EDWARD DUGGER + ASSOCIATES, P.A.
Consultants in Architectural Acoustics

Acoustic Study – ED+A 181007

March 30, 2018

Project:
Espanola Hotel
1434 Washington Avenue
Miami Beach, Florida 33139

Applicant:
Clay Hotel Partnership, LTD / Infinity Espanola Hotel Venture, LLC
c/o Infinity Real Estate, LLC
1407 Broadway, 30th Floor
New York, New York 10018

Prepared for:
Thomas R. Mooney – Director
City of Miami Beach Planning Department
1700 Convention Center Drive, Second Floor
Miami Beach, Florida 33139

Prepared by:
Edward Dugger + Associates, P.A.
1239 Southeast Indian Street, Suite 103
Stuart, Florida 34497
(772) 286-8351

Edward Dugger, FAIA ASA NCAC INCE
Principal; edward@edplusa.com

Sam Shroyer, ASA
Consultant; sam@edplusa.com

EDWARD DUGGER + ASSOCIATES, P.A.
Consultants in Architectural Acoustics

Date: 30 March 2018

To: Thomas R. Mooney, Director
City of Miami Beach Planning Department
1700 Convention Center Drive, 2nd Floor
Miami Beach, Florida 33139

From: Sam Shroyer, ASA
Edward Dugger, FAIA ASA NCAC INCE

Re: **Acoustic Study – City of Miami Beach**
Espanola Hotel
1438 Washington Avenue
Miami Beach, Florida 33139
ED+A 181007

Mr. Mooney,

This report has been prepared by Edward Dugger + Associates, P.A. (ED+A) to discuss potential sound impacts which could be created by 1434 Washington Avenue in conjunction with their request for an Outdoor Entertainment License. To prepare this study, ED+A performed long-term acoustical measurements on the property, discussed the scope of renovation and future operations with the Applicant, observed surrounding properties, and have reviewed the Applicant's submittal package, architectural details, and audiovisual plans and specifications.

Overall, it has been concluded that the future operations at Espanola Hotel will not conflict with the existing character of the neighborhood, so long as certain precautions are taken by the Applicant. These details are discussed in the following pages.

ED+A welcome further discussion with the City of Miami Beach Planning Department and their peer-review acoustical consultant pertaining to this report and application. Please contact ED+A with any questions, comments, or concerns regarding this report or its contents.

Project Information

Introduction

Clay Hotel Partnership, LTD / Infinity Espanola Hotel Venture, LLC (the Applicant) is seeking a Conditional Use Permit for an Open Air/Outdoor Entertainment Establishment at 1434 Washington Avenue. The property is currently known as the Clay Hotel but will operate under the Espanola Hotel moniker in the future. The property will operate primarily as a hotel but will also feature a restaurant and bar areas. Most of the operations will occur within the building structure, but the Applicant is proposing the addition of a rooftop deck featuring communal areas for guests and an outdoor bar counter.

Project Location

The hotel is located on the southwest corner of Washington Avenue and Espanola Way. Pursuant to the City's Zoning Map, the property is zoned CD-2, Commercial, Medium Intensity District. Pursuant to the City's Future Land Use Map, the property's land use is also designated as CD-2, Commercial, Medium Intensity District. The property is located within the Espanola Way Historic District.

The Feinberg-Fisher Elementary School, located immediately to the south of the property, along with residential properties west of Drexel Avenue have been identified as the nearest noise-sensitive receivers in relation to Espanola Hotel. The nearest residential properties appear to be multi-family residential buildings at 525 Espanola Way, 500 15th Street, and 516 15th Street. There are other buildings which appear to include residential living units further west at 537 Espanola Way and 1445 Pennsylvania Avenue with additional residential buildings to the northwest along 15th Street.

Architectural Information

The hotel is comprised of several different building structures with open space and a courtyard in between. While all the buildings are three-stories in height, the roof of the structure which wraps around the four smaller buildings on their west, north, and east sides is at a height of 32.25-ft. The roof of the smaller buildings is currently at a height of 22.25-ft. Guest rooms are located on all three levels while several retail and restaurant spaces currently utilize the north side of the building along Espanola Way.

The Applicant is proposing the addition of a roof deck on top of the four smaller buildings to connect the east and west sides of the larger building. The roof deck will serve a different purpose on each of the buildings, consisting of (from east to west): the "Spa Deck" with swimming areas, the "Sun Deck/Lounge," the "Bar Deck" featuring a bar counter and 37 seats, and the "Play Deck," which is to be used for yoga, relaxation,

and fitness. Two restrooms will be located in the Play Deck. 46-in. planters will line the roof deck at the edge of the buildings on the north and the south side, with the exception being the Bar Deck which extends 7.5-ft. above the roof deck on its north side. An aluminum trellis—10-ft. above the deck—is to cover the northern portion of the Bar Deck, Sun Deck/Lounge, and Spa Deck. The trellis, along with the taller structures to the east and west of the roof deck, will result in a diminished line-of-sight between the roof deck and other properties to the west, north, and east. The planters, roof deck height, and distance from the school property may result in a limited line-of-sight between these two areas, but this remains unconfirmed by ED+A.

