

Sound Solutions for Houses of Worship

nexo-sa.com

Thinking. Inside the box.

NEXO

A
Yamaha
Group
Company



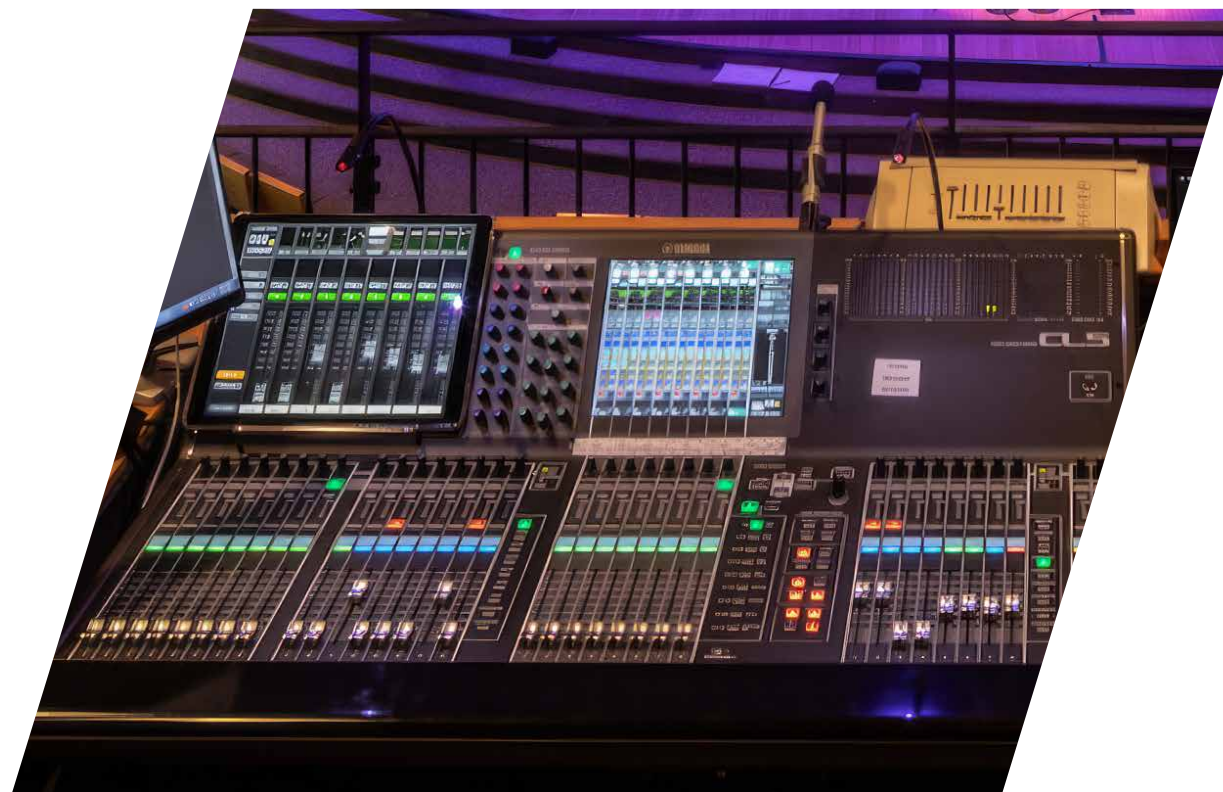
NEXO

Your partner in precision sound

NEXO leads the market in value-engineering innovative high-performance sound systems which have a distinctly musical character, and packaging them as affordable business-friendly solutions. All NEXO products and services are designed to eliminate the audio problems commonly found in communal spaces, and, by so doing, enhance the congregation or audience experience in the public environment.



The Perfect Combination



As sound professionals, at Yamaha and NEXO we are dedicated to helping our customers create the most appealing, effective sonic environments for their needs.

Yamaha has more than a century of experience in musical instrument manufacture, enriched by its expertise in processing and delivering quality sound and Industry-leading electronics. NEXO has been designing and building world leading audio solutions for over 40 years and the technologies developed at our own R&D centre are used and highly valued by distinguished engineers in professional audio and broadcast applications worldwide. That background and dedication inspire the sound systems we offer for commercial installations, giving our customers solutions that are ideally tailored to their individual needs.

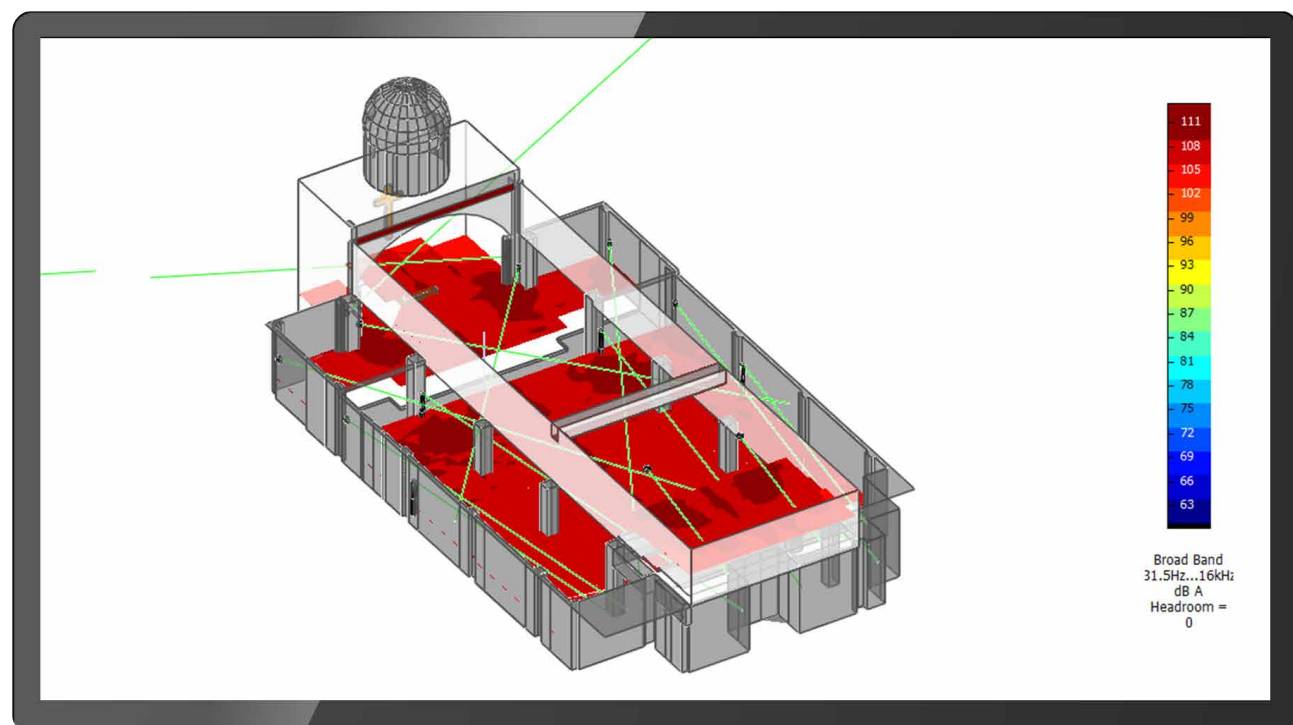
Together YAMAHA and NEXO deliver an unrivalled professional audio solution for any house of worship.

NS-1

A powerful and intuitive system configuration and simulation tool ensuring uniform SPL coverage in any house of worship with any NEXO and Yamaha system.

Whether or not you already know what NEXO system you intend to use in your house of worship, NS-1 is the entry point to your project, helping you to configure any line source or point source from NEXO and Yamaha's catalog, thanks to intuitive yet powerful tools applied to your own geometry.

NS-1 not only assists in achieving the best SPL coverage, but also certifies that mechanical constraints are satisfied. Finally, NS-1 enables you to create and present robust sound design proposals, including the speaker list, and also gain and delay to apply in the amplification and control chain.



AFC

ACTIVE FIELD CONTROL

Take control of space

Working closely with Yamaha AFC Image, NS-1 includes AFC Design Assistant which provides the necessary guidelines for the required type, number and placement of speakers to provide fully immersive audio. The result is a new and much more engaging experience for the congregation.



Advanced Manufacturing Processes



Each and every one of NEXO's loudspeaker cabinets is designed and manufactured in France. Since 2007, the company's headquarters have been located in modern purpose-built facilities, just 30 km north of Paris and close to Charles de Gaulle International Airport.



Highly-automated
manufacturing plant



2 optimized production
lines 5000 Sqm/each



Rigorous processes /
Quality management system

Modern Purpose-Built Facilities



Each new system begins with sophisticated computer simulations, executed by specialised proprietary software. The entire electro-acoustic signal chain is thoroughly modelled and product performance rigorously evaluated to maximise system performance.



R&D centre : 2000m²
dedicated state of the art
facilities



Anechoic chamber : 12m x
8m x 6.5m, this chamber
allows the R&D team to
measure down to 28Hz.



