SLR International Corporation
99 Realty Drive, Cheshire CT, 06410

December 5, 2024

Attention: Dr. Michael Klemens, Chairman
Planning & Zoning Commission
Town of Salisbury
27 Main Street
PO Box 548
Salisbury, CT 06068

SLR Project No.: 22100.00001

RE: Wake Robin Special Permit – Response to Brooks Acoustics Corporation Letter Dated November 27, 2024
104 and 106 Sharon Road
Salisbury, Connecticut

Dear Dr. Klemens and Members of the Commission:

This letter is a response to a letter written by Brooks Acoustics Corporation (BAC), dated November 27, 2024, which evaluated the Wake Robin Inn Special Permit Application ("Application"). The BAC letter focused on potential noise emissions from the Wake Robin Inn Redevelopment project ("Project"), citing aspects of the design proposal and Application. Mr. Bennett Brooks (President of BAC) also provided testimony during the Planning and Zoning Board meeting on Monday, December 2, 2024. This letter provides responses to specific comments in the BAC report below, as well as suggested actions that could be taken by the applicant to further address the issues raised by Mr. Brooks.

It should be noted at the outset that the Town of Salisbury does not have its own noise ordinance. Therefore, any discussion of noise must defer to the standards set forth in RCSA 22a-69. Any suggestion in the report or testimony to have a higher standard would be inappropriate and contrary to the Connecticut General Statutes.

1. **Transient Sounds: Car Doors/Starting Cars Leaving Parking Lot/Guests/Cleanup**

   Mobile sound sources (cars in motion, etc.) are excluded from the Connecticut noise regulations. Sound associated with closing of car doors and starting of cars is not expected to pose a significant noise complaint issue. Provided that event parking is handled through valet service as represented by the applicant, transient sounds from vehicles are not expected to exceed the State of Connecticut noise policy limits. Furthermore, the vehicle sound emission levels cited (74 dBA at 50 feet) are maximum allowable limits from a law enacted in 1978. Such levels are not necessarily indicative of sound emission from most late-model passenger cars. If requested by the Commission and prior to construction, a more detailed analysis could be performed using reference

measurements of vehicle activity from a similar facility, along with three-dimensional noise modeling calculation software.

Additionally, because all parking will be handled using a valet service, guests will typically not be present in the parking lot areas before or after events. This will essentially remove potential noise impacts due to “unruly guests” located close to nearby properties. Any issues with “unruly guests” (likely to be very rare) will be immediately addressed by staff security. Post-event cleanups can be performed without generating significant wide-area sound. These issues are not expected to result in frequent noise-related nuisance complaints.

2. Event Barn

The Wake Robin Inn has hosted weddings and similar events for many years using temporary tents and in an outdoor setting where there were no controls of sound emanating from the event. As proposed, such events will be moved indoors where sound can be monitored and controlled.

Prior to seeking a building permit, SLR will work with the Applicant’s architect and mechanical design engineers to develop a high-performance noise control design for the event barn, as needed to achieve compliance with the State of Connecticut noise limit. This will include, but will not be limited to, a thorough engineering design review of the building envelope and outdoor mechanical equipment. The design will consider and likely include:

- Large access vestibules with two self-closing doors with acoustic seals separating the event space and the outdoor areas
- High-performance wall/roof assemblies, windows, and ventilation silencers
- Placing egress paths on the non-property line side of the barn (with emergency-only egress directly facing property lines)
- A front-of-house real-time sound monitoring system, which will serve to limit the maximum sound level inside the event space (to include the A-weighted, 63-hertz, and 125-hertz levels). Similar systems are used in nightclubs and outdoor music venues, to immediately alert the audio engineer that the event space sound level must be reduced.

