

THE AUDIO BUG, INC.

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September 3, 2010

City of Miami Beach Planning Department
1700 Convention Center Drive
Miami Beach, FL 33139
Tel: 305-673-7000, ext. 6302
Fax: 305-673-7559

Ref: Sound Study
Shelborne Hotel
1801 Collins Avenue
Miami Beach, FL 33139

Attn: Katia M. Hirsh, Sr. Planner

Dear Ms. Hirsh,

This letter will serve as my report on a Sound Study conducted at your office's request as required for an Application for Modification of Conditional Use Permit at the above referenced property. This report is based on data gathered during two site visits, subsequent analysis of this data, drawings and other information submitted by the applicant, photographs and aerial maps obtained using our Google Pro account.

During my first visit to the Shelborne on Wednesday, August 25th, I met with Carlos J. Gonzalez, President and Construction Manager at Stellar Construction, the firm conducting renovations at the hotel, and Nelson Vega, Design Consultant of Sound Components, the audio/visual firm providing the new sound system and other equipment. We reviewed architectural drawings which were available at the time in spite of the fact that they did not include up-to-date information on the final disposition of loudspeakers. I just yesterday received the final drawings which detail loudspeaker locations as they are to be installed.

Upon completing our review of the drawings, Mr. Gonzalez gave me a tour of the property. We walked the pool deck and grassy area to the east while discussing the types of speaker systems to be used, methods of installation and general locations of these devices. The overall approach to the system is that of a densely populated distributed system which lends itself to venues where uniformity of sound coverage is highly desirable and effective in controlling sound levels off-property.

I conducted a second site survey on Friday, August 27 to further inspect and document information relevant to this Sound Study. Sound level measurements and audio recordings were collected for subsequent analysis in our office. Information from these are provided below in Figures 1 through 6 illustrating conditions observed during a one-hour period between 6:00 p.m. and 7:00 p.m. A number of photographs were taken; many of which are included below. Several video clips were also recorded. All of this information is included on a Compact Disc which has been provided to the Planning Department for their files.

The applicant's Letter of Intent, dated August 16, 2010, outlines the areas of interest to this Study. These are outdoor amenities which include dining components as noted on pages 3 and 4 of the Letter of Intent:



1. The "Outdoor Café" is located directly adjacent to the Café, and is the outdoor dining component to the Café, providing patrons with an outdoor venue for breakfast, lunch and dinner, with a view of the hotel's pool area. In conjunction with the Café, the Outdoor Café will open at 6:00 a.m. for breakfast and remain open until 2:00 a.m. for dinner. As with the Café, the menu items of the Café will consist of traditional American style food for breakfast, lunch and dinner, and will also include a menu comparable to other restaurants in hotels of the same caliber and style. The Outdoor Café will play only ambient background music.
2. The "Taqueria" is located within the two easternmost commercial cabanas and rear open courtyard area of the Shelborne Hotel, and is designed to accommodate the hotel's need for a pool side café, primarily serving patrons during the daytime and early evening hours. The Taqueria will serve a menu comparable to other pool side cafes in hotels of the same caliber and style, and will operate from approximately 11:00 a.m. through 11:00 p.m.. The Taqueira will play only ambient background music.

There is no outdoor entertainment proposed for the outdoor accessory use restaurants and bars (the Outdoor Café and Taqueria), except when there is a special event permit for entertainment issued by the City.

Beginning on page 5 and continuing on page 6, a narrative on their noise attenuation plan is provided which states:

(7) A noise attenuation plan which addresses how noise will be controlled to meet the requirements of the noise ordinance:

Consistent. Pursuant to the Applicant's pre-application meeting with the Planning Director, the Applicant has authorized the planning staff to engage a sound consultant under the procedure set forth in §118-6 of the City Code to conduct a sound study, subject to the applicant's review and approval of the consultant's proposal.

In addition, as per Sheet DIA-IE on the architectural plans submitted with this application, the reconfiguration of the existing ballroom includes the addition of sound vestibules at each entry location to the rooms. These vestibules include the following hardware on both sets of doors entering the rooms: Sound Vestibule Hardware (Continuous Perimeter Door Seal Unger Technologies - Model No. 475 or Equal; Automatic Door Sweeps - Unger Technologies - Model No. 365 or Equal; Acoustic Door Saddle - Unger Technologies - Model No. 566 or Equal; Acoustic Insulated Metal Door).

The partition between the surrounding occupied spaces and the meeting rooms has been upgraded to achieve an STC of 63. The wall consists of the following construction: Wall Construction (Two (2) layers of 5/8" gypsum board - meeting room side; Neoprene Isolation Element - Kinetic Noise Control - IsoMax Clips or Equal; 6" Metal Studs - Braced; Acoustic Batting; 5/8" Exterior Durock Sheathing; Stucco Finish System. In addition, the Wall details are included on Sheet DIA-IE).

The ceiling has been completely removed and a new acoustic ceiling assembly is being provided that achieves an STC of 72. The ceiling assembly consists of the following construction: Ceiling Construction (One (1) layer of 5/8" gypsum board - towards meeting room; 7/8" metal furring channels; Quick Connect Ceiling Hanger - Kinetic Noise Control Model IsoGrid or Equal; Three (3) layers of 5/8" gypsum board; Acoustic Batting; Deck Suspended Ceiling Hanger - Kinetic Noise Control - Model ICC or Equal. Note: In locations where ceiling is tight to underside of structure - Super-Compact Ceiling Hanger by Kinetics Noise Control- Model KSCH or Equal will be used; Existing Structure. The Ceiling details are included on Sheet DIA-IE).

