

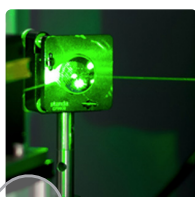


ABD Engineering & Design

Architectural Acoustics ▪ AV Design ▪ Noise & Vibration

Statement of Qualifications

Acoustical Consulting & Audiovisual Design



ABD Engineering & Design

ABD Engineering & Design is an independent acoustical engineering and audiovisual design firm, proud to be a nationally and state (OR, WA) certified Women Owned business. We work with you to provide practical solutions with options that allow for informed decisions. Our timely communications and responsiveness give you the right information at the right time. The cornerstones of ABD's work include data collection on site, research, and calculations to deliver evidence-based designs. With decades of experience across multiple markets, and a team of consultants from varied backgrounds, you can count on ABD to bring you the best in audiovisual design and acoustical consulting.

At ABD, we strive to create a future where every day spaces meet the acoustical and audiovisual needs of every person. We are committed to providing an open, inclusive workplace where everyone, no matter what their background or where they come from, can learn and grow to their full potential.

Certifications

WBENC: WBE1701950

OR-COBID-WBE: 11342

WA-OMWBE: W2F0027557

WI-WBE: WI-13264



Professional Memberships

Acoustical Society of America

Institute of Noise Control Engineering

American Society of Testing and Materials

National Council of Acoustical Consultants

AVIXA (CTS-D)

Staff Count

Acoustics = 8

Audiovisual = 2

Leadership/Admin = 2

Contacts

Principal Engineer: Melinda Miller, PE mmiller@abdengineering.com

Contracts/Billing: Marci Boks, COO mboks@abdengineering.com

New Projects: Brian Atkinson, client@abdengineering.com

Incorporated: S-Corp incorporated 10/30/2001 in the State of Michigan

EIN: 38-3631490

DUNS: 104088682

NAICS Code: 541330

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ABD Engineering & Design

Architectural Acoustics • AV Design • Noise & Vibration



Melinda Miller brings her passion for all things sound and 20 years of experience to her role as Principal Engineer of ABD Engineering & Design. Her expertise includes diagnosing and preventing noise problems, designing acoustically optimized environments, and using evidence-based design practices. Melinda has consulted on projects involving architectural acoustics, noise isolation, mechanical noise control, and occupational noise exposure. Her experience includes higher education, K-12 schools, performance and worship spaces, healthcare facilities, industrial facilities, hotel and multi-family residential buildings.

A Professional Acoustical Engineer, licensed by the State of Oregon, Melinda earned her Bachelor's Degree in Mechanical Engineering from the University of Idaho, and Master's from the University of Illinois, Chicago. She has continued her education and training, earning her INCE Board Certification (INCE Bd. Cert.), Evidence-Based Design Accreditation and Certification (EDAC), and LEED AP BD+ C. As an Assistant Professor of Acoustics for Columbia College, she taught undergraduate junior and senior level classes in HVAC design, vibrations, acoustical testing, building noise control, and musical acoustics.

Melinda has chaired sessions on various topics at Noise-con and Inter-noise since 2013, and has served INCE as the Co-Chair of Building Acoustics Technical Activities committee, on the Certification Board since 2018, and the Board of Directors (2021-2024). Likewise, she has presented technical papers and education sessions for the Acoustical Society of America, the American Institute of Architects, and the Chicago Chapter of the Audio Engineering Society.

Professional Experience

- 2011-Present – Principal Engineer, ABD Engineering & Design, Inc., Portland, Oregon
- 2006-2009 – Acoustical Consultant, Listen Acoustics, Inc., Portland, Oregon
- 2003-2005 – Assistant Professor, Audio Arts and Acoustics Department, Columbia College Chicago, Chicago, IL
- 2001-2003 – Graduate Assistant, Acoustics and Vibrations Laboratory, Department of Mechanical & Industrial Engineering, University of Illinois Chicago, Chicago, Illinois

Professional Licenses and Memberships

- Acoustical Society of America
- Evidence-Based Design Accreditation and Certification (EDAC)
- Institute of Noise Control Engineering (INCE), Board-Certified Member
- Institute of Noise Control Engineering (INCE), Certification Board, and Board of Directors
- National Council of Acoustical Consultants
- State of Oregon, Professional Engineer, #88158PE
- U.S. Green Building Council LEED AP BD+C

Education

- Master of Science in Mechanical Engineering, University of Illinois at Chicago, Chicago, Illinois, 2003
- Bachelor of Science in Mechanical Engineering, University of Idaho, Moscow, Idaho, 1998.

Project Experience

- | | | |
|--|---|---|
| • Linfield College, Murdock-Graf, McMinnville, OR | • Portland Community College, Cascade Campus, Public Service Education Building, Portland, OR | • Oregon State University, Fairbanks Hall Renovation, Corvallis, OR |
| • Schirle Elementary School, Salem, OR | • Tillamook High School, Auditorium, Tillamook, OR | • Mayo Clinic, Behavioral Health, Albert Lea, MN |
| • 1122 SE Hawthorne, Residential Mixed Use, Portland, OR | • Oregon Humane Society, Portland, OR | • University of Oregon, Autzen Stadium, Eugene, OR |
| • German Village, Residential Mixed Use, Columbus, OH | • Wenaha Baker Schools, Theater, Baker City, OR | |
| • Victory Charter School, Performing Arts, Nampa, ID | • PDX Power Punch, Title Boxing Fitness, Portland, OR | |
| • Sprague High School, Salem, OR | | |



Erik J Geiger has designed and consulted on audio, video, and technical systems for over 20 years. He has served as an Audiovisual discipline leader and project manager, and carries a wealth of technical system consulting and design experience. Erik brings the heart of a teacher to every project, helping clients and end-users to understand a rapidly changing environment — having held a position at Columbia College, Chicago for many years.

Erik specializes in planning, budgeting and needs analysis studies for audiovisual and media technology-based systems, with a focus on facilities and infrastructure planning to provide life cycle value and long-term cost savings through accommodating future technologies, some of which may only be emergent.

Erik has designed large scale facility-wide audio, video and media distribution systems, leveraging IT network topologies and convergence, as well as high performance sound-reinforcement and large-scale video display systems, recording and media post-production facilities. He has designed interactive and collaborative communications environments, that both augment and move beyond the traditional audio and video conferencing space. He has worked on projects in healthcare, university, K-12 education, and corporate environments, along with auditoriums, convention centers and hospitality venues around the world.

When Erik isn't designing technical systems, he enjoys playing the piano, backpacking, cycling, and photography.

Professional Experience

- 2016-Present – Director of Audiovisual, ABD Engineering & Design, Inc., Portland, Oregon
- 2011-2016 – Senior Associate, Shen, Milsom & Wilke, LLC – Chicago, Illinois
- 2007-2014 – Adjunct Professor, Audio Arts & Acoustics, Columbia College – Chicago, Illinois
- 2009-2011 – Owner, Geiger Design Consultants – Chicago, Illinois
- 2004-2009 – Associate, Shen, Milsom & Wilke, LLC – Chicago, Illinois
- 1998-2004 – Arnold & O'Sheridan, Inc. – Madison, Wisconsin
- 1995-1998 – Hammel Green & Abrahamson, Inc. – Minneapolis, Minnesota

Professional Certifications and Memberships

- AVIXA (InfoComm International), Certified Technical Specialist
- CTS-D
- AVIXA (Infocomm) Infrastructure Standards working group

Education

- Mass Communications, University Of Wisconsin – Madison, Wisconsin
- Audio Recording and Production, Musicians Technical Training Institute – Minneapolis, Minnesota.

Project Experience

- | | | |
|---|---|--|
| • Portland Community College, Cascade Campus, Public Service Education Building, Portland, OR | • Moreland Presbyterian Church, Sanctuary, Portland, OR | • University of Montana, Early Childhood Education Center, Missoula, MT |
| • Oregon State University, Fairbanks Hall, Corvallis, OR | • Port of Vancouver, Commission Room, Vancouver, WA | • Muskegon Community College, Arts and Humanities, Theater Music and Art, Muskegon, MI |
| • North Eugene High School, Eugene, OR | • Clackamas Community College, Barlow Hall, Automotive, Oregon City, OR | • South Christian High School, Grand Rapids, MI |
| • City of Ukiah, Council Chambers, Ukiah, CA | • The University of Providence, Great Falls, University Center, Great Falls, MT | • University of Oregon, Autzen Stadium, Eugene, OR |
| • Kaiser Permanente, North Lancaster Medical Office Building, Salem, OR | • Central Michigan University, Center for Integrated Health Studies, Mount Pleasant, MI | |





Peter Allen is a senior acoustical engineer with a Master of Engineering degree in Acoustics and over 20 years of experience in the field of acoustics. Peter has been with ABD Engineering & Design since 2016 and provides consulting services on a wide-range of projects types, including education facilities, healthcare facilities, worship spaces, hotels, and multi-family housing, while also specializing in vibration testing and analysis.

