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October 31, 2023

VIA ELECTRONIC MAIL

Melanie Bachman
Executive Director/Staff Attorney
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

Re: PETITION NO. 1426 – DG Connecticut Solar, III, LLC petition for a declaratory ruling, pursuant to Connecticut General Statutes §4-176 and §16-50k, for the proposed construction, maintenance and operation of a 4.9-megawatt AC solar photovoltaic electric generating facility located west of the Ellington town boundary at 341 East Road, East Windsor, Connecticut and associated electrical interconnection.

Dear Ms. Bachman:

I am writing once again on behalf of DG Connecticut Solar III, LLC (“DGCS”), successor in interest of the above-referenced project (the “Project”), to request that the Connecticut Siting Council (the “Council”) approve a further revision to the Project’s Development & Management Plan (“D&M”) for the reasons more particularly set forth below.

By letter dated July 18, 2023, the Council approved DGCS’ request to revise its D&M Plan in order to install a 12-foot tall, 16-inch wide and 275-foot long cinder block sound barrier wall inside the facility fence line at the north end of the site to address several complaints by neighbors regarding noise emissions. However, subsequent to the Council’s approval, DGCS learned that lead and construction times would be longer than originally forecast.

Accordingly, DGCS has investigated and identified an alternative solution in order to accelerate the timeframe to construction and ultimate completion. The proposed modified sound control design will utilize exterior grade vinyl composite material, affixed to a 12-foot high chain-link fence and be located 5 feet to the north of the power inverter banks, within the current fenced facility. The proposed modified design has shorter lead times on materials, and a shorter construction timeline. The sound control design employs a composite sound barrier/blanket material that is lighter in weight than the original cinder blocks and does not require the extensive

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foundation that a block wall demands. The material is easier to install, performs very well as a sound barrier, and provides additional benefits of sound absorption on the power inverter side that will reduce sound reflections that could reach neighboring property owners.

Additional detail regarding sound mitigation is set forth in the attached "Solar One East Windsor – Sound control – Revised acoustical engineering design study." DGCS has informed the Town of East Windsor of the proposed revision and they have no objection.

Accordingly, DGCS respectfully requests that the Council approve the revised plan. Please feel free to contact me should you have any questions or desire additional information.

Very truly yours,



David W. Bogan

Enclosure

Copy to: Service List



Mr. Timothy Garcia
DG Connecticut Solar III LLC
700 Universe Boulevard
Juno Beach, FL 33408

23 October 2023
PJ2023-1410-L02

Subject: Solar One East Windsor – Sound control – Revised acoustical engineering design study

Reference: BAC project Letter PJ2023-1410-L01, “Solar One East Windsor – Sound control - Acoustical engineering design study”, dated 5 June 2023.

Dear Mr. Garcia:

As requested, Brooks Acoustics Corporation (BAC) has conducted an acoustical engineering design study to evaluate the sound emissions from the existing Solar One facility on Middle Road in East Windsor, Connecticut, and any impact that those sounds may have on the surrounding neighborhood. As part of this study, sound survey tests were conducted to determine if the facility is operating in compliance with the Regulations of Connecticut State Agencies (RCSA) Section 22a-69-1 et seq. (“Sound Regulations”).

Measurements were made of the sound levels and tonal spectra attributable to the facility at the nearest residential property line during daytime (sunlight) hours. Based on these sound survey test data, it was determined that the current Solar One facility *meets the CT State sound level limit regulations*.

Sound Control Design Summary

Although the facility was found to be in compliance with CT Sound Regulations, a sound control design was developed that will further reduce the emitted sound levels which may reach residences in the vicinity. As the dominant sound sources are the electrical power inverters, the original sound control design employed a block sound barrier wall 16 inches thick, with a height of 12 feet, between the power inverters and the property line. (See Reference).

After review of the original sound barrier design, construction feasibility considerations dictated that an alternate barrier material be developed that would provide the same sound reduction performance. An alternate material and installation method was determined.

