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SPORTS HALLS AND ARENAS
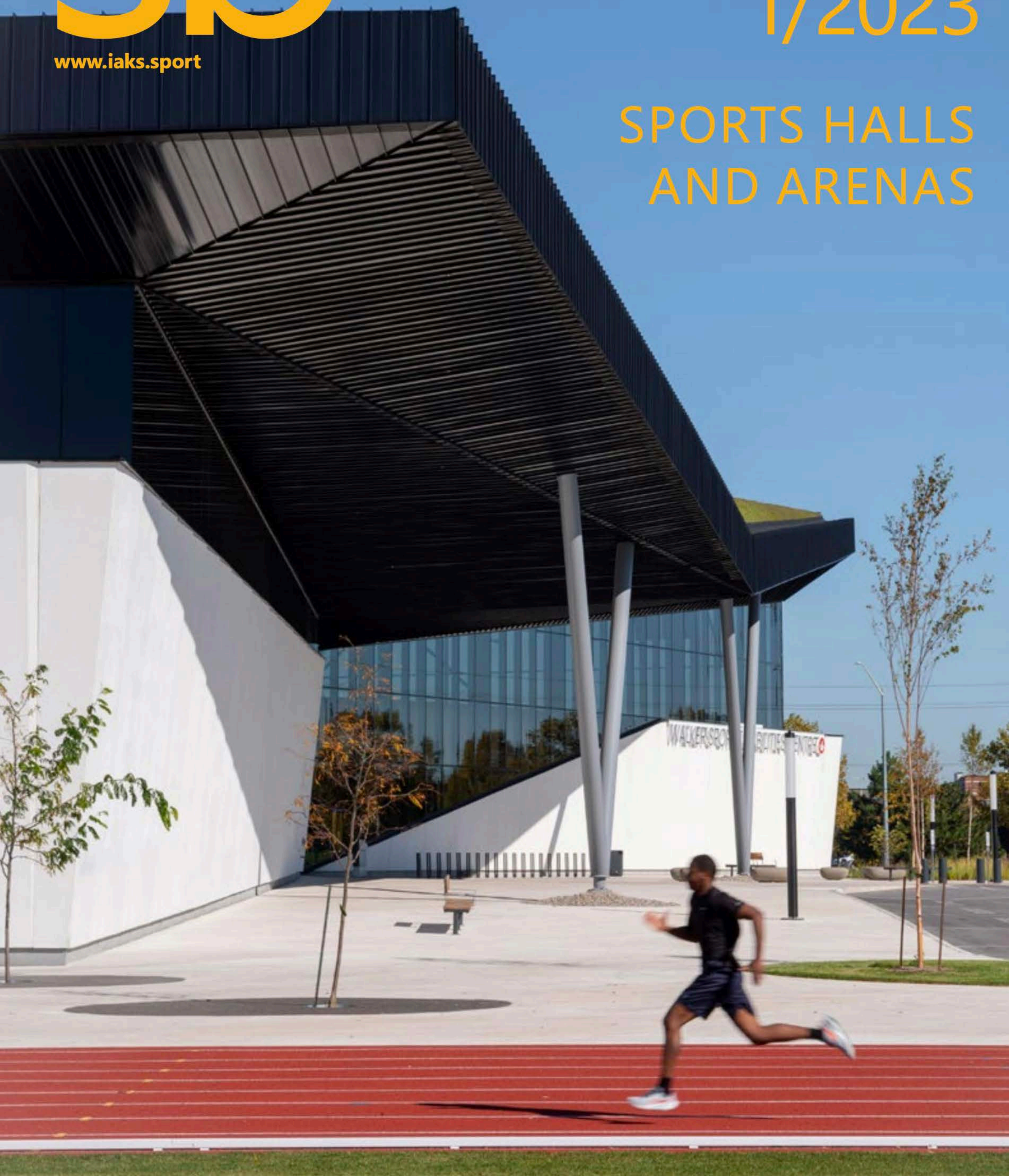
# WHITE ICE AND BLACK BOX

VAUDOISE ARÉNA IN MALLEY, LAUSANNE

With 43,000 m³ of water over four pools – including a competition pool – the pool areas of Vaudoise Aréna make up the largest covered swimming pool in Switzerland. There are 60,000 m² of floor area over seven floors, four of which are open to the public. In addition to ice and water sports, the sports centre offers table tennis and fencing, and is home to a multi-functional hall for large events, as well as meeting and conference rooms.

