

Dedicated to People Flow™

KONE

HEAVY-DUTY SOLUTIONS FOR HEAVY-DUTY ENVIRONMENTS

KONE solutions for transit centres



Optimising the passenger experience in busy public transportation environments

Today's sophisticated transportation systems provide passengers with a smooth, pleasant, and safe travel experience. There are several key factors that must be considered when aiming to optimise the flow of people in the busy transit centres served by modern metro and railway systems. These include choosing the right type and size of equipment – elevators, escalators, autowalks, and automatic doors – for each individual situation and choosing the optimal location for them.

KONE has long experience as a partner in public transportation projects of all kinds around the world. Our broad solution portfolio includes equipment to meet the needs of a wide range of different project demands, and our services and resources cover all phases of the transit centre's lifecycle.

Key factors to consider when planning a transit centre

Designing the optimal solution for a transit centre requires an in-depth understanding of:

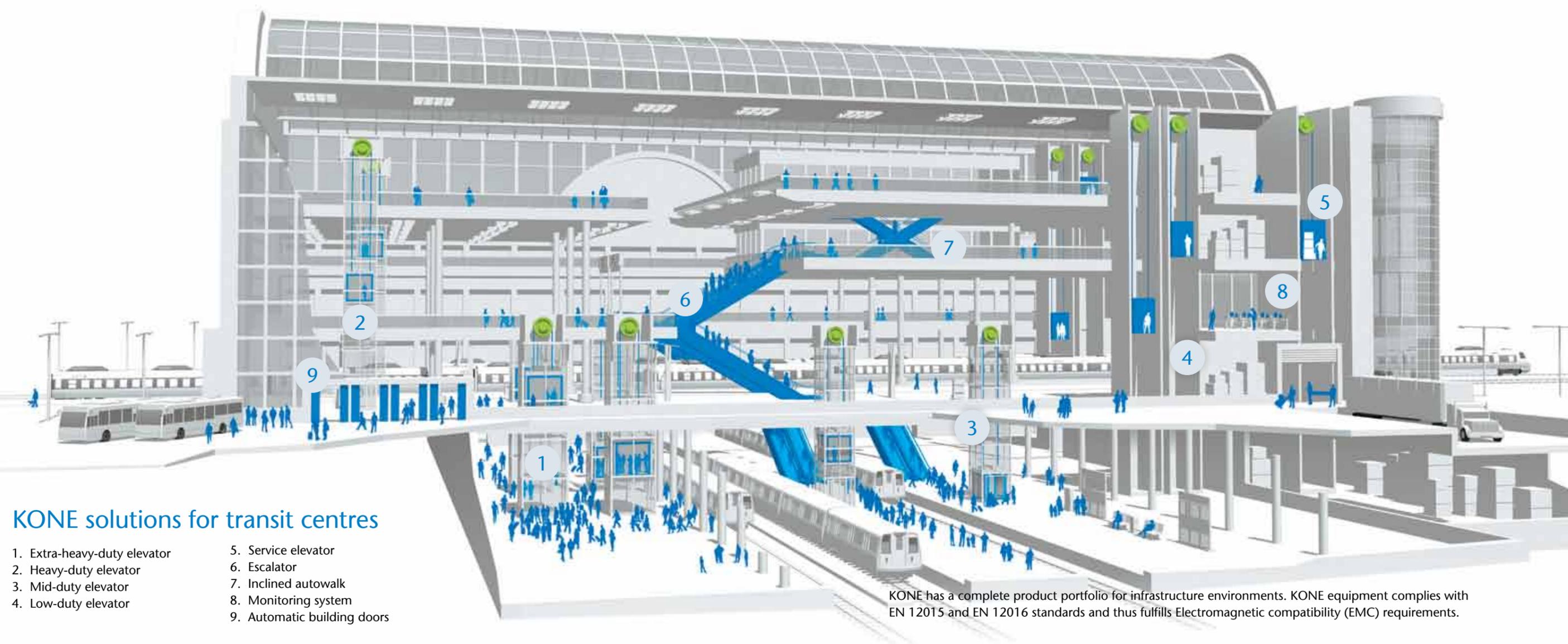
- the number and characteristics of the people passing through
- the layout and locations of the facilities
- how people find their way around the transit centre
- the nature of the buildings in the surrounding area

When planning the number and type of equipment required, the following things should be considered:

- When designing a new station, space could be left for adding escalators later on, if necessary (for example, by replacing staircases or in a space already reserved for escalators).

