



DISTRICT PLAN CHANGE 23

CENTRAL AREA NOISE INSULATION RULES

FEBRUARY, 2004

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The Wellington City District Plan is proposed to be amended as follows:

3.10 Definitions

Add the following definitions to section 3.10 - Definitions:

EXTERNAL SOUND INSULATION LEVEL ($D_{nT,w} + C_{tr}$): means the standardised level difference (outdoor to indoor) and is a measure of the airborne sound insulation provided by the external building envelope (including windows, walls, ceilings and floors where appropriate) described using $D_{nT,w} + C_{tr}$ as defined in the following Standards:

ISO717-1:1996¹ *Acoustics – Rating of Sound Insulation in Buildings & Building Elements* using spectrum No.2 (A-weighted traffic noise spectrum).

ISO 140-5:1998 *Acoustics - Measurement Of Sound Insulation In Buildings And Of Building Elements Part 5: Field Measurements Of Airborne Sound Insulation Of Facade Elements And Facades.*

The term “external sound insulation level” is used in this Plan primarily as a calculated value to demonstrate compliance with the stated minimum standard of acoustic isolation against sounds arising from outside the building. If field testing of built structures is employed to verify predictions, these tests shall be carried out using ISO 140-5:1998 *Acoustics - Measurement Of Sound Insulation In Buildings And Of Building Elements Part 5: Field Measurements Of Airborne Sound Insulation Of Facade Elements And Facades.*

HABITABLE ROOM: in any of the categories of activity referred to in the definition of ‘noise sensitive activity’, means a space within a building that is commonly associated with domestic living, but excludes any bathroom, laundry, water-closet, pantry, walk-in wardrobe, corridor, hallway, lobby, clothes-drying room, any room in an early childhood centre not used for sleeping, or other space of a specialised nature occupied neither frequently nor for extended periods of time.

NOISE SENSITIVE ACTIVITY: means

- € any residential activity
- € any hotel, motel or other premises where residential accommodation for five or more travellers is offered at a daily tariff or other specified time
- € early childhood centres

¹ This Standard is also known as AS/NZS1276.1:1999 *Acoustics-Rating of sound insulation in buildings and of building elements Part 1: Airborne sound insulation*

12.2 Central Area Objectives and Policies

Amend the first paragraph in the explanation for Policy 12.2.2.3 as follows:

Peace and quiet are particularly important for people's well-being. For this reason specific rules in the District Plan aim to avoid, remedy or mitigate the adverse effects of noise between properties within the Central Area and nearby Residential Areas.

Noise levels are nonetheless designed to allow most activities to occur. Noise sensitive activities (including residential ones) may wish to establish in the Central Area but the designers, developers and users of these will need to be aware that higher noise levels are allowed within the Central Area than would normally be provided to adequately protect, say, residential activities. Designers and developers also need to be aware that the wide range of permitted activities in the Central Area may lead to higher noise levels in locations where noise levels may currently be quite modest.

Consequently, specific rules have been included into the District Plan to ensure designers, developers and users of the noise sensitive uses provide for appropriate levels of insulation to buildings to stop possible higher levels of noise from causing intrusion. These acoustic insulation requirements have been purposefully applied across the entire Central Area in order to ensure adequate acoustic protection in the future where permitted activities on any site may be quite different from today.

Chapter 13 – Central Area Rules

Rule 13.1.1 (Permitted Activity Rule)

Amend the second paragraph of the explanation to Rule 13.1.1.1 (Noise) to read:

These noise limits apply to all other sites in the Central Area including sites used for residential purposes for which no stricter emission controls shall be applied. Acoustic insulation is required for noise sensitive activities in buildings within Central Areas to mitigate the potential adverse effects on such uses in accordance with rule 13.1.2.12.

Add the following new permitted activity condition and associated explanation to Rule 13.1.1:

13.1.1.10 Noise Insulation

13.1.1.10.1 Any **habitable room** in a building used by a **noise sensitive activity** shall meet the acoustic insulation requirement set out in Rule 13.1.2.12.

New noise sensitive activities moving into existing buildings within the Central Area are required to meet the standards that would apply if the building was built for that purpose.

Rule 13.1.2 (Permitted Construction Rule)

Add the following new permitted activity condition to Rule 13.1.2:

13.1.2.12 Noise Insulation

Any **habitable room** in a building used by a **noise sensitive activity** within the Central Area shall be protected from noise arising from outside the building by ensuring the **external sound insulation level** achieves the following minimum performance standard:

$$D_{nT,w} + C_{tr} > 30 \text{ dB}$$

Compliance with this performance standard shall be achieved by ensuring habitable rooms are designed and constructed in a manner that:

- ∄ accords with the schedule of typical building construction set out in Appendix 9;
- or**
- ∄ accords with an acoustic design certificate signed by a suitably qualified acoustic engineer stating the design as proposed will achieve compliance with the above performance standard.