Passionate, rigorous
and high level engineers

A Musical Celebration

Where music is at the heart of the celebration, NEXO line array systems deliver the same full-bandwidth, high SPL 'live concert experience' to every corner of the church.



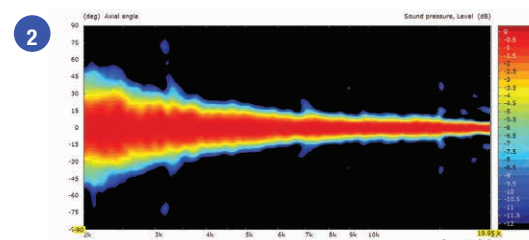
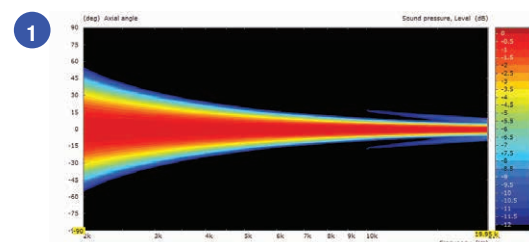
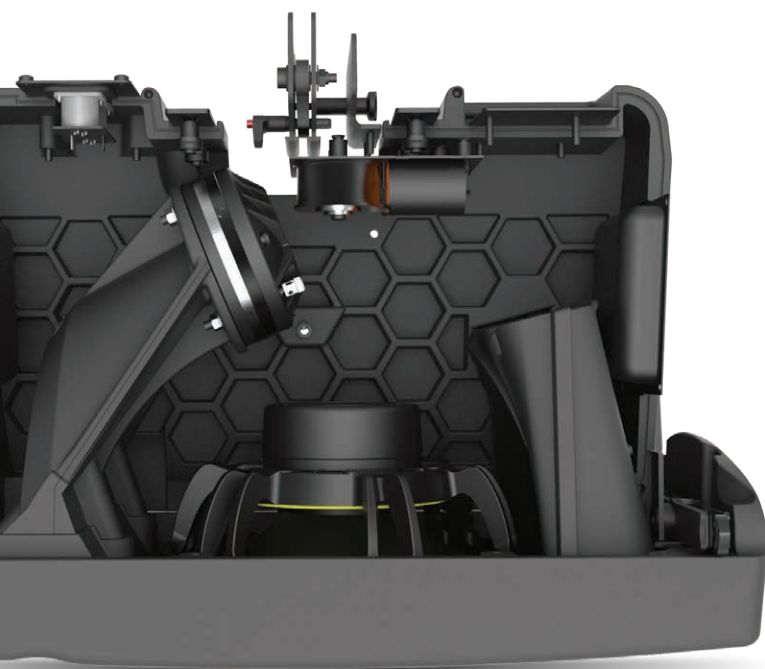
Spreading The Word

With a smooth and refined high-frequency performance and easily controllable dispersion characteristics, NEXO systems have gained a reputation for excellence in amplifying the spoken word, while making a low visual impact in traditional liturgical spaces.



Thinking. Inside the box.

What separates NEXO from its competition is its innovative, integrated systems approach to loudspeaker research and development. The company's R&D mission to innovate is acknowledged in the form of numerous patents, some of which are included here.



The HRW Hyperbolic Reflector Waveguide

Conventional speakers cannot be coupled in the high frequency range if not generating a continuous wavefront along the height or the width of the enclosure. HRW waveguide converts the spherical wave front generated by a high frequency compression driver into a flat or convex wavefront by means of an acoustic reflector. It allows speaker cabinet acoustical coupling without interference up to 20 kHz, with inter-cabinet angle sequences ranging from 0° up to 30° or more.

➔ Used in GEO M Series, GEO S1210 and S1230, STM M28 and M46 cabinets.



The CDD Configurable Directivity Device

CDD flanges are superposed to a horn or a waveguide to modify its dispersion characteristics. The same speaker cabinet reference can therefore produce a wide range of directivity features, from 80° or less (narrow coverage needed at long distances) to 120° or more (wider coverage needed at short distances).

➔ Used in GEO M Series, GEO S1210 and S1230, STM M28 cabinets.



The PDD Phase Directivity Device

Coupled direct radiation drivers will interfere when the distance between them exceeds half a wavelength, which sets a strong constraint on cross-over frequency to high frequency drivers (these are very likely to distort below 1 kHz). The Phase Directivity device splits the radiating surface of the driver in 2, thus dividing by 2 the acoustic distance between coupled devices.

➔ Used in GEO M Series, GEO S1210 and S1230, STM M28 cabinets.

We considered the physical space as well as the church's expectations before delivering our recommendations of a small NEXO GEO M10 line array in white, which brings a rock & roll vibe while also complementing the design aesthetic to ensure a low visual impact.
Fraser Brearley, Associate Engineer, Morgan Sound



Perfect Coverage Made Easy

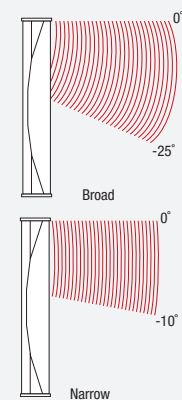
NEXO P+ and ID Series speakers make it quick and easy to select the optimal HF dispersion for every application, and a comprehensive range of mounting hardware makes installation similarly straightforward.

Extraordinary Clarity

Using a patent-pending arrangement of dome tweeters rather than a compression driver significantly lowers HF distortion and gives the ID84 a 'hi-fi-like' sonic character and exceptional clarity when reproducing the spoken word.

Tailored Coverage

The ID84 features a unique and easy to use system for changing vertical high frequency dispersion. A switch on the rear of the cabinet controls a passive filter which effectively changes the delay settings of the dome tweeter array at the top of the cabinet which, in turn, switches the HF vertical dispersion from broad (0 to -25°) to narrow (0 to -10°).

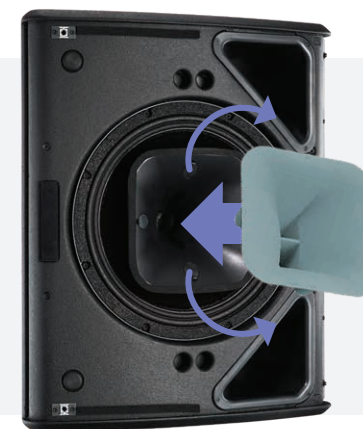


There was a feeling at the church that sound was always going to be a problem in a large, high-ceiling, reverberant space like theirs. Of course, it's a challenge, but the new ID84-based system delivers that perfect combination of even coverage, clear intelligibility, ease of use and low visual impact.

Devin Sheets, Lead Engineer, Alpha Sound

Variable HF Directivity

Optimise the HF dispersion for your application in just a few moments. The dispersion characteristics of the P12 and P15 can be changed in seconds through the addition of optional magnetic flanges. The standard cabinets use a 60° x 60° horn with additional 90° x 40° and Asymmetrical (PS Type) 60° - 100° x 40° also available. By default, the P8 and P10 cabinets use a 100° x 100° horn. In the case of these cabinets, the dispersion characteristics can be changed by fitting an optional, rotatable 110° x 60° horn.



Rotatable Horn

The ID24 features a unique user-rotatable horn that lets users quickly select between 120° x 40° or 40° x 120° HF dispersion to achieve perfect coverage in difficult spaces such as under balconies. You don't even have to remove the grille or open the cabinet. And the versatility of the ID24 is further enhanced by a selection of horn options with dispersions including 60° x 60°, 90° x 40°, 120° x 40° and 120° x 60°.



Versatile Mounting Hardware

A comprehensive range of mounting hardware makes it quick and easy to install NEXO loudspeaker systems in churches of all types and ages.





