



COMMUNITY HALL

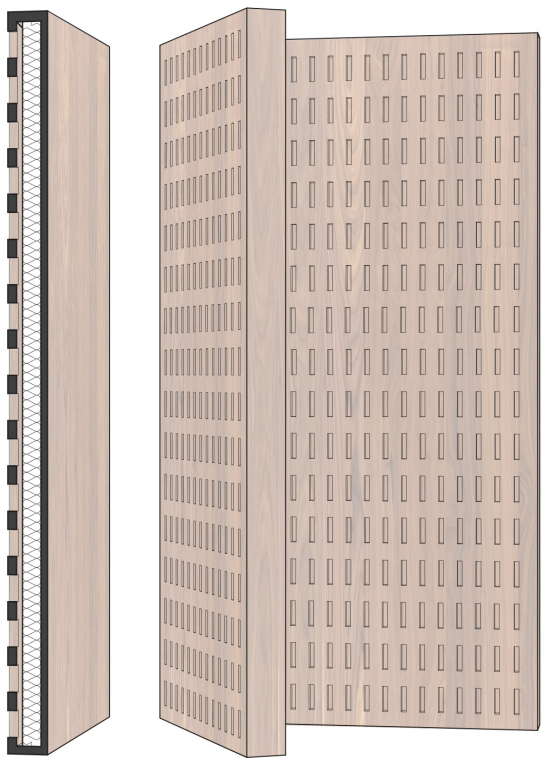
After passing two revolvable doors you enter the Community hall through its reverberation chamber. The room is well-connected with the surroundings through the glass facade that allows light to enter the room. The light, as well as the acoustics, can be adjusted with the revolvable plates along the walls.

The materials in the room harmonize aesthetically as well as acoustically, with a combination of wood, limestone and polished concrete.

REVOLVING PLATES

The side plates can be revolved according to the acoustical need. Some of the plates have contrasting materials on each face, absorptive and reflective. Behind the stage there are plates which can be angled to direct the soundwaves where they are needed. This enables the quality of sound to be less dependent on the size of the audience.

The surface of the wall consists of a perforated wood plate, on the one side, while the other side is replaced by a solid reflective wood surface. The plate is partially filled with mineral wool, further enhancing the absorptive properties of the wall. The holes of the perforated panel and the filling can be tuned in a variety of ways, providing a simple, yet efficient solution for fine tuning the acoustic behaviour of the room.



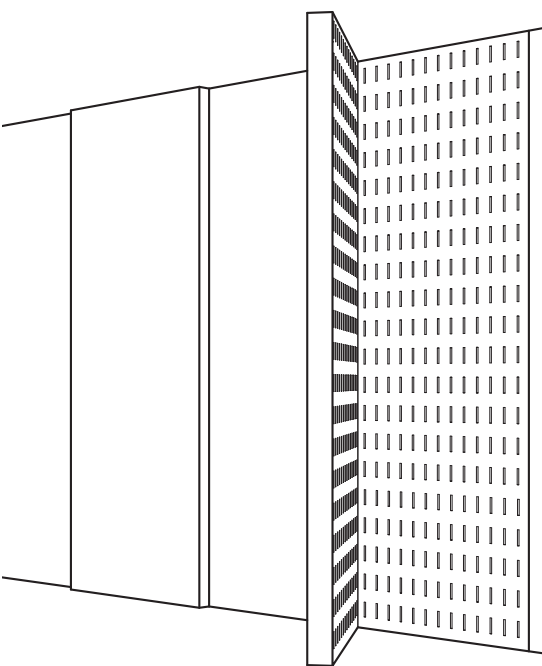
REVERBERATION CHAMBER

The plates on the right side can be opened to access a highly reverberant volume. This chamber is constructed with a higher ceiling, increasing the volume ratio between the chamber and the main hall. Opening the revolving plates includes the chamber to the acoustical environment, sufficiently increasing the volume and thus, the reverberation time.



