

**Zeitschrift:** Annual report / Swiss federal railways  
**Herausgeber:** Swiss federal railways  
**Band:** - (2000)  
  
**Rubrik:** Infrastructure

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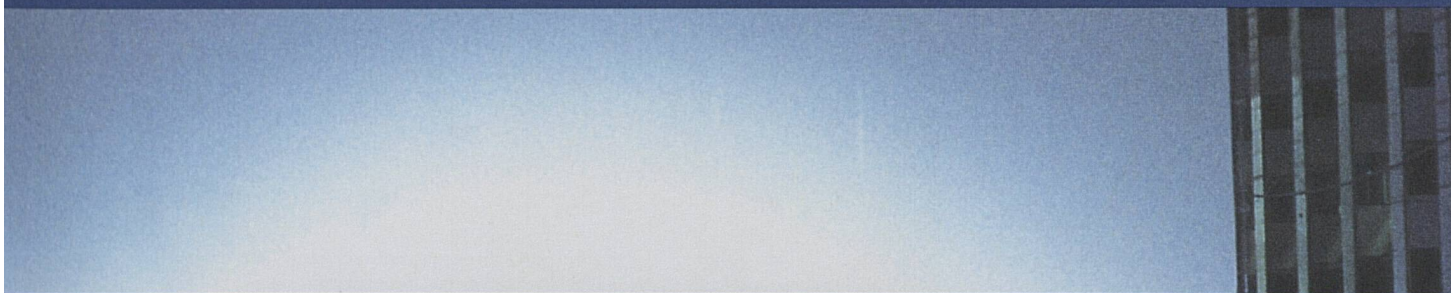
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## Infrastructure







## Base tunnel vision.

Locarno – a film festival of visions. Already the venture of organising an internationally renowned film festival in a small town was visionary. Also the SBB have visions, and they translate them into action. Be it a new level railway through the Alps, a high-tech train control and train protection system for more train path capacity and higher speeds: the SBB want to be a technical avant-gardist. The world's longest railway tunnel between Amsteg and Biasca is fully under construction. With the gratifying prospect that the Piazza of Locarno will be as little as two hours away from Zurich instead of three.

