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Doppelmayr has built a new aerial tramway, known as the "Texelbahn", in Partschins, South Tyrol. p.4



Sölden replaces Gaislachkoglbahn

From 2010, an 8-MGD and a 3S will replace the DLM built in 1988. p.2

8-seater gondola lift at the Red Sea

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Sölden replaces Gaislachkoglbahn



Doppelmayr was contracted to build two new ropeways from Sölden to the Gaislachkoglbahn: an 8-seater gondola lift and a 3S for 30 passengers. They will replace the DLM erected in 1988.

The new lifts will represent a quantum leap in terms of comfort and transport capacity.

Sölden is well-known for its use of leading edge ropeway technology

The DLM up to the Gaislachkoglbahn at an altitude of over 3,000m was a forerunner of the Doppelmayr Funitel. It is a proven installation which will remain in service until April 2010 when it will be dismantled and replaced by an 8-MGD and a 3S gondola lift.

Ski trail intersection

The two new lifts will be linked by a "mid station" – the top station of the 8-MGD

and the bottom station of the 3S – which will be built onto the existing restaurant. This station lies at the intersection of a number of ski trails and is within easy reach of several other lifts.

In view of the large construction volume, work on the new 3S was already started in the fall of 2009. The pouring of the foundations for the three towers and – weather permitting – the top station will be carried out this year. Completion of the 3S and construction of the 8-MGD are scheduled for 2010.

Even faster, even greater wind stability

So just what are the main benefits of the 3S system? The technology at the heart of the 3S ropeway unites the advantages



of reversible aerial tramways with those of circulating ropeways.

A major benefit of the 3S system is its high wind stability. Thanks to the two

track ropes which dampen carrier side swing, 3S lifts feature high wind stability and can incorporate extremely long unsupported rope spans.

Time for all of us to roll up our sleeves

There's no denying that the economic climate has become more difficult. We are well aware that we directly depend on development in the tourism sector and will do our utmost to support our partners' efforts to provide an optimal guest experience.

Doppelmayr/Garaventa will rise to the challenge. Because for us, innovation in the development of products, services and production methods is never an end in itself. There will be no letup in our drive to expand crucial skills and capabilities, and to deliver performance that cannot fail to convince.

It is thanks to this philosophy that we enjoy a high level of trust within the industry. This year, yet again, we shall be completing a large number of fascinating installations and have launched world firsts onto the market – in line with our reputation as technology and innovation leader.

We shall not lose sight of our goal of being a fair partner to our customers and continuing to provide them with the usual scope and quality in the medium and long term. This will be achieved by focusing on the sustainable development of our business.

Right now, I would like to wish all my customers – and myself – plentiful snowfall and a successful start to the season!


Michael Doppelmayr

8-MGD Gaislachkogel 1

Transport capacity	3,600 PPH
Trip time	6.7 min
Speed	6.0 m/s
8-passenger cabins	107
Interval	8.0 s
Inclined length	2,040 m
Vertical rise	811 m
Towers	16
Drive	Top
Tension	Bottom

3S-Gaislachkogel 2

Transport capacity	2,600 PPH
Trip time	6.3 min
Speed	6.0 m/s
30-passenger cabins	19
Interval	41.5 s
Inclined length	1,978 m
Vertical rise	864 m
Towers	3
Drive	Top
Tension	Bottom



Photos: obermoser arch-omo zlgmbh | architects, innsbruck

Texelbahn, Merano: No tower disturbs the view

In the Bolzano/Merano region of South Tyrol, Doppelmayr has constructed the third aerial tramway in four years. The latest of these is the Texelbahn.

In the heart of Meraner Land, amid the Ötztal Alps, lies South Tyrol's biggest nature park covering an area of 82,600 acres. One of the most popular means of access is the brand-new Texelbahn, a 25-passenger bi-cable aerial tramway, just a 15-minute walk away from the vacation villages Partschins and Rabland. The tram only operates in the summer. It was completed on schedule on April 25, 2009, after two years of planning and a nine-month construction phase – in spite of a heavy storm in August 2008, which resulted in severe damage to bridges and access roads, and a very severe winter.



The Giggelberg top station (1,560m) lies not far from a restaurant, above which a fire-extinguishing pond with a capacity of 2,700 m³ was constructed. The top station consists of three levels: at the bottom the shaft for the counterweight, in the middle the loading and unloading areas as well as a large viewing terrace (over 100 square meters in total) and at the top the return bull wheels and technical equipment. The drive and the ticket desk are located in the bottom station.

The tramway is fully automated and can be operated by just one person.



The tram has been exceptionally well received, the goal being to achieve at least 85,000 turnstile admissions a year. The reason for the popularity of the Texelbahn is the fact that it was financed by means of shares which were offered to a broad regional public. The population therefore looks upon the installation as "their" tram: over 200 citizens and vacation guests purchased shares to a total value of EUR 865,000; the rest of the finance was raised by contributions from the municipality, the Province of South Tyrol and a loan.



Adverse weather proved to be a major hindrance to construction work on the tram. The job was nonetheless completed on schedule thanks to the huge effort and dedication of everyone

involved. So it's no wonder that Hans Weiss, President of Texelbahn AG, is full of praise: "It all succeeded because Doppelmayr made the impossible possible." – Doppelmayr Italia took charge of the installation work and project management, Garaventa supplied the bull wheels for the rescue ropeway, and Texelbahn AG was responsible for contracting out the station buildings.

