

WSDG
WALTERS-STORYK DESIGN GROUP



ARCHITECTURAL
ACOUSTIC
CONSULTING

MEDIA
SYSTEMS
ENGINEERING

Company Profile Religious

wsdg.com

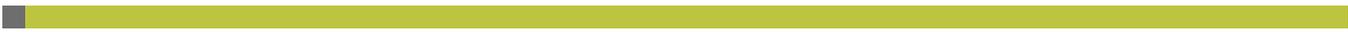


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Company Background and Structure

Company Background

WSDG - Walters-Storyk Design Group is a global architecture, acoustic, electro-acoustics and advanced audio-visual systems integration consulting and design firm. Pioneering architect/acoustician, John Storyk (AIA), founded the company in 1969 with the creation of Jimi Hendrix's Electric Lady Studios in NY.

With USA headquarters in Highland, New York, as well as offices and representation in Latin America, Europe, Middle East and Asia, WSDG is the partnership of Founding Partners Beth Walters and John Storyk. The firm's global team includes over 65 partners, associates and design professionals.

WSDG's almost 50 years of innovative design achievement has produced over 3500 diverse global projects. These assignments include: NY's Jazz At Lincoln Center and studios for Alicia Keys, Jay-Z, Bob Marley, Bruce Springsteen, Celine Dion, Def-Jam Records, ESPN, MTV (Latin America), WNET, KKL (Switzerland) and Boston Symphony Orchestra.

WSDG is an eleven-time winner of the international NAMM TEC Award for studio design creativity. Recent WSDG TEC winners include: Jungle City Studios, NY (2011), the Berklee College of Music – 160 Mass. Ave. recording/teaching complex, Boston (2014), The Church Studios, London (2016), and Boston Symphony Orchestra Control Room, Boston, MA (2017). The firm's work has been published extensively, and discussed in numerous professional audio, broadcast and systems design publications.

Company Structure

WSDG maintains offices and representation around the world:

USA:

Highland, New York
New York, New York
Miami, Florida
San Francisco, California
Los Angeles, California

Europe:

Basel, Switzerland
Berlin, Germany (ADA-AMC GmbH)
Barcelona, Spain

Latin America:

Buenos Aires, Argentina
Belo Horizonte, Brazil
México DF, México
Punta del Este, Uruguay

Asia:

Guangzhou City, China
Mumbai, India
St. Petersburg, Russia
Doha, Qatar

Services | Architectural Acoustic Consulting

Acoustic Testing, Measurement and Assessment

WSDG employs sophisticated measurement equipment, the most up-to-date acoustical data-collection and analysis software and complex visualization tools to determine and optimize existing acoustical conditions in time and frequency domains, including RT60 Reverberation Times, Transmission Loss, STI Speech Intelligibility Assessments, SPL Sound Pressure Level distribution, Background Noise Levels and many other parameters. Our engineering team specializes in acquiring critical measurement data in-situ or laboratory-based for documentation. This work applies to both technical design and legal / forensic purposes and presents useful interpretations of measurement results and their consequences. All work complies to the latest international standards, industry benchmarks and professional compliance values.

Acoustic Simulation, Modeling, Auralization

WSDG uses complex prediction and analysis software to model and study the behavior of sound in a three-dimensional virtual prototyping environment by means of an iterative process and has also pioneered the use of acoustical modeling tools and auralization by using the industry's most advanced acoustic prediction and modeling software. These software tools facilitate "auralization" - a complex calculated algorithm that allows for input of an original, non-processed audio file (such as a speech announcement or an acoustical instrument recording) and then renders an audible reproduction of the future acoustical situation in the virtual building environment. This allows all stakeholders to listen to music, speech or any audio content in the virtual design reality, thus providing an invaluable tool during design and planning.

Room Acoustics Analysis and Surface Treatments Design

Room Acoustics is the science of controlling a room's internal acoustic characteristics by creating geometry in combination with creative surface materialization using reflection, absorption and/or diffusion. Excessive reverberation time can lead to poor speech intelligibility, high ambient noise levels, poor ability to concentrate and limited comfort, specifically in workplace and privacy / confidentiality applications. Interior acoustical floor, wall, and ceiling surfaces can be created using a wide variety of materials and finishes, including perforated, slotted, fabric covered, foam based, plastic, wood, glass, metal or gypsum materialization. WSDG carefully studies and specifies appropriate materials and applications, always with a keen eye and respect for a project's underlying architecture.

Sound Isolation, Structural Acoustics Analysis and Design

Structural Acoustics analyzes noise transmission from building exterior envelope to interior and vice versa, as well as noise transmission from one room to another within the building environment. Inadequate acoustical isolation may lead to elevated sound levels within the space which reduces privacy, comfort level and concentration ability; severely limits speech intelligibility and has implications for noise health effects. Primary noise paths often include roofs, ceilings, eaves, walls, windows, doors, room partitions, as well as flanking, ducting and other penetrations. Sufficient noise containment control ensures space functionality and is often required by local municipal codes. WSDG specifications include construction details for wall and slab assemblies and special acoustical isolation conditions (including "room-within-room" construction).

Peer Review, Expert Reports, Studies and Surveys

WSDG is a trusted partner for Peer Review, Expert Reports, Studies and Surveys within the context of Architectural Acoustics Consultation. Peer review is the evaluation of work and studies conducted by other parties. This work is often required to maintain standards of quality; assess solutions and designs; provide a second opinion or variations to a concept; create alternate solutions to improve performance and efficiency; provide credibility; and verify costing and time table analysis. WSDG's studies and surveys are often based on in-situ or laboratory measurements and assessments utilizing a wide range of international benchmarks and standards.

Media Facility Site, Facility, Master Planning, Feasibility Studies

WSDG provides a wide portfolio of design and consulting services that support media facility conceptual planning, master planning, site selection and feasibility studies as well as timely, detailed and cost-effective advice on highly sensitive and complex architectural construction and renovation projects. WSDG has extensive experience with sensitive architectural issues including historical renovations, additions and new construction projects in media production, corporate, government, education, broadcasting and cultural / entertainment sectors.

Broadcast and Recording Studio Design

WSDG brings nearly 50 years of experience in providing design and consulting services that support Broadcast and Recording Studio projects during all phases (master planning, schematic design, design development, construction documentation, bidding – pricing, construction administration and final commissioning / close out). WSDG provides timely, detailed and cost-effective advice on highly sensitive and complex architectural construction and renovation projects, from small but critical retrofits to challenging ground-up construction. WSDG brings extensive experience to sensitive architectural issues including historical renovations, additions and new construction projects in media production, corporate, government, education, broadcasting and cultural / entertainment sectors.

Technical Interior Design, Product Development and Prototype Testing

WSDG provides technical interior design and integration services for media production, cultural, entertainment and corporate environments in close collaboration with all stakeholders with the goal of enhancing room design, achieving a healthier, more inspiring, more ergonomical and more aesthetically pleasing environment. WSDG provides conceptual development, space planning, site inspection, programming, research and construction management for technical AV and lighting design, lighting control, acoustical surfaces and sightline considerations. Designs are illustrated by means of 3D visualizations, renderings and VR simulations. WSDG's engineering team and laboratories are available for acoustical studies, assessments, and measurements as well as for supporting further optimization of acoustical parameters of a given product under development. Feasibility studies and virtual prototyping can be conducted to ascertain the product's acoustical performance level and market position.

Services | Media Systems Engineering

Media Systems Design and Equipment Recommendations

WSDG gives guidance in an increasingly crowded world of technology devices, standards and practices all claiming to be the best and the most futureproof. Corporate, cultural, educational, residential and governmental sites alike are constantly striving to improve their media systems in an effort to stay on top of current presentation, communication, collaboration, conferencing and entertainment techniques. WSDG provides well integrated AV System Designs based on the highest industry standards, while working collaboratively with its clients in developing long term visions, outlooks and strategies.

Media Network, Distribution, System Control, IT and Communication Systems

Telecollaboration, teleconferencing and telecommuting significantly influence corporate culture and workflow. Substantial engineering and integration efforts are required to make these technological advances in fact be supportive to the workforce. WSDG designs individual office, boardroom, conference center, and site wide media networks, while providing AV infrastructure with solid privacy protection and high usability to satisfy even highest quality requirements in both sonic and visual aspects.

Audio / Electroacoustic Engineering, Simulation, Modeling and Auralization

The most visible part of the electroacoustical system is the loudspeaker. Loudspeakers are complex electromechanical devices so varied and rapidly shifting that the market is hard to oversee even for professionals. WSDG specifications are based on 3D acoustical software simulations and virtual prototyping of the venue or room where the architectural conditions are overlaid with the technical, aesthetical and budgetary criteria of the project at hand. WSDG often creates simulated audio playback demonstrations, called auralizations, to facilitate decisions based on auditory impact. Selecting the electroacoustic system most suitable for the space, after determining room acoustics and structural boundary conditions in what-if scenarios, enables WSDG to achieve and exceed target parameters such as loudness level, frequency range, coverage, directivity control and speech intelligibility STI. Electro acoustical systems may be used in voice alarm / emergency scenarios, where properties such as redundancy, certification and reliability are highly critical. WSDG has extensive experience for such systems and is fully familiar with all current national and international regulation including e.g. FIFA, IOC and UEFA.

Audio, Electroacoustic Systems Calibration, Tuning and Optimization

Audio System Calibration or Audio System Tuning is the science and art of bringing the entire sound system to operate at its peak performance. The commissioning process involves WSDG's highly experienced experts in audio measurement and sonic accuracy and is based on a sequence of tasks to obtain the maximum audio precision of the component ensemble installed in a space. Frequency and time-domain measurements as well as extensive listening tests are employed to carefully determine the correct placement, phase-alignments, crossover points, equalization and gain control of a loudspeaker-room system. Full documentation concerning component settings is issued by WSDG for client's reference. For professional audio systems, WSDG recommends recalibration every 12 to 24 months to increase system accuracy and to maximize ROI.

Video Systems Engineering, Content Capturing, Display, Visibility and Sightline Studies

No media experience is complete without a clear, bright, high resolution visual solution. WSDG provides comprehensive video system engineering services, including design of networks, hardware, software and other related infrastructure to support video applications within production, broadcasting, educational, corporate, information and entertainment contexts. Camera and display / projection system positioning often require integration and placement studies that are based on 3D visualization and studies. Typical auxiliary WSDG engineering fields include heat management and noise mitigation.

Peer Review, Experts Reports, Studies and Surveys

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Theatrical Systems

Theatrical Systems Engineering refers to conceptualizing, designing and implementing technical equipment and devices for the performance community, while integrating these designs into the architectural and acoustic fabric of projects. WSDG provides these services including networking infrastructure, theatrical audio-video systems, immersive 3D audio replay, theatrical lighting, wired and wireless communication devices and stage machinery with the goal to give venue owners, producers, and artists the means to express their talents to the full extent of their creative imagination.

Relevant Experience

WSDG (Walters-Storyk Design Group) and its principals have an extensive body of clients in the fields of architectural acoustic consulting, facility master planning and media systems engineering. A list of projects that supports our company profile and credentials follows. For a more extensive client list, please see www.wsdg.com. Our experience spans nearly 50 years in architectural design, internal room acoustics, advanced noise isolation, and systems design required for acoustically sensitive projects of all sizes. Moreover, WSDG has the ability to work seamlessly within a team design environment.

We have assembled a list of projects that underscore our experience with multiple project types:

Central Synagogue
New York, USA

Young Israel Synagogue
Miami, USA

Iglesia Los Olivos
Buenos Aires, Argentina

Crossroads Tabernacle – Boden Center
Bronx, USA

St. Ursen Cathedral
Solothurn, Switzerland

KKL Concert Hall
Luzern, Switzerland

VSL Synchron Stage
Vienna, Austria

Aura Club Events Hall
Zurich, Switzerland

Morro de Chapeu Residence
Belo Horizonte, Brazil

Electric Lady Studios
New York, USA

Vassar Chapel
Poughkeepsie, USA

Igreja Batista Central - IBC
Belo Horizonte, Brazil

Church Le Noirmont
Noirmont, Switzerland

Diante Do Trono
Belo Horizonte, Brazil

Jazz at Lincoln Center
New York, USA

Flughagenkopf – Zurich Airport
Zurich, Switzerland

Rio 2016 – Barra Olympic Park
Rio de Janeiro, Brazil

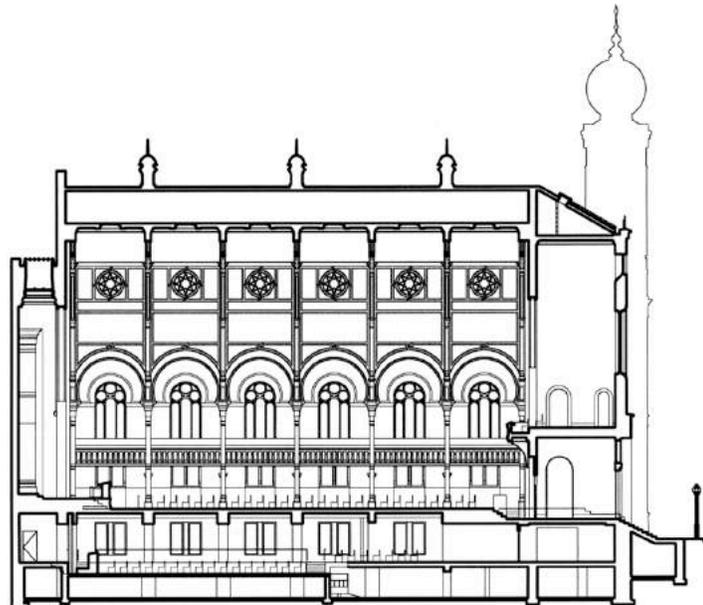
ESPN Digital Center 2
Bristol, USA

The Metroplex at KITEC
Hong Kong, China

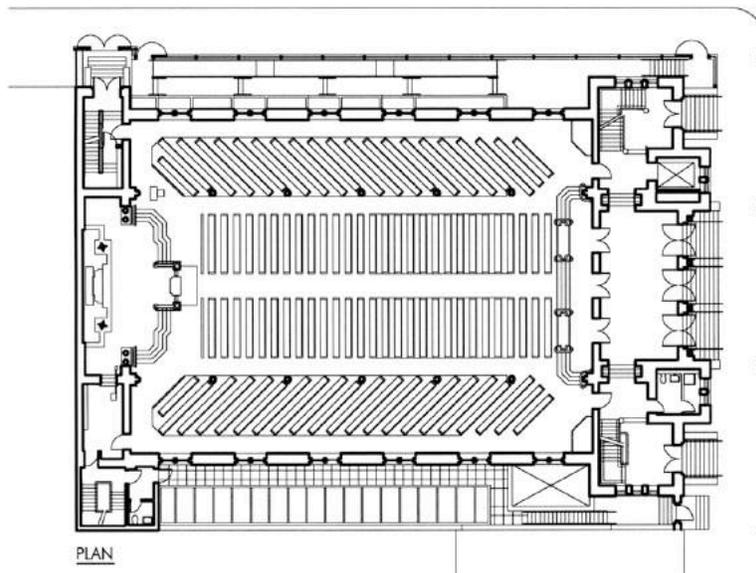
IBP Church São José
São Paulo, Brazil

Central Synagogue - New York, USA

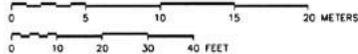
Devastated by a catastrophic fire in August 1998, the Central Synagogue (Lexington Avenue and 55th Street) was reduced to a burnt out shell. Following this disaster, architect Hugh Hardy, recognized for his restorative work on New York City landmarks, was called in to rebuild the treasured synagogue. WSDG played a key role in the facility's rebirth as the acoustical / audio-visual consultant.



SECTION



PLAN



Central Synagogue - New York, USA



Vassar Chapel - Poughkeepsie, USA

Founded in 1861, Vassar College is recognized as one of America's leading Liberal Arts colleges. Located in the scenic Hudson Valley, 70 miles north of New York City, this lovely campus is particularly proud of its magnificent Norman Revival Chapel.

Storyk and Noy conducted a series of tests to measure, analyze, and eventually calibrate the chapel's acoustics. The results revealed that RT60 reverb time was measured at 2.5 seconds in mid frequencies, far afield from the room's optimal 1.5-second requirements. It was fixable, yes, but complicated by Vassar's aesthetic "hear all speakers; see no speakers; make no changes to the chapel architecture" mandate.