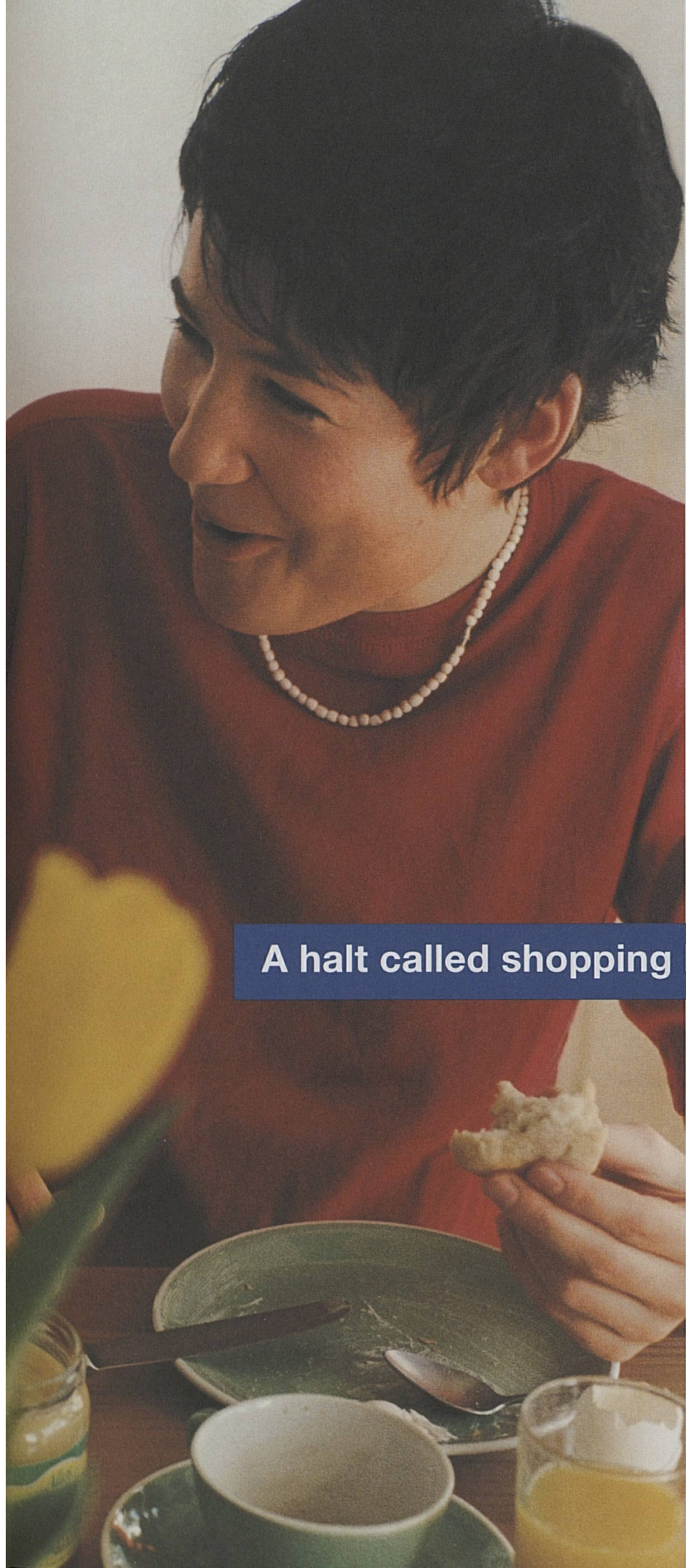












Time is valuable. The SBB are offering their clients an infrastructure that not only brings them to their destination quickly. Stations are modern service centres. Be it some yoghurt for the Sunday brunch or a trip around the world, everything can be bought here, from early Monday morning until late Sunday evening. Jointly with their partners, the SBB on big and smaller stations are expanding the offer further and tailor it even better to the requirements of their clients. Thus, they make towns and villages more attractive and contribute to human quality of life.

**A halt called shopping list.**



## Infrastructure: quality and innovation

To increase punctuality of the trains on a heavily used network, and with innovative technology to further increase capacity and quality: these are the performances of Infrastructure for its clients in- and outside the SBB.

In the second year of SBB AG, the Infrastructure has further enhanced its market orientation. In the integrated enterprise, its most important clients are the two transport divisions of the SBB. However, also on external markets, the Infrastructure Division holds its ground. Its main remit is to make a high-quality infrastructure available to the railway, at advantageous prices. Because this is the only way to develop the railway further, and to win market shares.

With this objective in mind, the business fields maintenance with its high number of staff, energy supply and in-house telecommunication, have reorganised themselves in the past year. Infrastructure maintenance with a 3500-strong manpower must become marketable step-by-step, and must be able to compete against private bidders when new constructions and major refurbishments are put out to tender. Under the sign of liberalisation, the in-house energy and telecommunication businesses were newly positioned. In both fields, the SBB refrain from a complete outsourcing, but they concentrate on the core activities and the safeguarding of a reliable railway operation.

### **Train path sale: advent of a new market**

The more trains, the more revenues from the sale of train paths, which are timetable slots for train runs. From a continuously expanding offer and best-possible network utilisation, the railway users can profit, but also the Infrastructure Division as owner of the railway installations. With 708 million CHF in the past year, the charges for train path use were, apart from the state contributions, the biggest source of income of SBB Infrastructure.

