

ROPEWAYS IN URBAN TRANSPORT





Challenges for urban mobility

Ropeways as a solution to traffic gridlock



Many cities are struggling today with massive traffic problems and road congestion. The general public suffers, with traffic jams, noise and poor air quality.

The road network can barely cope with the huge volume of traffic. In downtown Bangkok, Manila and Shanghai, for instance, the average speed on weekdays is just ten kilometers per hour¹.

Innovative, environmentally friendly solutions are needed. One solution is to create a new level using ropeways – relocating the flow of traffic from ground level to the air.



¹SOURCE: <http://green.wiwo.de/megaproblem-verkehr-und-wie-es-in-den-staedten-zu-loesen-ist/> (18/05/2016)



What is a ropeway?

A ropeway is a rope-assisted means of transport.



Various types of aerial ropeway systems



GD
Detachable
gondola lift



BD
Detachable bicable
gondola lift



TD
Detachable tricable
gondola lift



GFR
Reversible
gondola lift



AT
Aerial tramway

Aerial ropeway systems ideal for urban applications



Monocable ropeways (GD)

Monocable detachable gondola lifts have one rope which acts simultaneously as a carrying and hauling rope. Passenger boarding and disembarking areas can be comfortably passed through at low speed; at the same time, the system has a high transport capacity. Monocable ropeways are becoming an increasingly common expression of contemporary urban mobility.

Transport capacity: up to 4.500 pph

Speed: up to 6 m/s

Carrier capacity: up to 10 pers.



Multiple cable ropeways (BD & TD)

Bi- and tricable ropeways have one hauling rope, and move on one or two carrying ropes. They feature detachable grips, offer a very high transport capacity, guarantee outstanding stability in windy conditions and are able to span considerable distances.

Transport capacity: up to 6.000 pph

Speed: up to 8,5 m/s

Carrier capacity: up to 35 pers.



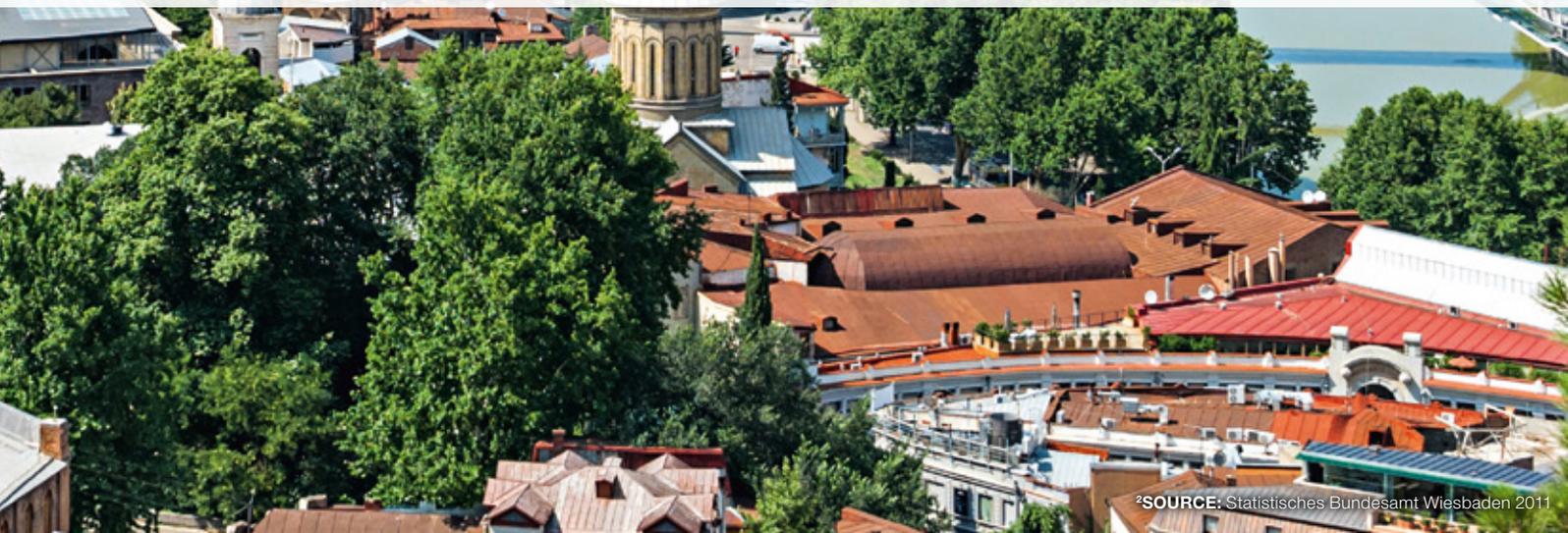
**What makes ropeways
ideal for urban areas?**





Modern ropeways can solve many contemporary traffic problems: they can be set up quickly and at relatively low cost, require little space, and with low energy costs and low emission levels they offer a sustainable reduction in environmental impact. In addition, according to the Federal Statistical Office Wiesbaden (Germany), ropeways are among the safest forms of transport². In the urban environment,

aerial ropeways in particular are specifically used to provide access to sensitive recreation areas. The ropeways touch the ground only where the towers stand, therefore causing minimal interference with the natural characteristics of the area. Urban cable-hauled transport systems thus offer not only great views for the passengers in the cabins, but a great outlook for the future.





