

Case Study:

# IAC Acoustics Sound Barrier

BMW – North America  
Woodcliff Lake, New Jersey



## IAC Acoustics Helps Keep Peace and Quiet at BMW–North America Research and Engineering Center

When BMW announced the expansion of their North American Headquarters, renowned Architects HOK were tasked with creating a home for the Research and Engineering Center and Technical Services Group. The project included state-of-the-art technology with a careful eye on ensuring the facility and its many lovely homesteads surrounding it would be environmentally and aesthetically compatible in rural Woodcliff Lake, NJ.

HOK quickly recognized the exceptional sound absorption and sound transmission loss capabilities of the IAC Acoustics Noishield® barrier product. IAC Acoustics was contracted to design, manufacture and install 3 custom Noishield® FS/S rooftop barrier acoustic walls.

## Construction Features

Construction details that included a non-welded assembly with a full five inch thick layer of sound absorption material, a powder coat finish, and horizontal reveals providing full length panel drainage on 24" vertical centers would ensure the system be maintenance free for well over 20 years.

The IAC Acoustics system is designed to withstand wind loads specified in the International Building Code with a post spacing of 16' – which also matched the vertical lines of the buildings facades. IAC Acoustics was challenged to fully conceal the flanges of the structural support system – to create the visual of a continuous post free wall nearly 300' long that closely aligned with all other vertical elements of the Building facade.

BMW is now conducting full operations in a state-of-the-art research facility with all of the attendant noise producing machinery having been effectively attenuated by IAC Acoustics Noishield® sound barriers to community standards.



Case Study:

# IAC Acoustics Sound Barrier

» Pacific Gas & Electric  
Gustine, California



## IAC Acoustics Scores Again with Noishield® FS/S Sound Barrier Systems at PG&E

For a second time IAC Acoustics supplied and installed Noishield® FS/S sound barrier panels for Pacific Gas & Electric (PG&E), only this time in Gustine, California.

The source of the noise complaint was two large transformers approximately 45' and 70' from the property line. The closest resident was within 15' of the property line adjacent to the transformers. IAC Acoustics provided complete turn-key services including design, engineering, foundations, structural supporting steel, acoustic panels and installation in order to address the low frequency noise generated from the transformers that exceeded the local noise ordinance.

### Manufacturing and Installation

PG&E presented the IAC Acoustics team with an additional challenge; to control the run-off rain water from escaping in to the adjacent properties prior to being filtered into the

on site water treatment area. This 2' high IAC Acoustics Noishield® sound barrier panel was designed to protect the community from unwanted sound, contain potentially contaminated water from adjacent properties and as a security fence to keep out trespassers. IAC Acoustics designed the foundation with an integrated curb to be both structurally sound and environmentally compliant. The panels are factory finished using a polyester powder coating for exterior applications and are available in over 100 colors. The low weight panels are 2' tall and stacked to achieve desired height and configuration.

### Acoustic Performance

IAC Noishield® FS/S sound barrier systems optimize sound transmission loss and sound transmission properties in a durable aesthetically pleasing wall system in harmony with the community. The 5" thick panel is self-draining and the absorptive side is rated NRC 1.05 with an STC 33 rating. According to resident in the adjacent property, the IAC Acoustics barrier wall has exceeded expectations with regard to the noise.

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Case Study:

# IAC Acoustics Sound Barrier

» Digital Realty Trust  
Chicago, Illinois



## IAC's FS/S Noishield® Roof Top Barrier Helps to Keep the Community Quiet for DRT in the Chicago Central Business District

IAC Acoustics delivered a turnkey project for Digital Realty Trust in Chicago. Located in the South Loop of the Chicago Central Business District, DRT is the premier mission critical datacenter and telecommunications facility in the Midwest. Located between McCormick Place and several high end commercial and residential properties, the property has over 1,000,000 square feet of rental space and boasts significant electrical and HVAC infrastructure as well as robust telecom access critical to enterprise datacenter tenants. The HVAC infrastructure consisted of several large noisy pieces of equipment all located on the roof of this eight story historic building.

### IAC Acoustics' Expertise

IAC Acoustics was tasked with developing a barrier wall that would be acoustically compatible with the community and not compromise the historical significance of the building. Designs were submitted and analyzed, and prototypes were built. The Architect on this project OWP/P and the IAC Acoustics team concluded that the FS/S Noishield® sound

barrier system with its exceptional sound absorption and sound transmission loss capabilities as well as the added decorative treatment clearly satisfied the acoustical and aesthetic requirements of the city.

### Manufacturing

The scope entailed more than (500) Noishield® FS/S sound barrier panels spanning 800 lineal feet and totaling 2,000 sq. ft. with an additional (33) 7' x 17' decorative face assemblies in a complimentary powder coated finish color to meet the stringent aesthetic criteria as set forth by the architect. Fill materials used are fiberglass, non-corrosive, resistant to attack by fungus, fire-resistant, vermin-proof and non-hygroscopic. This material is also free draining, self-supporting and retains physical and sound absorptive characteristics after long-term exposure to the elements. All materials have a Class A fire rating and the panels have an NRC 1.05.

