

UNDER

Under has an atmosphere closer to a classical concert hall and gives the audience a powerful musical experience only consisting of natural sound. Only a few meters from the front row there is the world above which provides the spectators with a glimpse of a world having a more relaxed atmosphere. What is a naturally shaped floor plan?



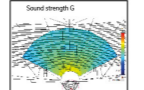
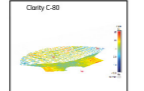
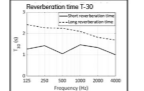
People on its way to the stage



Class released for the audience



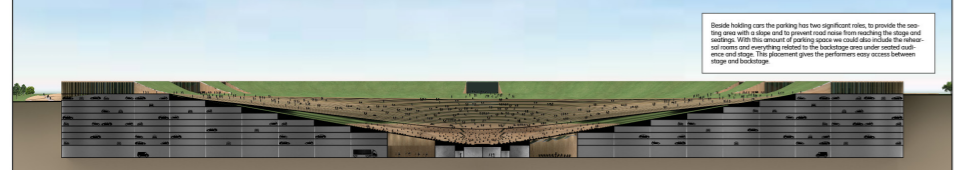
Because of the range of different acts there are a variation of desired reverberation time. One part of the design is the solution which will be the 'classical' concert hall. The other part is the concept under the strips which is the variable one. Integrated under the strips there are holes in different sizes with calculated resonant holes as you can see in the pictures above. The holes are able to switch between open and closed to optimize the amount of absorption and the different sound has made it possible to design different frequencies. The inspiration for this type of absorption comes from the Helmholtz resonators which is especially good for low frequencies.



In the Under section, the number under time can be modified using adjustable mechanical absorbers. The acoustic panels were around 2.5 x 1.5 m, which is suitable for most of the musical instruments. For a more powerful acoustic environment, the larger mechanical absorbers should be used.

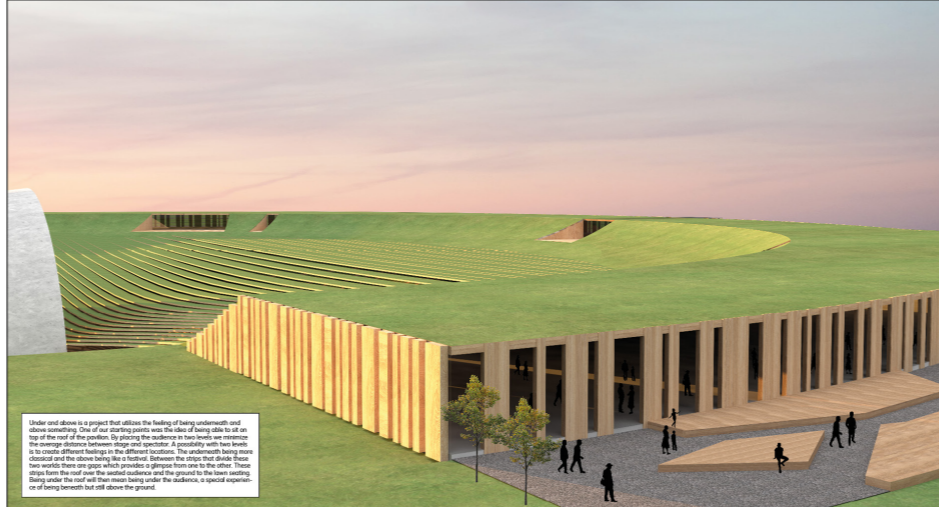
In the Under section, the clarity is high in areas near the stage. The acoustic panels were around 2.5 x 1.5 m. In the central area, higher absorbers, between for example different instruments, could be selected.

The sound strength is relatively high in areas near the stage. Combined with the system of acoustic absorbers, the Under area is appropriate for performances that not rely on electroacoustic amplification.

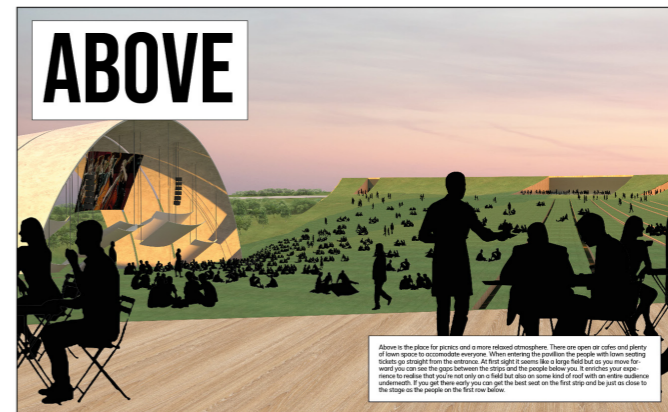


Beside holding cars the parking has two significant roles, to provide the seating area with a stage and to provide a view from the stage. The stage and seating area are connected by a bridge. This placement gives the performers easy access between stage and backstage.