Extensive research and planning led the WSDG team to recommend a sophisticated, digitally controlled, electro-acoustical solution capable of covering the entire seating area and balcony. A combination of modern line array and conventional passive speakers were selected. To ensure the integrity of the manual mix mode, a password must be entered into a programmable remote before integrating multiple microphones, an additional analog mixer, and other sources into the system.



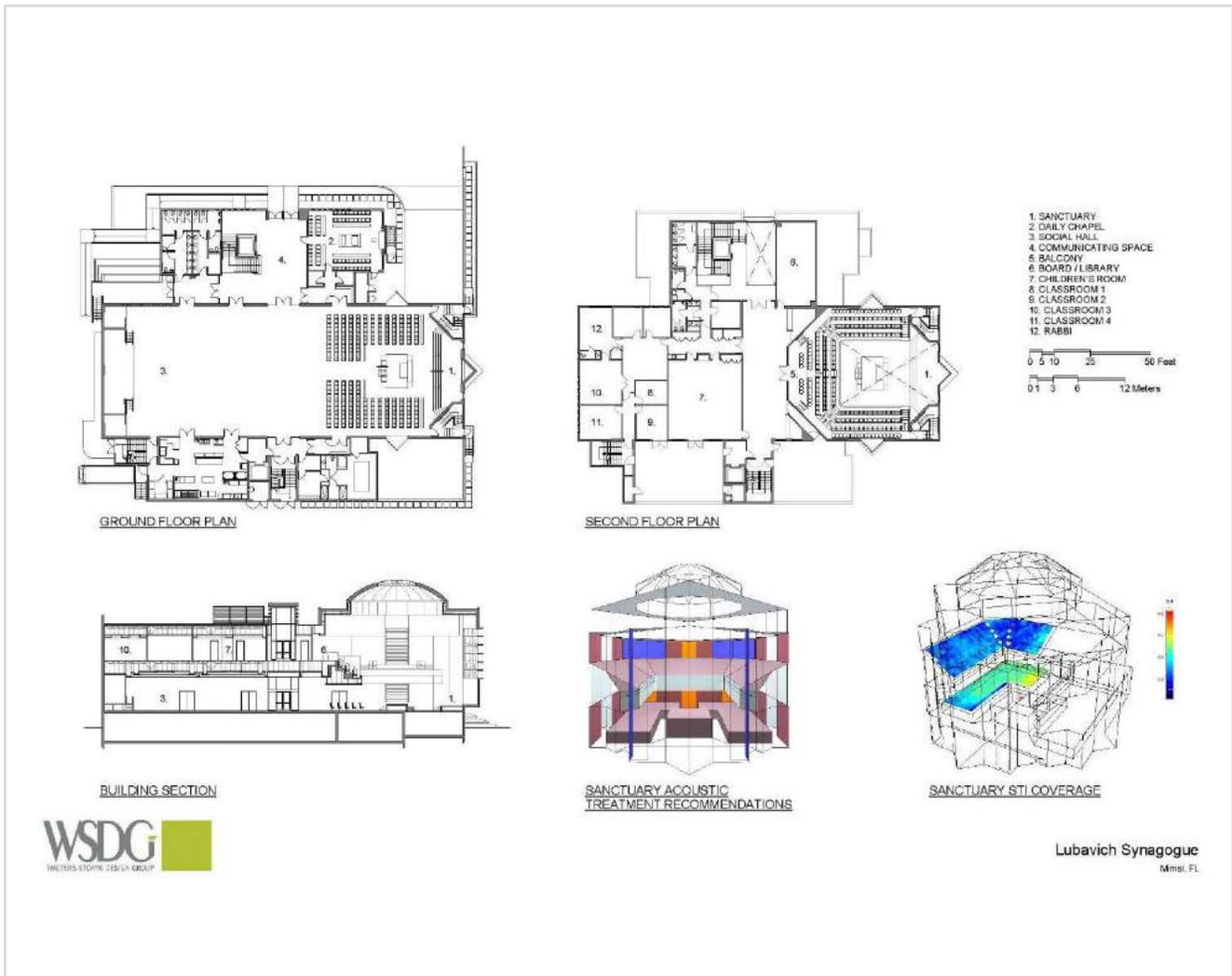
Vassar Chapel - Poughkeepsie, USA



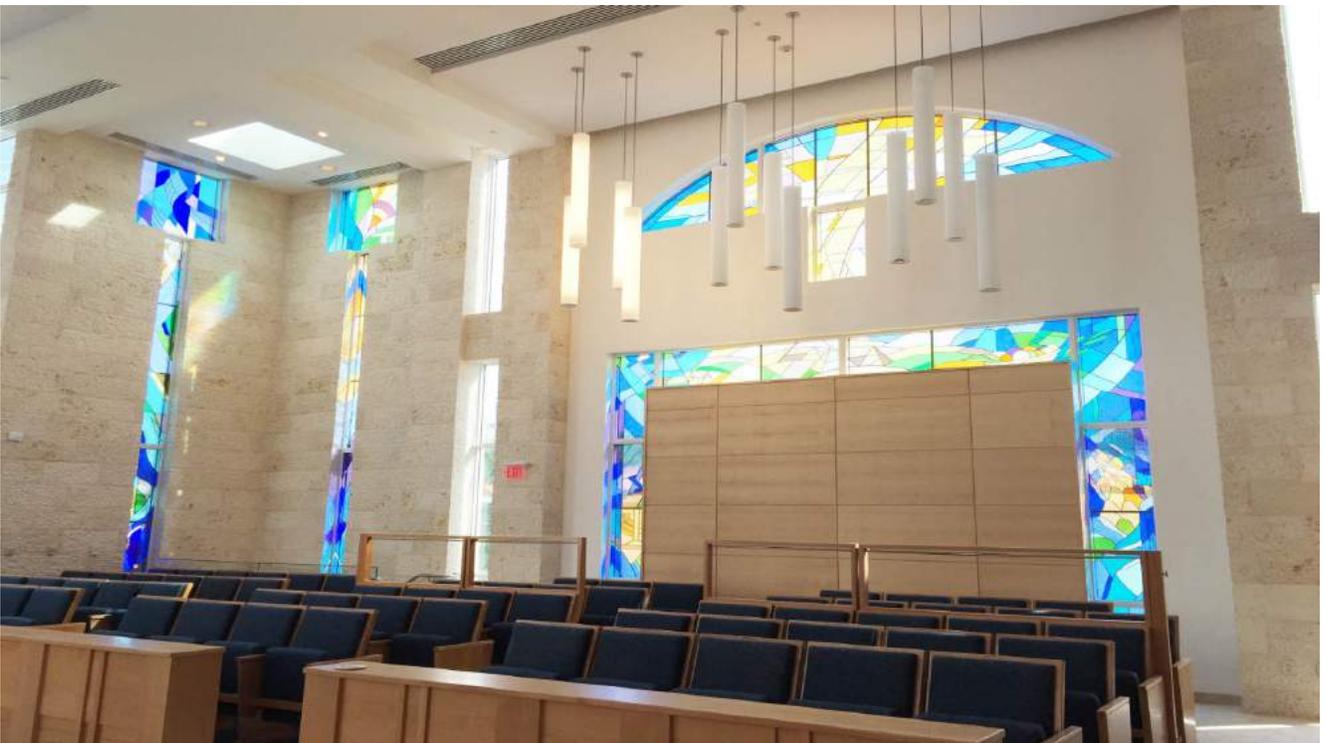
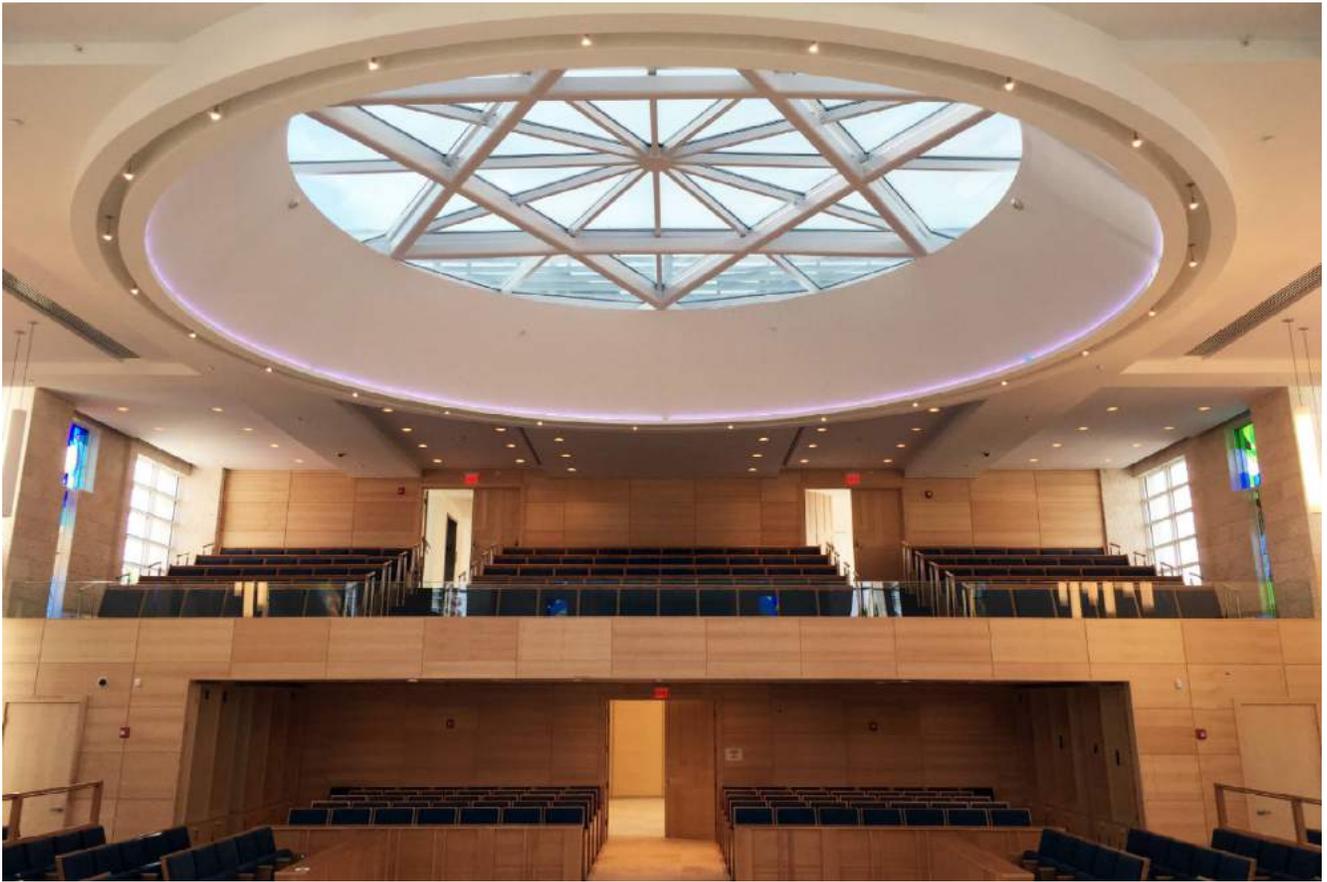
Young Israel Synagogue - Miami, USA

Orthodox Jewish congregations are not permitted to employ electronic sound reinforcement or amplification technology in their temples. Acoustic design therefore, plays a critical role in assuring acceptable levels of speech intelligibility for their services. This issue was a paramount concern when Miami's Young Israel Temple began planning their new Shul. To compensate for the lack of amplifiers, microphones, speakers, and other electro-acoustical support, Miami-based architect Shapiro Associates retained WSDG to develop a 'traditional' program based on physical design and site-appropriate acoustic treatments to establish an environment that would clearly project prayers, song and announcements from the bema.

Engaged at the project's pre-construction stage, WSDG addressed the acoustic challenges at the design stage with proprietary 3D modeling programs. These sophisticated tools produced a series of precisely detailed interior space simulations. Guided by these 'auditory maps,' WSDG acousticians developed a comprehensive construction plan to eliminate potential sound reflection issues and enhance speech intelligibility by implementing effective interior design elements. Precise the geometrical calculations determined the optimal configuration of walls, ceiling height and related 'fixed' construction elements. Potential reflective sound issues were resolved with the aid of recently developed "invisible" construction elements such as striking, micro-perforated wooden diffusers, and highly effective absorptive plaster. But, traditional treatments were engaged as well. Used in temple construction for centuries, porous Jerusalem Stone continues to serve as a beautiful and effective acoustically sound resource.



Young Israel Synagogue - Miami, USA



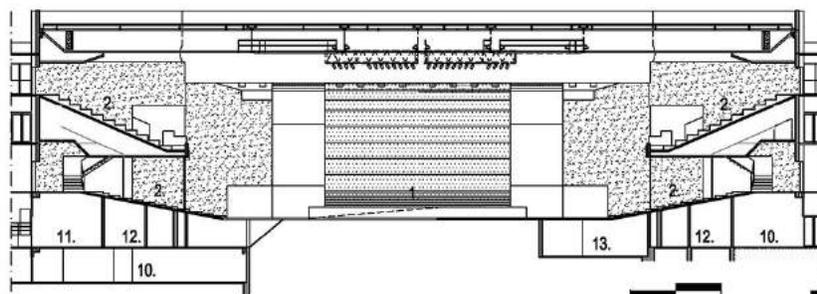
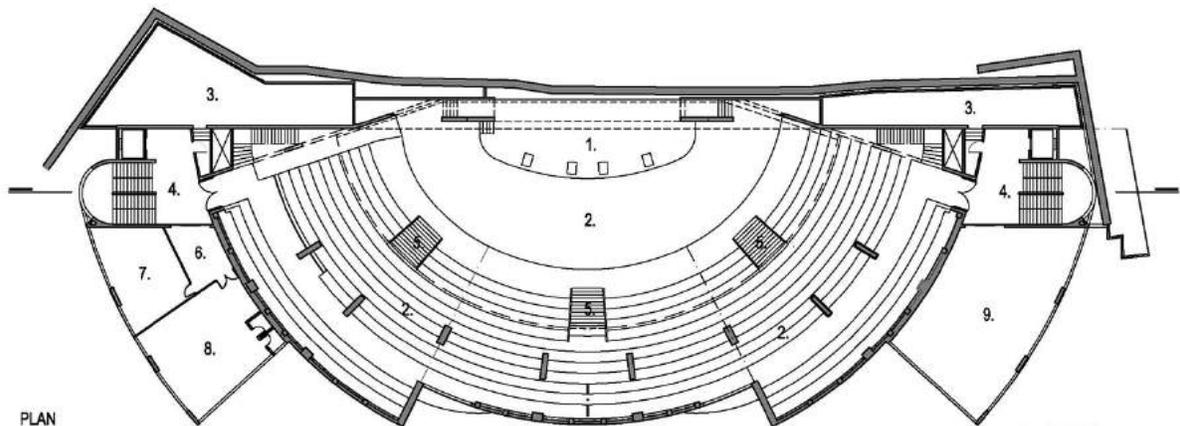
Igreja Batista Central - IBC - Belo Horizonte, Brazil

Igreja Batista Central (IBC) is one of the largest churches in Brazil. The project for the headquarters of IBC in Belo Horizonte was designed to seat 2,500 people in the main room, occupying a total space of 22,900 sq. ft.

Probably the most important issue for this room was to provide near perfect acoustics while at the same time accommodating a wide variety of performances, including worship, concerts, dramas, and outreach events. WSDG was chosen to develop all of the acoustical design and construction of the new facility.

Acoustical measurements were performed to obtain an understanding of the acoustic and intelligibility characteristics of the existing worship space. Reverberation Times of over 5 seconds were present at mid and high frequencies – very unacceptable! The acoustic goal curves for the given room volume call for average reverberation times of around 1.5 to 2.0 seconds for better intelligibility in the room.

In a way to provide a space with accurate acoustic qualities, while at the same time maintaining the interior design concept, WSDG used multiple acoustics treatment solutions. The room received numerous sound baffles suspended above the ceiling structure at the balcony to control the low frequencies. Around the front wall of the balcony was created a white diffuser sloped up to avoid the first reflections on the stage. The entire rear concave wall behind the audience was covered with mid-high frequencies absorption panels and membrane resonators to control low frequencies. The entire stage wall received a broad-band acoustic treatment for low, mid and high frequencies. This treatment was covered with an acoustically transparent fabric for aesthetical reasons and was also used to hide all the lighting and air conditioning elements above the stage. The positions of the suspended speakers were adjusted for best sound coverage and proper frequency response throughout the audience.