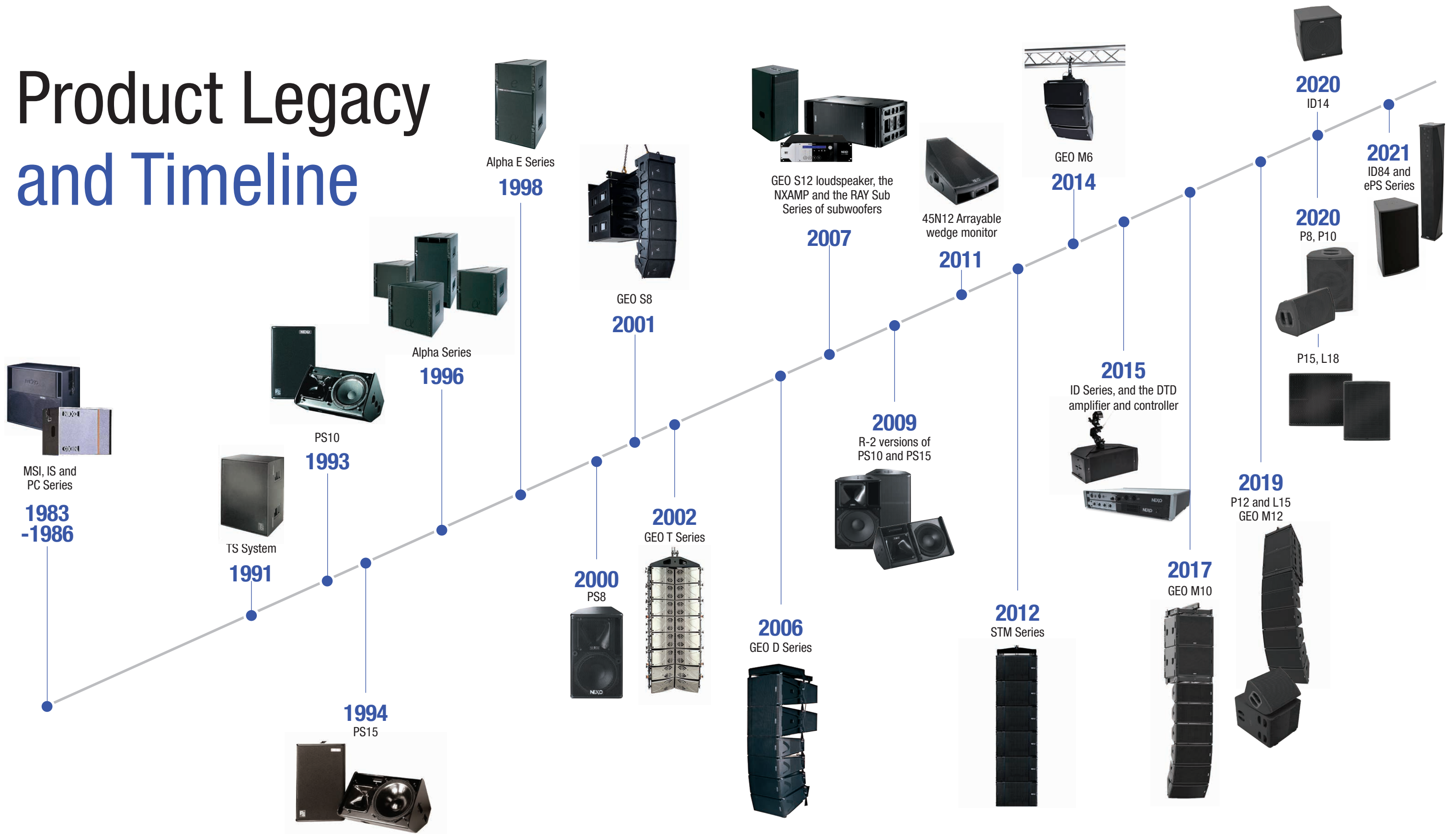
Custom Solutions

NEXO loudspeaker systems can be specified in custom RAL colours for seamless integration into all kinds of interiors, modern and historic.

A global sales & support network

NEXO systems are distributed by a network of 50 independent distributors worldwide, each chosen carefully for their expertise and provision of high-level technical and customer support.

Product Legacy and Timeline



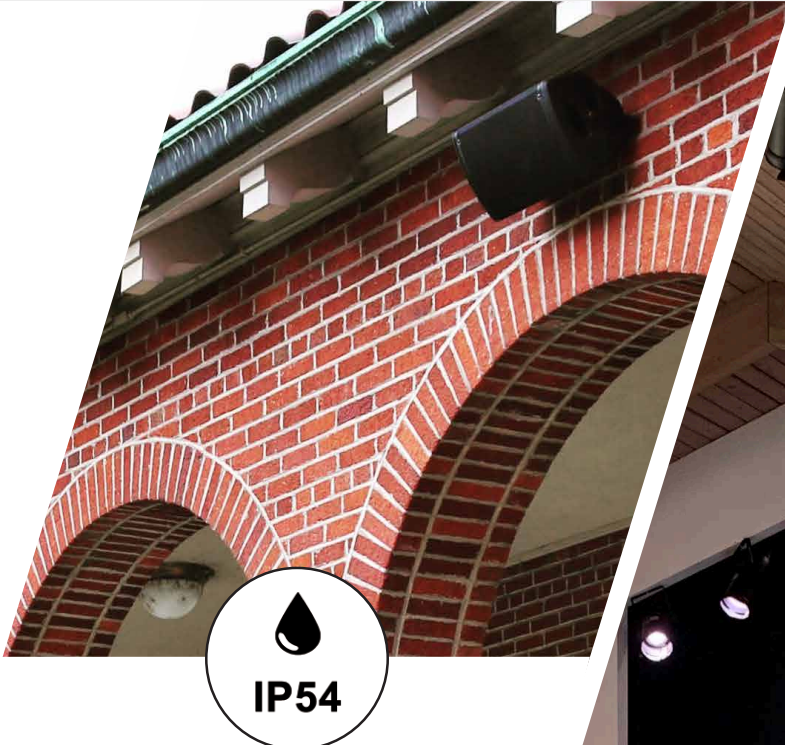


ISO 9001

World Leading Manufacturing Facilities



TÜV Certification
Safety Guaranteed



IP 54 Rating
Weather Resistant



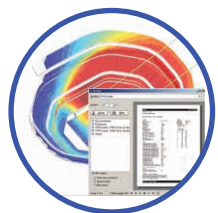
EC Declaration of Conformity
Quality and Reliability

Quality & Certifications

In order to meet our customers' requirements and enhance their satisfaction, NEXO is continually identifying the best options necessary to set an exceptional standard of products and services. The high quality of our products and services is endorsed through certification and a commitment to recognised methodical processes.

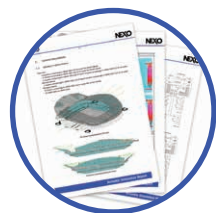
Dedicated Support

At NEXO, we believe in supporting the consultant, not in trying to be one!



Before

System Design
Training
Demos



During

Installation Support
Acoustic report
Assistance



After

Hotline
Feedback
Technical Docs

technical@nexo.fr



ns-1

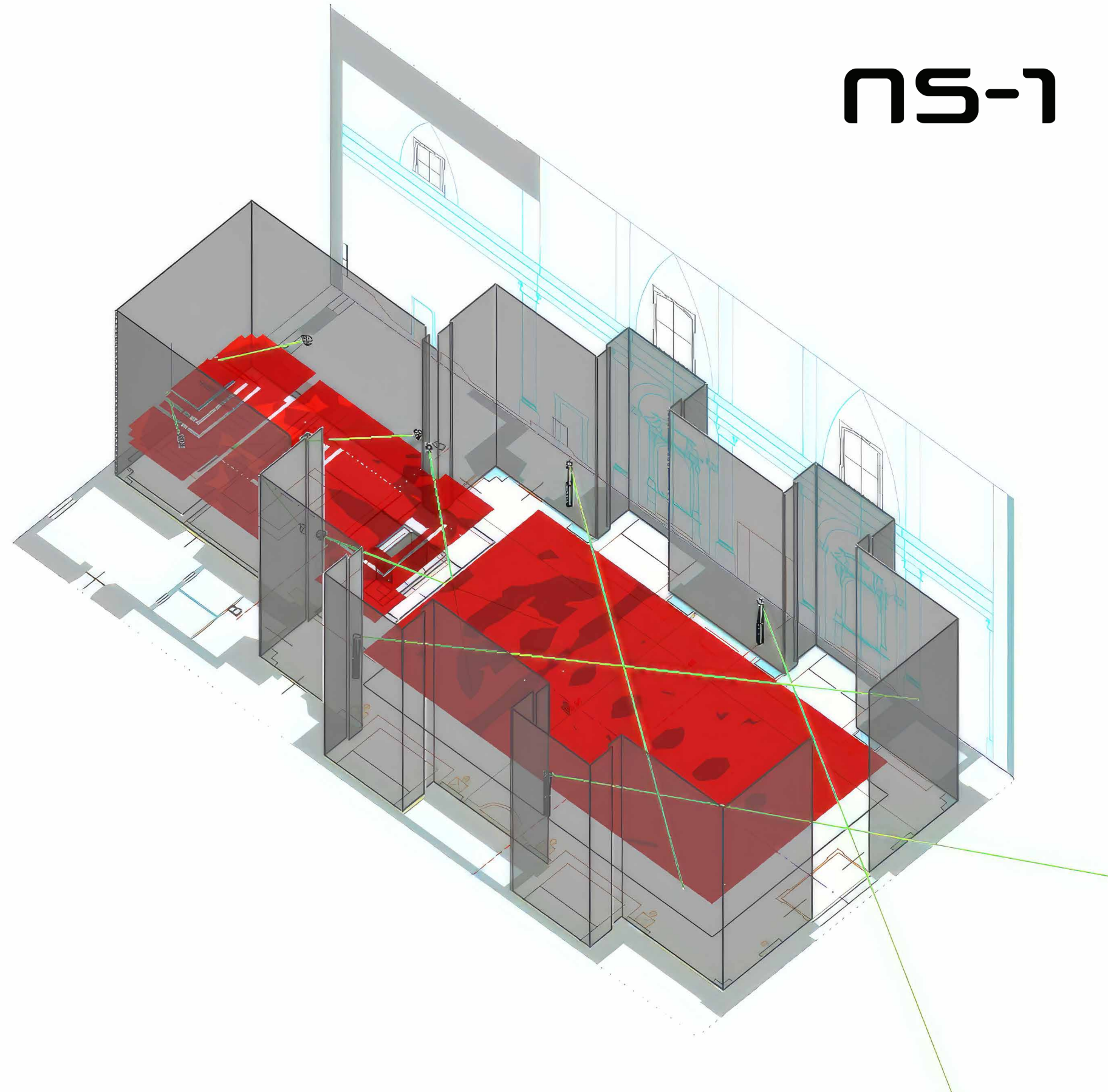
System Design

Perfect coverage made easy.

