

# Modern Theatres: Berliner Philharmonie

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The original home of the Berlin Philharmonic Orchestra (BPO) – a converted ice rink – was destroyed by British bombers in 1944. After a peripatetic existence for over a decade, an architectural competition for a new concert hall for the company was announced in August 1956. It was to be situated in the vicinity of the Academy for Music at the Bundesalle in West Berlin.

Hans Scharoun was awarded the first prize for his innovative concept. However, before construction commenced an urban design competition – Hauptstadt Berlin – was announced and work on the entire project was postponed.

The new site was at the edge the Tiergarten, a large park in the centre of Berlin. Hans Scharoun was awarded the second prize for this competition. His entry included a cultural forum as a counterproposal to the Museum Island in the eastern part of Berlin. As a consequence of this competition, it was decided to relocate the new concert hall to this site. The concert hall was to become the first, free-standing object in a no man's land still devastated from the war, and the design had to be adapted to this situation where the building was visible from all sides.

From the beginning Herbert von Karajan, Director of the BPO, strongly supported Scharoun's design that was otherwise widely criticised. Many architects, engineers and acousticians considered the project as unrealisable, but also the concept itself, with a central orchestra in a non-hierarchic auditorium, was new and provocative in conservative post-war Germany.

In February 1959, however, the contract was signed and construction commenced a year later. On 15 October 1963, the Berliner Philharmonie was inaugurated.

Meanwhile the political situation had

dramatically changed. In August 1961, the Wall between East and West Berlin had been erected. It passed just beside the Philharmonie. The building now found itself at the border of West Berlin.

## The Design of Building

The basic shape of the Philharmonie consists of three superimposed, concentrically rotated pentagons, now the logo of the orchestra. For Scharoun, the triple pentagon represented the harmonious unity of space, music and humankind. The main characteristic of the Philharmonie's exterior is its curved silhouette roof. It reproduces the curves of the auditorium ceiling, a tent-like form that culminates in a rooftop sculpture by Hans Uhlmann, called, "Phoenix". It symbolizes the rise from the ashes of the Nazi past.

The auditorium in its polygonal form is superposed onto a largely transparent (large coloured glass walls) substructure housing the box office and the foyers, with wardrobes on two levels. A southern building for administration, rehearsal rooms and other facilities is attached to the main building. The staircases and terraces embed the auditorium and give structure to the building. Glass roofs at the west side bring daylight down to the ground floor. They constitute a connection from the auditorium to the adjacent administrative building. The façade could only be realised at a later stage; its pattern, with half circles, corresponds to that of the coloured glass in the foyer.

In the documentation for the competition, Scharoun explained his concept of a central auditorium: "This is a space that is dedicated to

In the first of a series of articles focusing on significant performing arts buildings of the last 60 years, Karin Winkelsesser, chief editor of *Buehnentechnische Rundschau*, the German magazine for stage technology, architecture and scenography, discusses the Berlin Philharmonie

Photo: Bruns



music – in which music is to be performed and heard. Solutions that have been found for this architectural task vary largely, but they have one thing in common. Even modern concert halls keep the traditional configuration of the orchestra being placed on a stage and the public sitting in the ‘audience’, like in a theatre. However, it is certainly no coincidence that, today as at all times, wherever improvised music can be heard, people gather in a circle. Music should be located at the centre in spatial and visual terms. Everything else follows from thereon”.

This notion, dating back to the ancient Greek theatres, was an important impulse for Scharoun’s concept.

Another important aspect was the political background. After World War II, a democratic system had to be built up in Germany, and Hans Scharoun was part of a Planungskollektiv, that by 1946 had already started to develop an urban design for Berlin based on democratic principles.

For the design of the auditorium, Scharoun also wanted to apply democratic principles instead of reproducing social hierarchies in the architecture. He did not want any lodges; all seats should be accessible from any entry; and the acoustic and visual conditions should be equally excellent from all seats.

Scharoun deliberately chose to offset the entrance from the auditorium’s axis of symmetry so as to enhance the sense of excitement and confuse the public so that the concentration would inevitably shift from everyday life to the music event.

Members of the audience were not expected to locate obvious and immediate routes up through the building. However, as one rises upward, the range of options is reduced, the path becomes more evident, and the goal of the auditorium is the within sight... And then the moment of entry: at any one of these points, one is offered the most exciting synesthetic experience that modern architecture can provide. This passage, from one cavernous space – the foyer – to another – the auditorium – is entirely without precedent.