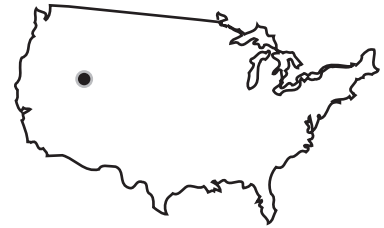
25 ATW Texelbahn

Transport capacity	280 PPH
Trip time	5.0 min
Speed	7.0 m/s
Inclined length	1,650 m
Vertical rise	911 m
Drive	Bottom

Tension (counterweight for haul and rescue rope loop) Top

Funicular to fairy-tale hotel

5



Doppelmayr CTEC installed a funicular of a special kind at Deer Crest in Utah, USA. The two cars run independently of one another on two parallel tracks. These act as a shuttle to the recently built 5-star luxury hotel St. Regis¹.

The St. Regis Deer Crest Resort is situated on the Wasatch Mountains, a short distance from the historic Park City which lies in the west of the Deer Valley hiking and skiing area. The hotel has the look and feel of a fairy-tale castle, incorporating private residences, condominium suites and a total of 181 custom-designed guest rooms after the style of the original St. Regis in New York City which has epitomized luxury and exclusivity since 1904. The new resort is jam-packed with amenities including top-class restaurants, spa facilities, conference rooms, ballrooms, boutiques and a split-level heated infinity swimming pool.

can be accessed via a private road. All other guests will use the funicular; their automobiles will be parked by a valet parking attendant in an off-site parking lot.

The guests will check in with their luggage in the lobby at the bottom terminal. The cars consist of a 15-passenger compartment and a luggage area which are accessed by separate doors. The luxurious cabin decor includes seats in genuine buffalo leather.

Illuminated steel guideway

To ensure availability, the two-meter-high guideway incorporates two systems. Each of these has a winch drive and is completely independent. As the gradient is not constant, but varies between 20 and 70 percent, the cars have been equipped with automatic level compensation which ensures that the passenger cab is always horizontal. The drive room is located in the hotel basement. The funicular is perfectly in tune, both technically and visually, with the resort's world-class atmosphere. At night the illuminated steel guideway becomes a fascinating eye-catcher.

The operators not only expect to see a full house in the winter season but also at least 90 percent utilization in the summer.



With the St. Regis, Deer Valley now has its third 5-star hotel. It can be reached in half an hour from Salt Lake International Airport. The lobby is in the bottom terminal, while the top terminal forms part of the main hotel building.

The St. Regis consists of two buildings – one adjoining Deer Valley's Snow Park base lodge and the other resting 500 feet higher on the Deer Hollow ski run. A funicular will carry hotel guests arriving by limousine from the Snow Park registration desk up to the hotel. Apartment owners arriving by private car will register at the main hotel building which features two levels of underground parking and

15-FUL Deer Crest

Transport capacity	330 PPH
Trip time	1.5 min
Speed	2.5 m/s
Carriers	2
Inclined length	178 m
Vertical rise	70 m
Drive 150 kW	Top

¹The funicular went into service for training purposes in August 2009; the official opening is scheduled for November.

Valais, Switzerland: Aerial tramway for public transport



The best public transport connection between Riddes in the Rhone Valley and the mountain village Isérables in the Swiss canton of Valais is the 25-passenger ropeway from Garaventa.

Riddes lies on the main routes from Martigny to Sion; Isérables is a mountain village at an altitude of 1,115 m. The terminals for the tramway, which reopened in the third week of August following a seven-month construction period, are to be found in the center of each location. The tramway itself replaces an almost 70-year-old 12-passenger installation.

Historically listed terminals

The terminals are historically listed buildings and, as such, may not be modified in any way which would change their external appearance.

To ensure safe and convenient loading and unloading for the passengers, a shifting platform with rotary head guide rail was installed. In this case, the loading platform moves from one side to the other, depending on which side the cab-

in enters the terminal. The shaft for the haul rope counterweight was retained without the need for rebuilding.

Four high-voltage power lines along the way

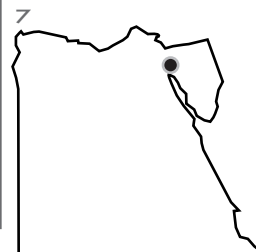
The tram crosses no fewer than four high-voltage power lines. This posed a particular challenge for both the rope-pulling operation and the rescue systems. Auxiliary safety towers were erected temporarily for installing the rope. The rope pulling operation went ahead with radio communication between the upper and lower terminals to make absolutely sure that sufficient tension was applied to the rope at all times in order to prevent any sagging and consequently contact with the power lines below.

A time frame was also selected when the main power line was disconnected from the grid for maintenance work. This

In the village of Isérables (population 1,000, altitude 1,115 m), the inhabitants affectionately refer to their 67-year-old aerial tram as "la ficelle" – the string. It was built at a time when there were no roads suitable for motor vehicles, and to this day remains the primary means of transport for school children, commuters and all kinds of freight. The tramway is extremely popular with hikers, mountain bikers and vacationers. Goods are transported using freight trolleys (capacity 2 t) which are suspended beneath one of the cabins. The canton has an integrated public transport system which includes the tramway and bus services linking up with the large Tzoumaz ski region. As well as being able to carry mobility-impaired passengers, the new tramway is also designed for operation without an attendant.