Operations

The Applicant is proposing to have Outdoor Entertainment on the roof deck—specifically the Bar Deck—between 8:00 p.m. and 2:00 a.m. Thursday through Saturday and between 12:00 p.m. and 2:00 a.m. on Saturday for select events. There will be a total of 37 seats though there would be space for additional patrons on the other deck areas. The Applicant intends for the Outdoor Entertainment to create a "vibrant and cocktail oriented scene" on Thursday, Friday, and Saturday Nights for hotel guests to experience live music at an elevation to create an enjoyable environment—similar to a "speakeasy or lounge" type of bar. The Applicant has stated that they do not anticipate the rooftop area to function as a "nightclub or event space."

Entertainment will consist of prerecorded music provided by DJs and live music. All entertainers will be using the house system, whose output settings will be configured by their audiovisual consultants. Hotel facilities employees, under the directive of hotel management, will assist the performers in connecting to the sound system.

Acoustical Measurements and Results

Methodology

Long-term acoustical measurements were performed along the south boundary of the property near the hotel's courtyard adjacent to the Feinberg-Fisher Elementary School. This location was chosen as the school was found to be the nearest noise-sensitive receiver in relation to the hotel.

The measurement system was deployed on Monday, March 19 and was retrieved on Wednesday, March 21. The system logged equivalent-continuous sound pressure levels (L_{eq}) every one-half second, from which it calculated and exported five-second L_{eq}, one-minute L_{eq}, and one-hour L_{eq}. Percentile-exceeded sound pressure levels (L_{10}, L_{50}, L_{90}) were also logged in these increments. The one-minute data have been

graphed and are included in the Appendix and can be provided in numerical form, if requested. Data for full one-hour periods are also included in numerical form.

Daily L_{eq} (L_{avg}) were calculated from the data to represent the measurement period for each day. Day-night average sound pressure levels (DNL or L_{dn}) were also calculated for each day. L_{dn} is also a time-average value, but a 10 dB penalty is applied to sound pressure levels measured during nighttime periods – 10:00 pm to 7:00 am – to account for the general public's increased sensitivity to sound during these hours. Daily percentile-exceeded sound pressure levels (L_{A10}, L_{A50}, and L_{A90}) were also measured and included.

Measurement Results

Sound levels were mostly constant, but were elevated during daytime hours due to activity at Feinberg-Fisher Elementary School. Sound generated by the school seemed to decrease after 3:00 p.m. to remain constant again until 7:00 a.m. the next morning. Sound levels did not drop below 57 dBA, presumably due to mechanical equipment in the area, though it is unknown to what extent equipment at the hotel or the school may have contributed. The measured data are included in graphical and tabular form.

Discussion and Analysis

Architectural Features

Though the roof deck is not fully enclosed, the architectural features of the surrounding buildings will assist in containing the sound within the property. As mentioned previously, the east, north, and west portions of the hotel are 10-ft. greater in elevation than the roof deck, so the hotel will effectively block the line-of-sight between the roof deck and properties in these directions. The lack of an unobstructed line-of-sight between the roof deck and the noise-sensitive receivers will reduce the sound which could freely travel between the two locations. The planters, bar façade, and trellis above the pool deck will further help to contain sound within the roof deck. While these attributes are beneficial in keeping sound contained within the area, the audio system is the key factor to ensuring that this is the case, the characteristics of which are discussed in the following section.

Audio System

The rooftop will feature a permanent "house" audio system designed by Engineering Plus, LLC. It will be a distributed system, spanning the roof deck and its various platforms. The audio system has been designed to evenly distribute sound and contain it within its intended area.

Nine small loudspeakers will be located in the planters, the majority of which (five) will be on the Spa Deck. Two will be installed on both the Bar Deck and the Sun Deck/Lounge. Two surface mounted speakers will be utilized on both the western and eastern façades of the hotel buildings on the Play Deck and Spa Deck, respectively, with these speakers facing inward toward the roof deck. The Bar Deck will have the highest concentration of speakers as it is where the entertainment will be provided, featuring four surface mounted speakers and two subwoofers.

Engineering Plus, LLC has indicated to ED+A that the system has been designed with the intent of providing different "modes" of operations for different operating conditions. For example, the system and its speaker output will be preset with different settings for background music and entertainment music. While Engineering Plus, LLC does not directly construct these presets, they review the audiovisual installer's specific equipment and settings as a quality control measure.