- The equipment capacity should be calculated so that if an escalator or elevator is out of service for any reason, the other equipment will be able to handle the peak traffic.
- Equipment capacity calculations need to account for traffic in both directions.
- The solution must provide an accessible route for people using wheelchairs or others who are unable to use escalators. Providing at least two elevators per floor is normally recommended.

Read more in the KONE planning guide for People Flow™ in transit stations.



KONE solutions for transit centres

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|------------------------------|-----------------------------|
| 1. Extra-heavy-duty elevator | 5. Service elevator |
| 2. Heavy-duty elevator | 6. Escalator |
| 3. Mid-duty elevator | 7. Inclined autowalk |
| 4. Low-duty elevator | 8. Monitoring system |
| | 9. Automatic building doors |

KONE has a complete product portfolio for infrastructure environments. KONE equipment complies with EN 12015 and EN 12016 standards and thus fulfills Electromagnetic compatibility (EMC) requirements.

Escalator solutions for transit centres



KONE offers a wide range of different escalator and autowalk solutions to meet all types of customer requirements. All KONE escalators and autowalks are based on the same innovative, eco-efficient technology and have a harmonised visual design, making it easy to combine different types of solutions in the same building.

Recommended escalator and autowalk solutions for transit centres

- KONE TransitMaster™ 140 escalator, for heavy transit centres such as metros and transit hubs.
- KONE TransitMaster™ 120 escalator, for mid-range transit centres such as railway stations.
- KONE TravelMaster™ 110 escalator, for retail environments located within transit centres.
- KONE TravelMaster™ 115 inclined autowalk for low duty traffic in retail environments within transit centres

	TransitMaster™ 120	TransitMaster™ 140	TravelMaster™ 110	TravelMaster™ 115
Max rise	13 m	18 m	9.5 m	8 m
Inclination	27.3°, 30°	24.5°, 27.3°, 30°	30°, 35°	10°, 11°, 12°
Step/pallet width	800, 1000 mm	1000 mm	600, 800, 1000 mm	800, 1000, 1100 mm
Balustrade height	1000, 1100 mm	1000, 1100 mm	900, 1000, 1100 mm	1000 mm
Operating environment	Indoor, semi-outdoor, full-outdoor	Indoor, semi-outdoor, full-outdoor	Indoor, semi-outdoor, full-outdoor	indoor, semi-outdoor
Duty cycle	20–24 hours/day	24 hours/day	12–16 hours/day	12–16 hours/day
Transition radius	2.7/2.0	1.5/1.0, 2.7/2.0 and 3.6/2.0	1.0/1.0 and 1.5/1.0	6.0/0 and 6.0/10.0
Speed	0.5, 0.65 and 0.75 m/s	0.5, 0.65 and 0.75 m/s	0.5 m/s	0.5 m/s



Benefits of KONE escalators

Round-the-clock availability and reliability

- **The highly efficient and robust drive** used in KONE escalators and autowalks is designed to last as long as required, even under high passenger load conditions.
- **Reduced total lifecycle costs** are result of the high reliability of KONE heavy-duty escalators and autowalk solutions.
- **KONE escalator and autowalk solutions can operate in fully outdoor locations** due to result of features such as hot-dip galvanisation and weatherproof electrical installation.

Low environmental impact

- **The lubrication-free step chain** saves oil, reduces chain wear, and decreases the risk of fire. The chain is also both water and dust resistant.
- **Efficient operation of the escalator can reduce energy consumption** by up to 50% by slowing down or stopping the equipment when it is not in use.
- **Regenerative solutions reduce energy requirements** by up to 60% by recovering the energy generated when the escalator is used.
- **LED lighting consumes up to 80% less energy** compared to conventional lighting technologies.

A flexible and safe passenger experience

- **Extended balustrades enhance safety** and convenience for passengers by guiding people onto the escalator. LED lighting for the skirting, balustrade, and soffit further enhances the safety and visual appearance of an escalator or autowalk. These solutions are especially useful in places where other lighting is limited.
- **High escalator speed improves safety** by allowing passengers to leave platforms quickly.