The organic shape of the building reflects its function (arena, skating rink) while also adapting to the external constraints (limits of fragmented constructions, vehicles turning radius at corners). The curves reflect the building's use: projections create terraces, hollows both signal and protect entrances, all while faithfully expressing the structure's influence on the roof. The rounded corners follow the shape of the ice rink. Ultimately, the strong shape moulds the building's identity and reflects the uniqueness of these exceptional facilities. The white glass is reminiscent of ice.

The overall floorplan is similar to a hockey stick: the large "L" creates a vast forecourt to match the scale of the events hosted by the sports centre, while also providing a public space available to the entire neighbourhood on a day-to-day basis. The southern wing of the building is home to the aquatic complex, with the children's pool tucked under the ice rink's tier.
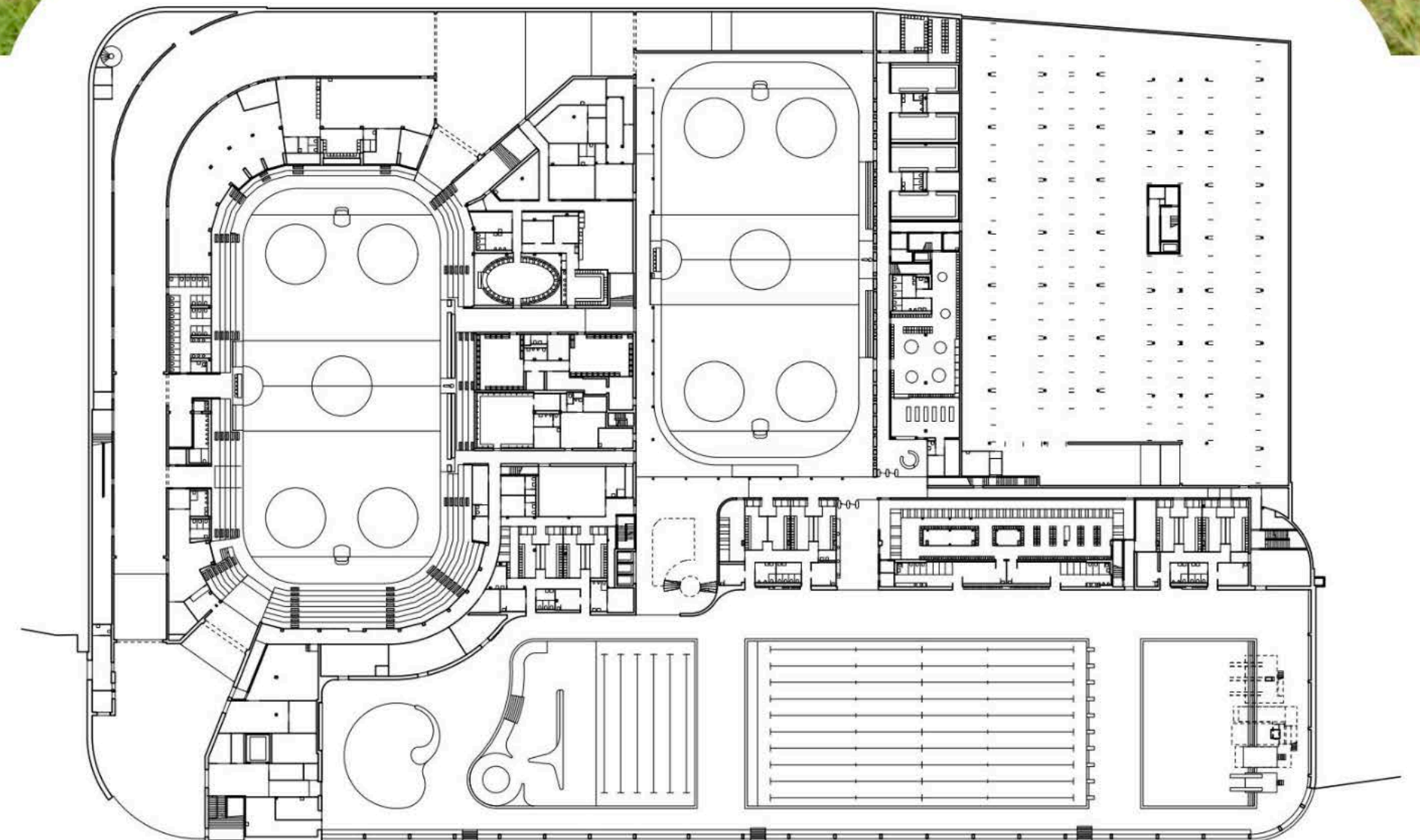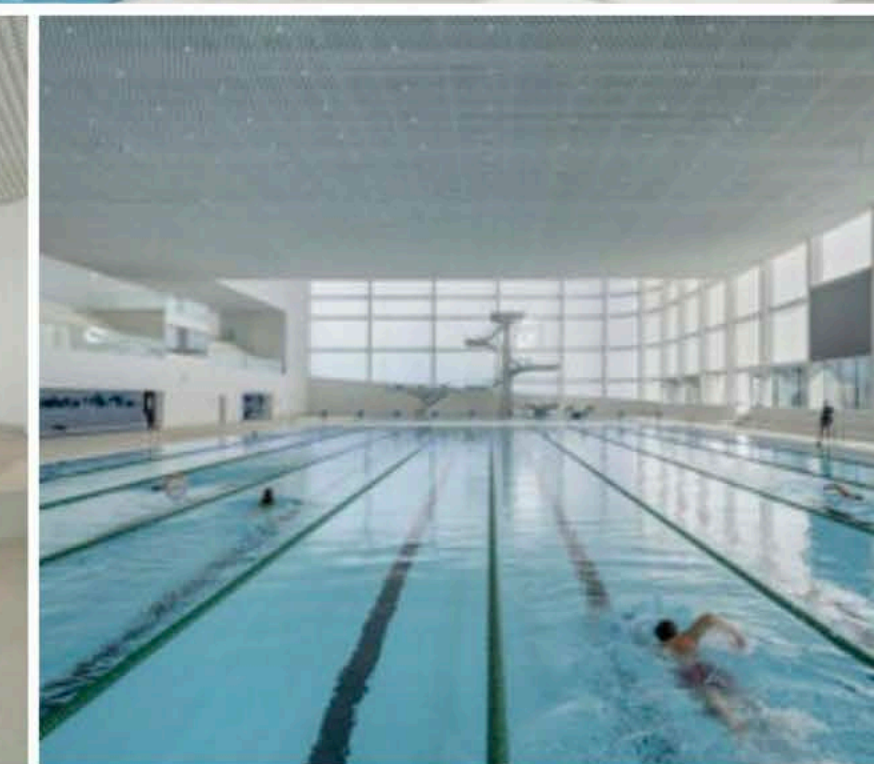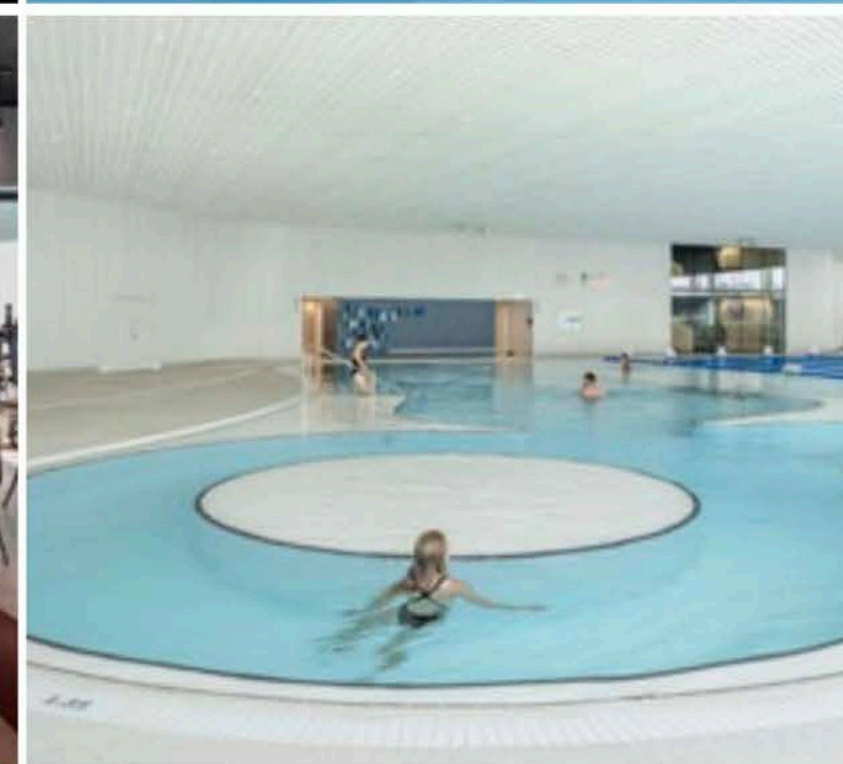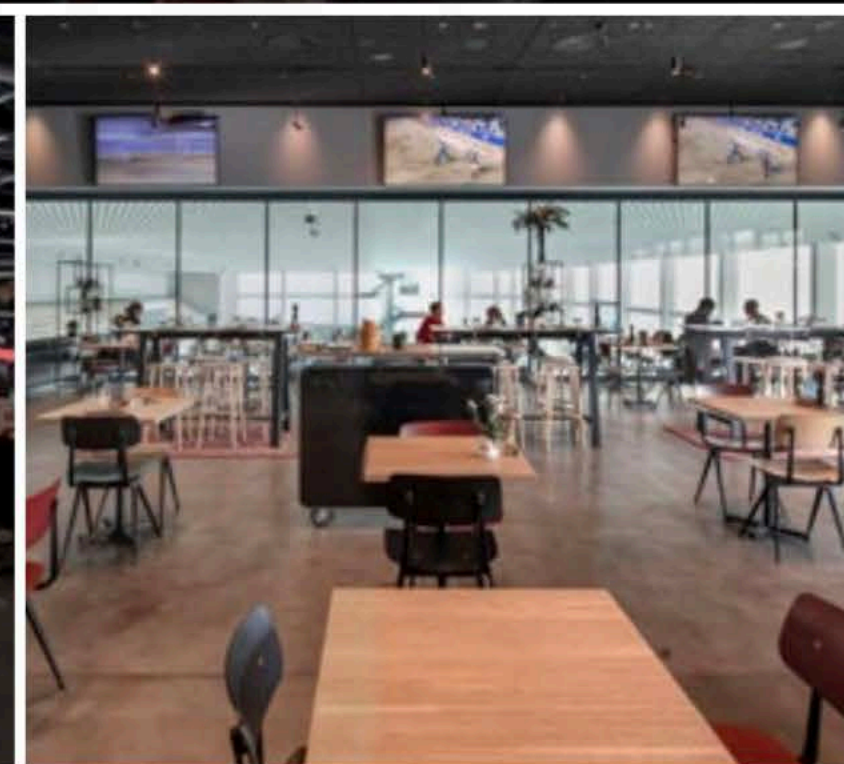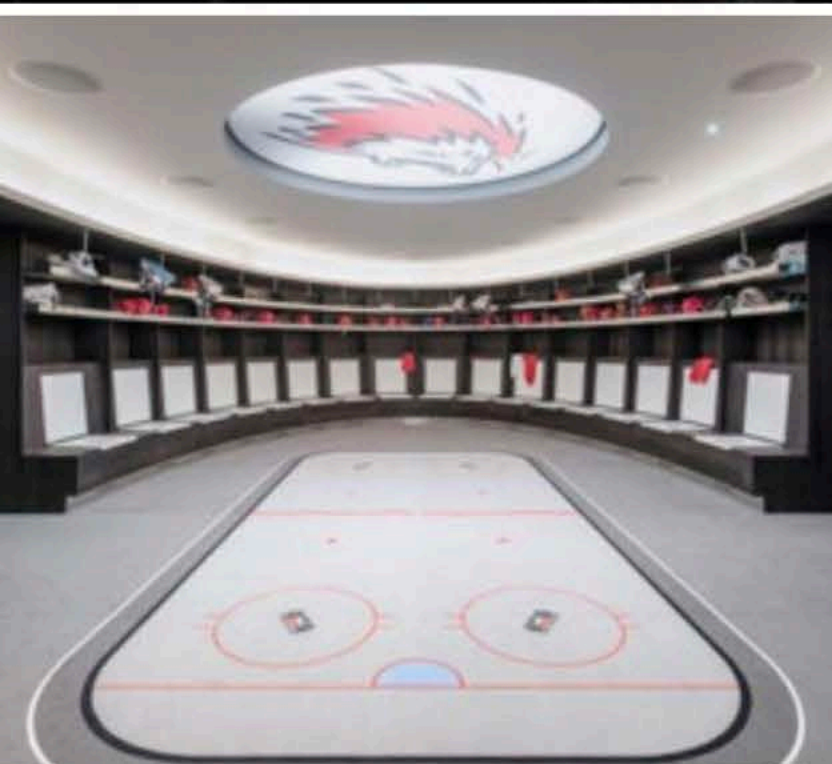
Expressing its urban influence through an immaculate façade, the generosity of the forecourt, paths and far-reaching views, the sports centre has helped create a new landscape in Malley, in the centre of the Lausanne urban area.