Background music will be provided on the roof deck during non-entertainment hours on all days. The background music will be provided mainly by the surface mounted speakers with the planter speakers "filling in" the space between them for equal coverage. The exception to this is the Spa Deck, where the background music will predominantly be provided by the planter speakers. There are fewer speakers on the Play Deck as this area is not intended to be as much of a gathering area as the other roof deck areas. The surface mounted speakers on this deck will provide low-level background music for this area.

During entertainment, the primary source of music will be the Bar Deck loudspeakers. While these speakers will be at entertainment levels, the surface mounted speakers and planter speakers on the other decks will be producing background sound levels.

The audiovisual drawings did not specify whether the IC6-1082/96 loudspeaker or the IC6-1082/96 surface mounted loudspeaker was to be used on the Bar Deck. ED+A recommend that the IC6-1082/96 be used to ensure "tighter" coverage and to contain sound within its intended area.

Potential for Impact

The use of a distributed sound system with speakers facing inward and preset levels, in conjunction with the architectural features of the buildings, will reduce the potential for impact to neighboring properties. Foremost, the nearest noise-sensitive receiver—Feinberg-Fisher Elementary School—would be unlikely to be impacted as Outdoor Entertainment has been proposed between the hours of 8:00 p.m. and 2:00 a.m. on weekdays. Though ED+A cannot speak to the specific operations at the school, it

should be noted that the only day that Outdoor Entertainment has been proposed during typical school hours is Saturday, when school would presumably not be in session.

However, the audio system will still be active during school hours to provide background music and ambience on the roof deck. ED+A reached out to Engineering Plus, LLC with recommendations, which are listed and addressed individually below:

- An appropriate preset sound level be chosen for use during non-entertainment hours (on school days) to ensure that any music generated on the roof deck is not audible within the school
    - Engineering Plus, LLC will be reviewing the installer's settings to ensure that they are appropriate for what the system has been designed to do.
- All planter speakers be installed so that they face inward toward the roof deck in a fashion which will not direct sound down toward the school
    - Engineering Plus, LLC has stated that the audio system has been designed to contain sound within the roof deck areas. Because of the school below, special consideration has been taken to ensure that this is the case.
- Community IC6-1082 surface mounted speakers have been specified for use by Engineering Plus, LLC, but a specific beamwidth was not noted in the drawings.
    - ED+A recommend that the IC6-1082/96 be used as opposed to the IC6-1082/26 to ensure "tighter" coverage. This will ensure that sound remains in the area for which it is intended. Engineering Plus, LLC have agreed with ED+A that this would be the preferable option.

It should be mentioned that levels measured by ED+A on the hotel property would also be expected at the school yard to the south. Therefore, the near-constant sound level in excess of 57 dBA measured by ED+A would need to be increased by music on the roof deck to result in any discernible impact at the school, which would be unlikely due to the ambient level at which background music would be played, the elevation of the roof deck, and a potentially obstructed line-of-sight between the locations.

During the midday recess hours, background music at the roof deck would be extremely unlikely to increase sound levels at the school. If it is deemed necessary to increase sound levels during this time to "mask" sounds coming from the school on the roof deck, it is further recommended that an individual level setting be created for this time period and that the system returns to its typical background sound level immediately thereafter.

ED+A have calculated that the maximum continuous sound pressure level that could be produced by all of the speakers on the Bar Deck would be roughly 122 dB, measured at the center of the Bar Deck. As all loudspeakers are to be pointed inward, it would be beneficial to treat the center of the Bar Deck as the "source" of sound when investigating its propagation to other properties. At a distance of roughly 320-ft.—the distance between the approximate center of the Bar Deck and 525 Espanola Way—an attenuation of 48 dB would be expected. Thus, a sound pressure level of 74 dB would be expected at this property with the audio system operating at its maximum continuous output level. This sound pressure level would be too great for a residential area. Likewise, 122 dB would be too great for the purposes of the Bar Deck.

ED+A recommend reducing this level to that which is recommended by ANSI S12.9 Part 3 to be a typical nighttime level in an "urban or noisy suburban residential area," 49 dB (see Table 2). This would be achieved with a reduction of 25 dB. Therefore, it could be stated that a sound level of 97 dB, measured in the center of the Bar Deck, would be a level which would be consistent with what are expected sound levels at residential properties during nighttime hours. These calculations did not account for the diminished line-of-sight between the two locations resulting from the larger hotel building to the west of the Bar Deck and also do not account for the directional characteristics of the speakers which would further reduce these expected sound levels.

Operating at this sound level, however, would not be consistent with the Applicant's intended use of the Bar Deck and would be likely to disturb their own hotel guests. It is ED+A's belief that a continuous operating sound level between 80 dB and 90 dB would be more appropriate and recommend that the Applicant consider a maximum sound level within this range.