Peter uses an evidence-based, data-driven approach to provide acoustical recommendations to clients. Whenever possible, his recommendations include multiple options to help clients meet their aesthetic and budgetary constraints. He has presented his work at various industry symposia as well as at the annual conference for the

Institute of Noise Control Engineering.

Prior to joining ABD, Peter worked as an acoustical consultant at Daly-Standlee & Associates for eight years, where he learned to apply his skills from a research environment to the field of acoustical consulting. He began his career at Southwest Research Institute (SwRI), where he worked for ten years. There, he managed technical projects in vibration analysis, noise control, and environmental testing for clients in the electric utility, telecommunications, aerospace, automotive, and building industries. He taught technical courses within the organization to further develop the skills of others in the organization.

In 2005, Peter obtained his Master's Degree of Engineering in Acoustics from Pennsylvania State University, and he has used his additional education to focus his efforts on the use of field testing and analysis to solve noise and vibration problems. In his personal time, Peter enjoys climbing, yoga, riding his motorcycle, and SCUBA diving.

Professional Experience

- 2016-Present – Senior Acoustical Engineer, ABD Engineering & Design, Inc., Portland, Oregon
- 2008-2016 – Senior Acoustical Engineer, Daly-Standlee & Associates, Portland, Oregon
- 1998-2008 – Senior Research Engineer, Southwest Research Institute, San Antonio, Texas

Professional Licenses and Memberships

- Acoustical Society of America
- Institute of Noise Control Engineering (INCE), Board-Certified Member
- National Council of Acoustical Consultants
- State of Oregon, Professional Engineer #84392PE

Education

- Master of Engineering in Acoustics, Pennsylvania State University, State College, Pennsylvania, 2005
- Bachelor of Science in Engineering, Electrical Emphasis, Texas Christian University, Fort Worth, Texas, 1998.

Project Experience

- | | | |
|---|--|--|
| • Beaverton Health & Science School, Beaverton, OR | • Oswego, OR | • Company, Packaging Area, Valley City, UT |
| • Jesuit High School, Portland, OR | • Ron Russell Middle School, Portland, OR | • TriMet, Columbia 10, Portland, OR |
| • Kaiser Permanente:
-Hybrid Operating Room, Clackamas, OR | • Tukes Valley K-8 School, Battleground, WA | • St John Fisher School, Gym Noise Isolation, Portland, OR |
| -Salmon Creek MRI, Vancouver, WA | • West End Surgical, Beaverton, OR | • Bendix, Relocation Noise and Vibration, Avon, OH |
| -North Lancaster MOB, Salem, OR | • Yates Pointe Mixed Use Development, Bend, OR | |
| -Clackamas Eye Care MRI, Happy Valley, OR | • Zoom+, Bridgeport Village Clinic, Portland, OR | |
| • Lakeridge High School, Lake | • USANA Sciences | |



Jeremy Bielecki is a Senior Acoustical Consultant with over 20 years of experience as a consultant, and as a project manager for over 300 building projects. Jeremy has worked in acoustics in the Midwest and Pacific Northwest on projects including healthcare, higher education, workplace, performance spaces, K-12 education, athletics, and multi-family residential.

Jeremy possesses a strong work ethic and creative problem solving skills that have served him and his clients well. Knowing he always wanted to be in engineering and involved with music, Jeremy found acoustics to be the marriage of the two. He gains tremendous satisfaction from being part of a project that starts with lines on a screen and words on a page, eventually becoming a physical space you live within, and get enjoyment from.

Over his career, Jeremy has developed expertise in performing field measurements, creating complex computer prediction models, and analyzing data and drawings to identify primary causes and contributors to noise and vibration problems. He also determines sound isolation ratings, HVAC system noise ratings, and room acoustic performance using reverberation time, acoustical clarity, and speech intelligibility metrics.

In his spare time, Jeremy is a skilled piano tuner and repair technician, musician, and coaches soccer and robotics. He also enjoys 3D printing, and cooking with his family.

Professional Experience

- 2022-Present – Senior Acoustical Consultant, ABD Engineering & Design, Inc., Grand Rapids, Michigan
- 2005-2022 – Acoustical Consultant, Kolano and Saha Engineers, Inc., Waterford, Michigan
- 2001-2004 – Acoustical Engineer, Michael R. Yantis Associates, Inc., Seattle, Washington

Professional Memberships

- Acoustical Society of America
- Institute of Noise Control Engineering (INCE)
- American Society of Testing and Materials
- National Council of Acoustical Consultants

Education

- Bachelor of Science in Mechanical Engineering, University of Michigan, Ann Arbor, 2000.

Project Experience

- | | | |
|--|--|---|
| • Munson Medical Center
Traverse City, MI | • *Michigan State University, East
Lansing, MI
Broad Art Museum
STEM Power Plant Renovation | • *Charles H Wright Museum
of African American History,
Detroit, MI |
| • *St. John Hospital, Detroit, MI | • *Henry Ford Community College,
Recording Studio, Dearborn, MI | • *Emagine Theaters, Royal Oak,
MI |
| • *Detroit Pistons Performance
Center, Detroit, MI | • *Kendall College of Art and
Design, Grand Rapids, MI | • *Residence Inn by Marriott,
Grand Rapids, MI |
| • *Greektown Casino Hotel,
Detroit, MI | • *Davidson Foundation
Development, Bloomfield Hills,
MI | • *Bharatiya Temple, Troy, MI |
| • *University of Michigan, Ann
Arbor, MI
Law School: Hutchins Hall,
Jeffries Hall
Student Union
Central Campus Recreation
Building
Beyster Building Addition
Munger Student Residences | • Romeo High School, Auditorium,
*Romeo, MI | • *The Mid: Co-Living, Detroit, MI |
| • *Central Michigan University,
Mount Pleasant, MI
Grawn Hall
Ronan Hall | • *Byron Center High School,
Byron Center, MI | • *New Beginning Baptist Church,
Waterford, MI |
| | • *Ann Arbor School of the
Performing Arts, Ann Arbor, MI | • *Cobo Center, Detroit, MI |
| | • *Toyota Technical Center, Quiet
Room, Ann Arbor, MI | • *Patrick V. McNamara Fitness
Center, Detroit, MI |
| | | • *Theodore Levin U.S.
Courthouse, Detroit, MI |

*Some project experience is prior to employment at ABD

Benjamin Wolf

Senior Acoustical Consultant
INCE Bd. Cert. bwolf@abdengineering.com



Benjamin Wolf is a Senior Acoustical Consultant with a Master of Science in Architectural Acoustics from Rensselaer Polytechnic Institute. He specializes in analysis and recommendations for the spaces and structures needed to provide acoustically effective and comfortable environments.

Ben joined ABD Engineering & Design, Inc. in 2016 after four years with Daly-Standlee & Associates. He has worked on architectural projects, including field testing of wall and floor/ceiling systems, HVAC noise analysis, the specification and design of acoustic partitions, and acoustical treatments in churches, movie theaters, offices, apartment buildings, hospitals, and schools. His environmental noise studies include mine and quarry sites, light rail, highway and roadway noise, along with power and industrial facilities.

Ben uses 3D acoustic modeling software to provide a detailed analysis and recommendations for room acoustics, sound distribution, and speech intelligibility. As part of his master's thesis, he modeled accurate acoustical representations of several famous music performance venues allowing musicians to hear their performance simulated in those spaces, in real time, as if they were standing on stage.

In his spare time, Ben plays bass trombone with a wide variety of local groups. He enjoys web design and recording live sound.

Professional Experience

- 2016-Present – Senior Acoustical Consultant, ABD Engineering & Design, Inc., Portland, Oregon
- 2012-2016 – Acoustical Consultant, Daly-Standlee & Associates, Portland, Oregon

Professional Memberships

- Acoustical Society of America
- ASTM International, E33 Committee on Building and Environmental Acoustics
- Institute of Noise Control Engineering (INCE), Board-Certified Member
- National Council of Acoustical Consultants

Education

- Master of Science in Architectural Sciences, Emphasis in Architectural Acoustics, Rensselaer Polytechnic Institute, Troy, New York, 2012
- Bachelor of Arts in Physics, Gustavus Adolphus College, St. Peter, Minnesota, 2011
- Bachelor of Arts in Music Performance, Gustavus Adolphus College, St. Peter, Minnesota, 2011.