Benefits of a ropeway at a glance



Low space requirement

Ropeways even provide advantages during their construction, which can be especially important in densely-built urban areas. Towers and stations take up relatively limited space, and the ropeways optimally integrate into the cityscape.



A great view

Passengers enjoy an unrivaled view during their journey. This also makes ropeways attractive for tourists, and creates an additional source of revenue.



Clearing obstacles

Being airborne, ropeways can clear obstacles.



Exclusive route

There is no conflict with other traffic, as the 'carriageway' is used exclusively by the ropeway.



Consistent travel times and continuous transportation

The exclusive ropeway line in the air guarantees consistent travel times, as the ropeway is not hindered by road traffic.

Passengers are transported continually – with no timetable and no waiting times.



Quick to build

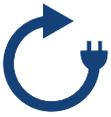
Right after the order, ropeways can be constructed over a short period of time.

This is mainly possible thanks to the use of a modular construction.



Handle steeper slopes than any other vehicle

Ropeways can handle steeper gradients than any other vehicle and are fit for use in any terrain.



Central drive unit and environmentally sustainable

Ropeways are operated environmentally friendly with electrical power. Energy consumption can be adjusted to the number of passengers. One single central drive unit in a station is enough to move many vehicles.

Example: Ropeway in Medellin / Colombia

Metrocable Medellin has received financial support from the United Nations' Clean Development Mechanism due to the system's ability to reduce carbon dioxide emissions. 121,000 tonnes of CO₂ have been saved.



Small capital investment and operating costs

Compared to other transport systems, ropeways offer relatively low investment and operating costs. The costs of a ropeway system amount to approximately half those of a streetcar, and about 1/10 of the costs of a subway.



Accessibility

Boarding and deboarding is accessible in all cabins (level walk-in). The cabins move through the stations at a very low speed, allowing easy boarding and deboarding. With **Stop-and-Go technology**, the cabins can also be brought to a complete halt for a short time. Bicycles and baby strollers can be carried in all cabins.



Safety

Compared to other means of transport:

Accident investigation conducted by the Federal Statistical Office Wiesbaden, 2011 (5-year period – based on passenger kilometers traveled):

Aircraft:	1 accident per 113 million km
Ropeways:	1 accident per 17.1 million km
Passenger car:	1 accident per 1.46 million km
Railroad:	1 accident per 1.31 million km
Bus:	1 accident per 616,000 km
Streetcar:	1 accident per 225,000 km

After aircraft, ropeways are the second-safest form of transport.

In terms of total transport numbers, ropeways are the safest means of transport.



Architecture

Architects have plenty of creative scope in designing the ropeway stations, and have a say in the design and coloring of the towers and the appearance of the cabins.

One impressive example of this is the Hungerburgbahn in Innsbruck, the stations for which were designed by star architect Zaha Hadid. The rounded, milk-white glass domes mirror the alpine landscape around Innsbruck. On the other hand, the eye-catching design of the MiniMetro in the Italian city of Perugia creates a conscious contrast to the medieval city.





