



Brooks Acoustics Corporation

30 Lafayette Square Vernon, Connecticut 06066 860-896-1081

Curriculum Vitae

Bennett M. Brooks

Biographical Sketch

During a career in acoustics which spans over thirty five years, Mr. Brooks' engineered designs have been proven through rigorous testing. These include the creation of pleasant sound environments and noise control solutions for applications ranging from concert halls, theaters, schools and universities, hospitals, houses of worship, commercial offices, recording and broadcast studios, restaurants, banquet facilities, hotels, resorts and residences, to factories and power plants. While at MIT, Mr. Brooks studied Noise Control Engineering with Richard Lyon, and Architectural Acoustics with the late Robert Newman. At GWU he studied Aeroacoustics with Michael Myers and Jay Hardin.

For over twenty years, Mr. Brooks has been engaged as a consulting acoustical engineer. During this time he has conducted over 650 engineering projects, in responsible charge as the Principal Investigator. Mr. Brooks began his private practice of engineering with the firm of United Acoustic Consultants, founded by Stannard Potter and Harold Mull in 1959. This firm became Brooks Acoustics Corporation upon Stan Potter's retirement in 1992.

Mr. Brooks serves as an acoustical engineering consultant to a variety of industries. These engagements include those in the fields of engineering, architecture, construction, mining, manufacturing, energy, government, law, real estate and music. Mr. Brooks' recent projects include acoustical building design for performance spaces, noise control in educational and commercial spaces, industrial and environmental noise control, quiet product design, and real estate development. He frequently publishes and presents his findings in a variety of forums, including peer reviewed journals. www.brooksacoustics.com

Education

B.S. Mechanical Engineering, Massachusetts Institute of Technology, 1974
M.S. Acoustics, George Washington University, 1977

Employment Experience

Brooks Acoustics Corporation	President	1992- Present
United Acoustic Consultants	Sr. Engineer	1989- 1992
EDO Corporation	Sr. Program Manager	1988- 1989
Kollmorgen Corporation	Program Manager	1987- 1988
United Technologies Corporation	Project Manager	1983- 1987
“ “	Analytical Engineer	1977- 1983
George Washington University / NASA Langley	Research Assistant	1974- 1977

Licenses and Awards

Licensed Professional Engineer (P.E.) State of Connecticut (License Number 17401)

Elected Fellow of the Acoustical Society of America (FASA) "For contributions to noise control engineering, standards and noise policy." 2004

American Council of Engineering Companies - Connecticut (ACEC/CT)
Engineering Excellence Award 1999
"For Acoustical Renovation of the Wesleyan University Crowell Concert Hall"

Professional Affiliations and Activities

National Council of Acoustical Consultants (NCAC)

Principal of Member Firm, 1997- present

President, Term 2010 – 2012

Board of Directors, 2004- 2010

Membership Committee, 2003- 2008

Honors and Awards Committee, 2004- 2010

Acoustical Society of America (ASA)

Member 1977- 2004, Fellow 2004- present

Member, Technical Committee on Noise, 1993- present (Chair 2000- 2003)

Chair, Outstanding Young Presenter Committee (2001- 2003)

ASA/TCN Task Force Committee (1991- 1999)

Member, Technical Committee on Architectural Acoustics, 1995- present

Point of Contact (Administrator) AIA/CES Architectural Acoustics Course, 2007- present

Member, Membership Committee, 2008- present

Member, Committee on Standards (ASACOS), 1994-2009

Member, ANSI Accredited Standards Committee S-12, Noise (Vice-Chair 1996-1999)

Individual Expert, ANSI S12, Noise, 1996- present

Co-chair, S12 Standards Working Group 23, Sound Power Measurement, 1995- present

Member, S12 Standards Working Group 38, Product Noise Labeling, 1998- present

Vice-chair, S12 Standards Working Group 41, Community Noise Ordinances, 2001-pres.

Member, S12 Standards Working Group 42, Classroom Acoustics, 1998- present

Chair, ANSI S1, Acoustics - Working Group 17, Sound Level Meters, 2003- present

Member, ISO/TC43/SC1 Working Group 28, Noise, 2000- present

Standards Nominating Committee, 1995, 96, 98

Member, Innovation Ad-Hoc Committee, 2008- present

Faculty, Special Seminar on Noise Control, 1996

Faculty, Workshop on Classroom Acoustics, 1999

Product Sound Quality (PSQ '97) Symposium, Organizing Committee, 1997

Member, ASA Nominating Committee, 2001

Technical Program Organizing Committee, Chicago 2001, New York 2004

Tokyo String Quartet Video Committee, 1994- 1995

American Society of Mechanical Engineers (ASME)

Member, 1974- present

Vice Chairman, Performance Test Code Committee ANSI-ASME PTC 36
Measurement of Industrial Sound, 1993- present

Institute of Noise Control Engineering (INCE) – Elected Member, 2004

Connecticut Society of Professional Engineers (CSPE)

Member, 1994- present

Member, Qualifications Based Selection (QBS) Committee, 2000- present

University of Hartford, Construction Institute

Principal of Member Firm, 1998- present

Member – Marketing Committee, 2000- 2007

Board of Directors, 2002- 2004

National Academy of Engineering (NAE)

Study Group on National Noise Policy (Peabody Group), 2000- 2007

Panel Co-chair - Technology for a Quieter America - Workshop, 2005

European Cooperation in Science and Technology (COST)

Invited US Observer and Participant, Action TD0804, Soundscapes, 2009

Publications

“A model study of sound propagation in a random array.” Massachusetts Institute of Technology, B.S. Thesis, 58 pages, 1974.

“The field of an acoustic dipole in the presence of an infinite cylinder with application to the prediction of airframe noise.” George Washington University, M.S. Thesis, 107 pages, 1977.

