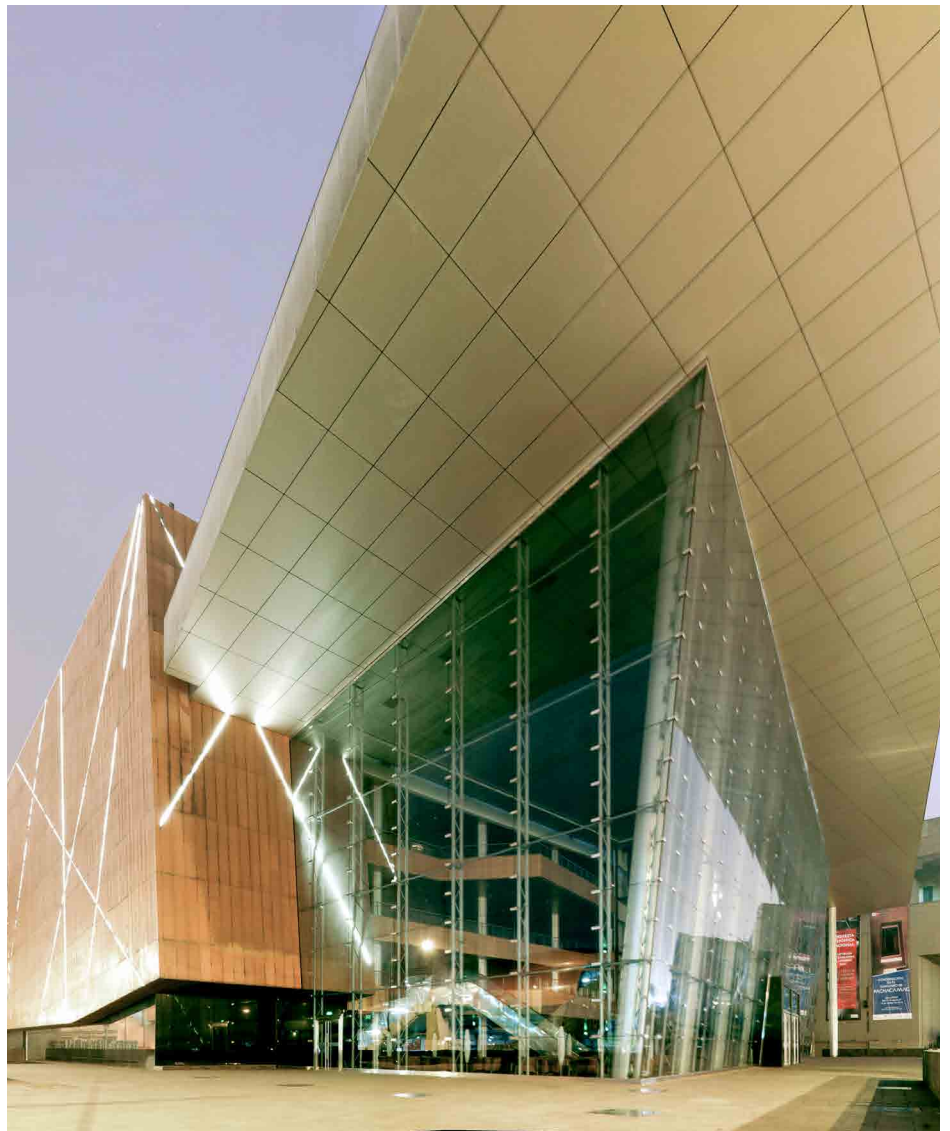


Grand National Theatre of Peru

Lima, Peru

Perfection in the detail

In July of 2010, works began on the Grand National Theatre of Peru, a venue that was needed for the city of Lima to be able to host large productions which would require a high technological capability. The architect responsible for the project, Alfonso de la Piedra, and the architect, José Nepomuceno, expert on acoustics, who worked together to bring life to a theatre, which has already become one of the architectural and artistic treasures of Lima.



