



Le Phare Arena, France

Patriarche & Co

# An Arena with Effective Signals

It will be brightly lit, its lighting visible from far away: This fall, the “Le Phare” arena will place the French city of Chambéry in the spotlight. The arena’s name, which translates as “lighthouse” or “light signal”, is both its motto and its concept. After all, this building transmits signals – and not just because of its ring-shaped, gleaming glazed façade.

This project combined great architecture with state-of-the-art technology – an achievement that resulted from the cumulative know-how at Patriarche & Co. The firm in the Savoys responsible for the design, consolidates architecture and building technology under one roof and was thus able to meet the challenges of this project especially well: Plan a venue for an audience of 3,000 – 6,000 people that can change its functions like a chameleon. Pop shows, sporting events, trade fairs or conventions – all these events in the same venue. Explains Jean-Loup Patriarche, who has been the second-generation manager at Patriarche & Co for more than 20 years: “Thanks to the integrated work method with Allplan from Nemetschek Allplan, we succeeded in creating a harmonious design for such a multi-purpose building.”

### Over 15 years experience working with Nemetschek Allplan

The firm’s repertoire includes research institutions, factories, office buildings, multi-family residences, schools, sports and cultural venues, as well as bridges and piers. The company employs 75 people by now with branches in Paris and Montreal. The architects and engineers have been using Allplan from Nemetschek Allplan for project design for 15 years. According to Jean-Loup Patriarche, “The system makes unified project processing possible for us, by using a single, centralized building model. This means we can quickly create highly precise models in 3D and very high-class 2D drawings, as well as integrate various technical disciplines at the same time. This is of the utmost importance, especially with complex projects such as “Le Phare”, since the software helps us keep everything under control.”

At Patriarche & Co, Allplan has been installed on 28 workstations by now. Architects, designers, building and environmental technicians work on the same digital building model and thus can coordinate different design processes. Design architects at Patriarche & Co work out their concept with a digital building model. Based on an initial hand-drawn sketch, they create a rough computer model that they then continue to shape like sculptors, until the final form is developed.

In addition, they visualize the draft with the visualization solution CINEMA 4D, in order to display and examine the building even more precisely. Says Jean-Loup Patriarche: “We simply import the model data from Allplan, assign materials and textures, and at the push of a button the software already creates a photo-realistic display of the building. It is really quite simple.”

Visualizations don’t just assist design architects. At Patriarche & Co they are also an important tool for the acquisition process, including during the bidding process for the “Le Phare” arena contract: after the first round, only two firms remained in the running. The designers used CINEMA 4D to create an animated film that won the contract for Patriarche & Co during the final selection: animated pictures showed the building’s interior from a bird’s eye view, which clearly conveyed the design idea to the client, including functions and construction method. Jean-Loup Patriarche is certain that this is why his firm was awarded the contract in the end.

The design firm from the Savoys also uses the CINEMA 4D visualization system to model unusual components. After all, such components can be freely modeled in the visualization system and transferred to Allplan, where they are available as actual architectural elements. For the multi-purpose arena in Chambéry, the firm collaborated with Arco-ra, an external engineering firm, to model the steel construction for the domed glazed façade in CINEMA 4D and then transferred it directly to Allplan, where complex steel girders were then available as intelligent 3D elements and could be evaluated further, along with all their properties and attributes – such as, for example, in the form of automated bills of materials and quantities for cost planning, tendering and contract awards, all of which Patriarche & CO is also responsible for during the “Le Phare” project.

**Consolidated Building Services (HVAC) and Detailed Planning**

At the same time, the digital building model was integrated into the overall building technology, which plays such a pivotal role for the multi-purpose arena in Chambéry. Says Jean-Loup Patriarche: "Since we combine architecture and engineering design, integration of these two disciplines is, of course, quite simple. We all use the same model, which means we all work with the same data." Heating and air-conditioning, automatic access systems, equipment for radio and TV transmissions, as well as all the technology required to assemble and disassemble the different scenarios – all of these aspects were integrated directly in Allplan.

That is how HVAC planners could be sure that they were working based on current and correct data, and conversely, architects could, for example, take into account cut-outs in their detailed planning. Thus

it was guaranteed that technical equipment and building design truly fit together without conflicts – a major plus at the construction site, where production can then proceed seamlessly. In addition, the building data in Allplan was used to examine the thermal behavior of the arena, which made it possible to optimize the building's energy efficiency.

**Communication with 3D PDF**

Designers at Patriarche & Co send project data in 3D PDF format to keep clients updated on the project status. This is a particularly effective communication option since a virtual building can be viewed on any PC in 3D. Explains Jean-Loup Patriarche: "Everybody knows immediately what is going on and can work on specific details in a systematic manner." Not only can the recipient view the planned building from all sides, he can also take a virtual walk through the interior of the building.

The virtual walk through is also being used at Patriarche to test the subsequent functionality of a building. This testing occurs directly in Allplan, for example. A guidance system for streams of visitors was developed and tested in the virtual model. As it is possible to walk through the virtual building as you would the actual structure, the designers were able to prove in advance that visitors, athletes and artists would be able to easily navigate the building complex. Consequently, prior to the start of construction, it was already clear that "Le Phare" arena is not just a trend-setting project in terms of its design, but will also guide its visitors to where they need to go.



*You have been using Allplan from Nemetschek Allplan for 15 years. What is it that you particularly value about this solution?*

In my opinion, the software is miles ahead of other CAD systems due to its unified approach. As a firm for architecture and building technology, it is not important to us to create first-class floor plans, views and sections – we can do that with Allplan anyway. We deal with the building as a whole; we want to create great buildings – and that is an endeavor where Nemetschek's Allplan is of substantial help to us.

*In which project phases and what areas are you using Allplan?*

We use Allplan from the beginning, first as a design tool, and then while working on the entire execution and building services planning process. Since we integrate these tasks in Allplan, we can control and manage the costs for the entire project, starting with the initial sketch.

*What were the pivotal advantages of using Allplan for planning the "Le Phare" arena?*

For this project, unified planning was of the utmost importance to us. We can use Allplan to create very precise 3D data that describes the building's geometry in detail. This enabled us to quickly generate high-quality 2D plans. Also, we could use the digital building model to describe the arena with all its functions and properties and thus work with and optimize the building as a whole, including its technology.

*Which trends do you think will define construction projects of the future?*

In the future, sustainable building will become increasingly important, which refers to the creation of buildings with state-of-the-art features in terms of offering comfort and energy-efficiency at the same time. We can already meet this requirement today. For example, we work with natural ventilation and natural lighting – technologies that we can take into account in the planning process from the beginning, because building service providers and architects are working and planning in parallel with the digital building model in Allplan.

*To what extent does Allplan affect your success as a planning firm?*

Allplan and the visualization software CINEMA 4D help us time and again to succeed in acquisitions and competitions. Just recently, we won a competition for a building that will become the headquarters of a pharmaceutical company. We had a week to design the building with approximately 10,000 square meters of gross floor space – and we met the deadline. With Allplan, within a week's time, we were able to design the building and create floor plans, sections and views, as well as a dozen visualizations of the highest quality.