Conclusion

ED+A's review of Espanola Hotel's proposed roof deck, architectural features, and design of its audio system in conjunction with analysis of data obtained through long-term acoustical measurements, has enabled ED+A to state that the proposed project and its operations should not have a negative impact on nearby residential and educational uses. During the daytime, care will need to be taken to ensure that background music on the roof deck would not interfere with activity at the neighboring school, but this should not be difficult to accomplish due to the nature of the audio system. At night, it is ED+A's belief that if the roof deck is operated in a way which would not disturb their own guests, it would certainly not be detrimental to nearby residential uses.

Tables and Figures

Table 1. ED+A Measurement Equipment			
Manufacturer	**Model**	**Serial No.**	**Laboratory Calibration Date**
Brüel and Kjær	Type 2270 Hand-Held Analyzer	2706869	3/24/2018
Brüel and Kjær	Type 4952A Outdoor Microphone	2788753	12/22/2017
Brüel and Kjær	Type 4231 Sound Calibrator	2394124	8/2/2017

Table 2. Average Sound Levels Corresponding to Approximate Population Density (Source: ANSI S12.9 Part 3*)						
Residential land use category	**DNL range, dBA**	**Typical DNL, dBA**	**Day level, dBA**	**Night level, dBA**	**People per square mile**	**People per square km**
Very noisy urban residential	> 65	67	66	58	63,840	24,650
Noisy urban residential	60 to 65	62	61	54	20,000	7.722
Urban and noisy suburban residential	55 to 60	57	55	49	6,384	2,465
Quiet urban and normal suburban residential	50 to 55	52	50	44	2,000	772
Quiet suburban residential	45 to 50	47	45	39	638	247
Very quiet suburban and rural residential	< 45	42	40	34	200	77

*Originally published by the US Department of Transportation in *"A Re-analysis of Day-night Sound Level (DNL) as a Function of Population in the United States,"* (February 2010).

Table 3. Measured Values						
Day	**Monday, 19-Mar**		**Tuesday, 20-Mar**		**Wednesday, 21-Mar**	
	L_{Aeq}	L_{A90}	L_{Aeq}	L_{A90}	L_{Aeq}	L_{A90}
$L_{0000-0100}$			60	59	60	59
$L_{0100-0200}$			59	58	59	59
$L_{0200-0300}$			59	59	59	59
$L_{0300-0400}$			59	58	59	59
$L_{0400-0500}$			59	58	59	58
$L_{0500-0600}$			59	58	60	57
$L_{0600-0700}$			60	58	61	59
$L_{0700-0800}$			60	58	63	58
$L_{0800-0900}$			64	58	65	60
$L_{0900-1000}$			60	58	65	61
$L_{1000-1100}$			62	59	67	59
$L_{1100-1200}$			69	60	66	60
$L_{1200-1300}$			67	59	64	59
$L_{1300-1400}$	63	59	64	59	64	59
$L_{1400-1500}$	62	59	61	59	62	59
$L_{1500-1600}$	62	59	62	59	61	59
$L_{1600-1700}$	60	59	60	59	60	59
$L_{1700-1800}$	60	59	62	59		
$L_{1800-1900}$	59	59	60	59		
$L_{1900-2000}$	59	59	59	59		
$L_{2000-2100}$	59	58	60	59		
$L_{2100-2200}$	60	59	60	59		
$L_{2200-2300}$	60	59	60	59		
$L_{2300-2400}$	60	59	60	59		
L_{avg}	61		62		63	
L_{d}	61		63		64	
L_{n}	60		59		60	
L_{dn}	63		66		67	

Figure 1

Monday, 3/19/2018 12:00 p.m. to Wednesday, 3/21 4:00 p.m.