NEXO is able to provide full sound system design support, offering our extensive experience and powerful modelling tools to augment the resources of consultancies and integrators, or even to provide complete venue designs on their behalf.

At the heart of our design process is NS-1, NEXO's powerful system configuration and simulation tool which ensures uniform SPL coverage of any NEXO system in any venue.

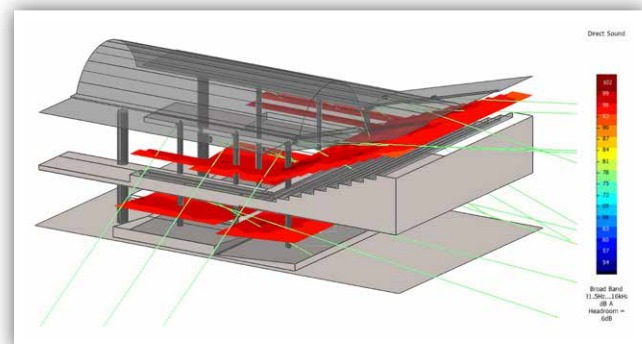
Your house of worship is just a click away.



NS-1

Complex Calculations

NEXO enjoys close collaboration with the world's leading experts in electro-acoustic simulation programming. NS-1 models the radiating behaviour of the speakers by spatially sampling them into a large number of monopoles and dipoles. In every mesh point of the venue's surfaces, the contribution of all these sources is calculated for the frequency band of your choice. The simulation results are mapped to the surfaces, giving a 3D representation of the SPL coverage.



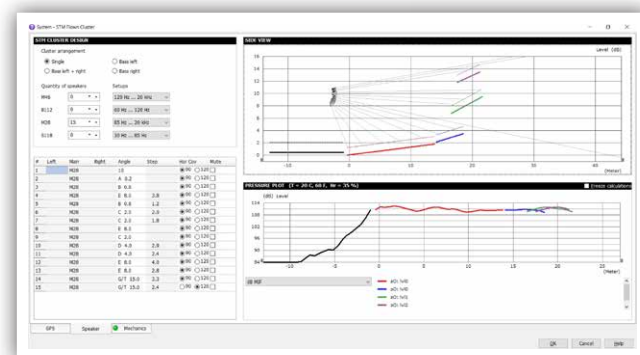
All NEXO speakers on tap

Once the geometry is defined, loudspeakers can simply be dragged and dropped into the project, and configured into flown or stacked clusters.

Surfaces

Sound pressure can be received differently on the venue surfaces. Venue items can be:

- Simple surfaces
- Standing-up or seated audience areas
- No audience areas, simply taken into account as obstacles
- Hidden to calculation.



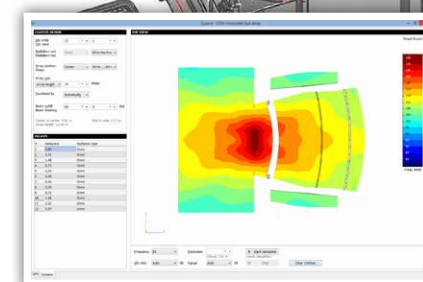
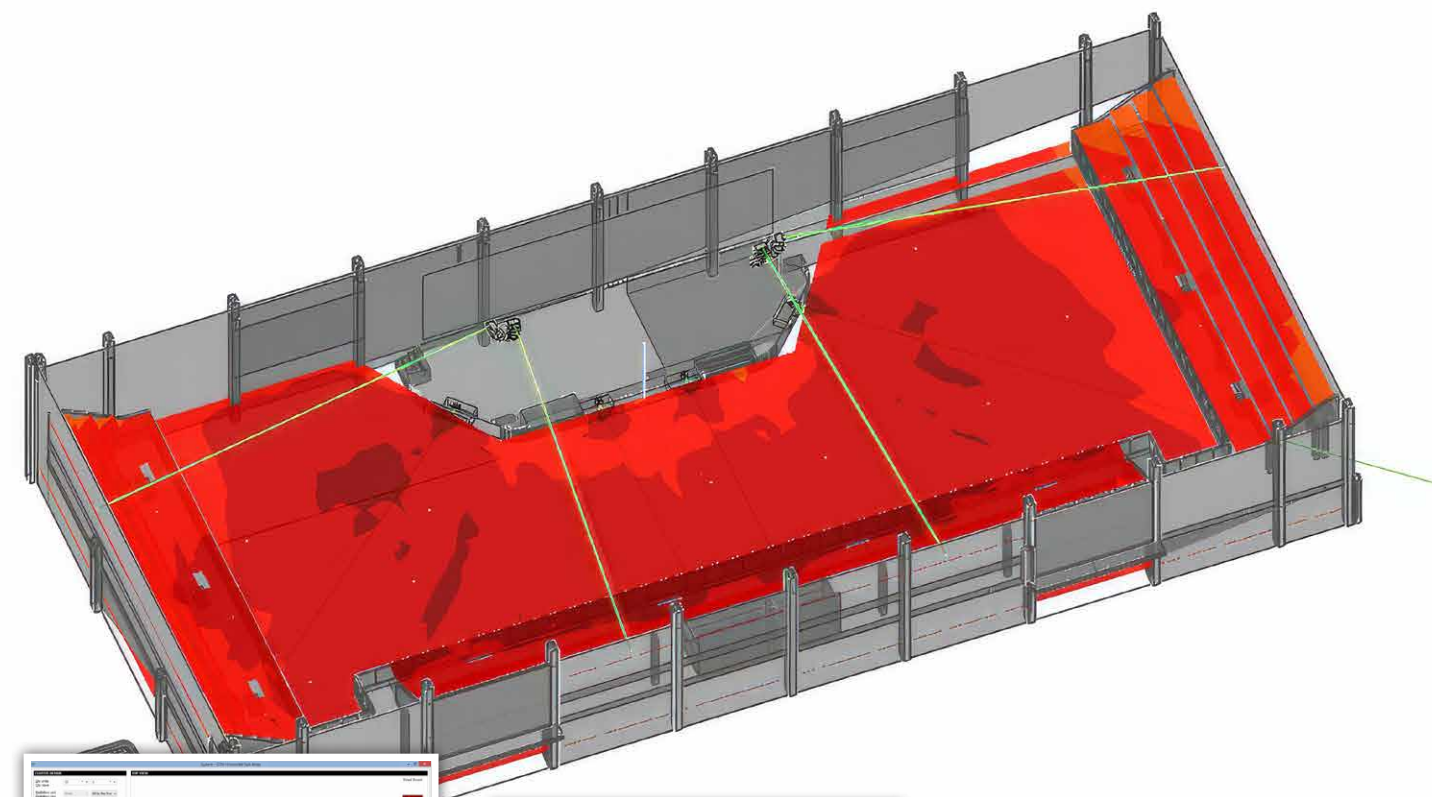
Line-source calculations

NS-1 helps you to find the perfect series of angles for your clusters, by calculating acoustic pressure on the surfaces. Results can be displayed using NEXO's meaningful dB MIF, or other metrics of your choice.

Direct sound and time coherency

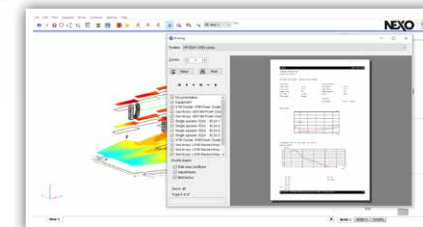
NS-1 performs direct sound calculations on your geometry. They allow you to tend towards the best speaker ratio, gains and positions to match your target coverage.

Furthermore, NS-1 makes it easy to align the delays of the speakers thanks to time-coherency calculations.



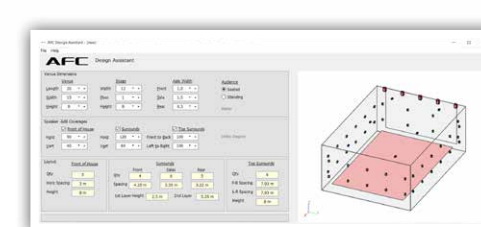
Sub design

NS-1 makes it easy to control the beam steering of horizontally arranged sub-arrays. Optimal electronic delays are calculated depending on the sub settings (omni/cardioid, etc.), the beam width, and steering angle.



Report editing

A complete speaker list, with specified positions, angles, gains, delays and pressure plots, can be exported from NS-1.



