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National Park 360° - You should definitely go there!

The Hohe Tauern National Park, which is the largest park in the Alps, opened its exhibition center “National Park World” in July 2007. In 2013 the exhibition center was expanded to include a new one-of-a-kind exhibit: A breathtaking 360° panoramic film experience of the Hohe Tauern summit.

Norbert Winding, Director of the Nature Museum and Competence Centre "Haus der Natur" in Salzburg and Andreas Zangl, exhibition's designer from Graz, conceptualized the "Making Of National Park" exhibit and were responsible for the overall design of the panorama world “National Park 360°”.



“National Park 360°” is a revolutionary Alpine nature film experience being projected in the newly constructed state-of-the-art 360-degree panorama theater at the Hohe Tauern National Park Center, in Mittersill, Austria.





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The spectacular 14-minute immersive Alpine journey transports viewers from the valleys, rivers and alpine lakes, through forests, waterfalls and gorges, to the glaciers and peaks of Austria's highest mountain - the Grossglockner.

The film, accompanied by realistic soundscape recordings, provides a virtual experience of being on the summit of the Hohe Tauern.

With elaborate time-lapse sequences that show the seasonal changes as well as extreme weather and lighting conditions, viewers are taken down a glacial crevasse, to a high mountain stream, into a gorge as well as float through an alpine primeval forest.



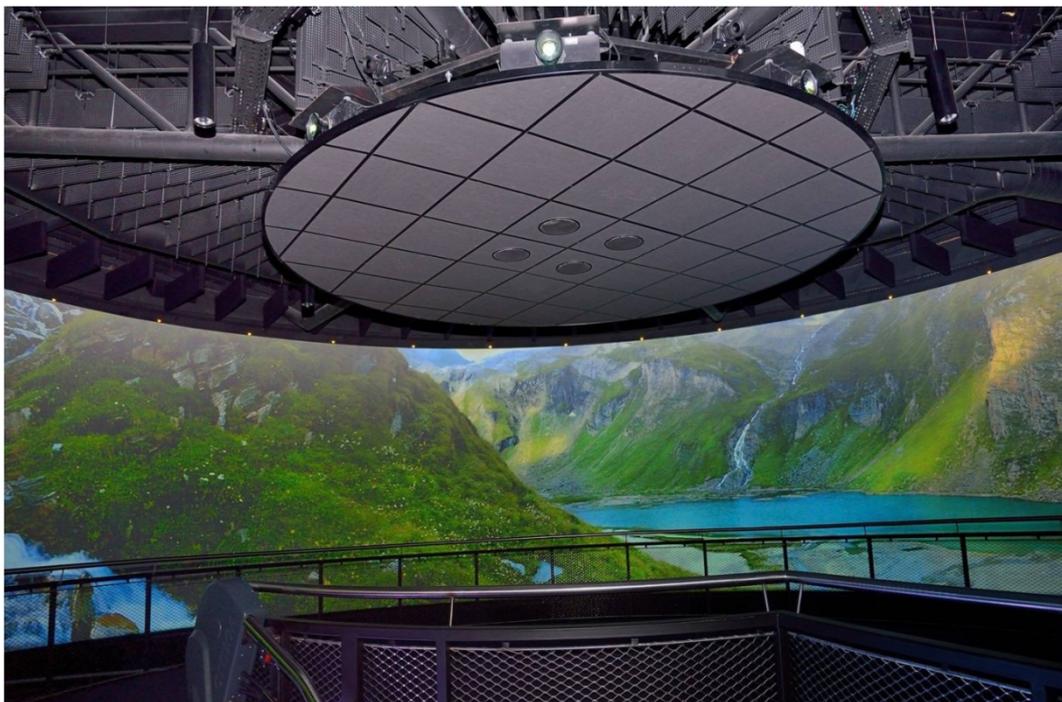


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The film's 360° panoramic format is similar to Disney's Circle-Vision but with a seamless surround image. Nine overhead high definition projectors project the film seamlessly onto a cylindrical screen that has a circumference of 52m (170ft) and a picture height of 4m (13ft).