Eye-catching media

With KONE MovingMedia™, the escalator step riser can be used to display highly visible messages. KONE MovingMedia™ messages are eye-catching, distinctive, and easily replaceable. They are especially useful for guiding passengers to connecting lines or ticket counters, for example. They are also ideal for displaying safety messages.



KONE EcoMod™ escalator modernisation solution

KONE EcoMod™ is a complete escalator modernisation solution that offers an innovative and eco-efficient technology for replacing the entire workings of your escalators – without expensive and disruptive truss removal.

Benefits of KONE EcoMod™

- A complete new escalator in an existing truss
- Saves construction time
- Significantly lowers total project costs
- Reduces energy consumption and operating costs

Elevator solutions for transit centres



KONE offers a wide range of different elevator solutions for transit centres, ranging from extra-heavy-duty passenger elevators designed to transport large volumes of customers to and from metro station platforms to smaller elevators that provide access for passengers who are not able to use escalators.

Recommended elevator solutions for transit centres

- **Extra-heavy-duty elevator.** In a metro station, which is open 24/7, for example, elevator is in use constantly. Typically, these elevators are used to handle the heavy traffic flow to and from platforms. Normally at this condition elevators are the main transportation equipment and when no escalators are available
- **Heavy-duty elevator.** Typically used in metro or railway stations, heavy-duty elevators are designed for normal operation with heavy traffic peaks where operating times exceed 10 hours a day. These elevators are normally used to handle the traffic flow to and from platforms.
- **Mid-duty elevator.** Designed for normal operation, where traffic flow remains relatively constant throughout the day, these elevators can typically be found in the retail areas of a transit centre.
- **Low-duty elevator.** Designed for infrequent or occasional use, these elevators provide access for passengers with special needs, such as those using wheelchairs.
- **Service elevators.** These elevators are used for transporting goods and personnel, and have a load capacity of up to 5,000 kg.

KONE elevators for transit centres are based on three different elevator platforms – the machine room-less KONE MonoSpace®, the KONE MiniSpace™ with its compact machine room, and KONE TranSys™ for heavy loads. All three platforms utilise the eco-efficient KONE EcoDisc® hoisting technology.

	KONE MonoSpace®	KONE MiniSpace™	KONE TranSys™
Load (persons)	up to 33	up to 54	up to 67
Load (kg)	1,000–2,500 kg	630–4,000 kg	1,600–5,000 kg
Speed	1.0–2.0 m/s	1.0–3.0 m/s	0.5–1.0 m/s
Travel	24 floors, 60 m	24 floors, 60 m	12 floors, 40 m

Benefits of KONE elevators

Safe, efficient, and reliable operation

- **Easy loading and unloading** is ensured with automatic, wide-opening doors. And they also provide access for people with limited mobility, travelers with luggage, and children in strollers, for example.
- **The reliable technology** of gearless KONE EcoDisc® hoisting solution has an excellent track record, with more than 300,000 units operating globally.
- **Relevant safety and accessibility standards and regulations are met** and exceeded with all KONE equipment.

- **KONE's regenerative solutions can provide 20–35% energy savings** by recovering the energy created when the elevator is used.
- **LED and eco-efficient fluorescent lighting can reduce energy consumption** by up to 80% compared to halogen lights.
- **Providing substantial energy savings**, KONE's standby solutions power down the equipment when it is not in use.

Eco-efficient and cost effective

- **KONE EcoDisc® is 50–70% more energy-efficient** than conventional traction 2-speed or hydraulic-powered elevators. Unlike hydraulic elevators, the KONE EcoDisc® requires no oil or hole drilling.

Durable and visually appealing

- **KONE offers a wide range of elevator design choices and materials.** EN81-71 cat 1/2 are codes to protect the cars and elevators from vandalism. KONE has materials that comply these codes.
- **KONE elevators can be fully customised** to meet customer design requirements.
- **To enhance safety of the passengers** glass elevators in glass shafts are available.

Other KONE solutions for transit centres

Monitoring solutions

The KONE monitoring systems enables remote monitoring of the real time equipment status, traffic, and faults, producing valuable information for analysis and planning. This not only increases the reliability and availability of the equipment, but it also increases the passenger safety and reduces the risk of vandalism. KONE monitoring solutions include: KONE E-link™ and KONE Remote Monitoring Services™.