“Advanced turbo-prop airplane interior noise reduction – source definition.” NASA CR-159668, 86 pages, 1979. (Co-author).

“Acoustic test and analysis of three advanced turboprop models.” NASA CR-159667, 245 pages, 1980. (Co-author).

“Acoustic measurements of three Prop-Fan models.” AIAA Paper 80-0995, also presented at the Aeroacoustics Conference, 12 pages, 1980.

“Mod-0 wind turbine dynamics test correlations.” *NASA Conference Publication 2185*, pp. 287-293, 1981.

“Jetstar propeller flight test program preliminary data analysis.” Hamilton Standard Engineering Report HSER 8207, NASA Contract NAS4-2766, 290 pages, 1981.

“Vibratory stress measurements on US-1A aircraft, T64-10J engine, 63E60-27 propeller installation.” Hamilton Standard Engineering Report HSER 8218, 49 pages, 1981.

“Jetstar propeller flight test program – acoustic data report.” for NASA-Dryden Flight Research Facility, NASA Contract NAS4-2822, 35 pages, 1983.

“Analysis of Jetstar Prop-Fan acoustic flight test data.” for NASA-Dryden Flight Research Facility, NASA Contract NAS4-2822, Hamilton Standard Engineering Report HSER 8882, 127 pages, 1983.

“Measurement and analysis of acoustic flight test data for two advanced design high speed propeller models.” AIAA Paper 84-0250, also presented at the Aerospace Sciences Meeting, 13 pages, 1984. (Co-author).

“Survey and recommendations for low speed propeller configurations.” for NASA-Lewis Research Center, Contract NAS3-23924, Task I Letter Report, 1984.

“Structural design study of low speed propellers – material selection and analysis procedures.” For NASA-Lewis Research Center, Contract NAS3-23924, 77 pages, 1984. (Co-author).

“Aerodynamic performance test and analysis of the four-bladed SR-3 Prop-Fan model.” For NASA-Lewis Research Center, Hamilton Standard Engineering Report HSER 9895, 38 pages, 1985. (Co-author).

“Analysis and test evaluation of the dynamic response and stability of three advanced turboprop models.” NASA CR-174814, 169 pages, 1985. (Co-author).

“Experimental evaluation of the effects of an upstream pylon on the blade vibratory stresses of the SR-6 Model Prop-Fan.” For NASA-Lewis Research Center, Contract NAS3-24222, Hamilton Standard Engineering Report 9671, 24 pages, 1985. (Editor).

“Experimental and analytical evaluation of the effects of simulated engine inlets on the blade vibratory stresses of the SR-3 model Prop-Fan.” NASA CR-174959, 109 pages, 1985. (Editor).

“Analysis and test evaluation of the dynamic stability of three advanced turboprop models at zero forward speed.” NASA CR-175025, 114 pages, 1985. (Editor).

“Analysis and test evaluation of the dynamic stability of three advanced turboprop models at low forward speed.” NASA CR-175026, 106 pages, 1985. (Editor).

“Unstalled flutter stability predictions and comparisons to test data for a composite Prop-Fan model.” NASA CR-179512, 50 pages, 1986. (Editor).

“Dynamic response and stability of a composite Prop-Fan model.” NASA CR-179528, 94 pages, 1986. (Co-author).

“Dynamic response of two composite Prop-Fan models on a nacelle/wing/fuselage half model.” NASA CR-179589, 162 pages, 1986. (Co-author).

“Evaluation of wind tunnel performance testing of an advanced 48 degree swept ten-bladed propeller at Mach numbers from 0.36 to 0.85.” for NASA-Lewis Research Center, Contract NAS3-21714, 70 pages, 1987. (Editor).

“Forum: The role of the Acoustical Society in noise and its control.” *J. Acoust. Soc. Am.* **98** (1), 18-19 (July 1995). (Co-author).

“A global vision for the noise control marketplace.” *Noise Control Eng. J.* **44** (3), 153-160, (1996 May-Jun). (Co-author).

“The global noise control marketplace for the new millennium.” *Noise Control Eng. J.* **49** (4), 204-205 (2001 Jul-Aug).

“The need for a unified community noise policy.” *Noise Control Eng. J.* **51** (3), 160-161 (2003 May-Jun).

“The economic impact on America’s products without a new national noise policy.” *Noise Control Eng. J.* **51** (3), 166-171 (2003 May-Jun). (Co-author).

“Crowell Concert Hall - Wesleyan University, Middletown, Connecticut.” in *Halls for Music Performance – Another Two Decades of Experience 1982 – 2002*, edited by Hoffman, Storch and Foulkes (Acoustical Society of America, Melville, New York, 2003) pp. 120-121.

“Symington Memorial Auditorium, Rocky Hill, Connecticut.” in *Halls for Music Performance – Another Two Decades of Experience 1982 – 2002*, edited by Hoffman, Storch and Foulkes (Acoustical Society of America, Melville, New York, 2003) pp. 262-263.

“Soundscape: An approach to rely on human perception and expertise in the post-modern community noise era.” *Acoustics Today*, vol. 3 issue 1, (Acoustical Society of America, Melville, New York, 2007) pp. 7-15.

Presentations

“The reverberant sound field induced by flow over a cavity.” American Institute of Aeronautics and Astronautics (AIAA) Mid-Atlantic Student Conference, 24 pages, 1975.

“Acoustic measurements of three Prop-Fan models.” AIAA Aeroacoustics Conference, Paper 80-0995, 1980.

“Measurement and analysis of acoustic flight test data for two advanced design high speed propeller models.” AIAA Aerospace Sciences Meeting, Paper 84-0250, 1984. (Co-author).

“Advanced turboprop propeller analysis and test support.” NASA-Lewis Research Center, Contract NAS3-24088 Final Oral Review, March 1986. (Co-author).