Project Experience

- | | | |
|---|---|---|
| • South Cooper Mountain Apartments, Beaverton, OR | • Hermiston Schools (Theater Lane Elementary School, Rocky Heights Elementary School, High School Classroom Annex and CTE), Hermiston, OR | • Northwest Pipe Company, Open Office Acoustics, Vancouver, WA |
| • Wood Village Mixed Use, Wood Village, OR | • Dry Creek Landfill, Noise Study, Eagle Point, OR | • Columbia Shores Townhouses, Overlay Noise Study, Vancouver, WA |
| • Farmdale Apartments, North Hollywood, CA | • Kaiser Permanente, Sunnyside Medical Center, Clackamas, OR | • Wood Village Mixed Use, HUD Noise Study, Wood Village, OR |
| • L&M Industrial Fabrication, Lot Expansion Barrier Calculations, Tangent, OR | • United Natural Foods, Noise and Vibration Study, Ridgefield, WA | • Clackamas Federal Credit Union, Corporate Headquarters, Oak Grove, OR |
| • USANA Sciences Company, Packaging Area, Valley City, UT | • Threemile Canyon Farms, Generator Exhaust, Boardman, OR | |
| • TriMet, Columbia 10, Portland, OR | | |





Quincey Smail is a Senior Acoustical Consultant, with a Master of Engineering in acoustics from Penn State. Quincey's expertise includes acoustical design, modeling and testing to provide thoughtful recommendations for a variety of project types from residential and mixed use to K-12, higher education to healthcare, workplace, environmental, and industrial facilities. Quincey earned his Board Certification by the Institute of Noise Control Engineering (INCE) in 2022.

His projects include noise studies of manufacturing equipment in the US and Europe, car wash sites with residential adjacencies, and high-profile commercial locations.

Quincey's musical background has served him and his projects well in performance spaces including the Interlochen Center for the Arts, as well as other public and private music schools, music stores, event centers, plus the particular needs of worship spaces. Quincey is regularly called upon to assist with hotel acoustical needs during design and construction, along with post-occupancy needs. He has also worked with hospitals, hospice, counseling centers, dental offices, and residential healthcare to address FGI and HIPAA requirements.

In his free time, Quincey – a talented baritone – sings in community and church choirs. He can be found enjoying the Grand Rapids local craft-brewery and cocktail culture, trivia nights, and playing tabletop games.

Professional Experience

- 2016-Present – Senior Acoustical Consultant, ABD Engineering & Design, Inc., Grand Rapids, Michigan
- 2015-2016 – Lead Producer, Penn State University, State College, Pennsylvania
- 2012-2013 – Physics Lab Assistance, Central College Physics Department, Pella, Iowa

Professional Memberships

- Acoustical Society of America
- American Society of Testing and Materials
- National Council of Acoustical Consultants
- Institute of Noise Control Engineering (INCE), Board-Certified Member
- Boy Scouts of America, Eagle Scout

Education

- Master of Engineering in Acoustics, Pennsylvania State University, State College, Pennsylvania, 2016
- Bachelor of Arts in Physics, Minors in Mathematics, Music, and German, Central College, Pella, Iowa, 2013.

Project Experience

- | | | |
|--|--|---|
| • Public Museum, Grand Rapids, MI | • Riverview Church, Auditorium, Holt, MI | • Forslund Condominium, Impact Isolation, Grand Rapids, MI |
| • Courtyard Marriott, Detroit, MI | • 212 River Residential Mixed-Use, Holland, MI | • Domino's Pizza, Boardroom and Warehouse Open Office, Ann Arbor, MI |
| • Essity Operations Gennep, Netherlands | • Jefferson Lofts Condominium Association, Noise Isolation, St. Joseph, MI | • Interlochen Center For The Arts, Kresge Amphitheater, Interlochen, MI |
| • Tri County Area Schools, Cafetorium, Howard City, MI | • West Ottawa Public Schools, Performing Arts Center, Holland, MI | • Grand Valley State University, Product Design and Robotics Studio, Grand Rapids, MI |
| • Nestle Production Studio, Solon, OH | • Warner Norcross & Judd, Office Acoustics, Detroit, Grand Rapids, and Kalamazoo, MI | • Ford Motor Company, Conference & Event Center, Dearborn, MI |
| • Bendix, Relocation Noise and Vibration, Avon, OH | • Tommy Car Wash Systems, Car Wash Noise Study, Hudsonville and Flint, MI | • Opera Grand Rapids, Grand Rapids, MI |
| • Western Michigan University, Dunbar Hall, Kalamazoo, MI | | |
| • Western Michigan University, College of Aviation, Battle Creek, MI | | |





Iva Handley is a graduate of Rosenheim University of Applied Sciences in Germany, where she earned her bachelor's degree in engineering, with a focus on interior engineering.

Iva has since worked as an engineer in the building design field, both in Germany, and in the US. She is experienced in acoustical measurements of airborne sound, impact noise, equipment, construction, and traffic noise, as well as building enclosures and field reviews. She also brings a background in carpentry and metal work to her projects.

When Iva isn't out taking acoustical measurements, building acoustical room models, or writing engineering reports, you might find her brewing her own beer.

Professional Experience

- 2019-Present – Acoustical Consultant, ABD Engineering & Design, Inc., Portland, Oregon
- 2018-2019 – Building Science Engineer, EIT, RDH Building Science, Inc., Portland, Oregon
- 2015-2016 – Project Engineer, ig-bauphysik GmbH & Co. KG, Hohenbrunn, Germany

Education

- Bachelors of Engineering: Interior Engineering, FH Rosenheim: University of Applied Sciences (Germany), 2017
- Study Abroad Program, École Supérieure du Bois: Research Wood Science and Technology (France), 2014

Professional Certifications

- EIT Certification for Civil Engineering and Land Surveying in the State of Oregon

Professional Memberships

- Acoustical Society of America
- Institute of Noise Control Engineering (INCE)
- American Society of Testing and Materials
- National Council of Acoustical Consultants

Project Experience

- | | | |
|---|---|---|
| • Zoom+, Bridgeport Village Clinic, Portland, OR | • Chiller Noise Control, Portland, OR | • Oregon State University Cascades, AB2 STEM Building, Bend, OR |
| • Hillsboro School District, Mooberry Elementary School, Chiller Noise, Hillsboro, OR | • Oregon Humane Society, Portland, OR | • Silco Site Apartments, Portland, OR |
| • Godfrey Detroit Hotel, Detroit, MI | • Kaiser Permanente, Sunnyside Medical Center, Clackamas, OR | • Kaiser Permanente, North Lancaster Medical Office Building, Salem, OR |
| • Schirle Elementary School, Salem, OR | • United Natural Foods, Noise and Vibration Study, Ridgefield, WA | • University of Portland, Innovation Center, Portland, OR |
| • Treasury Resiliency Building, Salem, OR | • Sprague High School, Salem, OR | • Salem-Keizer Public Schools, South Salem High School, Salem, OR |
| • Victory Charter School, Performing Arts Center, Nampa, ID | • Northwest Pipe Company, Open Office Acoustics, Vancouver, WA | • Scioto Peninsula Apartments, Columbus, OH |
| • Hermiston Schools (Theater Lane Elementary School, Rocky Heights Elementary School, High School Classroom Annex and CTE), Hermiston, OR | • Legacy Health, Emanuel Medical Center and Progressive Cardiac Care Unit, Portland, OR | |
| | • Casino Road Office Building, Everett, WA | |





John Kramer is an acoustical consultant, with a Master of Architectural Engineering from University of Nebraska, Lincoln. John's passion for music and performing arts led to his interest in acoustics and helping to create efficient, comfortable, and healthy acoustical environments. John leverages his experience in acoustics and building systems with an applied background in noise and vibration control in his project work.

John has excelled with both professional and student design teams, including a 1st place finish in the 2020 ASHRAE Student Design Competition (System Selection). He has designed mechanical systems on projects including secure government facilities, corporate headquarters, large scale healthcare, and education. Since joining ABD, John has begun working on projects across the country from wind turbine noise studies to residential acoustics. John is building his experience with acoustically sensitive spaces including: Healthcare, K-12 Schools, Churches, Corporate Offices, and Social Halls, and is quickly developing as a consultant.

In John's spare time he enjoys playing guitar and singing, playing chess, collecting comic books, and is learning his way around West Michigan.

Professional Experience

- 2021-Present – Acoustical Consultant, ABD Engineering & Design, Inc., Grand Rapids, Michigan
- 2019-2021 – Mechanical Engineering Intern, HDR, Omaha, Nebraska

Professional Memberships

- Acoustical Society of America
- Institute of Noise Control Engineering (INCE)
- American Society of Testing and Materials
- National Council of Acoustical Consultants

Education

- Master of Architectural Engineering, University of Nebraska, Lincoln, NE, 2021.
- Bachelor of Science of Architectural Engineering, University of Nebraska, Lincoln, NE, 2020.