Within the scope of the Network Access Ordinance, SBB Infrastructure has, since 1999, been offering the network to third parties for freight and partly also passenger operations, at the same conditions as valid within the enterprise. SBB Passenger Traffic and SBB Cargo are the biggest train path clients now as before. As yet only each 50th train uses SBB tracks in the "open access" regime. However, the market begins to move: apart from Swiss public transport enterprises, the former "private railways", new clients express their interest in using the SBB network. Among them are enterprises that until now have not been involved in train operation. As yet, contracts have not been concluded, as the creation of a new train operating company requires extensive preparation work.





A market emerges: also train paths can be purchased

On a daily average, 160 trains used SBB tracks in the free access mode at the beginning of 2001. Of these, as yet only 16 can be described as genuine "open access" trains. They are block trains not running regularly every day, mainly in freight traffic, and mail trains in cooperations between several smaller transport companies and "Die Post". However, it must be expected that competition on the railway will soon be stronger.

Also at an international level, the SBB cooperate in the efforts to further liberalise network access. They have intensified cooperation with the railways of other countries, and make "open access" easier to handle by offering train path sale out of one hand ("One-Stop Shop"), together with the network operators in Germany, Denmark and the Netherlands.

### Network: heavily used and further expanded

The existing infrastructure increasingly puts a limit to growth in train service offers. The timetable offer of Bahn 2000, extended in stages, extension of existing S-Bahn systems and creation of new ones, plus a further growing freight traffic, make that the network is used to near capacity. For the timetable and operations specialists, the leeway is continually getting smaller. This year, a further considerable extension stage within the Bahn 2000 scheme will take place, particularly at the foot of the Jura, and in western Switzerland.

Prior to the next bigger increases in the train services offer, infrastructure bottlenecks must be eliminated. The respective construction works are within schedule. The new constructions of the first phase of Bahn 2000 and of the AlpTransit project at the Gotthard

progress according to plan. The two mega projects (Gotthard and Lötschberg), together with the second phase of Bahn 2000 yet to be defined in detail, will further enhance client benefit in passenger and freight traffic.

### Bahn 2000: final sprint and beginning

Bahn 2000 is within schedule, and this schedule has been tightened in the past year. Because of the change of the European timetable year, the first phase will be taken into service already in December 2004 instead of June 2005. Important works in western Switzerland are already terminated, which brings Bahn 2000 comfort to the "Romandie" already as from the timetable change in early June 2001. The new double-track line between Onnens and Gorgier-St-Aubin is ready for the timetabled deployment of the Intercity tilting trains ICN, cutting travel time between Zurich and Lausanne by 15 minutes. This makes this line as fast as that via Bern. Between Bern and Geneva, all impediments to the double-deck trains are re-



Speed at the foot of the Jura: Rail 2000 tunnel near Gorgier NE

moved. Around 30 bigger works such as overpasses or tunnels have either been adapted, or newly built, the biggest project being a new 2-km tunnel between Vauderens and Siviriez. The last of the big construction works in western Switzerland is the third track between Coppet and Geneva. The target date for termination, end of 2004, is a challenge because sluggish procedures to get the building permits postpone the start of the works.

For the new line construction Mattstetten-Rothrist, all civil engineering works are in progress. On this 45 km long worksite, the tunnels below the river Emme near Kirchberg, and in Murgenthal, and the 329 m long Murg bridge have been completed on time. Also the works on the second double-track line between Zurich and Thalwil, mostly underground, are on target. In north-western Switzerland, after exactly eight years of construction, the Adler tunnel near Muttenz was taken into service in December. It eases a further bottleneck on the busy Swiss railway network. Thanks to still advantageous awardings and constant project optimisations, the Bahn 2000 scheme will finally close the account

**The infrastructure of the SBB is of a high quality  
and good to brave the future, and is continually  
improved for the benefit of passengers and freight transports.**





New landmark: central signalbox of Basel by Herzog & De Meuron

around 20 percent below the 7.4 billion CHF budget, which includes allowance for general price increases.