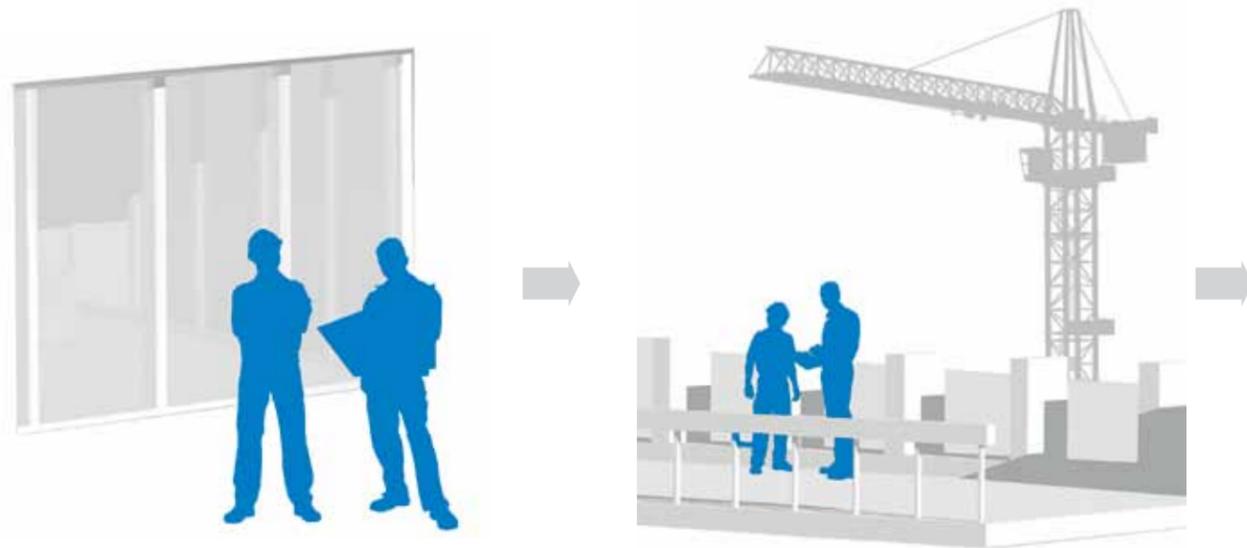
Automatic building doors

KONE offers a wide selection of automatic building doors. As well as various safety options, the doors can also be fitted with energy-saving solutions that reduce the loss of warm or cool air from the building, making the building heating or cooling processes more energy efficient.



At your service, in every phase of your building's lifecycle

KONE provides services to support our customers in every phase of their building's lifecycle – from designing and constructing the building to maintaining and modernising it.



Design services

Project planning and specification

KONE's experienced traffic analysis and planning team can help customers define the optimal amount of equipment and layout for any type of public transportation facility. We continually develop our competences and tools through systematic customer studies and research.



Solution design

KONE provides easy-to-use tools and CAD drawings to help customers design the right solution for their needs. Customers can choose from a wide range of high quality materials to create an elevator or escalator that suits any type of architecture. KONE can also help customer to create fully customised solutions.

Construction services

Project management and installation services

KONE's experienced project management teams guarantee smooth coordination with all parties involved in the project.

Expert teams customised for each project

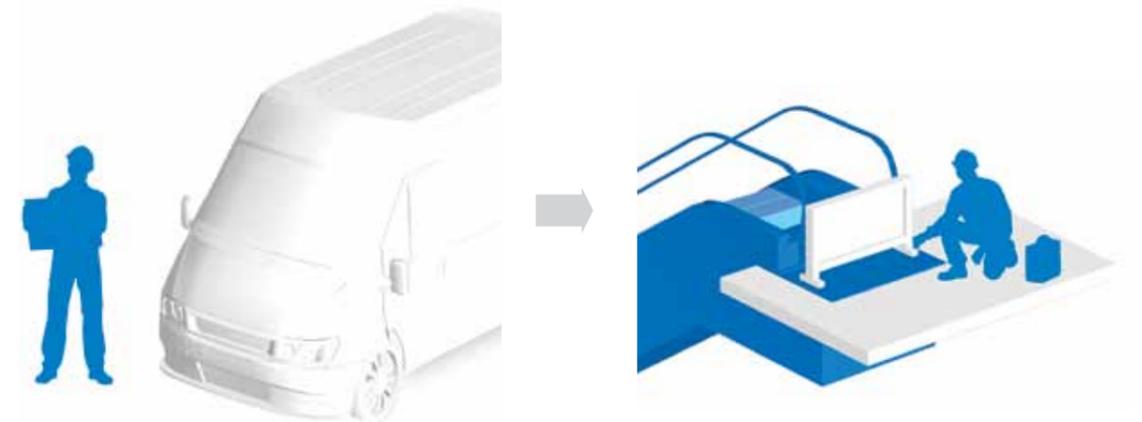
KONE sets up customised teams for each project with the optimal combination of global and local



resources, bringing together global best practices and experience as well as extensive knowledge of local conditions and requirements.