Regional national performance centre

The sports' centre has two distinct uses. Firstly, sports and cultural events for up to 12,000 people are held in the arena and up to 1,500 people per day use the aquatic area, with both facilities benefitting from their own supply system. Secondly, various sports programmes (swimming, diving, aquatic sports, table tennis, fencing, etc.) are used daily, as are the restaurant and offices, which are organised around a central hall from which all functions are managed.

The Olympic pool is home to Lausanne Aquatique – with 400 licensees and 2,000 members – Renens Swimming Club and the triathlon clubs. The pool has ten lanes. Like the diving pool, the Olympic pool is certified as regional national

performance centre and approved for international competitions by World Aquatics (formerly known as FINA). The diving board and the Olympic pool are surrounded by stands that can hold 700 spectators.

The Olympic pool includes a split movable bulkhead, allowing the main pool to be divided into two 25-m pools or to simultaneously offer 25-m and 50-m lanes. The multipurpose pool has a movable floor along the 25-m section, allowing the pool depth to be changed. The leisure area consists of a small lazy river, massage beds and benches, jets and water fountains.

Multi-storey facilities and generous views

The building's designers exploited the slope of the land to separate the functions: The lower ground floor is home to the ice rink and the pool area, and also provides access for internal logistics at the other end of the complex, the technical centres and the car park. On the upper ground floor, people enter the building from the forecourt and find themselves

eight metres above the water and ice. Staging facilities and ventilation are found within the building's structure.

Some of the facilities are located under the forecourt (training rink, car park), and part of the swimming pool slides below the stands around the ice rink to make best use of the emerging volumes and generously maximise the outdoor area, despite the cramped nature of the site.

Logically, the walkway design also segments the route by setting accents such as the large circular staircase and the plunging views over the ice rink. Each storey enjoys generous views, with the south-facing terraces for the restaurant, VIP areas and sports clubs being particularly noteworthy.

The right materials in the right place

This reflects a pragmatic yet practical approach to sustainability. Concrete was used for small and medium spans as well as the vertical load-bearing system (compression),

steel was used for large spans, particularly the arena roof (limited by static height), to optimise weight and material use.

Choosing profiled glass as the façade cladding is consistent with the organic shape of the building and enhances the symbolic expression of its function (similar to water and ice during the day, while the façade almost "glows" when events are held in the arena and when the swimming pool is used in the evenings).

To create the desired atmosphere, the interior features more homely materials. As an example, the Olympic Capital area, which is where most of the Arena's VIP bars can found, features wooden panelling on the partition walls and bars. Particular care was also taken when choosing the artificial lighting since each luminaire was tailor-made for the facilities.

Chromatic concept

The design is based on an assumed opposition of black and white. The Arena, which must guarantee the "black box" effect when shows are being held, features shades of black that reveal the contrasting white ice. The public and the screens add splashes of colour, while the red of the resident club is given pride of place. The aquatic complex is white with shades of blue: the blue of the pools when they are full of water, the blue of the glass flakes embedded in the resin of the beaches and the blue of the shower tiles. This immaculate white dominance maximises natural light and contributes to the hygienic atmosphere of the pools.

