MEDIA: Inflight
PUBLISHING DATE: May 2021
LANGUAGE: English

MRO FACILITIES: AMAC AEROSPACE BASEL

A hangar is born

After only 12 months of construction time, the latest hangar of AMAC Aerospace has opened its doors to welcome the first mid-size jets. *Inflight* gets a guided tour.

Hangar 5 adds 4,850 m² and 30,000 m² of new apron to AMAC Aerospace's four existing hangars at EuroAirport in Basel, Switzerland.

"We are proud to have managed this project successfully during this demanding time," commented Bernd Schramm, Group COO of AMAC Aerospace. "The hangar will be dedicated to mid-size jets maintenance and can accommodate up to seven mid-size jets like the Bombardier Global or [from] the Challenger or Gulfstream series or a combination thereof. The maintenance services for these types of aircraft were always high in demand and is steadily increasing due to our highly recognised quality of work."

Five new workshops are integrated into the building: A component and calibration shop, a window repair shop, a sound testing shop and two offices – the Bombardier Maintenance Supervisors Office and the Bombardier Maintenance Planning Office – are located at the rear area of Hangar 5.

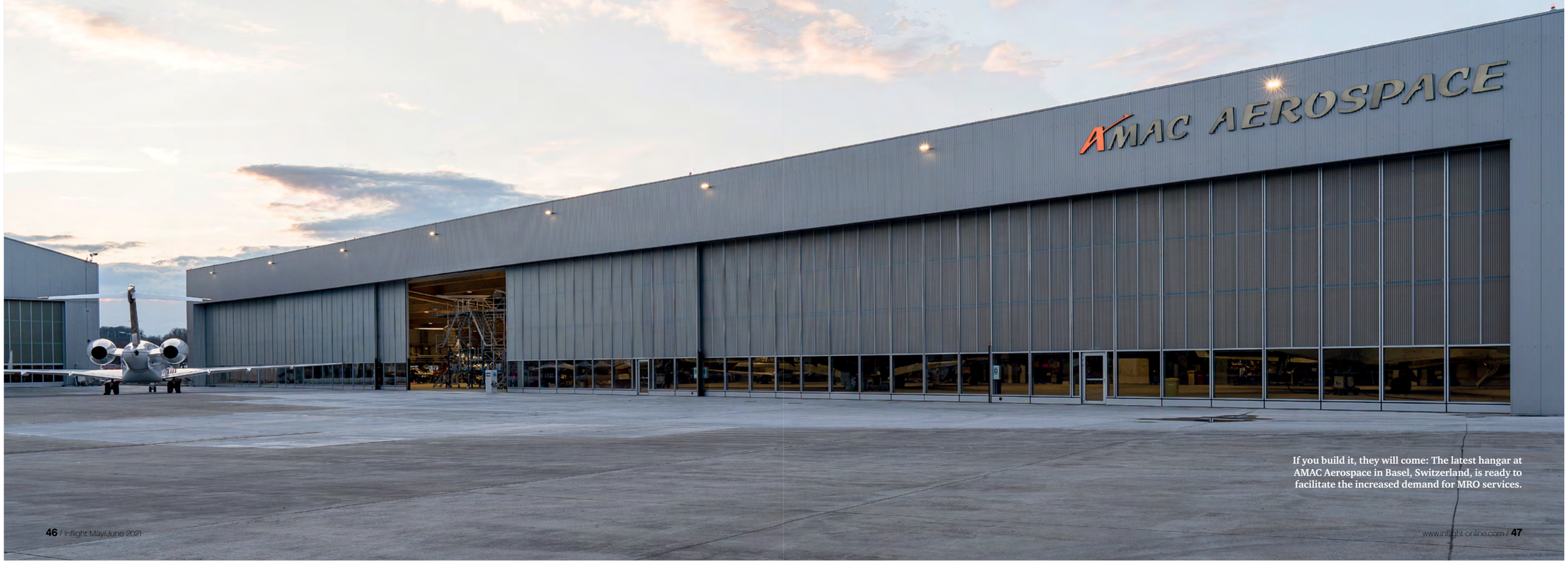
THE PERFECT MAINTENANCE PARTNER

As a consequence of the increased hangar capacity comes a requirement for expanding the team. The recruiting process has already started and will continue in the coming weeks and months to ensure that Basel's high quality of services will be maintained.

