



A Tata Steel Enterprise



## Case Study

### "Vaudoise aréna" sports centre in Lausanne, Switzerland

**Products:**

12'000 m<sup>2</sup> SWISS PANEL® SP 160/750 and SP 160/750A

**Building owner:**

Centre sportif de Malley SA (CSM), Prilly, Switzerland

**Client:**

SOTTAS SA, Bulle, Switzerland

**Architect:**

Pont 12 architectes SA, Chavannes-près-Renens, Switzerland

**Civil engineers:**

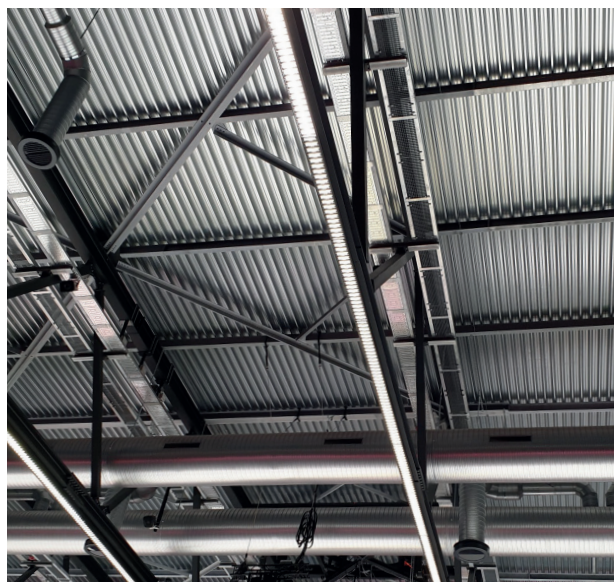
EDMS SA, Petit-Lancy, Switzerland

**General contractor:**

Steiner SA, Tolochenaz, Switzerland

**Realisation:**

2018 / 2019





# Atmosphere instead of sound

**Good acoustics: Sports arena in Lausanne fitted with trapezoidal profiles from Montana.**



A new home for the traditional ice hockey club Lausanne HC and at the same time a venue for the 2020 Winter Youth Olympic Games: All this and more is embodied by the new "vaudoise aréna" near Lausanne as a multi-purpose hall. But where there is sport, there is noise. To prevent goal celebrations from turning into tinnitus, the planners of the hall opted for a tried and tested product from Montana Building Systems Ltd. in Villmergen: perforated SWISS PANEL® trapezoidal profiles are now being used to combat sound waves. The system has already proven itself on the market for many years and has been used in countless sports facilities. After all, just because life rages, the feeling of well-being should not suffer.

The city of Lausanne – capital of the district of the same name and also the capital of the canton of Vaud – is located in French-speaking Switzerland, directly on the western shore of Lake Geneva. With just under 140,000 inhabitants, it is the fourth largest city in the mountainous Swiss Confederation after Zurich, Geneva and Basel. As part of the Geneva-Lausanne metropolitan region, it is also an important centre for business and culture and an important transport hub for the western part of Switzerland. Accordingly,

not only the Federal Supreme Court is based here, but also various world sports associations and even the International Olympic Committee (IOC). It is therefore not surprising that Lausanne was awarded the contract to host the 2020 Winter Youth Olympic Games in 2015. For this purpose, a large sports centre has now been built in Prilly, a suburb of the municipality. In particular, competitions in ice sports such as hockey or figure skating are to take place here. Outside the Olympics, the Swiss Ice Hockey Club Lausanne HC will

also have its home in the building completed in 2019. The "vaudoise aréna", named after its sponsor, was thus able to celebrate its official inauguration as early as September last year.

However, the ultra-modern complex not only welcomes visitors to sporting events and leisure activities: The premises can also be used for concerts, shows, exhibitions or conferences. With this in mind, the multi-purpose hall can be transformed in just 24 hours to fulfil very different requirements.



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It is equipped with two restaurants, various food and drink kiosks and a total of 20 VIP boxes to seat 240. Obviously, only tried and tested products could be used in a building project of this magnitude and with such a high volume of public traffic.