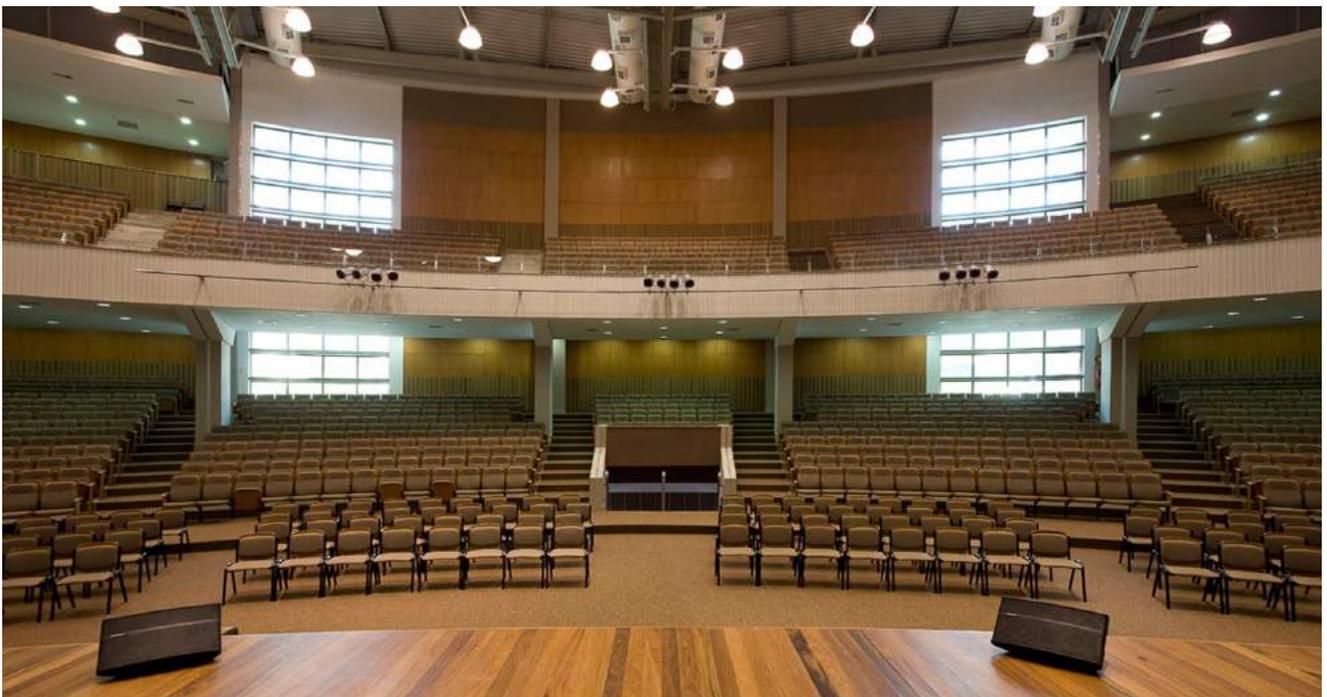
1. STAGE
2. SEATING
3. EQUIPMENT ROOM
4. STAIRS
5. ACCESS
6. RECEPTION
7. NURSERY
8. STORAGE
9. MEETING ROOM
10. GARAGE
11. FOYER
12. W.C
13. BOOKSTORE

0 10 20 FEET 0 5 10 METERS

Walters-Stork Design Group
Highland, NY

BAPTIST CENTRAL CHURCH
BELO HORIZONTE, BRAZIL

Igreja Batista Central - IBC - Belo Horizonte, Brazil

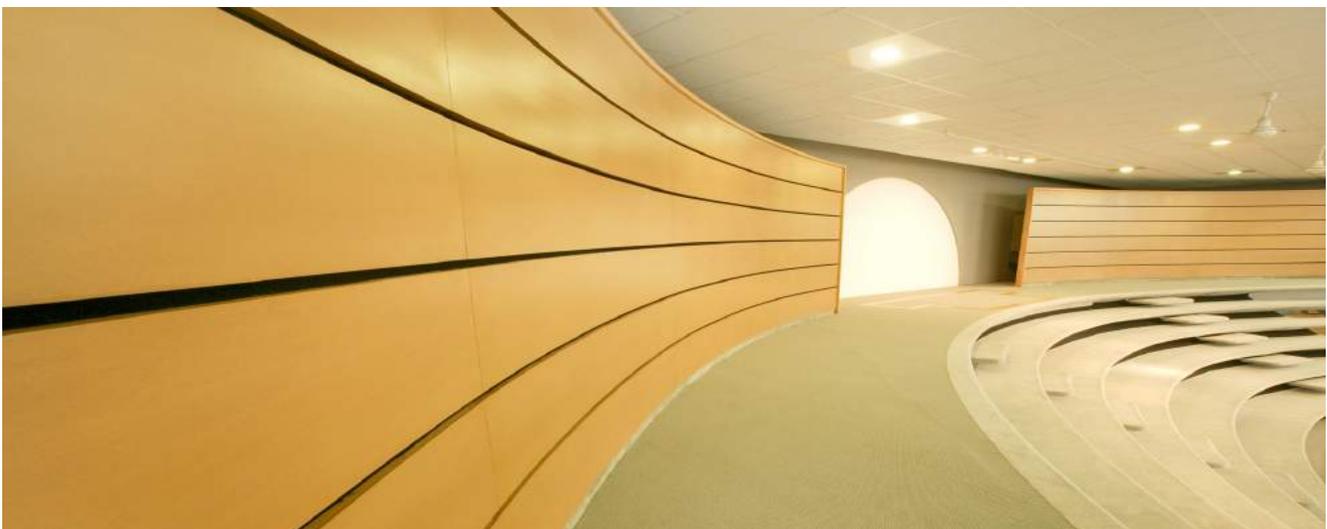


Iglesia Los Olivos - Buenos Aires, Argentina

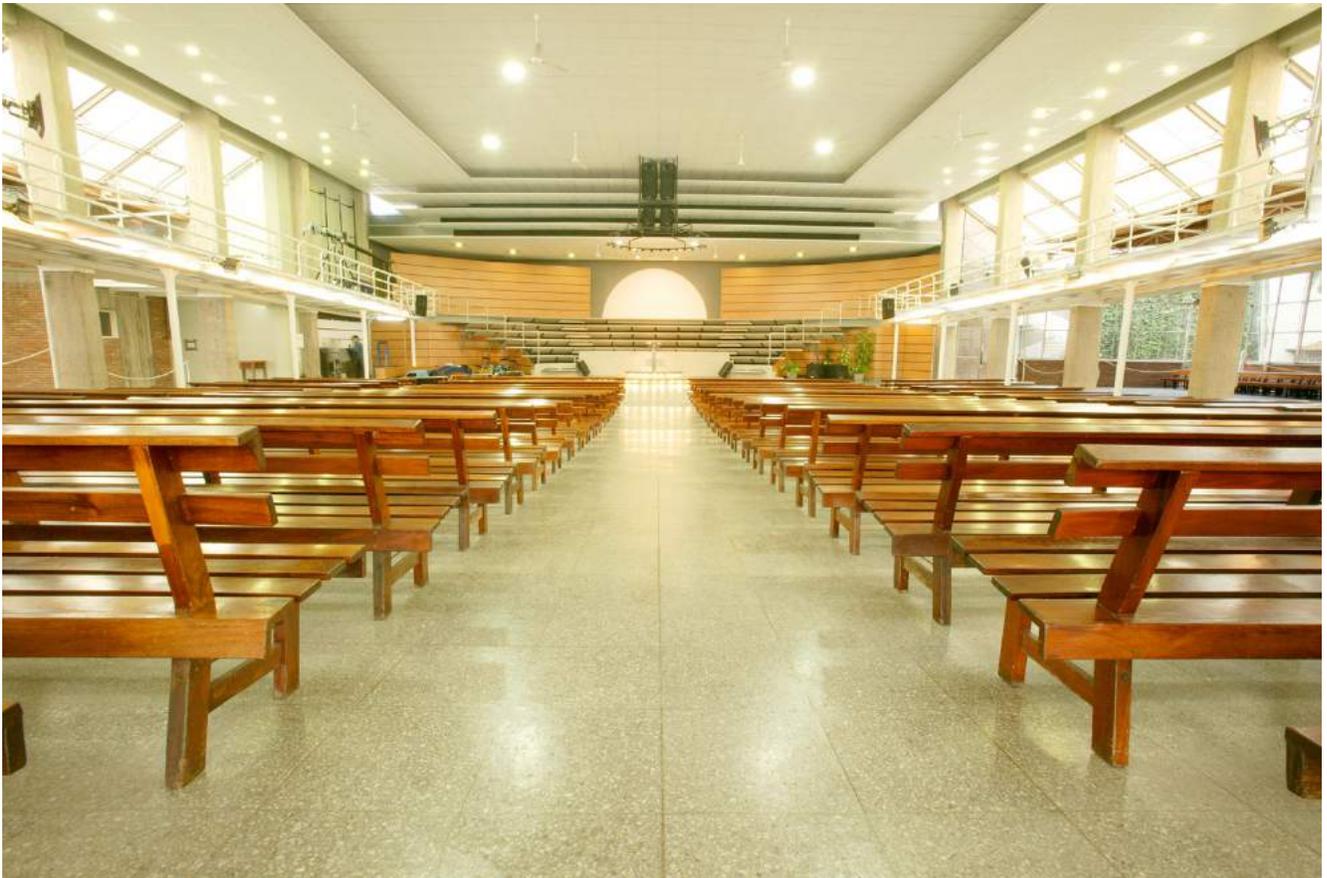
"Los Olivos" church called us to improve the acoustic and electro-acoustic performance of an existing space.

After having done acoustic measurements, we had to manage with modifications on the sound system, adjustments on the general equalization, and a modification in the altar and the performing area of the orchestra.

Together with the Minister and his collaborators, we had to relocate the altar, the orchestra, the stands for the choir and we placed a semi-circular panel, acoustically absorbent on the back area, and acoustically reflecting on the front area, to allow the sound coming from the altar go directly to the audience.



Iglesia Los Olivos - Buenos Aires, Argentina

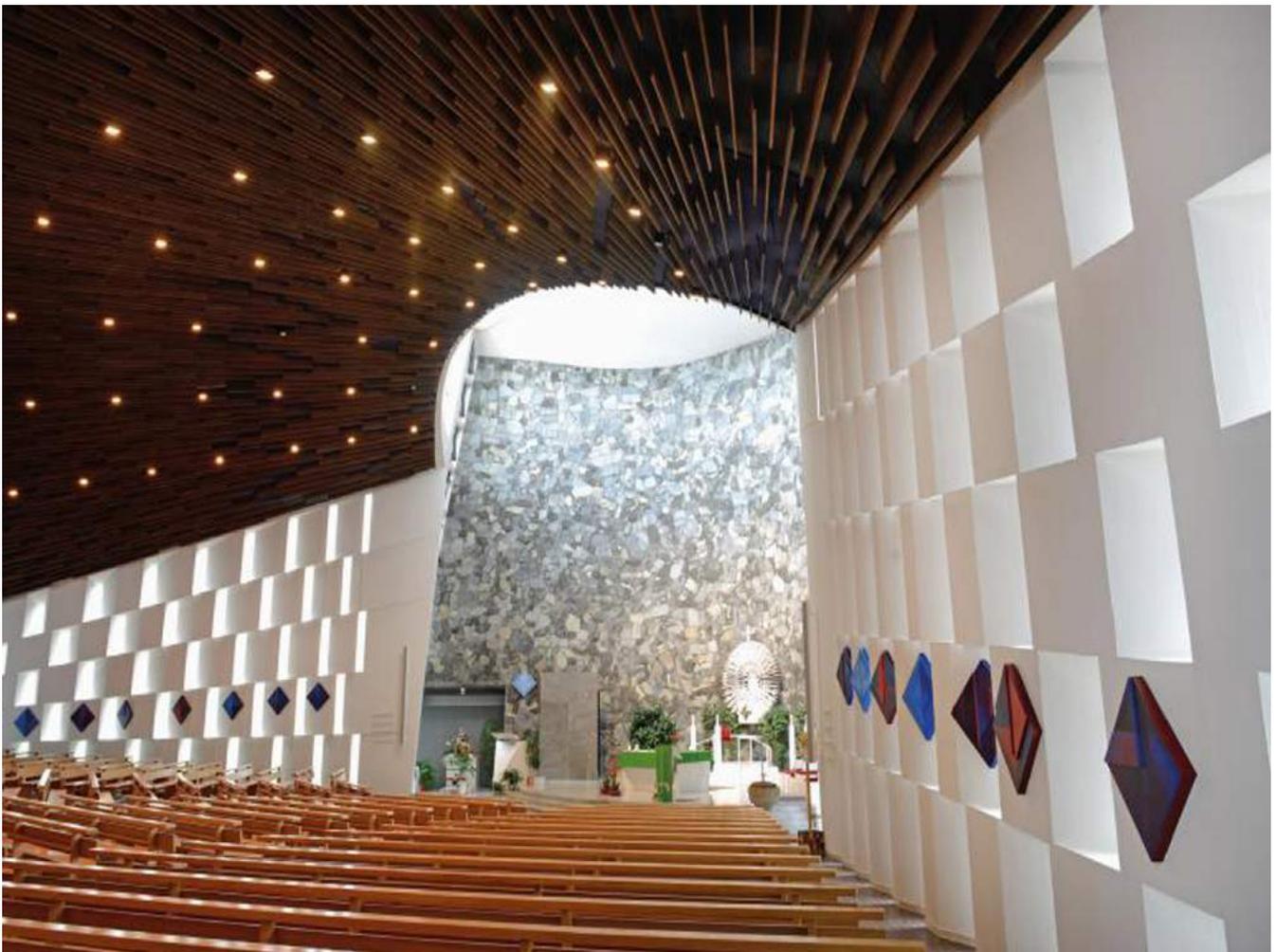


Church Le Noirmont - Noirmont, Switzerland

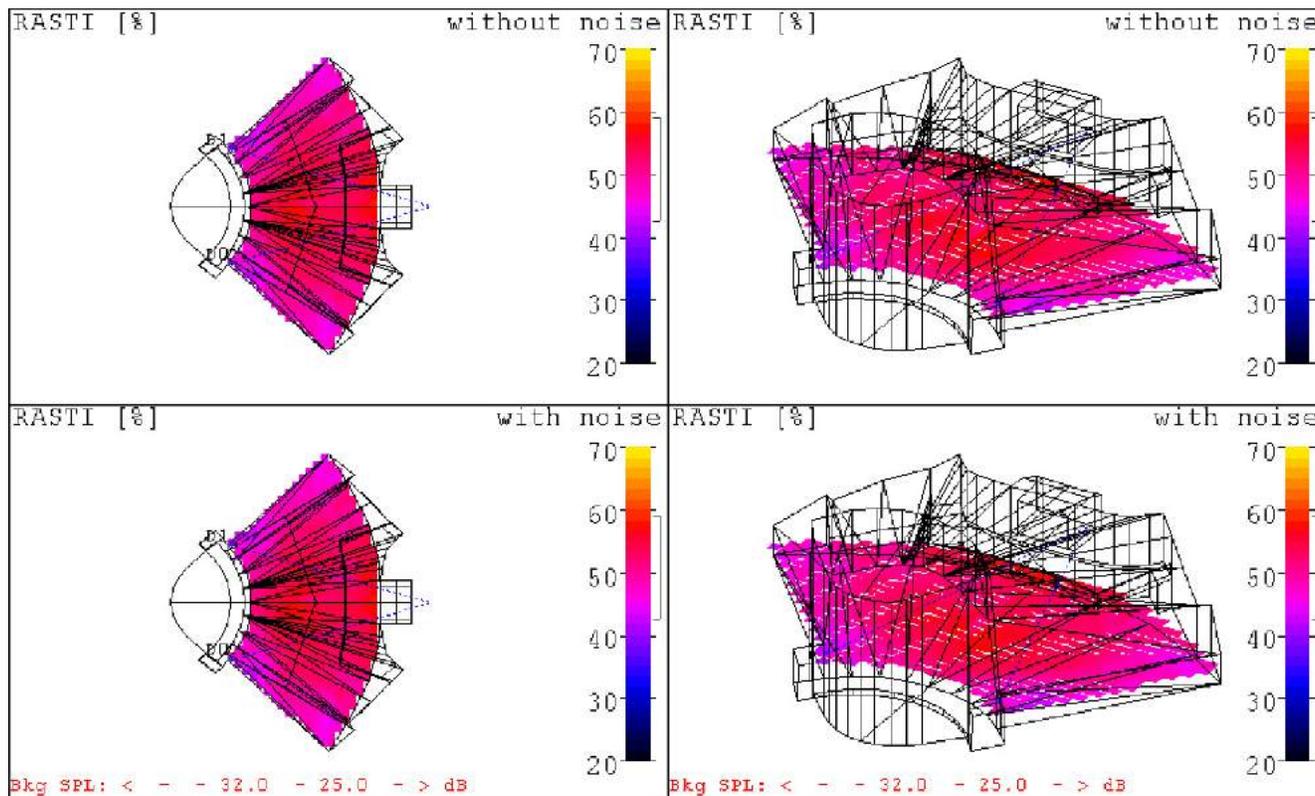
The Catholic Church in Le Noirmont – a beautiful, large fan-shaped concrete building – has suffered from low speech intelligibility since its initial construction in 1969. The problems caused by highly excessive reverberation have finally been addressed by a fully integrated architectural and electro-acoustic solution that is almost invisible to the eye, which results in a dramatic optimization of the room's acoustical characteristics.