Four years before termination of the first phase of Bahn 2000, the second phase is already a matter of concern. The Confederation, the Cantons and the transport companies are currently working on the basics for the further extension, to be realised between 2010 and 2020. For long-distance traffic, the SBB already have contributed to the discussions with own concepts. Additional "genuine" one-hour-apart hubs at Lausanne, Lucerne, St.Gallen and Biel, and shorter travel times of less than 60 minutes on the sectors Lausanne-Bern, St.Gallen-Zurich, Basel-Lucerne, Biel-Zurich and Biel-Basel, will be the cornerstones of the second phase.

Concretely, the SBB and the canton of Zurich already are planning a second through station in Zurich. With a preliminary investment of 145 million CHF, the SBB create the prerequisites for a connection from Wiedikon and Altstetten via the underground, four-track station "Löwenstrasse" and a new tunnel to Oerlikon.

## Gotthard: boring in progress everywhere

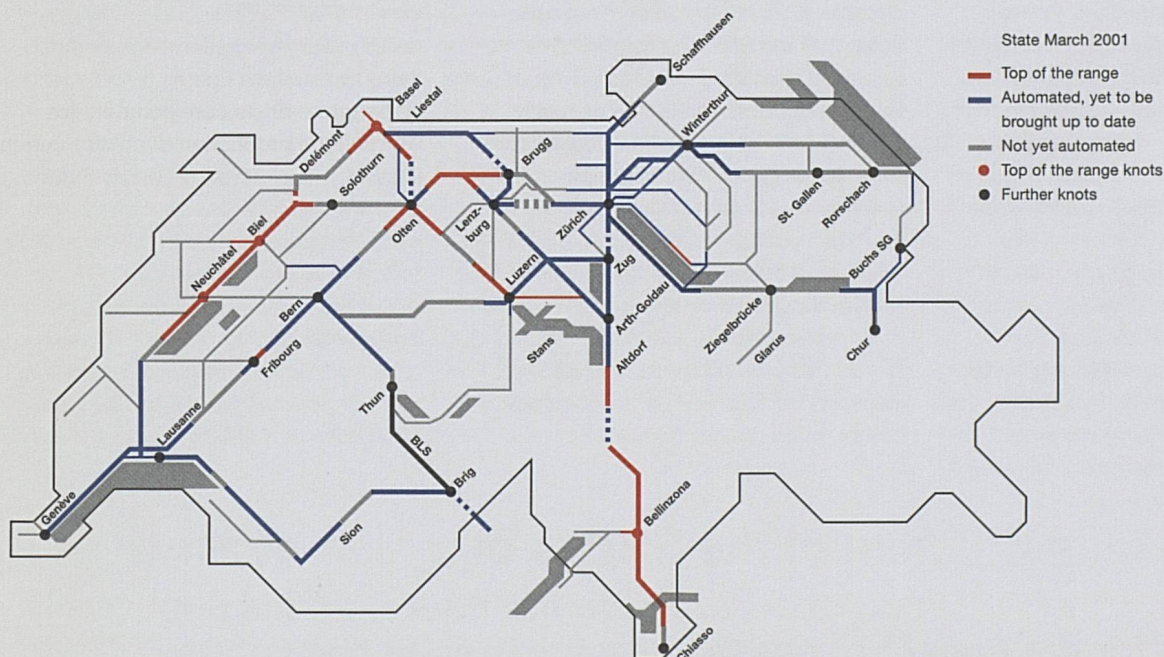
The construction of the new Gotthard base tunnel of AlpTransit is also advancing full tilt. This is the responsibility of the SBB subsidiary Alptransit Gotthard AG. Meanwhile, boring and blasting goes on at four faces, Amsteg, Sedrun, Faido and Bodio. The construction of the connection of the new Gotthard line to the existing one in the Canton of Uri is time-critical.