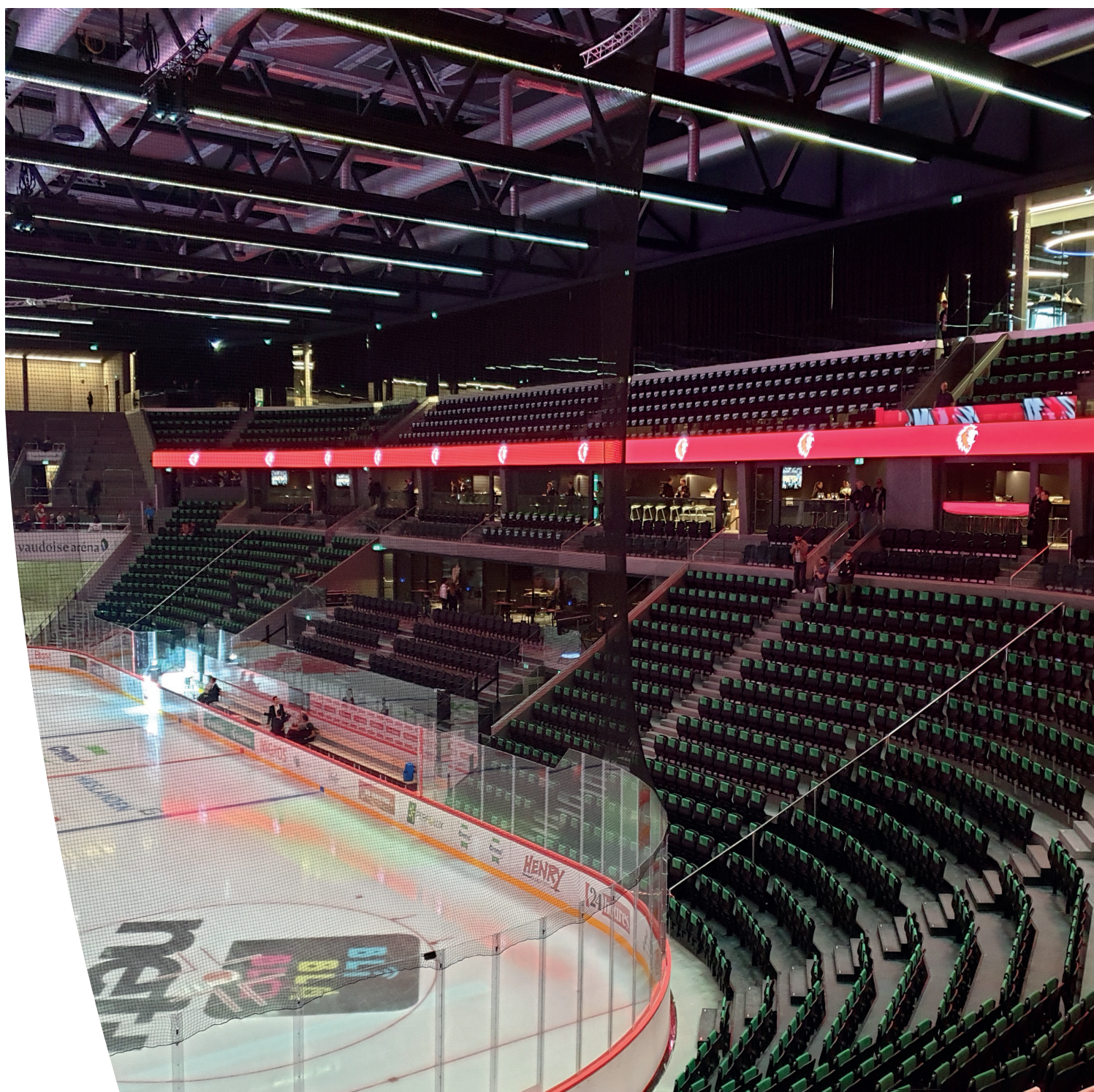
### Cheering instead of noise – acoustics by experts

The go-ahead for construction of the arena was given in 2018: almost 160,000 cubic metres of excavation created space for around 30,000 cubic metres of concrete and precast