FLEXIBLE REAR WALL

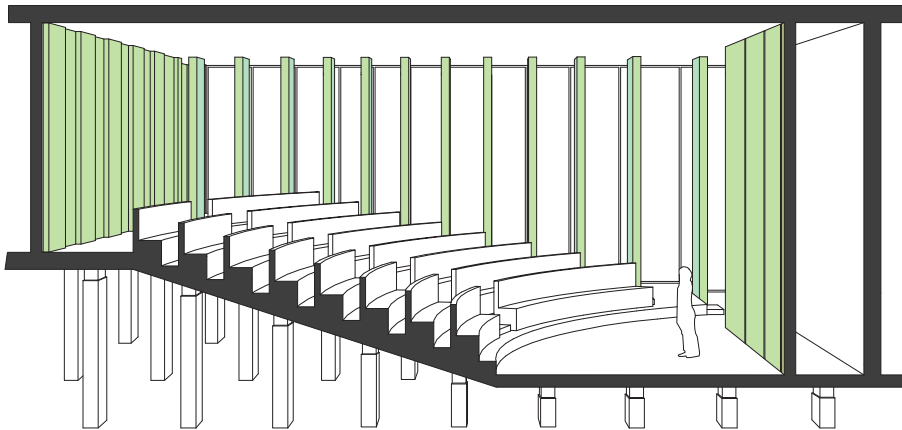
The rear wall is a set of reflective wooden plates which can be folded to expose the absorbing material on the back. In this way the rear wall can become entirely reflective, entirely absorptive or be arranged as needed to perfectly fine tune the absorption of the room, according to the event.



PERFORMANCES

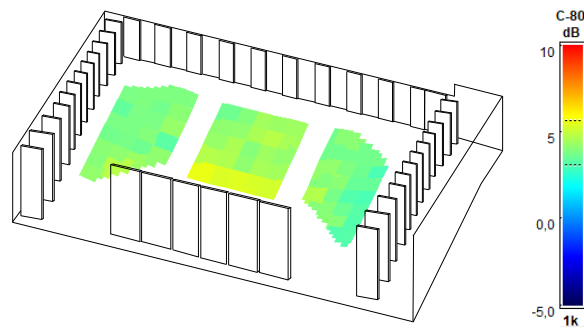
Despite it's small volume the dynamic, introduced by the revolvable side plates, the foldable rear plates and the reverberation chamber, makes it possible to achieve reverberation times suitable for a variety of musical performances.

- For acoustical solo performances, the plates can be angled, to further enhance early reflections and create a more intimate acoustical environment.
- For theatrical plays, the plates in the backwall can be set to be fully absorptive while the side plates can open, increasing the RT, allowing the venue to better support the music part of the event, without compromising the STI.
- Additionally, the backwall plates can become fully reflective, further increasing the RT, creating an environment that complements even small chamber music performances.



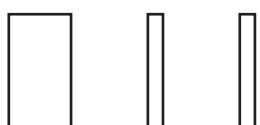
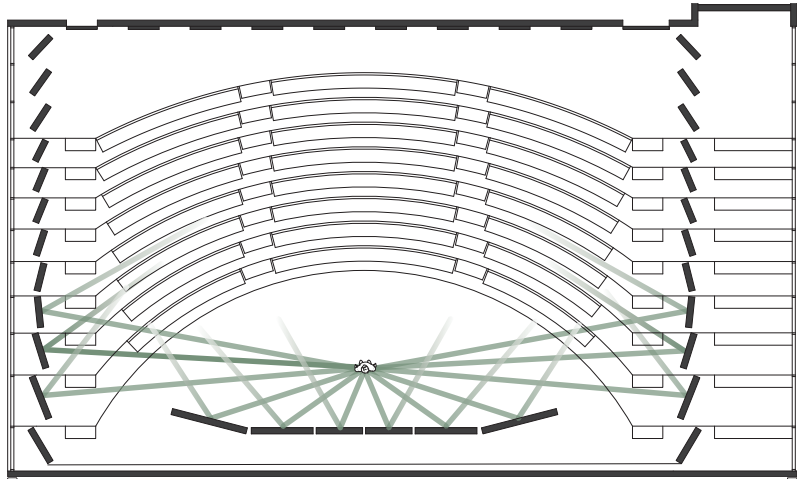
CLARITY

The C-80 value of 4.7 dB, evenly distributed across the entire audience, ensures a high quality experience, for both the audience and the performers.