The other areas wherein entertainment is proposed (the Lounge and Brasserie) are interior spaces with no direct connection to the exterior areas of the property. In addition, the outdoor accessory use restaurants and bars (the Outdoor Café and Taqueria) will not have entertainment, and will play music only at an ambient background level, except when there has been a special event permit issued by the City allowing for entertainment.

In reviewing the plans and drawings provided by the applicant, it is apparent the sound system design is consistent with the intent of the City's Noise Ordinance; amplified music should not be audible at adjacent properties. The system will consist of a large number of small speaker systems located throughout the Pool Deck and Garden areas in such a way as to ensure excellent uniformity of sound distribution. When properly adjusted, it shall be possible for music played at background levels to be clearly audible to the Shelborne's guests without intruding on neighboring properties.

Based on measurements of typical ambient noise levels (see measurement charts below) the system's nominal operating level should be adjusted to approximately 60 to 65 dBA between 8:00 a.m. and 11:00 p.m. The system's electronic management controller should be set to automatically decrease levels by 10 decibels between the hours of 11:00 p.m. and 2:00 a.m. Finally, the music system should be programmed to be muted during those periods when the two facilities are not operational, i.e., 2:00 a.m. to 6:00 a.m.

As noted in the Applicant's Letter of Intent, no residential properties exist adjacent to The Shelborne Hotel. Distances between The Shelborne's two outdoor components and neighboring properties exceed 100 feet in all directions. This represents a loss in sound level of approximately 28 decibels based on the inverse-square law¹. Proposed sound levels for the background music system (65 dBA) minus this level of attenuation would result in music registering 37 dBA at 100 feet. This would render any music emanating from the Shelborne Hotel to be significantly below the lowest ambient noise levels normally experienced on Miami Beach. The music would assuredly be inaudible at the adjacent properties.

Past and current use of the pool deck and other outdoor areas have included the sounds of hotel guests and others using the pool and other amenities. It is unlikely that sound levels associated with this type of activity will increase under the proposed usage. The only added component to these facilities will be a well-designed and controlled background music system. The additive effect, when properly setup and operated according to the attached Performance Specification, will be negligible.

¹. In physics, an inverse-square law is any physical law stating that some physical quantity or strength is inversely proportional to the square of the distance from the source of that physical quantity.



Significant remedies are being proposed to prevent sound generated within The Shelborne from escaping into the atmosphere. Sound vestibules are proposed for all ballroom exits. Demising walls and ceilings will be treated to provide substantial sound transmission losses, ensuring containment of activities within the meeting rooms. These architectural modifications are detailed in the Applicant's submittals.

While high STC ratings can indicate substantial reductions in the transmission of speech and other normal sounds, they suffer from the fact that they do not address low frequency or "bass" energy. STC ratings apply to frequencies between 125 Hz and 4 kHz. In situations where music with substantial low frequency energy might be played within the ballroom or meeting rooms, there is the risk that this energy could be transmitted through the building's interior and perhaps reach guest rooms or other sensitive areas. There is also the risk that such sounds could escape to areas outside the building. Conditions where this might occur would include the presence of a DJ or band at weddings or other similar events held at The Shelborne. A full review of this issue would be most worthwhile. I would also highly recommend field testing of these barriers once completed to ensure that the Sound Transmission Class (STC) ratings specified are met and that any low frequency sound transmission issues might be addressed.

In summary, it is my professional opinion that sound emanating from the Shelborne and its newly renovated facilities will have no adverse impact on the surrounding properties. Substantial distances separate them from one another, offering natural acoustical isolation. The Shelborne and its neighbors, The Raleigh and the Continental, share beach exposure to the East and all three properties have expansive pool deck and recreational spaces. As long as the design intent of the sound system is adhered to and the system is operated as intended, there should be no problems with noise.

I invite any questions you may have and look forward to assisting with this application in any way possible.

Respectfully submitted,



Donald J. Washburn
President



Shelborne Hotel Site Photos



Shelborne Hotel Entrance



Shelborne rooftop HVAC unit contributes to street level noise



View of Shelborne from East end of Pool Deck



View of Richmond and Raleigh Hotels from Pool Deck

Shelborne Hotel Site Photos



North side of pool along Cabanas



Proposed location of "Taqueria"



Looking North from East Courtyard



View of Continental Hotel from Boardwalk

Shelborne Hotel Site Photos



Courtyard looking East from Pool Deck - note gate to beach



Courtyard entrance at East end of 18th Street



Hotel Raleigh as seen from Courtyard - note distance



Proposed location of "Taqueria" as seen from Courtyard

Shelborne Hotel Site Photos



Shelborne Hotel, Miami Beach, Florida



THE AUDIO BUG, INC.