"In times like these, business people around the world are looking for a safe way to travel. Having the perfect maintenance partner at their side is not only reassuring but also gives them much-needed flexibilities," explains Ruedi Kurz, Director of Maintenance & Accountable Manager CAMO. "Whatever type of aircraft our clients call their own, a Bombardier, a Gulfstream or the latest Pilatus PC-24, our skilled teams will take care of any mid-size aircraft arriving here in Basel. Or if need be, our AOG support teams will travel to wherever our clients are."

HANGAR 5 – HOW IT ALL BEGAN

In April 2019, the existing container village, occupying 800 m², had to be dismantled first and moved to a new location behind Hangar 4 and more to the front of the facility. Four



If you build it, they will come: The latest hangar at AMAC Aerospace in Basel, Switzerland, is ready to facilitate the increased demand for MRO services.

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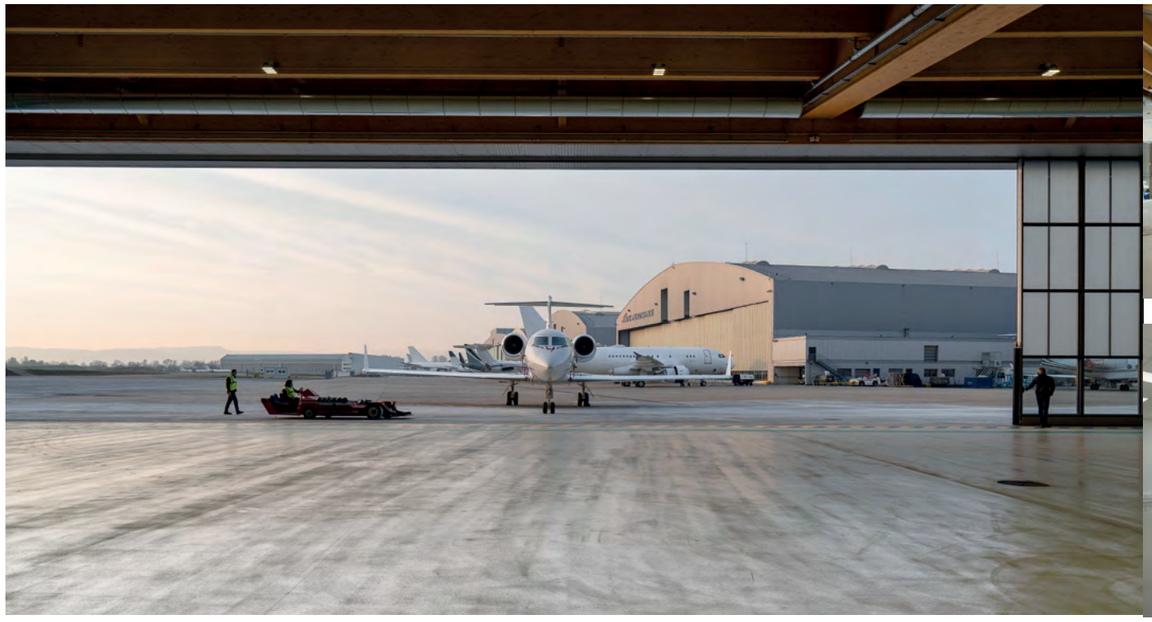

Welcome to Basel: The first aircraft – a Gulfstream – is waiting to be pulled into AMAC Aerospace's new 4,850 m² Hangar 5.

Room to MRO: The new hangar offers capacity for up to seven mid-size jets.

Back office: Space at the rear area of Hangar 5.

Going by rail: Six massive sliding hangar doors are needed to cover the length of 120 metres.

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>
> **Ruedi Kurz, Director of Maintenance & Accountable Manager CAMO, AMAC Aerospace**

months later, the earthwork for the new tarmac area began. By the end of December 2019, an impressive 85,000 m³ of ground had been excavated, and a new tarmac surface of 30,000 m² was built. Aircraft were then re-parked in the new area; an existing car park for 320 cars was removed and rebuilt close by to create space for the main construction site of the building.

