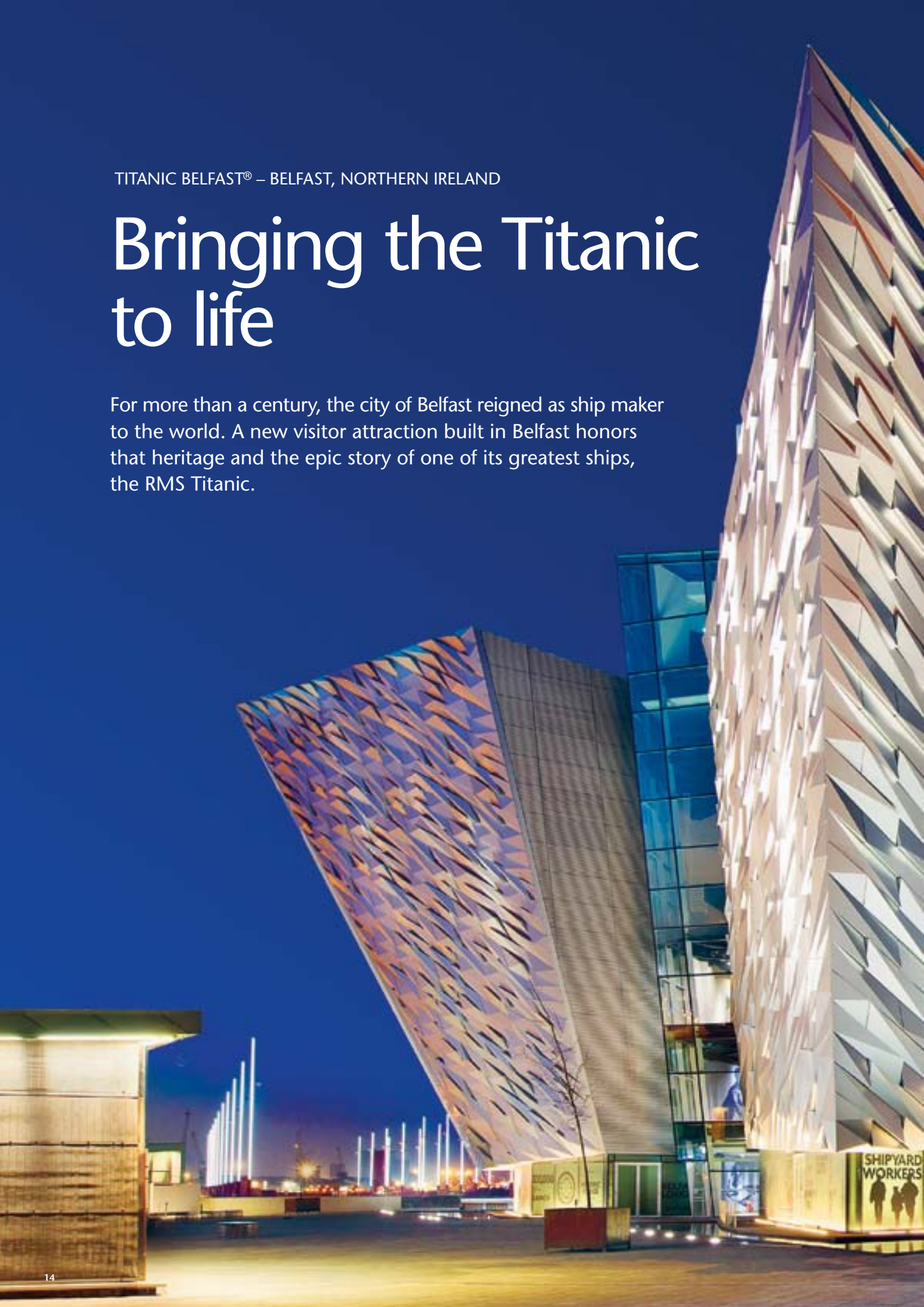




TITANIC BELFAST® – BELFAST, NORTHERN IRELAND

# Bringing the Titanic to life

For more than a century, the city of Belfast reigned as ship maker to the world. A new visitor attraction built in Belfast honors that heritage and the epic story of one of its greatest ships, the RMS Titanic.









A glittering addition to Belfast's newly revitalized waterfront, Titanic Belfast tells the tale of the most famous cruise liner constructed in a city long known for shipbuilding.

The world's largest Titanic-themed visitor attraction is contained in this six-story building and features interpretive and interactive galleries, a five-story atrium, a 1,000-seat banquet room, restaurants and retail space. Designed to accommodate up to one million visitors annually, Titanic Belfast honors a proud heritage while celebrating a progressive vision.

### Unsinkable design

KONE was involved in the early design stages of the project and crafted creative solutions that saved both time and money.

Original plans called for the use of a crane to install escalators through the roof structure. KONE developed an alternative – an internal railway system – allowing the roof to be installed sooner and the escalators later. "That sped up construction of the building, reduced construction costs and limited potential damage to the installed escalators," says **Jeff Scott**, Installation Supervisor at KONE Northern Ireland.

A custom-built 25-meter long KONE escalator – the longest single unsupported escalator in Ireland – rises unobtrusively through the atrium from the main lobby. Scott adds, "With a 10.2-meter rise, it offers excellent people flow without compromising the design considerations of the first floor."

Uniquely designed elevators also play an integral role in bringing the shipyard of 1912 to life. KONE installed a pair of elevators with a vintage industrial look while providing the modern benefits of safety, access and eco-efficiency.

### A responsive partnership

During the project, KONE fine-tuned the installation process by building in even greater efficiency. "There were many contractors on site at all stages of the project," Scott says. "Site readiness was a significant challenge. We tried to standardize our equipment as much as possible. Shipments were carefully timed. When our equipment arrived, we installed it immediately."