ENHANCING EARLY REFLECTIONS

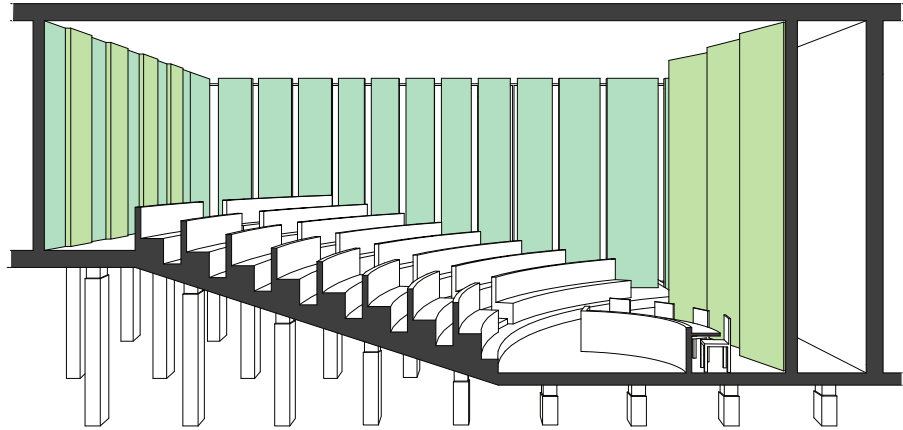
A community hall should be a place where people meet and participate in events related to their local community. Therefore, the room itself must provide its visitors the feeling that the distance between the audience and the speaker is small. The amphitheatrical shape of the seating area, the small volume of the room, create a very supportive and intimate environment with perfect acoustics. The reflective surfaces on the stage wall and revolving panels, enrich the early reflections that reach the audience, prior to the first 20 ms of an acoustical event. This effectively lowers the perceived distance between the speaker and the audience further



SPEECH

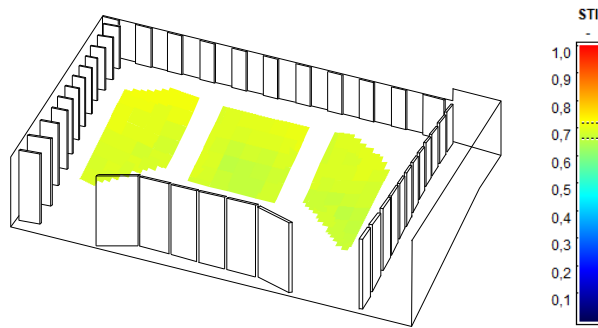
When the hall is to be used for lectures or meetings, the side walls can be revolved, exposing the highly absorptive material, placed on the backside and isolating the highly reverberant volume on the right side of the room. This can substantially lower the reverberation time and further increase speech intelligibility.

Furthermore, depending on the function of the event, the reflective stage panels can be rotated, creating semi-circular shapes which can distribute sound more evenly across the audience area.



