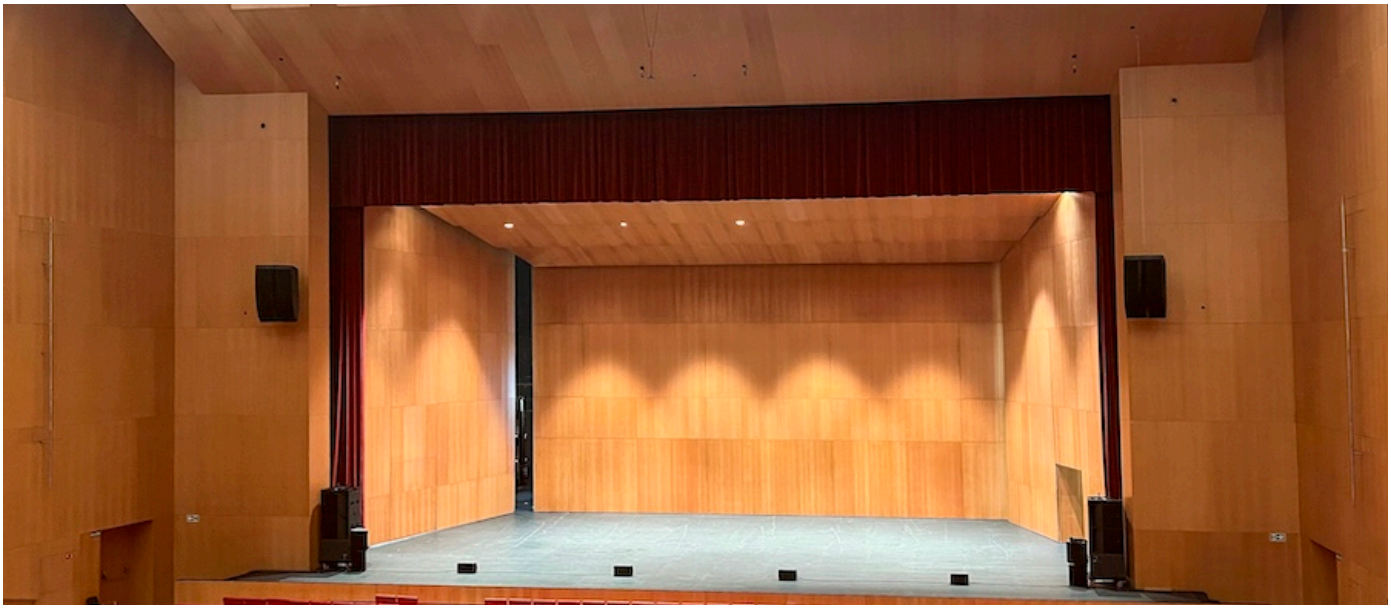

L-Acoustics L2D Arrays Solve 40-Metre Coverage Challenge at Spain’s Baluarte Congress Palace

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Teatro Baluarte’s 1,600-seat main auditorium presented a classic audio challenge: achieving consistent coverage across 40 metres of depth without delay systems, while accommodating programming that ranges from classical orchestras to contemporary rock concerts. The venue’s reverberant acoustics and requirement for clean stage presentation – essential for flamenco and classical performances – demanded a solution that could deliver professional touring-grade audio within strict aesthetic constraints.

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(Above): Teatro Baluarte's main auditorium now boasts an L-Acoustics L Series professional sound system