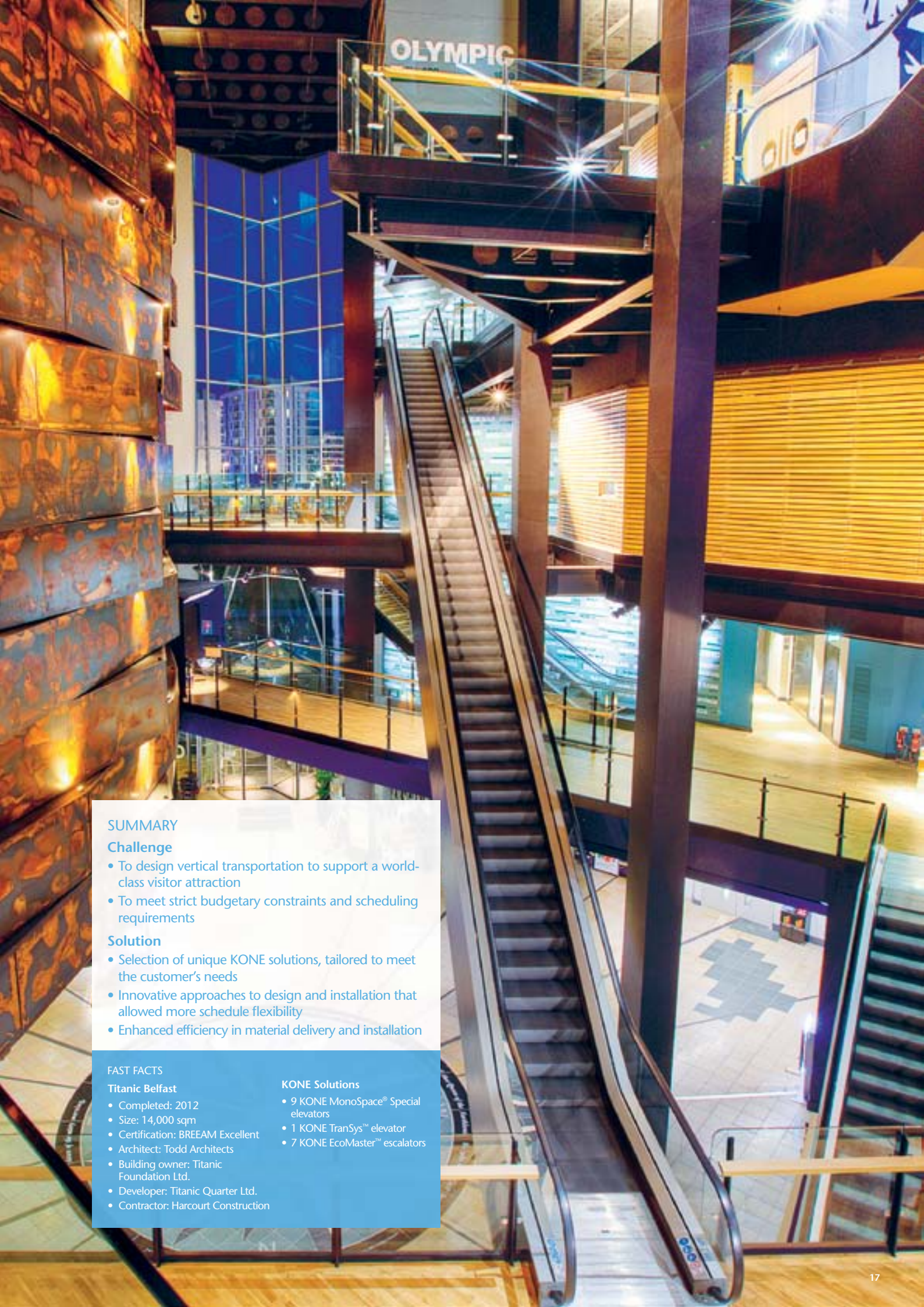
Additional eco-efficiency features like LED lighting, standby mode and variable frequency V3F drives for ride comfort helped Titanic Belfast qualify for BREEAM Excellent certification, a fundamental project requirement for sustainable design.

The opening date of the visitor attraction was unmovable as it coincided with the actual launch of the Titanic 100 years earlier. KONE delivered innovation, flexibility and a steadfast commitment to meet this scheduling must.

"We looked for a partner to provide the vertical transportation solutions that would meet the project's unique needs," says **Martin Conway**, Commercial Manager for Harcourt Construction. "KONE has demonstrated all of the attributes required to deliver this impressive project to the city of Belfast."







## SUMMARY

### Challenge

- To design vertical transportation to support a world-class visitor attraction
- To meet strict budgetary constraints and scheduling requirements

### Solution

- Selection of unique KONE solutions, tailored to meet the customer's needs
- Innovative approaches to design and installation that allowed more schedule flexibility
- Enhanced efficiency in material delivery and installation

## FAST FACTS

### Titanic Belfast

- Completed: 2012
- Size: 14,000 sqm
- Certification: BREEAM Excellent
- Architect: Todd Architects
- Building owner: Titanic Foundation Ltd.
- Developer: Titanic Quarter Ltd.
- Contractor: Harcourt Construction

### KONE Solutions

- 9 KONE MonoSpace® Special elevators
- 1 KONE TranSys™ elevator
- 7 KONE EcoMaster™ escalators



# Five-star service down under

Citigroup Centre at 2 Park Street is a landmark building offering premium office space in the heart of Sydney, Australia. Twenty-six KONE elevators serve the forty-one office floors atop a four-story retail podium and four-story car park.



KONE installed the elevators for Citigroup Centre at the start of the millennium. When opened, it was home to the fastest elevators in Australia with the units traveling at eight meters per second.

During the first ten years of operation, the elevators were maintained by a third-party service provider. However, in 2011, KONE began maintaining the elevators and has been active on site since.