“An overview of noise control in the power industry.” Acoustical Society of America (ASA) 122nd Meeting, November 1991, Houston, J. Acoust. Soc. Am. **90** (4, pt. 2), 2242 (1991). (Co-author).

“Measurement and control of noise from small arms firing facilities.” ASA 123rd Meeting, Salt Lake City, May 1992, J. Acoust. Soc. Am. **91** (4, pt. 2), 2452 (1992).

“Aerodynamic noise of high speed ground vehicles.” ASA 125th Meeting, Ottawa, May 1993, J. Acoust. Soc. Am. **93** (4, pt. 2), 2309 (1993).

“Special workshop on ASA’s role in noise and its control I: Introduction to workshop goals.” ASA 125th Meeting, Ottawa, May 1993, J. Acoust. Soc. Am. **93** (4, pt. 2), 2328 (1993). (Co-author).

“Special workshop on ASA’s role in noise and its control II: Final group presentation.” ASA 125th Meeting, Ottawa, May 1993, J. Acoust. Soc. Am. **93** (4, pt. 2), 2347 (1993). (Co-author).

“Low frequency noise induced vibration of housing structures.” ASA 126th Meeting, Denver, October 1993, J. Acoust. Soc. Am. **94** (3, pt. 2), 1872 (1993).

“Increasing the Acoustical Society’s role in noise control and noise effects (Interdisciplinary Hot Topics).” ASA 128th Meeting, Austin, November 1994, J. Acoust. Soc. Am. **96** (5, pt. 2), 3291 (1994). (Co-author).

“A global vision for the noise control marketplace.” ASA 129th Meeting, Washington, D.C., May 1995, J. Acoust. Soc. Am. **97** (5, pt. 2), 3324 (1995). (Co-author).

“Concert hall - acoustic study and design.” University of Hartford Acoustics Club, February 1996.

“Benefits and case histories of low noise products.” in *ASA Special Seminar on Noise Control for Plant Engineers and Product Designers*, ASA 131st Meeting, Indianapolis, May 1996, J. Acoust. Soc. Am. **99** (4, pt. 2), xxvi (1996).

“Noise: Progress report and discussion on the continuing activity of ASA’s role in noise and its control.” ASA 131st Meeting, Indianapolis, May 1996, J. Acoust. Soc. Am. **99** (4, pt. 2), 2538 (1996). (Co-author).

“Noise labeling and the acoustical consultant - the importance of standardization.” ASA, 136th meeting, Norfolk, October 1998, J. Acoust. Soc. Am. **104** (3, pt. 2), 1794 (1998).

“Need and issues for American standards and guidelines for classroom acoustics.” Noise Effects 98, 7th Int. Congress on Noise as a Public Health Problem, Sydney, Australia, November 1998. (Co-author).

“Eliminating acoustical barriers to learning in classrooms: Case study - Window ventilator noise,” ASA Workshop on Classroom Acoustics, New York, February 1999.

“Local ordinance targeted to low-frequency noise”, ASA 138th Meeting, Columbus, November 1999, J. Acoust. Soc. Am. **106** (4, pt. 2), 2261 (1999).

“The global noise control marketplace for the new millennium.” Inter-noise 99, Ft. Lauderdale, December 1999. (Proc. of 1999 Int. Cong. on Noise Control Engineering, vol. 1, pp. 29-30).

“Acoustical modeling and auralization as a design tool for a university concert hall renovation.” ASA 139th Meeting, Atlanta, June 2000, J. Acoust. Soc. Am. **107** (5, pt. 2), 2832-2833 (2000).

“Eliminating acoustical barriers to learning in classrooms – Case study of window ventilator noise.” ASA 139th Meeting, Atlanta, June 2000, J. Acoust. Soc. Am. **107** (5, pt. 2), 2860 (2000). (Poster Session).

“Eliminating acoustical barriers to learning in classrooms – Case study of reverberation reduction in elementary school gymnasiums.” ASA 139th Meeting, Atlanta, June 2000, J. Acoust. Soc. Am. **107** (5, pt. 2), 2861 (2000). (Poster Session).

“Acoustical quality for today’s facilities.” Association for Facilities Engineering (AFE) Western Connecticut Chapter Meeting, September 2000.

“Acoustics fundamentals.” American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) – Connecticut Chapter Technical Program, September 2000.

“Acoustical considerations in HVAC Designs.” ASHRAE – Connecticut Chapter Dinner Program, September 2000.

“Setting Agenda for Transportation Noise Management Policies and Noise Research in the United States - Purpose and Current Activities of the Acoustical Society of America,” Transportation Research Board (TRB) 80th Annual Meeting, Washington, D.C., January 2001.

“Rocky Hill High School Auditorium – Rocky Hill, CT.” ASA 141st Meeting, Chicago, June 2001, J. Acoust. Soc. Am. **109** (5, pt. 2), 2326 (2001). (Poster Session).

“Crowell Concert Hall, Wesleyan University Center for the Arts, Middletown, CT.” ASA 141st Meeting, Chicago, June 2001, J. Acoust. Soc. Am. **109** (5, pt. 2), 2326 (2001). (Poster Session).

“Hot topics in noise.” (Interdisciplinary Hot Topics) ASA 141st Meeting, Chicago, June 2001, J. Acoust. Soc. Am. **109** (5, pt. 2), 2424 (2001).

“Progress on a model community noise ordinance standard.” ASA 141st Meeting, Chicago, June 2001, J. Acoust. Soc. Am. **109** (5, pt. 2), 2437 (2001). (Co-author).

“The need for a unified community noise policy.” Institute of Noise Control Engineering, NOISE-CON 01, Portland, Maine, October 2001. (Proc. Noise-Con 01).

“Development of a model local noise ordinance standard.” Pan-American/Iberian Meeting on Acoustics (ASA 144th Meeting), Cancun, December 2002, J. Acoust. Soc. Am. **112** (5, pt. 2), 2212 (2002). (Co-author).