UNDER AND ABOVE



Under and above is a project that allows the feeling of being underneath and above something. One of our primary goals was the idea of being able to sit on top of the roof of the building. To provide the audience in two levels, we created the average distance between stage and spectator. A possibility with two levels is to create different feelings in the different positions. The underneath being more classical and the above being like a festival. Between the strips that divide these two levels, there are spaces which provide a glimpse from one to the other. These strips from the roof will be raised above the ground for the lower seating area. Below under the roof will be raised above the ground, a special experience of being beneath but still above the ground.

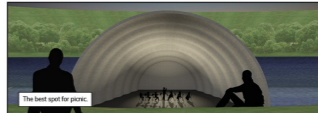


ABOVE

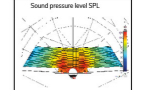
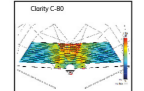
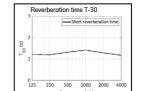
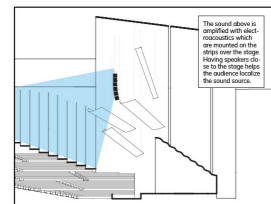
Above is the place for parties and a more relaxed atmosphere. There are open air cafes and plenty of space for conversations. When entering the people will have seating tickets go straight from the audience. At first sight it seems like a large hall but as you move forward you can see the space between the strips and the people below you. It creates an experience to realize that you're not only in a field but also on some kind of roof with an entire audience underneath. If you get there early you can get the best seat on the first strip and be just as close to the stage as the people on the first row below.



A glimpse of underneath



The best spot for some

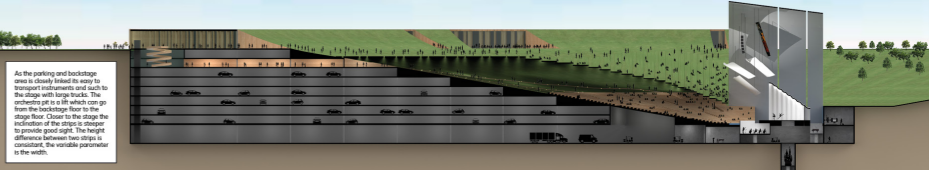


The sound above is amplified with active microphones which are mounted on the strips over the stage. Having speakers on the strips helps the audience to catch the sound above.

The reverberation time in the Above section generally varies around 1.2 s, which is quite low when you consider the entire frequency spectrum of music. These conditions are suitable for activities such as jazz, rock and pop music. However, as well as vocal and theater, they are also suitable for not only for opera.