## Working toward a joint goal

Quality of service was one of the key criteria in the selection of a new service provider. **Rita Vellar**, Major Accounts Executive for KONE's Service Equipment Business, recalls the discussion: "The owners told us they were experiencing a considerable number of passenger call-outs. This was impacting the perceived value of the building and had to be resolved."

Significant repair work was needed to return the equipment to KONE specifications. The reliability and performance of equipment has since improved considerably, along with a notable decrease in the number of call-outs.

"Our strong focus on the customer's concerns has resulted in a significant improvement in the passenger experience in the building over the past year," reports **Peter Evans**, Director of the Service Business for KONE Elevators Australia.

## Comprehensive solution

Timely preventative maintenance is crucial to fixing potential faults before they cause downtime. At the Citigroup Centre, KONE provides its KONE Care™ Maintenance Service solutions. The tailored plan includes KONE Clinica™, where a specialist investigates the cause of recurring problems and defines corrective actions.

KONE also has technicians on site from 7 am to 7 pm every weekday to ensure the equipment remains operational during peak traffic times.

Safe, reliable elevators are a vital part of the daily commute for the lawyers, bankers and other professionals working in the tower. The on-site KONE service team ensures this commute is a pleasant one.

"While we still have more to do, this site has gone from being one of the worst performing sites in our portfolio to one of the best," says Evans.

The changes have not gone unnoticed by the customer, either. In their latest annual review of the site, KONE received the highest possible rating: five stars!





## SUMMARY

### Challenge

- To bring an underperforming site up to the operational standards expected by the customer, end users and KONE

### Solution

- Initial service and technical repair of equipment
- Fixed manned location with on-site service technicians on weekdays

### FAST FACTS

#### Citigroup Centre

- Completed: 2000
- Height: 243 m
- Floors: 41 of office space, 4-story retail podium, 4-story car park
- Total floor area: 73,500 sqm
- Building owner: GPT (50%) & Charter Hall (50%)
- Property manager: Jones Lang LaSalle

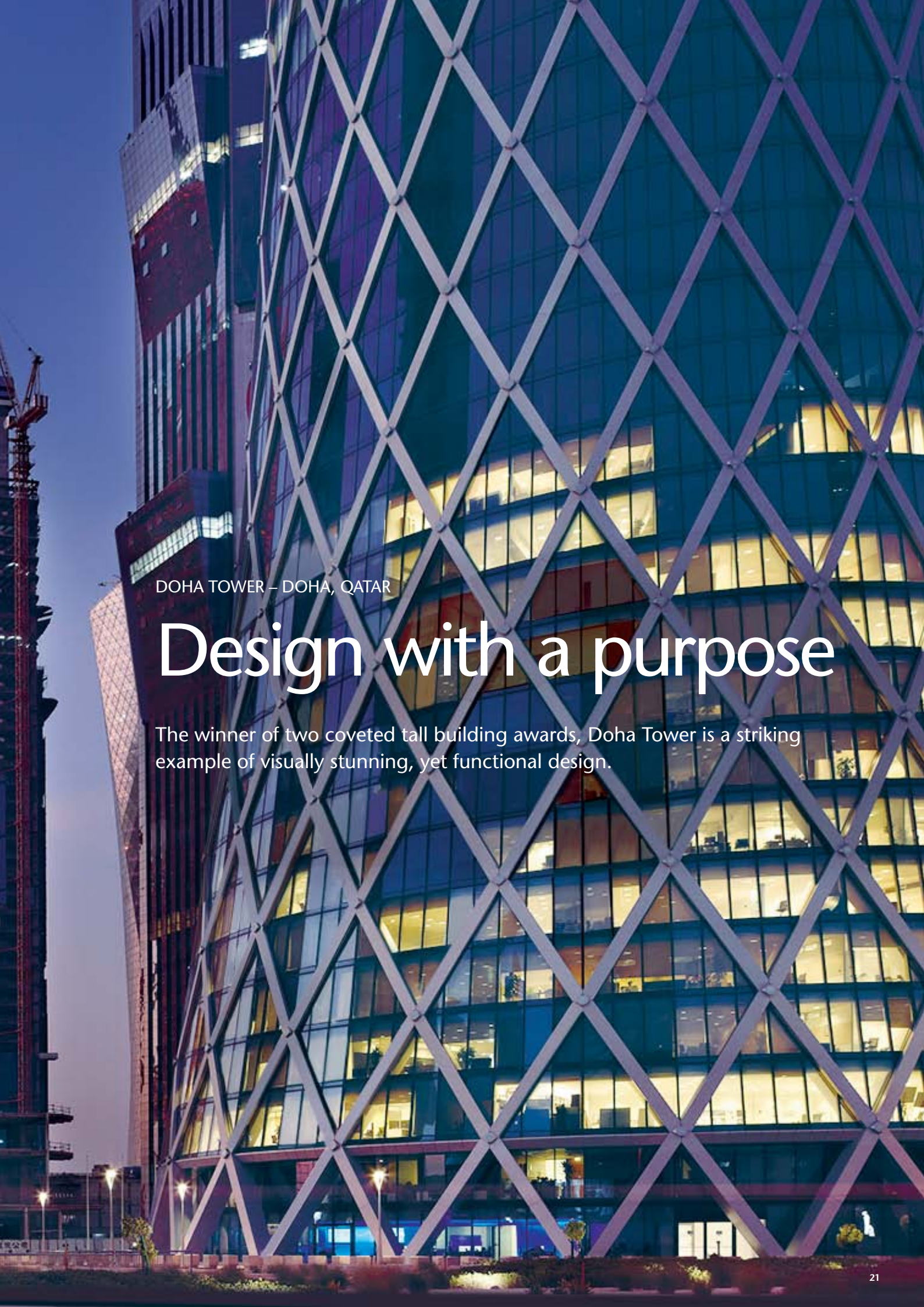
#### KONE Solutions

- 23 KONE passenger elevators
- 2 KONE car park elevators
- 1 KONE freight elevator
- KONE Care™ Maintenance Service
- On-site service technicians for 12 hours on weekdays









DOHA TOWER – DOHA, QATAR

# Design with a purpose

The winner of two coveted tall building awards, Doha Tower is a striking example of visually stunning, yet functional design.