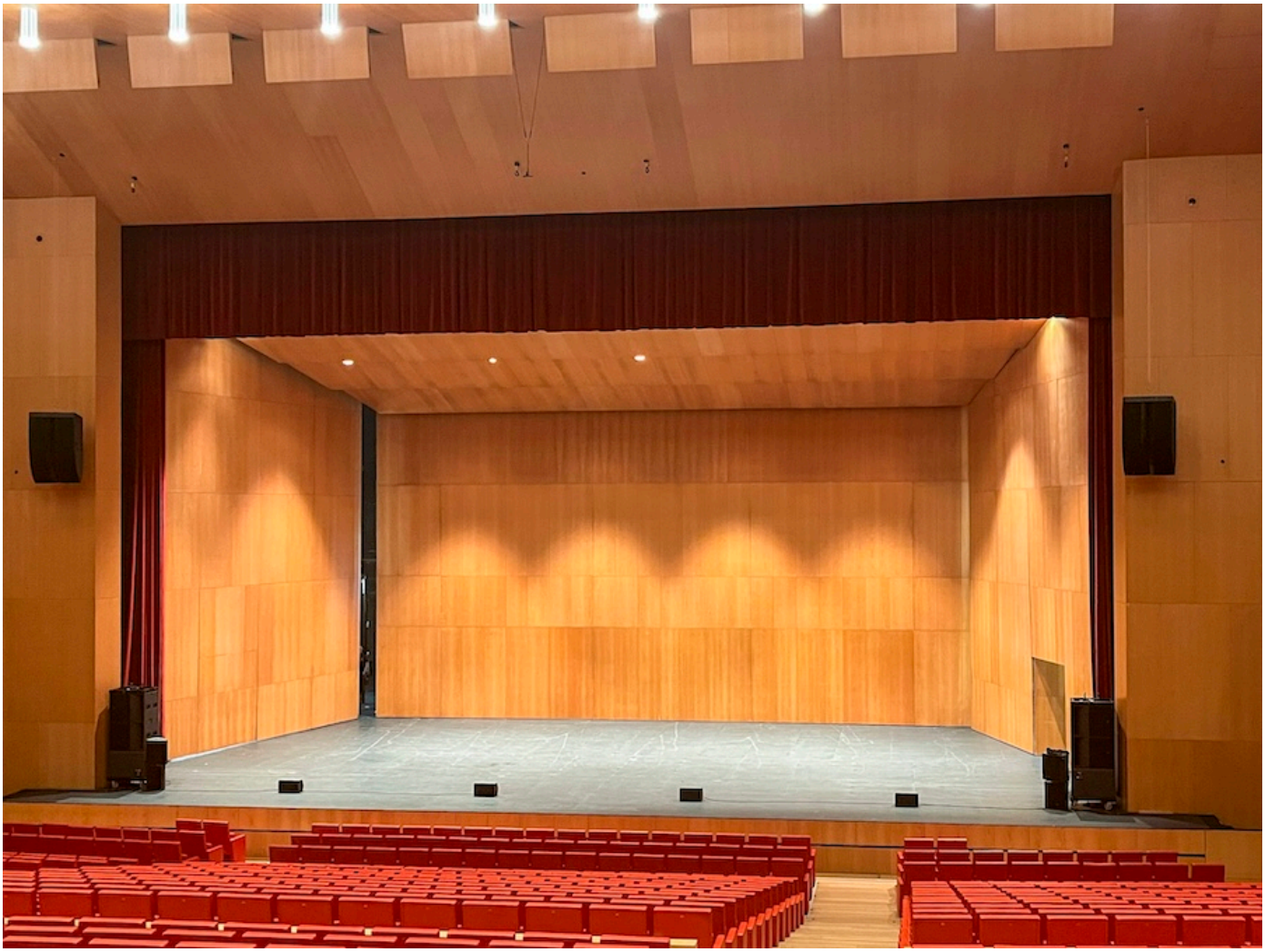
Baluarte Congress Palace, adjacent to Pamplona's 16th-century Citadel, serves as Navarra's primary cultural venue with 63,000 square metres of conference and performance space. The main auditorium's acoustic properties and diverse programming schedule—from Madrid pop-rock band Morgan to violinist

Ara Malikian—required a system capable of handling vastly different sonic requirements while maintaining intelligibility throughout the space.

L2D Configuration Addresses Coverage and Cardioid Control Requirements

Earpro, the L-Acoustics distribution partner in Spain, worked with the L-Acoustics Application team to design a solution centred on L2D line arrays. The integration was carried out by Telesonic, a leading Spanish company renowned for its expertise in designing and integrating high-end audiovisual installations.