“Eliminating acoustical barriers to learning in classrooms – What you need to know about acoustics.” Workshop: Implementing Classroom Acoustics Standards Locally. 18th International Self Help for the Hard of Hearing (SHHH) Convention, Atlanta, June 2003.

“Progress on developing a model community noise ordinance as a National Standard in the U.S.” Inter-noise 2003, Seogwipo, Korea, August 2003. (Co-author).

“Acoustical criteria for hospital patient rooms: Resolving competing requirements.” ASA 146th Meeting, Austin, November 2003, J. Acoust. Soc. Am. **114** (4, pt. 2), 2326 (2003).

“Forensic acoustics: An opportunity to educate.” ASA 146th Meeting, Austin, November 2003, J. Acoust. Soc. Am. **114** (4, pt. 2), 2402 (2003).

“Archaeological acoustics - A guide to trends in community noise levels.” ASA 147th Meeting, New York, May 2004, J. Acoust. Soc. Am. **115** (5, pt. 2), 2622 (2004). (Co-author).

“Manage and improve the sound in your electronic classrooms.” State University of New York Technology Conference 2004, New Paltz, NY, June 2004.

“The feasibility of noise and reverberation control for good acoustics in classrooms.” ASA 149th Meeting, Vancouver, May 2005, J. Acoust. Soc. Am. **117** (4, pt. 2), 2527 (2005).

“Community design with soundscape in mind.” ASA 149th Meeting, Vancouver, May 2005, J. Acoust. Soc. Am. **117** (4, pt. 2), 2551 (2005).

“Harmonizing the American National Standards Institute (ANSI) and International Electrotechnical Commission (IEC) sound level meter specification.” ASA 150th Meeting, Minneapolis, October 2005, J. Acoust. Soc. Am. **118** (3, pt. 2), 1842 (2005).

“Model community noise ordinance – A new approach to community based policy.” ASA 150th Meeting, Minneapolis, October 2005, J. Acoust. Soc. Am. **118** (3, pt. 2), 1874 (2005). (Co-author). Also, Institute of Noise Control Engineering, NOISE-CON 05, (Proc. Noise-Con 05).

“Traditional measurement methods for characterizing soundscapes.” ASA 151st Meeting, Providence, June 2006, J. Acoust. Soc. Am. **119** (5, pt. 2), 3260 (2006).

“Soundscape: an approach to combine physical measures and subjective evaluation with respect to community noise assessment.” Inter-noise 2006, Honolulu, Hawaii, December 2006. (Co-author).

“Workshop on standardization for soundscape techniques - Introduction to workshop goals.” ASA 153th Meeting, Salt Lake City, June 2007, J. Acoust. Soc. Am. **121** (5, pt. 2), 3062 (2007). (Co-author).

“Better soundscapes for all – a worth goal.” ASA 153th Meeting, Salt Lake City, June 2007, J. Acoust. Soc. Am. **121** (5, pt. 2), 3062 (2007). (Co-author).

“Workshop for American Institute of Architects Continuing Education Units Presentation – Introduction to workshop goals.” ASA 153th Meeting, Salt Lake City, June 2007, J. Acoust. Soc. Am. **121** (5, pt. 2), 3173 (2007). (Co-author).

“American Institute of Architects/Continuing Education System (AIA/CES) provider registration and reporting requirements.” ASA 153th Meeting, Salt Lake City, June 2007, J. Acoust. Soc. Am. **121** (5, pt. 2), 3173 (2007).

“Better soundscapes for all – Report on the Workshop in Standardization for Soundscape Techniques held in Salt Lake City, 5 June 2007.” ASA 154th Meeting, New Orleans, November 2007, J. Acoust. Soc. Am. **122** (5, pt. 2), 3010 (2007). (Co-author).

“School music rehearsal spaces – how dry is dry enough?” ASA 154th Meeting, New Orleans, November 2007, J. Acoust. Soc. Am. **122** (5, pt. 2), 3024 (2007).

“Better Soundscapes for all workshops on continuing development of soundscape techniques standardization: Workshop introduction.” ASA 156th Meeting, Miami, November 2008, J. Acoust. Soc. Am. **124** (5, pt. 2), 2552 (2008). (Co-author).

“American Institute of Architects Short Course: Introduction to workshop goals.” ASA 157th Meeting, Portland OR, May 2009, J. Acoust. Soc. Am. **125** (5, pt. 2), 2646 (2009). (Co-author).

“American Institute of Architects Short Course: Provider registration and reporting requirements.” ASA 157th Meeting, Portland OR, May 2009, J. Acoust. Soc. Am. **125** (5, pt. 2), 2646 (2009).

“Use of building site and design to address noise impacts.” Urban Design with Soundscape in Mind – Joint Symposium - Acoustical Society of America & City of Portland Noise Control Office, Portland OR, May 2009. (Co-author).

“Soundscape in the Urban Environment – What does it mean.” Urban Design with Soundscape in Mind – Joint Symposium - Acoustical Society of America & City of Portland Noise Control Office, Portland OR, May 2009. (Co-author).

“Soundscape and Community Noise: The Concept of Meaning in Soundscapes with Respect to the New Experts.” EURONOISE 2009, Edinburgh, Scotland, October 2009. (Co-author).

“Going green may require new professional relationships and different solution providers.” ASA 159th Meeting/NOISE-CON 2010, Baltimore, April 2010, J. Acoust. Soc. Am. **127** (5, pt. 2), 1723 (2010). (Co-author).

“Soundscape Concert II: Ocean Dreams.” ASA 159th Meeting/NOISE-CON 2010, Baltimore, April 2010, J. Acoust. Soc. Am. **127** (5, pt. 2), 1775 (2010).

