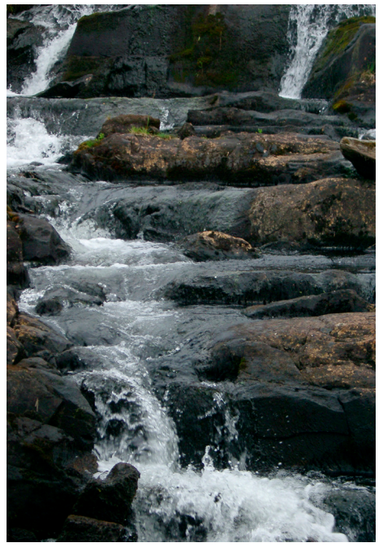


## The design process

The assignment was presented to us a few weeks before the start of the project, allowing Josefin and I to gather inspiration beforehand. From an assignment in an acoustics course, the Dalhalla arena in Sweden became a reference project, not originally because of the stone, but because of the water. The concept with water incorporated with the stage and the sound image was our first idea coming into the project. Secondly, in the first iterative process, three concepts stuck with us. First is the topology of the site, creating a view from above and a natural seating. Second is the ritual, an exciting experience traveling to the site, not necessarily quiet from the start but a building of atmosphere, somewhat inspired by the ElbPhilharmonie in Hamburg, a project which both Josefin and I had done previous work with, as well as visited, and this was an reference project as well. The third concept being the lightness in a roof, an accidentally wrinkled paper, creating a sense of floatation above the arena stage.

Furthermore, the concept of the ritual in combination with both a contrast in acoustics and material arose, and together with the idea of water we decided on the water and stone versus forest concept. Also, we did several iterations of solutions of backstage facilities and stage house. However, when Leon, our acoustician, entered the project he told us having water in between the stage and the audience will harm the sound image and will not work acoustically. Josefin and I tried to work around this but concluded that the water no longer was interesting enough as a concept in this scenario, and would, therefore, be less of a point to focus on and more of an added feature, since being an acoustic competition. Looking back we maybe let go of the water a bit too easily, or let it be compromised easily, although we tried to resist this. In the end it was not an acoustic feature, however we did try to fill the stage with as much water as possible by making it interchangeable.

## The methodology

Josefin and I worked as close together as possible. If stumbled upon a problem or found something needed to be reworked and so on, we would each work on it for some time independently, then comparing and discussing the work afterwards. In the beginning we worked with iterations of other plausible arena scenarios, which gave us very much inspiration and boosted our brainstorming process. The brainstorming kept on going, spending plenty of time gathering inspiration and discussing the desired experience of the visitor. The visitor's perspective was always our priority. Further on when concepts or plans were to be planed in more detail, we would separate the work but always kept in close contact.



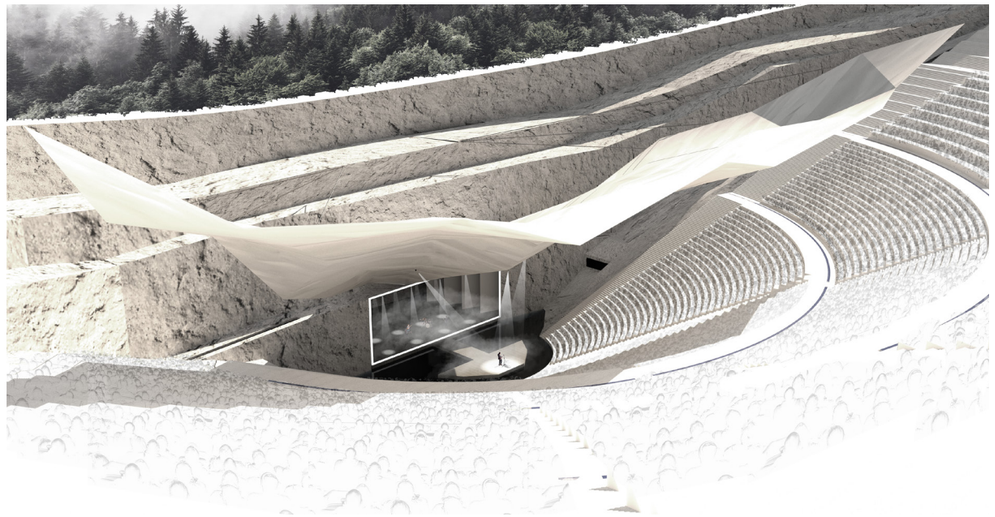
## The collaboration experience

The overall collaboration functioned very well. It was my impression that Josefin and I had a similar interest, style, and methodology but differed somewhat in competences, but very often completed each other and divided different tasks near the end. During the first, creative process we did not work independently but as one, constantly discussing and evaluating and sharing ideas. Near the end we work more and more independently, but still constantly showing each other the work, asking for opinions or help. We were in constant contact and had mutual respect, trust, and a sense of responsibility.