3. Sound Propagation Modeling

Sound from the entire facility (event barn and hotel) can then be modeled using an outdoor sound propagation model (Cadna/A), to calculate interior-to-exterior sound “breakout” from walls, doors, and windows, as well as ventilation openings or outdoor mechanical equipment. The modeling would consider sound directivity, ground absorption, topography, and other sound propagation effects. Any additional noise mitigation measures needed to achieve compliance with the State limits would be identified through the modeling and then incorporated into the overall facility final design. We are prepared to share that information with the Commission.

4. Community Complaint Resolution Protocol

A community complaint resolution protocol/system will be put in place by the applicant in the event of a noise-related nuisance complaint. Such a system would give residents direct access to facility management in the event of a noise issue.

5. Baseline Sound Survey

As noted above, the Town of Salisbury does not have a "quantitative" (numerical limit) noise ordinance. The most stringent State of Connecticut limit is 45 dBA at the closest residential property boundaries (during nighttime hours), and this level will be the acoustic design target for the facility.

If requested by the Commission for informational purposes, the applicant can perform multi-day, continuous sound measurements around the Project site, to document area baseline sound levels. Measurements would include weekend overnight periods. As peak utilization of the event barn will be during warmer months, scheduling of such a survey would likely have to be delayed until Spring 2025.

Please call us at if you have any questions or comments.

Regards,

SLR International Corporation

Damien Bell
Senior Acoustical Consultant
dbell@slrconsulting.com
(845) 663-7943

Nicholas A. Block, PE, LEED AP BD+C
Principal Engineer
nblock@slrconsulting.com
(713) 789-9400

Attachments: Resumes for Damien Bell and Nicholas A. Block

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Damien Bell

Senior Acoustical Engineer | New Paltz, NY

Damien supports consulting and engineering efforts related to Acoustics and Noise Control. He has 19 years of experience working on a wide range of projects related to environmental and indoor/architectural acoustics. Damien has extensive experience conducting acoustic laboratory testing, indoor acoustical evaluations, sound propagation modeling, and developing noise control recommendations. He has completed investigative studies for power plants, substations, pipeline pumping stations, gas compression facilities, mining, and pharmaceutical production.

Years of Experience

19 years

Education

- BS, Mechanical Engineering with Concentration in Acoustics, University of Hartford
- BA, English/Rhetoric, State University of New York, Binghamton

Selected Project Experience

Natural Gas Compression Facilities - Various
Comprehensive sound measurement surveys for over 30 natural gas compressor stations (interstate pipelines, midstream, and wellheads) throughout the eastern United States. Experienced in developing sound propagation models of compression station equipment. Modeling is used to predict future sound levels for hypothetical changes in site configuration or equipment. Involved in the detailed acoustical engineering design of exhaust mufflers for large turbine-compressor installations. Findings, noise control design, and summary reports have been submitted to the Federal Energy Regulatory Commission (FERC), as well as State and Local regulatory entities.

Traffic Noise Modeling - Various
Extensive use of the Traffic Noise Model (TNM) to determine noise impacts at planned residential development projects. Created and validated TNM models using sound measurement and traffic count data. Worked with developers and architects to determine appropriate site layouts and to specify acoustic performance for building façades. Used TNM to design noise barrier locations and heights when required.

Waldorf Astoria Hotel, New York, NY
(Active project) Multi-year acoustical design support for a combined heat and power (CHP) installation above the hotel grand ballroom. Analysis of sound transmission from the mechanical room to guest suites and the ballroom, as well as outdoor sound emission near rooftop luxury suites. Project sound levels must comply with strict design requirements.

Solar Facilities, New York State - Various
Modeling and analysis of potential noise impacts associated with solar facilities. Determined sound impacts from inverters, battery energy storage systems, and grid-tie substation equipment.

Federal Energy Regulatory Commission (Confidential Project)

Assisted the Federal Energy Regulatory Commission (FERC) with writing the noise section of an Environmental Impact Statement for a $10 billion liquefied natural gas (LNG) terminal. Assisted the FERC Office of Energy Projects with calculations and questions from senior technical and legal staff.