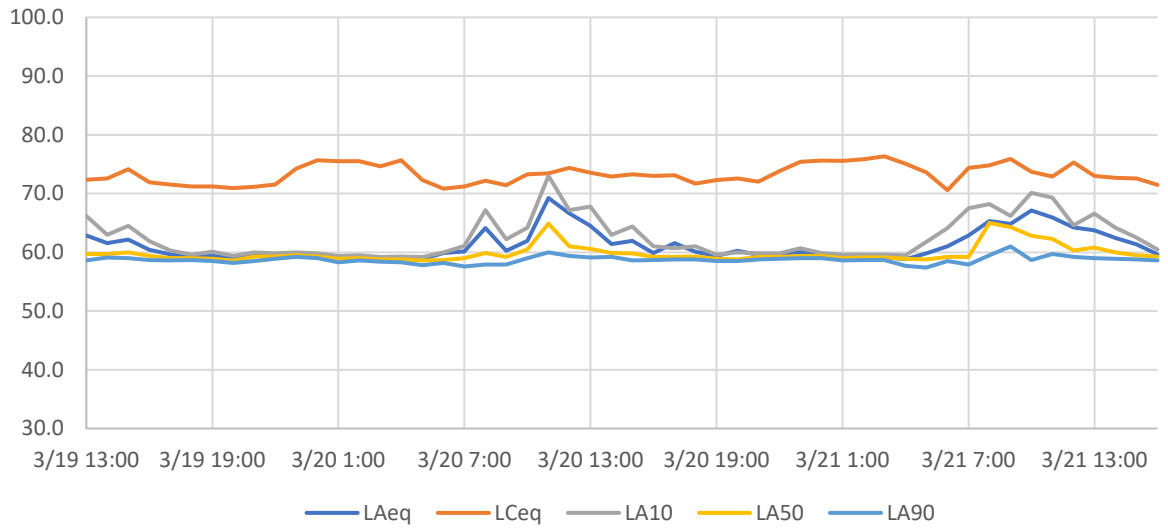


Figure 2

Monday, 3/19/2018 12:00 p.m. to Tuesday, 3/20/2018 12:00 a.m.

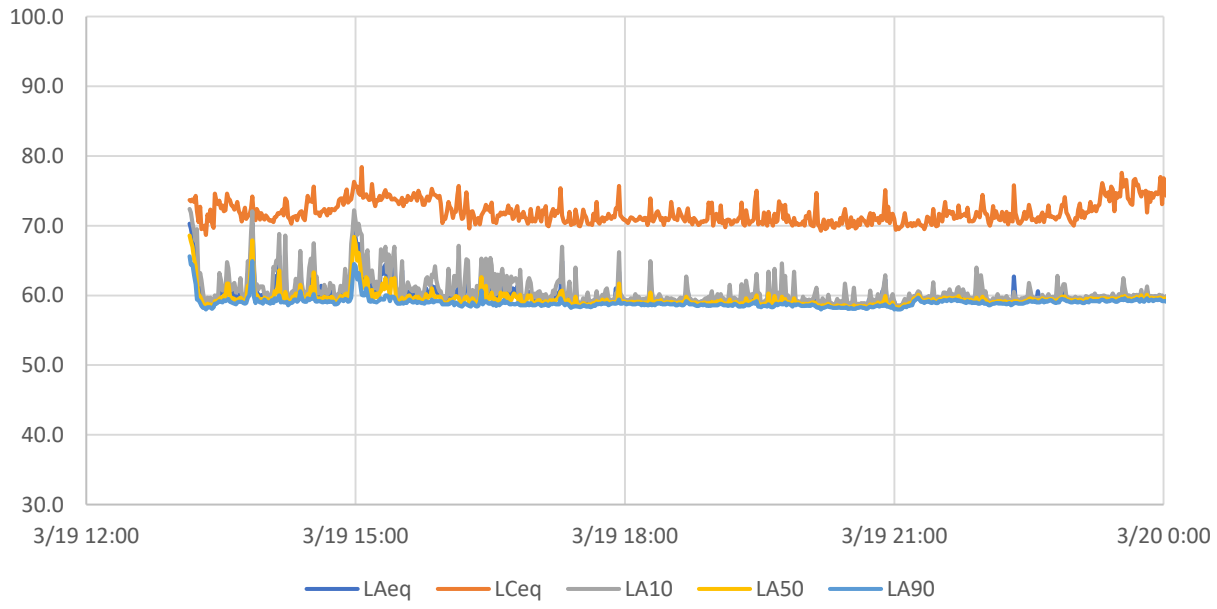


Figure 3

Tuesday, 3/20/2018 12:00 a.m. to Tuesday, 3/20/2018 12:00 p.m.