This project was designed, reviewed, approved, delivered and installed within six months of IAC Acoustics being awarded the contract. DRT is now quietly providing premier mission critical datacenter and telecommunications services in South Chicago.

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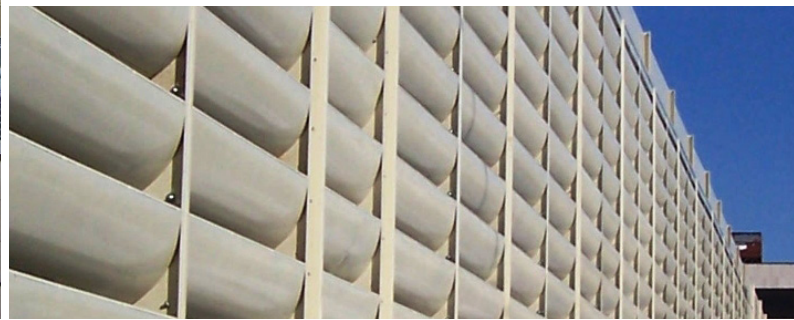


Case Study:

# IAC Acoustics Sound Barrier



Nomura Securities  
Piscataway, New Jersey



## IAC Acoustics FS/S Noishield® Sound Barrier System Helps Keep the Community Quiet for Nomura Securities

IAC Acoustics FS/S Noishield® louvered sound barrier systems are designed to protect the communities against noise generated by air condensers, pumps, chillers, fans and compressors where restricted airflow caused by an all solid barrier is a concern.

### Custom Configurations

Nomura Securities, located in Piscataway New Jersey, had a noise level that exceeded community noise ordinance along the property line. By incorporating the IAC Acoustics FS/S Noishield® Model LP louver and Model FS/S Noishield® barrier panels into our sound barrier system, we were able to achieve the acoustic requirement without compromising the airflow. IAC Acoustics designed and specified our Noishield® LP louvers to allow the wall to be in close proximity to their generators and air cooled condensers to prevent the formation of a micro climate where the exhaust is recalculated through the intakes.

### Manufacturing

For the Nomura project IAC Acoustics provided an FS/S Noishield® sound barrier system with wall segments arranged in a "C" shaped configuration. The segments have a 512' overall length with heights that range from 18' to 23' above the base of the wall. The wall consists of 4,619 sq.ft. of Model LP specialty louvers and 5,557 sq.ft. of model FS/S Noishield® sound barrier panels. The barrier system also includes forty-three 8' deep footings and three Noise-Lock® STC 28 roll-up doors.

All barrier systems are factory finished using polyester powder coating for exterior applications and are available in over 100 colors with smooth or textured finishes to blend with the community and environment. The louvers are rated for transmission loss and pressure drop in IAC Acoustics' Aero-Acoustic Laboratory.

Working with IAC Acoustics Representative Quietstar Industries, USA Architects, Acoustical Consultant Cerami, Mechanical Engineer Jaros, Baum & Bolles, and Contractor Joseph J. Jingoli & Sons; the end result was another successful turn-key FS/S barrier system that delivered the acoustic and aesthetic expectations of the customer without compromising the operation of the mechanical equipment.

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Case Study:

# IAC Acoustics Sound Barrier

▶▶ Pasadena Metro Gold Line  
Pasadena, California



## Metro Gold Line Wins the Gold

IAC Acoustics has fabricated and installed an IAC Noishield® FS/S acoustic sound barrier system for the Pasadena Metro Gold Line project in California. The light rail transit line is approximately 13 miles long and extends from Union Station in the city of Los Angeles to Sierra Madre Villa Boulevard in the city of Pasadena.

The project included more than 1200 IAC Noishield® FS barrier panels which are available in 24" and 18" heights and up to 16 feet long.

## IAC Sound Barrier Features

- Galvanized steel or aluminum
- Free-draining
- Light weight; easily installed
- Sound absorptive
- Weather-test features
- Relocatable
- Freestanding or add-on cladding
- Horizontal or vertical installation

## Manufacturing and Installation

The panels endure a five step cleaning process and are factory finished with a tough, thermosetting polyester powder coat available in hundreds of colors and patterns to simulate wood and brick. By including anti-graffiti treatment into the powder coating process, the IAC Acoustics FS Noishield® barrier panels are much easier to keep clean and maintain.

The steel panels are lighter and easier to install than traditional wood and concrete barriers and are ideal for round, bridges, and roof top community noise control applications.

## Acoustic Performance

IAC Acoustics barrier systems optimize sound transmission loss and sound transmission properties in a durable, aesthetically pleasing wall system. The 5" thick panel is self-draining and the absorptive side is rated NRC 1.05.

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