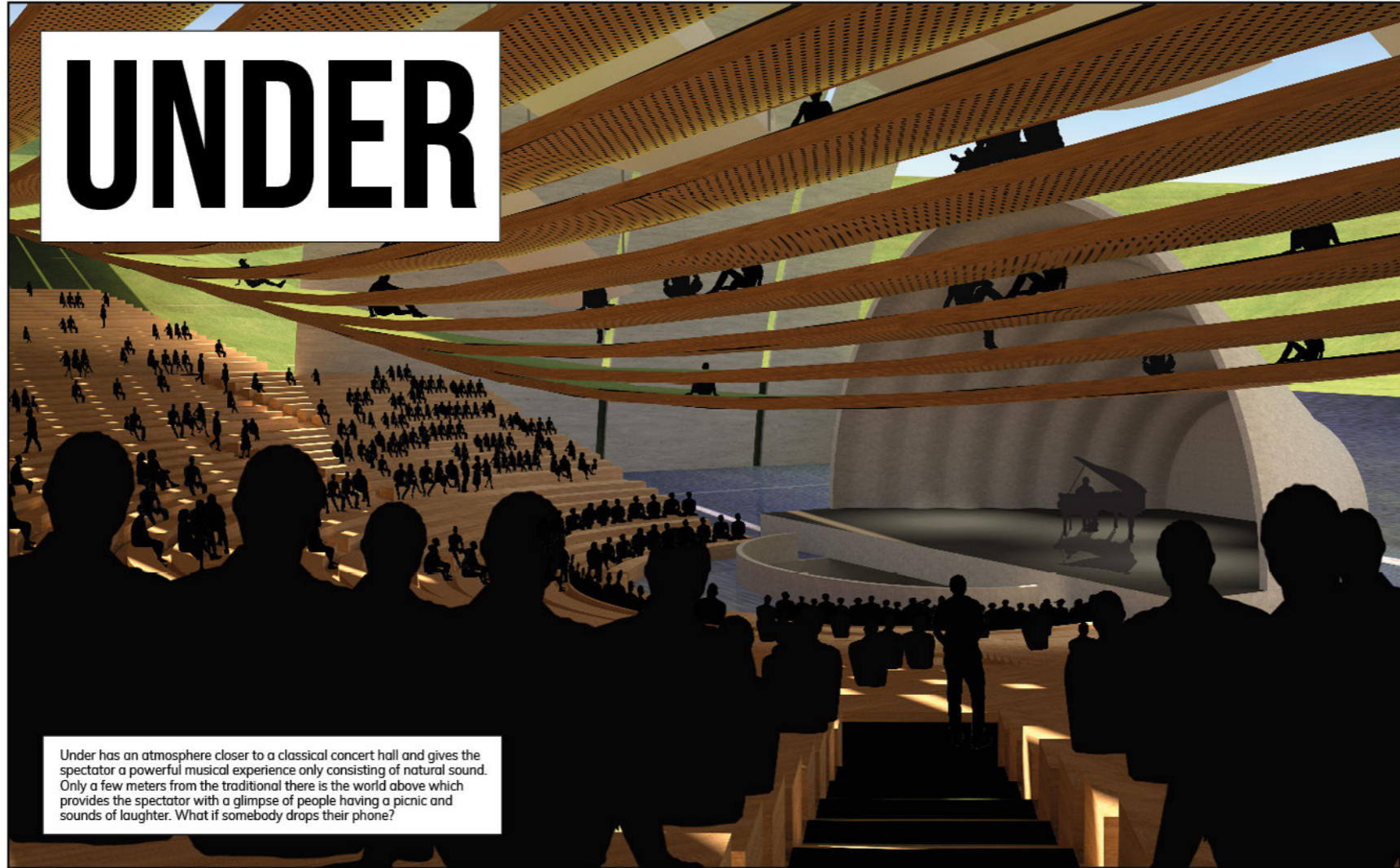
Nearly the area around the middle has a slightly better clarity. Clarity C80 should be in the interval between 0.40 and 0.60 for music, which is for large areas of the Above section. In these areas, different elements within various types of performances can be highly intelligible.

The upper volume of the Above section allows for an evenly distributed sound pressure level across the audience area. Using two sets of line array speakers mounted on the large strips, the most distant parts of the Above only see a reduction of about 20 dB compared to the center.



As the parking and backstage area is already intended for easy to transport vehicles and such to the stage with large trucks. The underneath part is a little wider than from the left to the right to the stage. The height of the strips is changed to provide good sight. The height difference between two strips is consistent, the variable parameter is the width.

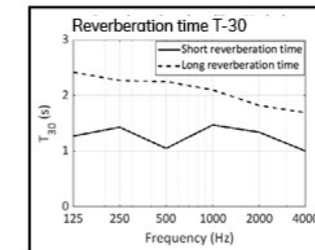
UNDER



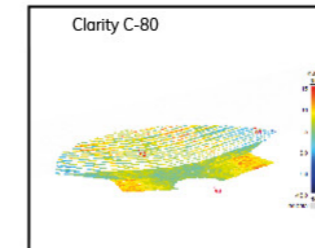
Under has an atmosphere closer to a classical concert hall and gives the spectator a powerful musical experience only consisting of natural sound. Only a few meters from the traditional there is the world above which provides the spectator with a glimpse of people having a picnic and sounds of laughter. What if somebody drops their phone?



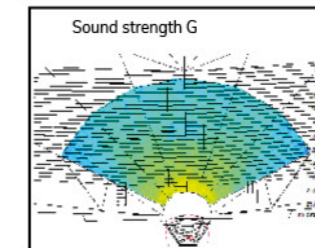
Because of the range of different acts there are a variation of desired reverberation time. One part of the absorption is the audience which will be fairly consistent. The other part is the concept under the strips which is the variable one. Integrated under the strips there are holes in different sizes with absorbent material behind, as you can see in the pictures above. The holes are able to switch between open and closed to optimize the amount of absorption and the different sized holes make it possible to absorb different frequencies. The inspiration for this type of absorption comes from the Helmholtz resonators which is especially good for low frequencies.