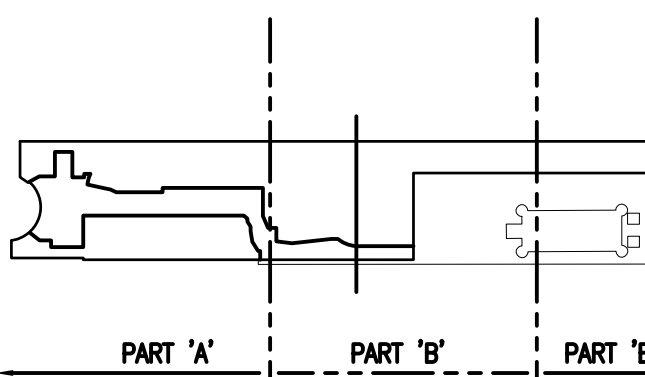
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Shelborne Hotel, Miami Beach, Florida



Shelborne Hotel, Miami Beach, Florida





REVISIONS

NO.	DESCRIPTION	ISSUE DATE

INTERIOR LOBBY
PERMIT SET

SEAL

Jonathan Cardello
Lic. # AA26001507

ADD Inc. Architecture Interiors Planning

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Boston Miami

JOB NUMBER: 10029.01

CHECKED BY:

ISSUE DATE: July 02, 2010

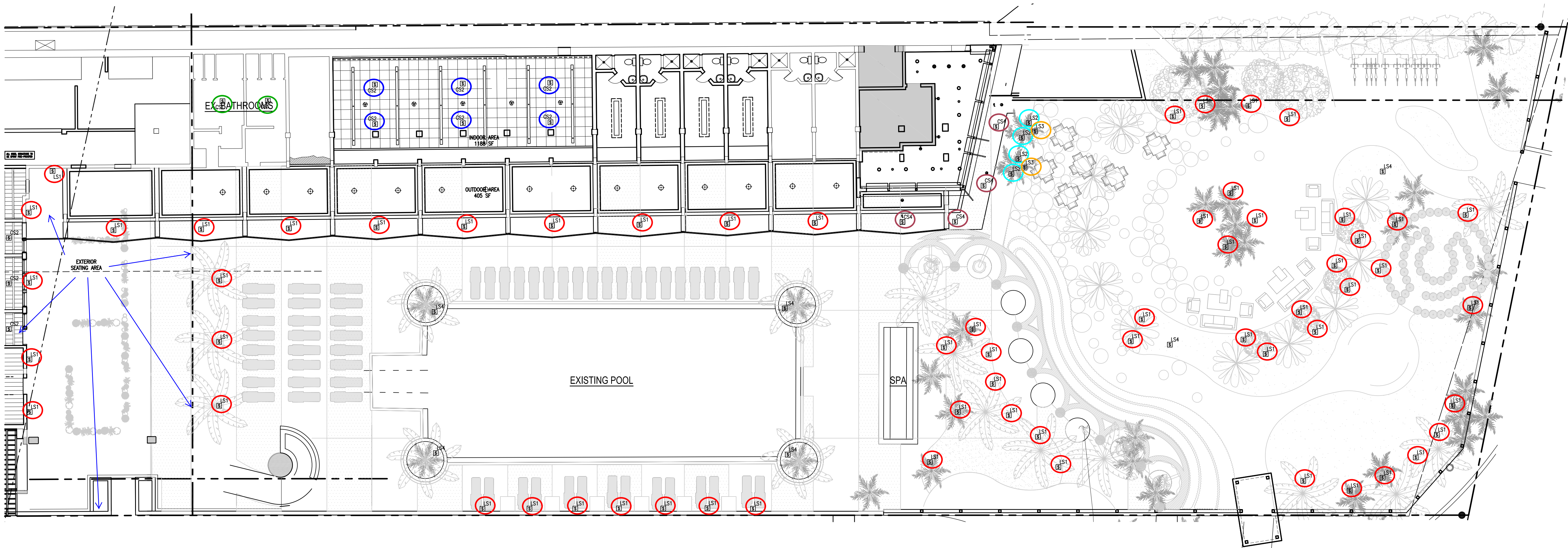
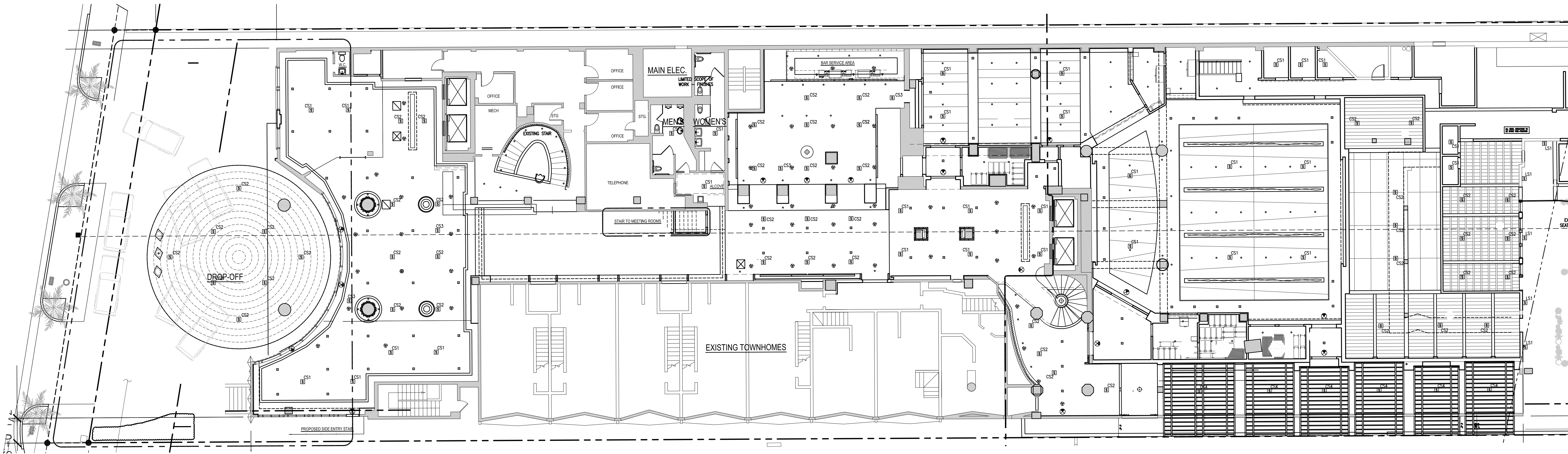
SCALE: 3/32" = 1'-0"