Project Experience

- | | | |
|---|--|--|
| • Oregon State University
Fairbanks Hall
Corvallis, OR | • Corewell Health Ambulatory
Grand Rapids, MI | • Kellogg's Headquarters
Battle Creek, MI |
| • Minot State University
Hartnett Hall
Minot, ND | • PeaceHealth Riverbend
Springfield, OR | • LinkedIn Detroit
Detroit, MI |
| • Sinclair Community College
Distance Learning
Dayton, OH | • Portland Providence Medical
Center Main Emergency
Department
Portland, OR | • Disability Advocates of Kent
County
Grand Rapids, MI |
| • Grand Rapids Community
College Secchia Institute for
Culinary Education
Grand Rapids, MI | • Interlochen Center for the Arts
Interlochen, MI | • Wolverine Worldwide Broadcast
Studio
Rockford, MI |
| • Oregon Health and Science
University Dispatch
Portland, OR | • Jackson Hole Classical Academy
New High School
Jackson Hole, WY | • Cannon Muskegon Noise Study
Muskegon, MI |
| | • Hudsonville Christian School
Hudsonville, MI | • Grand Rapids Public Museum
Grand Rapids, MI |
| | • Wheaton Academy
West Chicago, IL | • Southtown Guitar
Grand Rapids, MI |



Faulkner Bodbyl-Mast is an audiovisual and acoustical consultant, having earned a bachelor's degree in Sound Engineering, with a minor in Electrical Engineering. Faulkner is an AVIXA Certified Technical Specialist (CTS). You might work with him in either or both capacities at ABD.

Faulkner's interest in sound came from his passion for music. He started attending Grand Rapids Symphony Orchestra concerts as a child and developed as an instrumentalist through grade school and high school, picking up the euphonium and carrying it into college. Once exposed to electronic music, Faulkner's interest shifted from performance to technical arts. He combined his early musical training with technology and blossomed into composing, recording, and music production. Faulkner provided sound design for live theater productions and began 3D sound modeling to

create sound design for video games.

Acoustics and AV go together, as the inherent quality of the built environment is designed and tuned by engineering and supported and enhanced by the electronics. Faulkner notes the acoustics of a space and systems within it must compliment each other or they will undermine each other.

Aside from his work in acoustics and audiovisual design, Faulkner is passionate about music. Gifted in composing, performing, and recording electronic pieces, you might find his compositions on SoundCloud.

Professional Experience

- 2022-Present – Audiovisual & Acoustical Consultant, ABD Engineering & Design, Inc., Grand Rapids, Michigan
- 2022 - Acoustical Intern, Kirkegaard, Chicago, Illinois
- 2019-2022 – Media Assistant, Duderstadt Center, Ann Arbor, Michigan
- 2019-2022 – Audio Director, Composer, Sound Designer, Wolverine Soft Studio, Ann Arbor, Michigan

Professional Memberships and Certifications

- AVIXA (InfoComm International), Certified Technical Specialist
- CTS
- Audio Engineering Society
- American Institute of Architects, Professional Affiliate
- National Council of Acoustical Consultants

Education

- Bachelor of Science in Sound Engineering, minor Electrical Engineering, University of Michigan, Ann Arbor, 2022.

Project Experience

- | | | |
|---|---|---|
| • Hope College
Dewitt Center for Economics and Business, Holland, MI | • City of Troy Council Chambers
Troy, MI | • Amity Middle School and High School
Amity, OR |
| • Oregon State University
Fairbanks Hall
Corvallis, OR | • Portland Art Museum Rothko Pavilion, Portland, OR | • Spokane Pubic Schools
Lewis and Clark High School
Spokane, WA |
| • Oregon State University
Student Success Center
Corvallis, OR | • Rogue Credit Union Community Complex Sports and Events
Medford, OR | • NAMI Oregon
Portland, OR |
| • Columbia Gorge Community College Nursing SIM Lab
The Dalles, OR | • Wheaton Academy
West Chicago, IL | • Peace Church
Middleville, MI |
| • Hillsboro Civic Center
Hillsboro, OR | • St Paul Center
Steubenville, OH | • Gardens of Sun City Senior Living, Sun City, AZ |
| • Chehalem Cultural Center
Newberg, OR | • Ben Davis High School
Indianapolis IN | • Senior Living
Peoria AZ |
| | • Potter Elementary School
Flint, MI | • Happy Valley Library
Happy Valley, OR |
| | • Illiana Christian High School
Lansing, IL | |



Lauren Slattery is an acoustical consultant newly located in Portland, OR. She is a graduate of Belmont University where she earned her bachelor's of science degree in Audio Engineering Technology, with a Physics minor.

Lauren comes to ABD Engineering & Design directly from her internships at NASA Ames Research Center and NASA Marshall Space Flight Center, where she performed acoustical testing and assisted with acoustical aspects of aircraft, satellites, engines, and their components. Lauren is building her architectural acoustical experience through mentoring with ABD staff. She is proving to be a quick study and is taking on her own project work.

Lauren describes herself as outdoorsy and enjoys hiking, climbing, and kayaking. She loves road trips and travel, reading, and baking - especially pastries.

Professional Experience

- 2024-Present – Acoustical Consultant, ABD Engineering & Design, Inc., Portland, Oregon
- 2024 – Acoustic Support Intern, NASA Ames Research Center, Mountain View, California
- 2023-2024 – Acoustic Test Support Intern, NASA Marshall Space Flight Center, Huntsville, Alabama
- 2021-2024 – Audiovisual Technician, Columbus Zoo and Aquarium, Columbus, Ohio
- 2022 – School of Music Audio Crew, RF Technician, Stagehand, Belmont University, Nashville, Tennessee

Education

- Bachelors of Science: Audio Engineering Technology, Physics Minor: Belmont University, Nashville, TN, 2023

Professional Certifications

- ProTools User Certified
- Dante Certification 3

Professional Memberships

- Audio Engineering Society
- Women in Audio
- Acoustical Society of America
- Institute of Noise Control Engineering (INCE)
- American Society of Testing and Materials
- National Council of Acoustical Consultants

Project Experience

- | | | |
|--|---|---|
| • Oregon State University
Corvallis, Magruder Hall,
Corvallis, OR | • Colonia de Valle Prospero,
Affordable Housing,
Albany, OR | • Wind Tunnel Acoustic Data
Processing,
Mountainview, CA |
| • Sous La Rose Social Club and
Event Space,
Portland, OR | • RogueX Credit Union Community
Complex, Aquatics, Sports, and
Events Center
Medford, OR | • Ocean Way Recording Studios,
Final Recording Project for
Studio Recording II
Nashville, TN |
| • Micronesian Islander
Community's Voyagers' Village,
Affordable Housing,
Salem, OR | • Acoustic Test Stand Design,
Mountainview, CA | • Foley and ADR group recording
project
Nashville, TN |

Sound Advice

Independent Acoustical and Audiovisual Solutions



Acoustical Engineering and Audiovisual Design



ABD Engineering & Design is an independent engineering firm. Our services for healthcare, university, corporate, K-12 education, residential, hotels, restaurants, industrial and environmental needs include acoustical engineering for acoustical absorption, noise blocking, sound masking and audio-visual design solutions. We understand the challenges presented by HIPAA regulations, corporate brand standards, municipalities, owner-boards and other stakeholders. We provide expert acoustical solutions for new construction, remodeling, and retrofit projects.

Interior and Exterior Noise

We work with architects and engineers to design solutions to deal with Sound Isolation and Room Noise, plus Acoustical Finishes and Site Exterior Noise. We are experts at gathering the data on site or working from drawings to provide more comfortable rooms, more private spaces, and fewer distractions from mechanical or exterior noise.

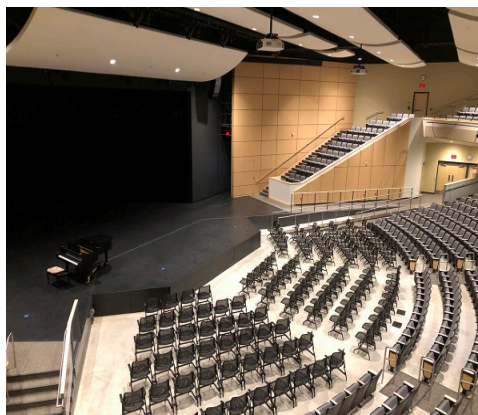
Audiovisual Design

We're experts at designing the demanding, audiovisual systems needed for healthcare training, and medical simulation (Med-Sim) environments, corporate and conference spaces, university education and performance spaces, as well as the infrastructure needs to support the technology. We start with a complete needs analysis to fully understand the project requirements along with the technical thresholds for the people who will use the spaces. We design based on simplicity of use and value to the user rather than equipment. AV systems are fully integrated with each other and with major building systems. We make sure

basic systems are designed for intuitive use without the need for specialized training but advanced enough for expert operations. Our clear delineation of scope and separate infrastructure bid drawings for the General Contractor, Electrical Engineer, MEPs, and structured cabling contractors saves time and money in the design and construction phases. Finally, specifying equipment at the last possible moment saves our clients from surprises and re-designs due to the ever-changing technical landscape. Altogether, saving you and your clients money and providing greater value.