Tennessee Gas Pipeline: Massachusetts, New Jersey, Pennsylvania

Performed close to twenty post-construction sound measurement surveys, to confirm compliance with State, Local, and Federal Energy Regulatory Commission (FERC) noise limits. These interstate pipeline facilities utilize large turbo-compressor equipment and are often situated near residential communities.

Aerospace Rocket Facility (Confidential Client)
Environmental noise modeling and noise mitigation design for a rocket development research facility. Worked with engineers to optimize test stand site layout. Predicted noise impacts at residences within the local community.

Williams Gas: Tioga and Bradford Counties, PA

Comprehensive sound measurement surveys for several operational natural gas compressor stations. Diagnostic near-field measurements were conducted to develop sound propagation models of the sites. Modeling results were validated with far-field sound measurements at property-line locations. Modeling was used to predict future sound levels due to station expansion.

NextEra Energy and Long Island Power Authority, New York State**
Project Manager. Provided a wide range of acoustical consulting services as part of a comprehensive noise impact study for a proposed 1,000-MW combined cycle power plant re-powering. Services included sound propagation modeling, community sound monitoring, and detailed review of applicable noise regulations. Worked with project developers and legal counsel to present noise mitigation designs to senior acoustical engineers and staff attorneys at the New York Public Service Commission.

Ravenswood Generating Station (Confidential Project), New York, NY**
Project Manager. Acoustical consulting services (various). Ravenswood is the largest electrical generation plant in New York City.

Newark Energy Center, Newark, NJ**
Conducted a post-construction sound measurement survey to confirm that sound levels from the 650-MW operational power plant were compliant with the New Jersey noise limits. Performed equipment-specific sound measurements to confirm that vendor noise guarantees were being met.

Jersey Central Power & Light, Wharton, NJ**
Computer noise modeling for a voltage-regulating static VAR compensator (SVC) facility near an existing electrical substation. The analysis determined that facility-emitted sound would comply with local and state noise limits. Findings were presented to the local zoning board.

Novo Nordisk DAPI-US, Clayton, NC**
Provided a full range of acoustical consulting services during the design and construction of a new Diabetes Active Pharmaceutical Ingredient (DAPI) production facility. Outdoor and indoor sound models were developed to address community noise and in-plant worker noise exposure. Worked with the engineering, procurement, and construction (EPC) contractor to specify equipment noise performance, site layout optimization, and noise mitigation.

PSE&G, Power Plant Sound Study, Glenmont, NY**
Conducted extensive sound measurements and noise modeling for a 750-MW combined-cycle power plant, before and after performance upgrades on the gas turbine combustors. Measurement data were presented to acoustical engineering staff at New York State Department

of Public Service, as evidence that increasing the turbine capacity would not increase sound levels in the local community.

Hudson River PCB Dredging Processing Plant, Fort Edward, NY**
Environmental noise permitting and long-term sound monitoring at the Hudson River PCB Superfund dredging project. Work included sound propagation modeling of the plant, which included dredging, size-separation equipment, sediment processing, and train yard activity.

Power Plant Noise Complaint, New York State**
Conducted several weeks of ambient measurements at a residence located near a 130-MW combined cycle power plant. Diagnostic measurements and computer modeling were used to determine that noise levels attributable to plant operation were compliant with limits required by the New York State Department of Public Service.

Power Plant Steam Venting (Confidential Client), New York State**
Performed diagnostic sound measurements of atmospheric steam venting at a 2,000-MW power plant, requested by client to address community noise complaints. Provided client with a conceptual design and identified the required dynamic insertion loss for a new steam blowdown silencer.

Colonial Pipeline, Centreville, VA**
Optimized a noise barrier design to guarantee site-wide compliance with a stringent, octave-band noise ordinance. Developed a noise model of an existing pipeline pump station located in a residential neighborhood. The successful design achieved regulatory compliance at all 35 discrete property line locations. Worked with the client during all phases of a three-year permitting process.