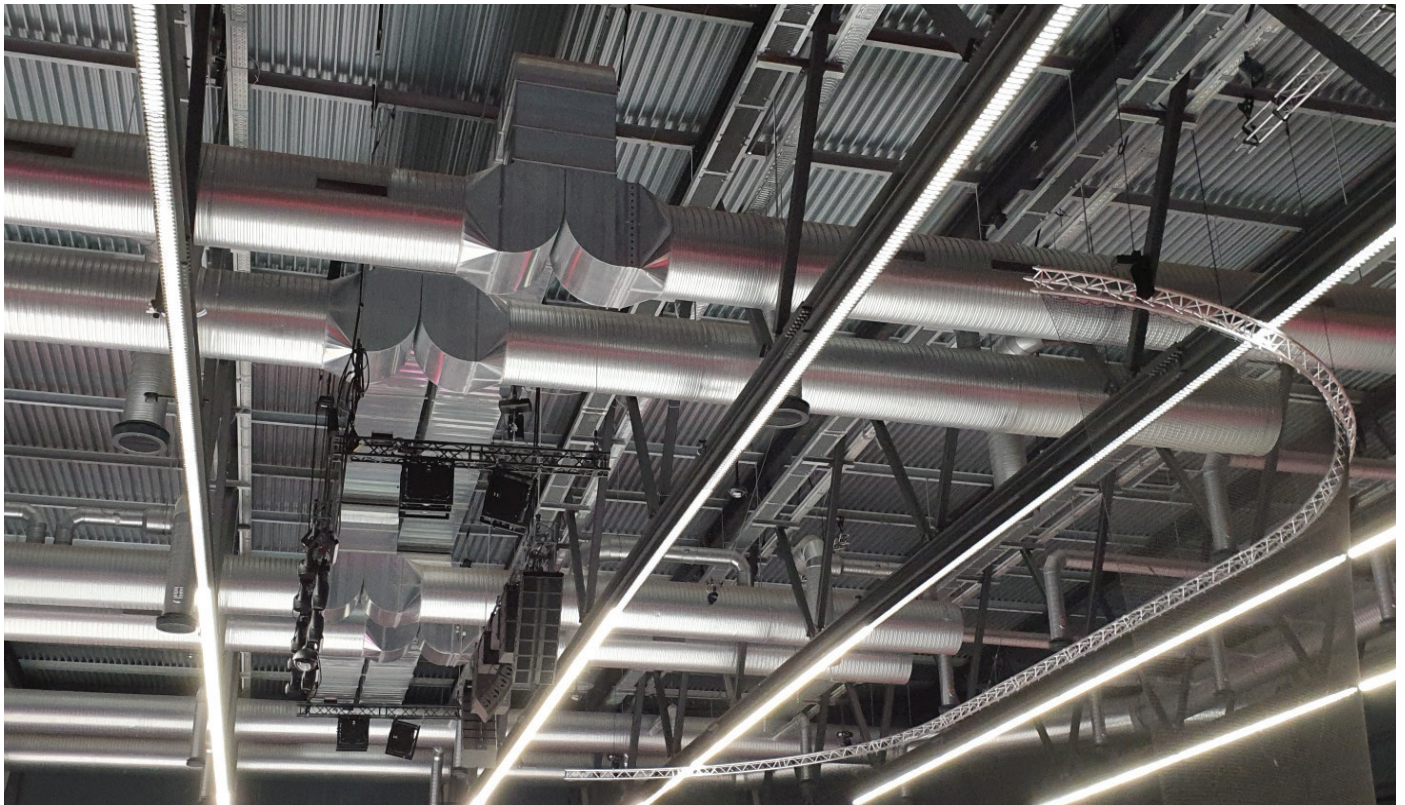
concrete elements as well as 4,600 tonnes of reinforcing steel. The main hall of the complex can now accommodate 9,600 people to cheer on their teams. However, to ensure that this is a joyful experience and that the visitors' nerves are only strained by exciting moves, special planning was required in terms of acoustics. So the responsible parties relied on products that have been successfully proving their expertise in stadium construction for years: Trapezoidal profiles from Montana Building Systems Ltd. The company from Villmergen in Switzerland has already made a name for itself in a number of major projects, so that in the case of the

Vaudoise aréna the products were put out to tender.

Above all, SWISS PANEL® trapezoidal profiles are now being used on the roof of the sports hall. These load-bearing profiled panels are mainly used in industrial and commercial construction, and are usually installed quickly and without complications. In the perforated version, as was also used in Prilly, SWISS PANEL® trapezoidal profiles ensure pleasant room acoustics: for the underside of the roof, which is visible from the auditorium, profiles of type SP 160/750A were used. The sheets







have web perforations with a diameter of five millimetres. These are exactly the secret behind their acoustic effect: thanks to the uneven surface, sound waves are refracted and the sound is thus "swallowed". This allows cheering and fan chants to have an atmospheric effect, but the unattractive, noisy echo effect is significantly reduced. With their both sound-absorbing and load-bearing function, Montana acoustic profiles also fulfil two important tasks in stadium construction - and are therefore also economically attractive.

To date, the construction costs of the sports centre have amounted to around 229 million Swiss francs. But apparently this was only the beginning: The further plans for the Vaudoise aréna include a fencing centre, a table tennis hall and a swimming hall with three pools and space for an additional 1,000 spectators. Completion is planned for 2021, so we can assume that Lausanne with its multi-purpose hall will soon be able to offer the perfect space for even more purposes - also in terms of acoustics.



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