The fan-shaped floor-plan, with an impressive natural-stone tower and the ingenious window pattern at the side walls, offers wonderful viewing angles towards the front and back of the church that become even more fascinating when direct sunlight hits the building. A balcony level carries the organ and additional seating / choir space. Vertically mounted wood paneling at the ceiling and the total church layout direct the attention towards the up-and-forward direction to represent the religious character of the space.

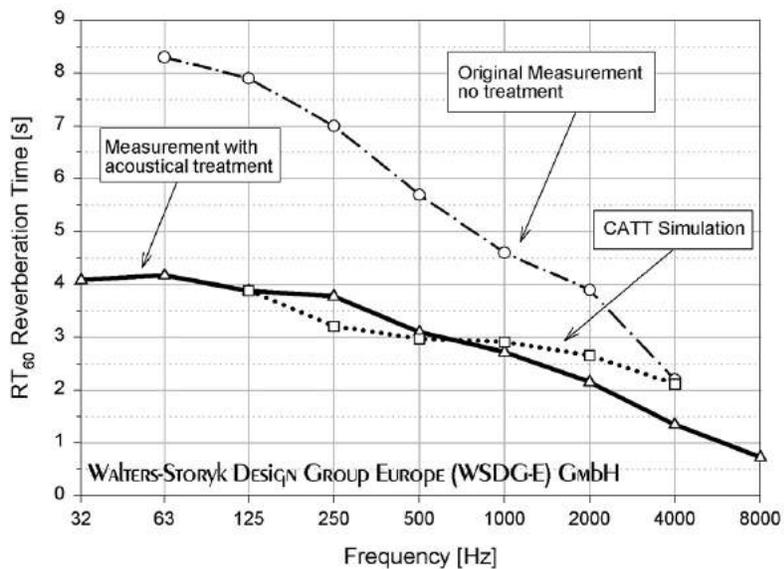
The main goal of the church remodeling was to improve the room acoustics (i.e. speech intelligibility). Acoustical measurements were performed to obtain an understanding of the acoustic and intelligibility characteristics of the existing worship space. Results were shocking. Reverberation Times of over 8 seconds were present at low frequencies! Slightly lower (but still excessive) values were measured at mid and high frequencies



Church Le Noirmont - Noirmont, Switzerland



Church Le Noirmont
 RT_{60} Reverberation Times
 Final Measurement with Treatment



Crossroads Tabernacle – Boden Center - Bronx, USA

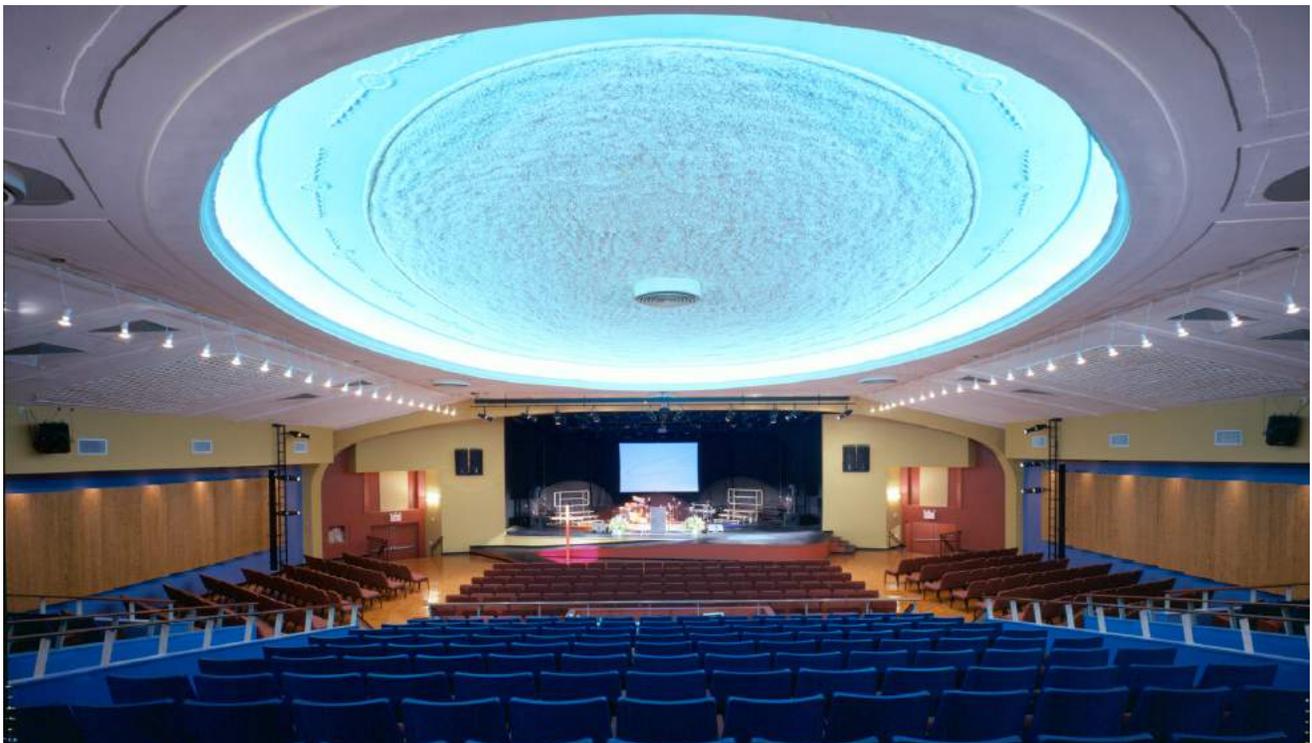
WSDG completed a major renovation project for Crossroads Tabernacle and Boden Center for The Performing Arts, a prominent inner-city church located in The Bronx, NY. The facility includes a state-of-the-art audio and video production studio (Studio On The Hill), and a completely refurbished 800 seat theater for worship, concerts, dramas, and outreach events. The restoration, which also includes new administrative facilities and a children's educational wing, was completed in 2002.

The control room and studio area of the facility can operate completely independent of the theater, or tie into performances as needed to capture live recordings. The seating area within the theater area is completely flexible and seating can be modularly removed for different events as needed by the church. Since the facility lies in the middle of the Bronx, special consideration was given to isolation for the facility to eliminate noise from the outside, but also to isolate the auditorium environment from the control room/studio environment that is adjacent to it.

The 1,000+ square-foot studio houses three isolation booths, and a control room equipped with a Sony R100 digital console. "We installed variable acoustic panels (solid wood on the outside and 2-inch-thick, fabric-covered insulation on the inside) on the back wall of the studio to facilitate changes in the room's reverberation time with minimal effort," explains WSDG principal architect John Storyk.



Crossroads Tabernacle – Boden Center - Bronx, USA



Diante Do Trono - Belo Horizonte, Brazil

Diante do Trono is the most successful Brazilian gospel band of the church Batista da Lagoinha. The group's career started in 1997 and has performed not only around Brazil but also in various other countries around the world. The monastery is formed by 50 musicians and has already released over 25 albums, and sold over 3 million copies.

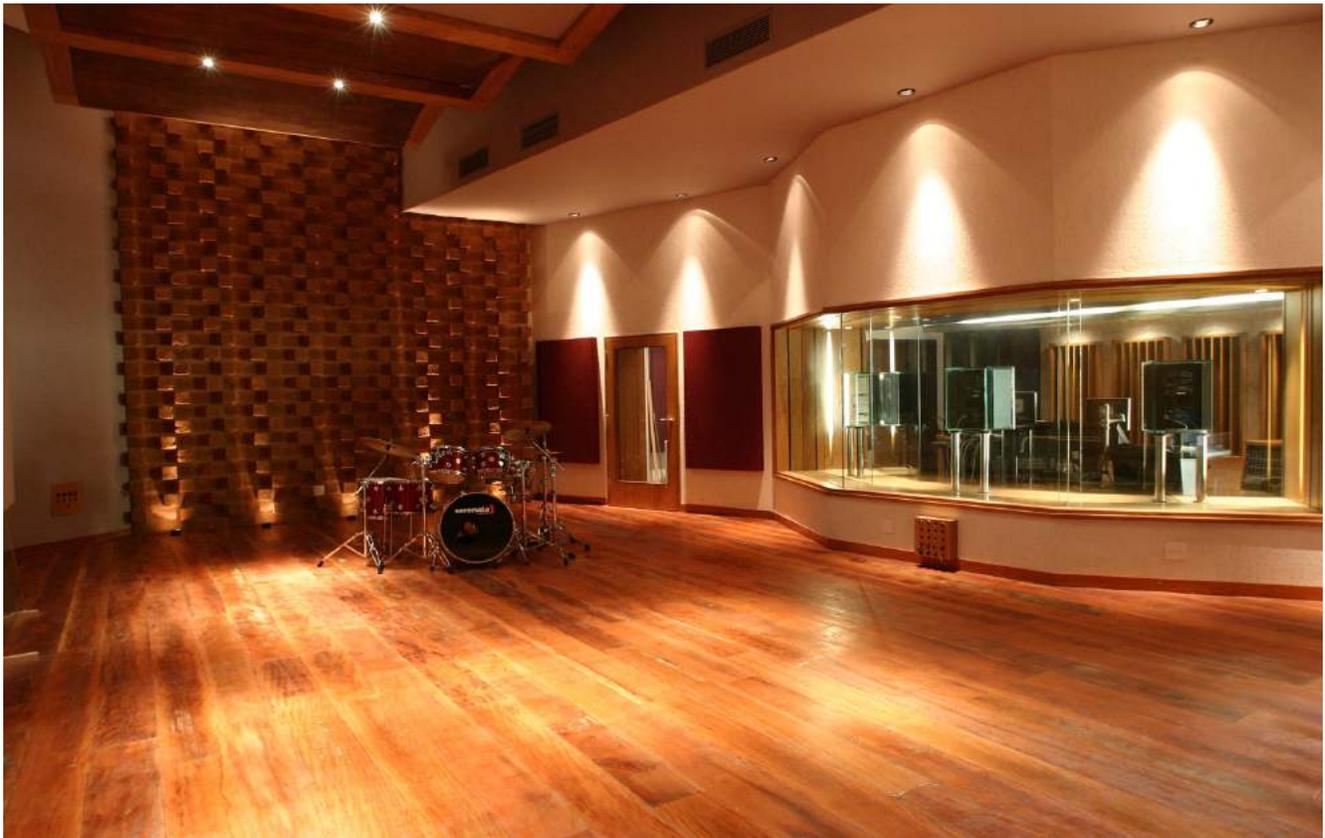
The facility is divided in three distinct areas: the main studio is 600 square feet with a 350 square foot 5.1-capable control room with two isolation booths and an equipment room. On the first floor is another recording room attached to a control room and an edit room, all-adding up to 600 square feet. Outside the studio areas there is a lounge with a barbecue space, along with an office space and a lounge.

In order to provide a flexible space for different recording applications, the studio was equipped with numerous types of variable acoustic panels, including motorized units installed at the ceiling that can be remotely controlled inside the control room. This way, after setting up the microphones for a recording session, the engineer can adjust the room acoustics to the desired time response according the musical needs. The room also received a large diffusion surface created with special bricks from recycled materials.

Another unique feature is the installation of all three front speakers inside the glass of the control room. This innovative idea presented a great acoustical challenge, but resulted in a perfect sight of the entire studio live room, while still maintaining the ideal positioning of the front speakers, at ear level, in accordance with the most current professional audio standards.



Diante Do Trono - Belo Horizonte, Brazil



St. Ursen Cathedral - Solothurn, Switzerland

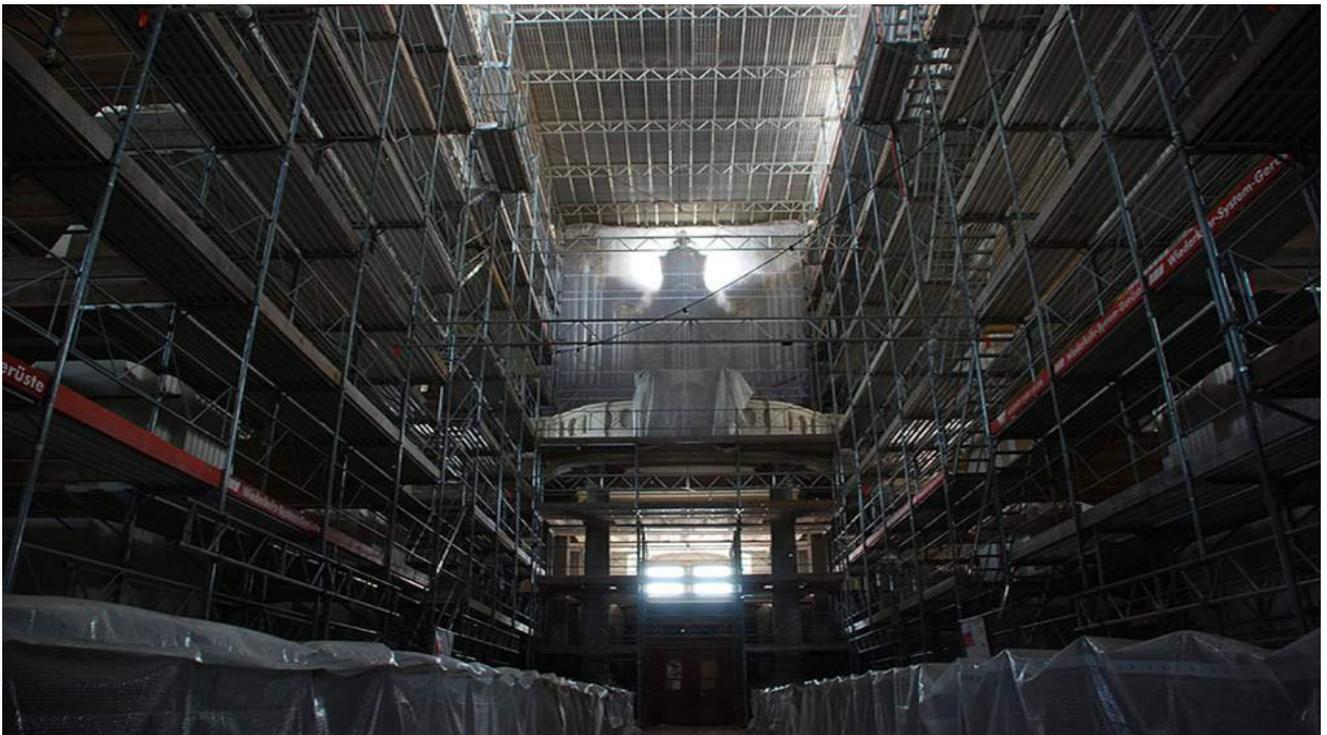
Solothurn is recognized as Switzerland's most significant baroque town. Its major hallmark and tourist attraction is the St. Ursen-Cathedral. In January 2011, a fire set by a mentally disturbed person massively damaged the Cathedral's 60m x 30m/200 x 100 sq. ft. center congregation area and side aisles. A careful assessment determined that a full cleaning and repair of all surfaces could restore the damaged room to its former glory. The restoration was coordinated by Pius Flury and Iwan Affolter of Flury und Rudolf Architekten AG. The project included all aspects of the building: surfaces, art, lighting, heating, electrical, and electro-acoustics infrastructure. WSDG was engaged to design and supervise installation of the electro-acoustics system.