SHEET TITLE

LEVEL 1 LAYOUT
FOR SPEAKERS

SHEET NUMBER

DIA-1H



Shelborne Hotel Sound System Specification

Pool Deck and Courtyard Areas • 1801 Collins Avenue • Miami Beach, Florida 33139

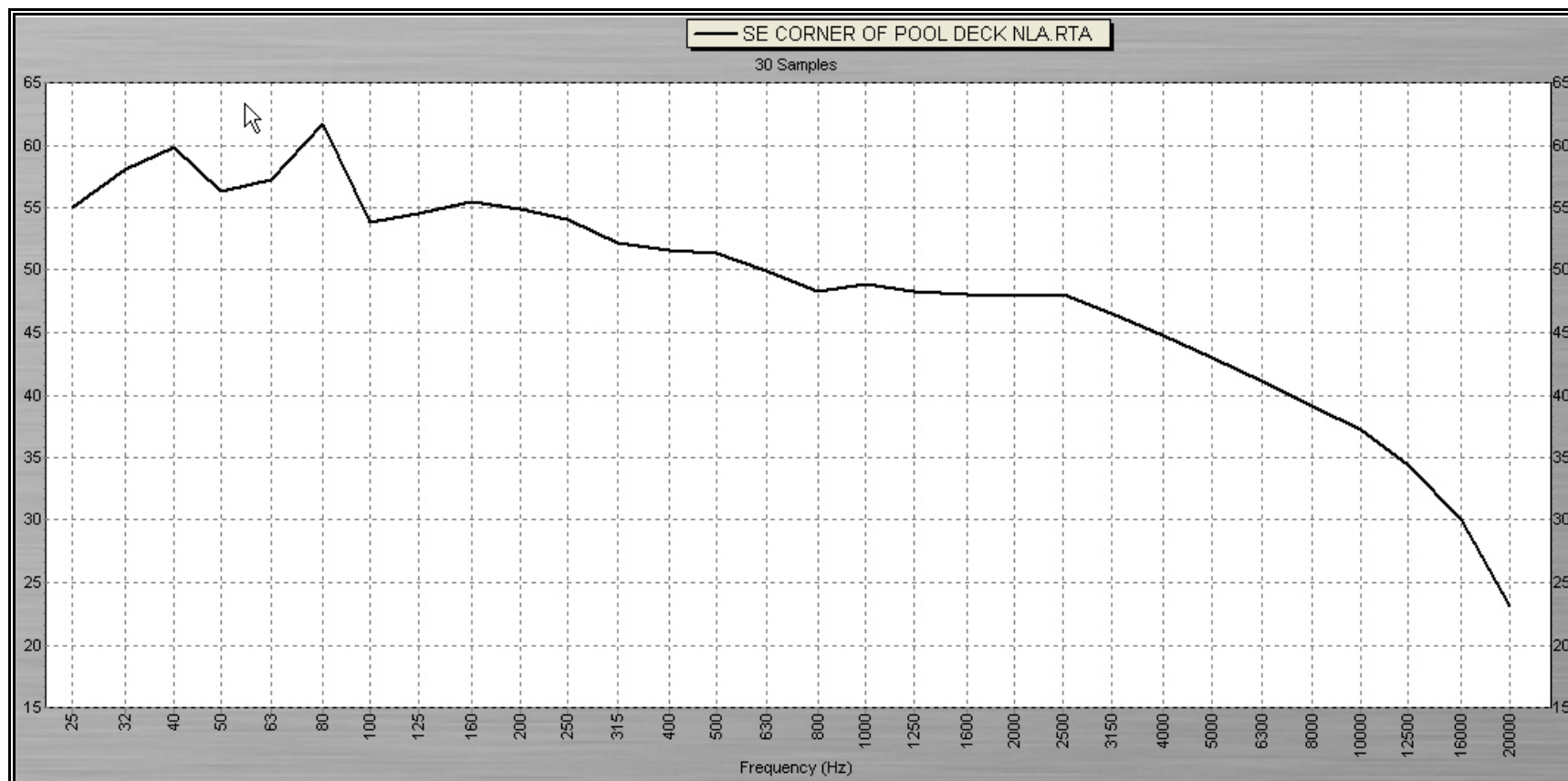
Outside Sound Systems: Shall be designed to fully comply with local noise ordinances, employing the following special techniques to accomplish this goal. These techniques include:

- A. Deployment of multiple small, closely spaced speakers driven at low individual volumes. The system design is intended to distribute sound uniformly within each listening area in such a manner as not to interfere with normal conversational level of the clientele. Maximum long-term system levels will be limited to 65 dBA SPL averaged throughout the Pool Deck and Courtyard areas. User access shall be restricted to the selection of program material and manual reduction only of system levels. No increase above maximum design sound levels will be permitted. Maximum sound levels at the property line shall not exceed 65 dBA long-term.
- B. All outdoor speakers shall be oriented in such a way as to minimize sound propagation towards adjacent properties. Size of outdoor speakers shall be limited to small woofers (not to exceed 8" nominal) incapable of producing appreciable levels of low frequency energy, as lower frequencies (longer wavelengths) can travel longer distances than higher frequencies (shorter wavelengths). The lowest frequencies, which are essential to the reproduction of some musical styles are to be significantly attenuated by electronic means.
- C. A centralized, computer controlled digital signal processor, such as a Biamp "Audia" Digital Signal Processing System (or equal), shall form the heart of the system. With this device, the system will be equipped with the following functions:
 - 1. All controls shall remain under lock and key in the hotel management offices, with limited access via password security.
 - 2. The systems shall be divided into multiple zones, each with a preset maximum level, separate dynamics control, equalization and signal alignment, and an intelligent automatic leveling program to maintain consistent sound levels irrespective of program source.
 - 3. Sound levels shall be programmable to accommodate changing requirements depending on time of day and hours of operation as deemed appropriate.
 - 4. User controls will consist only of source selection and the ability to turn the system down.
- D. Only system installers and programmers shall have access to the full complement of controls and adjustments, ensuring compliance with the stated standard. Volume levels will be automated, with programs levels set so as not to exceed a maximum, predetermined level. Once final adjustments have been made to the system, all controls are to be locked to prevent intentional or inadvertent adjustments.
- E. New speakers shall be installed as shown in the attached plans. The speakers shall be as specified by the sound system integrator and shall be mounted in the locations indicated on page 12 of this document.
- F. Except when permitted by special event permit, no live music will be presented.

The system, once completely installed, shall be tested and adjusted under the supervision of Don Washburn of the Audio Bug, Inc. to ensure that all aspects of the system's performance comply with the design intent, City Ordinance and good technical practices.