A **revised sound control design** was developed which employs a composite sound barrier/blanket material. This proposed material is lighter in weight than the blocks and does not require the extensive foundation that a block wall demands. The material is more easily installed, performs very well as a sound barrier, and provides additional benefits of sound absorption on the power inverter side that will reduce sound reflections which could reach the neighborhood.

Acoustical engineering calculations were made for the expected sound levels at the nearest residential property line with the revised vinyl composite sound control barrier wall in place, also with a height of 12 feet.

It is the opinion of BAC that, with a reasonable degree of engineering certainty, the revised vinyl composite sound barrier wall design will *reduce the sound level of the Solar One facility by nearly 20 dBA*. This will reduce the sound received at the nearby residences to below expected ambient background levels. This would make the facility *essentially inaudible at the residences*.

Sound control design details

Although the current existing Solar One facility was found to be in compliance with CT Sound Regulations, a revised sound control design, utilizing a vinyl composite barrier material, was developed which will further reduce the emitted sound levels which may reach residences in the vicinity.

The sound control design features a sound barrier of the exterior grade vinyl composite material, 12 feet high and located 5 feet to the north of the power inverter banks, between those power inverter banks and the neighborhood residences.

Specifications proposed for the barrier wall detail design are as follows. A licensed structural engineer should be consulted to confirm these specifications.

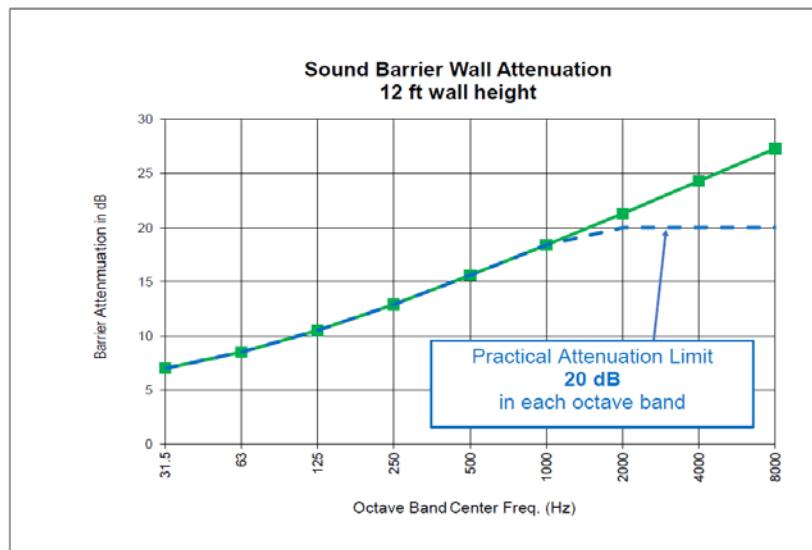
The sound barrier wall shall be constructed of Sound Seal BBC-13-2 LB-2 inch exterior grade vinyl composite material (or equivalent), attached to a pipe mounted chain link fence 12 feet in height. The material shall be a 2 LB per square foot (PSF) reinforced loaded vinyl noise barrier with 2 inch thick exterior-grade VCP faced quilted fiberglass absorber. The panels are fabricated with grommets along the top, middle & bottom. They shall have mating exterior-grade vertical Velcro seals sewn with Gore-Tenara thread.

The barrier wall design shall be compatible with structural engineering best practices for sustaining wind loads, and frost heaves for the existing soil conditions. The wall shall be set on proper footings prepared in accordance with the State of CT Building code. Helical pile footings or piers may be employed.

No holes, penetrations or gaps shall be allowed in the sound barrier wall which allow sound to escape through the wall to the north side of the wall. Gravel shall be installed in the footing trench around the barrier wall to allow for drainage, per structural engineering best practices.

Acoustical engineering calculations were made for the expected sound levels at the nearest residential property line with the sound control barrier wall in place.