THREE QUESTIONS TO THE OPERATOR
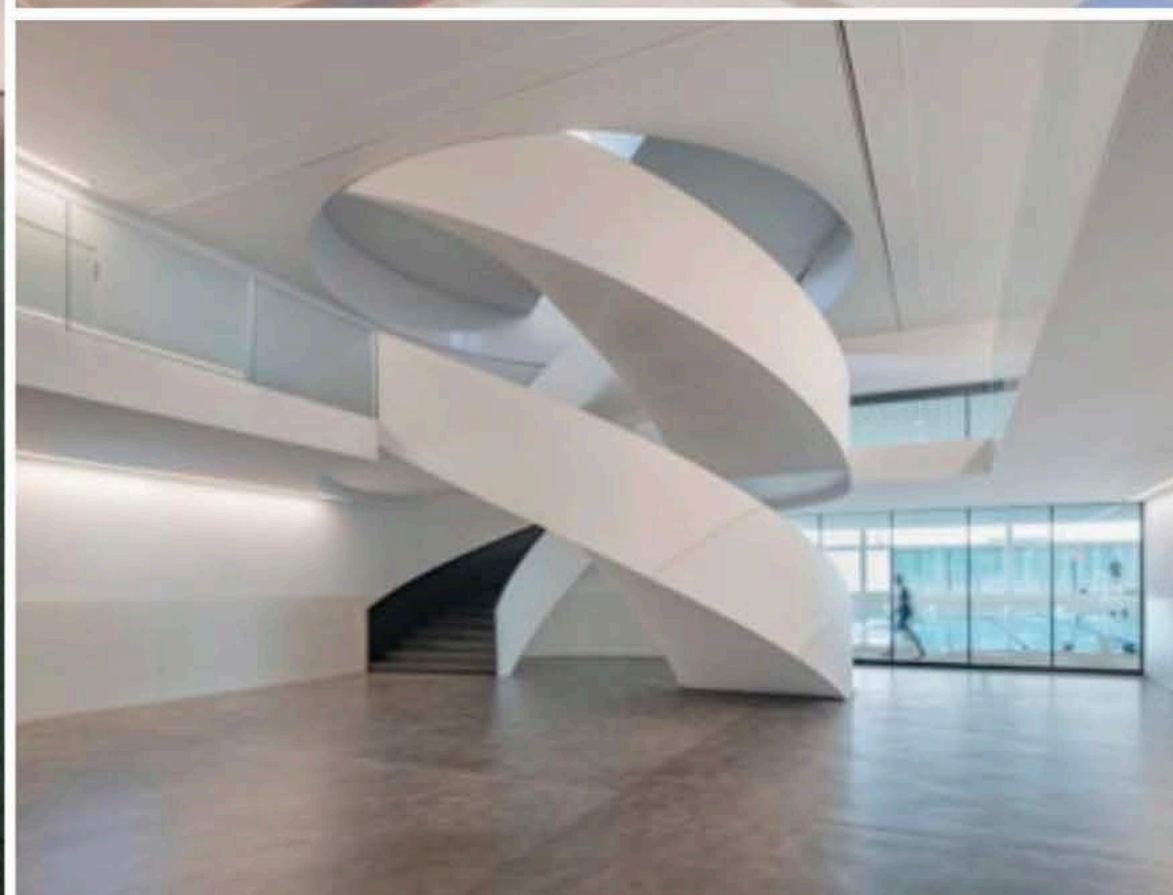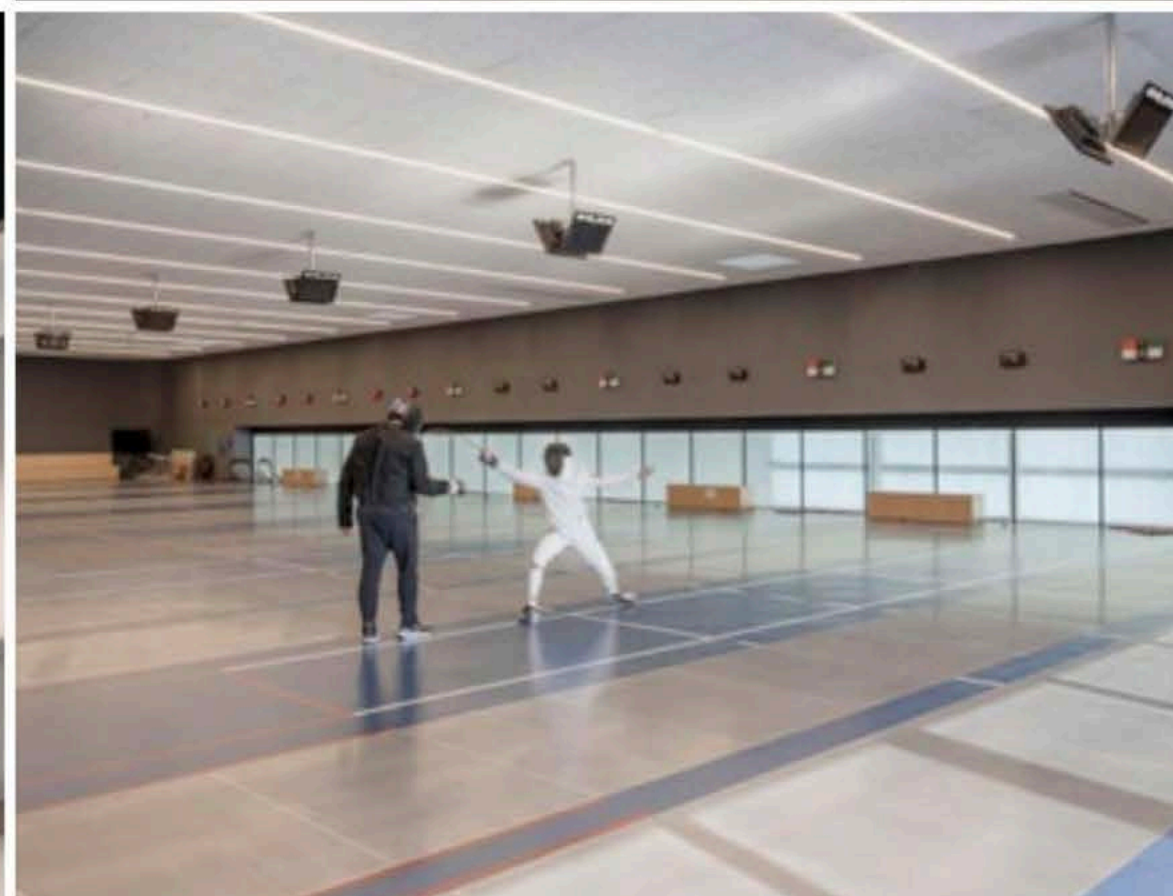