



### 3.2.2 Noise Attenuation

<b>Type:</b>	Regulatory Services – Environmental Health
<b>Legislation:</b>	Planning & Development Act 2005
<b>Delegation:</b>	N/A
<b>Other Related Document:</b>	ToEF Town Planning Scheme No 3 (Part 2) Residential Design Guidelines Policy (3.1.1)

#### Objective

This Noise Attenuation Policy aims to achieve the following:

- Provide a clear framework for addressing noise concerns in (and near) mixed-use areas and areas subject to ambient environmental noise, that may be subject to higher levels of noise than average suburban areas;
- Establish appropriate criteria for measuring and identifying potential noise impacts before they occur;
- Clarify the process and extent of reporting required in certifying proposed noise attenuation measures; and
- Protect the amenity of existing and future residents within (and near) mixed-use precincts and areas subject to ambient environmental noise, through enhanced building design and construction.

#### Policy

In providing for the sustainable co-existence of a mix of land uses (including residential, retail, recreational, commercial and entertainment uses) within, or adjacent to, areas that are likely to be subject to ambient environmental noise, measures need to be taken to minimise the adverse impacts of noise.

There are various provisions for the regulation of noise levels in respect to established land uses<sup>1</sup> This policy is intended to reduce the potential for ‘nuisance’ occurring from noise by providing for the appropriate assessment and design responses to be incorporated within development proposals. This Policy is intended to clarify the Council’s approach to noise-generating and noise-sensitive developments within the Town of East Fremantle.

To achieve appropriate acoustic environments within noise sensitive premises, ambient environmental noise needs to be considered as part of the application for planning approval for

<sup>1</sup> Environmental Protection Act 1986 and the Environmental Protection (Noise) Regulations 1997 provide powers for officers of the Department of Environment, WA Police Service and authorised Environmental Health officers from Local Governments to regulate noise where it is deemed to constitute a ‘nuisance’.

The Director Liquor Licensing Division has power to deal with noise issues and anti-social behaviour under section 117 of the Liquor Licensing Act 1988.

developments, and subsequently addressed during design development and documentation for implementation during construction.

## **AMBIENT ENVIRONMENTAL NOISE**

### **Sources**

Ambient environmental noise relates to the measurable existing (or projected) noise levels at a particular location. Environmental noise sources that may occur include:

(a) Traffic Noise

Major roads contribute to the ambient environmental noise of an area. In most cases, these roads are characterised by a daily traffic noise pattern with an average daily traffic count of more than 15,000 vehicles.

(b) Port Operations

The Port of Fremantle is Western Australia's dedicated container port. The Port is a significant noise source which impacts on the amenity of noise-sensitive premises, particularly residential uses. Council's Residential Design Guidelines established three buffer areas surrounding the port within which restrictions or prohibitions on development are applied to ensure the continuation of Fremantle as a working port. The provisions of these Guidelines take precedent and are additional to, the Noise Attenuation Policy.

(c) Noise from Entertainment and Other Uses

Developments that accommodate entertainment and other uses including cafes, restaurants, markets, hotels and other entertainment venues are integral to the vitality and enjoyment of mixed-use localities. Noise emission from such venues is regulated under the Environmental Protection (Noise) Regulations 1997 however, residual 'break-out' noise does occur, contributing to general ambient environmental noise. Alfresco areas associated with hotels, cafes and restaurants can be a major contributor to general ambient environmental noise.

(d) Street Noise

Urban locations containing the mix of lifestyle uses that contribute to the vitality and enjoyment of such areas are also characterised by increased levels of pedestrian activity. The noise associated with this pedestrian activity, including movement to and from different establishments, and persons getting into and out of parked cars can contribute significantly to general ambient environmental noise (particularly when this occurs late at night or early morning). This can create an impact on the amenity of noise sensitive premises, particularly residential.

