



Noise in Condos, Apartments & Townhomes



What types of noise concerns can an acoustical consultant help with?

- **Noise transfer between units:** *speech, TV, music, footsteps, or “banging” noises through walls and floor-ceiling partitions.*
- **Noise and vibration transfer from mechanical and electrical systems:** *mechanical equipment (pumps, chillers, cooling towers) and electrical equipment (generators, transformers) can generate noise that disturbs living spaces.*
- **Noise from amenities or commercial areas:** *fitness centres, business centres, retail spaces, etc. can generate noise that disturbs residential areas of a building.*
- **Noise from the outside:** *traffic, railways, aircraft, and industrial noise sources can affect noise-sensitive residences.*

Why is acoustics important?

- Acoustics is a fundamental aspect of how we experience a space. This especially applies to our residence, which should be the most comfortable, enjoyable, and private space possible.
- Noise disturbances in multi-residential developments can be caused by several factors and may constitute a breach of codes, regulations, and/or bylaws.

Many noise regulations and guidelines may apply to condos, apartments, and townhomes:

- Ontario Building Code
- Tarion requirements (newer condos)
- ASHRAE guidelines
- Municipal bylaws
- Environmental noise regulations
- Condo bylaws

How can KTD Acoustics help?

- **Design-phase work:** Work with architects and developers to design a multi-residential facility to avoid noise complaints.
- **Evaluating noise complaints:**
 - 1) Determine the cause(s) of the noise disturbance(s). This includes a site visit and may require noise measurements.
 - 2) Identify applicable codes, standards, and regulations to determine if there is a breach.
 - 3) Review information and identify remedial measures. This may include design, construction, and administrative measures.
- **Free consultations:** call us today.



The Three Main Aspects of Acoustics Design

Sound Isolation

Minimizing noise transfer between spaces, including in custom homes, multi-residential, and commercial developments.

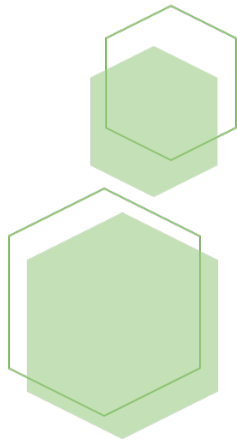
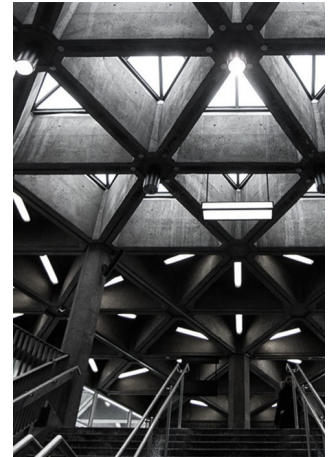
Application examples:

- Between residential units
- Between special-purpose or amenities spaces and residences
- Between private offices or clinics
- From outside to inside

Design considerations:

- Composition of partitions
- Construction deficiencies
- Flanking paths, including at junctions and service penetrations
- Glazing and door selections

Relevant acoustical parameters: (A)STC, NIC, (A)IIC, OITC, Rw



Room Acoustics

Designing for interior sound quality and comfort, including for speech intelligibility and music vibrance.

Application examples:

- Offices (private or open) and boardrooms
- Music rooms and home theaters
- Classrooms and lecture halls
- Performance venues

Design considerations:

- Room geometry and volume
- Surface finishes
- Location of occupants and sound source(s)
- Background noise

Relevant acoustical parameters: NRC, SAA, RT60, STI, NC, RC

Mechanical Noise Control

Reducing noise and vibration transfer from mechanical and electrical equipment, including HVAC and plumbing noise.

Application examples:

- Airborne noise from HVAC and plumbing systems
- Structure-borne noise from equipment vibrations

Design considerations:

- Composition of partitions
- Duct silencers, acoustical louvers
- Vibration isolation mounts
- Duct and piping layout

Relevant acoustical parameters: NC, RC, IL, SEL

KTD Acoustics offers free initial consultations for every project. Whether your project is a single family custom home, a commercial building with retail and office spaces, or an educational institution, we are happy to chat about how to make it a success – to deliver spaces that not only look beautiful, but sound exceptional.