Dominion Virginia Power Substations, Arlington, VA**
Performed environmental noise impact assessments for ten electrical substations throughout northern Virginia. Worked with the client to develop noise mitigation for maintaining compliance with local noise ordinances.

Other Work

Rotorcraft noise modeling (helicopters, UAVs)

Beamforming array truck noise measurements

Blast noise measurements (military bases)

Artillery noise measurements (military bases)

Mining noise modeling and measurements

Military jet noise measurements (US Navy)

Residential sound insulation near airports

Wind turbine farm noise modeling and sound surveys (various)

Shooting range (gunshot) noise studies and measurements (various)

Gas turbine noise mitigation (exhaust, combustion air inlets)

Air-cooled condenser (ACC) noise modeling and mitigation

**Denotes experience completed at another firm

Nick Block, PE, LEED, AP BD+C

Principal Engineer | Acoustics | Houston, Texas

Mr. Block has 15 years of experience in architectural and industrial acoustics regarding speech privacy, sound masking systems, audio-visual design, exterior noise control, reverberation control, field measurements, data processing, acoustical prediction modelling, constructing computer noise models to determine sound propagation, and generating reports.

He has been instrumental in the completion of numerous projects including multi-family, schools including higher education and several renovation/addition projects.

Years with Firm

15 Years with the firm

Technical Registrations

- Professional Engineer #88298, Oregon
- LEED AP Building Design + Construction # 10703403

Education

- B.S., Acoustical Engineering Purdue University (2009)

Project Experience

Acoustical consulting

Construction Noise Monitoring

Hanover Uptown, The Hanover Company, Oakland, CA. (2015-2019)
Acoustical consulting. Environmental Noise. Construction Noise and Vibration Monitoring.

Hanover Waverly, The Hanover Company, Oakland, CA. (2016-2019)
Acoustical consulting. Environmental Noise. Construction Noise and Vibration Monitoring.

Multi-Family Apartments

SLR has provided acoustical consulting services for over 200 multifamily projects.
The following is an abbreviated list.

Government Center II Residences, Lincoln Avenue Capital, Fairfax, VA **(2023-Current)**
Acoustical consulting. Project Manager

North Cambridge Retail, Hanover, Houston, TX (2023-Current)
Acoustical consulting for this project to provide recommendation to limit sound transfer from the retail spaces on the 1st floor to the residential units. Project Manager

Pinehills, Hanover, Plymouth, MA (2021-2023)
Acoustical consulting. Project Manager

Allen Parkway, Hanover, Houston, TX (2019-2023)
Acoustical consulting. Project Manager

**Denotes experience completed at another firm

Hollywood, Hanover, Los Angeles, CA (2019-2022)
Acoustical consulting for this mixed-use development (luxury apartments) in entertainment district on Sunset Boulevard. Services provided: Sound isolation, 3D computer noise model, exterior shell recommendations to reduce interior noise level. Project Manager

Edgewood Eastside, Hanover, Atlanta, GA (2021-2022)
Acoustical consulting. Project Manager

Burlingame, Hanover, San Francisco, CA (2019-2022)
Acoustical consulting. Project Manager

River Oaks, Hanover, Houston, TX (2015-2022)
Acoustical consulting. Project Manager

Sepulveda, Hanover, Los Angeles, CA (2018-2021)
Acoustical consulting. Project Manager

Crescent Midtown, Niles Bolton, Atlanta, GA (2018-2020)
Acoustical consulting. Project Manager

Crescent Peachtree, Crescent Communities, Peachtree City, GA (2019-2019)
Acoustical consulting. Project Manager

Novel Boulder, Crescent Communities, Boulder, CO (2018-2018)
Acoustical consulting. Project Manager