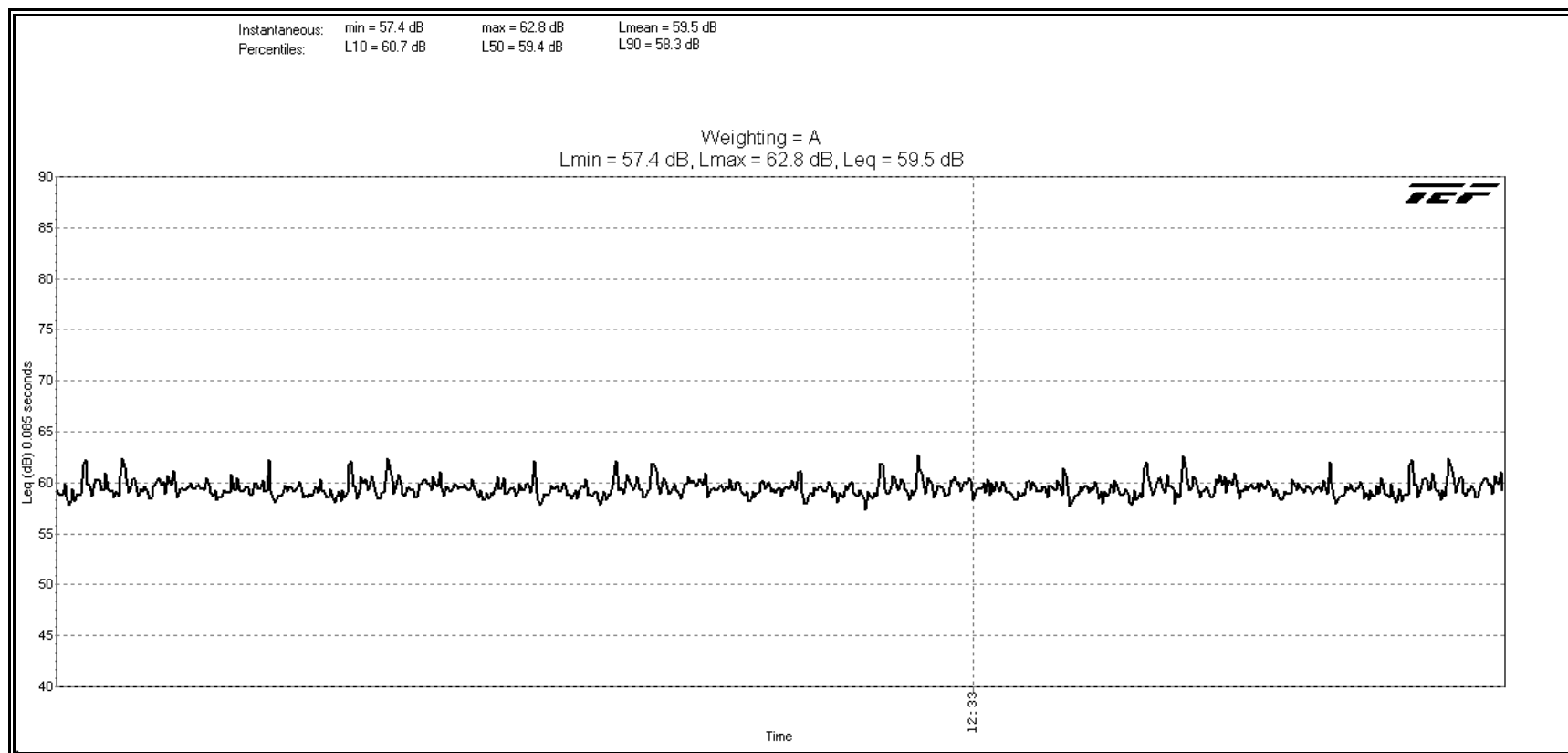


Shelborne Hotel



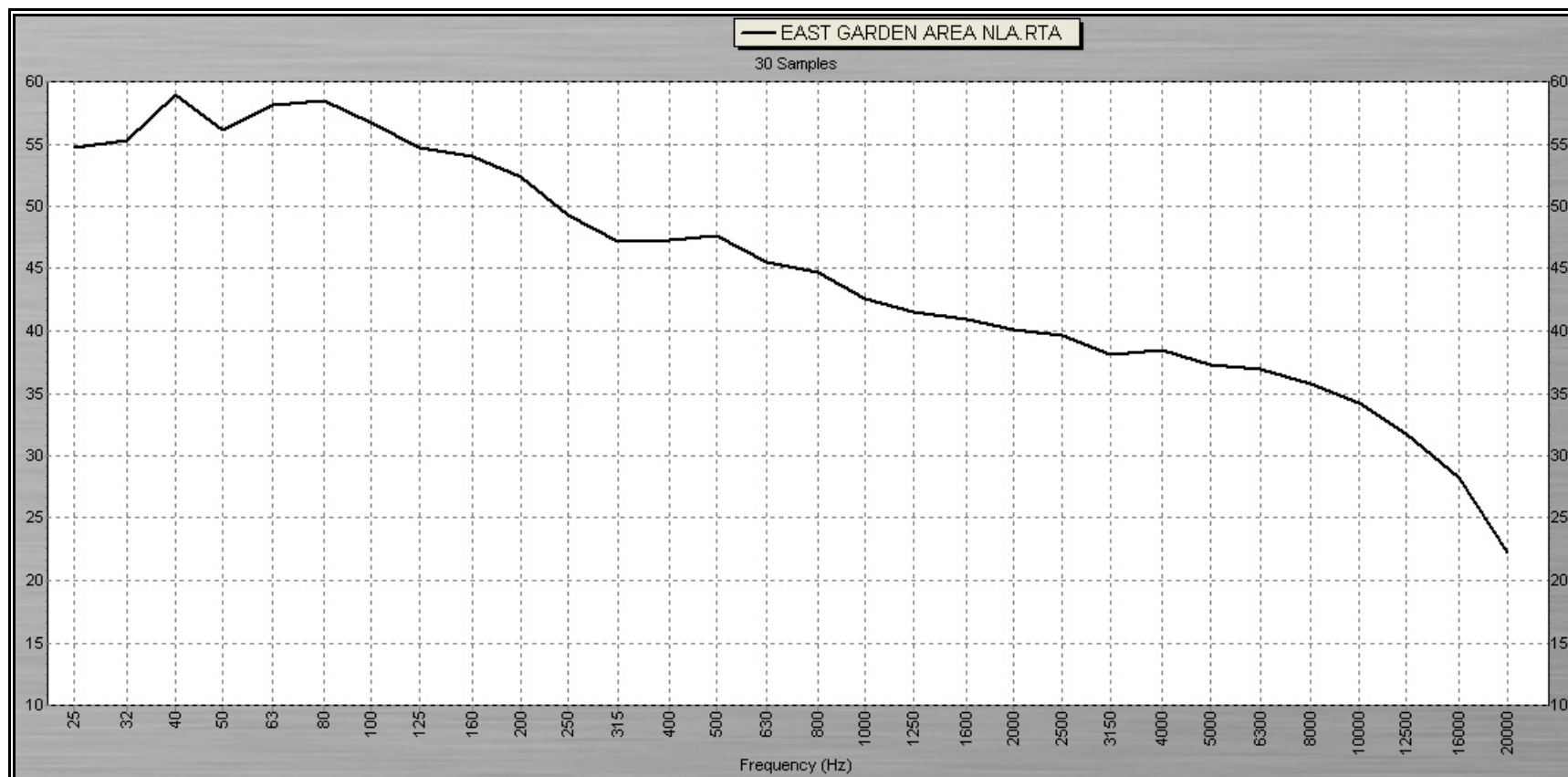
Broadband Spectral Response of Ambient Noise on Pool Deck - Southeast Corner
(1 minute sampling duration)