Early on in the planning process, extensive acoustical measurements were conducted, to both obtain a "status quo" documentation and to serve as a base for the predictive simulation software employed. Although RT60 Reverberation Times exceed 6 seconds at 500Hz – and a reduction would have been helpful to achieve improved speech intelligibility, changing the materialization of the building was not an option. Moreover, new measurements completed following the restoration revealed that the RT60 Reverberation Times were even higher after the accumulated dirt and gray burn residue were removed.

To resolve these issues, a number of CVS Clearvoice Systems Evolutone 3000, Evolutone 2000 and Evolutone 1000 steerable array loudspeakers were specified based on their inherent long-range throw, highly sophisticated steering algorithms and high speech intelligibility characteristics. The loudspeakers are driven by a networked BSS Soundweb DSP backbone, controlled by a Crestron touch panel. Gateways to other building management components (lights, heating, church bells etc.) were also incorporated to facilitate total building control from a centralized panel. WSDG engineered a number of custom solutions including auxiliary in and outputs for broadcast trucks, exterior courtyard locations and a time-critical audio and video monitoring and communication system for two organ players positioned 1/5 seconds (60m/200 ft.) apart during their duet performances.



St. Ursen Cathedral - Solothurn, Switzerland

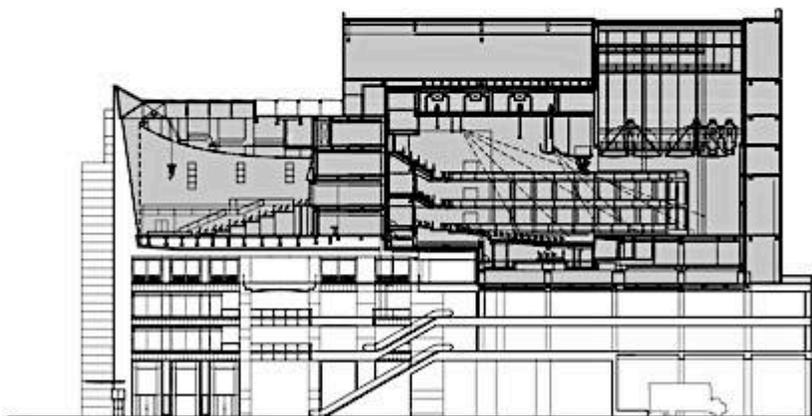
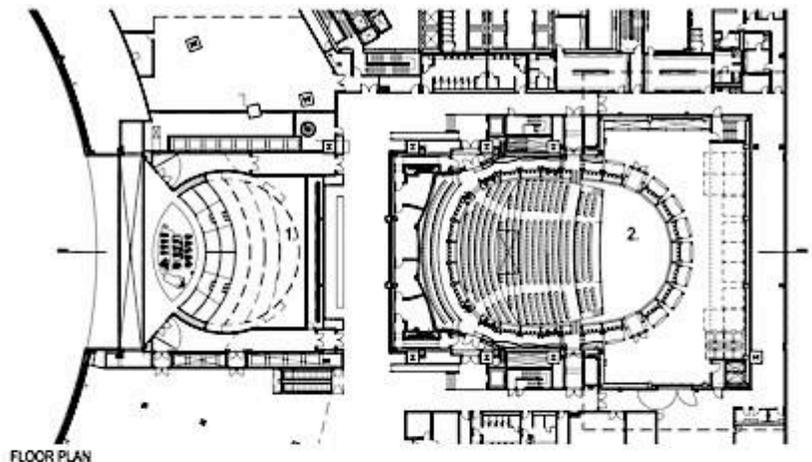


Jazz at Lincoln Center - New York, USA

Jazz at Lincoln Center is one of New York City's premier attractions, housing over 100,000 sq. ft. of performance venues, educational suites and recording/post production facilities.

The Frederick P. Rose Hall project consists of a 1,200-seat concert hall with movable seating towers. The hall can be configured for dance, opera, theater as well as provide an intimate jazz setting by surrounding the musicians with the audience seated on three levels in a stage surround setting. The Allen Room is a 300 - 600 seat performance space with tiered platforms ascending from the stage level to a dance floor with movable tables and chairs. The Irene Diamond Education Center is 3,500 sq. ft. and contains two state-of-the-art education/rehearsal studios.

WSDG, as partners in the Sound of Jazz Consulting Group, worked closely with the architects and Wynton Marsalis to acoustically design the education, rehearsal and recording spaces. The systems integration design for all performance, educational and listening spaces within this facility are linked together for recording and playback. This facility is the world's first performing arts center designed specially for the performance and recording of jazz.



SECTION



- 1. THE ALLEN ROOM
- 2. FREDERICK P. ROSE HALL

Jazz at Lincoln Center - New York, USA

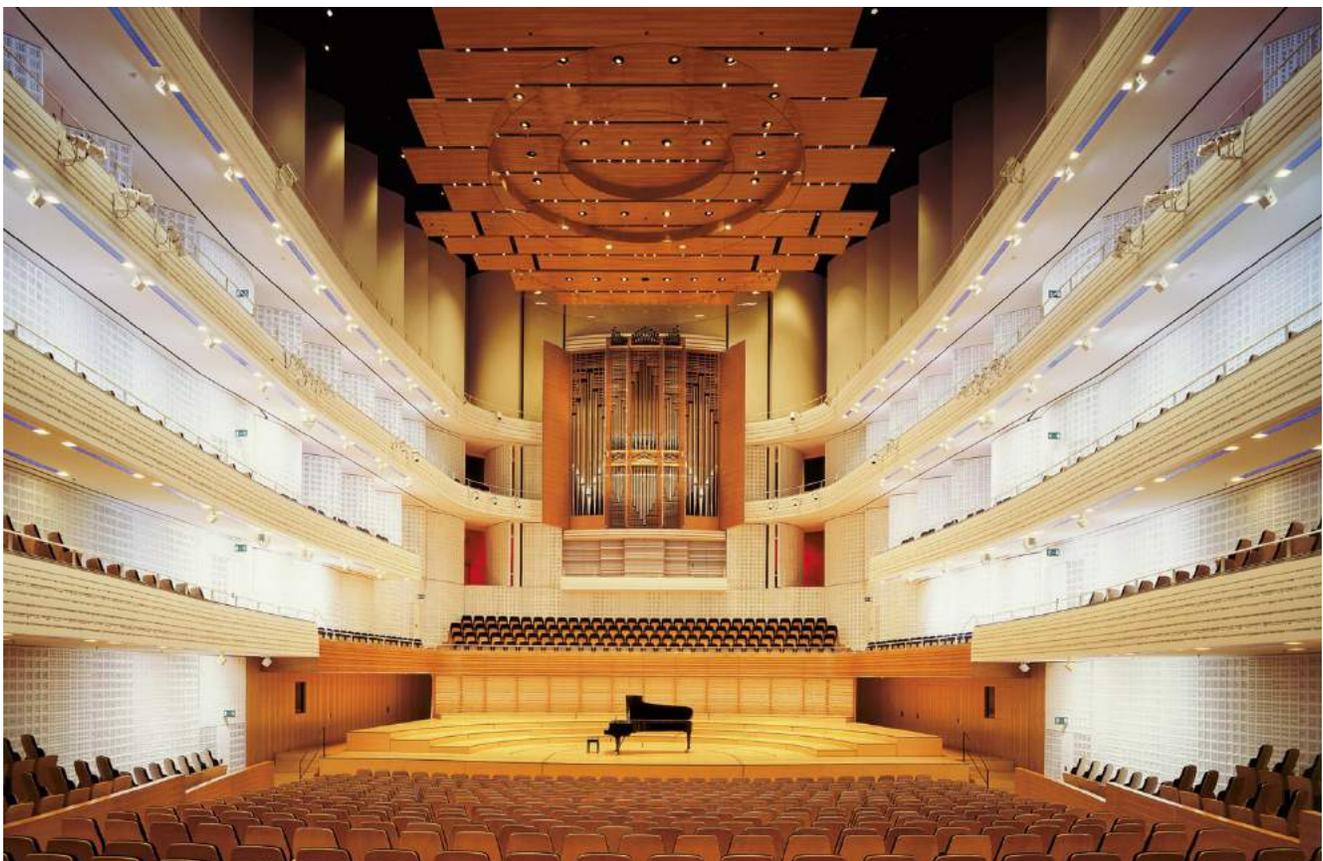


KKL Concert Hall - Luzern, Switzerland

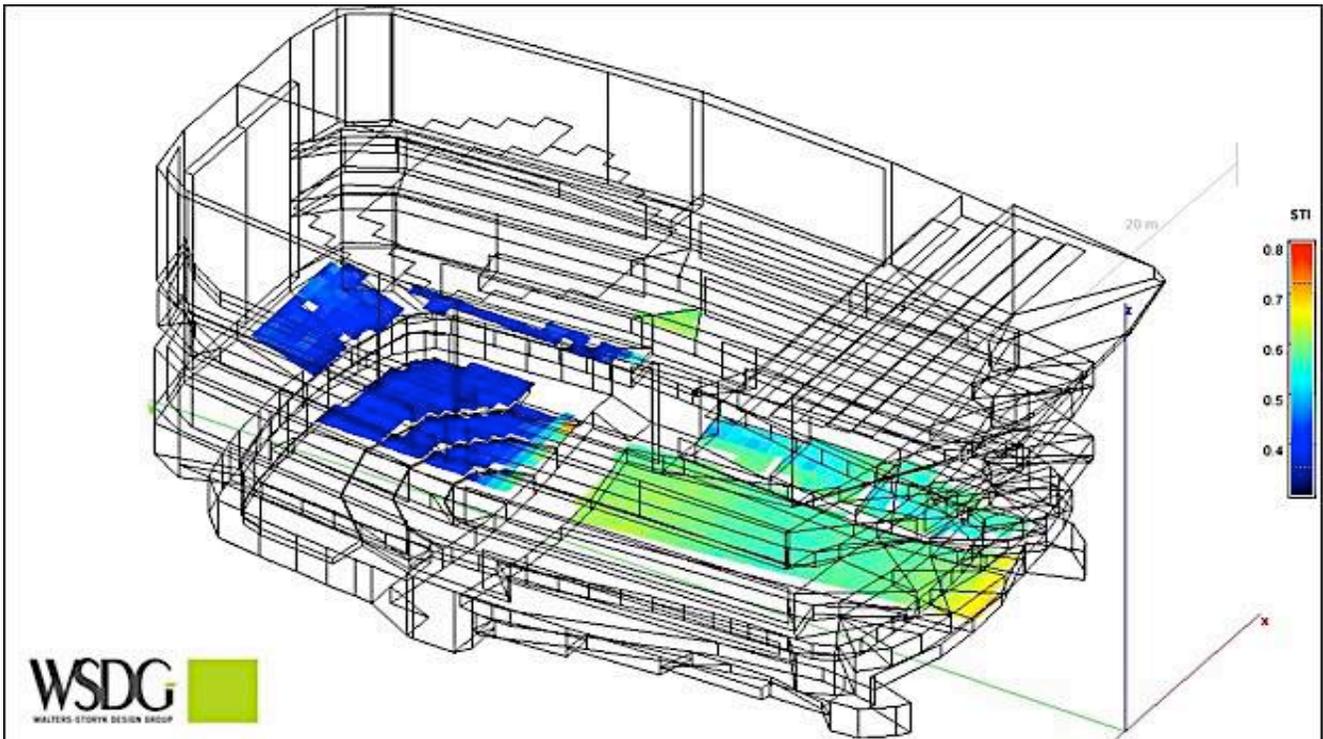
From its opening performance by the Berlin Philharmonic in August 1998, the KKL Luzern Concert Hall was recognized as one of the world's great performance centers. An international landmark, both architecturally and culturally, the complex attracts music fans from around the world to its picturesque lakeside setting. More than a dozen years of constant use – with an impressive yearly booking rate of more than 90% – coupled with significant technological advances prompted the KKL Luzern management group to upgrade its retractable electro acoustical system. WSDG was brought in to accomplish this essential project.

A major issue of this hall is the wide distribution of seats on five vertical levels surrounding three of the four walls, and consequently, the coverage requirements of the electro acoustical sound system. The core of the solution was the realization that the Hall is mainly designed for acoustical sources placed directly on stage. Consequently, the new main loudspeaker system was installed significantly lower and closer to the stage than the original system. The main system is supplemented by elements, which are permanently installed but retractable by motors. The project was divided into three phases: 1) Identification of the requirements, system planning and preparation of specifications; 2) On-site evaluation of a three loudspeaker system candidates; 3) The execution phase of installation planning, supervision and commissioning.

The new sound reinforcement system consists of the Left Right main system with two line arrays of eight d&b V12 units each, suspended above the stage front edge; two additional line arrays for covering each of the balconies with five d&b V12 units; a stage edge in-fill system consisting of two d&b V-Sub and two d&b V12 units each on the right and left and a stage mounted front-fill provided by six d&b E6 units. For events requiring a 360-degree speech reproduction, a retractable center cluster was provided with a front section (consisting of eleven d&b T10 units) and a rear section (consisting of three RCF VSA 2050 digitally controlled column loudspeakers).



KKL Concert Hall - Luzern, Switzerland



STI Speech Transmission Index

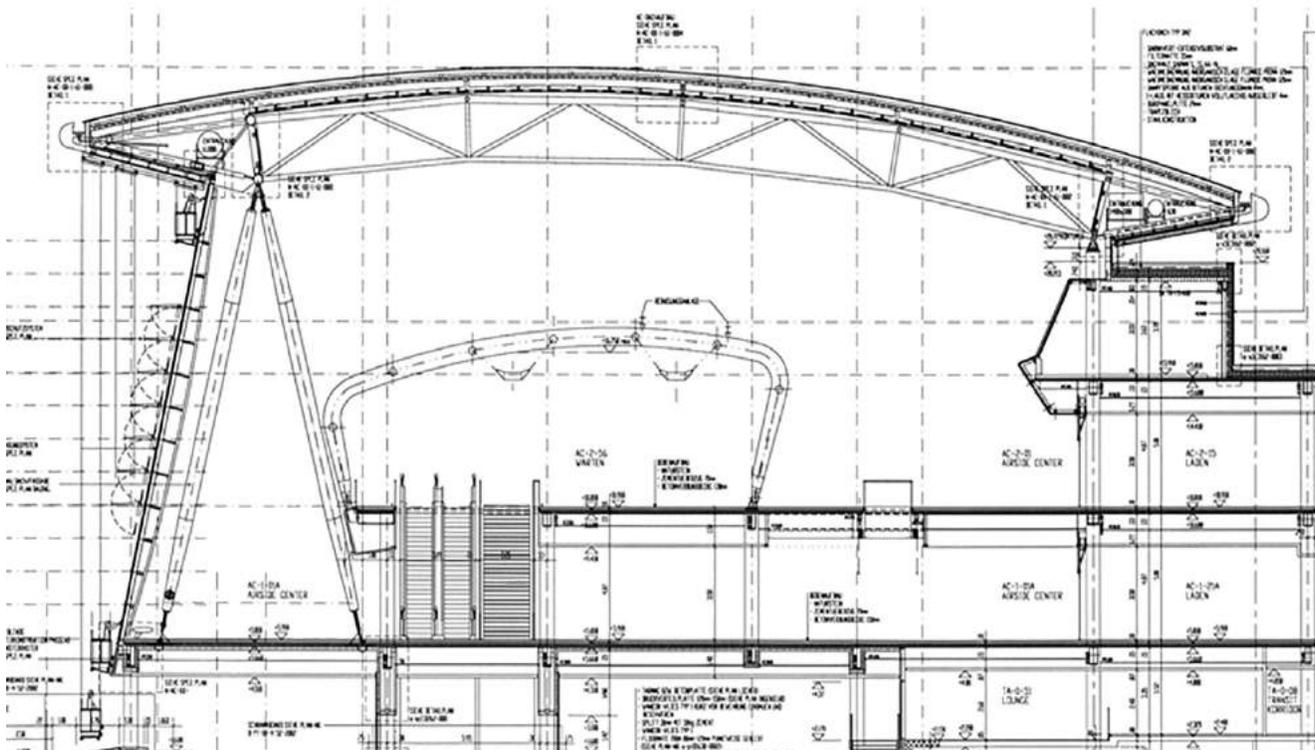


Flughafenkopf – Zurich Airport - Zurich, Switzerland

The Airside Center (A500), located between the existing finger docks A and B, acts as a focal point for travellers at the airport. The project is comprised of the new Airside Center (housing new shops and restaurants), the Underground Skymetro Station which connects the Airside Center to the Dock Midfield, the Arrival Hall just above the Skymetro Station, and various renovations within the A and B terminals. The previously existing buildings are all connected and the Airside Center, with its prominent shape, reflects the new identity of the airport.