“Proposed ANSI Standard - Guidance for Developing State Noise Regulations and Local Noise Ordinances.” Public Outreach Workshop on Community Noise – sponsored by the Institute of Noise Control Engineering (INCE/USA) and the Acoustical Society of America (ASA), Baltimore, April 2010.

“Use of building site and design to address noise impacts.” Urban Design with Soundscape in Mind – Joint Symposium - Acoustical Society of America & Baltimore City Planning Office, Baltimore, April 2010.

“Soundscape: A new approach in addressing urban noise -- Soundscape – what does it mean.” Urban Design with Soundscape in Mind – Joint Symposium - Acoustical Society of America & Baltimore City Planning Office, Baltimore, April 2010.

Technical Session Chair / Co-chair

"Noise: Noise Control Techniques in Energy Generation and Transmission Facilities." ASA 122nd Meeting, Houston, November 1991, J. Acoust. Soc. Am. **90** (4, pt. 2), 2242 (1991).

"Noise: Progress Report and Discussion on the Continuing Activity on ASA's Role in Noise and Its Control." ASA 133rd Meeting, Penn State, June 1997, J. Acoust. Soc. Am. **101** (5, pt. 2), 3145 (1997).

"Architectural Acoustics and Noise: Progress Report on ASA's Role in Noise and Its Control." ASA 136th Meeting, Norfolk, October 1998, J. Acoust. Soc. Am. **104** (3, pt. 2), 1847 (1998).

"Noise: Status of Noise Regulations." ASA 138th Meeting, Columbus, November 1999, J. Acoust. Soc. Am. **106** (4, pt. 2), 2261 (1999).

"Noise: Noise Measurement, Sources, Control." ASA 142nd Meeting, Ft. Lauderdale, December 2001, J. Acoust. Soc. Am. **110** (5, pt. 2), 2674 (2001). (Co-chair).

"Noise: Community Noise: Aircraft and Other Transportation Sources." ASA 142nd Meeting, Ft. Lauderdale, December 2001, J. Acoust. Soc. Am. **110** (5, pt. 2), 2731 (2001). (Co-chair).

"Noise: Transportation and Community Noise." ASA 145th Meeting, Nashville, April 2003, J. Acoust. Soc. Am. **113** (4, pt. 2), 2244 (2003).

"Noise: Topics in Urban and Community Noise." ASA 146th Meeting, Austin, November 2003, J. Acoust. Soc. Am. **114** (4, pt. 2), 2438 (2003).

"Noise and Psychological and Physiological Acoustics: Workshop on Methods for Community Noise and Annoyance Evaluation I." ASA 149th Meeting, Vancouver, May 2005, J. Acoust. Soc. Am. **117** (4, pt. 2), 2591 (2005).

"Panel Session 1: Issues with respect to manufacturing competitiveness. Both export and import issues." Technology for a Quieter America - A project planning workshop sponsored by the National Academy of Engineering, September 13-15, 2005, Washington, DC. (Co-chair).

"Noise and NOISE-CON: Workshop on Methods for Community Noise and Noise Policy." ASA 150th Meeting, Minneapolis, October 2005, J. Acoust. Soc. Am. **118** (3, pt. 2), 1874 (2005). (Co-Chair).

"Noise and Architectural Acoustics: Audio-Visual Design in Soundscapes I." ASA 151st Meeting, Providence, June 2006, J. Acoust. Soc. Am. **119** (5, pt. 2), 3260 (2006). (Co-Chair).

"Noise and Architectural Acoustics: Audio-Visual Design in Soundscapes II." ASA 151st Meeting, Providence, June 2006, J. Acoust. Soc. Am. **119** (5, pt. 2), 3293 (2006). (Co-Chair).

"Noise and Architectural Acoustics: Heating, Ventilation and Air-Conditioning Noise Control." ASA 151st Meeting, Providence, June 2006, J. Acoust. Soc. Am. **119** (5, pt. 2), 3411 (2006). (Co-Chair).

“Noise and Architectural Acoustics: Soundscapes and Cultural Perception I.” Fourth Joint Meeting ASA and ASJ, Honolulu, Hawaii, December 2006, *J. Acoust. Soc. Am.* **120** (5, pt. 2), 3237 (2006). (Co-Chair).

“Noise and Architectural Acoustics: Soundscapes and Cultural Perception II.” Fourth Joint Meeting ASA and ASJ, Honolulu, Hawaii, December 2006, *J. Acoust. Soc. Am.* **120** (5, pt. 2), 3278 (2006). (Co-Chair).

“Noise: Workshop of Standardization for Soundscape Techniques I.” ASA 153th Meeting, Salt Lake City, June 2007, *J. Acoust. Soc. Am.* **121** (5, pt. 2), 3062 (2007). (Co-Chair).

“Noise: Workshop of Standardization for Soundscape Techniques II.” ASA 153th Meeting, Salt Lake City, June 2007, *J. Acoust. Soc. Am.* **121** (5, pt. 2), 3088 (2007). (Co-Chair).

“Architectural Acoustics: Workshop for American Institute of Architects Continuing Education Units Presentation.” ASA 153th Meeting, Salt Lake City, June 2007, *J. Acoust. Soc. Am.* **121** (5, pt. 2), 3173 (2007).

“Noise: Soundscape Developments: Case Studies and Best Practices.” ASA 154th Meeting, New Orleans, November 2007, *J. Acoust. Soc. Am.* **122** (5, pt. 2), 3010 (2007). (Co-Chair).

“Noise and EURONOISE: Soundscape in the Heritage of Urban and Natural Areas I.” Acoustics '08 Paris, July 2008, *J. Acoust. Soc. Am.* **123** (5, pt. 2), 3394 (2008). (Co-Chair).