KONE Major Projects

With large building projects in particular, there is a fundamental need for a complete solution that includes expert support services and efficient process solutions designed to match customers' project planning, design, and construction processes and schedules. KONE Major Projects is KONE's global team of experts who provide dedicated solutions to help customers during every stage of the building process, anywhere in the world.



Maintenance services

Maintenance and monitoring

KONE's maintenance and monitoring solutions maximise reliability and safety while minimising downtime and costs. KONE Care™ maintenance solutions are based on preventive maintenance methods, the aim being to fix faults before they develop into bigger problems. The KONE Customer Care Centre™ offers round-the-clock



service and tracks equipment operation information, service records, and technical data.

Spare parts

KONE stocks a wide range of spare parts for its own elevators and escalators, and can also supply parts for other manufacturers' equipment.

Modernisation services

Equipment assessments

KONE Care for Life™ helps customers determine when and how to modernise equipment with a thorough inspection of the safety, accessibility, performance, energy efficiency, and aesthetics of a building's escalators and elevators.

Modernisation solutions

Depending on the customer's needs, KONE provides modernisation solutions ranging from small repairs and modular modernisation through to full replacement.



References



Singapore Circle Line
Singapore is a city-state with a cosmopolitan population. The solution for this challenging infrastructure project was designed and installed by an international team of experts. The project included 248 KONE TransitMaster™ heavy-duty escalators and two autowalks.

London Underground
London Underground is the oldest in the world. Its lines and stations are constantly being extended and renewed. The Jubilee line extension, consist 11 stations all completely accessible by wheelchair. Stations are equipped with 34 KONE elevators, 118 escalators and 2 autowalks.



Beijing-Shanghai Express Railway

A new high-speed railway now connects Beijing and Shanghai. The main challenge in this project was to provide tailored solutions for each of the railway's 21 stations while at the same time ensuring a uniform experience for travelers at every destination. Smooth, safe people flow at each and every station is delivered with 340 KONE TransitMaster™ escalators, KONE Monospace™ elevators and round-the-clock preventive maintenance services.



Delhi Metro
Delhi's new underground system is helping to transform the city, cutting commuting times by as much as 75%. KONE supplied 324 KONE MonoSpace® elevators and 71 KONE TransitMaster™ escalators for the underground. Round-the-clock maintenance support from KONE helps to ensure that the elevators and escalators continue to provide passengers with a safe and comfortable experience.



New York subway
New York never sleeps, and neither does its subway. 107 KONE TransitMaster™ heavy-duty escalators operate round the clock, allowing passengers to move smoothly and safely between and around the subway's stations.

Rome metro
The Rome underground is a heavy duty environment, with a huge impact on the city's appeal for tourists. The solution was KONE EcoMod™ which enabled the stations to be kept in operation with minimum disruptive work. KONE also maintains the Rome metro elevators and escalators.





KONE provides innovative and eco-efficient solutions for elevators, escalators, doors, loading bays and access. We support our customers every step of the way; from design, manufacturing and installation to maintenance and modernisation. KONE is a global leader in helping our customers manage the smooth flow of people and goods through-out their buildings.

Our commitment to customers is present in all KONE solutions. This makes us a reliable partner throughout the life-cycle of the building. We challenge the conventional wisdom of the industry. We are fast, flexible, and we have a well-deserved reputation as a technology leader, with such innovations as KONE MonoSpace®, KONE MaxiSpace™, KONE InnoTrack™ and KONE UniDrive™. You can experience these innovations in architectural landmarks such as 30 St. Mary Axe and Broadgate and 201 Bishopsgate buildings, BAA Terminal 5, Emirates Stadium, Brunel University, Citigroup, Jubilee Line and St. Georges Wharf.

KONE employs approximately 35,000 dedicated experts to serve you globally and locally in 50 countries.

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