In January 2020, heavy machinery arrived at AMAC Aerospace's headquarters in Basel, Switzerland, to prepare the ground for the new hangar building. The excavation work for the hangar building started in February, and by the end of the month, huge rainwater collecting tanks were placed under the surface for the drainage system.

THREE FLOORS DOWN

"Since Basel lies in a seismic area, safety comes first," explains Philippe Schurrer, Project Manager and Director Safety & Security, Facility Management. "Several columns were sunk 6 metres in the ground. The hangar is standing on these reinforced foundations, which can absorb any shocks or vibrations. Hangars 2, 3 and 4 are built after the same principle, even going down to 8 m. Hangar 1 has the same depth as Hangar 5," he adds.

Due to COVID-19, the construction work had to be stopped until 11 May 2020. Then, the EU authorities gave their OK to restart work on all construction sites simultaneously.

"Luckily, we have an excellent network of contacts, so we were prepared and could even pre-order most of the needed material," said Schurrer. "We restarted with 25-30 workers in the first week; then we increased the number up to 40 workers per working day."

CHALLENGING CONSTRUCTION SITE

The construction site itself was a challenge. Close to one of the runways at EuroAirport Basel, some restrictions had to be taken into account. A pneumatic crane was needed to build the hangar support structure. Since the crane interfered with the safety distance of 7% to the runway, it had to be ready to be removed in a very short time. Given an emergency, the runway had to be cleared immediately, which meant the crane had to be disassembled within 20 minutes.

Fortunately, this was never the case, and the project was spared from any accidents.

IMPRESSIVE WOODEN STRUCTURE

AMAC's hangars are famous for their wooden structure. The ecologically-sourced solid wood frame structures consist of several layers of wood; they are specially laminated to increase rigidity. The wooden bars were cut and shaped in the factory, so they were ready to be installed like Lego bricks by the time they reached Basel. The transport of the massive wooden beams was impressive: eleven special-purpose trucks had to be organised to bring these wooden elements from Alsace in France to AMAC's hangars at the EuroAirport Basel, Switzerland.

In October, the main power transformer was installed, and by the end of the month, the installation of the last roof element took place. Due to suitable weather conditions, the works on the building had progressed quickly. The ambitious goal was to have the floor inside the building finished before the end of the year. The floor covering had to be done zone by zone; a lot of concrete had to be poured. This task itself needed three weeks. The floor has to be highly resistant; it has to dry thoroughly before the maximum load capacity is reached, requiring the temperature to be well above 0°C to harden properly.

In early January, the massive hangar doors were installed. Six huge sliding doors, stretching 120 m, were placed accurately in the sliding door rails. At the same time, all the interior work started – several workshops and wardrobes, the plumbing work, and the heating and electricity systems had to be installed. And not to forget all the safety installations such as the fire extinguishing system, sprinkler system and the smoke extraction had to be fitted and tested. Due to the enormous doors and several skylights, the hangar's interior is very bright and flooded with natural light. Still, strong lighting and a recirculation system had to be set up and calibrated.

OPTIMISING THE TARMAC SURFACE

The tarmac in front of all of the hangars is not an even surface. The ground is slightly sloping, so water and snow can be channelled away. Since the new tarmac in front of Hangar 5 had to be adjusted, the space in front of Hangar 1 was used as a working area and was only partly accessible from the outside while the surface work was ongoing. The tarmac itself, including the pouring of concrete, was ready by the end of January 2021. Special concrete was used, which can harden even with a temperature below -5.0°/-6.0°. As soon as the tarmac surface was prepared, cranes, trucks and heavy loads were permitted to roll over it.

VIRTUAL GATE

When the tarmac was expanded, AMAC installed a new gate for the aircraft to enter AMAC's facilities from the taxi ramp. On each end of the gate, infrared lasers are installed, and as soon as they are interrupted, they immediately send an alarm to AMAC's security team. State-of-the-art security cameras facilitate the work to safely control the vast tarmac area 24/7 and allow safe time during any aircraft movements. The gates are also operationally surveyed by the airport's Gendarmerie, so a full-scale security operation keeps a watchful eye at AMAC's Swiss location. ■