The projection, which has a resolution of 13500 x 1080 pixels, is controlled by specially developed auto-calibration software that stitches the projected images together.



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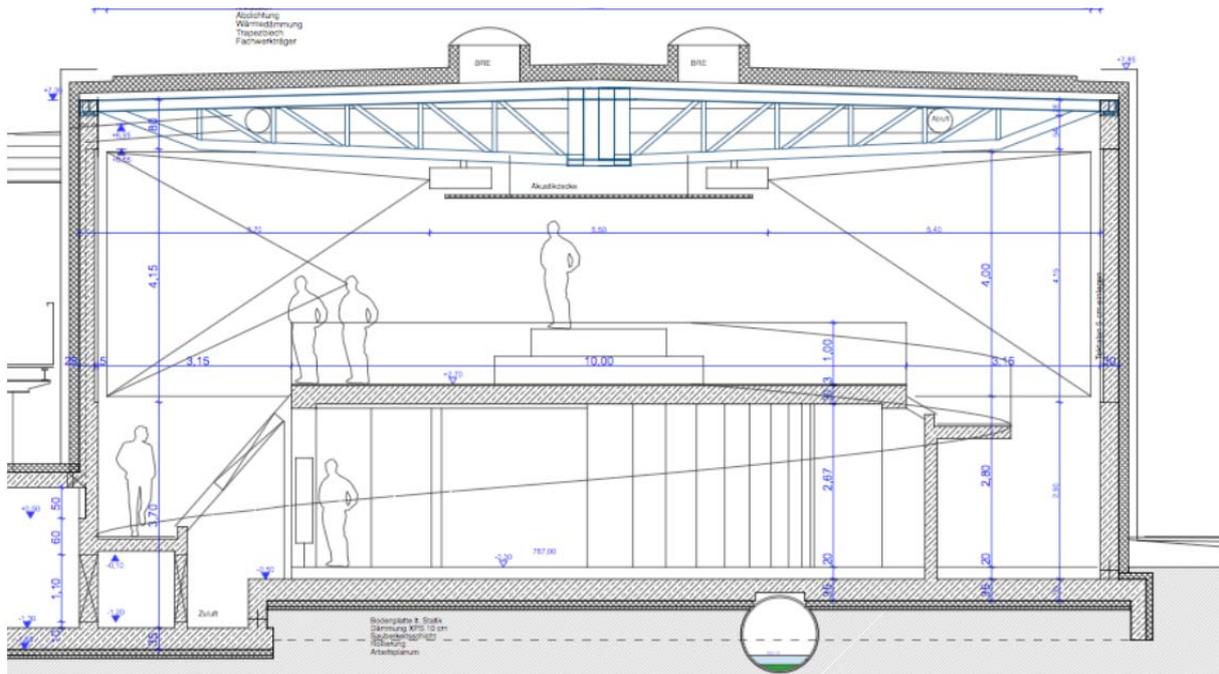




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The theater's central circular observation deck is accessed via a spiral ramp. It is 10-meters (32ft) in diameter and has a capacity to hold 70 people.



The “Making of the National Park” exhibit is located on the lower level of the 360° theater, where, among other things, the film "Behind National Park 360°" plays on a 70" monitor. The beautifully shot film unveils how the “National Park 360°” film was created and takes the viewer on a groundbreaking cinematic and technological journey, highlighting the innovative camera and theater design as well as the challenges of filming on location and the post-production process.

