



Case study

IGP Centre of sports Bergholz, City of Wil, Switzerland

Products:

MONTAWALL® MK 120/600, 1.100 m²
MONTALINE® ML 26/300 G
with closed joint, 650 m²
Specially folded facade panels, 4.100 m²

Client:

City of Wil, Switzerland

General contractor:

Implenia Schweiz AG Buildings and
Development - Region East,
St. Gallen, Svizzera

Architects:

K&L Architekten AG,
St. Gallen, Switzerland

Facade design

FMTEC GmbH, Tägerig,
Svizzera

Realisation:

2012-2013

Construction costs:

CHF 58 Mio.



White “metal folds” for IGP Centre of sports Bergholz

The residents and sports enthusiasts of Wil in the Canton of St. Gallen can look forward to a new indoor swimming bath with a wellness area, a modern football stadium and a new ice rink – all combined into one at the “IGP Centre of sports Bergholz”. 5,850 m² of the entire facade areas are made of white (RAL 9016) metal profiled sheets from Montana Bausysteme AG in Villmergen. The profiled sheets used were MONTAWALL® MK 120/600, MONTALINE® ML 26/300 G and specially folded facade panels.

Die town of Wil is the first in Switzerland to be able to call itself an “energy town” since 1998. Correspondingly, the local government set distinct specifications for the new building of the Sportpark Bergholz in Wil: Minergie (Swiss sustainability standard) – starting with a CHP biogas plant over solar collectors and waste heat utilisation through to an efficient building envelope. A great challenge for the building owner, architects and planners, because to date, Minergie standards had only been implemented in residential buildings and not in a complex sports park. The overall lifetime costs had to be primarily taken into consideration in all decisions, in order to build an economical and sustainable property. The topic of the competition was to put these deliberations in line with an architectonic concept.

The team Implenia with the office K&L Architekten AG in St. Gallen won with its concept of dividing the large volumes of the project into three separate parts: indoor swimming bath, stadium and ice rink. “Folded” facades were intended to add a filigree appearance to the buildings by means of a deliberate detail,

colour and material concept. A feasibility study followed and the challenge for the architects here was to design an architectonically attractive, fascinating and high-quality facade with a standard material such as sheet metal without exceeding the budget.

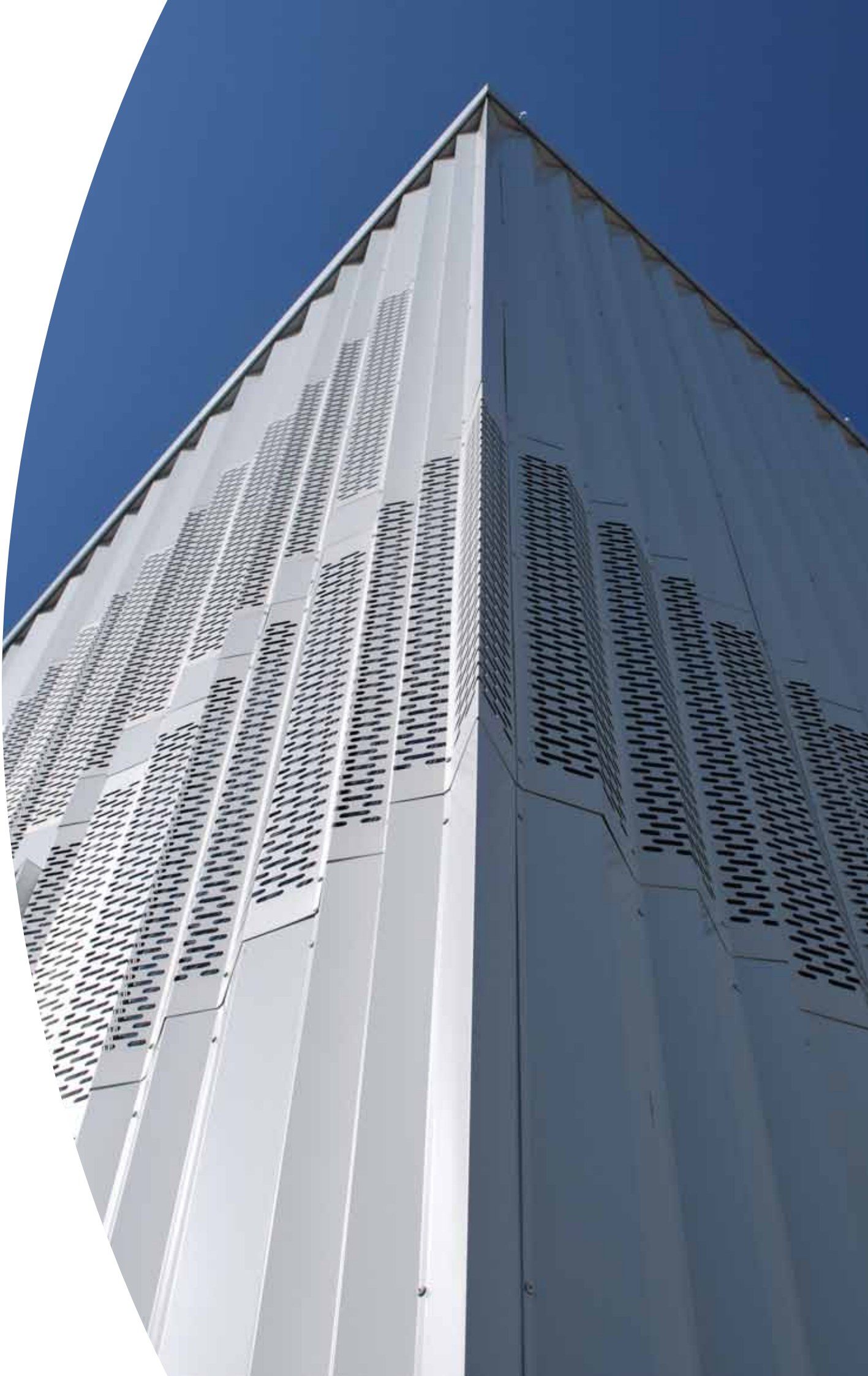
Special geometries, colour-coated and energy-efficient profiled sheets in the RAL colour 9016 (white), which also complied with the high static requirements, were found in the quotation from Montana Bausysteme AG from Villmergen. Montana is certified according to ISO 9001 and EPAQ Quality Label. The versatility and quality of its metal profiles speak for themselves. And also the fact that Montana, as a specialist for facades, has already realised numerous customised constructions for FIFA certified sports venues.