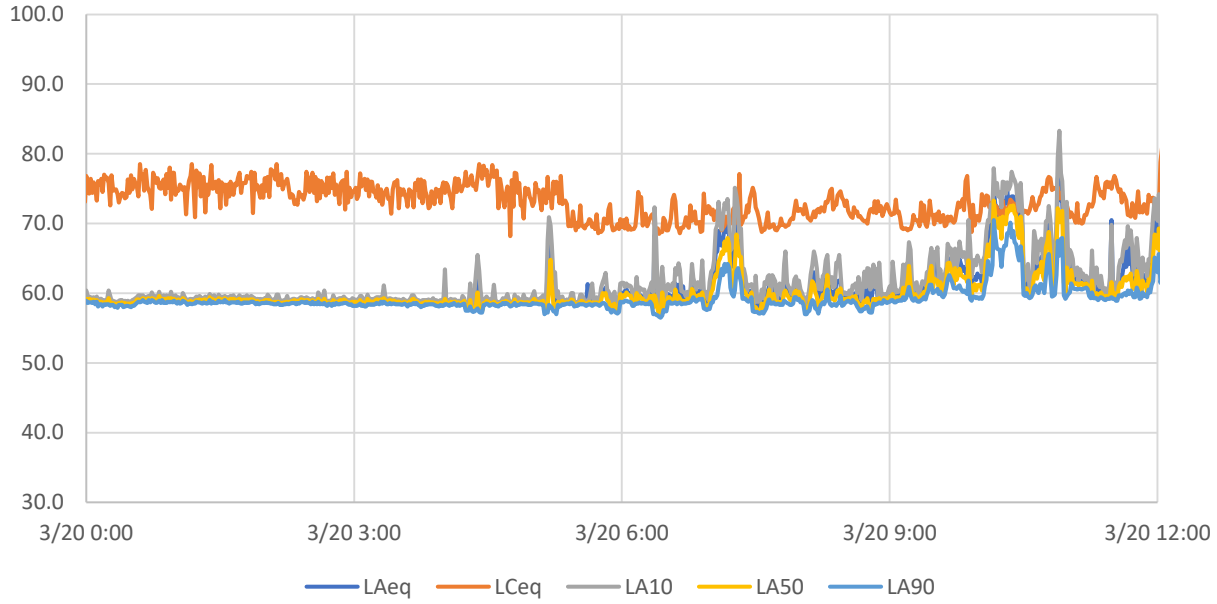


Figure 4

Tuesday, 3/20/2018 12:00 p.m. to Wednesday, 3/21/2018 12:00 a.m.

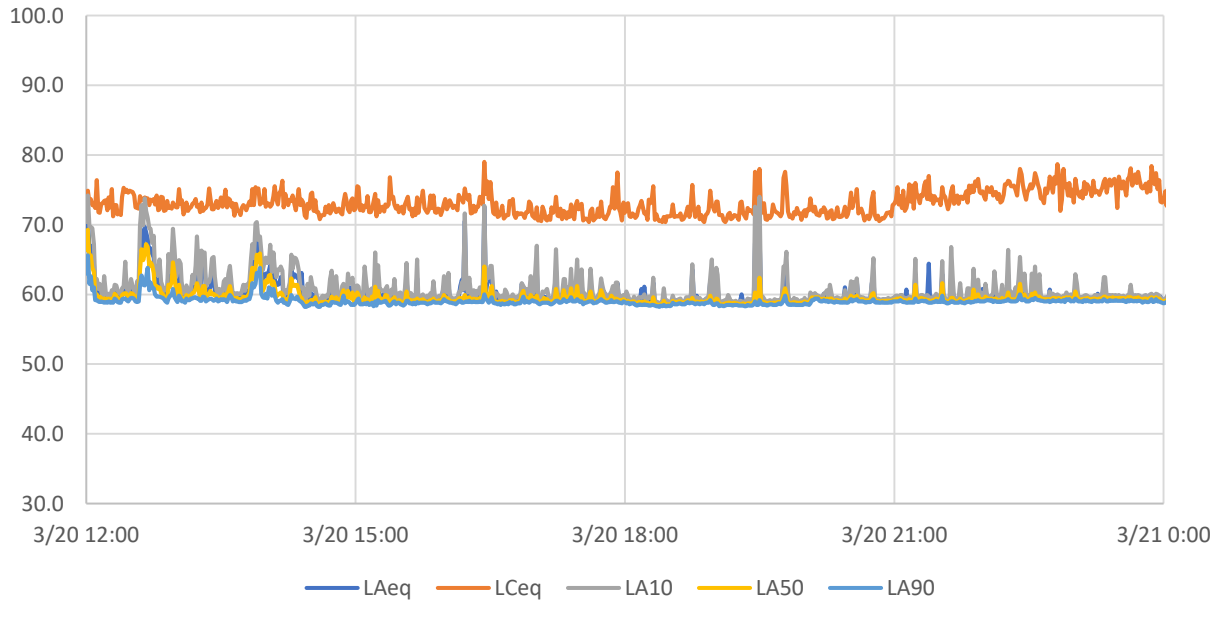


Figure 5

Wednesday, 3/21/2018 12:00 a.m. to Wednesday, 3/21/2018 12:00 p.m.