Gondola lift at the Red Sea



called for particularly fine tuning of the installation logistics.

The rescue ropeway involved a very complex design, not just because of the high-voltage power lines but also in view of the maximum height above ground of around 170 m. The system has a winch drive and two open carriers, each for eight passengers, which are parked at either side in the top terminal. These are positioned on the track ropes using tackle blocks. The hanger adapts to the rope inclination. The passengers transfer from the tram cabin to the rescue carrier by means of an evacuation bridge.



Philippe Studer is responsible for the Riddes-Isérables tramway project at the Office of Transport, Building and Environment/Transport Section. As the

tramway continues to meet the needs of the population after 65 years in service, offers high availability and moreover runs on renewable power – as well as being energy-efficient into the bargain – it was sensible to upgrade it. And in any case, the operating permit for the old tramway was due to run out in 2011.

25-ATW Riddes – Isérables

Transport capacity	226 PPH
Trip time	6.0 min
Speed max.	7.0 m/s
Inclined length	1,977 m
Vertical rise	614 m
Towers	1
Drive 96/152 kW	Bottom
Haul rope counterweight	Top 17.6 t
Fixed track rope anchoring	Top + Bottom
Altitude at lower platform	495 m

In May, Doppelmayr completed a gondola lift in Al Sokhna on the northern shores of the Red Sea. It links a newly built luxury hotel with a wellness center located on a nearby plateau.

The Doppelmayr 8-MGD runs from the Red Sea to an altitude of 232 m, where a mythical old town with an amphitheater, bazaar, winding streets and a host of luxurious recreational amenities is being created. The complex is due to open at the end of 2009.

Tourist resort in the desert

The Amer resort of Al Sokhna (Egypt) is literally being built from scratch. What is

certain is that it is destined to be an idyllic vacation paradise. The developer is the Amer Group, a global operation headquartered in Cairo and employing over 1,000 people. The Group's activities include construction and civil engineering works as well as the development and management of tourist resorts and shopping malls.

8-MGD Al Sokhna

Transport capacity	1,180 PPH
Trip time	4.4 min
Speed	5.0 m/s
Cabins	22
Interval	24.4 s
Inclined length	1,020 m
Vertical rise	207 m
Towers	4
Drive	Bottom
Tension	Bottom



The gondola lift in Al Sokhna complies with CEN standards.

Caracas: Gondola lift for hillside community

Doppelmayr has built an 8-seater gondola lift with five stations as a means of public transport in Caracas. The project initiators – and above all President Hugo Chávez – are firmly convinced that the installation is a trailblazer for the whole of South America.



San Agustín del Sur is a typical South American barrio: perched on a steep hillside, greatly loved by all who live there, but lacking in adequate transport infrastructure due to its constant expansion over the years and the absence of any town planning. Large parts of the 70-hectare district can only be reached via winding steps and narrow footpaths. This made a ropeway the obvious choice to provide the 40,000 inhabitants with a fast and convenient link to the road system and public transport services at the foot of the hill.

Gondola lift for 40,000 inhabitants

The solution which presented itself entailed a gondola lift with five stations, which followed a semicircular route up and over the hill, with terminals at the underground station at one end and a transport hub at the other. At the same time, the stations address different sociopolitical themes. They are equipped for musical events, not least for the local orchestra, and house educational facilities, a library with internet access, shops catering to daily needs, restaurants and a sports hall. The gondola lift stations are integrated into correspondingly large

buildings which are visible from afar. Photovoltaic units are used to assist the energy supply to the PA system for the gondolas and stations.

Fares prices in line with social needs

Fares are based on socially acceptable pricing structures, as Señor Cesar Núñez, project manager at the urban transport organization C. A. Metro de Caracas¹, assures us. He also notes that Doppelmayr performed the supervision of rope-

¹ Buses, underground

8-MGD San Agustín

	Section 1	Section 2
Transport capacity	1,200 PPH	1,200 PPH
Trip time	5.6 min	4.3 min
Speed	5.0 m/s	5.0 m/s
Cabins	28	22
Interval	24 s	24 s
Inclined length	1,601 m	686 m
Vertical rise	109 m	106 m
Towers	6	6
Drive	Bottom	Bottom
Tension	Bottom+Top	Bottom+Top



Cable Liner® Pinched Loop for Caracas

way construction to the full satisfaction of his company as well as providing training for the technical operating crew. Operating the gondola lift will directly create jobs for 30 people in total.

6 bull wheels, 4 rope loops, 4 tension systems

The system is comprised of two sections, each with an intermediate station. The intermediate stations El Manguito and Hornos de Cal are angle stations with a deflection of between 70° and 75°, ultimately giving rise to a route which is roughly semicircular. Each intermediate

station has a double bull wheel. The two sections can either be run independently or in pass-through operation. The central top station La Ceiba houses two adjacent, independent bull wheels and the tension system for each section; the overhead drives are located in the bottom stations San Agustín and Parque Central.

Section 1, which starts at San Agustín, went into service in February 2009, Section 2 in August.