(e) Mechanical Plant

Air-conditioning and related service hardware can impact on the amenity of noise sensitive premises. In a residential setting, the noise emission from air conditioner condensers can affect the amenity of neighbouring property. In mixed use locations, exhaust fans associated with commercial kitchens, smoke exhaust systems, refrigeration compressors and chillers and other equipment associated with the air conditioning of larger premises are significant noise sources that impact on the general ambient environmental noise.

## **MEASURES REQUIRED**

### **1. General**

In order to address noise from the above sources, the potential noise impacts upon new development shall be addressed at the planning and design stage. Measures to minimise the impacts of noise are to be incorporated at the time of construction.

For residential uses, measures are required to manage noise intrusion from sources, including:

- (a) Traffic noise;
- (b) Port noise;
- (c) Residual break out noise from entertainment uses and venues;
- (d) Street noise; and
- (e) Mechanical plant (on adjoining or adjacent properties).

For commercial uses, measures are required to control noise emissions generated by the use, including:

- (a) Noise break out from non-residential and other uses such as entertainment venues; and
- (b) Mechanical plant.

### **2. Acoustic Reporting Requirements**

The Council will require an acoustic report to form part of a proposal for development which it determines may be subject to (or emit) environmental noise. The report shall demonstrate how the proposed development has been acoustically assessed and designed for the purpose of minimising the effects of noise intrusion and/or noise emissions.

Where the Council requires a report, the report shall:

- (a) be prepared by an acoustical consultant with relevant qualifications and experience equivalent to those required for admission as a Member of the Australian Acoustical Society (to the satisfaction of Council);
- (b) be lodged during the development approval application stage; and
- (c) to the satisfaction of the Council, address all matters that are required to demonstrate that the acceptable noise criteria will be achieved including:
  - (i) for developments that may receive noise (noise intrusion):
    - the identification of all significant existing and potential environmental noise sources;
    - the measurement of all identified noise sources including, adequate sampling to enable the establishment of reliable design noise levels. For example, for traffic noise, measurements at different times such as during peak traffic times and late at night on weekends;
    - the character of the noise source to be adequately described in terms of frequency analysis (minimum of octave bands);
    - the establishment of appropriate interior design sound levels for various areas of occupancy in accordance with the Noise Criteria (outlined below);
    - a detailed description of the construction measures that are required to be included, or which have been included, in the proposed development to achieve

the noise levels prescribed in the Noise Criteria (outlined below). Calculations shall be based on octave band noise source data and octave band sound reduction performance for construction elements; and

- the provision of the following:
  - date, time and results of measurements;
  - design noise levels used in assessment;
  - design sound levels used for internal spaces; and
  - recommendations for construction.
- (ii) for developments that may emit noise (noise emissions):
  - the identification of all noise sources to be addressed, including alfresco areas for Entertainment Uses such as cafes, restaurants and hotels;
  - determination of noise source levels and character;
  - acoustic data to be in octave bands where noise sources are internal;
  - the establishment of Assigned Levels for noise sensitive premises in the vicinity in accordance with the Environmental Protection (Noise) Regulations 1997;
  - a detailed description of the construction measures that are required to be included, or which have been included, in the proposed development to achieve the noise levels prescribed in the Noise Criteria (outlined below). Calculations shall be based on octave band noise source data and octave band sound reduction performance for construction elements;
  - for commercial premises that have external noise sources, a description of the measures that are required to be included, or which have been included, in the proposed development to comply with the Environmental Protection (Noise) Regulations 1997; and
  - the provision of the following:
    - date, time and results of measurements;
    - design noise levels used in assessment;
    - Assigned Levels determined for adjacent areas/noise sensitive premises in the vicinity; and
    - recommendations for construction and noise control.

## **ACCEPTABLE NOISE CRITERIA**

### **Noise Intrusion (Residential Development)**

Buildings containing a residential component are to be designed so that the interior of residential units achieve the following design sound levels:

- (a) Leq 35 dB(A) in sleeping areas (bedrooms); and
- (b) Leq 40 dB(A) in living / work areas.

For residential dwellings fronting a major road<sup>2</sup>, a design sound level tolerance of 5 dB in excess of the above levels is acceptable.