The system’s integrated cardioid technology proved essential for controlling acoustics in the reverberant space, while the compact form factor met the venue’s stage aesthetic requirements. The venue’s previous positive experiences with L-Acoustics rental systems, including Kara II, established familiarity with the brand’s capabilities. However, the L2D selection was driven by additional criteria beyond sonic performance. As part of Baluarte’s Strategic Project 23–30, with its focus on digitalisation and sustainability pillars, the venue prioritised environmentally responsible technology alongside audio excellence.



(Above): The L-Acoustics L2D configuration delivers professional-grade coverage while meeting budget parameters, spatial constraints and sustainability objectives.

“The installation of the L2D also represents an important step forward in our environmental commitment, as we are talking about an extraordinarily efficient and environmentally friendly system,” explains Eduardo

Nanclares, Director of Sustainability and Quality at NICDO and Head of Operations at Baluarte. The L-Series’ sustainable design credentials—requiring 30% less wood and 60% less steel, using 56% less paint, and being 25% lighter than comparable systems—aligned perfectly with the venue’s green design philosophy.

An on-site demonstration confirmed that the L2D configuration could deliver professional-grade coverage while meeting budget parameters, spatial constraints and sustainability objectives.

Soundvision Modelling Resolves Three Core Design Challenges

Digital acoustic modelling through Soundvision software addressed the project’s primary technical obstacles: achieving consistent SPL across the venue’s 40-metre depth without delay systems; balancing direct sound projection with room reflection management in the highly reverberant space; and maintaining adequate sound levels to back seating areas while preserving sight lines and blending into the architecture.

(Above): L-Acoustics L Series reinforces Baluarte’s sustainability and innovation strategy

"The modelling capabilities of Soundvision were absolutely essential," explains Luc Espinach, Audio Product Specialist at EarPro. "We simply couldn't have demonstrated how effectively such a streamlined L2 configuration would perform in a space of this scale without that level of predictive accuracy."

Multiple configurations were analysed before the final L2D solution proved optimal for the venue's specific acoustic and operational requirements.

System Architecture: L2D Arrays with KS21 Subwoofer Configuration

The main system comprises L/R arrays of one L2D per side, configured in supercardioid mode to maximise on-stage rejection, with Panflex angles set to 90-degrees, angled inward to minimise side wall reflections. Low-frequency reinforcement comes from a centre-hung array of six KS21 subwoofers arranged in two hangs of three units each in a cardioid configuration. These can be reconfigured as left-right subwoofer stacks for specific concert requirements.

Four X8 across the stage lip serve as front-fill, while four X12 are ground-stacked at stage left and right for in-fill. The entire system operates over Milan-AVB, with a P1 processor managing the network connection between front-of-house consoles and the LA7.16i amplified controllers housed in the venue's rack room.

Performance Validation Through Morgan Concert and User Feedback

The installation's success was validated during one of the first major performances following commissioning: a concert by Madrid pop-rock band Morgan. "The guidance and support by the L-Acoustics application team, in particular application engineer Tom Laveuf, was crucial in the success of the project," continues Espinach. The feedback by the owners, technical team, band team and the audience in general was excellent, with specific comments about the uniformity, clarity and intelligibility of the system.

(Above): The L Series combination of long-throw capability, compact form factor, and integrated cardioid technology has provided Baluarte with a future-ready audio solution

The system’s efficiency extends beyond audio performance, with the L2D installation completing 68% faster than traditional systems, contributing to more agile and sustainable implementation.

According to Nanclares, the system “reinforces Baluarte’s future strategy aligned with sustainability and innovation,” representing what the venue describes as “an extraordinarily efficient and environmentally friendly system” that maintains the highest acoustic standards while supporting their environmental commitments.

Spinach concludes “The L2D’s combination of long-throw capability, compact form factor, and integrated cardioid technology has provided Baluarte with a future-ready audio solution that supports its mission as northern Spain’s premier cultural and conference destination.”