Following the positive experience with Doppelmayr, the contract to construct a people mover system was awarded to Doppelmayr Cable Car.

DCC Doppelmayr Cable Car has won the contract to build an automated people mover in Caracas.

A new people mover system, the Cabletren Bolivariano, will be part of the urban transit network linking the underground stations, Petare (existing Line 1) and Waraira Repano A (planned Line 6). This transportation system will be 2.3 km long and will pass five stations. Four walk-through trains, each consisting of four vehicles, will provide a system capacity of up to 3,000 people per hour per direction. Scheduled to open in November 2011, DCC's custom-tailored APM system will help Caracas to improve their public transport in the most populated region in South America.

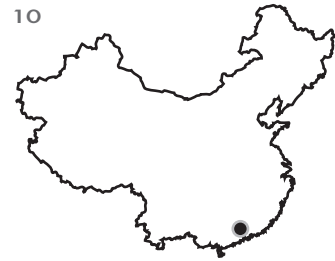
Cabletren Bolivariano

System length	2.3 km
Train capacity	3,000 pphd*
Trains	4 trains with 4 vehicles each
Travel speed	13 m/s
Travel time	7 min 22 s
Stations	5



The gondolas are fitted with an emergency call button and a PA system.





Underground amusement ride at Ocean Park

Doppelmayr/Garaventa has installed a funicular inspired by Jules Verne at Ocean Park in Hong Kong, one of the world's biggest theme parks. During the three-minute ride through a 1.3-kilometer-long tunnel, passengers will be given the sensation of a submarine dive into the deep sea.

Hong Kong's extensive Ocean Park is one of the biggest and most spectacular marine-themed amusement parks in the world. One section of the park, overlooked by a hill, is also popular for its amusement rides which include roller coasters and white water rafting.

90 million visitors

The hill is crossed by a gondola lift offering a magnificent view across the China Sea. One of the park's more recent additions is a large compound housing giant pandas. Styled after a big top, this structure features a transparent plastic façade, similar to Beijing's Olympic Aquatics Center. Ninety million people from around the globe have visited the park since it first opened in 1977.

The new funicular installation links the Waterfront and Summit areas of the park which are located on either side of the hill. Its task is to cut down waiting times at the two existing gondola lifts, which run

roughly parallel to one another, and to put guests in the mood for the topic of ocean worlds with an adventure show.

Maximum availability

The entire route of the new funicular is tunneled, thus enabling the system to meet maximum availability requirements (downtime tolerances are exactly defined in the contract). To ensure this level of availability, the funicular drive features a back-up system so that an immediate switchover to the second system is possible in the event of drive failure.

Special attention was focused on fire protection. The entire line has an escape tunnel at one side in which an air overpressure can be generated in the event of a fire to prevent the ingress of smoke.

Perfect submarine illusion

Both the cars and the stations of the funicular feature a special design inspired by



The funicular is a key element in the Ocean Park Master Redevelopment Project. As well as being an attraction in itself, thanks to its high transport capacity, the funicular also dispenses with the long waiting times previously experienced by visitors when crossing the site using the two gondola lifts. The installation was opened for selected visitor groups in mid-August and the Grand Opening will take place in September.

Jules Verne's Nautilus in "20,000 Leagues under the Sea". The idea is to create the impression that the visitor is arriving at a dockyard (the station) and about to experience a submarine dive into the ocean. The cars have screens incorporated in the ceilings to create the sensation of watching the underwater world through the panorama roof of a submarine. Wavelights, stroboscopic effects and bass loudspeakers enhance the feeling. The car suspension has also been specially designed to minimize the rolling noises generated between wheel and rail which might otherwise spoil the illusion of being under the sea.

With the exception of the passing loop, the entire track runs in a straight line and at a constant inclination. In view of the low gradient, the funicular is equipped with a counter rope which is hydraulically tensioned in the bottom terminal. To ensure that the cars in the opposite terminal come to rest in an exact stopping position, the end position is equipped with a hydraulic

buffer. The entire planning and execution took two years. The Ocean Park funicular was built in compliance with the Hong Kong Code of Practice, which is largely based on the Swiss Funicular Railway Ordinance. The local regulations relating to amusement rides also had to be adhered to. In addition to these codes, the latest CEN regulations applied. The installation was finally inspected by TÜV-Süd on behalf of the Hong Kong authorities.

Ingenious transport logistics

Transporting the cars in the Ocean Park itself proved to be a real challenge. At the port of Hong Kong they had to be loaded onto a barge in order to circumnavigate the island. In view of the large crowds of visitors, the cars could only be transported through the park at night, once the park gates had closed, and placed on a provisional track. Before this, a truck chassis with a car envelope composed of metal bars and twine had been sent off in order

to make absolutely sure that the ready-assembled cars would not be too big to safely wind their way through the installation.



Tom Mehrmann, Chief Executive of Ocean Park Hong Kong: The funicular will be a great new attraction.