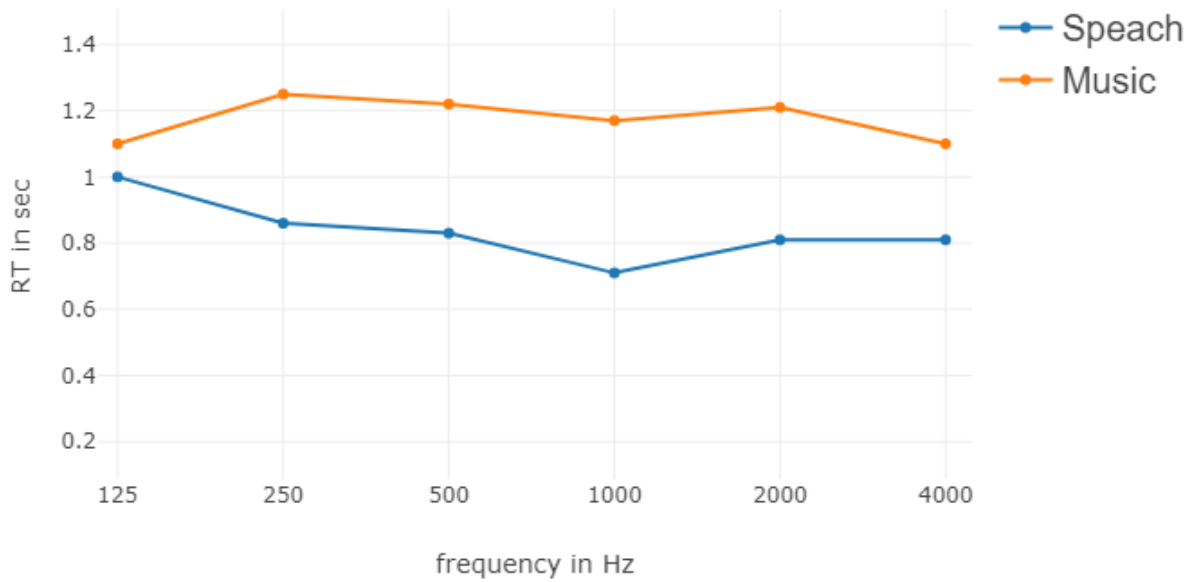
STI

Speech intelligibility is above 0.7 across the entire audience, creating an intimate communal environment which connects the audience and speaker, lowering the threshold for engaging dialogue.