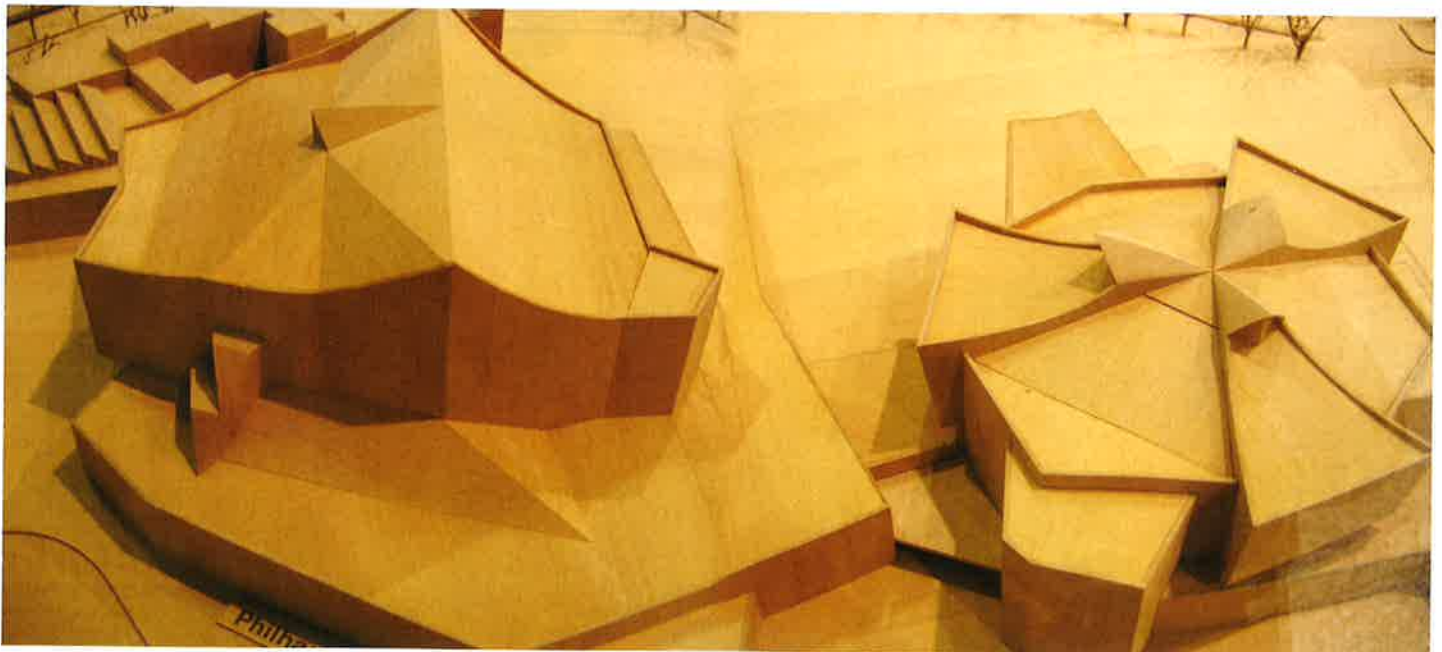
### The Auditorium

“The auditorium is conceived as a valley. The orchestra sits at the base, surrounded by forcefully ascending plateaus and slopes. Arranged in groups, the rows of seats rise like vineyards around the podium of the orchestra... The ceiling reacts (responds) to this landscape like a skyscape; formally, it looks like a tent”.

This statement of Scharoun later led to the definition of this type of auditorium as the “vineyard” principle. The tent structure is strongly related to the acoustics that intend to diffuse the sound all over the auditorium. The sound is not sent from one side into the auditorium, it rises from its centre and into the depth of the space before it sinks down to the audience in various ways.

Scharoun hoped to encourage composers to create new and innovative works that would use this space for 4D compositions and develop new ideas to use the space as a constituent artistic element of music.

Wooden model of the Philharmonie



"The auditorium was conceived for 2,440 people. It is structured into 23 groups of seats, each numbering around 128, the size of the full orchestra. Audience groups and orchestra are thus placed in a commensurate relationship. Moreover, rather than being focused on a single point as in neoclassical space conceptions, Scharoun was interested in notions of modern space with multi-faceted and multi-focal performances". (*Philharmonie: Hans Scharoun* (O'Neil Ford Monograph) Ed. W. Wang and D.E. Sylvester).

Most of the seats, however, are in front of the orchestra, and a rather small number (260) are placed behind it. On the whole, about 950 seats are around the orchestra in omnidirectional groups.

The ground plan of the Philharmonie is a symbiosis of a long shape (later to be called shoe box) and a central space.



## Acoustics

The acoustics were the main challenge for the project. The success of the acoustic consultant, Prof. Dr. Ing. Lothar Cremer, was at the same time a success for the acoustic sciences, as wrote Prof. Werner Gabler, acoustician himself, in *Buehnentechnische Rundschau* (Nr. 4/1964): "The success just came in time – in a period where some misfortunes had been exaggerated and our knowledge about acoustic phenomena was questioned.

Daily newspapers wrote about mythical secrets of acoustics, while the experts had earned their success after thorough preparations, model tests and calculations. To them, the result was not a surprise – and if it was, certainly in the positive sense. The fact that this space, which takes 2,400 spectators in a volume of 26,000 m<sup>3</sup> of air, and is able to diffuse the sound of even the smallest chamber orchestra or a solo singer to the most distant seat, surprised everybody. The required reverberation time was 2 seconds. In an empty situation, the reverberation time is 2.4 seconds.

