

Group One Acoustics Inc.

Terry Medwedyk[†]

1538 Sherway Drive, Mississauga, Ontario, Canada L4X 1C4

Résumé

Groupe One Acoustics est un cabinet de consultants et de design spécialisé dans l'acoustique architecturale. Lors de l'établissement en 1983 l'objectif principal était la conception des installations pour les studios d'enregistrement de musique, la postproduction audio et de l'industrie du film. Dès le début des années 1990, le portefeuille de projets a commencé à inclure les théâtres, les églises et les salles de cinéma maison. L'étendue de travail varie de simple modification de studio jusqu'à la conception complète d'installations polyvalentes.

Mots-clés: acoustique, musique, studios d'enregistrement, salles de spectacles

Abstract

Group One Acoustics is a design and consulting firm specializing in architectural acoustics. When established in 1983 the primary focus was facility design for music recording studios, the post audio and film industry. Beginning in the early 1990's, project began to include theatre, churches and home cinemas. Work scope varies from alterations of single studio rooms to complete design of multi-purpose facilities.

Keywords: acoustics, music studio's,

1.0 Introduction

GOA Inc. is operated by Terry Medwedyk whose work background began in recording studios in the late 1970's to early 1980's. Early work included some live performance mixing. Knowledge gained from years of field experience in a variety of environments; has been the primary education. Though the majority of work is in southern Ontario, project locations include India and North America

1.1 Group One's Clients

The client's include Canadian Broadcasting Corp. (CBC), Technicolor Inc., Corus Entertainment, Bell Media Metalworks Recording, Noble Street. Studios, Humber College, Sheridan College, Hope Fellowship Church, the Stratford Shakespeare Festival, Lawrence Park Community Church, the Meeting House, St. Leo's Parish, Dalhousie University, and the Kwanlin Dunn Cultural Centre.

1.2 Services

Group One's services include site evaluation, facility planning, acoustic design and room plan, noise control, construction details, acoustic measurements and analysis.

1.3 Project Range

The range of projects vary across music recording, post audio studios, control rooms and mix theatres, radio and broadcast facilities, private home studios, home cinemas, churches and performance spaces.

2.0 Selected Projects

2.1 CBC

Involvement began in 1993 with acoustic upgrades to select class 'A' control rooms at CBC's Toronto facility. Following these alterations the work expanded to 16 additional Radio and TV division audio control rooms and studios. Uses of rooms ranged from music recording, post audio studios, music and film mix control rooms and a Foley studio. Alterations focused on interior acoustics - some moderate, and others more extensive - in response to client requirements at the time. Consultation and design services were also provided to several new and existing control rooms/studios across Canada. One of the final projects was the redesign of studio 'Q' in Toronto.

2.2 Metalworks Recording Studio's – Mississauga

Metalworks has been, for many years, primarily a top music recording facility with its history beginning in 1979. In 2006 the studio expanded to include an Audio Institute. The total facility is approximately 15,000 sq.ft. Studios 1 to 6 occupy 9,500 sq.ft and the remaining 5,500 sq.ft is occupied by Metalworks Institute's lecture rooms, audio suites and sound stage.

Group One Acoustics' involvement included design of Control room, Studios 2 and 6 and the institute's audio suites. Control room 2, a 400ft² music mix control room and its 250 sq.ft studio, were originally designed in 1988 and recently altered with a refreshed interior design. Original design challenges included noise control

considering the condition of the base building concrete slab and space planning within an existing floor plan. Studio 6 (550 sq.ft) and its control room (600 sq.ft) were designed in 2001. The control room side view window design allowed the front speakers of its 5.1 system, to be at the ear level plus allow use of a projection screen. All front wall speakers are flush mounted and both control rooms are fitted with retractable video screens.

2.3 Noble Recording Studios, Toronto

The 6,000 square foot music recording complex is located in the west end of the city. In addition to being bordered by streetcar and railway lines, another issue was its proximity to the Canadian National Exhibition that hosts a three day Indy race event plus a three day air show. The Studio A portion of the building was constructed from the ground up and houses a 525 sq.ft Control room A, a 120 s.ft booth, a 1,100 sq.ft Studio A, sound locks, a full kitchen and large lounge area. There is a mezzanine level for offices and a composing suite. Studio B is on the second floor of an existing two story building.

Studio A room was built as an independent shell within the building resting on a 7" concrete slab with spring isolators. Perimeter dead loads were critical thus the 19' high walls are load bearing metal framing with four layers of boarding, supporting the studio ceiling which spans 35'. A feature of studio A is the 8' x 14' area of skylights with 3/4" thick laminated glass, each section staggered in height. The interiors are a blend of geometry, absorptive and diffusive surfaces coordinated with Hvac systems and a 14' wide retractable screen. Control A is also built as an independent shell isolated from the base slab and supporting a joist isolation ceiling. The interior floor includes extensive wire troughs and rests on its own isolator pads. Side view windows from the control room to the main studio and booth were designed to allow the main front speakers to be at the ear level. Control Room B (325ft²) and its booth (100ft²) are in a self contained area with its own lounge (which can double as a production space) and kitchen. Due to dead load limitations in the B section of the building, extensive use of Roxul in select ceiling and wall area's combined with limited boarding was used with success in regards to noise control.



Figure 1: Noble Recording Studio.

2.4 Kwanlin Dunn Cultural Centre – Whitehorse

KDCC is a First Nations complex that includes a museum, meeting rooms and two convention halls. The larger of the two spaces known as The Longhouse (6,400 sq.ft with a 30' ceiling) exhibited an RT60 at 500 Hz of 2.7sec. The Multi-Purpose room (2,000 ft with a 25' ceiling) had an RT60 at 500 Hz of 2.2 sec. Work involved acoustic assessment and recommendations for HVAC noise and interior acoustics. Issues were not limited to the RT60; HVAC levels were NC 35-39; exhaust fans from the adjacent kitchen to the Longhouse were NC46 in the hall.

The original acoustic treatments were 3/8" hardboard with 1/4" diameter holes on 4' centers, mounted on a 2" thick spacing frame along the long walls. The end or short walls were wood boarding directly on the partitions. The underside of ceiling is exposed wood planks and beams; floors are hardwood on concrete. Several solutions were proposed to the client but interior appearance was a strong driving element. Thus the final solution needed to remain a hard wood surface with vertical lines. New perforated wood finish panels (10% to 18% perforation) were arranged to fit the same wall area as the previous panels, but were mounted on slight angles. Cavities were light filled with insulation. Ceiling treatment was similar with new perforated panels covering approximately 25% of the ceiling area. End walls are to eventually have a portion devoted to First Nations emblems on fabric panels. Results have been extremely favourable with alterations to mechanical completed and a reduced RT60 of 1.4 at 500 Hz, with some treatments remaining to be completed.



Figure 2: Kwanlin Dunn Cultural Centre.