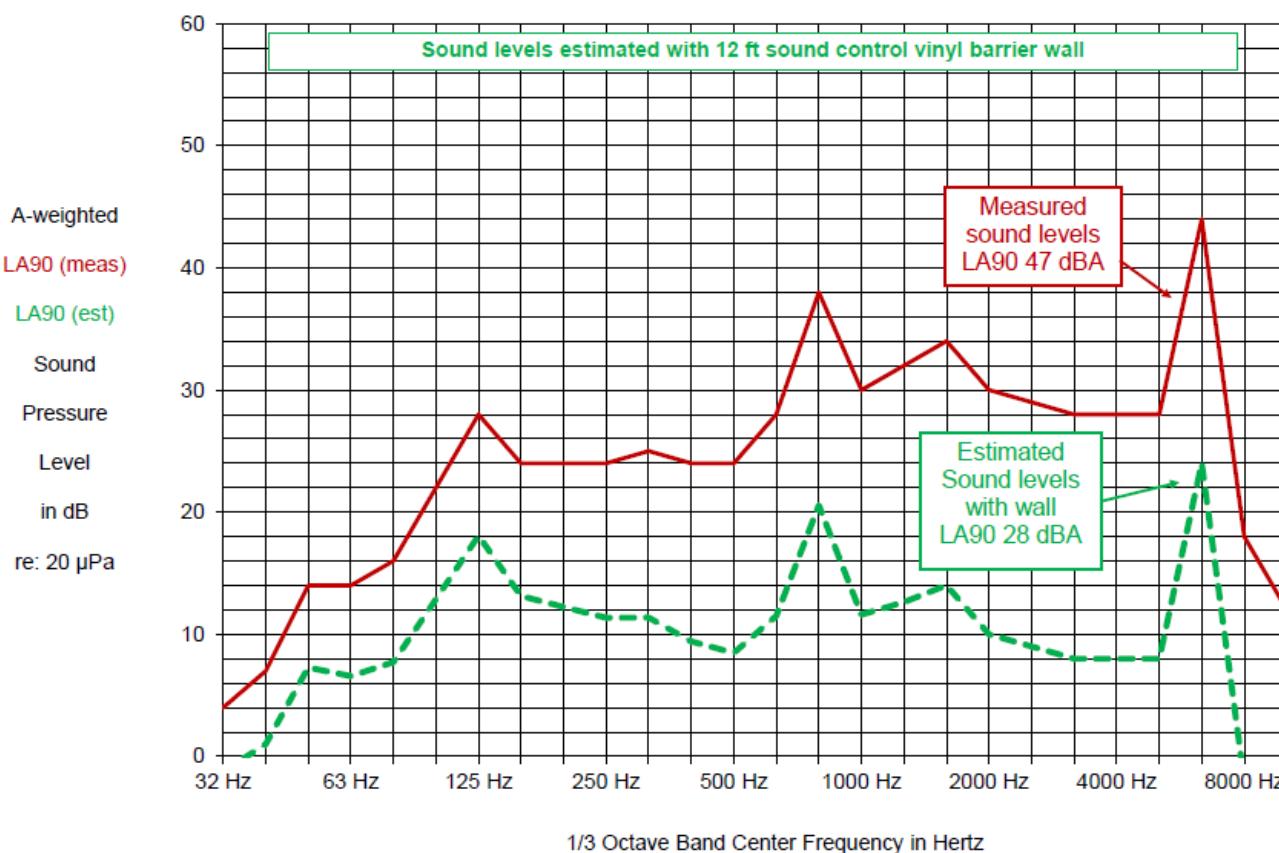
It was determined that a 12 foot wall would provide the best sound attenuation for a realistic wall. A graph which shows the calculated sound attenuation for the 12 foot high wall is shown below. Note that the practical limit for sound attenuation provided by a wall that is open to the sky is 20 dB in each octave band.