## SUMMARY

### Challenge

- To install elevator solutions requiring a high degree of customized design and engineering to match the uniqueness of the building

### Solution

- Involvement of a dedicated and highly professional team from the beginning
- Custom-designed scenic elevators complement the building's unique design
- Energy-efficient elevators, optimized with KONE Polaris DCS, ensure an optimal passenger experience

## FAST FACTS

### Doha Tower

- Completed: 2012
- Height: 238 m
- Floors: 46
- Architect: Ateliers Jean Nouvel
- Building owner: H.E. Sheikh Saoud Bin Mohammed Bin Ali Al Thani
- Owner's representative: Mr. Hassan Al Duhaimi
- Developer: Hamad Bin Saoud Trading and Contracting Co.
- Contractor: China State Construction Engineering Corporation

### KONE Solutions

- 17 KONE MiniSpace™ elevators
- 3 KONE MonoSpace® Special elevators
- 1 KONE TranSys™ freight elevator
- 5 hydraulic elevators
- KONE Polaris™ Destination Control System
- KONE E-Link™ monitoring system
- KONE Care™ Maintenance Service

With skyscrapers sprouting up all over the world, constructing a landmark that stands out is challenging. This is especially true along the shoreline of Doha in Qatar, home to numerous impressive high rises.

From the onset, the owner of the tower, H.E. Sheikh Saoud Bin Mohammed Bin Ali Al Thani, wanted to make a bold statement, combining advanced technology and engineering with breathtaking cultural design. At their annual awards ceremony, the Council on Tall Buildings and Urban Habitat (CTBUH) recognized Doha Tower as both the 2012 Best Tall Building Middle East and Africa and as the Best Tall Building Worldwide. The innovation, cultural significance and environmentally responsible design of the building were cited as key determining factors.

KONE played an active role in facilitating elevator traffic and capacity analyses, as well as providing customized design recommendations. "The work done by our analysis expert laid the foundation for our success," says **Prakash Kumarasamy**, KONE Project Manager.

### Fusing culture with design

The most overwhelming aspect of Doha Tower is unquestionably its visual appearance. French architect Jean Nouvel captured both a modern and classic arabesque context in the elegantly domed tower.

An intricate multi-layer steel screen of geometric pattern covers the façade, giving the building a unique look that complements the local culture. Even here, design is functional: the screen dissipates sunlight and heat entering the building.

The same spirit of modern design and technology runs throughout the building. KONE created eight custom-designed scenic elevators set in a semi-circle to serve the large atrium of the building.

"The finishes of any elevator interior should be an extension of the building itself," says **Hafid Rakem**, Architect Partner for Ateliers Jean Nouvel. "Our objective was to combine the modern style of the building with the geographical aspect. We wanted to express ourselves by using contemporary materials, but at the same time we wanted to preserve the region's culture."

Kumarasamy adds, "To achieve such a high degree of customization, we invited the customer to the KONE factory in Finland to review the various prototype stages.





We also provided 3D renderings to help visually assess the relationship between the hoistway and the structural elements of the building.”

### **Enhanced building intelligence**

In addition to its distinctive architectural design, Doha Tower incorporates the latest in elevator technology. KONE’s regenerative drive systems and advanced destination control system (DCS) optimize both energy consumption and traffic flow.

KONE’s Polaris™ DCS solution is split into two parts: one for the scenic elevators in the atrium, and the other for the high-rise elevators serving the rest of the building. The KONE E-Link™ monitoring system ensures reliability and efficiency of the elevators by monitoring the building’s people flow in real time.







STEDELIJK MUSEUM – AMSTERDAM, THE NETHERLANDS

# An artistic journey

A visit to the restored Stedelijk Museum is a spellbinding experience. And the visitor logistics system is a work of art in its own right.

From the outside, it looks like two separate buildings. Inside, the transition is invisible. Amsterdam's Stedelijk Museum – a world-leading institution of modern art and design – celebrated the opening of its futuristic annex in September 2012. As part of the complete renovation of the historic structure designed in 1895 by A.W. Weissman, a bold new wing was added by Benthem Crouwel Architects to provide much-needed space for temporary exhibitions.

Although radically different in appearance from the 19<sup>th</sup> century red-brick architecture, the white annex – nicknamed the bathtub – is perfectly matched in scale to the original structure and seamlessly connected on all floors both visually and logistically.

## Creative gateway

One of the most innovative interior features is the people flow system, which is designed around two enclosed escalators running between the lowest and the second floor.

The eye-catching escalators, which are enclosed in a yellow tube, unify movement into a logical flow and allow visitors to enjoy art on different floors without any distracting detours.

With a span of 28.5 meters and a vertical rise of 13.1 meters, the pair of escalators presented a technical challenge when it came to available intermediate support. "Our dedicated team was able to provide escalator solutions that met the needs of the customer," says KONE Project Manager **John van Moorselaar**. "The escalators are encased in a reinforced frame so intermediate support is not required. Complementing the structural and visual design, the escalators are equipped with our standby speed feature to enhance eco-efficiency," he adds.

In addition to the escalators, KONE installed two custom scenic elevators in the new wing, one of which conveniently allows visitors direct access to the new galleries. Two freight elevators – one in the new wing and one in the existing building – were also installed to facilitate the movement of goods throughout the museum.