WSDG was awarded the full electro-acoustic design of both of these new facilities by the responsible electrical engineering firm, Ernst Basler + Partner AG. WSDG's project scope included creating the electro-acoustic project requirements (e.g. Speech Intelligibility, Sound Pressure Levels, Frequency Responses, Coverage, etc.) in line with the appropriate national and international standards - IEC 60849; electro-acoustic design and optimization with assistance of computer simulations and other means of calculation; specifications and supervision of all driver components to the electro-acoustic system.

The specified system for the large open spaces with high ceilings is based on Duran Audio's Intellivox loudspeakers (a total of 16 units). These line array loudspeakers offer full digital beam steering control and, due to their narrow form factor, can be installed in a nearly invisible manner, meeting the project's architectural requirements. Ancillary specified loudspeakers for support spaces and adjacent areas are highly directional units from Frazier and HK.



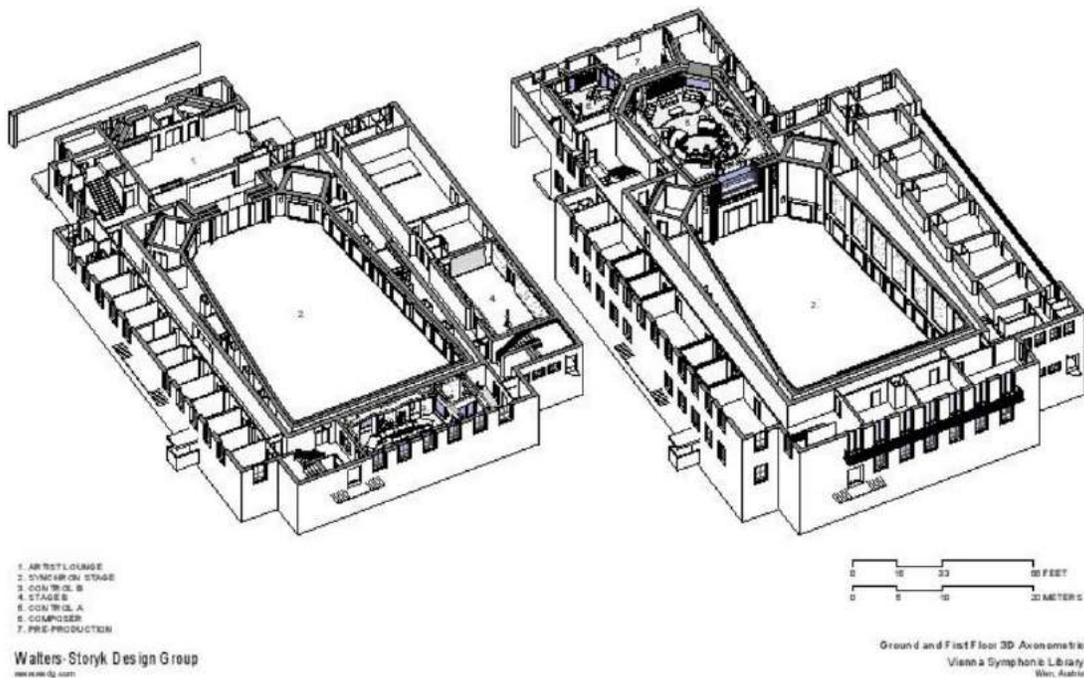
Flughagenkopf – Zurich Airport - Zurich, Switzerland



VSL Synchron Stage - Vienna, Austria

A leading developer of orchestral sample libraries and music production software, the VSL Synchron Stage enlisted WSDG to upgrade its historical (circa 1940) scoring stage into a cutting-edge recording facility. The reconfigured complex now provides enhanced acoustics and cutting edge technology for recording film music and, the full spectrum of orchestral and choral works. The 2,000 sq. m. / 21,000 sq. ft., VSL complex represents the worlds only scoring stage capable of merging proprietary software innovations with traditional technologies and procedures

The scope of the multi-year assignment required WSDG's wide-ranging facility planning services. Beginning with documentation of the overall state of the property, WSDG performed room and structural acoustical measurements and schematic conceptual planning. The Design Development Planning stage included interior design by company co-founder, Beth Walters. Construction Documentation was completed in collaboration with local architect, Schneider-Schumacher. The scope of work comprised: The VSL Synchron Stage A Control Room and large Recording Hall; VSL Synchron Stage B CR and Live Room; and the Studio C Edit Room, and Preproduction Suite. WSDG also performed the electro-acoustical system calibration for the audio monitoring system. The VSL Synchron State is distinguished by uniquely future-proof technology, making it a superb recording facility for film music and other orchestral and choral works. A large scale Dante Audio Network with input and output interface connection points at all relevant locations, serves as the facility's network backbone.



VSL Synchron Stage - Vienna, Austria



Rio 2016 – Barra Olympic Park - Rio de Janeiro, Brazil

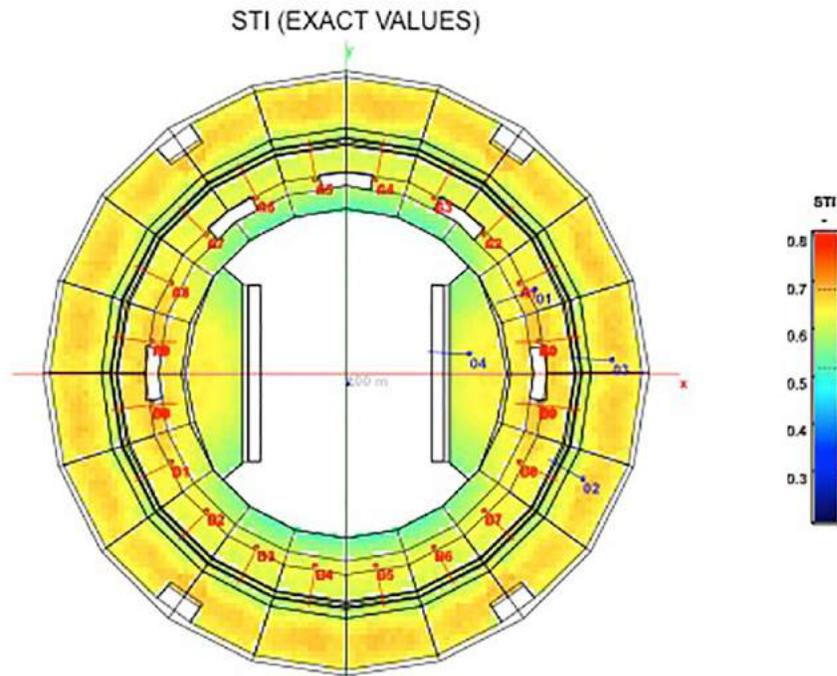
Barra Olympic Park was developed as Rio's primary 2016 Olympic and Paralympic Games competition center. Now it also serves as the city's largest sporting legacy. With an area of 1.18 million sq. m., Olympic Park includes nine sports venues. The Olympic Arena and Maria Lenk Aquatic Centre were built for the Rio 2007 Pan American Games. The seven new stadiums/sports venues are: The Olympic Tennis Centre, Aquatics Stadium and Rio Olympic Velodrome; plus: Olympic Hall 1 (basketball, wheelchair basketball and wheelchair rugby), Olympic Hall 2 (Olympic and Paralympic judo, plus wrestling and bocce), Olympic Hall 3 (taekwondo, fencing, sitting volleyball) and, Olympic Hall 4 (handball and goalball). Work on Olympic Halls 1, 2 and 3, plus the Tennis Centre begin earlier.

The developers of this enormous Olympics complex retained WSDG to design the acoustics, sound and video systems for the 3 Tennis Arenas + practice fields (10,000, 5,000 and 3,000 seats); the 18,000 seat Aquatic Arena + Warm Up Pool; and, Audio and Video Systems for the COT Arenas (16,000 seat Basketball, 10,000 seat Judo and 10,000 Wrestling arenas).

All the systems were designed to meet international security standards and, Olympics Committee requirements. WSDG began the process by performing sophisticated electro-acoustic and modeling studies. The findings of these tests and procedures determined multiple solutions for each specific sound system. The primary goal was to insure the highest quality Speech Intelligibility and Sound Pressure levels. WSDG also designed large-scale Video Walls and Score Board screens, as well as Time Clock and Media Displays. Each unit was scaled to provide optimal visibility from every seat in the stands. Every Olympic Park stadium was created with 'future-proofing', for long post-competition service as Brazil's first Olympic Training Centre (OTC) and, South America's premium high performance athletic campus. The campus includes a research lab for nutrition, physiotherapy, sports and clinical medicine.



Rio 2016 – Barra Olympic Park - Rio de Janeiro, Brazil



Average STI of 0.63. Mean - Std = 0.6
No seats in the simulated area are lower than STI
0.5



Aura Club Events Hall - Zurich, Switzerland

Built within the historic 21,000 sq. ft. (2,000 sq. meter) former “Alte Boerse” Zurich Stock Exchange Building, AURA encompasses four distinct settings, a 100 seat gourmet restaurant, an intimate bar, a chic, stylish smokers’ lounge and, a 4,800 sq. ft. (450 sq. meter) Events Hall capable of accommodating up to 500 guests. Featuring groundbreaking 360° panoramic video projection and 3D audio systems, the Events Hall is designed to host galas ranging from awards and fashion shows to banquets, weddings and corporate gatherings.

AURA’s uniquely flexible, multi-purpose strategy required the amalgamation of state of the art technology, within a highly sophisticated acoustic environment. The video presentation system engages eight, ceiling-mounted, high-performance projectors. Audio distribution employs a total of 80 loudspeakers, (70 of which are skillfully concealed by acoustically transparent, architectural construction). Deploying such a massive arsenal of cutting edge technology within this urbane, 21st Century atmosphere necessitated an extremely flexible and creative systems integration.

Aura’s vision for 3D audio presentation required full integration with the venue’s video imagery and innovative lighting, to establish a combined central focus for the Events Hall. All three elements were tasked with functioning interactively, to achieve a fully immersive environment capable of completely engaging guests within messaging and/or entertainment programs. WSDG’s Basel office was retained to design and coordinate the massive sound isolation planning and construction project to fully adhere to Zurich’s stringent city center legislations and limits. Various preset programs were developed to enable a myriad of speaker combinations (all together, or in an infinite range of individual or cluster groupings), depending on need, e.g. live performance, 3D surround sound, etc. Additionally, the ‘sweet spot’ can be expanded to encompass the entire room, providing a spatial sound experience for all guests.



Aura Club Events Hall - Zurich, Switzerland



ESPN Digital Center 2 - Bristol, USA

ESPN, the global leader in comprehensive sports coverage, has completed a five-year development and construction project for its new Digital Center 2 studio/media production center. An ambitious addition to ESPN's existing Digital Center 1 campus in Bristol, Connecticut, the 194,000 sq. ft. complex was envisioned as a "format-agnostic/future-proof" creative production facility with unlimited potential for trail-blazing content creation. A comprehensive green and employee comfort-focused environment were primary goals for the new facility.

With six new production control rooms, four audio control rooms and 16 edit suites, ESPN's Digital Center 2 technical capabilities are exemplified by a multi-dimensional monitor wall featuring 56 variably sized individual monitors designed to provide 3D-like graphic images. An arsenal of 40 state-of-the-art cameras is highlighted by a JITA cam capable of swooping up to a height of 22 ft. and following a circular track to deliver a sweeping 360° studio overview. The Center 2 routing system can accommodate as many as 60,000 simultaneous signals over 1,100 miles of fiber optic and 247 miles of copper cable deployed throughout the facility.

All these rooms are dedicated to producing flawless audio and video for programs, interviews, voiceover recording and the full spectrum of broadcast audio for video support. Overall quietness throughout the entire creative plant was an absolute priority. High performance broadcast acoustic specifications and recommendations were developed for all critical services including HVAC, fire protection and electrical systems. ESPN Digital Center 2 represents the apex of broadcast, cable, and Internet streaming production. The complex stands as a major accomplishment in next-generation audio/video production and delivery.



ESPN Digital Center 2 - Bristol, USA



Morro do Chapéu Residence - Belo Horizonte, Brazil

The architectural and acoustical design devised by WSDG for the villa's home theater and other living spaces leaned on solution suggested by the firms' professional recording studio expertise. Inhibiting sound from leaking into or out of sensitive listening areas such as recording studio live and control rooms is a WSDG specialty. The enclosed pool and spa area, however presented more troubling waters. Particularly challenging was the need for the acoustical treatments to unobtrusively compliment the custom finishes.

WSDG also designed a spacious (but cozy) home theater, which integrates the highest levels of audio and video technology. Recording studio-level, acoustical wall and ceiling treatments were engaged to provide superb frequency and time response. Bedrooms and a home office also benefitted from acoustical ceiling clouds, designed to control the reverberation time over a broad sound spectrum enabling each room's individual 5.1 surround sound and HD video system to deliver maximum performance quality.

The swimming pool and spa area, however, presented the project's primary acoustic challenge. The large area includes a gym, Jacuzzi and wet bar, surrounded by three walls of double height windows and a movable glass sealing system to maintain interior warmth in the cool, mountain region evenings. Again, professional recording studio design techniques provided solutions. Each window, including an expansive skylight grid of 20 individual panels was fitted with Acoustical Clearsorber Foil. Imported from Germany, the innovative translucent plastic sheets absorb medium and high frequency reverberation to resolve sonic reflection issues. Clearsorber also serves as a full room UV ray filtering system! Full transparency insures unimpeded views and, conversations free of traditional pool house reverberation.



Morro do Chapéu Residence - Belo Horizonte, Brazil



The Metroplex at KITEC – Hong Kong, China

Early in 2014 the Metroplex, a luxurious 9 screen multiplex cinema, opened in Hong Kong's iconic Kowloon Bay International Trade & Exhibition Centre. Adjacent to the widely popular Star Hall, scene of many major international concerts, The Metroplex is an investment property of Hopewell Holdings Limited. The complex reflects the Group's vast experience in operating large-scale venues, and it establishes a new level of lavish comfort for filmgoers. Their unique concept was to bridge the gap between film and music by creating cross-over events and festivals that would benefit from the venue's diverse dining, socializing, large and small theaters and intimate screening rooms.

House 1, the Metroplex's largest theater, can accommodate an audience of 430. The five other "public" theaters can seat groups ranging from 151 to 97 guests. Three plush VIP Screening Suites (#'s 7,8, 9) are each designed to host twenty guests. Theaters 1 & 3 and all three VIP Suites offer opulent reclining lounge chairs, state of the art lighting, exquisite interior designs and Dolby® Atmos™+ Dolby Surround 7.1 sound. The four other theaters are outfitted with Dolby Surround 7.1. The futuristic lobby and dining areas provide an unsurpassed ambience for elegant gatherings. WSDG provided a comprehensive review of the architectural master plan layouts and a detailed analysis of the acoustic package recommendations provided by a local consultant. Particular attention was addressed to issues of sound isolation and (RT60) internal room acoustics. The client's primary concern was to assure absolute sound isolation between the movie theaters and the large event hall located on the upper floor specifically with regard to NC and STC parameters.