The collaboration with Leon as well worked perfectly, where we had multiple meetings and could send him messages asking or discussing things, and was always met with ambition and enthusiasm. However, I found it a a bit unclear how much time Leon both spent and where expected to spend on this project. Towards the end I realied that the simulations and modellings in CATT he did took more time then I first thought. Leon did never complain or was late with any project, he felt enthusiastic and took on our ideas and project with much seriosly. I found the entire experience, collaborating with students from different departments very fun and educative, both in the subjects themselves but also in working in a team where people's knowledge and skills differ. Josefin, Leon and I collaborated with our independent knowledge and were both good listeners and Leon understood our archicectural vision and did not interfear with that.

## The architectural and acoustical qualities achieved

I believe we achieved very well the concept of the visitor's movement, entering an acoustic and visual journey. We achieved an arena or an experience where music or acoustics and the visual not only cooperates but enhances each other. Furthermore, acoustics are at a large scale adjustable, both by changing the shape and tilt of the roof, by adjusting the absorption in the roof, the Helmholtz resonators in the seats as well as small distributed speakers in the roof.



## Stone Of Music

Spring 2020
Music Pavilion, Alabama USA
Bachelor's Degree Project

Project description: Competition proposal for the ASA Student Design Competition. Designing a music pavilion with covered and lawn seating, to serve as the summer home for a city orchestra. Work in pair.

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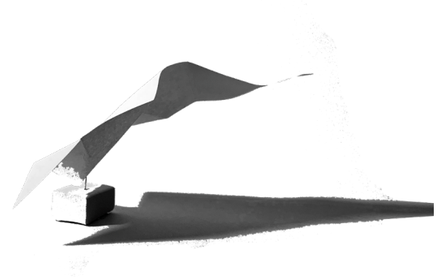
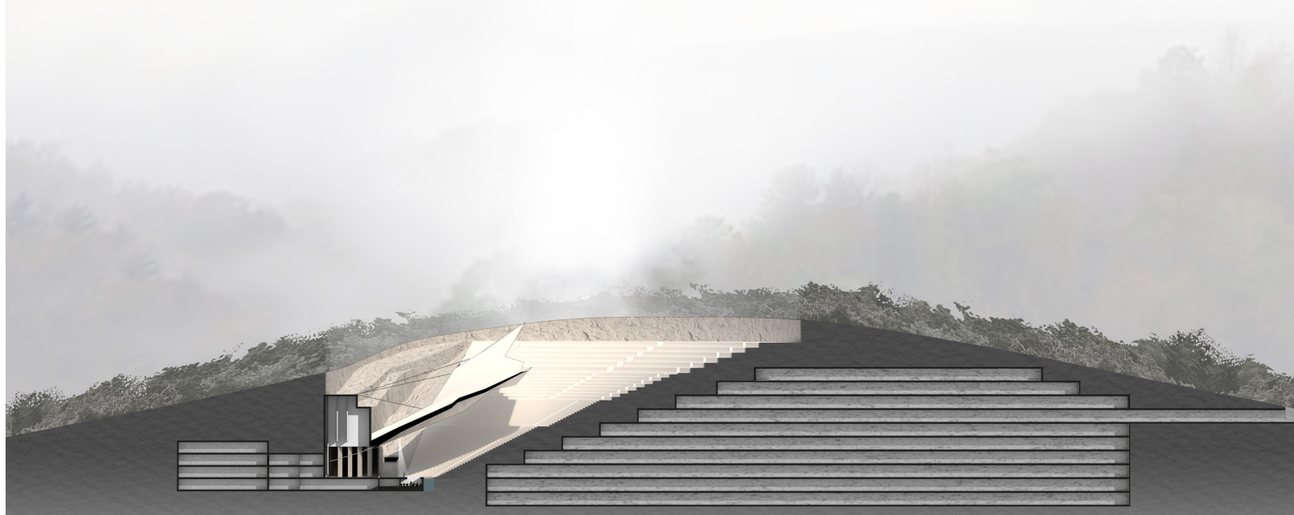
The pine and oak forest covering the state of Alabama opens upon a hill near a river to reveal a stone quarry from within musical and theatrical acts of all kinds are performed. From down deep in the quarry, surrounded by water, music flows along the surface of a wing, creating a spectacular atmosphere.