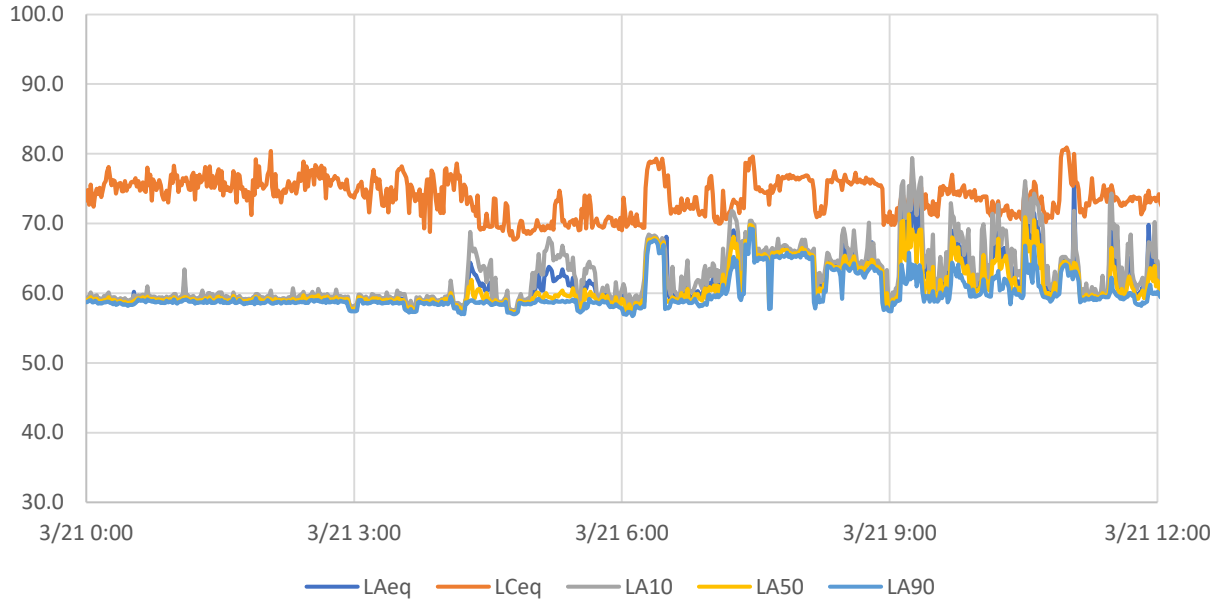
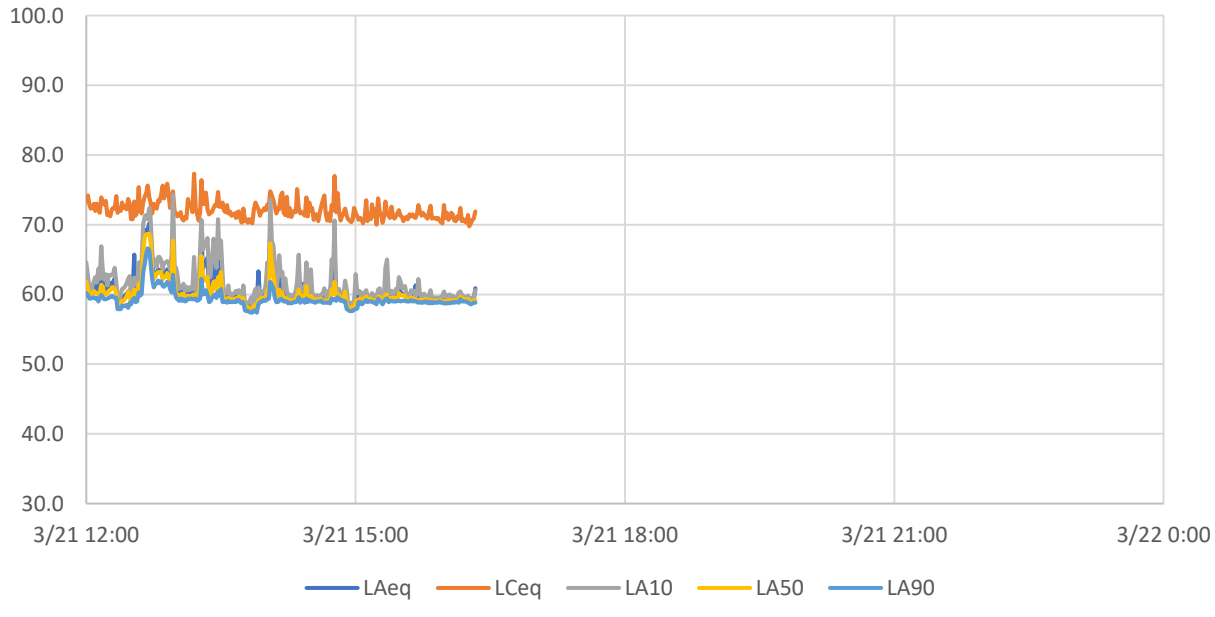


Figure 6

Wednesday, 3/21/2018 12:00 p.m. to Thursday, 3/22/2018 12:00 a.m.



Espanola Hotel
OPERATIONS PLAN

A. Total Number of Employees when Hotel is Fully Operational

Sixty (60) Employees

B. Employee Parking Plan / Transportation Demand Management (TDM) Plan

1. The owner shall offer a program to hotel employees to either obtain monthly passes from Miami-Dade Transit to allow employees to travel to and from the property without the need for automobiles, or provide an option for monthly City of Miami Beach parking garage passes (at each employee's option) for at least five (5) employees.
2. The owner shall offer hotel employees who have been employed for at least ninety (90) days financial assistance of up to $100 to cover the cost of purchasing a bicycle to travel to and from work.
3. The operator shall appoint one employee of the hotel to serve as the TDM (Transportation Demand Management) Program Administrator, whose duties will include encouraging and facilitating employees use of mass transit or bicycles for travel to work.