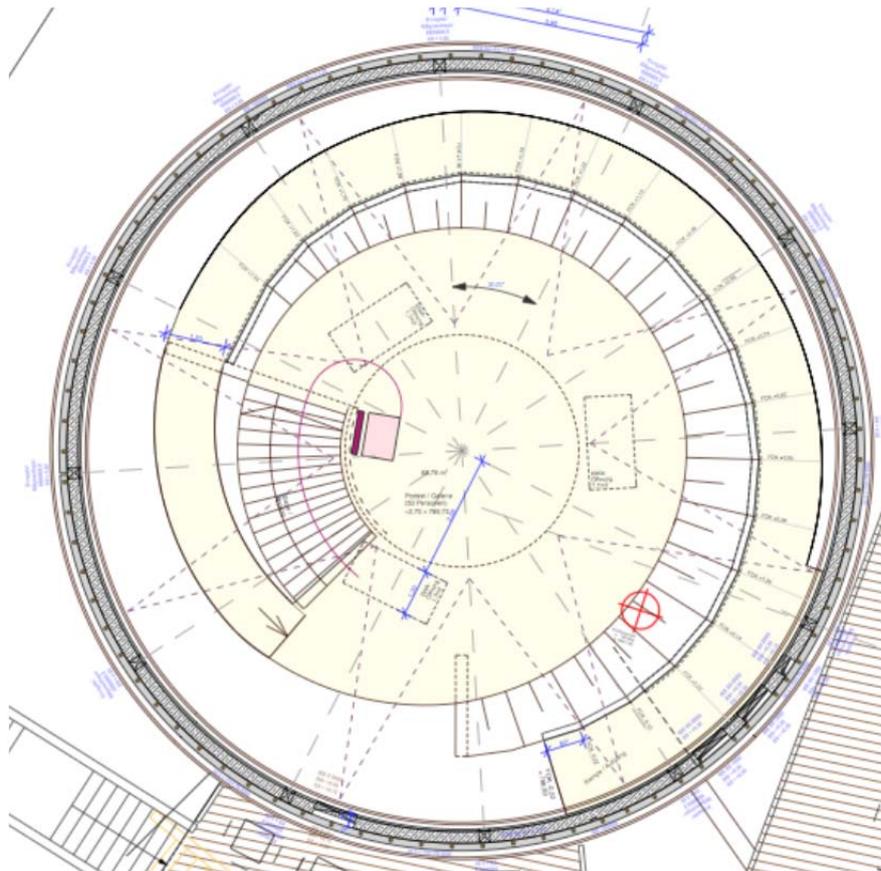
"Behind National Park 360°" complements the main exhibit's unique panorama film and further enhances the virtual reality 360 ° experience of the Hohe Tauern National Park.



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Once on the deck, viewers are able to wander around as if on the real summit and can look down on the horizon thereby producing a realistic "summit feeling".



The theater's design and optimized configuration ensures that a seamless 360-degree panoramic view is maintained at all times.

Since the image size of this type of immersive media presentation exceeds the human visual range of 160° and can no longer be perceived as a whole, it must be designed very carefully. And because this presentation is intended for an audience of all ages, special consideration was also given to ensure that the images and image sequences were not too dynamic or fast, otherwise the viewers would feel they were

