

Katowice Concert Hall Room Acoustical Design

By Dr. Yasuhisa Toyota

Katowice City, located in Poland's Silesia region, is a major regional city with a population of more than 300,000 people. The city's environs boast rich coal deposits and the city has a long history of industrial development.

In the environmentally unregulated decades following the end of World War II, the industrial activity in and around Katowice City led to environmental pollution levels that in turn caused serious social and other problems. However, after the 1989 revolutions in Eastern Europe and the collapse of communism, the government began to both care for the local environment and focus its energies on educational and cultural initiatives.

Poland's public radio broadcaster, Polskiego Radia (Polish Radio) maintains offices and studios in Katowice. The broadcaster's associated orchestra, Narodowa Orkestra Symfoniczna Polskiego Radia - NOSPR (National Symphony Orchestra of the Polish Radio) ranks alongside the Warsaw National Philharmonic Orchestra as one of the country's two highly valued national symphony orchestras.

Architect and Acoustical Consultant Selection Processes

In 2008, planning began to develop a home hall for the National Polish Radio Symphony Orchestra. From its inception, the hall was conceived as a classical music concert hall and its size was to be about 1,800 seats. An international architectural competition launched in the same year of 2008 selected the local architectural firm of Konior Studio, Tomasz Konior, Principal. The architectural rendering of the hall exterior shown with this article depicts the competition's winning design.



Figure 1: Rendering of the winning design

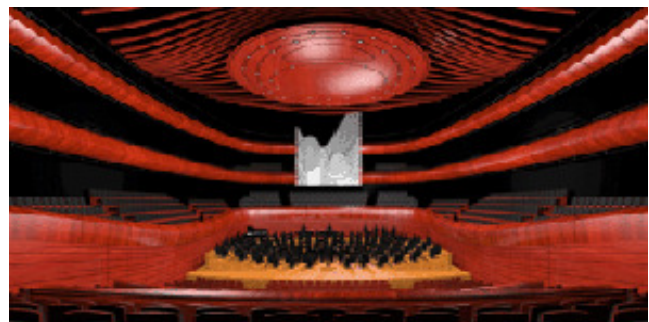


Figure 2: Rendering of the Katowice Hall interior, as of the completion of design development

World renowned pianist Krystian Zimerman, who was born just 15 km. from Katowice in the southern Polish town of Zabrze, recommended that Nagata Acoustics be selected as the project's Acoustical Consultant. The selection decision-makers accepted his recommendation and

we received the invitation to serve in this capacity.

Katowice Hall Project Progress and the 1/10 Scale Model

The design phase of the Katowice Hall project began in September, 2009. Currently, the project has completed its design development and entered the phase of developing the construction documents.

Originally, the architectural competition's winning design included a standard shoebox-shape configuration for the hall interior. During our collaboration on the actual project design development, the team increasingly added seats around the stage so that the hall's interior configuration now more closely resembles an arena configuration. This design evolution reflects the high priority this project places on creating an environment that will enhance the sense of intimacy between the performers and the audience. The rendering of the hall interior accompanying this article shows the design at the completion of the design development phase.

In parallel with the development of the construction documents, Nagata Acoustics began building a 1/10 scale model of the hall. This model is now nearing completion, as can be seen in the recent photo of the model. Because this hall's interior has many curved surfaces and a complex geometry, the 1/10 model is an essential tool for us to use in detecting and preventing echoes.

The Katowice Hall project plans to start construction in 2011. The project is expected to complete in 2013, and the many participants in this endeavor look forward to opening Katowice Hall in the same year.



Figure 3: Katowice Hall 1/10 scale model