BIM Design

Building Information Modeling (BIM) is an intelligent 3D modeling and database-based process that gives architecture, engineering, and construction (AEC) professionals the insight and tools to more efficiently plan, design, construct, and manage buildings and infrastructure. ABD's design professionals use BIM as a collaborative design process, not just a documentation tool, making use of Cloud-based resources for smoother real-time collaboration with our partners. Our team performs QA/QC within the model for accuracy beyond what appears on a drawing or sheet. We're using Revit families for better visualization. This helps our clients gain insight into system performance, loudspeaker coverage, projection system geometry, and sight lines. ABD's BIM process also provides more accurate coordination with other disciplines including MEPS, lighting, furniture, and specialty equipment.



Sound Isolation & Masking

Consulting in the design phase, we can attenuate interior noise to create more comfortable environments with appropriate PI (Privacy Index) ratings for

speech privacy. Achieving confidential and non-intrusive PI ratings for facilities integrating open and closed spaces requires sophisticated solutions. We assess and predict air-borne and structurally borne sound and provide impact insulation measures to absorb or block unwanted sound or cover it with electronic background sound-masking technology.

Noise & Vibration Control

We consult on building systems noise isolation and provide recommendations on placement of mechanical and electrical equipment to minimize background noise and vibration. We identify potential structural noise and vibration issues and advise on facilities design, placement, and construction to optimize environments for sensitive technology.

Exterior Noise & Vibration

We conduct site evaluations to diagnose, assess impact, and provide control solutions for facilities affected by noise and vibration from medical air transportation and landing pads, street traffic, industry, community, and other sources.

Objective Recommendations

As an independent acoustical and AV consulting firm, we have no affiliations with or affinity for any particular brands, products, technologies, or suppliers. We bring objectivity and unbiased recommendations that are best suited to your facility – procured through a competitive bid process to ensure superior designs at or below budget.

Experience

The ABD Engineering and Design team has extensive acoustical design and engineering experience. In addition, staff members have held teaching and research positions at various colleges and universities and regularly conduct educational seminars, conferences, workshops, and institutional training sessions on acoustics, and environmental noise and vibration control.



ABD Engineering & Design
Architectural Acoustics • AV Design • Noise & Vibration

Healthcare Projects

Project Name	Vancouver Clinic Expansion
Location	Vancouver, Washington
Year Completed	2019
Description	ABD Engineering & Design worked with ZGF Architects to provide complete acoustical consulting services for the Vancouver Clinic expansion at 3 locations.

- Salmon Creek: 100,000 SF
- Camas: 25,300 SF
- Ridgefield: 15,400 SF - which was named one of Vancouver's top projects of 2019.

Facilities include: Ambulatory Surgical Center (ASC), Musculoskeletal Center of Excellence, Physical Therapy, General Surgery Clinic, Urology Clinic, High Acuity Urgent Care, Imaging, Pathology, Family Practice (Primary Care) Clinic, and 24x7 Urgent Care.

The project utilized the on-stage/off-stage model to separate patient spaces from the common noise generating activities like supply delivery, alarms, and staff conversations. Patients enter exam rooms from one corridor, while care providers enter exam rooms from separate team workspace. To accomplish this, each exam room required two doors - which can be a potential sound isolation issue. ABD consultants recommended sliding doors with complete seals and added further modifications after construction to improve the noise isolation, without inhibiting the door operation.

Rooftop units placed directly over exam and team workspace areas were addressed with upgrades to the roof. Meanwhile, High Ceiling Attenuation Class (CAC) ceiling tiles were used inside help absorb mechanical unit noise and control sound within the space.



Healthcare Projects

Project Name	Yukon-Kuskokwim Health Dr. Paul John Calricaraq Center
Location	Bethel, Alaska
Year Completed	2019
Project Size	185,000SF - \$300,000,000
LEED	Designed to meet LEED Silver
Description	<p>Bettisworth North Architects hired ABD Engineering & Design for complete acoustical engineering services for the Yukon-Kuskokwim Health (YKHC) Dr. Paul John Calricaraq Center. The Paul John Calricaraq Project (PJCP) took input from local tribal leaders and residents to be sure the community values of sustainability and care were fully realized. YKHC is the principal healthcare organization responsible for the health and wellbeing of some 30,000 Alaska Natives from 58 tribes residing in the Yukon-Kuskokwim Delta's 50 villages, as well as Bethel's 6,000 residents.</p> <p>The project's remote location, approximately 50 miles upriver from where the Kuskokwim River flows into Kuskokwim Bay, and 400 air miles West of Anchorage, certainly posed a challenge. ABD's acoustical engineers conducted our work by teleconference/video-conference and email throughout the project. The location and weather conditions meant long lead times for mechanical equipment, which was a challenge in the design process. ABD analyzed the mechanical noise impact at multiple stages of the design process as each piece of equipment was specified and ordered. Recommendations were updated at each stage to meet the LEED and FGI guidelines.</p> <p>Along with designing to LEED Silver standards, ABD employed the Federal Guidelines Institute (FGI) guidelines for the design and construction of healthcare facilities, citing six distinct acoustical criteria for site exterior noise, acoustic surfaces, room noise levels, performance of interior wall and floor/ceiling constructions, speech privacy, and building vibration.</p>



Photo credit: Greg Kim/KYUK

Healthcare Projects

Project Name	Cleveland Clinic Richard E. Jacobs Health Center Tower Expansion
Location	Avon, OH
Year Completed	2016
Size and Cost	221,500 SF, \$143 Million
Description	ABD Engineering & Design provided comprehensive consultation for Architectural Acoustics including external freeway noise mitigation, room noise, sound isolation, and acoustical finishes, in compliance with the FGI Guidelines for Design and Construction of Healthcare Facilities, and LEED for Healthcare. Designed as a “hospital of the future,” Cleveland Clinic’s Avon Patient Tower expansion has 126 private hospital rooms, including a small intensive care unit which can be converted into an observation or a medical-surgical unit based on patient needs.

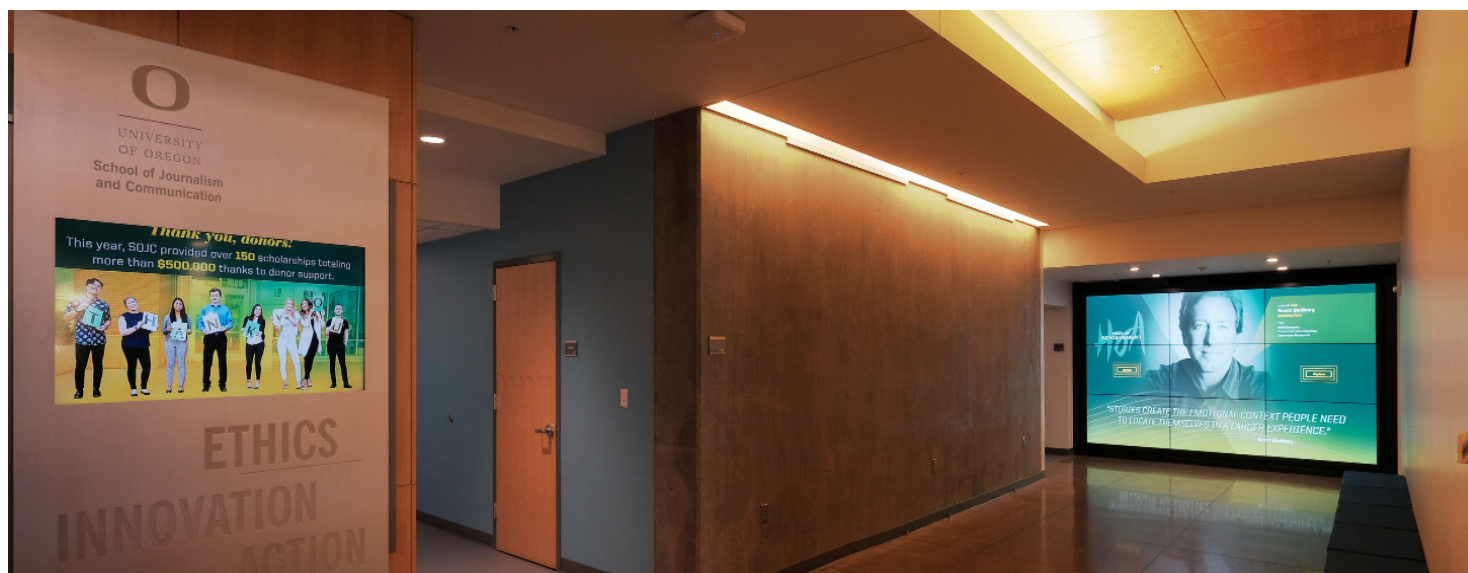


University Projects

Project Name	University of Oregon Allen Hall Experience Hub
Location	Eugene, Oregon
Size and Budget	18,000 SF \$3.2 million
Year Completed	2019

Description ABD Engineering & Design worked closely with PIVOT Architecture, and University of Oregon staff on the Allen Hall Experience Hub renovation. The facility is shared by different groups including: the School of Journalism and Communications, immersive media, games development, psychology and counseling, and traditional media faculty. The school demonstrated the need to replace the existing traditional broadcast studios with spaces for new and emerging media. ABD provided complete acoustical engineering, audiovisual design, and AV infrastructure design.