## SUMMARY

### Challenge

- To arrange seamless circulation that enables visitors to enjoy art on different floors without detours or bottlenecks
- To provide elevator and escalator solutions matching the exclusive look of the new architecture

### Solution

- An elevator system provides visitors with direct access to the gallery of their choice
- The two futuristic escalators enclosed in a yellow tube provide a striking visual accompaniment to the bold, yet functional architecture

## FAST FACTS

### Stedelijk Museum

- Completed: 2012
- Size: Original building: 10,023 sqm; New annex: 9,423 sqm
- Floors: 7
- Architect: Benthem Crouwel Architects
- Building owner: City of Amsterdam
- Developer: City of Amsterdam
- Contractor: VolkerWessels

### KONE Solutions

- 2 custom scenic elevators
- 2 custom freight elevators
- 2 KONE ECO3000™ escalators
- 1 dumbwaiter
- KONE Care™ Maintenance Service

### Under one roof

The technical and visual integration of the interiors is so harmoniously executed that the two wings seem like they always belonged together.

“The contrast is barely noticeable when you walk through the museum. The Weissman building and the new annex have embarked on a new life together, facing the famous culture hub of Museumplein,” concludes van Moorselaar.





# 深圳北站

SHENZHEN NORTH RAILWAY STATION – SHENZHEN, CHINA

## Solving Shenzhen's transit puzzle

The construction of Shenzhen North Railway Station was the engineering equivalent of completing a giant jigsaw puzzle.



# SHENZHEN NORTH RAILWAY STATION







When the city of Shenzhen announced plans to build “the best train station in Asia”, it clearly meant business. Predicted to serve more than 44 million passengers annually by 2020, Shenzhen North Railway Station is the new hub of South China’s high-speed train and passenger rail network.

With its cantilevered roof structure and space-age façade, the station is an architectural statement reflecting the dynamism of an ambitiously expanding metropolis.

But what’s inside is equally exciting. Completed in 2011, the station accommodates local and long-distance bus links, eleven platforms and twenty train lines, including the Guangzhou-Shenzhen high-speed train. Take the KONE elevator underground and you find three subway lines, one providing the first-ever seamless connection between Shenzhen and nearby Hong Kong.

### Moving the masses

KONE was chosen to supply the elevators and help solve the people flow puzzle of this high-profile project. KONE experts analyzed the peak-hour traffic flows and proposed the optimum number of KONE high-capacity 1,350 kilogram elevators.

“They are located in sites drawing the most vertical traffic. We arranged them around the taxi and private transportation drop-off points, as passengers are most likely carrying a lot of luggage and need a vertical solution to get them to their destination as conveniently as possible,” explains KONE Project Manager **Shang Rui Lin**.

With multiple levels interacting with each other, the complexity of the engineering required meticulous coordination, adds Shang. “All parties depended on each other. Our elevators helped to speed up the work of the other contractors.”

### Putting the customer first

To stay on schedule, KONE drew up detailed plans, organized regular management training, and communicated closely with the customer and other contractors. KONE technicians worked extra-long hours to complete the task of installing 30 elevators in only two months.

“The plans and design kept changing, so we had to manage the project under variable conditions. June and July are the rainy season here, and a malfunction in the drainage system caused a water leakage in the shaft, resulting in damage to our spare parts. We didn’t waste time arguing about responsibility – we put the customer’s interests first and simply fixed the problem,” says Shang.

“This won us trust and respect. In the end, we delivered all of the equipment on time and at premium quality. We even received a certificate of commendation from the customer.”

Eco-efficient KONE EcoDisc® motors help to reduce the station’s total energy consumption, complementing its advanced range of energy-saving technologies including optical lighting, syphonic roof drainage and a fog cooling and humidification system.



## SUMMARY

### Challenge

- To analyze the massive traffic flows of the multi-level hub and deliver optimum solutions for convenient passenger routing
- To accommodate numerous last-minute modifications and coordinate the project on a tight schedule, collaborating with other contractors
- To deliver energy-efficient elevator solutions

### Solution

- Detailed people flow analysis and high-capacity elevators optimally positioned to channel vertical traffic between five floors
- Close communication and coordination with the customer and other contractors
- Elevators equipped with energy-efficient KONE EcoDisc motors

## FAST FACTS

### Shenzhen North Railway Station

- Completed: Train station 2011; Metro 2012
- Size: 1,224,200 sqm
- Height: 22.3 m
- Floors: 5
- Flow: 44,500,000 passengers annually
- Architect: Zhang Shaomin
- Building owner: Shenzhen Government
- Developer: Shenzhen Metro Co., Ltd
- Contractor: China Railway Engineering Corporation

### KONE Solutions

- 51 KONE MonoSpace® elevators
- KONE Care™ Maintenance Service



# A destination in itself

With more than 2,000 guest rooms, Marriott World Center in Orlando is one of the biggest resorts in the world and has been attracting visitors for nearly three decades. Sprawling over 42,000 square meters of event space, restaurants, shops and recreational opportunities, the golf and spa resort is a premier venue – and one where elevator downtime can result in an unpleasant guest experience.



A popular leisure destination as well as prestigious conference site, Marriott World Center is populated by a blend of vacationing families, business professionals and conference attendees. Routine high occupancy translates into heavy elevator usage, a factor complicated by occasional bursts of conference-related traffic. When the decision was made to modernize aging elevators, Marriott turned to KONE for a comprehensive solution.

## Cutting consumption

A total of 27 elevators were modernized. KONE ReSolve™ controllers with regenerative drives were installed to deliver a faster, quieter ride with significant energy savings. In a 12-month study, metered electrical consumption was reduced by more than 40 percent. “Marriott gained not only energy savings, improved reliability and ride quality,” says KONE Installation Supervisor **George Mathis**, “but also enhanced passenger handling capacity due to the modern controllers.”