Ventilation

Where bedrooms with openable windows are proposed, a positive supplementary source of fresh air ducted from outside is required at the time of fit-out. For the purposes of this requirement, a bedroom is any room intended to be used for sleeping. The supplementary source of air is to achieve a minimum of 7.5 litres per second per person.

Add a new explanation section as follows:

Acoustic insulation is required for noise sensitive activities in buildings within the Central Area to mitigate the potential adverse effects on such uses and to lessen the potential for constraint that such uses can place on typical business and commercial activities commonly associated with the central city. The ventilation requirement for bedrooms is required to ensure noise attenuation is not compromised if compliance with the requirements of the Building Code (G4) for natural ventilation is achieved by installing openable windows. The required airflow level is based on the minimum standard for habitable spaces set out in NZS 4303.

Rule 13.3.1 (Discretionary (Restricted) Activity Rule)

Add “**13.3.1.7a noise insulation**” as a new criterion to Rule 13.3.1

Add “13.3.1.7a” to the first bullet point under the heading “*Non-notification*”.

Add a new assessment criterion 13.3.1.15 as follows

13.3.1.15 Noise insulation

- 13.3.1.15.1 Whether the likely exposure to noise will lead to an unreasonable level of health or amenity for occupiers of the building.
- 13.3.1.15.2 Whether the habitable rooms are located, orientated or designed in such a way which would make insulation to the required standards unnecessary.
- 13.3.1.15.3 Whether the development is likely to lead to potential conflict with typical business and commercial activities commonly associated with the central city.
- 13.3.1.15.4 Whether the building is a listed heritage building and the extent to which it is practicable to insulate to the required standard without compromising the heritage significance and fabric of the building.

Normally insulation to permitted activity standards will be required throughout the Central Area, however Council accepts that there may be some situations (e.g. in locations adjacent to some residentially zoned areas where the long term noise environment is likely to remain quiet or for the renovation of heritage buildings) where it can be demonstrated that full compliance with the insulation standard may not be necessary or practicable.

Rule 13.3.2 (Discretionary (Restricted) Construction Rule)

Add “**13.3.2.8a noise insulation**” as a new criterion to Rule 13.3.2.

Add “13.3.2.8a” to the first bullet point under the heading “*Non-notification*”.

Add a new 13.3.2.18 as follows:

13.3.2.18 Noise insulation

- 13.3.2.18.1 Whether the likely exposure to city noise will lead to an unreasonable level of health or amenity for occupiers of the building.

- 13.3.2.18.2 Whether the habitable rooms are located, orientated or designed in such a way which would make insulation to the required standards unnecessary.
- 13.3.2.18.3 Whether the development is likely to lead to potential conflict with typical business and commercial activities commonly associated with the central city.
- 13.3.2.18.4 Whether the building is a listed heritage building and the extent to which it is practicable to insulate to the required standard without compromising the heritage significance and fabric of the building.

Normally insulation to permitted activity standards will be required throughout the Central Area, however Council accepts that there may be some situations (e.g. in locations adjacent to some residentially zoned areas where the long term noise environment is likely to remain quiet or for renovation of heritage buildings) where it can be demonstrated that full compliance with the insulation standard may not be necessary or practicable.

Chapter 13 Appendices

Add the following schedule as Appendix 9 to Chapter 13:

APPENDIX 9 - NOISE INSULATION CONSTRUCTION SCHEDULE

(the schedule describes the minimum requirements necessary to achieve an external sound insulation level of $D_{nT,w} + C_{tr} > 30$ dB)

Building Element	<u>Minimum</u> Construction Requirement	
External Walls of Habitable Rooms	<u>Stud Walls:</u>	
	Exterior cladding:	20 mm timber or 9mm compressed fibre cement sheet over timber frame (100 mm x 50 mm). 1
	Cavity infill:	Fibrous acoustic blanket (batts or similar of a minimum mass of 9 kg/m ³) required in cavity for all exterior walls. Minimum 90 mm wall cavity.
	Interior lining:	One layer of 12 mm gypsum plasterboard. Where exterior walls have continuous cladding with a mass of greater than 25 kg/m ² (e.g. brick veneer or minimum 25 mm stucco plaster), internal wall linings need to be no thicker than 10 mm gypsum plasterboard.
	Combined superficial density:	Minimum not less than 25 kg/m ² being the combined mass of external and internal linings excluding structural elements (e.g. window frames or wall studs) with no less than 10 kg/m ² on each side of structural elements.
	<u>Mass Walls:</u>	190 mm concrete block, strapped and lined internally with 10 mm gypsum plaster board, or 150 mm concrete wall.