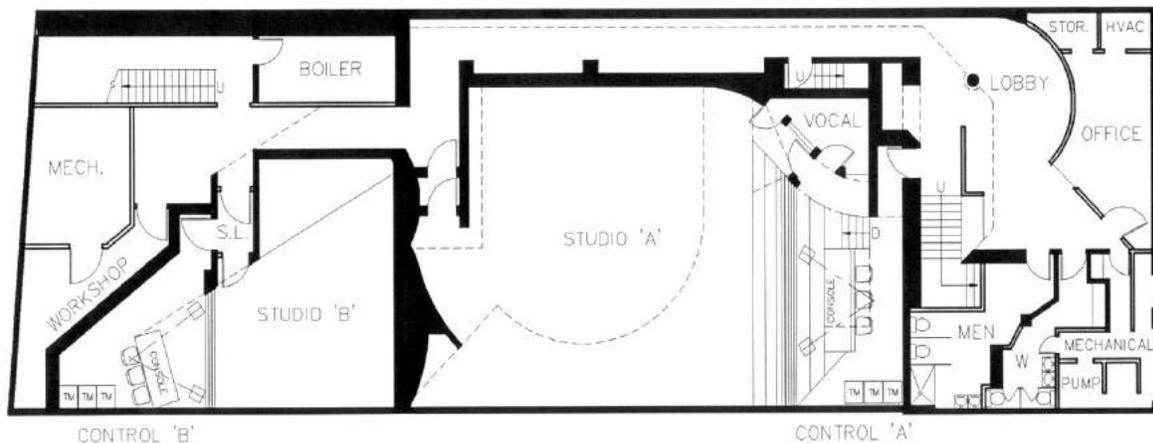
The Metroplex at KITEC – Hong Kong, China



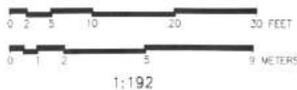
Electric Lady Studios - New York, USA

At nearly 50 years old, Electric Lady is one of the world's first artist owned recording studios and one of the oldest, most famous and most successful studios ever. WSDG co-founder John Storyk was a 22-year-old fledgling architect fresh out of Princeton University when he was hired to design a studio for Jimi Hendrix. One summer evening in 1968, Storyk was enjoying an ice cream cone and leafing through the Village Voice when a classified ad caught his eye: "Carpenters wanted to work for free on experimental nightclub." Dialing the number from a corner pay phone, he got the gig. That club, Cerebrum, made the cover of Life Magazine after 6 months. When Jimi Hendrix visited the club one night and decided to hire Storyk to design his club (which became ELS), well the rest is history.

Eddie Kramer (Jimi's engineer) was adamant about Electric Lady having a tall, bright room similar to NY's legendary A&R Studios where Phil Spector did some of his greatest work. Kramer was also familiar with European studios like London's Olympic and Abbey Road. He believed drums required a big room. Storyk accommodated Kramer's need for high ceilings by excavating the basement, digging down to raise the height of the underground rooms. For the studios' interior, Jimi specified theatrical lighting, and his desire to have as many curved surfaces as possible (design elements which Storyk had originally incorporated in Cerebrum). Electric Lady's walls were painted white, so they could easily be turned into whatever color Hendrix was in the mood for with simple adjustments. One day Jimi arrived at the construction site and decided that he didn't like the square look of the expensive acoustic doors, which had just been installed. He asked Storyk if he could round off the tops, and when that proved impractical, he had them replaced by custom units with rounded, porthole-style windows.



ELECTRIC LADY STUDIOS
NEW YORK CITY



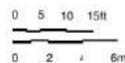
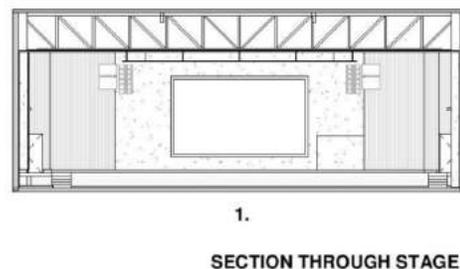
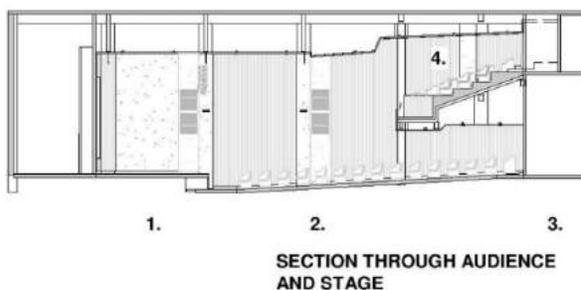
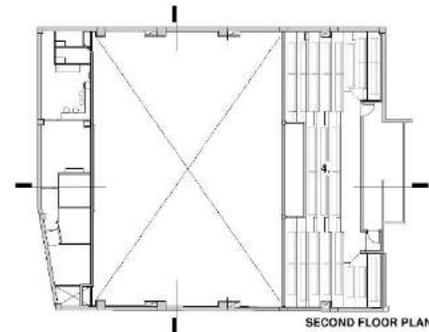
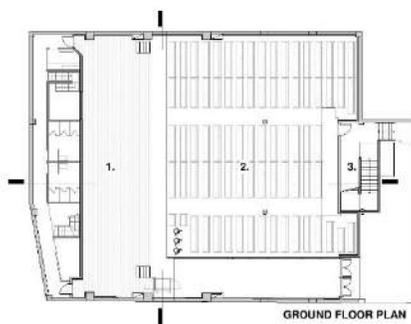
Electric Lady Studios - New York, USA



IBP Church São José - São Paulo, Brazil

Since it was founded in 2009, The Baptist Church of the People has grown into one of Brazil's largest Church ministries, with eleven churches serving communities across the country. Most recently, **IBP** has created a contemporary house of worship in São José, suburb of São Paulo, Brazil largest city. Having worked successfully with IBP previously on a project at Vila Mariana, also in São Paulo, WSDG was commissioned for the acoustic design for this new House of Worship. By engaging WSDG at the 2016 design stage, the Church planners were assured of providing their parishioners with superb acoustics for their worship services.

Situated on the 2nd through 5th floors of a ground up building in a commercial section of São José, the new IBP Church is distinguished by a two-story high worship basilica with seating for 460 parishioners in the nave, and an additional 190 seats in the mezzanine. The 3rd, 4th and 5th floors are dedicated to classrooms and administrative offices. WSDG Partner/Director of Design **Renato Cipriano** reports the Church was as concerned with the quality of sound as they were with the aesthetics. "Our design team included architect/project manager **Breno Magalhães**, and NY-based project manager **Kevin Peterson**, who did excellent work on pre-visualizations and analysis of room acoustics. Our long-time WSDG contractor, Thiago Barros's ATIMO firm did a flawless construction, and our A/V partner Jefferson Seifert of BIG SOUND developed a user friendly and cost effective AV system.



- 1. STAGE
- 2. AUDIENCE
- 3. ENTRANCE
- 4. MEZZANINE

IBP
São Paulo,
Brazil

IBP Church São José - São Paulo, Brazil



Professional References

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Representative Client List

26 Sushi & Tapas (Morris J. Kaplan) Surfside, FL
3:3:2 Buenos Aires, Argentina
54 Below New York, NY
55TEC Studios Beijing, China
Adverse Residence Belo Horizonte, Brazil
Alan May Listening Room Home Theater Dallas, TX
Albano Residence Monte Claros, Brazil
Alejandro Lerner Buenos Aires, Argentina
Alicia Keys (Oven Studios) Long Island, NY
Allaire Studios, Woodstock, NY
American University Washington, DC
Anel Paz – Supercharango Buenos Aires, Argentina
Appalachian State University Boone, NC
Art Institutes United States
AR Studios Rio de Janeiro, Brazil
Atlantic Recording New York, NY
Atomica Santiago, Chile
audioEngine New York, NY
Aura Club Events Hall Zurich, Switzerland
Bamyasi Studio Miami, FL
BBC Mundo, Coral Gables, FL
Bearsville Recording Bearsville, NY
Berklee College of Music – 160 Mass Ave Boston, MA
Berklee College of Music - Valencia Valencia, Spain
Big Mo Mobile Recording Kensington, MD
Blue Table Post Brooklyn, NY
Bob Margouleff (Mi Casa Studios) Hollywood, CA
Bob Marley Kingston, Jamaica
Boston Symphony Orchestra Control Room Boston, MA
Bruce Springsteen (Thrill Hill Studios) United States
Camden Yard / Baltimore Orioles Baltimore, MD
Carter Burwell New York, NY
Casa Cor Belo Horizonte, Brazil
Casa Ezeiza Buenos Aires, Argentina
Celine Dion United States
Central Synagogue New York, NY
Church Le Noirmont Le Noirmont, Jura, Switzerland
Citicorp Credit Services Huntington, NY
Clap Studios Medellin, Colombia
Club NEO Zurich, Switzerland
Comunidad de Fe Quito, Ecuador
Credit Suisse Zurich, Switzerland
Crossroads Tabernacle - Studio on the Hill Bronx, NY
Cuyahoga Community College - Center for Innovation in the Arts Cleveland, OH
Daniel Studio São Paulo, Brazil
Damian Marley Miami, FL
Diante do Trono Belo Horizonte, Brazil
Diego Torres Private Studio Buenos Aires, Argentina
Di Tella University Buenos Aires, Argentina
Different Fur Music San Francisco, CA
Dream Asylum – Danja & Marcella Araica Miami, FL
Duke Ellington High School Washington, DC
Eddie Kramer Rhinebeck, NY
EFE-X Bogota, Columbia
El Aleph Building – Norman Foster Buenos Aires, Arg
El Porteño Buenos Aires, Argentina
Electric Lady Studios New York, NY
Electronic Arts Vancouver, Canada
Elektra Entertainment New York, NY
Ellis Marsalis Center for Music (EMCM) – NOLA, LA
EMI – Escola de Marketing Industrial São Paulo, Brazil
Equiscosa Mexico City, Mexico
EUE Screen Gems (Rachel Ray) New York, NY
ESPN Bristol, CT
ESPM Broadcast Teaching Center São Paulo, Brazil
Estudio 13 Mexico City, NY
Ex'Pression College for Digital Arts San Jose, CA
Fito Paez (Circo Beat Studios) Buenos Aires, Argentina
Flughafenkopf – Zurich Airport Zurich, Switzerland
Fenix Club San Rafael, CA
Fontela Residence Buenos Aires, Argentina
Food Network New York, NY
Full Sail Center for the Recording Arts Orlando, FL
Goesgen Nuclear Plant Däniken, Switzerland
Goo Goo Dolls (GCR Audio) Buffalo, USA
Graeme Judd Voiceover Studio Calgary, Canada
Green Day – Jingletown Recording Oakland, CA
Hard Rock Cafe New York, NY
Harman Flagship Store Listening Room New York, NY

Hilton Garden Inn Montevideo, Uruguay
Hirslanden Group Zurich, Switzerland
Hoffman LaRoche Basel, Switzerland
Howard Schwartz Recording New York, NY
Huber Music Room Carlsbad, CA
Hunter College New York, NY
IMAX Buenos Aires, Argentina
IDZI Lab Mexico City, Mexico
Independencia Stadium Belo Horizonte, Brazil
Interlochen Public Radio Interlochen, MI
Interim Services Ft. Lauderdale, FL
Isaac Hayes Westchester, NY
J Records (Clive Davis) New York, NY
J.A. Castle Recording Utica, NY
James Earl Jones Theater - PDS Poughkeepsie, NY
Jay-Z (Roc the Mic Studios) New York, NY
Jazz at Lincoln Center New York, NY
Jim Cramer's Real Money New York, NY
Jungle City Studios New York, NY
Kimmel Center Philadelphia, PA
KKL Concert Hall Luzern, Switzerland
La Rioja Theater La Rioja, Argentina
Le Poisson Rouge New York, NY
Mad Oak Studios Boston, MA
Maracana Stadium Rio de Janeiro
Manhattan School of Music New York, NY
Martin Scorsese Media Center Bronx, NY
Merriweather Pavilion Columbia, MD
Mineirao Stadium – FIFA Belo Horizonte, Brazil
Minnesota Public Radio Minneapolis, MN
MJ1 Broadcasting / Clear Channel New York, NY
MonkMusic Studios East Hampton, NY
Murray Arts Center Marietta, GA
MTV Latin America Buenos Aires, Argentina
National Council of Switzerland Bern, Switzerland
National Museum of the American Indian Washington, DC
New York University New York, NY
Northern Lights New York, NY
Novartis Basel, Switzerland
NYISO (NY Independent System Operator) Albany, NY
Peavey Electronics Meridian, MS
PepsiCo Content Studio New York, NY
Peloton Flagship Spinning Center New York, NY
PostFinance Arena Bern, Switzerland

Philippe Moritz Zurich, Switzerland
Planet Hollywood Screening Room New York, NY
Proctor and Gamble Buenos Aires, Argentina
Qatar Television Doha, Qatar
Record Plant Los Angeles, CA
Restaurant T Buenos Aires, Argentina
Richard Gere New York, NY
Rio 2016 – Barra Olympic Park Rio de Janeiro, Brazil
Robert Clivilles (Paradise Garage) Westchester, NY
Salvation Ministries Port Harcourt, Nigeria
SBK / EMI Records New York, NY
Skank Belo Horizonte, Brazil
SONY Corporation Teaneck, NJ
Spank! Music and Sound Design Chicago, IL
Stanwich Congregational Church Greenwich, CT
St. Gallen Train Station St. Gallen, Switzerland
Stevie Wonder (Wonderland) Los Angeles, CA
Sumitomo Boardroom New York, NY
Sunshine Mastering Vienna, Austria
Swiss Parliament Basel, Switzerland
Telefé Buenos Aires, Argentina
Teleproductions, Inc. Washington, DC
TSR – Télévision Suisse Romande Geneva, Switzerland
The Carpenters Church Port Harcourt, Nigeria
The Church Studios – Paul Epworth London, UK
The Cosmopolitan Las Vegas, Nevada
The Standard Hotel New York, NY
Thirteen / WNET New York, NY
TV Globo Sao Paulo, Brazil
Union College Schenectady, NY
University of Colorado – ATLAS Boulder, CO
University of Michigan Ann Arbor, MI
Univison Miami, USA
Universidad ICESI Cali, Colombia
Vassar Chapel Poughkeepsie, NY
Video Arts Studios Fargo, ND
Village Studios Guangzhou, China
Vocomotion Skokie, IL
VSL Synchron Stage Vienna, Austria
Vivace Studios Montevideo, Uruguay
Whitney Houston United States
WNYC Radio New York, NY
Woodrow Wilson Center– Smithsonian Washington, DC
Young Israel Synagogue Miami, FL

Key Personnel



John Storyk, R.A.

Founder Partner / Director of Design

john.storyk@wsdg.com

John Storyk, registered architect and acoustician, is a founding partner of WSDG. He has provided facility planning, acoustical and systems design services for the professional audio-video production and performance community since the 1969 completion of Jimi Hendrix's Electric Lady Studios in New York City. John received his architectural studies from Princeton and Columbia Universities. As an independent designer, engineer and principal of WSDG, he has been responsible for over 3,000 world-class audio-video production facilities, including studios, radio stations, video suites, entertainment clubs and theaters. He is a member of the American Institute of Architects (AIA), Audio Engineering Society (AES) and Acoustical Society of America (ASA) and is a frequent contributor to AES convention papers and professional industry periodicals. John is a frequent lecturer at schools throughout the nation and has established courses in acoustics at Full Sail (Orlando), Ex'Pression Center for the Media Arts (San Francisco), while maintaining adjunct professor status in Acoustics and Studio Design at Berklee College of Music (Boston) and Stevens Institute (New Jersey).

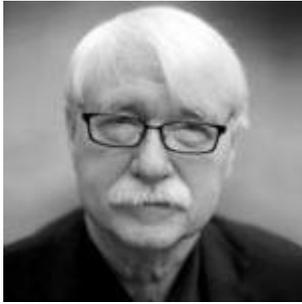


Beth Walters

Founder Partner / Interiors

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Beth Walters-Storyk is a graduate of the Fashion Institute of Technology (New York) with two degrees, A.A.S. in Textile Design and a B.F.A. in Product Design. Her construction experience comes with having been a senior installation designer for the Gallery's exhibition and installation staff at the Fashion Institute for over 10 years. From 1982-1988, Beth also was the display and merchandising director for such noted home furnishing fabric firms as Boris Kroll Fabrics, Greff Fabrics and Design Tex Fabrics. Beth is a founding partner and principal of Walters-Storyk Design Group and leads the interior design services division.



Prof. Dr. Wolfgang Ahnert

Partner / Director of ADA/AMC, a WSDG Company

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After studying Technical Acoustics at the Technical University of Dresden and passing one year at the Moscow State University (Lomonossov) for a complementary course, Dr. Ahnert wrote his doctoral thesis and attained a Ph.D. In 1990 he founded the Engineering Office ADA – Acoustic Design Ahnert with at first two colleagues at the site of the former governmental Institute. In January 1993 the Office moved to a new location at the Berliner ‘Innovations- und Gründerzentrum’ (Berlin Innovation and Founders’ Center) – BIG – which was established in an abandoned industrial area, formerly used by AEG, in Berlin’s Municipal District of Wedding. Dr. Ahnert is a sought-after author, contributor, educator and lecturer at professional conferences and tradeshow and has authored countless white papers on subject matters such as acoustical simulation processes, measurement technology, electro-acoustical theory and applications.