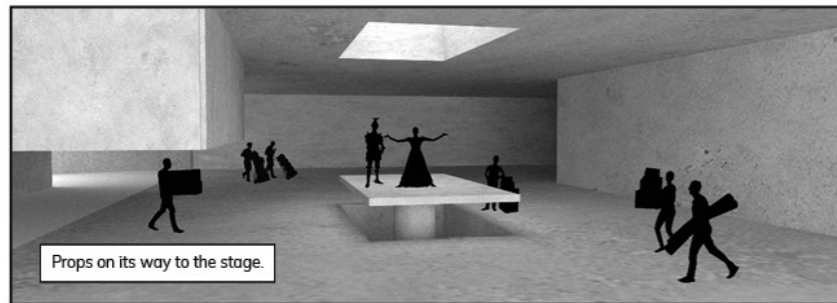
In the Under section, the reverberation time can be modified using adjustable Helmholtz resonators. The shorter option varies around 1.2 s - 1.5 s, which is suitable for most of the intended activities, such as rock and jazz concert, theater and opera. For a more versatile opera environment, or suitable conditions for classical music, the longer reverberation time of around 2 s for most frequencies, should be used.



In the Under section, the clarity mainly varies between 0 and 5 dB, with a few non-central zones reaching higher positive values near 10 - 15 dB. In the central zones, higher distinction, between for example different instruments, could be achieved.



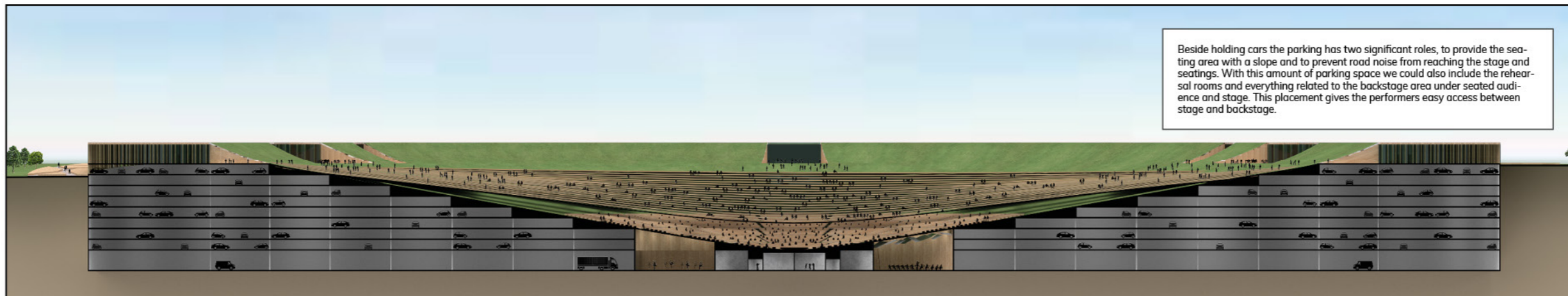
The sound strength is relatively high in areas near the stage, where it reaches values above 5 dB. Combined with the option of increased reverberation time, the Under area is appropriate for performances that do not rely on electroacoustic amplification.



Props on its way to the stage.