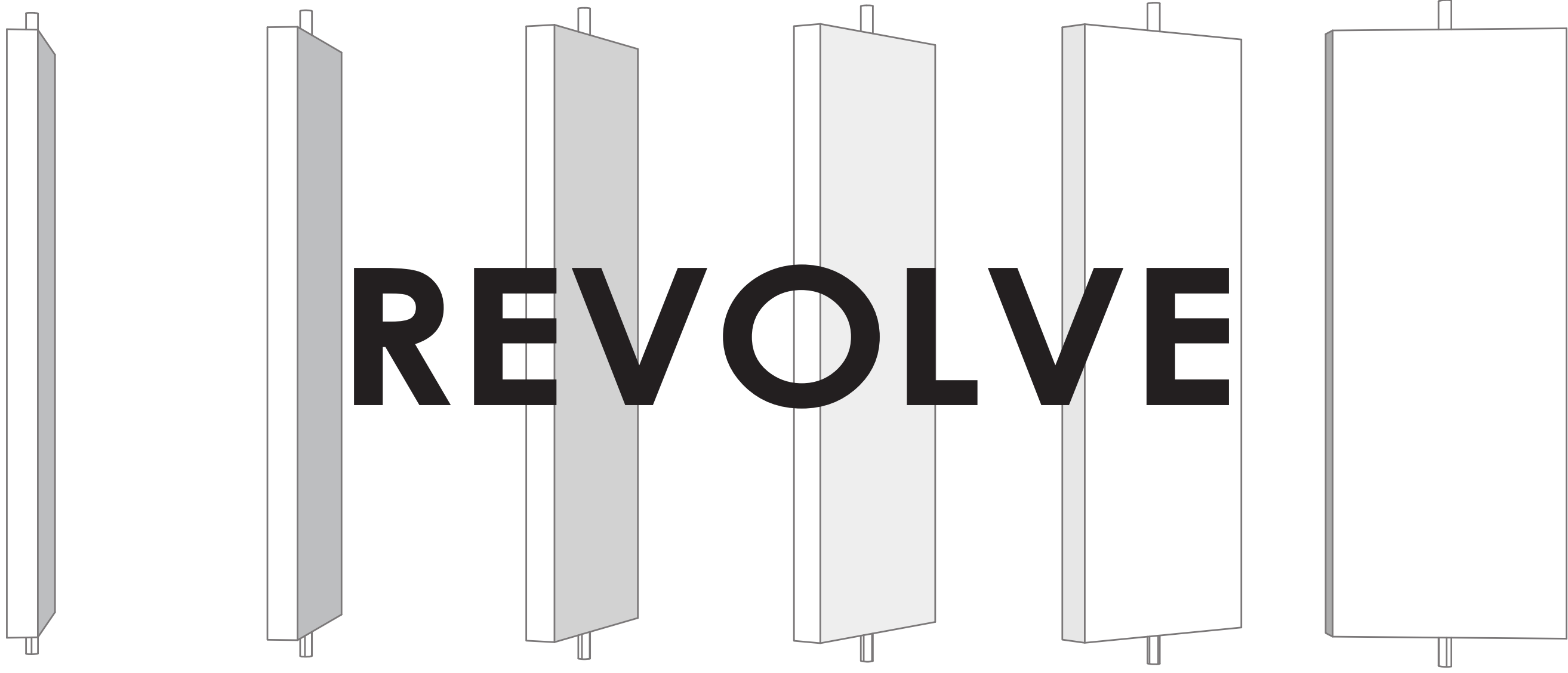


REVERBERATION TIME

A community hall serves many different purposes, that would require the reverberation time to change substantially. This can be easily handled by the revolving panels and the use of the reverberations chamber. The maximum RT that can be achieved is 1.2 sec, which is perfect for music, while the lowest that can be achieved is 0.8 sec which is ideal for speech.



REVOLVE



MUTABLE VOLUME

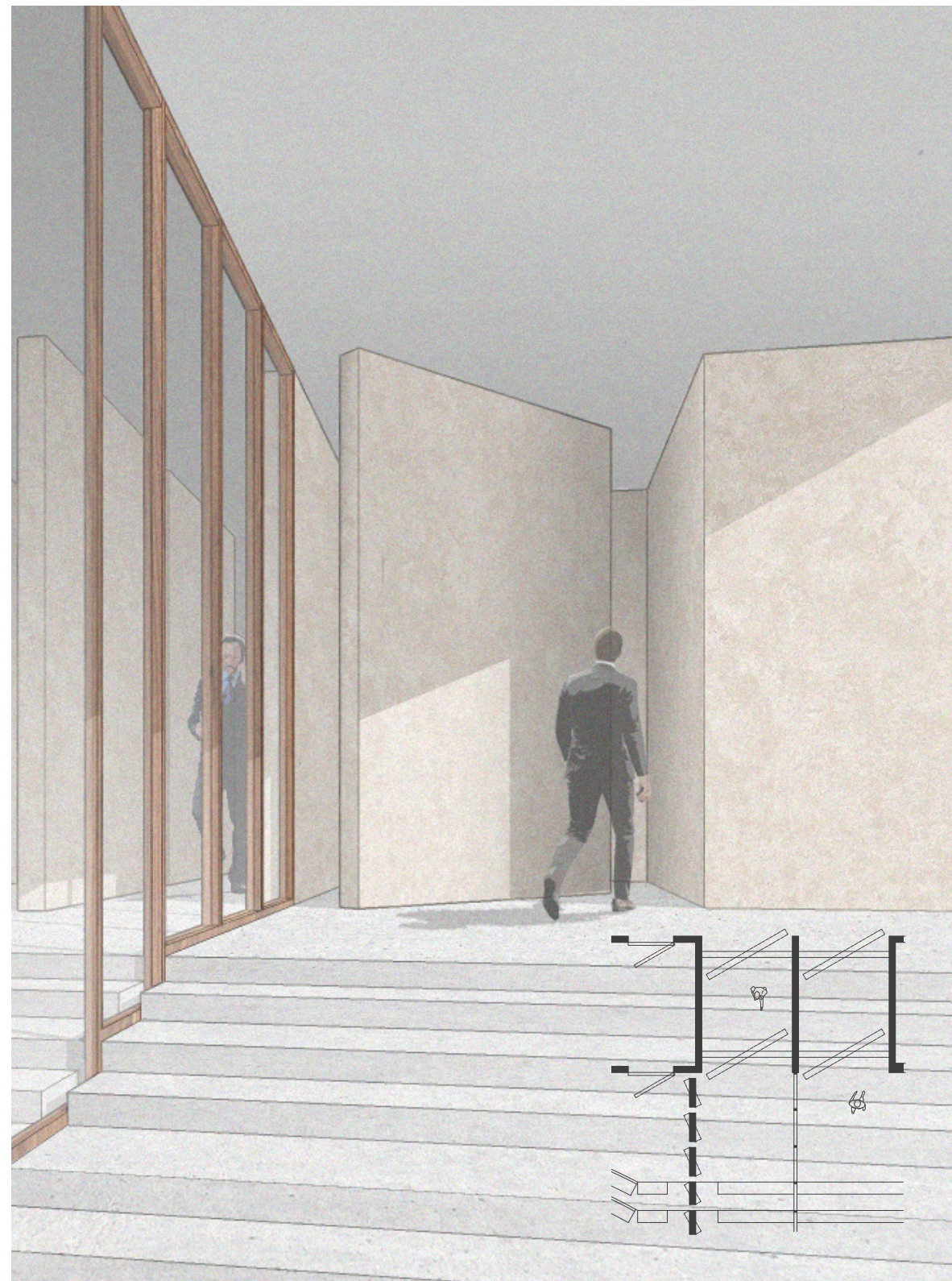
The rotation of the plates allows for great variable acoustics since it can mute an entire part of a room and therefore alter the volume significantly. Which is exactly how the community hall achieves the ultimate acoustic environment for its purposes.

