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Switzerland's first metro

Since 27 October 2008, Lausanne has been the smallest city in the world to have an automatic metro system. This ambitious project has changed the face of the capital of the Canton of Vaud and some sociologists are already calling it an urban revolution. Deep down in the M2. By Alain Wey.

"The M2 is the jewel in our transport policy", said Federal Councillor Moritz Leuenberger. On 18 September 2008, the Minister of Transport officially opened Switzerland's first metro system together with the mayor of Lausanne, Daniel Brélaz. Mr Leuenberger said: "The people of Vaud have realised a visionary project. The M2 is an excellent example of sustainable transport infrastructure. It helps achieve social cohesion by linking the city centre with the suburbs in an environmentally friendly way. This metro system will foster the city's economic vitality and improve quality of life for its people." When the system opened for business on 27 October 2008, Lausanne became the smallest city in the world to have an automatic metro system. It is sunk into the depths of this city of 130,000 inhabitants, located in a conurbation of more than 300,000 people.

The ultimate symbol of urbanism

A metro system changes a city. This urbanist prophecy has become reality in Lausanne. In 100 days of operation, the M2 has transported 5 million passengers with an average of 50,000 users a day and a record high of 78,200. This urban escalator connects Ouchy, on the shores of Lake Geneva (373 m), with Croisettes, to the south of the commune of Epalinges (711 m), in twenty minutes. Lausanne Public Transport (TL) is already faced with saturation of the line and is ready to order extra trains in addition to the fifteen already in operation. The estimate of 18 million passengers expected in the first year already needs to be revised after just four months. Experts are now forecasting 20 to 21 million people, pointing out that the use of the metro is almost two years ahead of schedule.

Travellers arriving at Lausanne station take an underpass which leads directly to the metro on the other side of the street. Even at 11.00 a.m., the system is full of passengers. You might think you were in Paris. The trains arrive every six minutes, and every three

minutes at peak times in the morning and evening. Everything is automated. There are no drivers here, as the system is run by operators from a central control unit. The 5.9 km line, 90% of which runs through tunnels, has fourteen stations with a difference in level of 398 metres. After studies carried out in 1993, the story of the M2 really began in November 2002 when the citizens of the Canton of Vaud voted to finance its construction. Civil engineering work began in March 2004 and the job of laying the tracks started in November 2005. The progress made led to the closure of the M2's predecessor, "La ficelle" (cog-wheel railway between Ouchy and le Flon), in July 2006, and the track was made electric between January and August 2007. From this point onwards, trials and tests on the system were carried out on the entire line. In September 2008, the Federal Office of Transport (FOT) gave the green light for its launch. "This rubber-tyred metro with gradients of 12% is truly revolutionary for Switzerland. The M2 is a showcase example for transport in Switzerland", says Max Friedli, director of the FOT. While the baptism of the metro was met with general euphoria, this has not always been the case. In 1997, Christophe Jemelin and Vincent Kaufmann, from the laboratory of urban sociology at the Federal Institute of Technology in Lausanne (EPFL), launched an attack on the first reports on the project. Now as members of the metro's regional development committee, the two sociologists are fervent advocates of the system.

The impact of the metro

Sociologist Vincent Kaufmann says: "The M2 will change Lausanne profoundly. The 6 km line has already caused a cultural revolution. Having a metro means joining the club of big cities. From the small capital of a rural canton which denied it urban status, Lausanne has become the first metropolitan area in Switzerland to have a metro system. The M2 made a significant mark on Lausanne

even before its official opening. The unbelievable enthusiasm of the city's citizens provides the best evidence of this." The sociologist believes the urban revolution is just beginning. There has been a great increase in the number of major projects in the region since work on the metro began. A regional express railway, a tram system, athletics and football stadiums, an eco-district, museums of fine art and a giant aquarium are the visible public face of a development boom. "We are contributing to a complete overhaul of the city", says Olivier Français of the Lausanne department of public works whose services are under strain from requests from private developers. The city has not seen a boom in construction and redevelopment like this since the 1960s. The M2 is also already having an impact on road traffic. "There has been a noticeable fall in traffic in Lausanne", says Olivier Français, though this decrease has not yet been quantified.

Urbanisation in Lausanne is now developing along the axis of the metro. A new district (des Fiches) will be built around Fourmi station. Construction work is scheduled to start in 2009 and last for five years. More than 450 homes will be built there. At Vennes station, an out-of-town car park with 1,200 spaces will aim to meet the needs of commuters from the north and is scheduled to open at the beginning of 2010. As for the university hospital centre (CHUV), there are plans to build an extension to its maternity unit just above the metro station. Flon station will have a metropolitan look with a skyscraper, walkways and a bridge. More than 65,000 passengers pass through this key junction every day via "place de l'Europe" to catch either the LEB (Lausanne-Echalens-Bercher) train, a trolleybus or the M1 (tramway for south-western Lausanne). A new building and a link with the regional bus lines have been built above the station terminus at Croisettes. The authorities still need to develop other parts of the metro network. This involves deciding where the future M3, a tram linking the city centre (gare du Flon) with the north-western districts (Pontaise and Blécherette), will run and starting work on the future RER with the construction of a station at Prilly-Malley as part of the Lausanne-Morges conurbation project. After just four months of operation of the metro, the public transport company has decided to hire 85 bus drivers in 2009 to ensure bus services for travellers.



FACTS AND FIGURES FOR THE M2

- Construction took four and a half years, from March 2004 to October 2008, and cost CHF 736 million.
- The track has an average gradient of 6% reaching up to 12% in places. Its 5.9 km have a difference in level of 338 metres. The M2 has a double track except for a 200-metre section of single track to the south of the Lausanne-Gare station. Around 300 surveillance cameras ensure security on the system.
- The fifteen trains have a nominal capacity of 220 spaces with 60 seated. Made up of two railcars, they are 30.7 metres long and 2.45 metres wide. In order to climb the track's significant gradients, they travel on rubber tyres.

- The stations are announced by the voice of the watchman of Lausanne cathedral accompanied by contemporary music or soundtracks.
- With a frequency of every three minutes, its hourly capacity is 4,400 passengers in each direction. Eventually, the frequency will be increased to two minutes and the M2 will transport 25 million passengers a year.

Maximum speed: 60 km/h.

- Ours station lies 23 metres beneath ground level.
- A thousand men, 250 sometimes working at the same time, and a hundred engineers and experts were involved in the M2 development. Between June 2004 and summer 2006, these men from Portugal, Italy, Switzerland and Croatia dug 2.8 km of tunnels.



The example of Rennes

Before Lausanne, Rennes (France) held the title of "smallest city with a metro system". With a 9 km line in operation for 6 years, the metro has changed the face of the Breton city which shared its experience with the capital of Vaud. Car parks have disappeared from the city centre and the medieval squares have regained their charm. With out-of-town car parks at both ends of the line, motorists have become used to travelling by metro. Use of the entire public transport network has doubled in six years. With 1,300 surveillance cameras, this metro system has also made people feel safer. "People now take the metro as they would an elevator. The people of Rennes have become used to this system and it runs like clockwork", says the system manager.

In Lausanne, 2009 will be a year spent breaking in the metro with various incidents and breakdowns. However, its reliability increased to 98% in February with a target of more than 99% by the end of the year. Aside from the teething problems, technical difficulties and world firsts, the metro is setting about its most fundamental task: transforming a small city into a modern metropolis.