“Noise and EURONOISE: Soundscape in the Heritage of Urban and Natural Areas II (Poster Session).” Acoustics '08 Paris, July 2008, *J. Acoust. Soc. Am.* **123** (5, pt. 2), 3680 (2008). (Co-Chair).

“Noise and EURONOISE: Soundscape & Community Noise I.” Acoustics '08 Paris, July 2008, *J. Acoust. Soc. Am.* **123** (5, pt. 2), 3807 (2008). (Co-Chair).

“Noise and EURONOISE: Soundscape & Community Noise II (Poster Session).” Acoustics '08 Paris, July 2008, *J. Acoust. Soc. Am.* **123** (5, pt. 2), 3819 (2008). (Co-Chair).

“Noise, Architectural Acoustics, and ASA Committee on Standards: Workshop on Standardization for Soundscape Techniques: Soundscape and Sound Quality – Measurement and Lexicon.” ASA 156th Meeting, Miami, November 2008, *J. Acoust. Soc. Am.* **124** (5, pt. 2), 2552 (2008). (Co-Chair).

“Noise, Architectural Acoustics, and ASA Committee on Standards: Soundscape Techniques and Applications – Community and Urban Environments.” ASA 157th Meeting, Portland OR, May 2009, *J. Acoust. Soc. Am.* **125** (5, pt. 2), 2714 (2009). (Co-Chair).

Standards Documents

Co-authored product of American National Standards Institute (ANSI) Committee S12 on Noise:

Standards Working Group 23 on Sound Power Measurement (Co-chair):

- ANSI S12.53/1-1999 Nationally Adopted International Standard (NAIS)
Acoustics – Determination of sound power levels of noise sources –
Engineering methods for small, moveable sources in reverberant fields
– Part 1: Comparison method for hard-walled test rooms.
- ANSI S12.53/2-1999 Nationally Adopted International Standard (NAIS)
Acoustics – Determination of sound power levels of noise sources –
Engineering methods for small, moveable sources in reverberant fields
– Part 2: Methods for special reverberation test rooms.
- ANSI S12.54-1999 Nationally Adopted International Standard (NAIS)
Acoustics – Determination of sound power levels of noise sources
using sound pressure – Engineering method in an essentially free field
over a reflecting plane.
- ANSI S12.56-1999 Nationally Adopted International Standard (NAIS)
Acoustics – Determination of sound power levels of noise sources
using sound pressure – Survey method using an enveloping
measurement surface over a reflecting plane.
- ANSI S12.50-2002 Nationally Adopted International Standard (NAIS)
Acoustics – Determination of sound power levels of noise sources –
Guidelines for the use of basic standards.
- ANSI S12.51-2002 Nationally Adopted International Standard (NAIS)
Acoustics – Determination of sound power levels of noise sources
using sound pressure – Precision method for reverberation rooms.
- ANSI S12.57-2002 Nationally Adopted International Standard (NAIS)
Acoustics – Determination of sound power levels of noise sources
using sound pressure – Comparison method *in situ*.
- ANSI S12.5-2006 Nationally Adopted International Standard (NAIS)
Acoustics – Requirements for the performance and calibration of
reference sound sources used for the determination of sound power
levels.
- ANSI S12.55-2006 Nationally Adopted International Standard (NAIS)
Acoustics – Determination of sound power levels of noise sources
using sound pressure – Precision methods for anechoic and hemi-
anechoic rooms.

Standards Working Group 42 on Classroom Acoustics (Member):

- ANSI S12.60-2002 American National Standard Acoustical performance criteria, design requirements, and guidelines for schools.
- ANSI S12.60-2010/Part 1 American National Standard Acoustical performance criteria, design requirements, and guidelines for schools, Part 1: Permanent Schools
- ANSI S12.60-2009/Part 2 American National Standard Acoustical performance criteria, design requirements, and guidelines for schools, Part 2: Relocatable Classroom Factors

Standards Working Group 15 on Measurement and Evaluation of Outdoor Community Noise (Member):

- ANSI S12.9-2007/Part 5 American National Standard Quantities and procedures for description and measurement of environmental sound – Part 5: Sound level descriptors for determination of compatible land use.
- ANSI S12.9-2008/Part 6 American National Standard Quantities and procedures for description and measurement of environmental sound – Part 6: Methods for estimation of awakenings associated with outdoor noise events heard in homes.

Standards Ad Hoc Working Group (Member):

- ANSI S12.43-1997 American National Standard Methods for measurement of sound emitted by machinery and equipment at workstations and other specified positions.
- ANSI S12.44-1997 American National Standard Methods for calculation of sound emitted by machinery and equipment at workstations and other specified positions from sound power level.

Co-authored product of American Society of Mechanical Engineers and American National Standards Institute (ASME/ANSI) Power Test Code Committee PTC36 (Vice-Chair):

ASME/ANSI PTC 36-2004 Measurement of Industrial Sound

Selected Projects

Bennett M. Brooks, P.E. has conducted over 650 engineering projects in his private practice at United Acoustic Consultants (UAC) / Brooks Acoustics Corporation (BAC) as Principal Investigator. Results and findings were documented, as appropriate, with written reports and/or presentations to government authorities, private reports, design drawings, construction specifications, and graphical and auditory design and test data. Designs for the projects in industrial and environmental noise control, architectural acoustics and quiet product development were produced through the application of measurement and analysis. Many of these designs were verified by post-installation testing. Representative projects are as follows:

Musical Performance Spaces and Auditoria

Yale School of Medicine, Harkness Memorial Auditorium – New Haven, Connecticut
Town of Windsor Amphitheater -- Windsor, Connecticut
Symington Memorial Auditorium, Rocky Hill High School -- Rocky Hill, Connecticut
Crowell Concert Hall, Wesleyan University -- Middletown, Connecticut
State University of New York, Purchase College Performing Arts Center -- Purchase, New York
Cheney Hall (historic) -- Manchester, Connecticut
Jonathan's -- Ogunquit, Maine