Shelborne Hotel



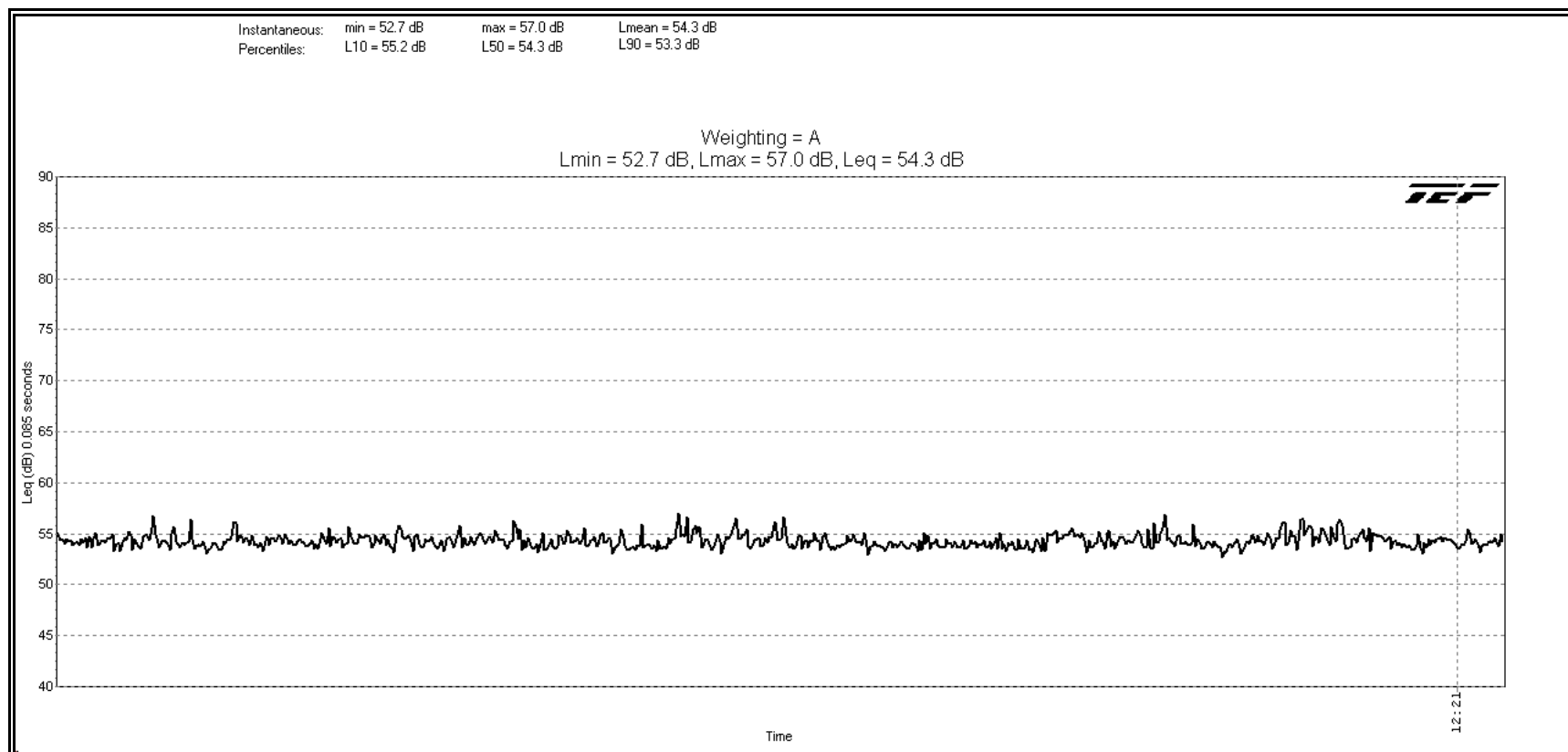
A Weighted Ambient Noise on Pool Deck - Southeast Corner
(1 minute sampling duration)

Shelborne Hotel



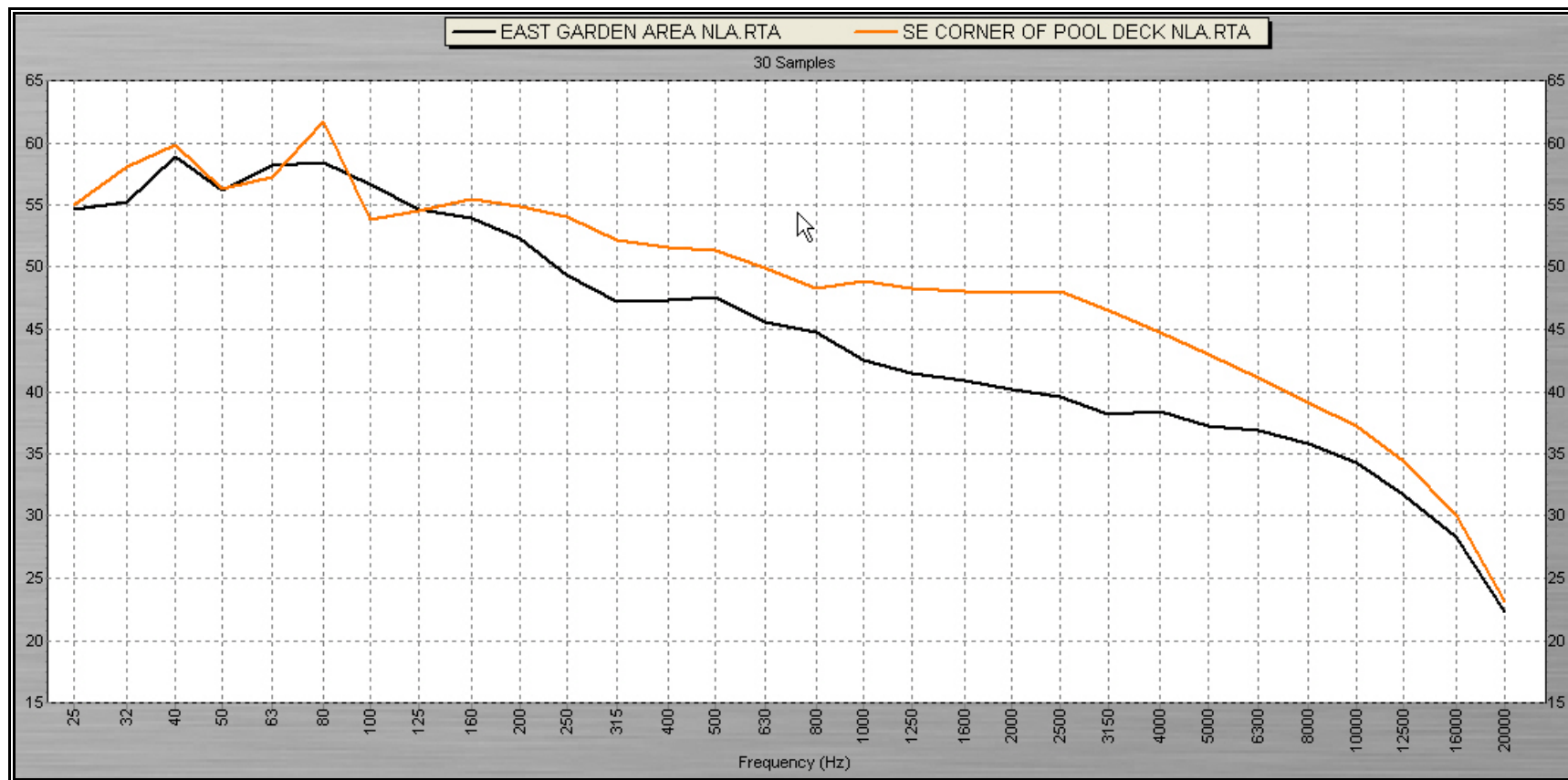
Broadband Spectral Response of Ambient Noise in Garden Area East of Pool Deck
(1 minute sampling duration)

