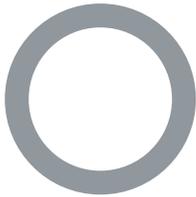


Orfield Laboratories Inc



Office and Laboratory in Minneapolis, Minnesota, USA



Design / Research / Testing

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Orfield Laboratories, Inc. is a multi-disciplinary laboratory serving North American and international clients. Providing services in Acoustics, Vibration, Vision, Lighting, Architecture, and Market Research, Orfield is unrivaled in the extensive use of objective and subjective methods, offering design, research and testing services and solutions for corporate and architectural clients since 1971.

Sophisticated laboratory testing in combination with diagnostic analysis and consumer-based research allows Orfield Laboratories to accommodate a full range of testing, research and assessment needs in product and architectural markets. The firm's projects and research have been broadcast on television and featured in the Wall Street Journal, Architecture, Sound & Communications, Sound & Vibration, Lighting Design + Application, Contract, and Appliance Manufacturer.

The staff of Orfield represents a broad set of professional backgrounds in Physics, Acoustics, Audio & Video Engineering, Lighting & Building Performance, Market Research, Psychology & Philosophy. The specialized laboratories provide one of the most qualified levels of service, facilities and expertise found anywhere.

Clients

3M Company
American Airlines
Ariens Company
Armstrong World Ind.
Atlas Soundolier
ATS Medical
Black & Decker
Blue Cross
Bridgestone/Firestone
Briggs & Stratton
Burger King Corporation
Draper Screen
Federal Signal
GE Appliances
GN Netcom
Graco
Harley Davidson
Illinois Tool Works
J.I. Case
Jenn Aire
Kohler Company
Marquette University
Maytag Corporation
Mayo Clinic
Medtronic
MN World Trade Conference Center
Muzak, Inc.
Navistar International
Northwest Airlines
Opus Corporation
Panasonic
Sears
Select Comfort Corporation
Sharp Electronics
Skyline Displays
Sony Corporation
Starkey Laboratories
Taliesin Associated Arch
Thermo King
Toro Company
Unisys Corporation
Wenger Corporation
Whirlpool Corporation
Yamaha Corporation

Staff Affiliations

ASA
IES
AES
ASTM
ANSI
IFMA
SID
ARVO
OSA
HFS
CIE

O V E R V I E W

Acoustics/Vibration & Sound Quality Group



Acoustic Holography System

From fundamental acoustical and vibration testing to advanced acoustical research, design and sound quality assessment, Orfield has been a leading-edge resource since the early 1970's.

Orfield introduced the advanced measurement of consumer response into the realm of product and architectural acoustics in 1991 with the founding of the Sound Quality Working Group. Orfield Laboratories has also introduced such new acoustical measurement technologies as sound intensity and acoustic holography. Known for advancing American industries' concept of sound quality, Orfield has impacted both the acoustical engineering and perceptual market research disciplines. Annual training seminars in sound quality analysis are conducted for the engineering and marketing staffs of numerous Fortune 500 companies.

The NVLAP accredited acoustics labs at Orfield include three reverberation rooms and a full anechoic chamber which are used for certified, standardized ASTM, ISO, ANSI and SAE consumer, industrial, product and architectural materials testing. Complimenting Orfield's outstanding facility and staff is one of the most comprehensive collections of high quality acoustical test instruments in private consulting in the USA. Consisting primarily of Brüel & Kjær instruments, the collection includes precision analyzers, measurement microphones, accelerometers, software and accessories to offer testing for virtually limitless laboratory, field and research capabilities.

Projects for Clients



Project
In The Ear Music Monitoring Study

Project
Headset Measurement Study

Client
The Steve Miller Band

Client
G. N. Netcom

Vision & Lighting Group



Visual Performance Laboratory

Natural and artificial lighting provide light to see visual tasks, yet few designers or researchers consider the characteristics of the visual system in their work. Orfield has been a leader in developing visual task solutions in architecture and product development which achieve higher visual task performance and lower visual stress.

In assessing viewer response, the approach at Orfield Laboratories is to define and evaluate the effect of visual task variables such as viewing orientation, field luminance, glare, and masking illumination in order to provide correlations between these objective measures and subjective performance and preference rankings of viewers as the basis for visual design solutions.

From an early emphasis on the architectural lighting and daylighting fields, Orfield Laboratories has evolved to become a source of leading-edge research measurement technology. In collaboration with the National Research Council of Canada, Orfield was the first consulting user of a measurement system called video photometry. Measurement assessments often consider the visual task, the visual environment and the illumination sources.

In addition to architectural lighting, Orfield Laboratories performs research and design in the areas of industrial and inspection lighting, display systems and their "visual intelligibility," information and behavioral analysis of signage systems, viewer detection & recognition performance and forensic visual performance analysis.



Project
Automotive Inspection Lighting Research

Project
Our Lady of Hope Church, Chicago

Client
Automotive Manufacturer

Client
Opus Corporation Architects

Our Business Groups | Facilities | Projects for Clients

Architectural Technology Group



Acoustic Simulation Laboratory

In 1971, Orfield Laboratories began to provide services in architectural consulting including research, design, and testing of acoustical and lighting performance for the "landscaped office", now known as the open plan office. In order to establish definitions of performance in these environments, Orfield Laboratories incorporated advanced analytical & subjective measurements to derive solutions to office performance problems. This research has been translated into building performance approaches in acoustics, lighting, daylighting, audio-visual systems, thermal environment and human factors and to the founding in 1998 of the Open Plan Working Group which consults nationally in reintroducing open plan technologies to the design and facilities community as well as providing perceptual market research on the future of the open plan office.

Orfield Laboratories is currently one of the most comprehensive independent laboratories, specializing in architectural acoustics & vibration, audio-visual systems, lighting, daylighting, thermal environment and human occupancy requirements. The integration of human perception data into the design process elicits unequaled results in building performance as perceived by the occupant and as measured by technology.

Orfield has decades of experience on projects such as industrial, institutional, commercial, educational, athletic, religious, civic, performing arts, corporate, studio and training facilities and also provides legal and environmental assessment within each discipline.



Project
Minnesota World Trade Conference Center

Client
Minnesota World Trade Board

Project
Monona Terrace Community and Convention Center by Frank Lloyd Wright

Client
Taliesin Associated Architects

Perceptual Market Research Group



Studio Auditorium

Orfield Laboratories Perceptual Market Research methodology provides a consumer-based market research process to a broad base of corporate and architectural clients who would otherwise use conventional market research or planning processes.

This scientific perceptual market research process serves such industries as the automotive, appliance, consumer product, yard product, heavy equipment, tool, aircraft, hearing aid, medical and communications retail markets.

Orfield provides assessment of sound and visual quality, visually inferred performance, thermal, vibrational, tactile, comfort quality, human interface and environmental quality. The Orfield jury process is a quantitative perceptual market research process performed using consumer group or individual behavioral experiments. Analytical measurements are typically correlated with subjective consumer response to provide engineering definitions of market research results. The Sound Quality Working Group, founded by Orfield Laboratories in 1991, was developed solely to educate product engineering and marketing staffs in the fields of acoustic perception and cognition.

This perceptual market research method is unique to Orfield and has had a profound effect on the process of marketing and product development in the USA and abroad by providing opportunities for major corporations and design firms to lead their industries in the development of new paradigms in product and environmental quality.



Project
Automotive Sound Quality Research

Client
3M Company



Project
Marquette University Performance Auditorium

Client
Opus Corporation Architects