

Broadcast, Recording & Film Studios



Radio, Television and Film Studios are designed to meet the exacting requirements of broadcast and recording environments. The sound of the voice must be faithfully reproduced without interference from external or internal noise sources, and without colouration from unwanted sound reflections or reverberation.



Acoustical Design of Television, Radio, Film and Audio Studios

For more than 40 years, BKL Consultants Ltd. has provided an integrated package of sound isolation, noise control and room acoustics for private and public broadcast and recording studios, as well as TV and film (movie) sound stages throughout Western Canada. Our design team has the multi-disciplinary expertise to provide the best possible acoustical design package for new construction or renovation of your studio.

The Importance of Acoustics

Excellence in sound quality and room acoustics is fundamental to the successful operation of studio facilities. The success of building broadcast and film studios requires judicious implementation of many aspects of acoustical design, including:

Noise Isolation

The single most important design element for broadcasting and recording studios is that they are QUIET. Noise from sources external to the building, such as aircraft, trains and road traffic, and noise from adjacent spaces of both similar and dissimilar use, must be adequately controlled. This requires careful design of separating partitions to meet the requirements of the broadcast and recording industry. We can provide acoustic design advice on the complete noise isolation of a studio, including isolated walls, floors, ceilings, doors and windows. In exceptional cases, for example where studio buildings are located close to environmental noise sources such as underground railways, the whole building can be designed to be constructed on vibration isolation bearings.

Ambient Noise Control

Ambient noise within studios must also be kept at very low levels. Primarily, this means sufficient silencing of air supply and exhaust systems, low duct velocities and selection of low noise grilles and diffusers. However, this is not the only consideration. Noise from sources of structure-borne noise throughout the building such as mechanical equipment, elevators and plumbing must also be very well controlled.

Reverberation Control

Room acoustics is critical to the studio environment. Special attention must be paid to the design of the room in order to keep the reverberation time short and within very close tolerances. We help by providing construction assembly details for support of bass response, and balanced room decay by selection of suitable sound diffusing and sound absorbing surfaces. We also provide guidance on relative room dimensions and on the control of reflections that would degrade the sound quality and imaging of the control room monitor loudspeakers. Fixtures and fittings can also be detrimental to studio sound quality. They should be sufficiently rigid, and fixed firmly in place, to prevent any rattle or buzz, and should be adequately damped to eliminate ringing when acoustically excited. Special attention should also be paid in the selection of lights, dimmer switches and switching power supplies, all of which can generate low level hum or whines that are audible in the low noise studio environment.

Site Services

The careful design of broadcast and film studios does not guarantee the successful provision of a high quality product to the client. Many of the acoustically critical construction and assembly details are not fully appreciated by the tradesmen on site. We can make thorough site inspections during the construction stage of a studio project to ensure that the design details are being implemented properly by the sub-trades. This is the most critical aspect of studio construction. Time spent on site by the acoustic consultant during construction can save a great deal of time spent on diagnostic investigation if commissioning tests show a failure to meet the contract specifications.