Tech-spaces included new broadcast suites, control room, podcast, digital media editing in conjunction with surround audio mixing, and a social media lab with real-time analytics monitoring, as well as host UC/web-conferencing and streaming applications on a large video-wall. Virtual Reality and Augmented Reality share space with collaborative games development. Common-area upgrades included the replacement of existing lobby signage, as well as a new wall-sized interactive display system to showcase significant alumni and donors.



University Projects

Project Name	University of Montana Early Childhood Education Center
Location	Missoula, Montana
Size	30,000 SF
Year Completed	2019

Description ABD Engineering & Design worked with OZ Architects on this University of Montana Early Childhood Education Center project for the Phyllis J. Washington College of Education and Human Sciences. ABD provided complete acoustical engineering and audiovisual design.

This expansion is adding approximately 30,000 SF and creates space for three fast-growing departments within the College of Education, additional classroom space, additional preschool space, and a multi-use auditorium space.

The program includes: Two preschool classrooms designed for observation by Early Childhood Education students, an additional seminar room for use by Early Childhood Education students, technology classroom, small and large counseling offices, shared seminar rooms (divisible into 2 spaces), Montana Digital Academy, auditorium (divisible into 2 spaces)

While each room had its own needs for acoustics and audiovisual details, the owner specifically requested a gesture-controlled Interactive Digital Wall, similar to the one we designed for the University of Michigan Schembechler Hall.



University Projects

Project Name	University of Connecticut Hartford Downtown Hartford Times Building
Location	Hartford, Connecticut
Cost and Size	\$70 million, 232,000 SF
Year Completed	2017
Description	<p>The University of Connecticut – Hartford Downtown campus serves over 3,000 students in the historic Hartford Times building and addition.</p> <p>Robert A.M. Stern Architects (RAMSA) hired ABD Engineering & Design to address the Room Acoustics, Noise Isolation and Speech Privacy, and Mechanical Noise Control throughout the project.</p> <p>ABD followed the BIM (Building Information Modeling) process with the architect, other consultants, and contractors to maintain efficiency of planning and construction along the way.</p> <p>Our work on the project included complete acoustical engineering and consulting for the entire structure of 6 floors plus basement mechanical spaces, divided between approximately 140,000 SF of new construction and 90,000 SF of historic preservation renovation. The completed project consists of the student center, commons, cafe, conference and meeting rooms, classrooms, the STEM program, study rooms, labs (including state-of-the-art computer labs), lounges, the President's and Directors' offices, along with department and administrative offices, and a Veterans' Oasis lounge.</p> <p>In April, 2018 the project was awarded a Connecticut Preservation Award of Merit from the Connecticut Trust for Historic Preservation. This award honors outstanding efforts in building preservation, enhancement of historic places as well as excellence in adaptive re-use of historic buildings, preservation of neighborhoods, and restoration of cultural landscapes.</p>



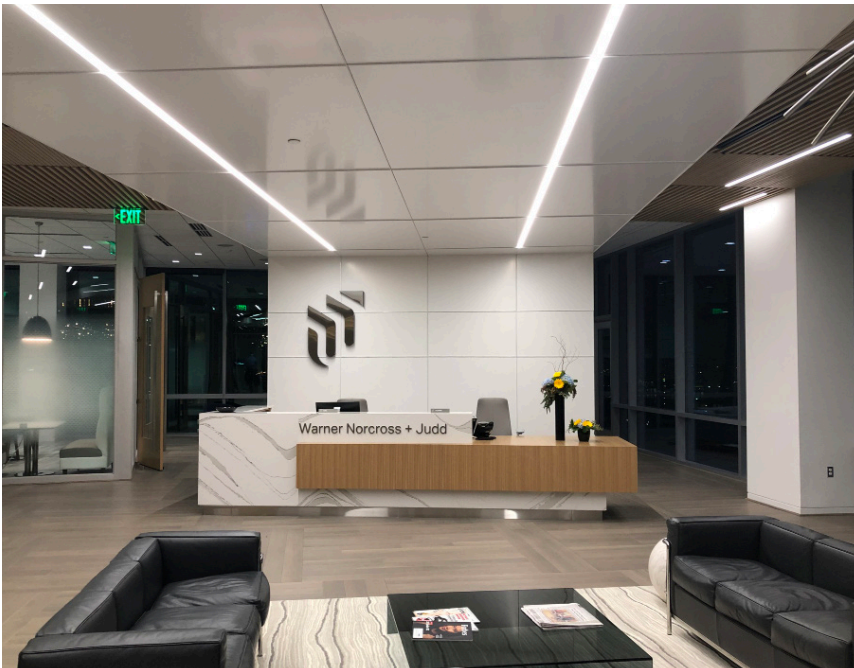
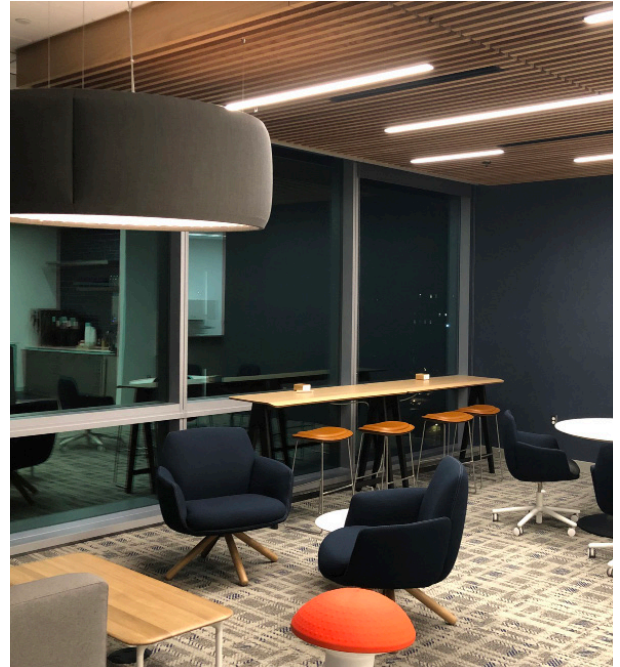
Legal Offices

Project Name **Warner Norcross + Judd**

Locations Detroit, Michigan
Grand Rapids, Michigan
Kalamazoo, Michigan

Year Completed Grand Rapids: 2019

Description Warner Norcross + Judd occupies the 15th floor of the Warner Building (a 15-story mixed-use tower) in the heart of Grand Rapids, along with other locations throughout Michigan. The offices have an expectation of general privacy plus confidentiality for legal matters. ABD Engineering & Design has enjoyed a long-lasting partnership with WNJ on a variety of individual projects, and has worked with them on the construction of the new offices as well as renovations. ABD's services have included: noise studies, room acoustics, noise isolation, mechanical noise control, and the design of AV and sound-masking systems.



Corporate Headquarters

Project Name **Acuity Insurance**

Size and Budget Nearly 1 Million SF, Over \$100 Million

Location Sheboygan, Wisconsin

Year Completed 2016

Description ABD Engineering & Design worked with Eppstein Uhen Architects to design complete Acoustical Consulting, along with Audio-Video and Conference Room Technology for the Acuity Insurance corporate headquarters. Our Professional Engineers developed room acoustics, noise isolation, and mechanical noise control solutions to provide a pleasant working environment, even in the 85' high atrium. Our AV designers designed state-of-the-art technology systems for the high-end demands of the corporate environment, and followed up with complete system testing and commissioning throughout the facility.