400-FUL Ocean Express

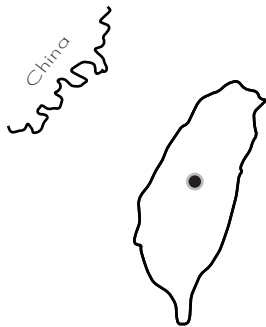
Transport capacity	5,000 PPH
Trip time	3.1 min
Stopping time in stations	1.7 min
Speed	10 m/s
Inclined length	1,280 m
Vertical rise	115 m
Drive 550 / 1500 kW	Summit
2 trains with 2 cars each	



The Ocean Park funicular incorporates a whole host of innovations and high-tech features. Doppelmayr/Garaventa was also responsible for the sophisticated peripheral equipment used. As well as creating the perfect illusion of a submarine voyage, the entire communications systems – CCTV monitoring of the tunnel, car interior and exterior plus the PA system – were adapted in line with the stringent requirements of the Ocean Park management before leaving Switzerland. The two trains are 40 m long and each consists of two cars.

Taiwan: Wedding car with a view

Sun Moon Lake in central Taiwan is a great tourist attraction – and extremely popular with wedding couples. Since summer 2009, a Doppelmayr gondola lift has linked the lake with the Formosan Aboriginal Culture Village (FACV) theme park, crossing a wildly romantic mountain ridge along the way. In 2001, an 8-MGD from Doppelmayr went into service in the park itself. Both tourist sites attract large numbers of visitors.



The theme park was created on the initiative of Jung-I Chang, the current president of the operating company, and opened in 1986. His prime mission was to commemorate and celebrate Taiwan's indigenous culture. It was not long before his dream of building the park was also shown to be a very sound business decision. Today, the park attracts 1.5 million visitors a year.

Hsieh-Shen Chang, the second son of the park's founder and an Executive Director of FACV, joined the family business as soon as the park opened. Hsieh-Shen Chang's main task involves handling the expansion project for the theme park. He has therefore devoted a great deal of energy and enthusiasm to providing an aerial connection between FACV and the region's other great tourist destination, Sun Moon Lake.

Taiwan's largest lake covers a surface area of eight square kilometers and is famous for its pagodas as well as its many legends. Sun Moon Lake National Scenic Area Administration is responsible for managing the area. This authority organizes group wedding ceremonies at the specially created wedding pavilion as well as a host of events such as the annual swimming race which attracts 10,000 participants. Throughout the rest of the year, swimming in the lake is prohibited for safety reasons due to the risk posed by the many pleasure boats.

Prolonged planning process

Back in 2000, Hsieh-Shen Chang had originally planned to build the ropeway link to the lake at the same time as the gondola lift inside the theme park itself. However, while the theme park gondola was built on privately owned land, the Sun Moon Lake facility was a "Build-Operate-Own" (B.O.O.) project crossing national land and consequently involved a much lengthier planning process.

But it was certainly worth all the hard



work! The ground-breaking ceremony took place in mid-2008 and the ropeway finally went into service in late summer 2009.

Technically impressive

The ropeway crosses a mountain ridge with a steep-sided valley. This made it necessary to incorporate a long unsupported rope span of 788 m at a height of 160 m above ground. For this section, a rescue ropeway with two self-propelled carriers was built. The carriers are parked on swing arms on the towers immediately next to the rope span and, in an emergency, bring the cabins to the nearest tower, where the passengers are lowered by rope. This long span also posed a challenge in terms of rope guidance due to the high wind pressures. Doppelmayr guarantees problem-free operation up to wind speeds of 50 km/h. To further increase safety, the Doppelmayr RPD (Rope Position Detector) system was installed, which provides fail-safe monitoring of the rope position on the tower sheaves.

The stations had to be extended to



Doppelmayr Wolfurt was responsible for project management, ropeway technology, control system and construction supervision. The towers were manufactured by Doppelmayr China in Sanhé. The surveying, civil engineering, foundation works for the towers, construction of the station buildings and lift installation assistance – under the direction of Doppelmayr’s long-serving chief fitter Warren Newland – were taken care of by the customer.

handle the exceptionally high transport capacity of 3,000 passengers an hour. The drive station is located in the theme park, the fixed tension system in the lake-side station. The tension carriage is adjusted for the entire day prior to start-up and before the cabins come onto the rope. The cabins themselves are parked at the theme park station.

Uncompromising quality requirements

Director Hsieh-Shen Chang is pleased with Doppelmayr’s performance. He chose Doppelmayr because of their outstanding reputation for quality and service. There can be no compromises where these aspects are concerned: “We operate 365 days a year. Safety and reliability have to be our top priority!” And that’s why Hsieh-Shen Chang is convinced he made another correct decision in entrusting Doppelmayr with the Sun Moon Lake Ropeway project.

His view is also borne out by the particularly complex planning process required for a B.O.O. project. In this case, the authorities carry out a comprehensive inspection of the ropeway installation itself (“Doppelmayr provided thorough training for our team”) as well as rescue procedures, fire control and the arrangements for passenger line management.

8-MGD Sun Moon Lake

Transport capacity	3,000 PPH
Trip time	6.8 min
Speed	6.0 m/s
Cabins (LWI)	86
Interval	9.6 s
Inclined length	1,925 m
Vertical rise	110 m
Towers	16
Drive	Park
Tension	Lake



Maintaining tradition while simultaneously developing the region by boosting tourism – that is the goal of company founder Jung-I Chang and his son, Executive Director Hsieh-Shen Chang.



