Dubbed “the Pearl of the East” for centuries, Shanghai literally means “overhanging the water”. The architect, Paul Andreu, and his team probably used these two concepts as a starting point when they proposed a plan for a cultural complex in 2001. In partnership with CSTB room acoustics experts, the architect won the competition organized by the city to create the Oriental Art Center. Result: a completely curved building, reminiscent of a flower, featuring a shiny, pearl-grey material.

### Three entertainment auditoriums for every style of music

This cultural center, which is dedicated to music, features incredibly diverse musical events with its three entertainment auditoriums:

- **A large, 2000-seat philharmonic concert hall:** the architectural innovation lies in the oval shape of the hall, which expands around the stage in a semi-central position and groups of seats that are raised and staggered, responsible to a large extent for all of the acoustics. About 40 reflectors around the perimeter of the hall increase lateral reflections. Another special feature of this hall: adjustable acoustics through the use of retractable absorbing baffles in the ceiling.

- **A 350-seat chamber music hall:** the acoustics, which a priori are difficult to control because of the circular shape of the hall, are controlled through the diffuser walls, the shape of which conjures up an immense drape of curtain and which are positioned suitably for the audience in relation to the stage.

- **An opera hall and theatre (1,100 seats):** as for the other halls, digital simulation was developed during the design and final design phase.
CSTB services

The EPIDAURE and EBINAUR programmes developed at CSTB were used to test the different configurations envisaged and to “hear the acoustics” of each concert hall, before they were even designed. Accordingly, acoustical quality criteria, such as reverberation time, sound dynamics, clarity, intelligibility, and envelopment, etc., were optimized through simulation. Moreover, ICARE simulations confirmed the acoustic performances of the work.

The precise choice of the materials, the definition of their implementation and the work on the seats – with everything done in consultation with the architect, Paul Andreu – made it possible to finalize the acoustic balance for each volume.

Acceptance testing for the three halls verified the very sound reliability of the forecast model. The audience was captivated, and today, Shanghai City Hall takes pride in an architectural and acoustic masterpiece.

The Oriental Art Center in short

- Design and construction phases, 2001-2004, up and running early 2005
- Project owner: Shanghai Pudong New Area Culture Broadcast Television Bureau
- Architect: Paul Andreu, in partnership with ADPi and ECADI
- Senior architects: Graciela Torre, Roberta Affatato, Michel Adment, Hervé Langlais
- Acoustics: CSTB
- Surface area: 39,694 m²
- Cost: €94,2M

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