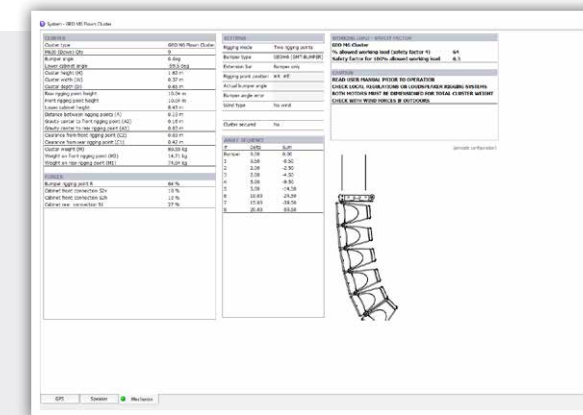
AFC Design Assistant

A shoebox model immersive design calculator which defines spacing and positions for front of house, surround and top speakers based on venue dimensions and speaker coverage characteristics.

Fly safe

For NEXO, safety is the number one priority. Capable of so much more than acoustic predictions, NS-1 also calculates the working load of the flown clusters, and gives you the green light.

NS-1's mechanical database is always double-checked by an independent expert. The advanced algorithm takes into account the hanging points, the bumper type and, most importantly, the angles between the speakers, providing an accurate result that is TÜV certified.

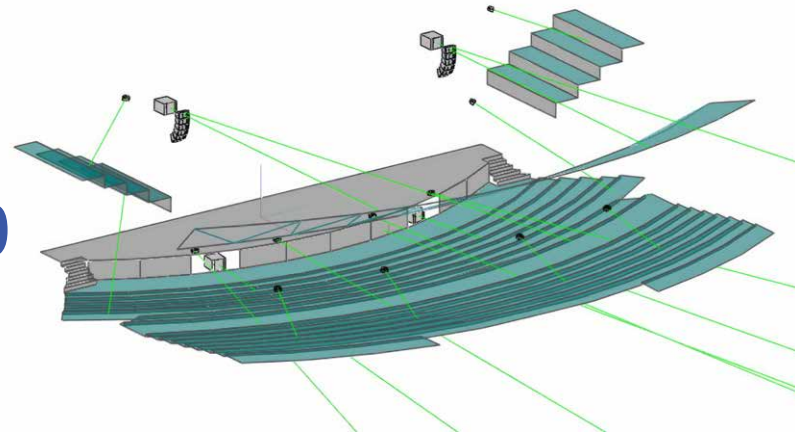


Mechanics

System Design:

Templo El Calvario

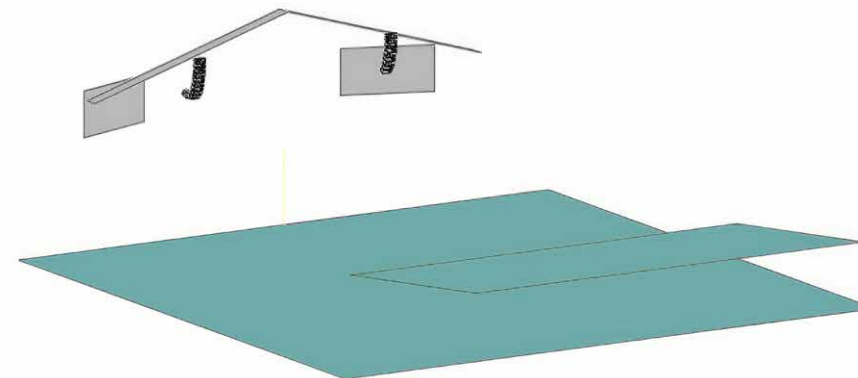
Dominican Republic



System Design:

Salem First Baptist Church

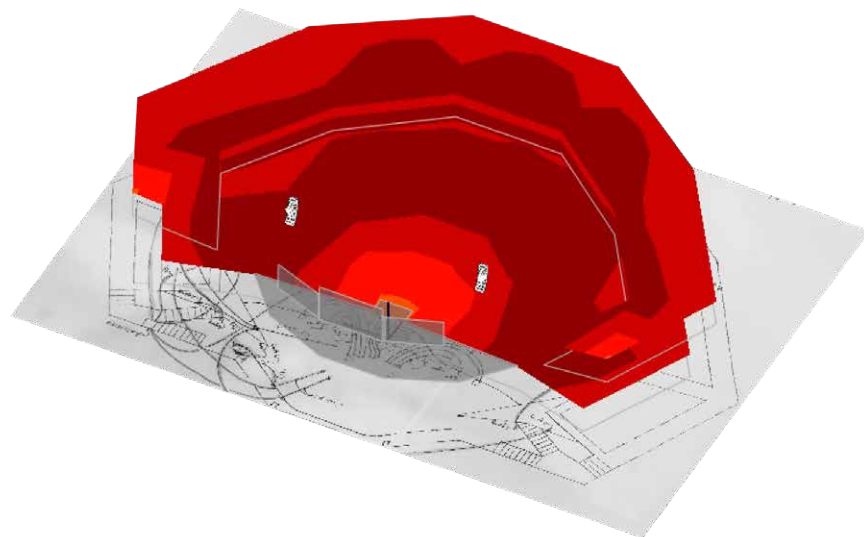
USA



System Design:

Albany Hope Church

USA



Mechanics

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CLUSTER	
Cluster type	GEO M6 Flown Cluster
M620 (Down) Qty	9
Bumper angle	0 deg
Lower cabinet angle	-59.5 deg
Cluster height (H)	1.63 m
Cluster width (W)	0.37 m
Cluster depth (D)	0.65 m
Rear rigging point height	10.04 m
Front rigging point height	10.04 m
Lower cabinet height	8.43 m
Distance between rigging points (A)	0.19 m
Gravity centre to front rigging point (A2)	0.16 m
Gravity centre to rear rigging point (A1)	0.03m
Clearance from front rigging point (C2)	0.03 m
Clearance from rear rigging point (C1)	0.42 m
Cluster weight (M)	89.55 kg
Weight on front rigging point (M2)	14.71 kg
Weight on front rigging point (M1)	74.84 kg

FORCES	
Bumper rigging point R	64 %
Cabinet front connection S2v	10 %
Cabinet front connection S2h	12 %
Cabinet rear connection S1	27 %

WORKING LOAD - SAFETY FACTOR	
GEO M6 Cluster	
% allowed working load (safety factor 4)	64
Safety factor for 100% allowed working load	6.3

CAUTION	
Read user manual prior to operation	
Check local regulations on loudspeaker rigging systems	
Both motors must be dimensioned for total cluster weight	
Check with wind forces if outdoors	

SETTING	
Rigging mode	Two rigging points
Bumper type	GEOM6 (GMT-BUMPER)
Extension bar	Bumper only
Rigging point position	#A #E
Actual bumper angle	
Bumper angle error	
Wind type	No wind
Cluster secured	No

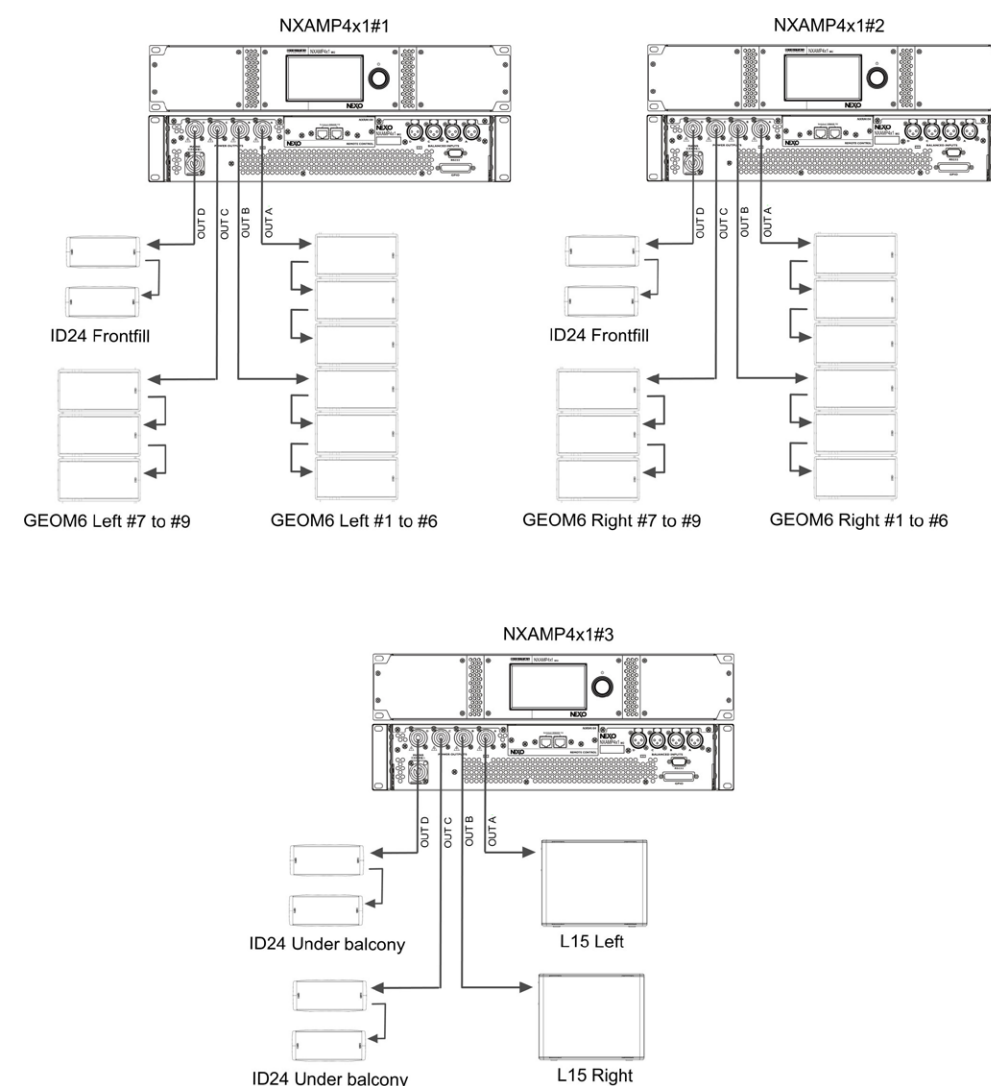
ANGLE SEQUENCE		
#	DELTA	SUM
Bumper	0.00	0.00
1	0.50	-0.50
2	2.00	-2.50
3	2.00	-4.50
4	5.00	-9.50
5	5.00	-14.50
6	10.00	-24.50
7	15.00	-39.50
8	20.00	-59.50



