

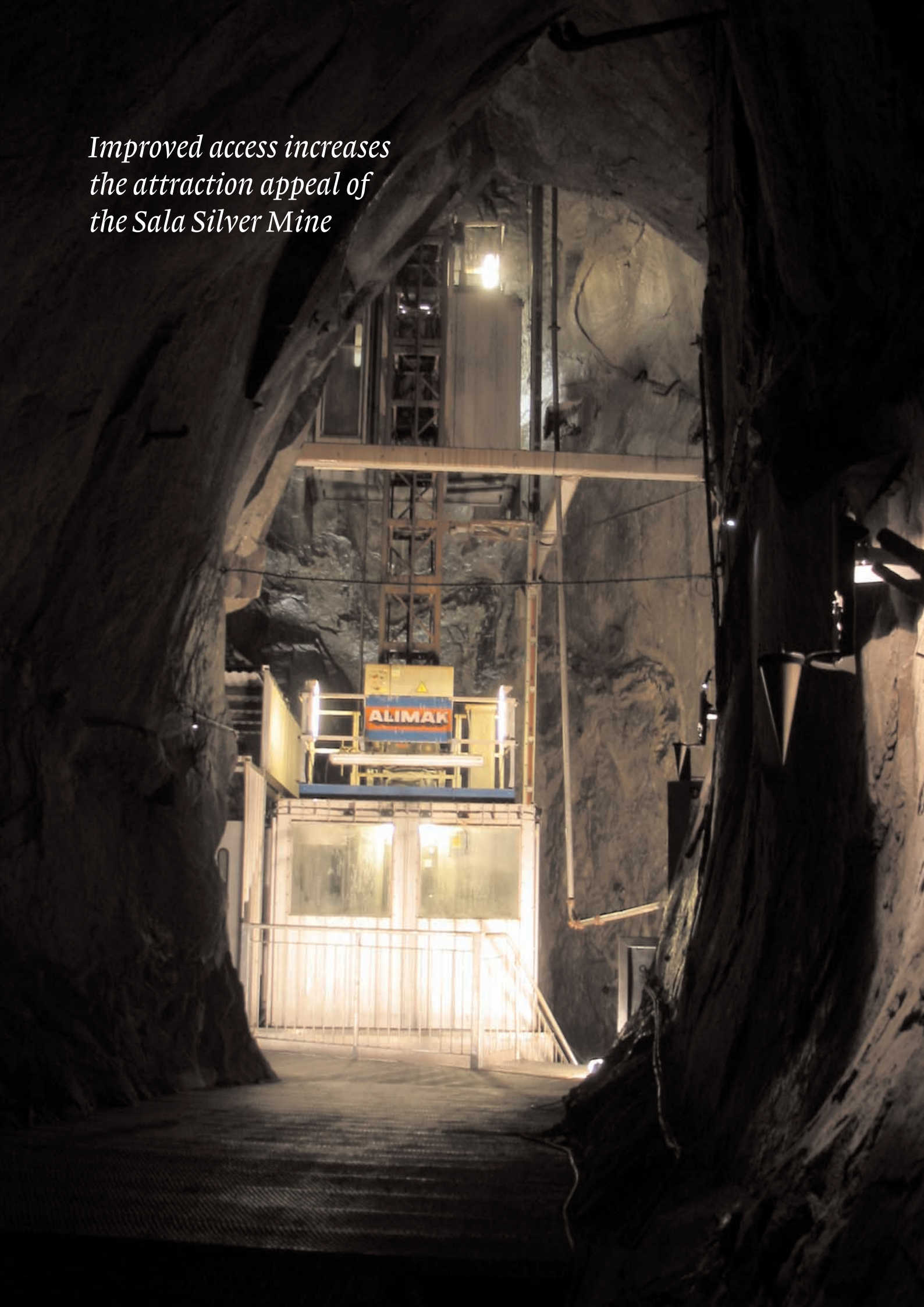
Case study:

Alimak lifts help open unique silver mine to visitors – taking them 155 meters underground



Sala Silver Mine, Sweden

*Improved access increases
the attraction appeal of
the Sala Silver Mine*



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Alimak lifts help open unique silver mine to visitors – taking them 155 meters underground

Visitors to one of Sweden's most popular tourist attractions, the Sala Silver Mine, are now enjoying a unique opportunity to see the working interior deep below ground. Two specially made Alimak lifts whisk visitors 155-meters below the surface into the heart of the old Ulrika Eleonara mine dating back to the 1600s. For Alimak Hek, which has extensive installation experience in the mining industry, this is one of the first lifts it has delivered for use by the general public in a mine.