Broadcast and Recording Studios

Radio Station WOKQ -- Dover, New Hampshire
AT&T Broadband Television -- Berlin, Connecticut
Riverside Trust Television and Film Post-production – Gardiner, New York
Skye XIII Cable Television -- Waterbury, Connecticut
Another Level Recording -- Meriden, Connecticut
Modcon Productions – New Haven, Connecticut
Firehouse Studio - New Haven, Connecticut
A/Digital Edge Studio - Middlebury, CT

Worship Spaces

Church of the Living God – Manchester, Connecticut
Trinity Covenant Church -- Manchester, Connecticut
Church on the Rock -- New Haven, Connecticut
Unitarian Universalist Society East -- Manchester, Connecticut
The Church of St. Francis of Assisi -- Wakefield, Rhode Island
Evangelical Covenant Church -- Springfield, Massachusetts
Colonial Point Christian Church – South Windsor, Connecticut

College, University and Institutional Facilities

University of Connecticut - Storrs (Main) Campus New Student Union – Storrs, Connecticut
University of Connecticut - Waterbury Campus Classrooms – Waterbury, Connecticut
Yale University - Dormitories – New Haven, Connecticut
Yale School of Medicine - MRI Research Facility – New Haven, Connecticut
Wesleyan University - Laboratory Building – Middletown, Connecticut
Eastern Connecticut State University - Dormitories and Offices – Willimantic, Connecticut
Southern Connecticut State University - New Student Center – New Haven, Connecticut
Trinity College - Student Center and Film Theater – Hartford, Connecticut
Quinnipiac University – Dormitories – Hamden, Connecticut
Town of East Greenwich - Historic Court House – East Greenwich, Rhode Island
Mystic Aquarium - Expansion – Mystic, Connecticut
Mashantucket Pequot Tribal Council – Community Center – Mashantucket, Connecticut

K – 12 Schools

Amistad Academy -- New Haven, Connecticut
Beecher School – New Haven, Connecticut
Connecticut International Baccalaureate Academy – East Hartford, Connecticut
Rock Hills High School – Rock Hills, North Carolina
New Central York High School – York, Pennsylvania
Torrington Elementary School – Torrington, Connecticut
Bnos Menachem School – Brooklyn, New York
Bnos Bais Yaakov School – Far Rockaway, New York
Cromwell High School -- Cromwell, Connecticut
Strong Middle School -- Durham, Connecticut
Hampden-Wilbraham Regional Schools, Burgess Middle School – Wilbraham, Massachusetts
Lyman Hall High School – Wallingford, Connecticut
Sheehan High School -- Wallingford, Connecticut
Dag Hammarskjold Middle School – Wallingford, Connecticut
Moran Middle School -- Wallingford, Connecticut
Pomfret School -- Pomfret, Connecticut
Smith Vocational High School, Northampton, Massachusetts
Plainfield Memorial School – Plainfield, Connecticut
Shepherd Hill Elementary School – Plainfield, Connecticut
Moosup Elementary School – Plainfield, Connecticut
Killingly Middle School – Killingly, Connecticut
Farmington High School -- Farmington, Connecticut
Glastonbury High School -- Glastonbury, Connecticut
Washington Montessori School – Washington, Connecticut

Hospitals

Greenwich Hospital – Greenwich, Connecticut
University of Connecticut, Dempsey Medical Center – Farmington, Connecticut
Norwalk Hospital – Norwalk, Connecticut
Hartford Hospital – Hartford, Connecticut
Johnson Memorial Hospital – Stafford Springs, Connecticut
Mercy Medical Center – Springfield, Massachusetts
New Britain General Hospital – New Britain, Connecticut
Waterbury Hospital – Waterbury, Connecticut

Commercial Offices

Webster Bank -- New Britain, Connecticut
Farmington Savings Bank -- Farmington, Connecticut
New Boston Fund -- Windsor, Connecticut
ESPN – Bristol, Connecticut
Purdue Pharma – Stamford, Connecticut
OFI Contract Interiors Showroom -- Newington, Connecticut
Norwich Department of Public Utilities -- Norwich, Connecticut
Rogers Corporation -- Rogers, Connecticut
United Health Group – Hartford, Connecticut

Residential Multi-family Dwellings

Del Webb Homes - Sun City Grand -- Surprise, Arizona
Ryan Homes – McLean, Virginia
Applied Development – Jersey City, New Jersey
Pinnacle Communities – West Hartford, Connecticut
Garden Homes – Windsor, Connecticut
Ironwood Development – Providence, Rhode Island
Plaza Realty – Greenwich, Connecticut
Duncaster – Bloomfield, Connecticut

Luxury Residential / Destination Resorts

Private residences in New York City; Aspen, CO; Westport, CT; Waterford, CT; Ulster County, NY.
Mayflower Inn and Spa – Washington, Connecticut
Mohegan Sun – Uncasville, Connecticut

Outdoor Entertainment Facilities

Rentschler Field Stadium – East Hartford, Connecticut
Spencer Speedway (NASCAR) – Williamson, New York
Accord Speedway (Modifieds) – Accord, New York
New England Kart Raceway – East Bridgewater, Massachusetts
Maple Breeze Park – Stonington, Connecticut
White Water Mountain Resorts – Middlefield, Connecticut
Rock Cats (Minnesota Twins organization) Baseball Stadium – New Britain, Connecticut

