Close to the Bone — the next ENTERprise / Aust
Q: A deck of 1,500 square meters some five meters above ground, containing swimming pools with glass openings at the bottom and a grandstand. What was decisive for the design with regard to concrete technology?

A: In addition to the existing attraction — swimming in the lake — we wanted to create an artificial topography that would make this place unique — add a further quality. There is a 10 meters wide protected zone around the lake. The extension of the so-called sun-deck is defined by that rule. Moreover, we took advantage of the existing topography with its slight slope to create a roofed external area under the sun-deck, housing the locker rooms, a whirlpool, a rain room and all technical facilities. In some places the roof spans 17 meters as a cantilever: the structure is both a roof and a pool. Preliminary structural analysis showed that concrete construction would be the only economically viable solution, which is why we developed the building in cast concrete, it appeals to us to let the structure float above the ground. That is the state we consider a landscape.

Work methodology, analog and digital model

All work executed by the contractors is based on the latest version of our 3D model, especially for structural engineering and formwork construction. All 2D executive drawings are derived from that model — we can always refer to an original file that is binding for everybody.

Q: How did you develop the 3D model?

A: We used many cardboard working models to different scales for the design process. At the same time, the digital model was developed and refined all the way to the executive planning stage. Meanwhile, all the data needed for execution, from structural joints to all the pipes needed for water technology, have been integrated into the 3D model. We show how the pipes can be laid in the spatial cast structure. The concrete formwork has also been integrated. Except for a few consultants and contractors, we basically communicate using the digital 3D model.

The structural engineers, Bergmeister & Partner, are obviously working directly with the 3D model, which is also the pre-condition for concrete and formwork construction — otherwise the pool could probably not be built in such a short planning and construction period. Moreover, we have come up against the limits of the structural deformation of concrete.