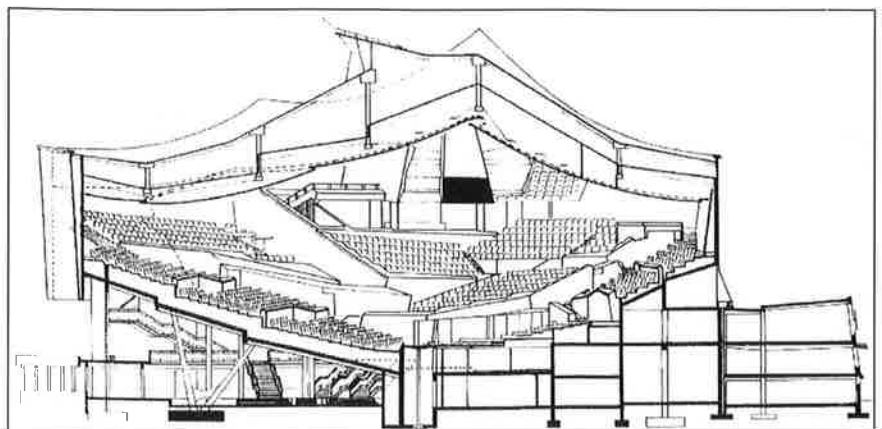
The short way of the sound waves from the orchestra to the most distant seats was particularly explored. The breaking up of the walls and the multiple forms and inclinations of the vineyard sections and the elevated parquet also enhances the diffusion of the sound to every seat.

The cooperation of architect and acoustician resulted in the actual shape. The seats of the audience are not directly adjacent to the

orchestra platform but are lifted onto a kind of terrace. This helps to create acoustic reflection walls around the orchestra. However, the wall is not high enough to enable the musicians to hear one another. Sound reflectors had to be installed for this. The ceiling, between 12mm and 25 mm thick, is conceived as an absorber of basses. The absorption of deep frequencies is necessary, because the clothing of the audience and the upholstery of the seats absorb the high frequencies. Also the wooden walls and balustrades were conceived as resonating bodies for differently deep frequencies.

To design the acoustics of the auditorium, a model in the scale of 1:9 was built from wood and hardwood. The tests for the diffusion of sound were done with spark gap impulses and registered with echograms from microphones. The reverberation time and the progress of the frequencies however could not be tested; these were calculated in numerous variations.

*The Philharmonie in construction*  
Photo: Hoffmeyer Zlotnik





### Chamber Music Hall

One of the most important developments was the construction of a 'little sister' to the Philharmonie, the Kammermusiksaal (Chamber Music Hall). Soloist and chamber music concerts had been performed at the Philharmonie, but they were thought to look somewhat lost on the big platform. In addition, new kinds of modern music required a smaller type of auditorium.

After many fights and controversies, the Kammermusiksaal was inaugurated in 1987. It was designed by Scharoun's disciple, Edgar Wisniewski, who dedicated a large part of his professional career to take care of the heritage of Scharoun's work. It follows the same principle as the Philharmonie and is directly linked to it by a common foyer.

*Photo: von Oben*



### The Role and Perception: then and now

Until the end of 1989, the Philharmonie was the prominent cultural attraction in West Berlin. Famous conductors helped to make this unique orchestra world famous, and their home, the Philharmonie, became equally significant.

After the unification of Germany, the Philharmonie suddenly found itself in the centre of the new capital, and the cultural forum was further developed. A stronger attention however was given to the redevelopment and reconstruction of the historical city centre.

Although further buildings such as the National Gallery (by Mies van der Rohe); the National Library (Staatbibliothek), also designed by Hans Scharoun; the Gallery of Old Masters, the Kunstgewerbe-Museum (Museum for Decorative Arts); and the Museum for Music instruments were added to the Kulturforum over the decades, it never became a lively place. Scharoun's concept, which also included artists' residences and meeting areas was only partly realised. There has always been a lack in social infrastructure – no cafés and restaurants outside the buildings, no attractive open-air areas. Only now are new concept areas being developed.

The Philharmonie itself however remains a very important institution and building. Thanks to numerous educational programmes for young people and people with little musical education, the company now attracts new and younger groups of audiences.

Scharoun's wish, that new music might be inspired by this building, however, have not been fulfilled. Many modern concerts with 360° presentations, where parts of the orchestra are placed in the auditorium or where electronic music fills the space in four dimensions, have been performed there – also as world premieres. But artists did not really "dare" to compose music for this space, because it was and is unique and gives them little opportunities to perform them at other places.

The architecture of the auditorium has been copied and modernised in many projects, but the "original" still looks as young as 1963. Once the actual plans for the Kulturforum have been realised, it is hoped that the Philharmonie will be less isolated and become part of a lively centre to enjoy the arts and to meet people.



Photos:

Top: Manfred Bruckels

Middle: Kai Bienert

Bottom: Manfred Bruckels