As work was performed on individual elevators, a unique KONE solution ensured that group service was not interrupted. The KONE MDE3000 secure overlay system was used to orchestrate car group functions, guaranteeing that existing and modernized cars continued to work as a group.

## Planning pays off

“Extensive coordination and preplanning really made a difference,” Mathis adds. KONE worked closely with consulting firm Lerch Bates Inc. to develop a schedule that corresponded to the spikes in guest occupancy. Over the course of the project, scheduling remained fluid, minimizing disruption during periods when the resort was at full capacity.

The result? A complex project completed months ahead of schedule. KONE returned back to the site to complete interior upgrades, including replacement of dated décor and installation of info screens used to keep guests informed about what’s happening at the resort and local attractions.





© Orlando World Center Marriott Resort

### Delivering service excellence

KONE continues to play a vital role in operations at Marriott World Center. An on-site KONE service technician adds to the service package and provides KONE Care™ Maintenance Service to ensure that all equipment operates at peak safety and performance.

“It’s a real benefit to our customers that KONE service technicians receive constant training and they are current with safety-related topics,” says KONE Modernization Sales Manager **Noel Corrigan**. “And, because our service technician was experienced with the original equipment, it was a very easy transition.”

### SUMMARY

#### Challenge

- To modernize 27 elevators in one of the world’s biggest and busiest resorts while minimizing guest inconvenience throughout a two-year project

#### Solution

- KONE controllers and regenerative drives delivered significant energy savings, improved reliability and ride quality
- The KONE MDE3000 secure overlay system ensured that existing and modernized cars continued to work as a group, guaranteeing uninterrupted service during the project

### FAST FACTS

#### Marriott World Center

- Year built: 1986
- Modernization completed: 2012
- Size: 42,000 sqm
- Floors: 23
- Capacity: 2000+ guest rooms

#### KONE Solutions

- 27 KONE ReSolve™ regenerative drives
- KONE Care™ Maintenance Service





Cinematheque



EMPORIA SHOPPING CENTER – MALMÖ, SWEDEN

# Shopping Shangri-La

Sweden's first environmentally certified mall is a green haven of retail therapy and design inspiration.







“In touch with nature” is a label rarely associated with suburban malls, but the Emporia Shopping Center is a surprising exception. A sanctuary unfolds as you step inside the birdsong-filled elevator, which is nestled in a shaft of plants. A waterfall bubbles behind another glass elevator. Ride to the top and you discover a green roof the size of four soccer fields.

Located in the Malmö district of Hyllie, which aims to set a global example in sustainable urban development, Emporia is the greenest mall in Scandinavia. The total floor space of 93,000 square meters houses three floors of shopping, food, art and design in an urban oasis of architecture.

#### **Low lifelong impact**

Boasting a range of eco-design features, Emporia is the first mall in Sweden to achieve BREEAM environmental certification. BREEAM is Europe’s most widespread system for environmental certification, aiming to reduce the building’s lifelong environmental impact.

“By providing project-specific energy consumption calculations, KONE ensured that we scored the necessary points for BREEAM certification,” says Project Manager **Ingvar Nohlin** from Steen & Ström.

KONE supplied a range of transit solutions equipped with the latest energy-saving features, including the new KONE Direct Drive for escalators and autowalks, which was piloted in this project.

“We were chosen as the total solutions provider based on our earlier cooperation with the client and our active promotion of KONE eco-efficiency expertise. Through our maintenance contract we will continue working with the customer to ensure the project’s ongoing success,” says KONE Project Manager **Rasmus Anjert**.

#### **Paradise in the details**

Created by one of Sweden’s most renowned architectural firms, the imaginative interiors are easy to navigate thanks to six colorful piazzas in which elevators and escalators play the starring visual role. KONE supplied custom balustrades, glass, handrails, steps and access plates for the escalators and autowalks to match the distinctive color theme of each piazza.

Other customized visual solutions include the vine-clad elevator in the Flower Piazza, where seven 16-meter plant ropes are suspended from the ceiling to create a jungle-like atmosphere.

“Visitors have been impressed with the spectacular experience of visiting the most modern shopping environment in Scandinavia,” says Anjert.

With 25,000 visitors expected to visit daily, the smooth flow of people and goods was accounted for early on when KONE provided detailed early-phase traffic calculations.

“Emporia is Scandinavia’s biggest shopping center, so we expect 100 percent reliability from our elevators and escalators. All KONE installations have worked without a single maintenance call-out,” concludes Nohlin.





## SUMMARY

### Challenge

- To deliver eco-efficient transit solutions for Scandinavia's largest, most modern shopping mall, meeting stringent BREEAM certification requirements
- To provide unique visual solutions matching the nature-inspired look of the architecture

### Solution

- Detailed energy efficiency calculations; all KONE solutions are equipped with advanced eco-features such as LED lighting, KONE Direct Drives for escalators and KONE EcoDisc® regenerative drive technology for elevators
- Custom visual design including tailored escalator balustrades and unique integration of plants into the elevator shaft