REVOLVING BARRIER

When enter the municipality building, you pass through a big stone door which is surprisingly easy to revolve. When you have passed through the entrance, you will experience the silence within the building. The heavy stone door is perfectly balanced around its own axis and can therefore rotate easily and provide a perfect noise barrier.

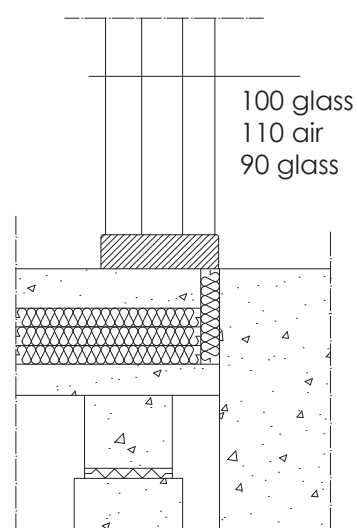
ACOUSTIC SECURITY

The revolvable plates outside the courtroom emphasise the transition between the lobby and the court activity. When closing the plates they add a layer of security to the court area and decrease noise from the rest of the building.



VIBRATION ISOLATION

The community hall and the lobby rests on sylomer-cushioned pillars. In that way a good isolation of vibration from the light rail traffic is achieved.

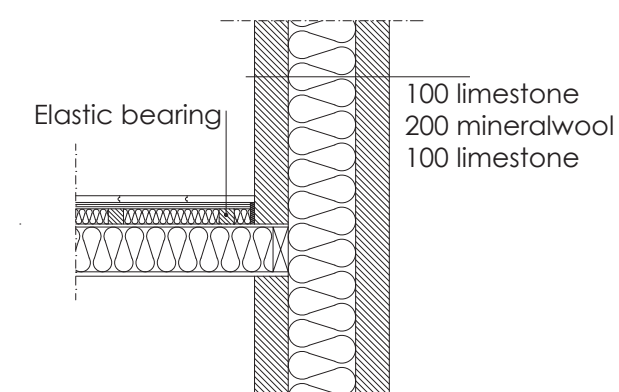


GLASS FACADE

The double glass façade opens the Community hall to the outside without compromising it from the disturbing sounds from the surrounding area. The façade consists of PVB-laminated glass of different thickness, making it harder for noise to pass through.

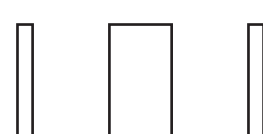
FLOATING FLOOR

The floor that separates the courtroom from the underlying offices is constructed as a floating floor. This construction can effectively attenuate both vertical and lateral transmission of vibrations.



DECOUPLED WALL

The outer wall is decoupled from the two sides of the structure. The limestones are mechanically separated, which means they can vibrate separately and therefore effectively decrease background noise.





COURT ROOM

When entering the courtroom you will experience a room where the light is highly present. On each side of the limestone wall there are two elongated windows that offers an overview of the surroundings and the lowered ceiling allows ranking light along the side walls.