<u>Glazed Areas of Habitable Rooms</u>	Glazed areas up to 10% of <u>floor</u> area:	6 mm glazing single float
	Glazed areas between 10% and 35% of <u>floor</u> area:	6 mm laminated glazing
	Glazed areas greater than 35% of <u>floor</u> area:	Require a specialist acoustic report to show conformance with the insulation rule.
Frames to be aluminium window frames with compression seals.		
<u>Skillion Roof</u>	Cladding:	0.5 mm profiled steel or 6 mm corrugated fibre cement, or membrane over 15mm thick ply, or concrete or clay tiles.
	Sarking:	17mm plywood (no gaps).
	Frame:	Minimum 100 mm gap with fibrous acoustic blanket (batts or similar of a mass of 9 kg/m ³).
	Ceiling:	Two layers of 10 mm gypsum plaster board (no through ceiling lighting penetrations unless correctly acoustically rated). Fibrous acoustic blanket (batts or similar of a minimum mass of 9 kg/m ³).
	Combined superficial density:	Combined mass of cladding and lining of not less than 25 kg/m ² with no less than 10 kg/m ² on each side of structural elements.
<u>Pitched Roof</u> (all roofs other than skillion roofs)	Cladding:	0.5 mm profiled steel or tiles, or membrane over 15mm thick ply.
	Frame:	Timber truss with 100 mm fibrous acoustic blanket. (batts or similar of a minimum mass of 9 kg/m ³) required for all ceilings.
	Ceiling:	12 mm gypsum plaster board.
	Combined superficial density:	Combined mass with cladding and lining of not less than 25 kg/m ² .
<u>Floor</u> areas open to outside	Cladding:	Under-floor areas of non-concrete slab type floors exposed to external sound will require a cladding layer lining the underside of floor joists of not less than 12 mm ply
	Combined superficial density:	Floors to attain a combined mass not less than 25 kg/m ² for the floor layer and any external cladding (excluding floor joists or bearers).
<u>External Door</u> to Habitable Rooms	Solid core door (min 25 kg/m ²) with compression seals (where the door is exposed to exterior noise).	

Notes:

- € 1The table refers to common specifications for timber size. Nominal specifications may in some cases be slightly less than the common specifications stated in the schedule for timber size.
- € In determining the insulating performance of roof/ceiling arrangements, roof spaces are assumed to have no more than the casual ventilation typical of the jointing capping and guttering detail used in normal construction.”

CHAPTER 13B – TE ARA HAUKAWAKAWA PRECINCT

Objectives and Policies Section

Policy 13.13.4.1

Add in second paragraph third sentence, the words:

“and other noise sensitive activities” after “residential activities”.

Change last sentence of third paragraph to read:

“For all noise sensitive activities in Te Ara Haukawakawa, these measures should achieve appropriate internal noise levels.”

Rules Section

Rule 13.14.1.1.5 (Permitted Activity Rule)

Replace existing wording with the following:

“Noise Insulation

Any **habitable room** in a building used by a **noise sensitive activity** within the Te Ara Haukawakawa Precinct shall be protected from noise arising from outside the building by ensuring the **external sound insulation level** achieves the following minimum performance standard:

$$D_{nTw} + C_{tr} > 30 \text{ dB}$$

Compliance with this performance standard shall be achieved by ensuring habitable rooms are designed and constructed in a manner that:

- ∄ accords with the schedule of typical building construction set out in Appendix 9;
- or**
- ∄ accords with an acoustic design certificate signed by a suitably qualified acoustic engineer stating the design as proposed will achieve compliance with the above performance standard.”

Ventilation

Where bedrooms with openable windows are proposed, a positive supplementary source of fresh air ducted from outside is required at the time of fit-out. For the purposes of this requirement, a bedroom is any room intended to be used for sleeping. The supplementary source of air is to achieve a minimum of 7.5 litres per second per person.

Change the second paragraph of the explanation to rule 13.14.1.1.5 to read:

“Because of the sound environment created by existing activities within and around the precinct, the Council is concerned to ensure that all residential development and buildings that house other noise sensitive activities are adequately designed to ensure protection of the activities from external noise sources. For this reason a condition has been imposed to require habitable rooms in buildings used for noise sensitive activities to meet specific acoustic standards. The ventilation requirement for bedrooms is required to ensure noise attenuation is not compromised if compliance with the requirements of the Building Code (G4) for natural ventilation is achieved by installing openable windows. The required airflow level is based on the minimum standard for habitable spaces set out in NZS 4303.”

Rule 13.16.1.12 (Discretionary (R) Activity Rule)

Modify existing title for 13.16.1.12 to read:

“Noise – insulation of buildings for noise sensitive activities”

Modify existing wording of the assessment criteria as follows:

13.16.1.12.1 Change “inhabitants” to “users”.

13.16.1.12.2 Change “residential units” to “habitable rooms”.

Include additional assessment criteria for heritage buildings as follows:

13.16.1.12.4 Whether the building is a listed heritage building and the extent to which it is practicable to insulate to the required standard without compromising the heritage significance and fabric of the building.

Modify the existing wording of the explanation as follows:

change “residential development” to “a noise sensitive activity” and change “occupants” to “users”.

Appendices Section

Add the Noise Insulation Construction Schedule (shown above as Appendix 9 to Chapter 13) as Appendix 9 to Chapter 13B.