Skiing fun in Montenegro

Doppelmayr has built a detachable 6-seater chairlift in the Bjelasica Mountains near Kolasin, 65 km northeast of the Montenegrin capital Podgorica. According to the operators, the ski resort is now the most modern in the whole of Montenegro.

For many years, tourism was in the doldrums in Kolasin, but since privatization in 2006 it has experienced a noticeable upswing¹. The ski resort itself has a total of five lifts – the new detachable 6-seater chairlift “Vilina Voda”, a 2-seater chairlift and three surface lifts – plus 20 km of interlinked ski trails. Three ski trails were constructed for the new chairlift. They range between 40 m and 60 m in width and their lower section has snow-making facilities. Right next to the new lift is the bottom station of the old 2-CLF which provides access to the slope opposite.

Wooden-clad façade

The new lift runs in a southwesterly direction into the new ski area. Adjacent to the bottom station is a secure parking lot. From here, a bridge provides access to the ski rental and then to the ticket desks which are housed in separate kiosks. A restaurant is integrated into the bottom station. Both the top and bottom stations are steel lattice constructions with wooden cladding, as frequently used by Doppelmayr in France. The lift features a loading carpet and RPD monitoring².

Extensive construction work

A 3.5-kilometer-long access road had to be built to allow work on the top station to go ahead. As construction of the lift did not start until early November 2008 and there was unusually high snowfall, building progress was delayed in spite of the huge deployment of personnel and equipment. Up to 100 people worked on the construction of the top station. The towers were erected in February using helicopters and the installation was finally ready to go into operation in the second week of April 2009.

Doppelmayr was responsible for the planning and execution of the entire rope-way equipment. The geomechanical in-

vestigations, the foundations and control rooms as well as the power supply to the station, local transport, etc. were taken care of by the customer, New Ski Centar Bjelasica A.D. Kolasin.

6-CLD Vilina Voda

Transport capacity	2,800 PPH
Trip time	4.5 min
Speed	5.0 m/s
Chairs	72
Interval	7.7 s
Inclined length	1,258 m
Vertical rise	384 m
Towers (1 twin tower)	13
Drive	Bottom
Hydraulic tension system	Bottom

¹ Guests are primarily from Russia, Albania and Podgorica.

² Rope Position Detector, the fail-safe monitoring system from Doppelmayr





Kopaonik: Six of the best

At the end of July, the 4-CLD Gobelja was opened in Kopaonik, Serbia. This is the sixth Doppelmayr lift in this ski region since 2004.

Kopaonik is an all-year tourist area in the Central Balkans. The region offers around 15,000 beds. The guests are mainly from the UK, Russia and Serbia.

Doppelmayr lifts are much more popular than others

In total, the area has 17 lifts with an hourly capacity of over 18,000 skiers. The Doppelmayr installations are extremely popular and currently transport 90 per cent of all passengers.

Gobelja acts as a feeder lift as well as providing uphill transportation for the adjacent slopes. For this reason, the Srbenac Hotel is located right next to the bottom station. The new ropeway replaces an old surface lift and follows a slightly modified lifeline.

In its capacity as general contractor, Doppelmayr performed the planning¹

and also supplied the ropeway and electrotechnical equipment as well as the foundations, installed the towers (by helicopter) and built the control rooms plus the transformer station. Regional resources were used in the process.

The construction phase took nine months. In view of the extremely low temperatures and deep snow, construction work had to be interrupted from December 2008 until after the thaw in May 2009.

As the ropeway features the same design as previous lifts, it will be possible to draw on experience and utilize synergies in maintenance, the use of spare parts and training.

The customer for this contract was "Skijalista Srbije", a state-owned holding company which was specially founded to run all Serbian ski resorts. The operating company is the state-owned Ski Resorts of Serbia.



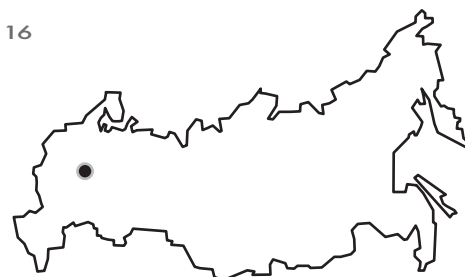
4-CLD Gobelja

Transport capacity	2,400 PPH
Trip time	3.1 min
Speed	5.0 m/s
Chairs	62
Interval	6.0 s
Inclined length	846 m
Vertical rise	232 m
Towers (1 twin shaft)	8
Drive	Bottom
Tension	Bottom

¹ Including surveying, geotechnical assessment, etc. and obtaining official permits

A major argument in favor of awarding the contract to Doppelmayr: the meticulous instruction and continuous training of ropeway operatives. The photo shows ropeway crews from Montenegro and Serbia at the training center in Wolfurt in July.

Wedelling at Moscow's topflight ski club



Doppelmayr installed an efficient, fixed-grip quad chairlift at the exclusive Shukolovo ski center on the outskirts of Moscow.

Shukolovo is a village situated in a hilly area approximately an hour's drive from Moscow.

The early days of skiing in Shukolovo date back to the 1960s. It is here that a training center was created for Russia's national ski team. Work on developing the ski center into a modern sports and entertainment complex began in 2000. There are seven ski trails¹, many of them offering challenging slopes, five lifts, a skating rink, sports halls, sports shops, wellness facilities, restaurants and six chalets. The center is owned by Leonid Tyagachev, President of the Russian Olympic Committee. The most prominent member of the Shukolovo Ski Club is Prime Minister Vladimir Putin. The Shukolovo ski center has played a major role in popu-

larizing the sport of alpine skiing in the greater Moscow area.