Technical details:

Name: Grand National Theatre of Peru

Location: Av. Javier Prado on the corner with Av. Aviación. San Borja district

Architecture: Architect Alfonso de la Piedra. De la Piedra Consultores SAC

Acoustic: Architect José Nepomuceno

Number of floors: 4 + 3 floors below ground

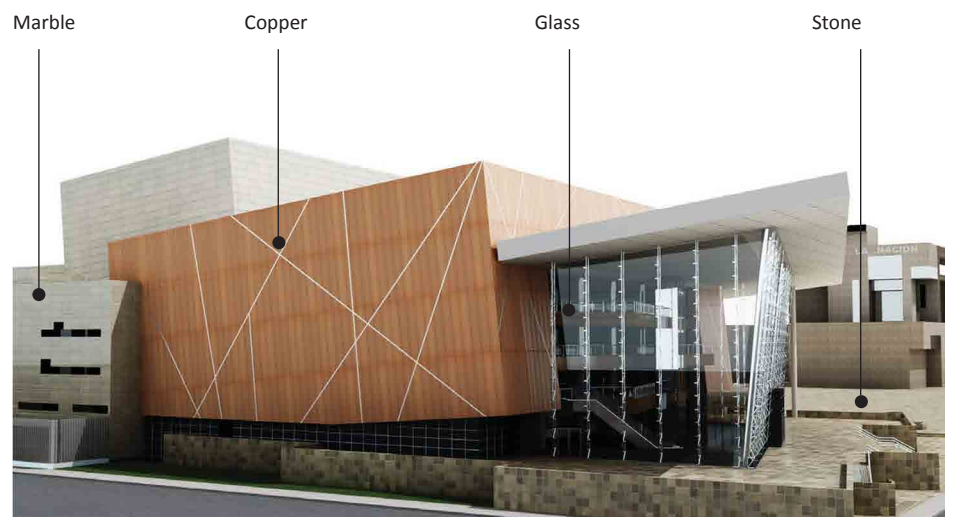
Owner: Ministry of Culture of Peru

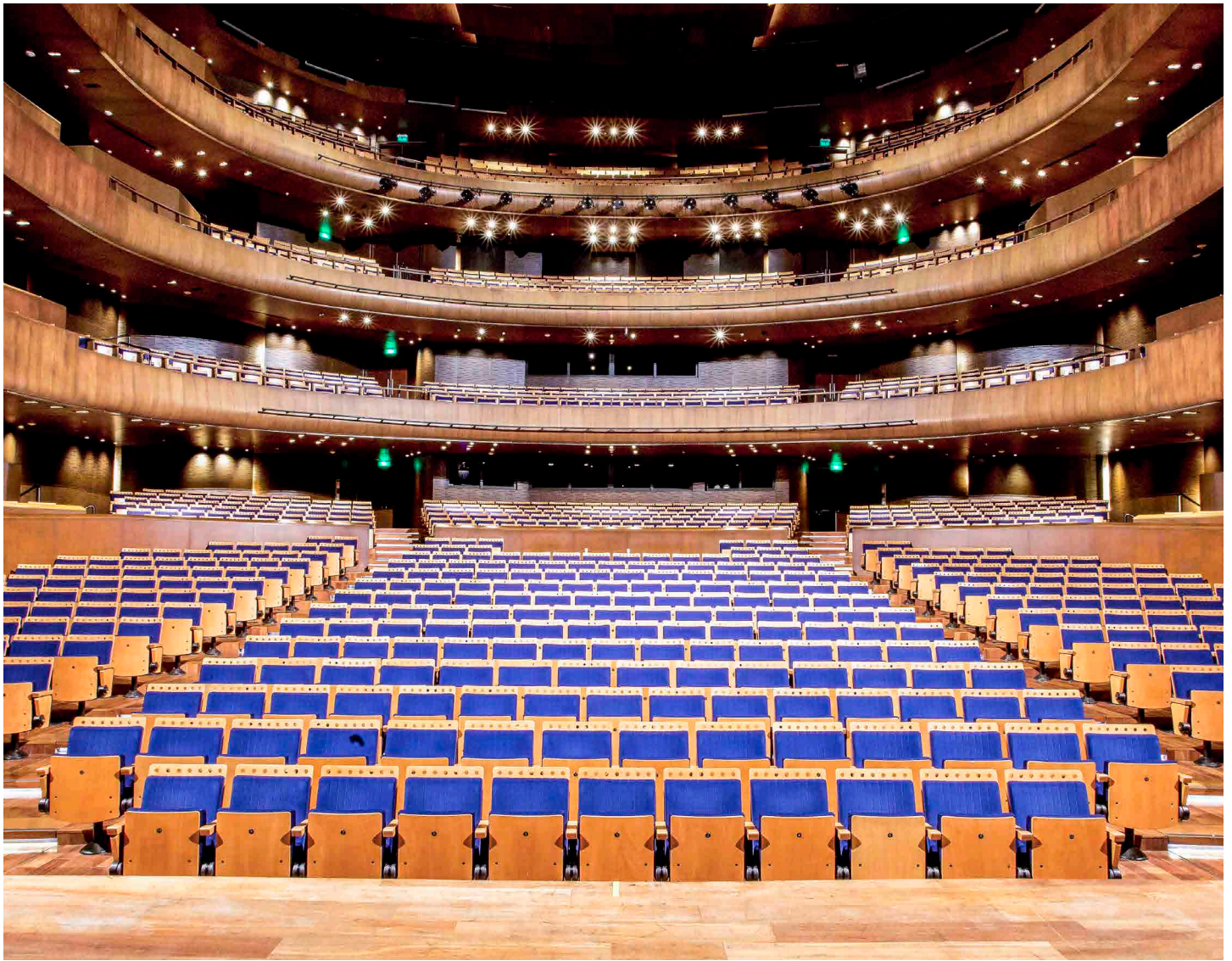
Total Surface Area: 26,106m²

Capacity: 1,500 seats

Product: Carmen

The first impact on the visitor is the external structure, in which fine materials which the ancient Peruvians used of stone and copper have been combined with materials such as marble and glass. The theatre stands on a 2 m high stone atrium and integrates it in turn with the Museum of the Nation and the cultural core. The foyer welcomes its visitors with glass, essential for transparency and permanent contact with the public. The central body is covered in copper, a material with which the ancient warriors used to make their breastplates. The fourth section, under which the dressing rooms and rehearsal rooms are found, is covered in marble. A total of 26,106m² of engineering genius, where cutting-edge technology is made available for the shows performed there.





Challenges and solutions

The main hall has recuperated the classic theatre design, but incorporated elements of modern theatres requiring contemporary solutions, such as the possibility of having a multi-functional hall in which, additionally, the acoustic settings could be adapted to each show. There was also a basic requirement, that in each of the 4 floors that make up the hall, there would be an excellent view of the stage. In each of these challenges, the choice of seat and its aptitude was paramount.