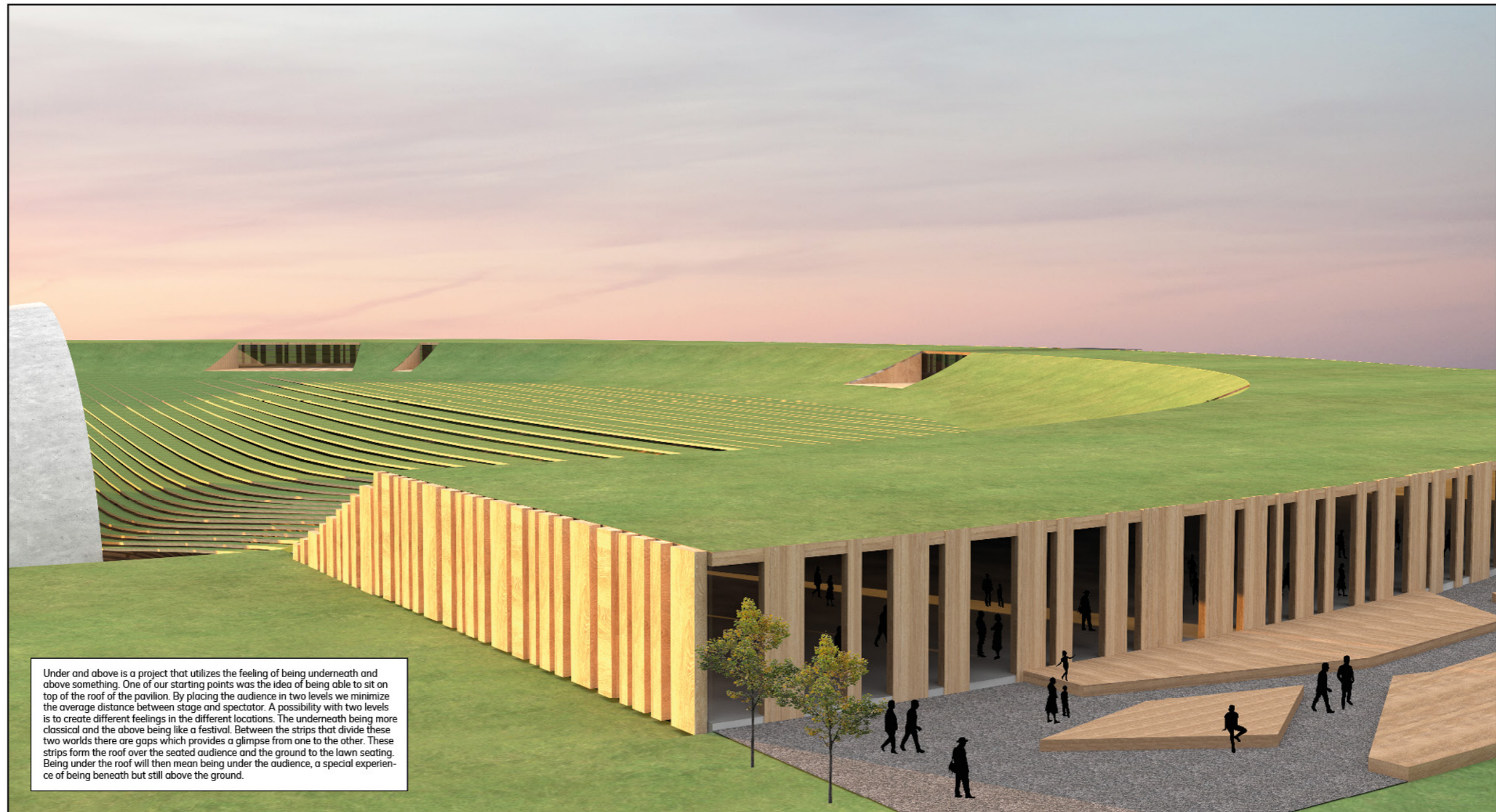


Dress rehearsal for the orchestra.



Beside holding cars the parking has two significant roles, to provide the seating area with a slope and to prevent road noise from reaching the stage and seatings. With this amount of parking space we could also include the rehearsal rooms and everything related to the backstage area under seated audience and stage. This placement gives the performers easy access between stage and backstage.