Modera Waugh, Mill Creek Residential /MCRT, Houston, TX (2022-2023)
Acoustical consulting. Project Manager

Modera Highland Village, Mill Creek Residential /MCRT, Georgetown, TX (2022-2023)
Acoustical consulting. Project Manager

Modera Garden Oaks, Mill Creek Residential /MCRT, Houston, TX (2021-2023)
Acoustical consulting. Project Manager

Modera EADO ATX Stonehollow, Mill Creek Residential /MCRT, Austin, TX (2021-2023)
Acoustical consulting. Project Manager

Modera McKinney Ridge, Mill Creek Residential /MCRT, McKinney, TX (2022-2022)
Acoustical consulting. Project Manager

Modera West Fork, Mill Creek Residential /MCRT, Conroe, TX (2022-2022)
Acoustical consulting. Project Manager

Modera Walsh, Mill Creek Residential /MCRT, Dallas, TX (2021-2022)
Acoustical consulting. Project Manager

Modera Southshore - East Riverside, Mill Creek Residential /MCRT, Austin, TX (2021-2022)
Acoustical consulting. Project Manager

Modera S St Paul, Mill Creek Residential /MCRT, Dallas, TX (2021-2022)
Acoustical consulting. Project Manager

Modera Trailhead, Mill Creek Residential /MCRT, Dallas, TX (2021-2022)
Acoustical consulting. Project Manager

Amavi Grand Prairie, Mill Creek Residential /MCRT, Grand Prairie, TX (2021-2022)
Acoustical consulting. Project Manager

One Oak Brook Commons, Antunovich Associates Oak Brook, Ill., (2020-2021)
Acoustical consulting for this mixed-use development (luxury apartments) near entertainment district. Services provided: Sound isolation, 3D computer noise model, mechanical noise control, exterior shell recommendations to reduce interior noise level. Project Manager

Commercial Buildings

Phoenix Tower, Perry Homes LLC, Houston, TX **(2023-Current)**
Acoustical consulting and LEED review for suite 2800 occupied by Perry Homes. Project Manager

BMC Software, Inc, Gensler Various locations (2004-2017)
Acoustical consulting as HFP and additional projects as SLR.

P66 New Corporate Campus, HOK, Houston, TX (2013-2016)
Acoustical consulting as HFP and additional projects as SLR.

Chevron Office Tower, HOK, Houston, TX (2012-2016)
The Chevron office tower includes a large volume grand lobby, a second-floor dining area, typical office floors, and conference/board rooms. Services provided: Sound masking system design, sound isolation design, sound isolation testing, room acoustics modeling of the grand lobby space, speech intelligibility testing of the fire alarm / life safety paging system, and the design of NFPA-rated line array loudspeakers for life safety paging system use in the grand lobby space and dining areas. The major buildouts included: 1500 Louisiana – 40-story (over 1million sq ft), 1400 Smith – 50 story (1.2 million sq ft), 1600 Smith – 51 story (1.2 million sq ft), 4800 Fournace Place, Bellaire – 10 story (over 200,000 sq ft),

Hotels

Omni Hotel, C+TC Design Studio, Tempe, AZ (2019- 2021)
Acoustical consulting for this This new hotel that consists of 330 rooms, Rooftop bar, Ballrooms. Project Manager

Westin Hotel, Westin at the Woodlands, Woodlands, TX (2018-2018)
The Acoustical consulting for this venue which has a stunning foyer area with floor-to-ceiling windows overlooking The Waterway, a glass-walled lounge, Fitness Studio, Outdoor Pool, 150-seat restaurant, 302 guest room, 15,000 square feet of flexible venue space and a flexible workspace. Project Manager

Memberships and Associations

- Member, Acoustical Society of America
- Founding member and former Chair of the Purdue University Student Chapter of the Acoustical Society of America.
- Founding member and former Vice Chair of the Purdue University Student Chapter of the Audio Engineering Society.

**Denotes experience completed at another firm