Amplification | NXAMPs

Formidable power. Precision control. Flexible networking.

Available in 4 X 1300 Watts, 4 X 2500 Watts and 4 X 4500 Watts versions, the NXAMPMK2 combines advanced signal processing with four state-of-the-art Class D amplifiers to create a flexible, light-weight powering and control solution for NEXO loudspeaker systems.



The Process

When it comes to specifying a complex technological service like an audio system for a house of worship, the decision-making process is not always a linear one.

Researching information for solutions to fulfil the requirement is where that process starts to become complex. Sound system set-ups for concert events are founded on very different criteria to those suited to a worship space. Choose your partners carefully, rather than being influenced by the “stardust” of which world-class bands used the loudspeaker systems last year! Read on to discover the vital criteria in the decision making process.



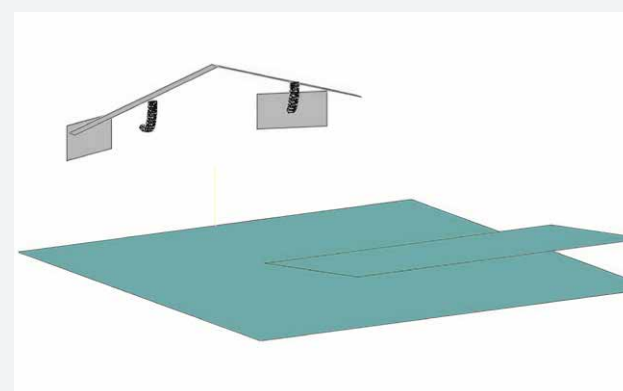
Vital Criteria



Conveying the message clearly

Clear speech intelligibility and a full frequency response are essential to ensure that worshippers can hear every word clearly and engage fully with the message.

NEXO sound systems excel in this area, while also providing the power and headroom necessary when live music is part of the service.



The same high-quality sound for every member of the congregation

Worship spaces can be complex, particularly in historic buildings with multiple areas and many hard, acoustically reflective surfaces.

NS-1 system configuration software makes it easy to design and predict the coverage of a sound system in the venue prior to installation, ensuring that every member of the congregation experiences the same high-quality sound, with even distribution of SPL and frequency response.



Placing music at the heart of the celebration

The choice of countless live music venues, events and festivals around the world, NEXO systems in houses of worship ensure that congregations feel the music, as well as hearing it.

Recognised for their musical sonic signature and for the power and precision of their coverage, NEXO loudspeakers provide front of house and stage monitoring solutions, with Dante networkable NXAMP powered controllers offering plug and play amplification and processing that enables the optimum combination of NEXO speakers to be configured.



Making a sonic impact while remaining visually unobtrusive

Employing a number of patented technologies, the performance of NEXO speakers is typically characterised by very high output from a compact cabinet size. So, a NEXO system is typically smaller than other systems, and subsequently less obtrusive in the space.

NEXO systems are also available in custom RAL colours, ensuring that systems fit seamlessly into the design of the building.

High-Profile Contracts | Worldwide



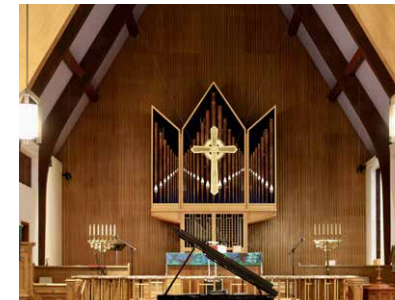
Mount Angel Abbey (USA)



Wattana Presbyterian Church (Thailand)



Hallows Church (USA)



St Paul's Episcopal Church (USA)



Aula Magna, University of Bologna (Italy)



Stockton Parish Church (UK)



Vuon Ngo (Vietnam)



St Mary's Cathedral (USA)



Willebadessen's Baptist Church (Germany)



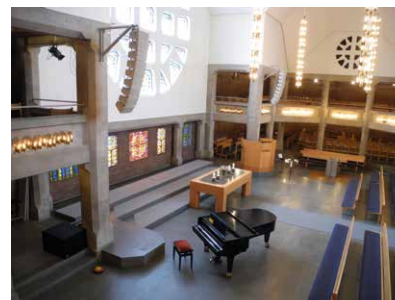
The Grainery Church (Australia)



Enjoy Church (Australia)



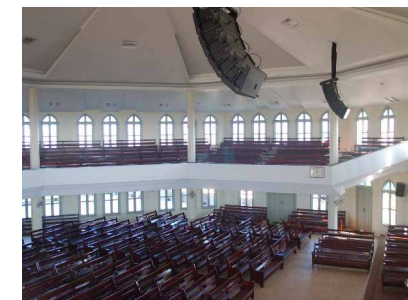
Valley Life Centre (USA)



Bethlehem Church (Sweden)



Salvation Army Temple (USA)



Zarkawt Church (India)

CASE STUDY

Bethlehem Church

Gothenburg, Sweden

With music and the spoken word at the heart of the modern worship service, any renovation of a church sanctuary calls for a critical appraisal of the performance of the fixed audio system. In the Bethlehem Church in Gothenburg, Sweden, just such a renovation resulted in the installation of a new NEXO GEO M6 compact line array, after careful analysis of the church room's acoustics and a shoot-out between manufacturers' solutions.

Tech 4 Event AB has specialised in church installations over recent years, and was called in to assess the needs of the Bethlehem church, and its 800-strong congregation. Björn Carlsson, the CEO of Tech 4 Events, and his colleagues looked at a number of different sound reinforcement systems for the installation, considering the aesthetic appearance of the audio solution as well as its sonic performance.

The church called for a demo and comparison between two brands, a clean shoot-out which was welcomed by Björn Carlsson. "Such a test is rewarding for the customer, in this case the assembly. In this way, they get an opportunity to listen to different systems before choosing what to install."

In the end, the choice rested with the assembly, and they chose the NEXO GEO M6 compact line array.

"We used NEXO's own software, NS-1, which is a powerful and intuitive system configuration and simulation tool with a smooth drag and drop interface. The NS-1 program enabled us to configure and optimize performance of any NEXO system by simulating its behaviour in the current location. It is a very smooth and extremely useful piece of software."

Acoustics are often a tough challenge in a church building, but one of the key requirements of the congregation was for as discreet a speaker system as possible, one which would not visually affect the church environment more than necessary.

"We know from experience that, using the right technology, it is possible to create good sound systems which can also look nice and blend into the church room. In this case, we mounted the speaker system on a heavy concrete beam between floor and ceiling, and the assembly wanted the speakers to pick up the colour from the concrete beam. So the loudspeakers and flyware were specially painted in the RAL colour we received from the architect to blend in perfectly.

"The GEO M6's lightweight polyurethane composite cabinet measures only 191 x 373 mm x 260 mm and is therefore ideal for installation in design-sensitive environments. In addition, this line array also performs very well when it comes to both sound pressure and sound quality. Not only is there a wide range of mounting accessories, the system offers us as an installer and audio rental company a reliable, TÜV-certified system with very good performance. The Bethlehem system uses 18x GEO M6 modules in two arrays of 9 cabinets, supplemented by 2x NEXO LS18 subbass. The entire system is powered by 3x NEXO NXAMP4x1, which brings the built-in, advanced processor that makes the system sound so good."

Carlsson concludes, that "we, and more importantly, the congregation is very pleased with the results in the Bethlehem Church. Of course, the sound quality has become much better with a steady frequency range from bass to treble, but above all speech comprehensibility has become significantly better. Every seat in the whole church must enjoy the same sound and we have managed to achieve that. In fact, there is only 2 dB between the highest and lowest points in the whole church, which is a very, very good result."

With thanks to Peter Fredberg, and MONITOR magazine for this article.
All photos © Peter Fredberg.