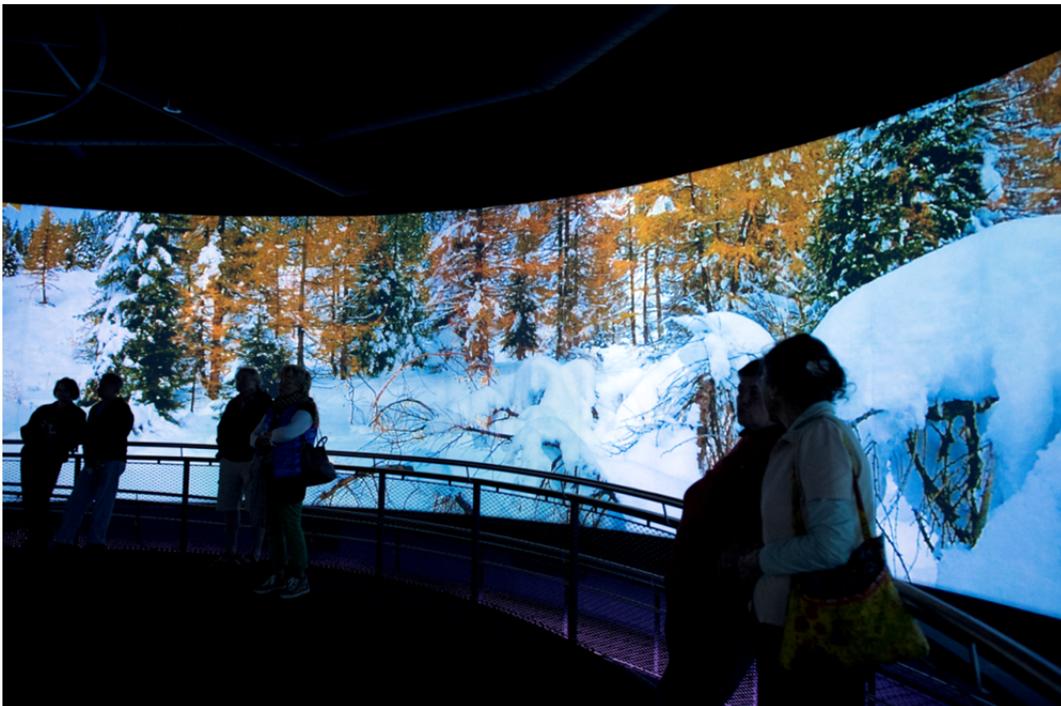




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on a roller coaster ride and possibly lose balance. Also, with a panoramic 360° film the dramatic action revolves around the axis, i.e. the viewer is in the middle of the action, unlike the classical 180° principle, where the viewer is strictly on one side of the action axis. This makes it necessary to create a new 360-dramaturgy technique to ensure a coherent narrative.





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360° Director's Notes (Michael Schlamberger)

The aim of this 360° film is to transport people to places that are only encountered by a few mountaineers and nature enthusiasts. Viewers see stunning mountain wilderness panoramas and experience magical moments from the summit of the Hohe Tauern. They can feel the force of nature, and experience the changing seasons as well as appreciate nature's eternal struggle for survival.



The film has been carefully designed and opens with serene slow moving scenery. A 360° projection of this size can be extremely overwhelming at first and therefore, the drama must increase slowly so that the suspense can build throughout eventually leading to the grand finale.

The opening of the film introduces the various unique characteristics of the Hohe Tauern mountain landscape like symphonic poetry. Spatial sound montages accompany the calm epic panoramas with its mystical moody lighting that awakens the day.





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As the film progresses, the sequence of events within the various scenes constantly change and move between the extreme wide and close-up, as well as from the heights into the depths. This not only allows viewers to experience the magic of the landscape up close, but also emphasizes the contradictions and the diversity of the National Park.

The momentum increases in the main section of the film. Here, the camera glides over the mountain peaks, goes underwater into alpine lakes and floats on rivers, as well as probes deep into glacial crevices.

Through time-lapse sequences viewers are confronted with the unpredictable and extreme alpine weather. Here again, the deliberate use of sound design together with emotional music plays a dramatic and decisive role.





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Cinematographer's Notes (Mario Cater)

Producing a 360° film for a 200 square meter screen in sufficient quality poses a multitude of diverse and often interconnected technical problems. Parallax and camera calibration issues, focusing and image distortion, synchronous f-stop adjustment, dust and spray protection as well as the overwhelming data rates and many more problem areas have to be considered.

Apart from these purely technical challenges we had to deal with extraordinary shooting conditions, having to carry our equipment to high alpine peaks and remote valleys, filming in well below zero centigrade temperatures, inside crevasses and ice caves, close to thundering waterfalls and going underwater in a turbulent white-water stream.



A custom-made camera and recording rig, specifically designed to be as lightweight and compact as possible, allowed us to reach these locations with a small crew and without extensive use of helicopters, giving us the all-important flexibility to quickly react to changing conditions. Confronted with so many technical and logistical issues, it is difficult, but hugely important to concentrate on the creative side of filmmaking.