Matthew Ballos

Partner / Director of Architectural Technology

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Mid-Hudson Valley, New York native Matt Ballos earned dual degrees in Architecture and Construction Management. A background in civil engineering and a lifelong love of construction and design has enabled Matt to quickly become a valuable member of WSDG’s design and production team, currently as a project designer and manager. Matt’s love of design extends from his drawing skills to his personal workshop where he spends his free time building furniture and fabricating functional pieces of art. He believes his experiences at WSDG coupled with having grown up on construction sites provides him with a functional knowledge of what can and can’t be built, and enables him to apply his design talents in creating uniquely useful, beautiful and acoustically accurate spaces. WSDG is proud of Matt’s continued affiliation with the US Air Force Reserve as an engineering specialist.



Jonathan Bickoff

Project Engineer

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Jonathan earned his B.S. in Music Technology and Business from Mercy College in 2009. He then went on to develop his skills in applied acoustics mixing front of house for live shows, AV for corporate functions, and mixing for commercials, TV, and film. Jonathan brings this real world experience and enthusiasm to the Highland, NY acoustics team. When not arguing about music and headphones, Jonathan is busy playing cello, road cycling, hiking, stand-up paddle boarding and practicing yoga.



Silvia Campos Ulloa Molho

Partner / Art Director

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An audio/video industry professional since 1987, Silvia Molho has developed striking interior designs for an international client base ranging from luxury homes to high-end recording studios and state-of-the-art educational complexes. A graduate of the Bellas Artes University in Lima, Peru and Visual Anthropology in UBA, Buenos Aires. Silvia has served as a producer on several video and film productions and documentaries in Peru, Paraguay and Argentina. Her areas of expertise include graphic design and art direction. As a long-time partner in WSDG, she is a leader (with founding partner Beth Walters) of the firm's global graphic design team. Since joining the firm in 1994 she has represented WSDG in Latin America and served as interior designer and supervisor for countless high-end design projects including world class facilities.



Victor Cañellas (Weike)

Representative

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Acousmatic Sinologist Víctor Cañellas (Weike) has been a successful acoustician/sound researcher in China since 2003. His expertise in developing acoustic interfaces for visual arts in performance venues has contributed to such demanding assignments as the Park19 and LOFT345 clubs in Guangzhou and for the popular 2007 La Fura dels Baus 'Imperium' premiere in Beijing. His expertise in acoustic treatments was enriched by serving as a representative for Jocavi Acoustic Panels and Soundbox Acoustic Tech fixed architectural acoustic systems. Victor studied Social Science at Universitat de Barcelona, Asian Studies at Universitat Autònoma de Barcelona Center of International and Intercultural Studies, and attended Chinese Language Studies in Sun Yat Sen University in Guangzhou. His wide-knowledge of 'Eastern thought and logics' provide a solid foundation for him in his new role as a WSDG representative.



Renato Cipriano

Partner / Director of Design

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Renato Cipriano graduated as a Civil Engineer from the University of FUMEC in Belo Horizonte, Brazil in 1994 and is also a graduate from both The Recording Workshop, Ohio (1992) and Full Sail Center for the Recording Arts, Orlando, USA (1999—also one of John's students). In early 2000, Renato opened the WSDG Brazil office in Belo Horizonte, Brazil and is responsible for the acoustical and architectural supervision on all projects in Brazil. Additionally, Renato has led the design efforts of many of our international projects contributing to creative acoustic interiors and integrated lighting design as well as setup and calibration of audio systems. As an audio engineer, he has worked on various projects including the most recent album of the most popular rock band in Brazil – Skank. Renato also teaches acoustics in the top audio school in the country, IAV in São Paulo. In 2004 Renato received two Grammy nominations and won the Latin Grammy for "Best Brazilian Rock Album".



Michael Chollet

Partner / Director of Systems

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Michael Chollet's first activities in the professional audio field were the development of loudspeaker systems and electronics. After graduation from High School with a focus on engineering he started self education in the fields of acoustical measurements, DSP programming, computer and network technology. He augmented this know-how foundation with advanced training courses in acoustics and environmental noise protection. At WSDG Michael has been in charge of different studio construction projects and large scale Installations, as the Swiss national broadcaster TSR in Geneva. Additional specialties include system integration, DSP programming and research on advanced problem solving. His language skills include German, French and English.



Nancy Flannery

Partner / Chief Financial Officer

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Nancy Flannery has spent nearly thirty years as the consummate client liaison and financial leader of WSDG. A tireless multi-tasker, and summa cum laude graduate from SUNY New Paltz with a business degree, Nancy assists clients in virtually every phase of their projects. From negotiating favorable contracts with suppliers to procuring special materials, or swiftly resolving complex scheduling, production, or billing issues as well as operating as WSDG's Human Resource department head, Nancy Flannery is the definitive advocate/problem solver. With a focus on developing internal procedures and policies to improve productivity and performance, she gets it right the first time and keeps it on track for the entire trip.



Gabriel Hauser

Partner / Director of Acoustics

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Gabriel Hauser graduated with a degree in electrical engineering from the Swiss Federal Institute of Technology, Zurich, in 2000. Analog and digital signal processing and acoustics were his primary focus. His Thesis was titled "Reduction of Nonlinear Distortion of Loudspeakers employing Volterra Filters" (at Studer Professional AG, Switzerland). After joining the WSDG New York office, Gabriel returned to Switzerland to become a founding partner at WSDG Europe. His specialties include Acoustical Simulation and Measurement, complex Acoustical Analysis and Methodology as well as Architectural Acoustics. During his studies Gabriel was a founding member of Abbaxx Soundsystems Ltd., whose principal field of work is sound reinforcement and loudspeaker technology. While with Abbaxx, he designed and developed sound systems for concert use, churches and installations. He writes articles for audio magazines and continues to be a performing musician.



Romina Larregina

Partner / Director of Production

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Romina Larregina graduated from the University of Palermo, Buenos Aires, with a degree in Architecture. Upon graduating, Romina took her skills to an engineering office, while teaching English and helping with the set up of trade shows. She apprenticed at WSDG – Latin for several years before moving to the United States in 1999, to become an integral member and now partner at WSDG (New York). Her multi-lingual skills in English, Spanish and Portuguese have been instrumental in leading numerous international projects. Romina is the Latin liaison, as well as project management and production coordinator for the New York office. She loves to travel and enjoys the day-to-day client interaction.



Alan Machado

Project Manager

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Alan graduated as an Architect and Urban Planner from FUMEC University, Belo Horizonte in 2013. Since then he has worked in many different areas of architecture, going from house and building modeling and executive project to markets and shopping malls. Alan has a deep connection with music, he is a passionate listener and has been playing the electric guitar as a hobby since the early 2000s. Working at WSDG since 2016, he discovered a new way to combine his passion for music and architecture and work with them for a common objective.



Breno Magalhães

Architect / Project Manager

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Breno graduated as an Architect and Urban Planner from Federal University of Minas Gerais (UFMG) in 2010 and as a Product Designer from State University of Minas Gerais (UEMG) in 2006, both in Belo Horizonte. His interest in music and acoustics grew during his university period. Breno enjoys playing the guitar and he turned this hobby into his Product Design final graduation project, by developing an electric guitar with an innovative pickup swapping system for studio applications. The same thing happened in his Architect and Urban Planner graduation project when he designed a new music Arena for Belo Horizonte. At this point he was already a WSDG member. Also as a Product Design student, Breno took part in several research groups related to furniture design focused on manufacture optimization, ergonomics and sustainability. He was a partner in a design office with the same approach. Breno works as a Project Manager and Designer at WSDG Brazil office since 2008.



Robert Margouleff

Project Engineer

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Grammy-winning engineer/producer/studio-owner Robert Margouleff brings 40+ years of hands on experience in his role with WSDG. Beyond his long-time collaboration with Stevie Wonder, capped by a Best Engineered Album Grammy for *Innervisions* (shared with Malcolm Cecil,) Margouleff's producer/ engineer credits include work with Devo, Billy Preston, Depeche Mode, Jeff Beck, The Doobie Brothers, Quincy Jones, and many other stellar artists. After building his Hollywood-based Mi Casa Multimedia Studios, Margouleff became a leader in surround audio for home theater, and provided 5.1 and 7.1 mixing and mastering for DVD and Blu-ray releases and restorations for such films as: *The Sound Of Music*, six *James Bond* features, *Rush Hour* and the complete *Lord Of The Rings* cycle. Margouleff will be involved in all aspects of WSDG's west coast projects. He will consult with new clients on details ranging from site selection to design, construction, technology, acoustic treatments and systems integration.



Aditya Modi

Representative

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Born in a recording studio in a quaint studio apartment in Chennai, Aditya has flair and passion for anything audio. After school, he used to sit in on recordings conducted by his father, Vijay Modi, for artists such as AR Rahman. Graduating Full Sail University with a Recording Arts Degree, Aditya moved to LA as a practicing DJ. India calling, Aditya moved to Mumbai where he assisted Sound Engineering legend Daman Sood as well as Avinash Oak, Jagjit Singh, Abida Parveen and almost every great in the Indian music industry. Aditya formed Modi Digital to offer premium recording studio design and undertake complete audio install projects, pro audio equipment distribution, technical designing, acoustic designing and after sales support to the audio industry.



Sergio Molho

Partner / Director of Business Development

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Named Partner/Director of Business Development in 2016 for the global WSDG architecture/acoustic design firm, Sergio Molho was a founding partner of WSDG Latin America in 1994. He has provided technical, acoustical and architectural supervision as well as project management for all WSDG Latin projects. He now provides daily and long-term technical, marketing, social media and business management direction for the firm's multiple offices. Sergio Molho has been an audio/video and recording industry professional since 1982. An accomplished keyboard artist and vocalist, in the 1980's he led popular Argentine funk band CASH. His technical credits range from AV and Systems Integration/design to project management. Sergio is a frequent contributor to technical workshops and is committed to expanding the knowledge and education of acoustics and electro-acoustics in their relationship to architecture. Sergio also serves as Director of WSDG International Relations, and contributes to the promotion and acquisition of new business worldwide.



Joshua Morris

Partner / Chief Operational Officer

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Joshua Morris graduated from the University of North Carolina in Charlotte with two Degrees, a Bachelor of Arts in Architecture and a Bachelor of Architecture. A love of music has led him to seek a combination of architecture and acoustics, beginning with his thesis on acoustics. Additionally, Josh has been educated in the Suzuki method for violin since age three, making acoustic design a natural choice for a career path. Joshua joined the WSDG team in January of 2005, moving from North Carolina to New York, and quickly settled into a key role as a project manager, designer, to his current status as a partner and COO. He has managed dozens of projects from China to the United States to Germany, and continues to add more skills to his design vocabulary each day, while refining his already well developed practice as a luthier.



Dirk Noy

Partner / Director of Applied Science and Engineering

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Dirk Noy, M.Sc. Physics, has a Diploma in Experimental Solid State Physics from the University of Basel, Switzerland and graduated from Full Sail Center for the Recording Arts, Orlando, USA, where he was one of John Storyk's students. After joining WSDG in early 1997 Dirk now heads the WSDG Europe office in Basel, Switzerland. Dirk has extensive experience in applied mathematics, acoustical measurement and calculation techniques, audio engineering, systems design and all facets of Information Technologies. His language abilities include German, Dutch, French and English. As a publishing member of the Audio Engineering Society (AES) and the Swiss Acoustical Society (SGA) he is a frequent lecturer at trade conventions, recording colleges, as well as architectural education institutions.



Kevin Peterson

Project Engineer

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Kevin has always been a music lover and musician. While in high school, he performed in several bands, and developed a 'gear head' aptitude for setting up recording equipment, microphones, and speakers. That early experience inspired him to study audio in college. After graduating as Class Valedictorian from Full Sail University with a B.S. in Show Production, Kevin's interest in audio and acoustic measurement lead him to a career with WSDG. He welcomes the opportunity to collaborate with WSDG's international team and enjoys hands-on involvement with unique, creative projects. An avid year-round camper / outdoorsman / Eagle Scout, Kevin claims to enjoy the cold and snow of the Hudson Valley winters much more than his co-workers.



Federico Petrone

Senior Systems Designer

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Federico obtained a Contemporary Music Degree and an Audiovisual Communications Degree in Argentina. He started his career as the music director for Indie Musical Theater groups and the FOH sound engineer for a major theater in Buenos Aires. Federico then went on to get a lead audio position at Disney Cruise Lines, in charge of all audio systems and responsible for the FOH operation in the main theater of one of their cruise ships. In 2007 he joined WSDG in Latin America in his current position as Audiovisual Systems Designer and Chief Installer. He has worked on numerous projects worldwide integrating sound, video, lighting and automation for different applications, from small project studios to large live venues. He also leads the systems install team for all types of audiovisual installations. Federico is an accomplished video game music composer having worked in more than 100 titles for different game platforms.



Bob Skye

Project Engineer

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Bob is a leader in electro/acoustic design, recording studio construction and, a Grammy-winning engineer with Gold and Platinum credits, has joined the Walters-Storyk Design Group. As WSDG's west coast rep and project engineer, Skye will shoulder a host of responsibilities ranging from new client development and overall business management to hands-on project design and construction supervision. He is a member of Audio Engineering Society, American College of Forensic Examiners and American Board of Recorded Evidence.



Andrew Swerdlow

Acoustic Engineer

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Andy earned his B.S. in Physics and developed computer modeling and laboratory measurement/data capture skills from UMBC (Baltimore). His first job was in analytical chemistry for a Maryland based pharmaceutical company. Once he'd had enough "Big Pharma", he switched career paths and moved to NYC to become a double threat musician/audio engineer (drummer and mastering). In addition to enhancing his listening and audio production skills, Andy acquired hands-on construction credentials while helping build a new location for Studio G in Brooklyn. That project rebooted his interest in electro-acoustics, architectural acoustics, and acoustic prediction, measurement and modeling. In 2015, he joined WSDG as an intern, building his way to his current position as an acoustic engineer, applying his modeling and measurement skills, making recommendations for a variety of acoustic projects, and tuning audio systems.



Mariana E. Varon

Project Manager

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Mariana studied architecture at the UBA (Universidad Nacional de Buenos Aires / University of Buenos Aires) and graduated in 1995. Along with her MBA in Architectural Design at FADU (UBA) she continued her architecture studies at Universidad Torcuato Di Tella. From 2004 to 2011 she worked for WSDG Latin, being the project manager of many projects and in charge of the production of the construction documentation. In 2011, she created her own Architectural Firm: Mvaron Arch. & Assoc., working on Steel Framing projects and dry-wall construction. Mariana has been involved as a project manager with several architectural firms, including Clorindo Testa, Roberto Frangella and Justo Solsona Arquitectos. Her work led her to win several awards and mentions during her career.



Marc Viadiu

Project Engineer

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Marc studied Technical Engineering in Sound and Image and Higher Engineering in Electronics at the University Ramon Llull in Barcelona, Spain. After graduation, Marc worked in an industrial acoustics company in Barcelona. Later he started his own company of acoustic engineering and distribution of acoustic and audio products. At the beginning of 2009, Marc undertook a six month internship at the WSDG New York office preparing drawings, taking acoustical measurements and performing room acoustical calculations. Upon returning to Spain in 2010, he started a new company of designing acoustical products and opening the new WSDG office in Spain.



Thomas Wegner

Senior Project Engineer

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Thomas Wenger studied IT and electronics at the Institute for Software Engineering, Bern with additional studies in Audio Recording and Room Acoustics in East Croyden, England. After several years in the IT world with major project management development he worked with J+C Intersonic AG for 5 years and became a Senior Project Manager. Mastering the synthesis of the technical aspects of acoustics, broadcast and audio video systems has made him an invaluable member in all the released projects like GTRK Kultura Moscow, HKB Music University Switzerland, and several government related projects for Swiss Television and Radio. In his responsibility for the technical planning and integration of state-of-the-art recording studios and media locations, his supervision capability insures the coordination of the building process and equipment specifications.





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