Of course, the sound quality has become much better with a steady frequency range from bass to treble, but above all speech comprehensibility has become significantly better.

Björn Carlsson, CEO, Tech 4 Events

CASE STUDY

St Mary's Cathedral

Oregon, USA

Alpha Sound was contacted to solve audio intelligibility problems for St Mary's Cathedral, the seat of the Roman Catholic Archdiocese of Portland. The beautiful and prestigious house of worship was built nearly 100 years ago. Although refurbished in 1996, it remained troubled by the congregation's complaints of not being able to hear or understand speech in its highly reverberant acoustic space.

Devin Sheets, lead engineer at Alpha Sound, describes the church as "the only venue of its kind in our area; modernised yet classical, and quite traditional in a way that is rare in the USA these days. The original point source PA system was located in the ceiling behind cloth panels, and it's fair to say the sound was bad, and the coverage awful. The room is so reverberant, with some 4.5-5 secs of decay, that a line array solution was the only option."

Based in Salem, Alpha Sound has become a committed user of sound reinforcement solutions from the NEXO and Yamaha marques, and Sheets explains that NEXO's compact GEO M6 line array stands out as the most successful design for their house of worship installations.

"It is our best shot at getting intelligibility in these situations," he says, "instead of spreading unwanted sound everywhere like a floodlight, which leads to a muddy and frustrating result, the unique M6 high-frequency horn focusses the sound like a laser beam on the seating areas alone. This produces a very big and very clear sound from a very small package."

Using NEXO's proprietary NS-1 software modelling tools to plan the system, Alpha Sound arrived at a deceptively simple design. Main arrays of 6 modules of NEXO M6 per side handled the nave: additional smaller 3-module clusters of M6 per side took care of the transept and aisles, maintaining consistency of sound. A pair of NEXO's super-compact ID24 point source cabinets in the ceiling provided contingency coverage for the small balcony area.

With the main arrays hung in the open air, the Alpha Sound team had to do everything in their power to ensure a low visual impact in the space. That promise involved trying no less than 20 different paint samples on the M6 cabinets, and 14 different designs of hand-painted gold embellishment, to help the arrays fit discreetly into the architecture of the church and match its Classical Italian decor. "This client paid more attention to detail than anyone I've ever worked with, in fact it was rather thrilling to collaborate with them! And it shows in the results."

Duane Sheets reports that reactions to the new system have been incredibly positive. "NEXO's GEO M6 line array speaker system provides smooth and even coverage to every seat, and possesses a very natural frequency contour which compliments the venue acoustics for both speech and music. We had people telling us they could understand everything effortlessly, some for the very first time. For St Mary's, this system has met their highest expectations both in terms of intelligibility and aesthetics. As we say with the NEXO product, you could spend a lot more money but you can't buy better."



NEXO's GEO M6 line array speaker system provides smooth and even coverage to every seat, and possesses a very natural frequency contour which compliments the venue acoustics for both speech and music.

Duane Sheets, President of Alpha Sound

CASE STUDY

Enjoy Church

Melbourne, Australia

Enjoy Church, headquartered in Melbourne, is the fastest-growing church in Australia. As is common for many churches in the country, the main campus is situated inside a warehouse, which has undergone mainly cosmetic improvements to transform it into a functional worship space. It can now seat approximately 1800 people, but its acoustic environment is not ideal.

Forefront Productions had installed a NEXO GEO S12 line array system in this building in 2009, but, in order to keep up with its expanding congregation, Enjoy Church asked Nick Burns and Matt Wever to implement a purposeful main speaker system upgrade. The aim was to apply more modern sound reinforcement technology to the venue's geometry, and better cater for future changes in presentation as well as capacity.

Forefront's Nick Burns selected the STM Series modular line array from NEXO as the main building block of the new system. "For this project, we needed to supply coverage to a greater area without increasing the overall line array length (so as to not impede sight lines), and at the same time increase headroom and sonic capability. The STM system allowed us to deploy double wide main arrays of M46 main and B112 bass modules, with under hangs of the smaller M28 omnipurpose module. Using M46 main cabinets only for the centre fill and outfill arrays meant we could keep the same HF/MF sonic signature without the expense or physical size of the main arrays."

STM's modularity means it can change and expand really easily. "It really is the Lego of speaker systems. We can simply add more STM cabinets of any form to the system to further extend the value of the investment."

Forefront's designers Nick Burns and Matt Wever used NEXO's proprietary NS-1 calculation and coverage prediction software to provide an extremely true representation of the actual system performance. "It is a valuable tool in producing any NEXO system design, coupled with mechanical information and of course the ability to also produce 3D visual representations. Having been very meticulous in the design phase of the system, we were again particularly impressed by how true to life NS-1's MIF calculations are."

The results are notable. One of the great characteristics of the STM system is its perceived "near field" sound. This extends to the furthest corners of the auditorium area, giving the listener the impression that they are very close and drawn to the action. From full range live band program material to speech, the intelligibility and consistency in coverage throughout the space is impressive.

This installation not only provides a significant and notable sonic improvement, but allows Enjoy Church to cater for its various needs, both in style of its presentations from contemporary church high impact band reinforcement, to dramatic theatrical performances, spoken word and everything in-between.



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It really is the Lego of speaker systems. We can simply add more STM cabinets of any form to the system to further extend the value of the investment.

Nick Burns, Designer, Forefront

CASE STUDY

Valley Life Centre

Oregon, USA

One of the most elegant fixed sound system installations now graces the 400-seat sanctuary of the Valley Life Centre in Dallas, Oregon. NEXO's compact GEO M6 line array has been delivered by local audio specialists Alpha Sound, as the front end of a digital system featuring a Yamaha QL5 mixing console, and personal in-ear monitoring facilities.

"The 400-seat, intergenerational congregation sanctuary previously had a mono center cluster of horns enclosed in a fabric cloud and a simple analog console with a few wedges for monitors," says Devin Sheets, head engineer at Alpha Sound.

Now two NEXO M6 line arrays cover the 180-degree room perfectly with added localization from ultra low profile outfills. Along with the subwoofers, the speaker system naturally delivers a "modern" sound that is fitting for contemporary worship styles. "The new system will serve this church community very well for decades to come," added the elder Sheets.

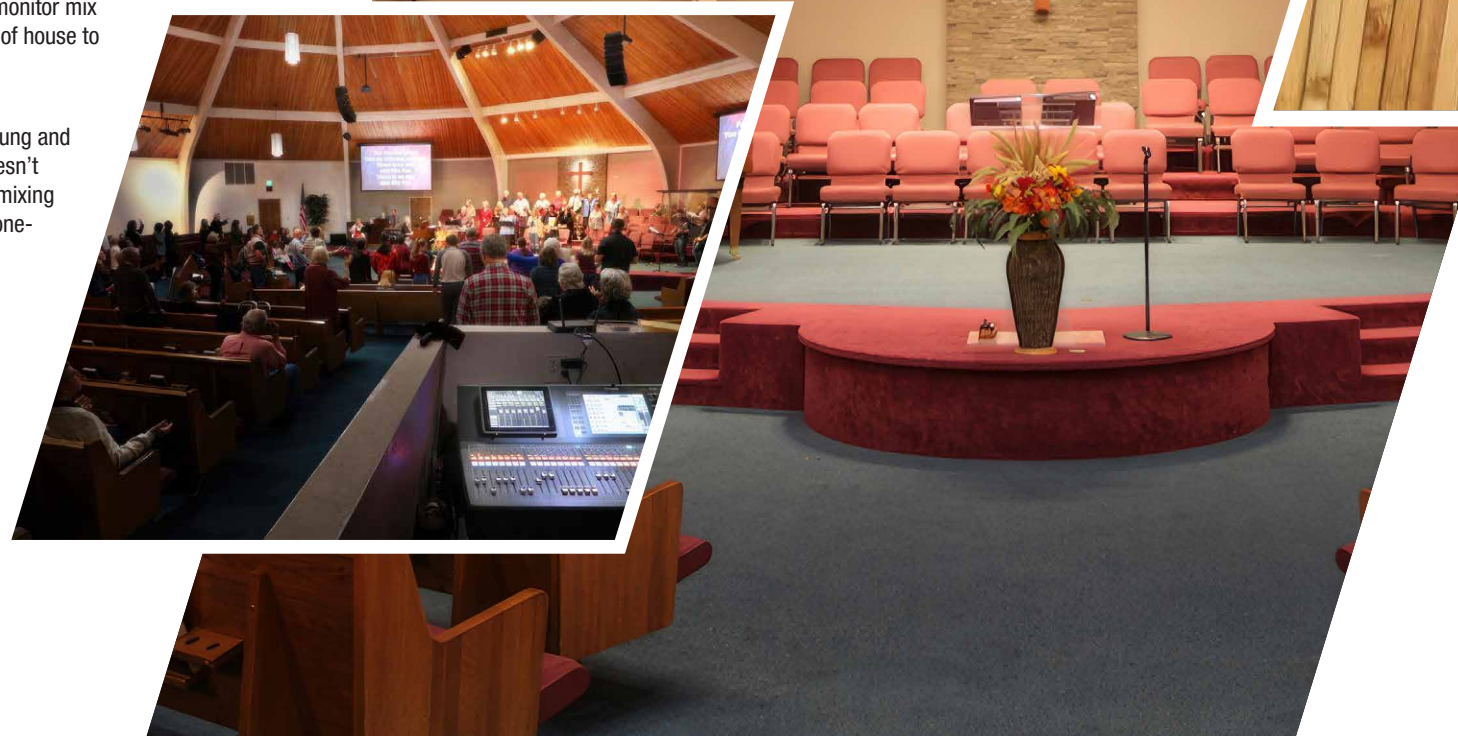
The M6 line array configuration consists of six per side, one per side of NEXO LS18 subwoofer, one per side NEXO ID24 speakers used for outfills, and two NEXO NX4x1 Mk2 amplifiers. "The clarity and detail of this new system is absolutely incredible," states Chris Barker, Head Pastor. "Many people can hear the instruments and voices for the first time, and the younger crowd really loves the new depth of sound. Because it all sounds so smooth, we really aren't getting complaints about the volume even though it is actually a lot louder than ever before. It all just sounds amazing!"

