


# ACOUSTICS

FOR THE BUILT ENVIRONMENT



CSDA | DESIGN  
GROUP



*“Sound is an element too often forgotten when designers and owners visualize a building, but acoustics are just as important as what we can see and feel.”*

– Randy Waldeck, PE, LEED® AP, Principal Acoustician





ARCHITECTURAL ACOUSTICS



ENVIRONMENTAL/  
TRANSPORTATION NOISE



SOUND INSULATION



*“CSDA has demonstrated to be quite a team player with great communication skills, professionalism, and responsiveness in assisting me in my role with implementing the noise monitoring requirements for the Universal Studios Specific Plan.”*

– Robert Glaser, Principal Planner, County of Los Angeles, CA

# ARCHITECTURAL ACOUSTICS



Academic  
Civic and Public Institutional  
Commercial  
Data Centers  
Entertainment and Leisure  
Healthcare  
Industrial  
Master Planned Communities  
Mixed-Use  
Performing Arts  
Places of Worship  
Restaurants  
Retail  
Single- and Multi-Family Residential  
Senior Housing  
Sports Facilities  
Student Housing  
Theater



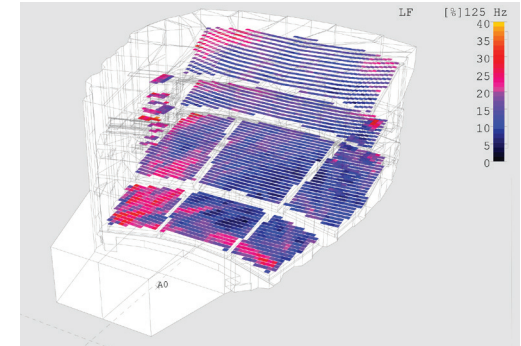


## ARCHITECTURAL ACOUSTICS

CSDA carefully considers a building's location, function and aesthetics in designing acoustical solutions that are within an owner's budget. We have collaborated on new construction, expansions, restorations, and renovations for a wide range of building types, including high-performance and sustainable structures.

**We provide developers, planners, schools, architects, engineers, and owners with:**

- Recommendations for room shaping, acoustical finishes, and sound isolation
- Design review and acoustical input on building plans and specifications
- Coordination, calculations, and documentation for LEED acoustics credits
- Construction site visits and measurements
- Three-dimensional modeling and graphics for agency/user presentations



*Interior computer model of a 2,100 seat multiuse concert hall, used to develop recommendations for acoustical treatment and room shaping.*

ENVIRONMENTAL/  
TRANSPORTATION NOISE



Aircraft  
Construction  
Central Plants  
Equipment Yards  
Helicopter  
Industrial Facilities  
Rail  
Vehicle







## ENVIRONMENTAL/TRANSPORTATION NOISE

By necessity, transportation systems are placed near population centers. The resulting noise and vibration may adversely impact the quality of life for nearby residents and the surrounding communities. Government agencies are well aware of these environmental impacts and have set regulatory compliance standards to ensure community wellbeing.

**CSDA works with planners, engineers, and project managers to meet regulatory requirements for noise by providing:**

- Environmental noise and vibration studies
- Noise barrier and building envelope design
- General plan noise element updates
- Noise and vibration measurements/monitoring



*Three-dimensional noise model provides an accurate visual “heat map” of project noise levels*

SOUND INSULATION



- Apartments
- Churches
- Civic Institutions
- Community Centers
- Condominiums
- Educational Facilities
- Hospitality
- Nursing Homes
- Retirement Homes
- Single-Family Homes





## SOUND INSULATION

In an effort to address noise concerns, the federal government has funded programs to retrofit impacted properties with architectural solutions aimed at achieving acceptable interior noise levels. These retrofits reduce speech interruption and sleep disturbance in homes and improve learning environments in schools. We respectfully work with each community to provide acoustical solutions that offer healthier, more comfortable environments.