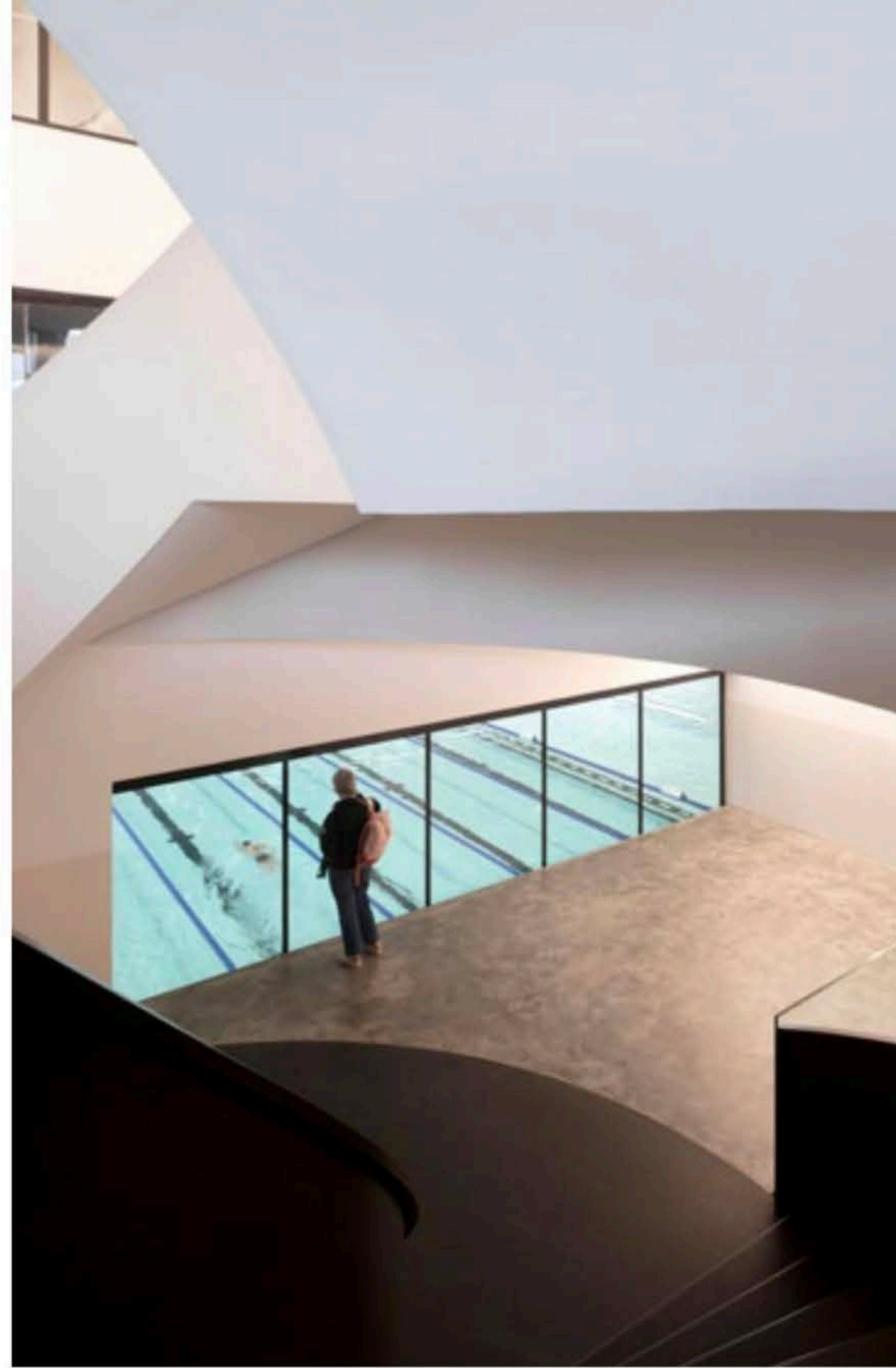
SÉBASTIEN BACONNIER
Director of operations
Vaudoise Aréna