An extensive garage, with a capacity allowing all visitors to travel by car, creates a hill from where a stone quarry is carved out. At the bottom of the quarry, a stage is placed in a pool of water and is surrounded by sloped stone shaped into audience seating. The forest and topology blockade disturbing sounds from surrounding roads, creating a secluded atmosphere in the arena.

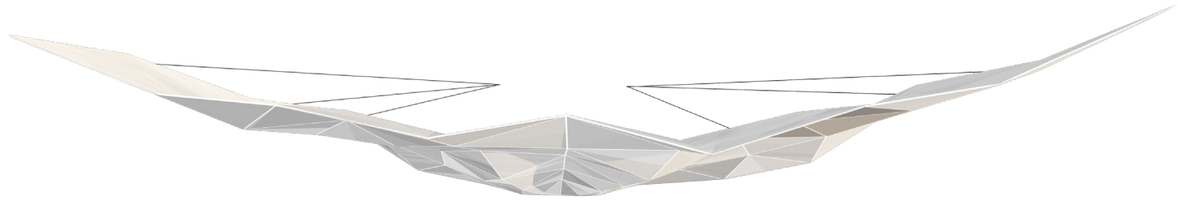


Landscape section 1:2000

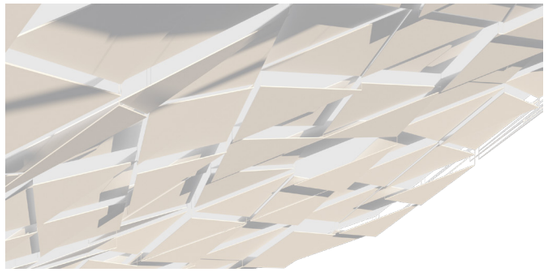
Forest pathway

The RItual
The visitor exits the garage into an open lawn enclosed by forest. Via ticket counters, the visitor is led by the recurring and repetitive white illuminating rectangle through the forest on a quiet pathway. This ritual, a quiet moment, creates a thrilling difference contrasting to the vibrant concert. At the end of the pathway, the visitor is welcomed trough the last illuminating rectangle directly into the quarry. The quiet sound image is replaced by the imposing sound within the quarry.

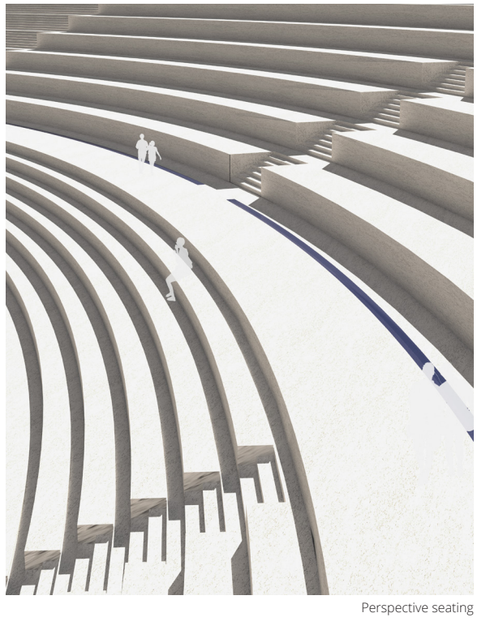
Situation Plan 1:4000



The Wing
Contrasting to the solid stone, the roof hovers light above the arena. Attached to the proscenium, the white roof of folded triangular panels opens up above the audience like a bird's wing. The diffusive and reflective panels can be lowered independently, revealing an absorbent surface underneath, enabling an adjustable sound image.