In the case of this sports park, it was now planned to build the facade of the ice rink with energy-saving MONTAWALL® steel cassettes MK 120/600 in conjunction with spacing insulation strips. These are approved in accordance with the building authority test certificates

P-BWU02-094092 and P-09-2001.

The construction consists of two galvanised, 1 mm thin steel sheets S320GD with metal coating on both sides acc. to BS EN 1034. Insulating mineral wool serves as an intermediate layer between the two sheets. The combination of these elements results in the proven rear-ventilated facade. One special feature had to be taken into consideration: As the course of the condensation flow is reversed in summer in the ice rink (inside colder than outside), the outer side of the insulation was additionally equipped with a glued aluminium film vapour barrier. Hence, the U-value of a facade module reaches 0.25 W/m²K.

The fact that the MONTAWALL® cassette construction has excellent noise insulation values of R'w = 47 dB also fits in with the energy balance of the sports park. The Swiss noise protection regulations are fulfilled without any problems, as the thermal decoupling of the exterior and interior components of the cassette also contributes to the reduction of sound waves. In addition, this technology helps to prevent thermal bridges.



One paramount wish of the building owner was to give the face of the huge sports complex a high dynamic impact. The idea was that the individual buildings should change their appearance in the ambient light conditions. For this purpose, the architects, together with the facade planners and the Montana specialists, developed a specially folded steel sheet with two angles in four different designs. Architect Kay Kröger explains in more detail: "Four steel sheets made of Montana A-D strip material, folded according to this idea, and the deliberate arrangement of these 4 basic types brings a rhythmic image to light: from ABBA to ACDC. With regard to construction and fastening, the hollows are wider and appear on the facade as 'pinstripes'. Special folds in the overlapping area enable streamlined production and assembly. These have been chosen such that the standard width of the basic material was able to be optimally utilised."

The folded facade made of special steel sheets is interrupted by smooth white MONTALINE® profiled sheets ML 26/300 with closed joints. Equipped with edge returns on both sides, the profiled sheets today appear as a high-quality flat panel facade. The MONTALINE® cladding sheet fastenings are concealed, which supports the design idea – to create smooth, elegant facade areas.

MONTALINE® cladding sheets from Montana AG can be manufactured in various designs, dimensions and lengths as well as in optional widths. This left the architect free to design the interaction between the metal facade and the exposed concrete areas of this property.



The delicate design of the steel sheets with their closed joints allowed the fast and economic top to bottom assembly using the MONTAFIX® fastening system and rustproof flat-head screws. Due to the high degree of pre-fabrication of the metal profiles, the number of deliveries to the building site was also reduced.

The sports park Bergholz today represents not only a sporting but also an architectonic highlight. The special pattern of four different profiles from Montana Bausysteme AG creates a facade with a modern 3D effect, which reflects the ambient light conditions in different ways. The MONTAWALL® and MONTALINE® products used prove that an aesthetic design can be achieved even for voluminous sports facilities.

They helped the building owner, architect and facade planner to realise a future-oriented building project that sets high ecological and economical standards. The excellent cooperation between the town, the general contractor, the planning architects and Montana Bausysteme AG made it possible to design a first-class sports facility across cantonal borders that ideally fits in with the "energy town Wil" concept.

www.montana-ag.ch

MONTANA BAUSYSTEME AG

Durisolstrasse 11
CH-5612 Villmergen
T +41 56 619 85 85
F +41 56 619 86 10
E info@montana-ag.ch

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