As seen in the barrier acoustical calculations (above), the amount of sound reduction provided by the sound barrier wall increases with increasing frequency, until it reaches a practical maximum of about 20 dB in the higher frequency bands. The calculated practical limit sound attenuation values for the 12 foot wall were applied to the measured sound spectrum at the nearest residential property line to the solar power inverters.

The transmission loss (reduction) of sound which passes *through the composite barrier material* is significantly more than the insertion loss for sound which passes over the barrier wall. Therefore, the calculations showed that there is a negligible increase in sound, amounting to a fraction of a decibel, for substituting the composite barrier material for the original design block wall. Data sheets for the composite barrier material are attached.

A sound spectral graph for the residential property line position, with and without the 12 foot high sound barrier wall in place, is shown below.



Note that the dominant amount of sound from the solar power inverters is in the higher frequency bands. Therefore, the total reduction of the barrier wall is estimated to be about 19 dBA. The sound level that is attributable to the power inverters is expected to drop from 47 dBA which was measured at the residence property line, to the resulting 28 dBA level that is estimated at the property line.

So, the barrier wall is expected to reduce the sound level of the power inverters to about **28 dBA** at the nearest residential property line. This level is likely to be below the lowest ambient background level in that area of East Windsor, due to distant traffic and natural sound sources. Therefore, with the sound barrier wall treatment it is likely that the Solar One facility **will be inaudible** at the nearest residential property line.

The sound level of the power inverters will be even lower at residential properties that are at greater distances.

Further, as exterior walls and windows typically provide at least another 25 dBA sound reduction from the outside to the inside, it is *highly unlikely* that any sound from the power inverters will be audible indoors. It is expected that the operation of the Solar One facility with sound control **will not disturb the comfort and repose** of any person in the vicinity.

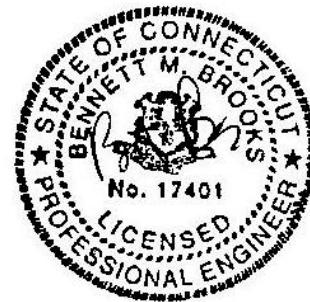
Please contact me if you have any questions concerning these findings.

Very truly yours,
BROOKS ACOUSTICS CORPORATION



Bennett M. Brooks, PE, FASA, INCE
President

Attachments



ACOUSTICAL PERFORMANCE DATA

SOUND TRANSMISSION LOSS (dB) per Octave Band Frequencies (Hz)

Sound Seal Model #	125	250	500	1000	2000	4000	STC
QFA-10	6	11	15	20	25	32	19
BBC-13	11	16	24	30	35	35	27
BBC-13-2"	13	20	29	40	50	55	32
BBC-13-2LB-2"	19	25	33	46	53	58	37
BSC-25	12	16	27	40	44	43	29

Per ASTM E 90

SOUND ABSORPTION DATA

Sound Absorption Octave Band Center Frequencies (Hz)

Sound Seal Model #	125	250	500	1000	2000	4000	NRC
QFA-10	0.19	0.99	0.96	0.80	0.57	0.33	0.85
BBC-13	0.12	0.47	0.85	0.84	0.64	0.62	0.70
BBC-13-2"	0.07	0.27	0.96	1.13	1.08	0.99	0.85
BBC-13-2LB-2"	0.07	0.27	0.96	1.13	1.08	0.99	0.85
BSC-25	0.45	0.96	0.87	0.66	0.47	0.30	0.75