### FAST FACTS

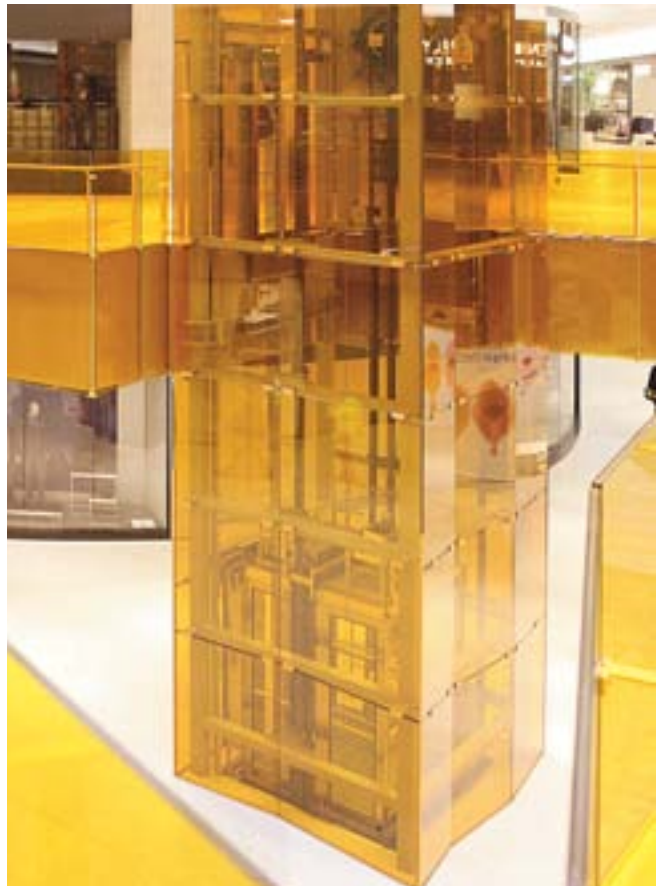
#### Emporia Shopping Center

- Completed: 2012
- Size: 93,000 sqm
- Flow: 25,000 visitors per day
- Certification: BREEAM
- Architect: Wingårdhs Arkitektkontor
- Building owner: Steen & Ström
- Developer: Steen & Ström
- Contractor: Steen & Ström

#### KONE Solutions

- 5 KONE MonoSpace® elevators
- 7 KONE MonoSpace® Special elevators
- 3 KONE MonoSpace® Special scenic elevators
- 8 KONE TranSys™ freight elevators
- 25 KONE TravelMaster™ 110 escalators
- 1 KONE TransitMaster™ 120 escalator
- 2 KONE TravelMaster™ 115 autowalks

© Tord Rikard Sörenström





# Investment that pays off

When owners of an upscale residential development in Singapore launched an elevator modernization project, their priorities were clear: energy efficiency, reliability and lifelong performance of equipment.

Faced with the need to modernize the 24 passenger elevators at The Waterside condominiums, property owners knew a standardized approach would not work. They turned to KONE for the elevator system upgrade.

“We took a consultative approach, recommending information on the latest technology and best solutions for The Waterside’s unique needs,” says KONE Project Manager **Timo Viitala**. “That helped the owners gain confidence in our modernization package, which included eco-efficient solutions and committed project management.”

A key concern for the owners was minimized disruption throughout the modernization process. Due to the project’s complexity, KONE assumed the role of general contractor, ensuring smooth operations and rapid response to customer inquiries.



“From the beginning, this project required experienced management skills to handle such matters as material deliveries between project phases and installation activities without disturbing residents,” notes **Yeo Kwee Ming**, owner of the consulting company Wistec Engineers & Associates. “All communications to the owners and residents were very clear and done with quality in mind.”

## Planning for tomorrow

KONE’s process blends innovative technology with economical and predictable maintenance management. The elevators at The Waterside are now safe, reliable and efficient.

Energy efficiency is a top priority for building owners and is central to any project’s success. The KONE ReGenerate™ 800 high-performance solution with regenerative drives delivered immediate energy savings, far exceeding the owners’ expectations.

“From the measurements, we can see a reduction in electricity consumption by over 60 percent,” Viitala says. “We videotaped one of the manual rotating electricity meters and showed the owners how the meter actually starts to rotate backward once the regenerative drives kick in. They were able to see firsthand how it helps to save energy.”

Uniform solutions also played an important role. KONE systems adapt to existing roping configurations, improving energy efficiency and reducing building life cycle operational costs.

In addition to higher than expected savings in energy usage, modernization delivered added value in improved reliability and ride quality. KONE ride comfort measurements taken before handover revealed a ride that was 27 percent quieter and 8 percent faster.

## A dedicated partner

Strong collaboration set the stage for success. Sensitive to the needs of the residents, which include children and the elderly, KONE carefully organized installation to maximize safety and efficiency. Viitala explains, “KONE crews worked in four phases, modernizing one elevator at a time. There were always three elevators in operation at any given time.”

The relationship will continue with KONE Care™ Maintenance Service for the modernized elevators.





## SUMMARY

### Challenge

- To modernize non-KONE elevators in a residential complex with minimal disruption to tenants

### Solution

- Reliable modernization solution that improved the energy efficiency, ride quality and safety of existing elevators
- Carefully planned project schedule and clear communication to owners and residents

## FAST FACTS

### The Waterside Condominium

- Year built: 1993
- Modernization completed: 2011
- Towers: 6
- Floors: 23
- Building owner: MCST (Management Corporation Strata Title) Plan 1801
- Consultant: Wistec Engineers and Associates Pte Ltd

### KONE Solutions

- KONE ReGenerate™ 800 modernization solution
- KONE E-Link™ monitoring system
- KONE Care™ Maintenance Service



# Design to appeal

Rising above the sprawling Mumbai cityscape, One Indiabulls Centre stands out with its gleaming exterior and state-of-the-art architecture.



One IBC, as it's locally known, is a spectacular building by any standards, let alone in this cosmopolitan Indian city. Creating multiple groups of elevators for a first-of-its kind commercial development in a city that has no shortage of infrastructural challenges was never going to be easy.

## A welcome challenge

Right from the start, the developers had an ambitious plan. They wanted to build a distinctive commercial center in an emerging business district within just five years' time.

"KONE used its vast experience and technical competences to ensure the project exceeded the customer's expectations," says KONE Project Manager **Shashi Kant Mishra**.

The project has been a huge success and is now home to Mumbai's most prominent financial services businesses. "The type of building design was something we had not seen in India before. This meant the elevator requirements were unique," Mishra explains.