What are the planning or functional aspects that make your facility a success?

The Vaudoise Aréna was designed for use by top athletes, whether it be it the aquatic centre, which is a regional performance centre; the ice centre that hosted the Youth Olympic Games; or the fencing and table tennis centre which that concentrates the elites in of their respective sports. The campus also has the mission of welcoming the public in the best conditions of comfort and safety for the practice of sport. The compactness, space and layout of the premises make the infrastructure very attractive, as does its location in the immediate vicinity of the public transport system. Finally, its architecture makes it a spectacular and very modern centre.

If you had one wish, to what extent would you change or expand your facility?

The ice centre has been a real success with the public and clubs. We are struggling to meet all the requests; we would like to cover the outdoor rink so that it can be used independently from of the weather conditions in winter. This space would also be very useful for other activities in summer.

What challenges does the operation of sports and leisure facilities face in the near future?

Technically, the first challenge is related to energy management. By definition, the production of ice and the pumping and filtration of the water in the pools generate a substantial energy requirement. In order tTo cope with this, our infrastructure is equipped with an ingenious system that combines the production of cold and heat, to which is added the contribution of more than 2,000 m² of photovoltaic panels. In addition, this energy production is linked to the large number of people who benefit from the infrastructure. We take our sustainability responsibilities seriously by taking these aspects into account in all our events and projects.

From an operational point of view, the challenge is to manage the rapid changeover from sports to entertainment in the best conditions. We have had the opportunity to test this situation "in real" and we have seen that we are perfectly capable of doing so!