## More technology for more operation

Thanks to modern technology, the trains pulsate at a higher cadence. "Electronics instead of concrete" is not only friendly to the environment, but also spares the group accounts. Automatic operations management enhances quality, increases line capacity, lessens the risk of accidents through communication shortcomings or errors in manipulation, and additionally lowers costs. A few years hence, a small number of remote-control centres will control all station signalboxes.

Last year, remote-control was extended to additional lines in the areas of Neuchâtel, Basel and Fribourg. This is made possible among other things by a new signalbox installation in Neuchâtel, and introduction of remote-control of the safety installation of Pratteln from out of Basel. Train traffic at Pratteln is among the most dense of all the SBB. This year, the automation programme continues in the whole of Switzerland.

### State of progress in remote-control and automation on the SBB network







Passed the test set by the heavy floods:  
lift-up of a bridge in the Valais

Shorter headways between trains require radio-transmission of signals. On the new lines of Bahn 2000 and AlpTransit now under construction, the locomotive driver gets his instructions transmitted directly to his cabin. Lineside signals will not exist any more. "Cab-signalling" is part of a system for train control and train protection, standardised throughout Europe. With the preparation of a pilot sector between Zofingen and Sempach, the SBB play a pioneer role. To be a precursor bears its risks. Because the system components did not yet harmonise with each other with sufficient reliability, the start of pilot operation had to be postponed to this year. The system tests began in 2000.

### More punctual, in spite of hurdles

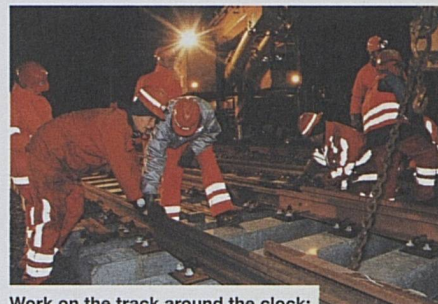
In the past year, the trains were more punctual than in 1999, despite more traffic with 4.3 percent more train kilometres, and despite tempests in the Valais and the Ticino. 80 percent of all passenger trains arrived at destination at the minute, or within one minute. 94 percent arrived within 4 minutes after schedule time. With this, the highly set targets of 75 and 95 percent respectively, were surpassed as regards the first value, and just missed by one point as regards the second. Also punctuality of domestic freight traffic was satisfactory, and up on the previous year. Freight transit however suffered from production bottlenecks in the neighbouring countries, and from the SBB's own capacity problems.

### Maintenance has stood the test

The tempests in the Valais in mid-October became also a test case for the reorganised infrastructure maintenance. In summer, the business field had changed from a regional structure with 14 comprehensive works regions to an organisation by fields of tasks. The tasks of supervision and maintenance of the railway infrastructure, including failure management, was separated from railway construction proper. Renewals and new constructions constitute the business of a new field "Heavy Maintenance and Projects", functioning as an internal building contractor of the SBB, which will increasingly bid for contracts under conditions of competition. The 3500 employees of the maintenance field are distributed at approximately equal parts to the two branches. A third, smaller organisation unit is active in the acquisition of orders in the railway technology market which is opening itself.

As of late, SBB Infrastructure is offering know-how in railway technology also on the external market. Together with Sersa AG which is part of the Orion group, it has developed a method whereby switches are delivered to the worksite in pre-assembled form. This and other methods are now also marketed internationally by the SBB and Sersa with a newly founded company named "Euro-switch". Because of the commercially interesting "just-in-time" delivery of complete turnouts, they are counting on good market chances. Until now, the switches were first built in the industrial plant, then disassembled for transport, and re-assembled on the worksite.

Thanks to the employees' special efforts, safety and availability of railway installations remained guaranteed during this complete organisational change. The new organisation stood the test when



Work on the track around the clock:  
maintenance – newly organised by branches

in October, it had to cope with the inundations in the Valais. In order to prevent greater damage, bridges were for instance lifted up provisionally, and lowered again to their normal position after the flood had sufficiently subsided. A good cooperation between all units concerned made it possible that the completely closed-down operation could be re-started within a shortest possible period.