KONE installed 44 elevators, of which six were KONE MiniSpace™ scenic passenger elevators. "These glass exterior elevators were imported from overseas and tailored to meet the architect's specifications. They also travel at a speed of four meters per second," Mishra proudly notes.

## Overcoming obstacles

During the construction phase, several unanticipated challenges arose. The business district was previously home

to the city's mill industry and crowded by shanties, lacking decent infrastructure.

"The area is prone to flooding during monsoon season. In 2011, heavy rainfall caused lower parts of the buildings to fill with water. We obviously had to work around this with designers and engineers," Mishra reveals.

For KONE it meant innovative and detailed planning down to each and every bolt. Even getting construction materials to the congested area was difficult at times. Any delays had to be minimized through close collaboration with the contractor.

## Fulfilling expectations

The developers of One Indiabulls Centre had high-end requirements. KONE offered a wide selection of materials and components to create an original look and feel best suited to the project. Environmental standards were also of concern as One IBC aims to receive LEED Gold certification.

"We installed customized car interiors and signalization panels that were specifically designed for the project. And we used KONE EcoDisc® regenerative drive technology which provides up to 35 percent energy savings by recovering the energy created when the elevators are in use.

"Design and eco-efficiency are something we do not compromise and our customers know and appreciate that," Mishra concludes.





## SUMMARY

### Challenge

- To provide customized solutions in a challenging construction environment
- To design specialized scenic elevators that offer both safety and a unique user experience
- To ensure environmental standards are not compromised

### Solution

- Careful planning from the start and regular updates through close customer collaboration
- Custom scenic passenger elevators enclosed in glass shafts
- Installation of KONE eco-efficient machinery and drive systems

## FAST FACTS

### One Indiabulls Centre

- Completed: 2011
- Floors: Tower 1: 18 floors, Tower 2: 20 floors
- Architect: Hafeez Contractor
- Building owner: India Bull Properties
- Developer: India Bull
- Contractor: Aluwalihya

### KONE Solutions

- 8 KONE MonoSpace<sup>®</sup> Special elevators
- 6 KONE MiniSpace<sup>™</sup> scenic elevators
- 30 KONE MiniSpace<sup>™</sup> elevators
- KONE E-Link<sup>™</sup> monitoring system
- KONE Care<sup>™</sup> Maintenance Service





RAFFLES CITY – CHENGDU, CHINA

# Raising design to new levels

The Raffles City Chengdu complex in western China is both the largest and most distinctive construction within a kilometer radius. Designing eco-efficient People Flow® solutions for this exclusive and high-profile project was a matter of precision, patience and some serious heavy lifting.







Not only does Raffles City stand an imposing 123 meters above ground level, but the building is also a triumph of sophisticated modern design. Its asymmetrical design was the creation of renowned architect Steven Holl and incorporates five towers and 28 floors. With offices, luxury and serviced residential units, a hotel, and a shopping mall, the massive complex demanded no small degree of logistical genius in terms of both planning and construction.

### Faster, greener solution

A crucial requirement of the project was for environmental considerations to be factored in at all stages. Raffles City is a symbol of present-day urbanization and qualified for LEED Gold certification under the U.S. Green Building Council's Leadership in Energy and Environmental Design – Core & Shell (LEED-CS) program.

KONE installed six KONE DoubleDeck elevators that enable increased passenger capacity with one car atop the other. The KONE EcoDisc® hoisting motors utilize regenerative drives to convert the excess braking energy into power.

In order to further comply with LEED requirements, each KONE escalator is fitted with a load sensing device that synchronizes motor output to passenger demand through an energy efficient inverter.

Even after the most thorough of planning phases, realization of the project was no easy task. "This is our second double-deck project in China," explains KONE Project Manager **Zhang Jin**. "The technical side is incredibly complex. In terms of installation, everything is very large and heavy, but the high-speed setup demands almost pinpoint accuracy."

### Functionality in the limelight

The successful installation in two of the towers is garnering attention throughout China, setting new standards for both passenger convenience and energy efficiency.

"The complex will gain a reputation as an outstanding building. It's a very high-profile project," says Zhang. For this reason the customer is pleased that people have been so curious about the energy efficient KONE DoubleDeck solution. "Chinese officials have been in touch to say that they're looking forward to coming and seeing how it all works," he adds.

### Onwards and upwards

Currently, only the mall and part of the office building is open. However, the owner is expecting to fully open the remaining three towers within one year. In the meantime, the complex is establishing an impressive reputation for its role in raising energy efficient and elegant design to impressive new heights.





## SUMMARY

### Challenge

- To set new benchmarks in eco-efficiency in a high-profile green project

### Solution

- Installation of elevators and escalators with advanced energy saving features ensure utmost energy efficiency
- KONE DoubleDeck elevators enable increased passenger handling capacity and contribute to smooth, efficient people flow

### FAST FACTS

#### Raffles City

- Completed: 2012
- Size: 32,574 sqm
- Height: 123 m
- Floors: 37
- Certification: LEED-CS Gold
- Architect: Steven Holl
- Building owner: CapitalLand
- Developer: CapitalLand
- Contractor: CapitalLand

#### KONE Solutions

- 24 KONE MiniSpace™ elevators
- 18 KONE MonoSpace® elevators
- 6 KONE DoubleDeck elevators
- 1 KONE Transys™ elevator
- 26 KONE TravelMaster™ 110 escalators
- 6 KONE TravelMaster™ 115 autowalks
- KONE E-Link™ monitoring system







LONDON, UK

## More than meets the eye

The Shard's visually stunning exterior has transformed the cityscape of London. World-class design creates an impact on the interior, too. Through the use of innovative design and materials, the elevators offer both an ambient experience and a pleasant journey to tenants and visitors alike.