4-CLF Shukolovo

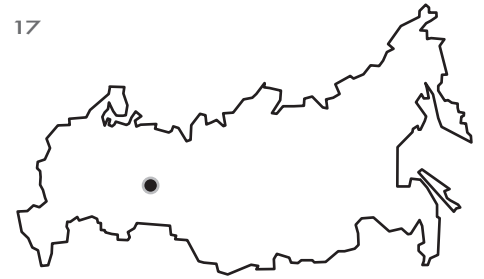
Transport capacity	1,378 PPH
Trip time	3.7 min
Speed	2.3 m/s
Chairs	43
Interval	10.4 s
Inclined length	503 m
Vertical rise	79 m
Towers	5
Drive	Bottom
Tension	Bottom

¹The parallel slalom of the Snowboard FIS World Cup has already been held here twice.



Night skiing is very popular in Russia. Shown here: the main ski trail at Shukolovo near Moscow.

Construction boom in Russia's Olympic resort



Doppelmayr has already supplied six lifts for the Olympic ski resort of Roza Khutor. The 8-MGD Lift A was completed at the end of 2008. Roza Khutor in the Caucasus Mountains, 40 km from Sochi on the Black Sea, is to host the alpine competitions of the XXII Winter Olympics in 2014.

Roza Khutor is a completely new ski resort which lies on a plateau above the village of Krasnaya Polyana. While the surrounding area already has several lifts dating from the Soviet era, what is now being created is a new, world-class recreation center. In 2005, the Roza Khutor Development Company (Interros) gave the go-ahead for planning the ski resort. The total length of the ski trails will have reached 55 km by the time the Olympic Games take place. The ski area lies between altitudes of 819 m and 2,285 m. The lifts will also operate in the summer and are expected to see capacity utilization levels comparable to those of the winter months as the mountainous region behind Sochi is popular for hiking.

Sophisticated rescue ropeway

The bottom station of the 8-MGD with gondola parking facility lies on the edge of Krasnaya Polyana at an altitude of 560 m. The lift – which rises steeply at the beginning but then levels out – acts as a feeder for the Roza Khutor Plateau (1,166 m). Its rope gauge varies from 5.5 to 6.5 m. It crosses wooded and rugged terrain, including a very deep and very wide gorge, which made it necessary to install two rescue winches. A rescue carrier can be lowered from the opposite tower on either side of the gorge. In an emergency, passengers would be brought to the towers (21 m and 29 m) and then lowered to the ground by rope.

The stations have been carefully integrated into the surrounding building infrastructure. At the top station, "Roza Khutor Lodge", this includes restaurants (split into a self-service facility on the ground floor and two restaurants on the upper floor with waitress service and VIP amenities), shops, ski school, kindergarten, personnel area, garages for snow-grooming vehicles, emergency power generators, etc. The bottom station is located next to a large parking lot and also forms part of a group of buildings housing workshops, clarification plants and infrastructure equipment.

8-MGD Roza Khutor Lift A

Transport capacity	2,478 PPH
Trip time	7.5 min
Speed	6.0 m/s
Cabins	77
Interval	11.6 s
Inclined length	2,341 m
Vertical rise	606 m
Towers	18
Drive	Top
Tension	Bottom



In Roza Khutor, the skiing season lasts 140 – 180 days, depending on altitude. However, lift capacity is also well utilized in the summer.

Bird's eye view of the FIFA World Cup

Garaventa has installed a funicular on the striking 30-story arch which spans the entire length of the new 70,000-seat Moses Mabhida Stadium in Durban, South Africa.

Initially named after King Senzangakhona, one of the founding fathers of the Zulu nation, the stadium was renamed after Moses Mabhida (1923–1985), a former General Secretary of the SACP during the construction phase. It was built first and foremost for the 2010 FIFA World Cup, but is part of a long-term development concept.

The stadium replaces the famous Kings Park Stadium, which was only half the size, and will be incorporated into an extensive sports center and a new shopping mile with shops, restaurants, offices and underground parking for 70,000 cars near the railroad station (with connections amongst others to the

new King Shaka International Airport). The roof covering the spectator stands is supported by a 100-meter-high steel arch which divides into two arms above the football pitch. On one of these, a 25-passenger funicular runs up to a viewing platform at the highest point in the stadium which affords an awe-inspiring view of the sea and far into the mountainous hinterland¹. The cabin is a rectangular glass structure with hydraulic level compensation. The winch drive is housed in the cavity of the tower foundation. At the "top end" beneath the viewing platform there is merely a return bull wheel.

The funicular was completed in June 2009, but the stadium is still under construction. Prior to and during the installation period for Garaventa AG, there were up to 1,500 people working on site at any one time. Seven games will be played here during the 2010 World Cup, including two semifinal matches.

Work on the new World Cup facility began in 2006 with the demolition of the Kings Park Stadium. The demolition material from this site was used to fill the foundation for the new stadium. Seats, lighting masts, etc. were installed at other sports facilities. 13,000 people were involved with this work.