### Purposeful concentration

More market also in the energy sector. In the face of an excess supply of energy in the whole of Europe, and considerably lower prices for electricity on open markets, the SBB have revised their energy policy. Implementation has already started. With the objective of providing the railway with energy at market prices, the business field Energy will concentrate in the future on its core competence which is the production of railway current (16.7 Hz). Therefore the SBB withdraw from the production of electricity for the public network (50 Hz). By end of 2000, they sold their 5% share in the nuclear power plants Gösgen and Leibstadt to the energy company Atel. Also the shareholdings in other production plants shall be disposed of.





The station as services centre:  
Geneva Cornavin

This strategic reorientation came about because the purchases of 50 Hz current represented an increasing financial burden. In the expectation, correct at the time, of a strongly increasing energy requirement, the SBB had secured their supply of current in the 70s and 80s by acquiring shares in domestic and foreign production plants. The 50 Hz current can be converted to "railway current" in the SBB's own installations. In spite of considerably increased performances, passenger and freight traffic did not consume more energy in 2000 than they did in 1989. The efficiency gains achieved are to be welcomed from an ecological point of view, on the other side the SBB through their equity participations have surplus energy which at today's market conditions, they can resell at considerable loss only. In the future, they therefore concentrate on the production of railway current, optimising it further. Power plants generating railway current, such as the Amsteg plant, completely renewed in 1998, specialise in satisfying peak demand over short periods.

## The station, a visiting card

Stations by their architecture invite to use the train. With considerable investments, the business field Real Estate makes access to the railway more easy for customers, and at the same time increases financial revenue from real property of the SBB. The use of stations as shopping, services and communication centres at attractive locations is in ideal correlation with railway use. In this connection, the SBB have also acquired the shares of the "Bahnhof Luzern Immobilien AG", after which the station of Lucerne is again in the sole ownership of the SBB.

Numerous important ventures were carried out or initiated:

- In Geneva, the western wing of the main station Cornavin has been completely renovated. Shops, service providers and restaurants animate the ground floor, while the upper floor houses the editing offices of the daily newspaper "Le Temps".

- With the "Stadttor", Winterthur has received a new accent in town building. The services industry centre, connected to the historical station building, creates a link between the station and the city, and constitutes an architectural bridge between buildings of different epochs.

- Frauenfeld has taken completely renewed station structures into service. After a rebuilding of several years, effected in close cooperation with the Canton of Thurgau, the access to the railway in the capital of the canton is now much more comfortable.

- The station of Neuchâtel boasts a completely new southern wing. Two restaurants and several shops valorize this future turntable of the flow of visitors to the "expo.02".

Apart from the medium-sized and bigger stations, the SBB focus their main attention on the stopping places of regional traffic. Around 600 regional stations will be completely renewed along uni-



For a simple access to the railway:  
customer-friendly stopping points

form remits within five years. In order to better serve settlement areas, they also are planning new stopping places. The ambitious programme wants to change the mostly unmanned stopping places of regional traffic into more inviting, more customer-friendly and more safe sites. Among the elements to achieve this are modern customer information systems and ticket vending machines, good access to platforms, the provision of canopies and shelters.

A new, successful means of valorizing smaller and medium-sized stations are "avec." shops. As small services centres with kioskwares and every-day commodities, coffee bar, sale of tickets and other travel offers, they make it possible to continue offering a personalised ticket sale where otherwise turnover from ticket sale alone would not be sufficient. The "avec." shops are operated in the franchising system. The franchisor is "cevanova AG", a subsidiary of the SBB, Kiosk AG and Migros, founded in 2000.

As an important part of the mobility chain, also combined mobility will be promoted in the coming years, and the system "Park+Rail" will be expanded further. The offer of parking places shall be doubled within the next five years, which means realisation of 17,000 parking places.