Electric Power Generation and Natural Gas Transmission

Carrier Corporation – Danbury Hospital cogeneration plant (5 MW) – Danbury, Connecticut
Select Energy – Rand-Whitney Cogeneration (17 MW) – Montville, Connecticut
AES – Ocean Link/ Express (LNG & 1200 MW) – Cat Cay, Bahamas & Ft. Lauderdale, Florida
Berkshire Power – Combined cycle electric plant (285 MW) – Agawam, Massachusetts
Noresco/Dynegy – Pan Am Thermal Generating (100 MW) – La Chorrera, Republic of Panama
Connecticut Natural Gas – Hartford Steam Company (20 MW) – Hartford, Connecticut
Gas Recovery Services – Landfill gas to electric power (1.6 to 30 MW)
 East Bridgewater, Massachusetts
 Chicopee, Massachusetts
 Halifax, Massachusetts
 Lyon, Michigan
 Marshall, Michigan
 Northville, Michigan
 South Barrington, Illinois
 Hanover Park, Illinois
 Inver Grove Heights, Minnesota
Williams – Transcontinental Gas Pipe Line – Compressor Stations (40 to 100 MW)
 Sandersville, Mississippi
 Sweetwater, Alabama
 Billingsley, Alabama
 Wadley, Alabama
 Stockbridge, Georgia
 Comer, Georgia
 Moore, South Carolina
 Mooresville, North Carolina
 Unionville, Virginia
 Manassas, Virginia
 Ellicott City, Maryland
 Frazer, Pennsylvania
 Bear Creek, Pennsylvania
 Salladasburg, Pennsylvania
Columbia Gas Transmission Corporation – Gas Compressor Station (9 MW) – Fallston, Maryland
Kinder Morgan – Gas Compressor Station (20 MW) – Devers, Texas

Industrial Noise Control

NASA Glenn Research Center – Cleveland, Ohio
Pfizer – Groton, Connecticut
Applied Biosystems – Framingham, Massachusetts
Schick – Milford, Connecticut
JDS Uniphase – Bloomfield, Connecticut
Fairchild Semiconductor – South Portland, Maine
Allied Printing – Manchester, Connecticut
United Technologies – Windsor Locks, Connecticut

Mining / Construction Noise Control

O & G Industries – Torrington, Connecticut
Hanson Aggregates – Tucker, Georgia
McKnight Sand & Gravel – Ellington, Connecticut
Aiudi and Sons – Plainville, Connecticut

Quiet Product Development

General Electric Aircraft Engines (military hydraulic test stands) – Cincinnati, Ohio
Hamilton Beach / Proctor-Silex (commercial and consumer blenders) – Glen Allen, Virginia
Keating Technologies (automobile emission test equipment) – Warwick, Rhode Island
National Tank Company (gas fired heat exchangers) – Houston, Texas
Gerber Garment Technologies (cloth cutting systems) – Tolland, Connecticut

Government

Town of Cromwell, Connecticut - developed noise ordinance, trained enforcement officers
Town of South Windsor, Connecticut - developed noise ordinance
Town of Enfield, Connecticut - developed noise ordinance
Town of Manchester, Connecticut - developed noise ordinance, trained enforcement officers
Town of Jamestown, Rhode Island - developed noise ordinance
Town of Orange, Connecticut – assisted in noise enforcement proceeding
Town of Rochester, New York – assisted in noise enforcement proceedings
Torrington Area Health District – Torrington, Connecticut – assisted in noise enforcement
Cities of Hudson and Greenport, New York – advised citizen forum on environmental noise issues
State of Connecticut – Office of Policy and Management – assisted in noise enforcement
State of Maryland – Noise Control Office – assisted in noise control design
State of Rhode Island – District Attorney's Office – assisted in a criminal noise prosecution
U.S. Federal Agency (NASA) – investigated noise impact from Cleveland Hopkins Airport

Expert Witness Testimony

Mr. Brooks has testified in dozens of court and administrative proceedings, and has prepared testimony and evidence for cases which were settled before decision. These include:

State of Connecticut Superior Court Judicial District of New Britain, Docket No. CV 93-0464170 S (Nelson Granger, et al. v. A. Aiudi & Sons, et al.) December 18, 1998

In finding for our client (Aiudi) Judge James T. Graham wrote in his memorandum of decision:

“In contradiction to plaintiffs’ claim, the defendants presented the testimony of Bennett Brooks, who has a graduate degree in acoustics, is a licensed professional engineer in Connecticut, has made numerous peer presentations and published many written reports and articles. He is also a member of the Acoustical Society and serves on the ANSI standards committee in his field.

Their respective findings conflict in many regards and their opinions are almost opposites. The court finds the testimony of Brooks to be more credible and persuasive.”

“Further, Brooks’ observations and characterizations as to audible noise at the various relevant locations (the Aiudi site and the plaintiffs’ homes) are consistent with the court’s observations in its view of the premises...”

State of New York Supreme Court (Wayne County) Mason, Saxman, et al. v. Apple Valley Speedway, Inc. et al. Index No. 37917 April 7, 1999

Judge Maurice E. Strobridge found in favor of our client (Apple Valley).

Local Planning and Zoning Public Hearings:

- Town of Windsor, Connecticut
- Town of Scotland, Connecticut
- Town of West Greenwich, Rhode Island
- Town of Cromwell, Connecticut
- Town of Farmington, Connecticut
- Town of East Bridgewater, Massachusetts

State of Connecticut Legislature Education Committee public hearings: 2003, 2004, 2005.

Testified in support of Senate Bill requiring schools to be constructed in accordance with the ANSI S12.60 Classroom Acoustics Standard. Signed into Law by Governor Rell, July 2005.

Musical Experience

Mr. Brooks is a musician with over 35 years of professional performing and recording experience playing the acoustic double bass and the electric bass guitar. This experience informs his work on musical performance and education facilities. His most recent engagements include:

- Manchester (CT) Symphony Orchestra and Chorale (msoc.org) – Principal Bass (2001- present)
- Beth El Temple Orchestra (West Hartford, CT) – Bass (2008 – present)
- Big Band Sound of the Forties – Bass (2000- present)