25-FUL Moses Mabhida Stadium Cable Car

Transport capacity	230 PPH
Trip time	1.5 min
Stopping time in stations	1 min
Speed	2.0 m/s
Carriers	1
Inclined length	213 m
Vertical rise	105 m
Drive	145 kW; in tower foundation

¹For security reasons, the funicular will not be in service during the World Cup football matches, but is nonetheless one of the major attractions of the sports park.



The funicular travels along the arched roof support to Durban's highest viewing point.

Logistics center for Fresenius

LTW, a member of the Doppelmayr Group¹, provided the equipment for the very heart of the Biebesheim logistics center in Hessen for international pharma group Fresenius. This involved the entire storage and order-picking area.



Biebesheim lies between the German cities of Darmstadt and Worms. It is here that the investment company Alpha Industries, which specializes in the design of logistics buildings, erected a distribution center for Fresenius Medical Care. Products manufactured by Fresenius in countries such as Turkey, France and Holland are stored at the center prior to distribution. The location is ideally placed for rapid access to the A5 and A67 highways, the large port of Gernsheim on the River Rhine and Frankfurt Airport.

Flexible use

Fresenius is renting the premises for 15 years, after which the warehouse complex could easily be leased to other customers.

General contractor for intralogistics

LTW planned and installed the fully automated system from the baseplate up; it comprises a high-bay warehouse with 55,000 pallet spaces², automated small parts storage plus the order-picking zone. The LTW warehouse control system ensures optimal use of storage capacity and rapid material flow.

98 percent availability

LTW guarantees an availability of 98% for 15 years. And a five-man service team from LTW is on site to make it happen. At least two members of the team are monitoring operations at any one time. They also perform preventive maintenance to ensure that a single maintenance stoppage per year is sufficient.

LTW Intralogistics GmbH at a glance:

Products	Intralogistics systems
Headcount	170
Revenues 2008	EUR 43 million

¹ LTW plans and manufactures intralogistics systems, i.e. it covers all logistics activities within a building or premises. The steel modules are produced by a special department at Doppelmayr's Ropeway Division in Wolfurt.

² Seven aisle-bound storage and retrieval machines are operated in two shifts and enable up to 4,500 pallet movements per day in the high-bay warehouse. This system permits an extension of the warehouse by three additional racking aisles.

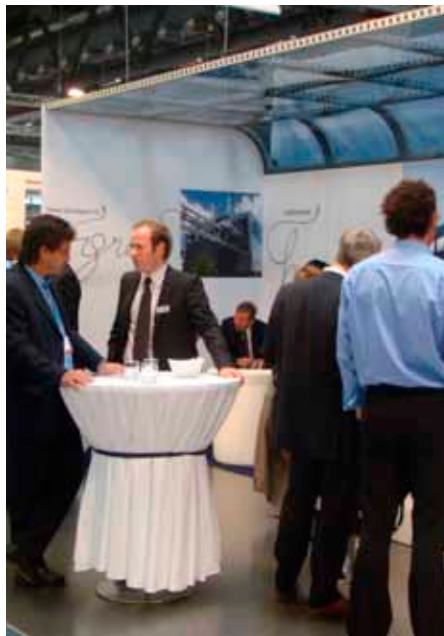



Fresenius Medical Care is the world's leading provider of dialysis products. The fully automated central warehouse in Biebesheim, Hessen, serves 140 countries. Acting as general contractor, LTW built and equipped the warehouse precisely on schedule. The warehouse is 40 m high and covers a floor space of 8,000 m². It houses 1,400 different products.

Cable Liner® takes center stage at shows in Atlanta and Vienna

Large numbers of visitors were anxious to find out more about the portfolio of DCC (Doppelmayr Cable Car) at the Automated People Mover Conference & Exhibition 2009 in Atlanta, USA (May 31 – June 3), and at the UITP Mobility & City Transport Exhibition in Vienna (June 8 – 11; photo).


With the Cable Liner®, DCC offers urban passenger transport solutions for efficiency at every level and ultimate reliability, whether in airports, resorts, or architectural mega-projects.





Interalpina
отправляется в
СОЧИ

**With Doppelmayr,
the reliable partner to
the ropeway sector**



Interalpina: Great interest in Doppelmayr

The Doppelmayr stand at Interalpina 2009 (Innsbruck, April 22 – 24) attracted over 18,000 visitors. This was seven percent up from two years ago. Innovations which commanded particular attention included the 3S gondola at Whistler-Blackcomb, Canada, the Cable Liner® in Venice, child-friendly chairlifts and the huge material ropeway for the Linth-Limmern hydropower scheme in Switzerland.



WIR prize draw – you could be the lucky winner!

New: Readers of the WIR ropeway magazine can now take part in an exciting prize draw. To answer the questions, simply read the latest issue.

Try your luck – the winner could be you! The prize to be won for two people is

- a ski weekend (hotel/half board, ski pass) in Vorarlberg
- plus a guided tour of the Doppelmayr plant in Wolfurt.

Answers by email

Please email your answer to wir@doppelmayr.com, subject: "Prize Draw". Competition ends November 15.

The winner will be chosen at random. The judges' decision is final.

The question is: **In which South African city has Garaventa built a stadium funicular for the FIFA World Cup 2010?**

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