Shelborne Hotel



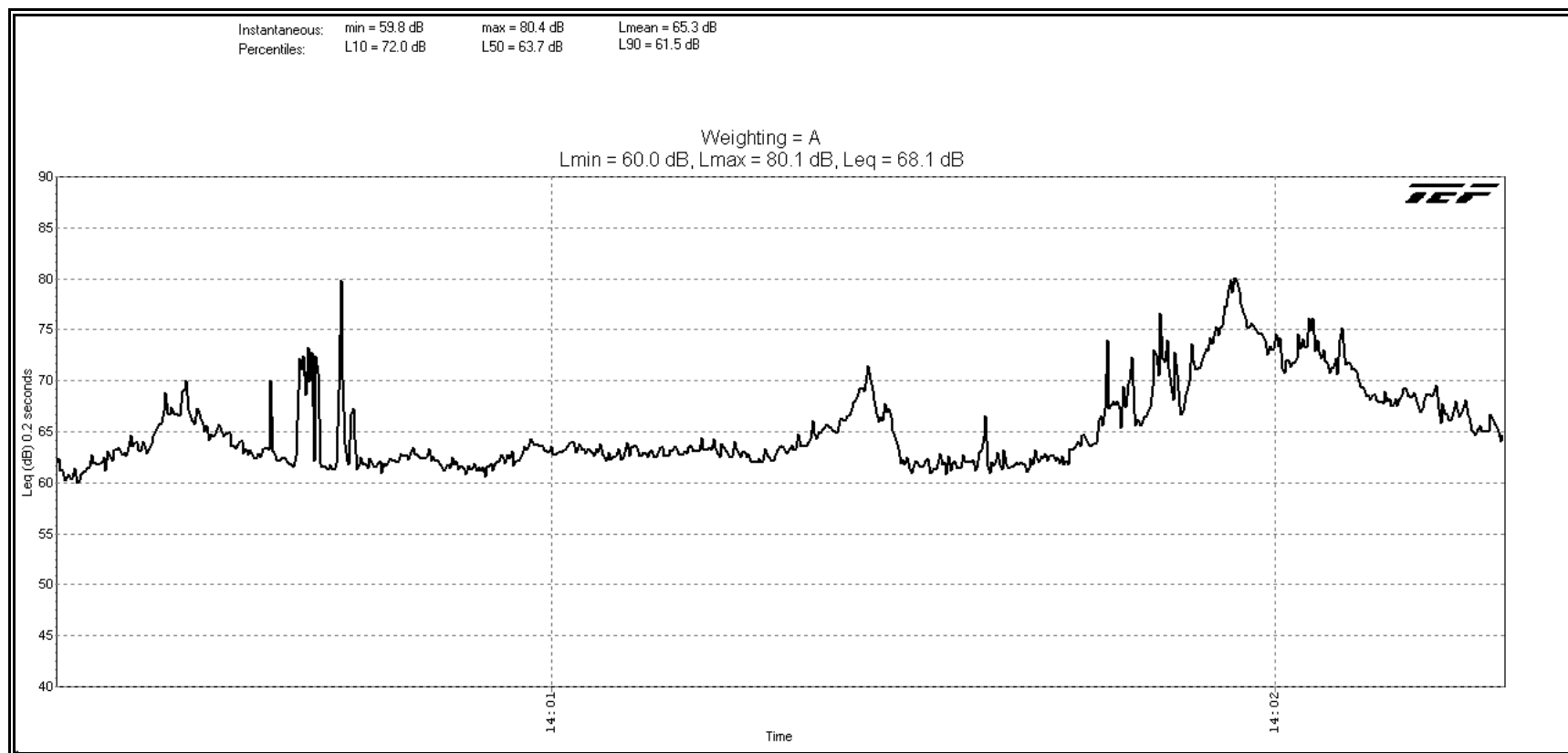
A Weighted Ambient Noise in Garden Area East of Pool Deck
 (1 minute sampling duration)

Shelborne Hotel



Overlays of Broadband Ambient Noise Spectrums measured in Garden Area East of Pool Deck and on Southeast Corner of Pool Deck (1 minute sampling duration)

Shelborne Hotel



A Weighted Noise Levels along 18th Street and Collins Avenue including traffic
(2 minute sampling duration)