C. Parking Plan

1. Valet parking will be offered for all hotel guests.
2. Valet Drop-off/Pick-Up Location shall occur on Washington Avenue in front of the main entrance of the hotel.
3. An additional Valet Drop-off/Pick-Up Location shall be located on Drexel and Espanola Way but will only be available and open at peak times, as needed

D. Pool Deck / Bar

1. Food (limited fare – sandwiches, wraps, salads, etc.) and drink shall be served throughout the day.
2. Alcohol shall be served at all hours when pool is open.
3. The pool deck bar will be open from Sunday thru Wednesday from 8am to 10pm and from Thursday through Saturday from 8am – 2am.
4. The pool will be open from 7am to 10pm.
5. Outdoor entertainment is only proposed a the following hours: Thursday through Saturday 8pm to 2am and Sunday from Noon – 2am (select days only)
6. Speakers will be only permanent house speakers as recommended by Edward Dugger & Associates

E. Delivery Schedule

All deliveries shall occur through the existing on-street delivery area at intersection of Drexel and Espanola Way.

Type of Delivery	Day of Week	Time of Day
Laundry	7 days per week	6:30am to 10:30am
Waste/Trash pickup	7 days per week	7:30am to 9am
Beverage	4 day per week	8:30am to 11am
Food Products	3 days per week	8:30am to 11am

F. Queuing Plan

Queuing for the outdoor entertainment use is not expected to provide a significant impact to neighboring uses. However, to the extent that queuing occurs, it will be internal to the property and will occur within the hotel building. Security or staff of the hotel will be available to ensure that queuing occurs as anticipated and does not create impact for surrounding properties.

G. Security Plan

A Security Checklist has been included with the application package, which includes daily checks and tasks to ensure that the property is clean, safe, secure and impacts are minimized.

Security Checklist

Name:

Date:

11pm Task to complete

- ☐ Check in with the PM agent (pre-shift)
- ☐ Do a radio inventory, how many radios (_____)
- ☐ Check the rooms for the arrivals coming in
- ☐ Do a spot check for the Main Building-take a pic
- ☐ Do a spot check for Building 300-take a pic
- ☐ Do a spot check for Building 500-take a pic
- ☐ Check the stair cases and ensure all main doors are closed
- ☐ Do an inventory of any luggage stored in the bell closet (_____)
- ☐ Do an inventory of the master keys (_____)
- ☐ Read the shift report from the PM
- ☐ Prepare weather cards
- ☐ Prepare breakfast vouchers
- ☐ Keep count of the number of keys valet turned in (_____)
- ☐ 11pm- Walk the hallways and the courtyards
- ☐ 12am- Walk the hallways and the courtyards
- ☐ 1am- Walk the hallways and the courtyards
- ☐ Check to see if there is any trash the needs to be changed including the back office.

2am Task to complete

- ☐ Do a spot check for the Main Building
- ☐ Do a spot check for Building 300
- ☐ Do a spot check for Building 500
- ☐ 2am- Walk the hallways and the courtyards
- ☐ 3am- Walk the hallways and the courtyards
- ☐ Slide the weather cards underneath the guest doors
- ☐ Ensure that the back door to the laundry room is locked up.
- ☐ Check with Alonso to see if there are any credit issues, and lock out if needed.
- ☐ If you notice the lobby gets dirty or if it was left dirty, please sweep and mop the lobby around this time.

4am Task to complete

- ☐ Do a spot check for the Main Building-take a pic
- ☐ Do a spot check for Building 300-take a pic
- ☐ Do a spot check for Building 500-take a pic
- ☐ 4am- Walk the hallways and the courtyards
- ☐ 5am- Walk the hallways and the courtyards
- ☐ 6 am- Walk the hallways and the courtyards
- ☐ CHECK TO MAKE SURE GARBAGE DOOR IS UP

Code is 1438

7am Task to completer

- ☐ Check again to ensure all areas are cleared of any trash.
- ☐ Send MOD a quick report, via text
- ☐ Roll towels for the front desk.
- ☐ Communicate any issues to Night Audit that might need to be place in the Overnight Shift Report for Night Audit
- ☐ Note any issues that need follow up on your checklist
- ☐ Turn in your checklist to Night Audit so that they can scan it as part of the morning reports.
- ☐ Check with Night Audit to see if there is anything else they might need before you leave.

Note any issues below that need follow up.

- ☐ _____
- ☐ _____
- ☐ _____