UNDER AND ABOVE

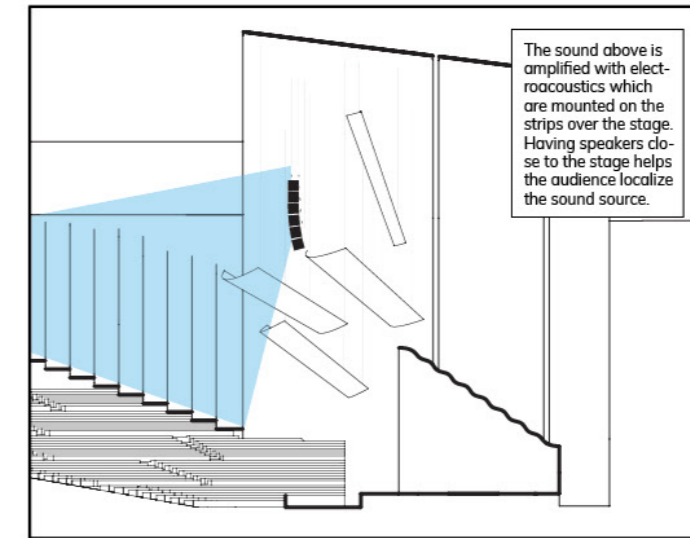


Under and above is a project that utilizes the feeling of being underneath and above something. One of our starting points was the idea of being able to sit on top of the roof of the pavilion. By placing the audience in two levels we minimize the average distance between stage and spectator. A possibility with two levels is to create different feelings in the different locations. The underneath being more classical and the above being like a festival. Between the strips that divide these two worlds there are gaps which provides a glimpse from one to the other. These strips form the roof over the seated audience and the ground to the lawn seating. Being under the roof will then mean being under the audience, a special experience of being beneath but still above the ground.

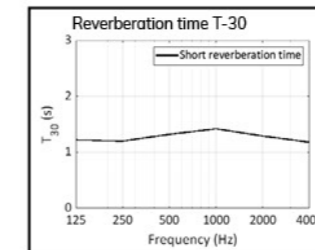
ABOVE



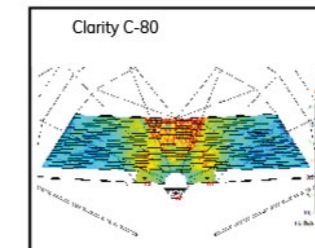
Above is the place for picnics and a more relaxed atmosphere. There are open air cafes and plenty of lawn space to accommodate everyone. When entering the pavilion the people with lawn seating tickets go straight from the entrance. At first sight it seems like a large field but as you move forward you can see the gaps between the strips and the people below you. It enriches your experience to realise that you're not only on a field but also on some kind of roof with an entire audience underneath. If you get there early you can get the best seat on the first strip and be just as close to the stage as the people on the first row below.



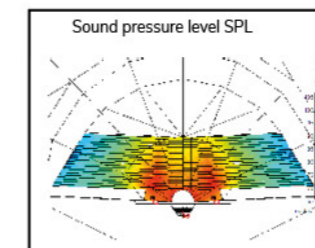
The sound above is amplified with electroacoustics which are mounted on the strips over the stage. Having speakers close to the stage helps the audience localize the sound source.



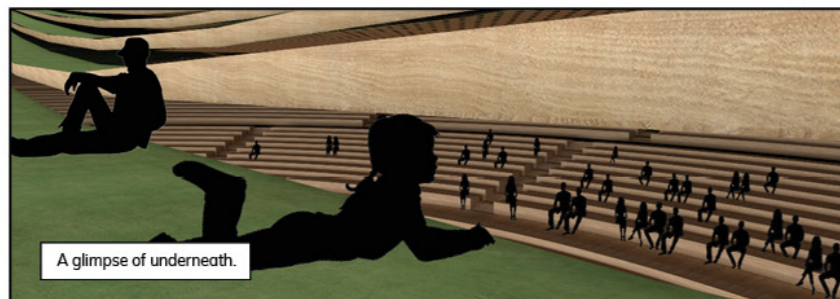
The reverberation time in the Above section generally varies around 1.2 s, and is quite even across the entire frequency spectrum of interest. These conditions are suitable for activities such as jazz, rock and pop performances, as well as ballet and theater. They are acceptable but not ideal for opera.



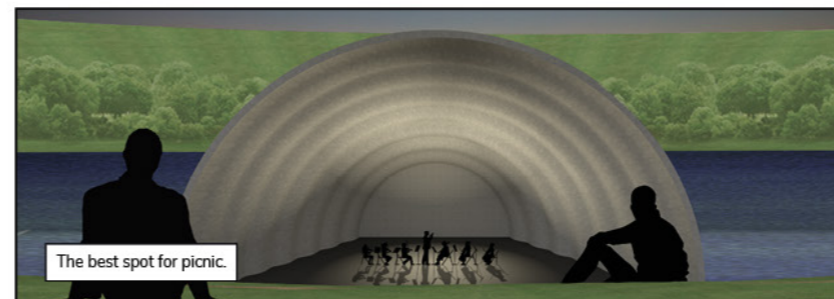
Mainly, the areas around the middle have a slightly positive clarity. Ideally, C 80 should be in the interval between -4 dB and 1 dB for music, which it is for large areas of the Above section. In these areas, different elements within various types of performances can be highly intelligible.