Over 30,000 people visit the culturally important Sala Silver Mine, situated in the middle of Sweden some 120 kilometers from Stockholm, during the tourist season. After years of work, the mine's 155-meter deep Knekt shaft was opened on 1 January, 2006 leading into the Ulrika Eleonara's extensive and well-maintained mine system, which gives visitors a unique insight of a spectacular environment. Blue lights guide visitors through small chambers and enormous caverns in a mine first opened around 1690. A number of the wooden ladders used by yesteryear's miners still remain. Visitors can also see the mine's water level, which has created the stunning underground Christina lake. And, naturally, the Sala Silver Mine has its own supernatural resident, a ghostly apparition of a woman!

Designed for comfort and the physically impaired

Alimak Hek has installed raise climbers, platforms and winches for shaft excavation as well as inspection lifts for the mining industry around the world. However, the Sala Silver Mine is the first underground environment where an Alimak lift is being used by the general public. The two permanent lifts ALIMAK SE 2000 FC models, each with a lift capacity of 2,000 kg or 26 people, provide superior comfort for visitors. An alternative to using a lengthy and sometimes difficult winding concrete and spiral staircase, the Alimak lifts move passengers at comfortable speeds, and ensure anyone with a physical impairment can also

enjoy the descent into the depths of the mine to explore. A special large window in the lift gives visitors a close-up view of the hand-shaped shaft walls outside the lift. Today the Alimak lifts have two landings, but an additional one has been prepared at the 90 meters level.



Increased safety thanks to passage lock between lift cars

The harsh climate in the Knekt shaft with its extreme humidity and limestone environment has placed huge demands on the design and reliability of the lifts, and required a number of special solutions. The mineshaft stretches 300 meters below the surface, but is flooded from 155 meters down. As a result, the lift mast has been anchored in beams fastened to the shaft walls.

The large flow of visitors required Alimak's engineers to develop unique safety solutions. Should an accident happen causing a lift car to stop in an inaccessible location, the second car can be driven down or up and dock securely with the immobile lift car. Both lift cars are equipped with an extra door that enables a lock to be opened between them, enabling people to be evacuated from one lift to the other. In the event of an electrical failure, there is back-up



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equipment in the machinery room at ground level. Inside each lift car is an alarm that connects directly to the safety services. All safety functions are tested regularly together with the mine's guides, who have been trained to drive the Alimak lifts.

More visitors expected

The additions of the Alimak lifts are expected to increase the attraction appeal of the Sala Silver Mine. An additional 7,000 visitors are expected, mostly from companies running corporate events in the mine.

The lifts are contributing to more people getting the opportunity to experience a very special slice of Swedish mining history and the physical environment of a mine. The Sala Silver Mine is an important cultural location, which is beautiful and interesting both above and below ground.

Sala Silver Mines history

Sala Silver Mine is Sweden's richest silver mine of all time. During certain periods it has also been one of the most important mines of its kind in Europe. When activities were shut down in 1908, the mine had been in active use for over 400 years.

The mine enjoyed its renaissance during the reign of King Gustav Vasa in the 1500s. During its peak years, the mine produced 3-5 tons of silver annually. In total, more than 400 tons of silver and around 40,000 tons of lead were extracted from the mine. The silver was a vital addition to the state reserves during a time of economic difficulty and war. Among other things, the silver was used to mint metal. In the mid-1800s, the mine experienced another renaissance as the industrial era got underway.

With its corridors and rums stretching over 20 kilometers, the Sala Silver Mine today is one of Sweden's largest tourist attractions. During the tourist season there are various guided tours both above and below ground. An underground guest chamber can be hired for parties, weddings and conferences.



LIFT DETAILS

Location:	Sala Silver Mine, Sala, Sweden
Installation year:	2003
Application:	Mine shaft
Lift type:	Rack & Pinion
Lift model:	ALIMAK SE 2000 FC, Special, twin
No. of lift cars:	2
Capacity per car:	2 000 kg (26 passengers)
Lift car size:	1.56 x 2.60 m
Lifting height:	Varies between 13.5 m and 48 m
Lifting height:	155 m
No. of landings:	3 (60 m and 155 m) (landing at 90 m is prepared)

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Alimak Hek AB is ISO 9001 and 14001 certified