### **We have earned a reputation for excellence in the following:**

- Acoustical design and measurements
- Agency audits
- Architectural design
- Construction and contract document development
- Construction administration and inspection support
- Community outreach/collateral materials
- Data management systems
- Program management
- Technical and administrative staff support

## NOTABLE PROJECTS



Kids' Country Theater and  
Science Center

Los Angeles County High School  
for the Arts Black-Box Theater

Ravenswood Family Health Center

UCLA Medical Center  
Kidney Transplant Suite

Stanford University Hospital Helipad

Stanford Linear Accelerator

360 Spear Street Data Center

Universal Studios Sound Monitoring

6701 Shellmound Mixed-Use

Artisan Way Residences

Metro Purple Line/Westside Subway

BART Silicon Valley Berryessa Extension  
Residential Noise Insulation Program

General Mitchell International  
Airport Noise Program

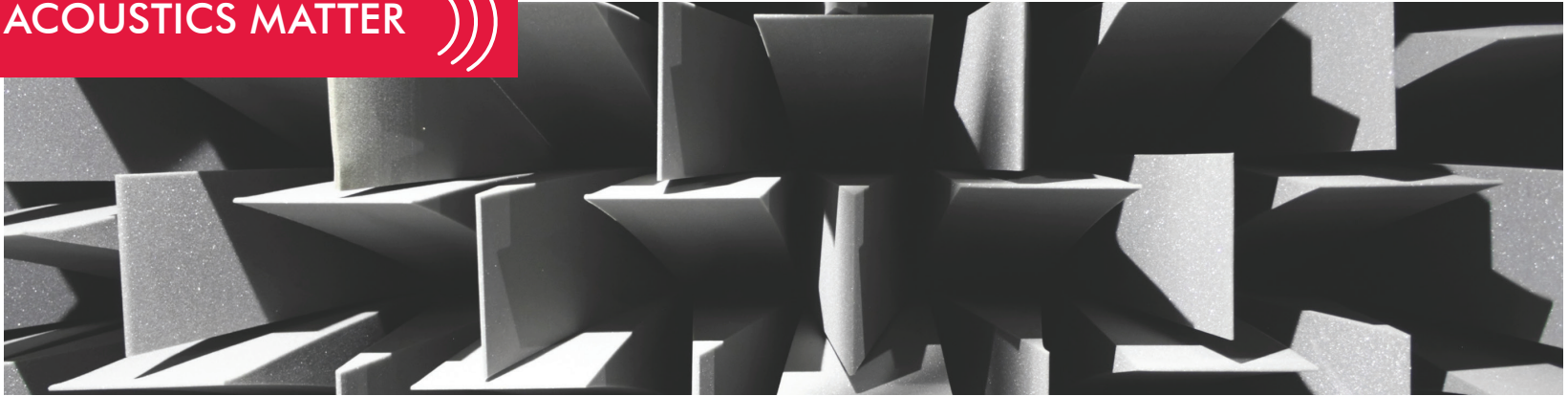
Los Angeles World Airports (LAWA)  
Residential Soundproofing Program

Norman Y. Mineta San Jose Intl. Airport  
(SJC) Acoustical Treatment Program

Phoenix Sky Harbor Intl. Airport (PHX)  
Sound Mitigation Services



ACOUSTICS MATTER



Randy Waldeck, principal and founder of CSDA's acoustics practice, has traveled all over the U.S. to measure, model, analyze, and develop acoustical solutions to mitigate and control environmental, mechanical and occupant noise. A third generation engineer, Randy has been working with clients to provide sound solutions for the built environment for more than a decade.



## ABOUT CSDA DESIGN GROUP

CSDA Design Group (CSDA) is an architectural and engineering firm with 55 professionals practicing in San Francisco, Los Angeles, San Diego, and Milwaukee. Founded in 1952, we specialize in acoustics and educational facility planning and design. We collaborate with clients to develop cost-effective acoustical solutions that provide healthy environments and meet regulatory requirements and community expectations.

## HOW TO REACH US



RANDY WALDECK, PE, LEED® AP  
Principal of Acoustics

475 Sansome Street  
Suite 800  
San Francisco, CA 94111

[D] 415.321.1145  
[E] [rwaldeck@csdadesigngroup.com](mailto:rwaldeck@csdadesigngroup.com)

ANAT GRANT, LEED® AP BD+C  
Director of Acoustics

4061 Glencoe Avenue  
Suite B  
Marina del Rey, CA 90292

[D] 310.301.4781  
[E] [agrant@csdadesigngroup.com](mailto:agrant@csdadesigngroup.com)