Per ASTM C 423

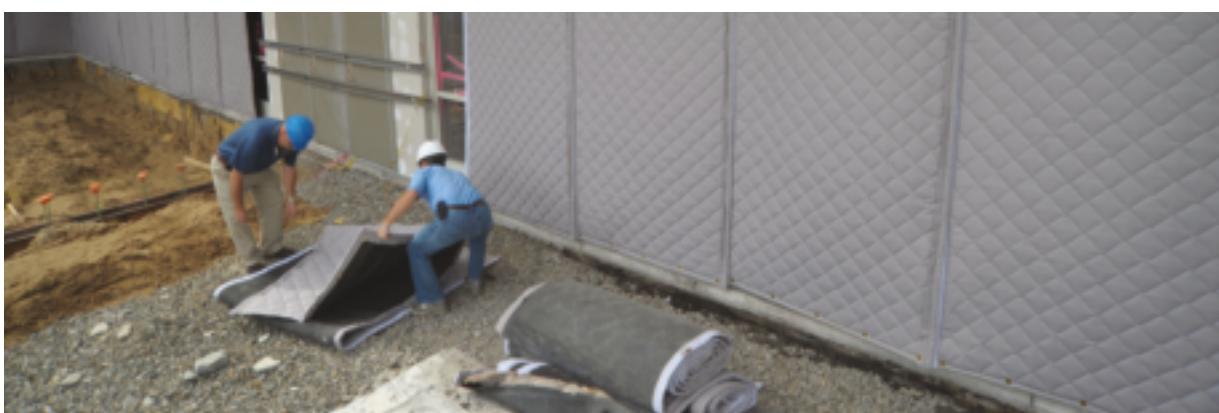
QFA-10: 2" thick vinyl faced quilted fiberglass absorber
BBC-13: 1" thick vinyl faced quilted fiberglass absorber (QFA) bonded to a 1 lb. psf reinforced loaded vinyl noise barrier
BBC-13-2: 2" thick vinyl faced quilted fiberglass absorber (QFA) bonded to a 1 lb. psf reinforced loaded vinyl noise barrier
BBC-13-2LB-2: 2" thick vinyl faced quilted fiberglass absorber (QFA) bonded to a 2 lb. psf reinforced loaded vinyl noise barrier
BSC-25: 1" thick vinyl faced QFA on both sides of a 1 lb. psf loaded vinyl noise barrier septum

Item	Barrier	Absorber/ Decoupler	Typical LAG Application	Nominal Thickness	Weight /Sq Ft	125 Hz TL	STC
B-10 LAG	1 lb/sq ft MLV, foil facing 1 side	None	On top of existing insulation	1/8"	1lb/sq ft	15	27
B-10 LAG/QFA-3	1 lb/sq ft MLV, foil facing 1 side	1" thick quilted fiberglass	Directly onto pipe/ duct or on top of existing insulation	1"	1.3lb/sq ft	18	29
B-10 LAG/QFA-9	1 lb/sq ft MLV, foil facing 1 side	2" thick quilted fiberglass		2"	1.45lb/sq ft	19	30
B-20 LAG	2 lb/sq ft MLV, foil facing 1 side	None	On top of existing insulation	3/16"	2lb/sq ft	16	31
B-20 LAG/QFA-3	2 lb/sq ft MLV, foil facing 1 side	1" thick quilted fiberglass	Directly onto pipe/ duct or on top of existing insulation	1"	2.2lb/sq ft	20	32
B-20 LAG/QFA-9	2 lb/sq ft MLV, foil facing 1 side	2" thick quilted fiberglass		2"	2.45lb/sq ft	21	34