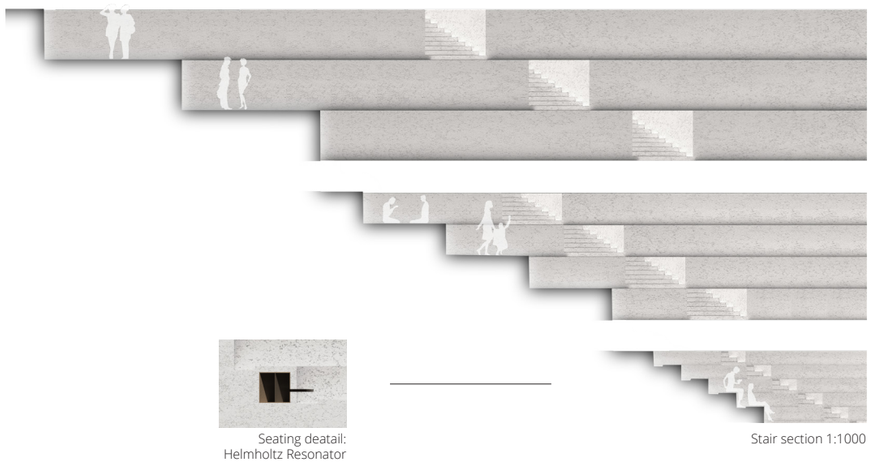
Roof detail: Panels



Perspective seating

The Steps
Inspired by the ancient Greeks, the sloped stone within the quarry is shaped into an amphitheater shape. The seating changes up via the steps. Starting with the most formal seating closest to the stage that further on transcends in deeper and deeper steps, allowing picnic arrangements and at the top free movements.

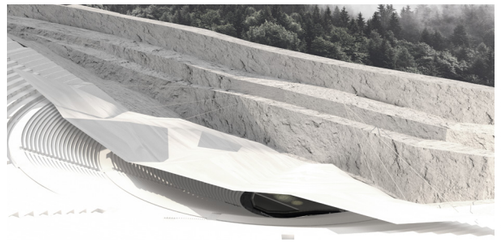
Helmholtz resonators are hidden within the steps in the hollow hill. Unconnected to each other, the back wall of the resonator opening can move, enabling an ability to control the sound image.

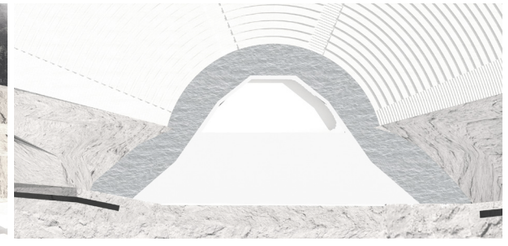


Seating deatail:
Helmholtz Resonator

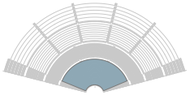
Stair section 1:1000

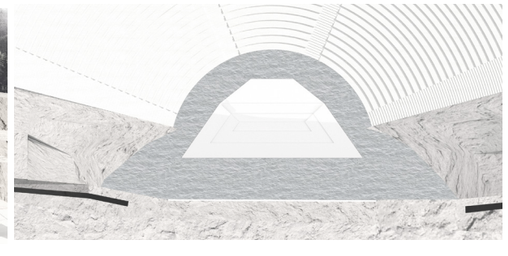




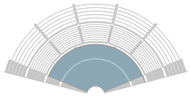


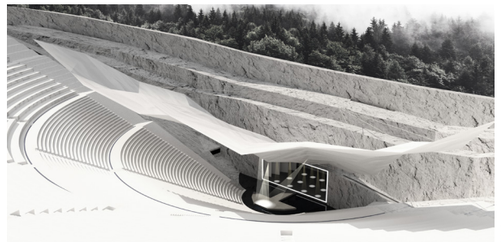
Spoken Word
During acts with spoken words, such as theater, with an audience of 5 000 people, the roof folds and encloses the audience. This creates a strong first reflection and ensures a good reverberation. The stage is in its complete form.

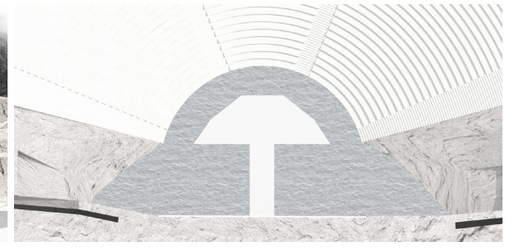




Symphony
During acts with symphonic music with up to 10 000 audience members, the roof folds and closes halfway. Speakers distributed within the roof enables amplification of the natural sound. In acts with orchestra only, the stage transforms for sedentary and an island is created, exposing more of the water pool.







Rock and Roll
During larger performances, with up to 25 000 audience members, the roof is kept in its original, opened form. The stage transforms into a catwalk combined with a small island closes to the audience. Speakers hidden in the roof amplifies can be used to amplify the sound.