The warmth of the wood increase the feeling of intimacy and the level differences reinforce the sense of democracy, where the spectators are equated with the judge.

ACOUSTIC QUALITIES

The court room is optimised for clarity and speech intelligibility. The reflective limestone wall behind the judge's podium combined with absorptive plates surrounding the audience and jury ensures that the sound reaches out without losing its distinctiveness.

ACOUSTIC TUNING

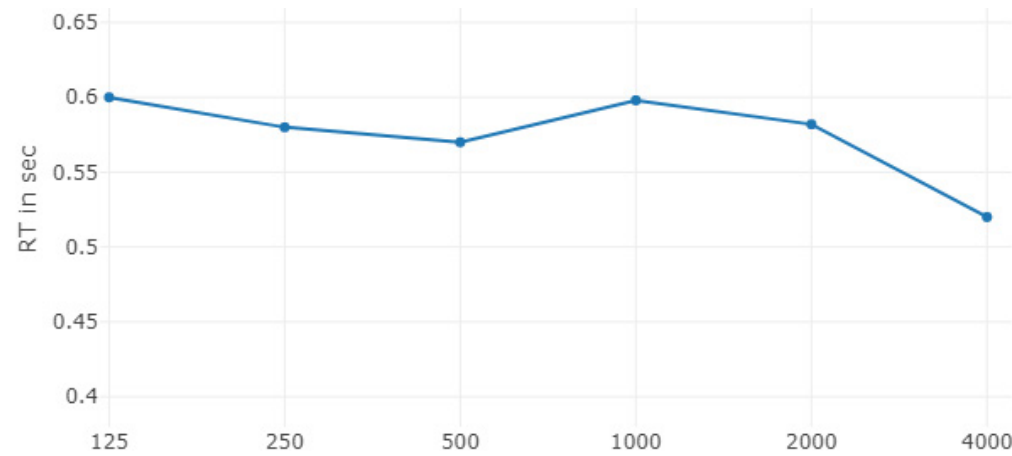
The three walls surrounding the spectators and the jury consist of wooden perforated panels. These panels can be placed in different varieties across the room, to effectively handle the flutter echoes created by its shoebox design.

NATURAL LIGHT VS. SECURITY

The courtroom is elevated from the street sight so that the windows will not compromise the security and the privacy of the room. The high sitting windows above the lowered ceiling provide ranking light on the right and left walls of the room.

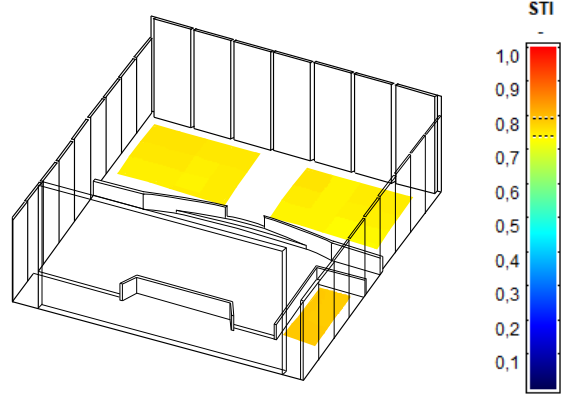
REVERBERATION TIME

The reverberation time in the courtroom should be fairly low, in order to not obstruct speech comprehensibility. A flat reverberation time centred around 0,56 seconds can be achieved, using a variety of absorbing panels on the walls of the court room.



STI

The values for STI are 0.78 for the audience area and 0.82 for the jury box. This ensures that all the details of the judicial procedure are fully comprehended by all the participants of the procedure.



THE SITE

The municipality building is situated in the central part of the city, surrounded by heavily traveled streets. Across the street there is a light railway station and on the other side of the building the police and fire station are located.

ROOM ORGANISATION

The courtroom and the community hall are both consciously situated to decrease the exposure from the outside noise, focusing on the noise from the fire station, police station and the light railway. Therefore, the exterior walls of these rooms face towards the calmer streets.

The courtroom and the associated rooms are divided by a common corridor to secure speech privacy. Also, the rooms are located regarding each other's common purposes to increase the security and simplify the exercise of the profession.