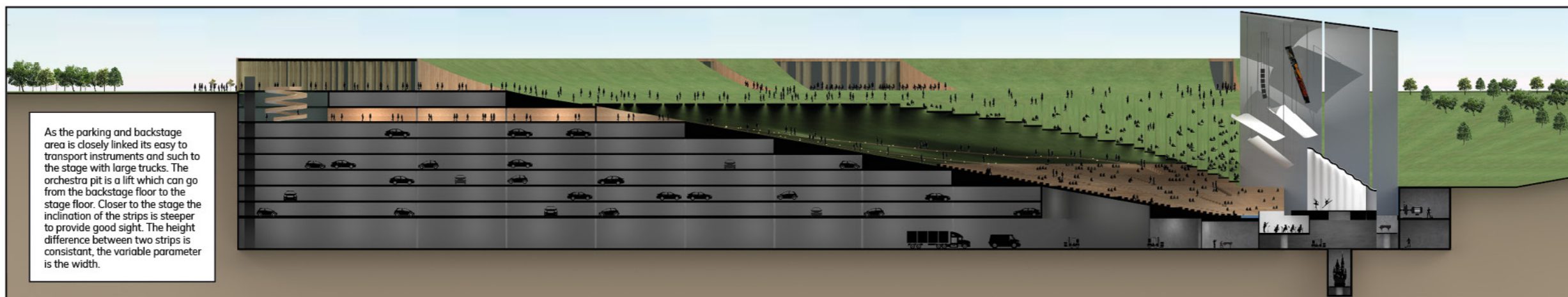
The open nature of the Above section allows for an evenly distributed sound pressure level across the audience area. Using two sets of line array speakers mounted on the large arc, the most distant parts of the flanks only see a reduction of about 20 dB compared to the center.



A glimpse of underneath.



The best spot for picnic.



As the parking and backstage area is closely linked its easy to transport instruments and such to the stage with large trucks. The orchestra pit is a lift which can go from the backstage floor to the stage floor. Closer to the stage the inclination of the strips is steeper to provide good sight. The height difference between two strips is constant, the variable parameter is the width.



Ett av de första valen vi gjorde var att bestämma oss för att arbeta med våningar. Att kunna sitta både under och ovanpå. Tillsammans med remsorna gavs möjlighet för de som sitter på läktaren att skymta de som picknickar ovanpå och tvärtom. Ett senare val var att låta dessa glipor vara delvis öppna för att släppa igenom skrott neråt och låta ljud från scenen ta sig upp.

REFLEKTION

Överlag så har projektet gått bra. Jag har uppskattat att arbeta i grupp med Vilma och har känt att det bara har varit något positivt som har fört arbetet framåt och inte något som har känts som en belastning som vissa grupparbeten ibland kan göra. Tyvärr så blev samarbetet med vår akustiker delvis problematiskt då det är svårt att veta vad som förväntas och vilka krav en kan ställa.

Konceptet som vi tog till oss tidigt i processen höll vi fast vid och det kändes som en rolig twist på en konsertlokal som på samma gång kändes både verklig och lekfull. Jag gillar upplägget med två olika "världar" som finns i publiken och känner själv att jag inte kan placera mig själv i en specifik som jag hade föredragit utan båda känns tilltalande i olika situationer.

Samspelet mellan dem känns som en berikande del där publiken får ett större perspektiv av hela situationen. Att kunna skymta varandra från respektive sida av remsorna känns viktigt för känslan men om jag hade fortsatt så hade jag reflekterat över hur kopplingen hade kunnat se ut annars. Hade den kunnat vara glas istället för öppna hål? Hade remsorna kunnat vara en större yta och mellanrummen vara något annat? Hur låter man ljud komma igenom utan att någon riskerar att ramla ner?

Sist men inte minst så lade vi mycket fokus på presentationsmaterialet och i InDesign då vi både tycker att det är en del som är väldigt rolig i ett projekt. Just presentationen är en av de saker som jag är mest nöjd med då vi verkligen fick till känslan som vi siktade på från början av en serie eller en tidning. Min åsikt är att det är en lättläst presentation med mycket fokus på att uttrycka maximalt i bilder och ha text i små doser. Jag tycker extra mycket om ögonblicksbilderna som vi sammanfattar med en enda mening. Till sist så lämnar jag detta projekt med en bra känsla i magen av att vi har funnit en rolig vinkel på uppgiften, haft ett givande samarbete, hunnit med det vi ville utan att lägga mer tid än vad som är rimligt och vad som är schemalagt i kursen.