The urban ropeway

A unique means of transport



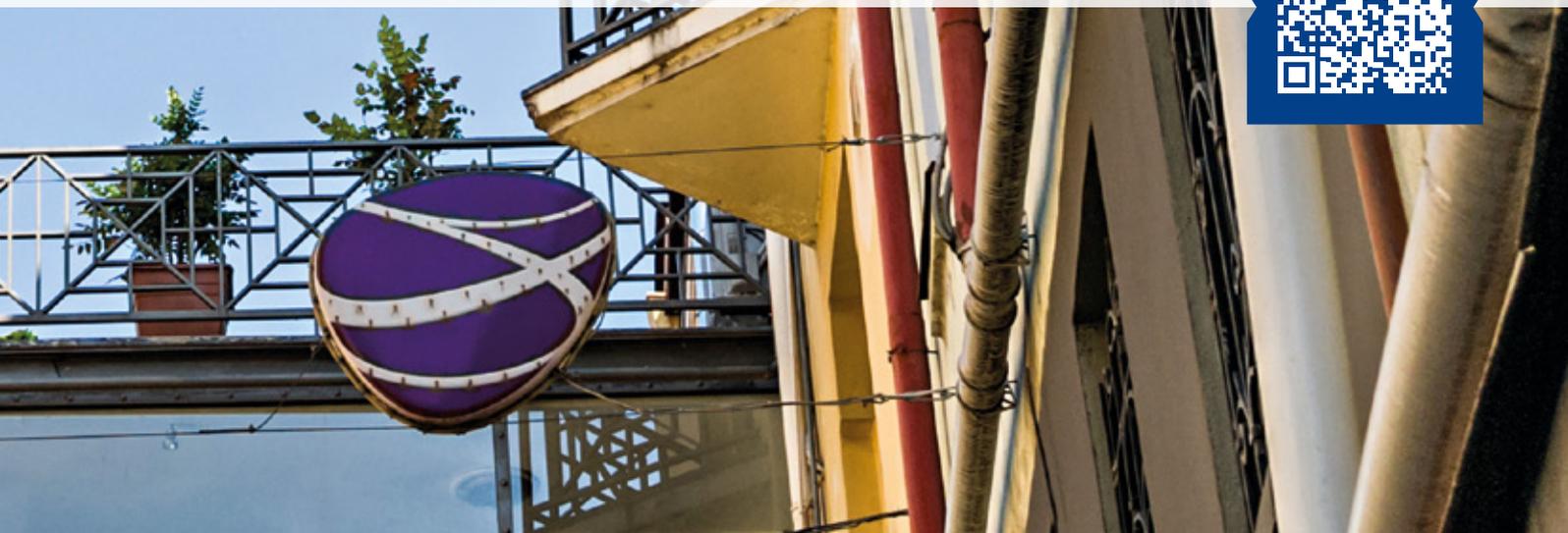


The urban ropeway constructed 12 years ago in Medellín (Colombia) was a success, and quickly led to further systems being constructed in other cities. Urban ropeways are now also in use in Europe and Asia.

Experience shows that wherever topographical obstacles such as rivers or inaccessible terrain threaten to put the brakes on vehicle movement, urban ropeways offer the ideal transport solution.

In addition, compared to a subway or urban railway system, they can be set up very quickly and in comparison with conventional means of transport, they entail relatively low investment and operating costs.

Scan the QR code and watch videos and success stories:



TD35 RITTEN - RENON
BOZEN - BOLZANO / IT



BD17 NGONG PING 360°
HONG KONG / HK



GD10 YENIMAHALLE I, II & III
ANKARA / TR



GD10 MIO CABLE
SANTIAGO DE CALI / CO



GD10 CAMBULOS-VILLAMARIA
MANIZALES / CO



GD10 CABLE AÉREO MANIZALES
MANIZALES / CO



GD8 NARIKALA
TIFLIS / GE



GD8 TELEFÈRIC DE MONTJUÏC
BARCELONA / ES



GD8 EXPO
ZARAGOZA / ES



GD8 BURSA
BURSA / TR



IF130 HUNGERBURGBAHN
INNSBRUCK / AT



MM50 SQAIRE METRO
FRANKFURT / DE



MM50 PERUGIA
PERUGIA / IT



GFR 2-2-8 EYÜP - PİYERLOTI
ISTANBUL / TR



LEITNER ropeways

Innovation since 1888



It's no longer only winter sports enthusiasts that are on the move with systems from LEITNER ropeways. This long-established South Tyrolean company enjoys global success with its high-tech ropeways. Alternative applications are increasingly in demand. This mainly comprises passenger transport in urban environments and transportation to tourist attractions, but systems are also used for material transport. LEITNER ropeways combines cutting-edge technology and superior quality with sustainability, premium design and individualized customer requirements.



Leading-edge technology

Through technological innovations, LEITNER ropeways creates excellent conditions for success, such as the LEITNER DirectDrive system – unique within the industry, these systems run much more quietly and consume less energy.

Premium Design

The long and successful partnership of LEITNER ropeways and PININFARINA has reached its pinnacle in the design of the new 3S cabins. These cabins bear the unmistakable style of renowned Ferrari and Maserati designer PININFARINA. The design is both esthetically pleasing and functional.

Superior Quality

LEITNER ropeways rigorously focuses on superior quality and offers maximum comfort for passengers and ultimate product quality for the operator.

Sustainability

Eco-friendliness and sustainability are values that enjoy the highest priority. LEITNER ropeways maintains an environmental management system certified in accordance with ISO 14001. Throughout the LEITNER group of companies, sustainability plays a major role, as also evident in products such as the LEITWIND wind turbines.

Individuality

The diverse needs of customers are fulfilled by innovative, individualized solutions. Individualized and innovative solutions from LEITNER ropeways turn a ride into an experience. The corporate design of the destination can be seamlessly integrated into the ropeway itself.

LEITNER urban



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