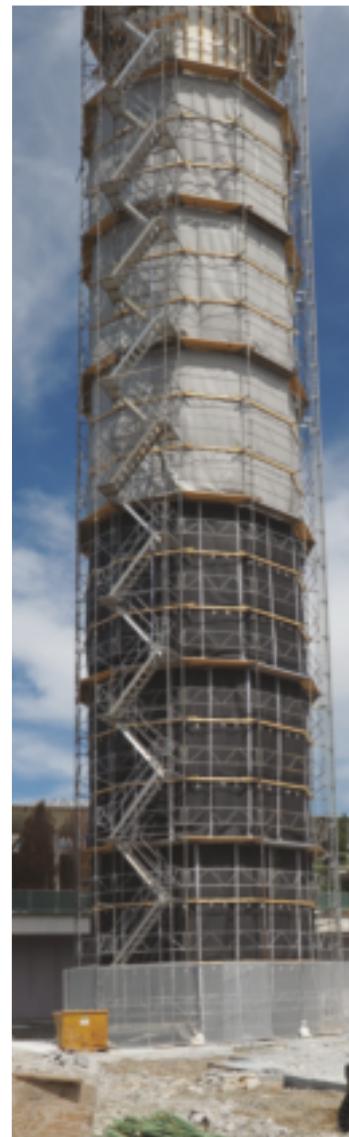


**SOUND SEAL® SOUND CURTAINS
EXTERIOR GRADE NOISE CONTROL**





Water Fountain Area



Water Tower



UNIVERSITY AT ALBANY; ALBANY, NY

Situation: Sand blasting and repainting the 248' tall water tower; and refurbishing water fountain area while classes are in session.

Sound Seal Solution: BBC Exterior Grade Sound Curtains specified—BBC-13X-2" for water tower higher wind exposure areas, BBC-EXT-N-2" for lower water tower areas and water fountain area.



Typically installed on...

- Engineered Steel structures
- Chain-link Fences
- Wood Framing



PISCATAQUA BRIDGE; PORTSMOUTH, NH – KITTERY, ME

Situation: Repainting bridge work. Compressors and generators located below bridge disturbing community.

Sound Seal Solution: BBC-13X-2" Sound Curtain panels to enclose equipment.



EXTERIOR GRADE NOISE CONTROL PRODUCTS

SOUND SEAL

www.soundcurtains.com

PERMANENT STYLE SOUND CURTAINS

"Most Durable"

BBC-EXT-R Style

BBC-EXT-R Sound Curtain Panels feature our durable reinforced noise barrier and a UV and tear resistant exterior grade faced quilted fiberglass sound absorber sewn with a Gore Tenera exterior grade thread.

- For use on permanent outdoor installations
- 1 lb. psf or 2 lb. psf reinforced noise barrier
- Wind Load > 120 mph
- 1"-thick or 2"-thick quilted fiberglass sound absorber
- STC values ranging from 29 to 38
- NRC values ranging from .65 to .75

Applications...

- HVAC Equipment
- Compressors, Generators
- Dust Collectors
- Shredders



BBC-EXT-R-2" Sound Curtains enclose pumps and compressors.



BBC-13X-2" Sound Curtains were specified on Boston's "Big Dig" project

CONSTRUCTION SITE SOUND CURTAINS

"Most Specified"

BBC-13X-2"

BBC-13X-2" Sound Curtain Panels combine the benefits of both a Noise Barrier (Rated in STC) and a Sound Absorber (Rated in NRC) in one product.

This product utilizes a durable, tear resistance reinforced noise barrier with a vinyl faced quilted fiberglass sound absorber.

- Class A flammability rated
- 2-inch thick vinyl faced quilted fiberglass absorber
- Fabricated with grommets across top and bottom and exterior grade Velcro seams along edges
- Acoustical Ratings: STC 32, NRC .85

Typically installed on...

- Chain-link Fences
- Wooden support Structures
- Double Jersey Barriers



A specified and approved product used to comply with the New York City Noise Ordinance Code.

CONSTRUCTION SITE SOUND CURTAINS

"Most Economic"

BBC-EXT-N Style

BBC-EXT-N Sound Curtain Panels combine a money saving non-reinforced noise barrier with a UV and tear resistant exterior grade faced quilted fiberglass sound absorber.

- For use on construction sites
- 1lb. psf or 2 lb. psf non-reinforced noise barrier
- 1"-thick or 2"-thick quilted fiberglass sound absorber
- STC values ranging from 27 to 38
- NRC values ranging from .70 to .85

Typically installed on...

- Chain-link Fences
- Double Jersey Barriers

Applications...

- Commercial & Industrial Construction
- Highway & Bridge Construction
- Drilling Sites
- Mass Transit construction



Front

Back

EXTERIOR SOUND ABSORBERS

Add Sound Absorption to...