A versatile and an exceptional isoptic hall. The Grand National Theatre was designed as a multi-purpose hall. For this reason, several rows of seats are movable. The 177m² orchestra pit has an automatic system of seats that rises up into 4 complete rows of chairs (82 seats in total) for when the hall is full to its maximum. On the other hand, if the concert requires the orchestra, these rows are hidden and the pit has room for 106 musicians. In the stalls, there is also another system that has allowed them to install a sound console in the seats along the descent of 18 chairs. Figueras had to produce these chairs especially to fit one of these consoles into each one. The majority of the seats are fixed in place, but there are up to 13 different models, modified in width, back support height, angles and armrests, to adapt each one to the corners of the area of seats and offer an exceptional isoptic line.

The acoustics, the key to success. The acoustic characteristics of the theatre were studied in detail, both with regards to the influence of the materials as to the shape. The hall has an acoustic adjustment system and reverberation chambers, which can change the volume in

the hall and its sound. On stage, an acoustic shell with mobile screens and a motorised ceiling surrounds the orchestra converting the Grand National Theatre into a symphony hall. The 1,500 seats play an important role in the acoustics, because they serve the purpose of absorbing the sound and should absorb the same amount whether they are occupied or empty. The choice of these seats was taken into account on this basis, since it is a specially designed model to produce the best acoustic effect with its combination of different materials.

Selected model

The Carmen model is designed and produced to suit theatres and concert halls. The seat is made of wood and has scalloped upholstered padding. Having balanced proportions, it is very comfortable whilst at the same time allowing for the optimization of space. It has great acoustic qualities thanks to the main materials with which it is made: beech wood and open cell polyurethane foam. The seat is ergonomically designed, with a curved board both in the seat and the back.