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OF ARCHITECTS
AIA Building Award Winner

Corporate Projects

Project Name **Lowe Campbell Ewald**

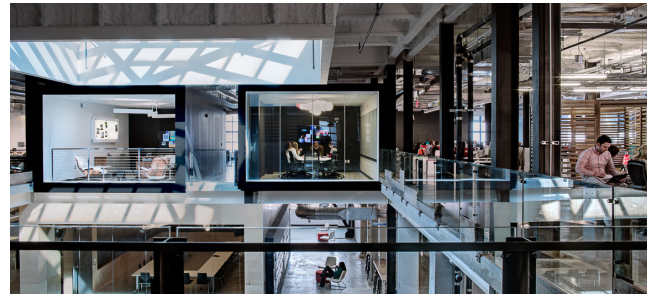
Architect Neumann/Smith Architecture

Location Detroit, Michigan

Project Size 121,000 SF

Year Completed 2014

Description A creative space for a creative company. Neumann/Smith Architecture helped advertising agency, Lowe Campbell Ewald, breathe new life into a 100-year old building, setting a precedent for repurposing long vacant Detroit buildings, shining the light on historic preservation and anchoring the creative sector's place as a strong economic engine for Detroit. ABD Engineering & Design provided complete acoustical measurements and design including room acoustics, open office acoustics, and sound masking. This melding of architectural acoustics and design shows how you can have a space that sounds as good as it looks.



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Performing Arts School

Project Name **Interlochen Center for the Arts Music Center**

Location Interlochen, Michigan

Project Size & Cost 65,000 SF, \$24 million

Year Completed 2019

Description ABD Engineering & Design worked with Cornerstone Architects to develop complete acoustical recommendations for the state-of-the-art Music Center.

The Music Center includes a variety of acoustically critical listening spaces: teaching studios, practice and ensemble rooms, recording studios and rehearsal spaces. Recommendations for reverberation time, isolation, and background noise extended into classrooms, and offices.

"The new Music Center provides the opportunity to incorporate 21st century expectations into our already rich music curriculum. ... Music students will have even greater success and Interlochen as a whole will be able to expand offerings and enhance the curriculum."

- Camille Colatosti, Provost, Interlochen Center for the Arts



Theater

Project Name **Hale Centre Theatre and Proscenium Thrust Stage**

Location Sandy, Utah

Size 1000 Seats + 500 seats

Opening September 2017

Description ABD Engineering & Design's Professional Engineers developed recommendations for acoustical treatment, along with construction materials and methods to provide an acoustically rich and pleasing environment.

The Hale Centre Theatre's Centre Stage Theatre is set in the round for an old-world feel, with new-world design, while the Jewel Box Stage (proscenium thrust) provides a more intimate experience.

ABD Engineering & Design performed an environmental study to help anticipate the noise and vibration from the highway adjacent to the theater, and followed up with complete room acoustics, noise isolation, and mechanical noise control for the theater and proscenium thrust stage. The theater has a complicated system of lifts, positioned in close proximity to the audience, which required extensive noise and vibration mitigation.

Photos courtesy of Hale Centre Theater.



University Projects

Project Name	Grand Rapids Community College Albert P. Smith Music Center and Linn Maxwell Keller Performance Hall
Location	Grand Rapids, Michigan
Year Completed	2017
Description	<p>The original building was constructed in 1922 and served as a physical education facility for Strong Junior High School, and then Grand Rapids Junior College. It was first renovated for use by the Music Department in 1980. This latest renovation includes a new 100-seat performance space (The Linn Maxwell Keller Performance Hall) with flexible seating and stage, recording studio, private studios, teaching studios, practice rooms, classrooms, and an informal gathering and study area.</p> <p>ABD Engineering & Design worked with AECOM to provide complete acoustical analysis of existing spaces marked for re-use and a variety of new spaces. The design required engineered recommendations for Room Acoustics, Noise Isolation, and Mechanical Noise Control specifically tuned for performance, and teaching. Our consultants created designs to handle the demanding acoustical needs of spaces that would be in constant flux – changing from one use to another throughout the day, and throughout the year.</p>



K-12 Project

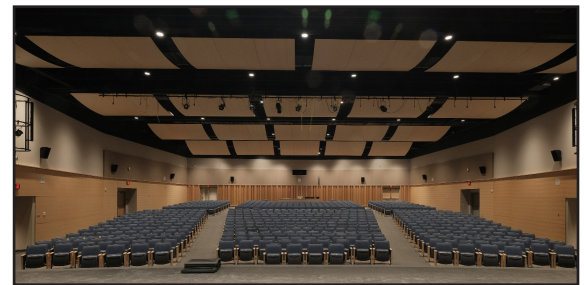
Project Name **Sam Barlow High School**

Location Gresham, Oregon

Year Completed 2020, 181,000 SF, \$290-million
Size and Budget

Description ABD Engineering & Design worked with Opsis Architecture and the Gresham-Barlow School District to provide acoustical and audiovisual design of Sam Barlow High School.

The school focuses on STEM and Career Technical Education (CTE) with a new science wing and maker spaces. The project covered AV and acoustics for the stadium, classrooms, labs, administration and guidance. The performing arts center includes a teaching theater (blackbox), chorus and band rooms, plus a full auditorium.



K-12 Private School

Project Name **South Christian High School**

Location Byron Center, Michigan

Year Completed 2019

Description ABD Engineering & Design partnered with AMDG Architects to develop acoustical and audiovisual designs for this new campus.

The school includes 56 classrooms, performing arts center around a 1,100-seat auditorium featuring fixed and flexible seating and balcony, commons, STEM classrooms and labs, industrial arts, competition/performance gymnasium, along with administrative spaces.

South Christian High School offers classes for nearly 700 students from 9-12th grades. SCHS is affiliated with Moline Christian School, Byron Center Christian School, Dutton Christian School, Legacy Christian School, all of which provide K-8 Education



K-12 Performing Arts

Project Name **La Porte High School
Performing Arts Center**

Location La Porte, Indiana

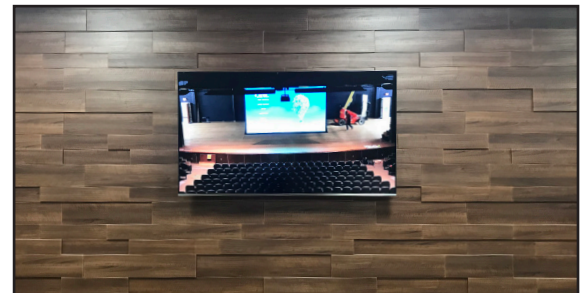
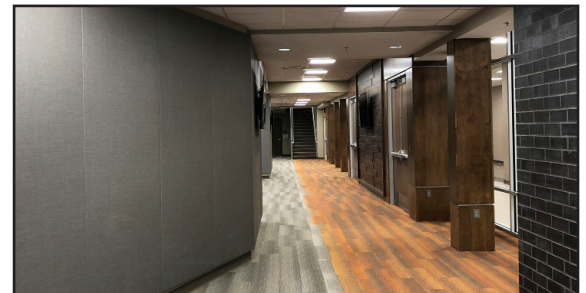
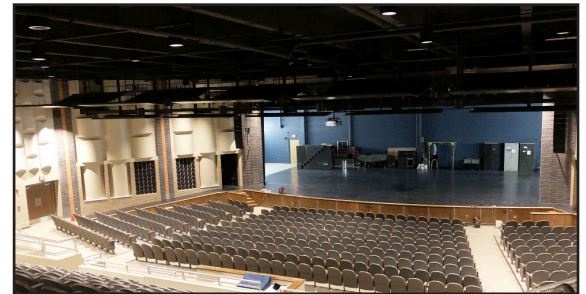
Year Completed 2018

Description ABD Engineering & Design worked with Schmidt Architects on complete acoustical consulting and audiovisual design for this auditorium and support spaces renovation project.

Rotating an existing auditorium 90 degrees to provide a wider approach to the stage comes with a unique set of challenges. Add to that a fixed ceiling height requiring creative solutions to the performance space.

Back of house and lobby audio and video systems were added to allow patrons and backstage personnel alike to see and hear stage activities.

The acoustical materials and audiovisual systems blended seamlessly into the modern and durable design.