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360° cinematography in itself poses some unique challenges that requires one to think outside the box of normal camera work and come up with a new way of looking at locations. Forget the concept of image composition by a free choice of focal length and framing. Being limited to what is essentially a strictly horizontal wide angle surround view, the exact choice of camera position becomes the only and therefor even more important composition tool.

Careful location scouting was instrumental. As a cameraman that usually thinks in rectangular frames I needed to learn to really take in and evaluate the full 360° surroundings in all its details. In a 360° frame one often has to deal with the full range from bright sunlight to deep shades, that exceeds the contrast range of any camera. Through a steep learning curve we had to find out what lighting conditions and exposure compromises worked best for our cameras.



An important role in our concept of taking spectators on a journey through the landscapes was smooth, floating camera movements. Again, many of the classic





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tools don't work here, as any camera support equipment as well as the crew has to stay out of frame.

We had success in adapting dolly tracks and cranes for our purposes. We also came up with some unique devices, such as a modular float, that despite it's rather improvised looks made possible some elegant camera moves on lakes and rivers.



This film proved to be an extremely difficult and challenging endeavor, but also a journey that we wouldn't want to miss. It brought us to places of otherworldly beauty and gave us a new perspective on things.





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360 °musical and technical highlights (Peter Moritz)

The sound in the 360° realm plays a very important role and it has been carefully designed to direct the viewer's attention to specific areas of action, thereby creating suspense and guiding the action. Since the viewer cannot see what is happening behind them in a panoramic environment, they have to be guided in the desired direction through specific acoustic stimuli.

For the audience to be able to differentiate and locate the sonic information within this cylindrical building (which in theory implies an acoustic impossibility), the acoustic arrangements and design including various measurements and planning posed the very first important challenge to the company of Vatter Acoustics.

Recording original sound in order to achieve a realistic 360° surround sound experience in the theater was particularly challenging and a custom-made quadraphonic recording setup was developed and used on location by the project's sound engineer, Martin Rohmoser.





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The next challenge was to be met by composer Christian Kardeis in his two-dimensional production room, as his task was to imagine and compose his music to a special preview-movie actually consisting of eight tiny miniature movies on one screen.

Technically the sound-system has been set up on a calibrated 10.2 surround system including 10 speakers on one circle-layer, one Z-cluster over the heads of the audience and a mighty sub-bass system. The final mix of every single orchestral instrument and each natural sound event could only be finalized on location, that mean inside the 360° panorama theater in Mittersill, claiming the equipment of an entire sound studio and a special designed surround setup. The final mixing project, containing over 500 tracks, numberless effects as well as several instances of the Vienna Symphonic Library MIR, required a total of eight synchronized computers.

The mission to transfer the audience right into the middle of an orchestra and amongst the stunning landscape of the Hohe Tauern National Park has been completed:

National Park 360° is an absolute must-hear, an absolute must-see,
an absolute must-experience!





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PRODUCTION TEAM

Director Michael Schlamberger

360° Camera

Cinematography Mario Cater
Astro-Timelapse Camera Christoph Malin
Additional Camera Alfred Zacharias, Thomas Höll

Camera System Development

Design & Construction Mario Cater
Workflow Consultant Oliver Kunz
Electronics Consultant Christoph Freidhöfer
Indiecam Camera Support Raphael Barth, Matthias Schellander,
Martin Reinhart
Technical Consultant Martin Burger

Post Production

Editor Omer Sacic
Panorama Stitching Geoffrey Kleindorfer
Color Grading Willi Willinger, Raimund Sivetz
Technical Supervisor Herbert Fischer

Music

Music Coordinator Peter Moritz
Composers Christian Kardeis, Fred Jaklitsch
Vocals Zabine, Fred Jaklitsch
Steirische Harmonika Jürgen Leitner
Hackbrett Sigi Lemmerer





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