- Permanent concrete enclosures
- Temporary Plywood barriers
- Solid wooden fences

Typically installed on...

- Concrete wall structures
- Solid wood Fences

QFA-EXT Style

These Sound absorptive panels feature our UV and tear resistant exterior grade faced quilted fiberglass sound absorber sewn with a Gore Tenera thread.



- 1-inch, 2-inch, or 4-inch thick
- NRC values ranging from .65 to .95
- Exterior grade facing on one or both sides
- Superior UV resistance



Sound Seal Sound Curtain Panels are used for both permanent and construction site noise control. Our modular Sound Curtains offer noise control that is simple, cost effective, and proven to work.

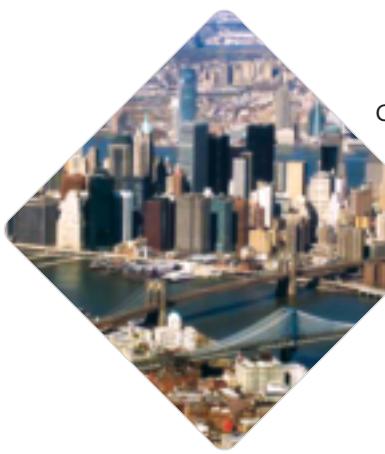
- Reduce outdoor construction and/or community noise
- High actual noise reduction up to 20 dB(A)
- Economical alternative to rigid acoustical panel systems
- Easily installed, relocated, or modified

Flexible configurations to suit your needs for easy set-up, easy maneuverability.

- Custom engineered systems for any application
- Durable and washable
- A variety of colors
- Designs blend with landscape

Sound Seal Sound Curtains help you get the job done without hassle and on time.

- Comply with city noise codes
- Avoid litigation from neighbors
- End costly delays and work stoppages due to noise
- Expedite options ship in one week or less



Check out www.soundcurtains.com to see why Sound Seal has become a New York City suggested vendor... and to see how Sound Seal can provide the sound barrier solution your city or town may require to comply with local noise ordinances.



SOUND SEAL SOLUTIONS AT WORK



BOSTON'S BIG DIG

Situation: Noise control measures specified by engineers

Sound Seal Solution: 10 dB(A) noise reduction; modular panels moved as project progressed



NEW YORK CITY

Situation: Contractor must comply with NYC Noise Ordinance before project may proceed

Sound Seal Solution: BBC-EXT Sound Curtains installed around job site



INDIANAPOLIS, IN

Situation: Dust collector behind manufacturing facility creating neighborhood noise problem

Sound Seal Solution: BBC-EXT-R -2" Sound Curtains installed on chain link fence offers long term effective noise reduction of 15 dB(A)



CALPINE CALIFORNIA NATURAL GAS, SACRAMENTO, CA

Situation: Neighborhood noise, restricted work hours; high winds

Sound Seal Solution: BBC-EXT Sound Curtains installed on engineer certified steel tube frame yields 16 dB(A) noise reduction

Block Sound Outside

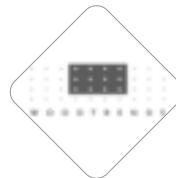
Absorb Sound Inside

Who is Sound Seal?

Since 1978, Sound Seal has been a leader in the acoustics field, offering a complete line of soundproofing and noise control products for industrial, architectural, construction, and HVAC markets. Our product lines can be installed in almost any location, and include:

- Wood Ceilings
- Wood Wall Panels
- Acoustical Wall Panels
- Ceiling Panels
- Acoustical Floor Underlays
- Acoustic Pipe and Duct Wraps
- Noise Barriers
- Sound Curtains

With the widest product selection in the soundproofing industry, and sound control solutions for every type of noise problem, our expert staff is available to advise you about product selection and installation.



www.soundcurtains.com

www.soundseal.com

T-800-569-1294