Transportation Projects

Project Name **TriMet MAX Light Rail Warning Bells**

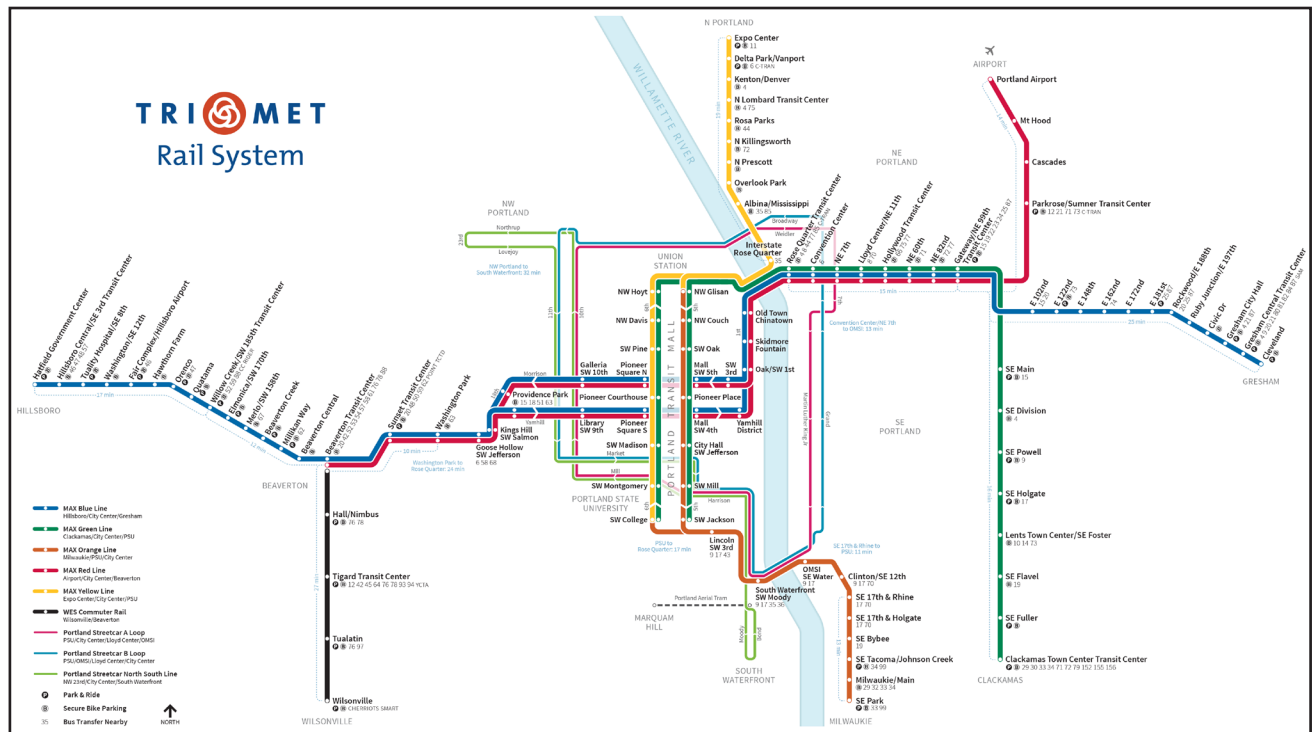
Location **Portland, Oregon**

Size **40 Locations**

Completed **2018**

Description Beginning with measurements taken in 2015, ABD Engineering & Design worked with TriMet to conduct sound measurements of warning bells at MAX Light Rail pedestrian crossings. When it was discovered that the bells were not at a consistent sound levels, and usually so loud that the neighbors were disturbed, ABD developed recommendations for adjusted sound levels from the bells. The warning bells needed to be loud enough for public safety but as quiet as possible for neighbors, and needed to be consisted throughout the system.

Measurements and modifications were made at representative locations throughout the light rail system. ABD helped TriMet establish a specific noise criteria specification through extensive lab and field testing. The new levels are now consistent across different street and intersection types, providing louder and softer bell sounds depending on the relative activity at the intersections.



Industrial Projects

Project Name **Ferris State University
Swan Engineering and Technical Arts Building**

Location Big Rapids, Michigan

Cost and Size \$30 Million - 77,400 SF (30,300 SF addition)

Year Completed 2016

Description ABD Engineering & Design was hired by architectural firm Neumann/Smith Architecture to design comprehensive Acoustics, Audio, Video, IT, and Digital Signage systems for this engineering and technical arts facility of the future.

Photos are pre-renovation



Industrial Projects

Project Name **Ridgeview Industries**

Location Grand Rapids, Michigan

Size 304,920 SF

Completed 2014

Description ABD Engineering & Design worked with A.M.D.G. Architects, Inc., to design comprehensive architectural acoustics in the Ridgeview Industries Corporate Headquarters. The office, common areas, and manufacturing facility were designed to flow together as much as possible. The plans included a gymnasium, cafeteria, commons area, and exercise room, as well as a waiting room and meeting room. The facility houses everything from loud sports activities to sensitive office conversations, all under the same roof. To make the challenge greater, the new space would be added onto an existing manufacturing facility, sharing a load-bearing wall.

ABD worked to develop an intricate plan for addressing the multiple acoustical issues. We made recommendations for construction features that would lower the reverberation time in the larger spaces, like the gym, and café, while raising the sound isolation in the smaller spaces, like the waiting room and meeting room. Our design provided Ridgeview Industries with the proper amount of acoustical treatment to meet their needs for years to come.

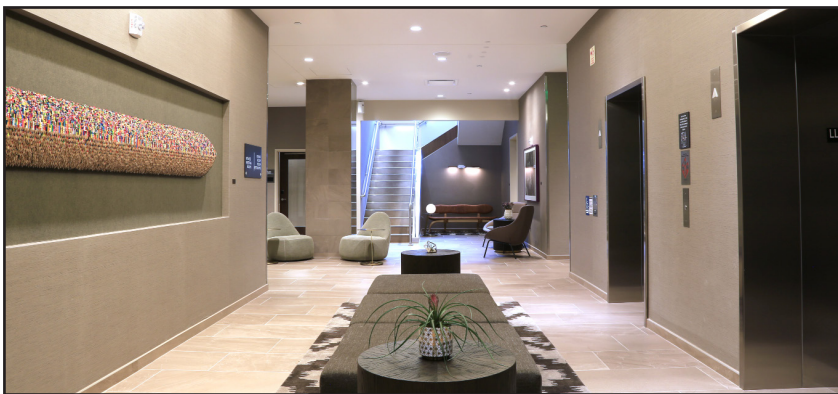


Photos courtesy of A.M.D.G. Architects.



Hotel

Project Name	Marriott AC Hotel Portland Downtown
Location	Portland, OR
Year Completed	2017
Description	ABD Engineering & Design worked with SERA Design and Architecture and Motenson Construction to provide confirmation noise isolation and impact insulation testing to verify the quiet and comfort of this beautifully designed downtown hotel.



Corporate Retreat Center

Project Name **Herman Miller Marigold Lodge**

Location Holland, MI

Year Completed 2017

Description GMB Architecture + Engineering hired ABD Engineering & Design to provide acoustical consulting for the special needs of this historic Gold family waterfront home - turned corporate residential conference center. Of utmost importance was to have as little impact as possible on the architectural details, while still providing a comfortable acoustic atmosphere.



Brew-Pub Restaurants

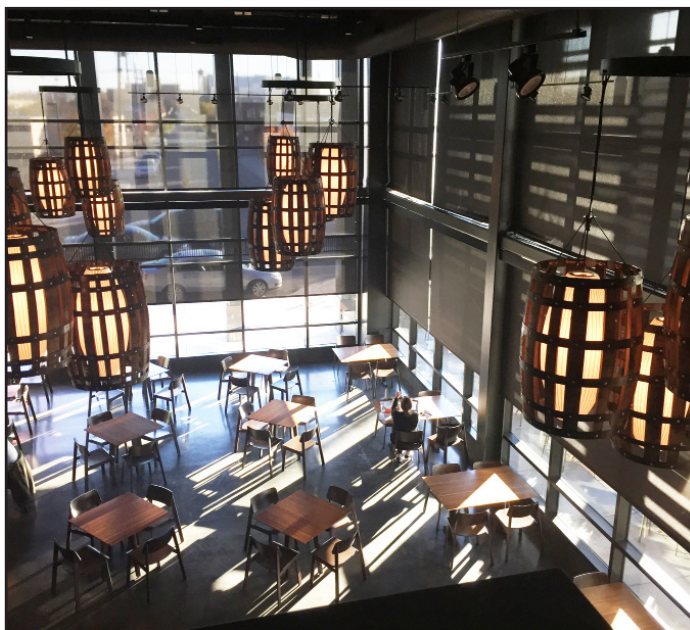
Project Name **New Holland Brewery - Grand Rapids**

Location Grand Rapids, Michigan

Year Complete 2016

Description Rockford Construction Co., Inc., and Architects, Fishbeck, Thompson, Carr & Huber, Inc., brought ABD Engineering & Design on as Acoustical Consultants for this brew-pub restaurant. The different spaces, including an indoor beer hall, outdoor beer garden, dining, and whiskey bar, each have a different atmosphere with unique acoustical needs.

ABD Engineering & Design consultants modeled the spaces and provided recommendations for designs and acoustical treatments to achieve the "Stop, Taste" goals of New Holland Brewery's first expansion. The site is also home to a mixed use office, retail, and residential development requiring noise isolation and building systems noise control. ABD also provided AV systems programming for the displays and audio systems throughout.



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