Head engineer, Devin Sheets, said that the sonic demands of modern worship styles and the need for consistent and ergonomic functionality drove the decision for the Valley Life Center to purchase the Yamaha and NEXO systems. "The very first Sunday on the new Yamaha QL5, with no previous rehearsal, we had 32 inputs and 15 monitor channels (12 IEMs via the Monitor Mix App) up and running within satisfaction in under an hour." People of all ages and technical skill levels can easily download the Yamaha simple and intuitive Monitor Mix App on their phones, and within minutes receive the exact monitor mix that they need to hear. "For Valley Life Center, Sheets continues, "this freed up the personnel at front of house to concentrate entirely on the house mix." A Yamaha Tio digital I/O stage box was also installed.

"The ability to digitally save Alpha Sound's settings on the mixer and start from that week to week is wonderful," states Roger Shinn, Tech Director at the church. "Also, having everyone on stage both young and old adjusting their own monitor mixes through their phones has been a major relief. After all, who doesn't like their own mix? We hardly get any complaints now! And the system sounds beautiful and makes mixing very easy and enjoyable. I especially appreciate Alpha's team investing so much time with us doing one-on-one training until we could fly on our own; that was invaluable."

"We have had so much success as a company with the Yamaha and NEXO brand, most of our sales have come not from any fancy talking or trendy marketing, we simply bring prospective clients into spaces where we have installed these systems or let them hear demos in their own spaces," comments Duane Sheets, President of Alpha Sound.

The Alpha Sound team said they really enjoy working with churches. "Suddenly transitioning to a system that is a good half-century more advanced can be really difficult, especially for multi generational congregations," noted the younger Sheets. "The NEXO and Yamaha product lines make this transition not only painless but exciting for everyone. It is really great seeing worship team members who are sometimes also a good half-century apart in age getting along so well with the new technology and many benefits."



We have a pretty unique way that we like to tune and calibrate the Yamaha and NEXO systems for house-of-worship applications, and the sound of it sells itself.

Duane Sheets, President of Alpha Sound

CASE STUDY

Church of the Castle

Malbork, Poland

NEXO's sleek contemporary compact loudspeakers are an aesthetically pleasing fit for one of Poland's most valued heritage sites, in the Church of the Castle of the Teutonic Order in Malbork, officially recognised as the largest castle in the world.

The Castle itself is a medieval fortress, completed in 1406, and designated a World Heritage Site by UNESCO 20 years ago. This year, as part of an extensive reconstruction programme in the Church of the Blessed Virgin Mary, LAUDA Audio was asked to design and install a sound reinforcement system to support the permanent and temporary exhibitions that are to be hosted by this historic venue.

The church can accommodate around 300 people in its main hall, attending meetings and presentations, as well as concerts. However, with a ceiling height of 14 metres, the acoustics of this medieval building are demanding. Reverb time is approximately 6 seconds, which presented a big challenge for the audio system designers.

"Our most important design objective was to achieve uncompromised sound quality, and multifunctionality for the system," explains Marcin Popek of Lauda Audio, a pro-audio specialist company from nearby Gdansk which is also the Polish distributor of NEXO systems.



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Marcin Popek, Lauda Audio

For the main system, Lauda Audio selected NEXO's compact GEO M6 line array, recognised for its exceptional speech intelligibility and smooth even coverage. Using elegant white cabinets, two arrays of 9x M620 modules are flown at a height of 6 metres to cover the long narrow Church interior – 9 metres in width, with a throw of 32 metres. 2x LS600 subs per side were used for LF reinforcement, hidden from view.

A dynamic approach to audio-visual presentation called for a surround system, and for this, Lauda Audio has chosen NEXO's super-compact ID24 cabinets. 10 of these small units, with 90x40 directivity, have been installed on the side walls, where they are virtually invisible. They are set up to work as surround speakers with the main system, or independently controlled for use on exhibition projects. The twin 4" full-range ID24 loudspeakers are the perfect solution for this application, designed to be low profile while fitting into awkward and acoustically challenging spaces.

All the audio devices in the Church are connected on a Dante network, and controlled by a Yamaha MRX7-D mixer, using iPad remote control via the RS232 port of the RTI system.



CASE STUDY

Willebadessen's Baptist Church

Paderborn, Germany

In the calm and elegant modern interior of Willebadessen's Baptist Church, a high-flying GEO M6 line array is almost invisible in its custom grey colours. The Church approached Kalle Hogrefe of Sound Linear, the Paderborn-based installation and rental company, to design a system that would provide smooth and even SPLs to each of the 1500 seats in the sanctuary.

After spending a test weekend with NEXO GEO M620 full-range cabinets, pole-mounted for the evaluation, a favourable decision was made. Hogrefe used NEXO's NS-1 proprietary modelling software to design and specify a system which used 7x GEO M620 cabinets in L/R arrays, with a centre cluster of 3x M620s. For the choir, 3x PS10-R2 speakers were fitted behind the arrays. These were powered by 2x NXAMP4x1 amplifier/processors.

For aesthetic reasons, the Church wanted to make the system as low-profile and invisible as possible, so all speaker elements were painted in a soft custom grey colour which blends in with the décor. This includes two new ID24 super-compact speakers, which are being used as floor monitors on stage. These powerful twin 4" cabinets are paired with the DTD Controller: in a light 2U rack, this unit confers new affordability and accessibility on NEXO loudspeakers by connecting them to third-party amplifiers of every size and scale.



CASE STUDY

Mount Angel Abbey

Oregon, USA

Located in Salem, Oregon, Alpha Sound is rapidly establishing a reputation for excellence across the US for its work in designing and installing sound systems in houses of worship. Following a recent project at St Mary's Cathedral of the Immaculate Conception in Portland, lead engineer Devin Sheets and the Alpha Sound team have added further to their credentials with another successful installation at the prestigious Mount Angel Abbey monastery of Benedictine monks, established 140 years ago in St. Benedict, Oregon.

"The brief at Mount Angel Abbey was to amplify the spoken word throughout the abbey with the exact same sonic character and timbre as that of the unamplified choir, while also providing pristine audio capture for the live streaming of choral music" reports Devin. "And, of course, the system had to be as unobtrusive as possible in such a historic building."

With line array clusters and delays deemed inappropriate in this case, thoughts turned quickly to NEXO's ID84 column speaker. "In a highly reverberant space with up to 5 seconds of decay, it's difficult enough to understand speech at 15 feet, let alone 150 feet away at the back of the abbey" says Sheets.

Also from NEXO's ID Series, ultra-compact ID14s are deployed to cover the nave, the choir area, an additional side chapel and



The sound of the ID84 is amazingly smooth and natural, and it fires like a laser beam to deliver total clarity right to the back. It's just perfect for this type of application."

Devin Sheets, Lead Engineer at Alpha Sound

organist waiting area, and 6 per side along the triforium, essentially a U-shaped balcony around the front and sides of the space.

Power and processing come from NEXO's DTD controllers and amplifiers. "It really helps the budget to have an appropriately-powered amplification solution that doesn't compromise on quality in any way" says Sheets, "And it's also important that the system is easy to use by anybody in the absence of trained operators."

A range of DPA microphones is used at podiums, on custom-built wireless microphone stands, and located discreetly in areas of acoustic shadow to capture the choir without encountering any direct sound from the speakers.

"Perhaps it's not surprising that the monks place such a high level of importance on pure sound quality and acoustics" comments Sheets in conclusion. "We really had to bring our A game to this project and thoroughly enjoyed the process of meeting the very exacting demands of our client."

"At Mount Angel Abbey, we've installed the best microphones and the best column speaker into an extraordinary acoustic environment. Listening to the system, I genuinely find it impossible to imagine how the sound could be any better."



NEXO
Parc d'Activité
du Pré de la Dame Jeanne
B.P.5
60128 Plailly
FRANCE
Tel: +33 (0)3 44 99 00 70
Fax: +33 (0)3 44 99 00 30
E-mail: info@nexo.fr



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