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<sup>2</sup> A major road shall have the same meaning as the definition contained in the Environmental Protection (Noise) Regulations 1997 being "a road estimated to have an average daily traffic count of more than 15,000 vehicles". Major roads within the Town of East Fremantle are the Canning and Stirling Highways. For residential dwellings within 150m of a rail corridor, a design sound level tolerance of 5 dB in excess of the above levels is acceptable.

### **Construction Requirement**

Multi-residential developments shall be constructed to meet the requirements of the Building Code of Australia (BCA) Part F5 – Sound Transmission and Insulation.

For all other development, unless another level is specifically prescribed in this Policy, noise intrusion is to be controlled to achieve the indoor design sound levels for buildings as set out in Australian Standard AS/NZS2107: Acoustics - Recommended Design Sound Levels and Reverberation Times for Building Interiors.

### **Noise Emission**

Noise emission from all developments shall comply with the *Environmental Protection (Noise) Regulations 1997*.

### **PLANNING & DESIGN CONSIDERATIONS**

The consideration of sound attenuation at the planning stage of a development can contribute significantly to achieving the required Noise Criteria - as well as reducing the eventual cost of construction. Factors that affect the acoustic performance of a building that should be considered include:

- (a) the identification of existing/potential environmental noise sources;
- (b) development orientation and layout taking into account the location of existing/potential environmental noise sources;
- (c) the location of bedrooms away from noise sources;
- (d) the location of outdoor living areas including balconies and the location of windows away from noise sources;<sup>3</sup>
- (e) the use of development built form (blade walls etc) to screen noise sources; and
- (f) the use of building design elements (balcony balustrades, decorative screens etc) to provide some reduction in noise impact on windows.

### **Design Development (Documentation) Considerations**

At the design documentation stage, working drawings should reflect the outcomes and recommendations in the acoustic report that was prepared and submitted at the planning application stage.

### **Construction Considerations**

Noise attenuation measures that may be addressed in the acoustic report and implemented into the construction of the development to achieve the Noise Criteria include:

- (a) Windows:
  - (i) heavyweight / thicker glass;
  - (ii) double glazing;
  - (iii) allow for window construction to be readily upgraded to double glazing in the future;
  - (iv) special acoustic requirements for window frames; and

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<sup>3</sup> For further guidance refer to State Planning Policy 5.4 – Road and Rail Transport Noise and Freight Considerations in Land Use Planning, section 5.3 Noise Criteria which apply to outdoor living areas.

- (v) specific acoustic performance requirements – Laboratory tests data.
- (b) Walls:
  - (i) stud frame walls may require acoustic upgrading;
  - (ii) acoustic attenuation for exhaust vents through wall;
  - (iii) specific acoustic requirements for external doors; and
  - (iv) appropriate selection of garage doors to reduce noise.
- (c) Roof - Ceiling:
  - (i) specific acoustic requirements for sealing roof;
  - (ii) timber framing or insulated metal framing;
  - (iii) upgraded acoustic performance for ceiling;
  - (iv) closing / sealing of eaves;
  - (v) insulation of ceiling void; and
  - (vi) acoustic attenuation for vents through roof.

Attention to sealing all gaps is critical to successful noise amelioration.

#### **Noise Emission**

- (a) Environmental Protection (Noise) Regulations 1997:
  - (i) Assigned Levels identified for various times of day; and
  - (ii) adjustments for noise characteristics identified.
- (b) Noise breakout from premises:
  - (i) acoustic upgrade of windows;
  - (ii) acoustic lobbies at entry and exit points in the building;
  - (iii) acoustic upgrade to walls and roof-ceiling construction;
  - (iv) process for determining maximum allowable internal noise level;
  - (v) use of permanent noise monitoring with integrated audio control system;
  - (vi) management strategies to control breakout noise; and
  - (vii) management strategies for control of noise during deliveries and disposal of rubbish.
- (c) Mechanical Plant:
  - (i) importance of selecting an appropriate location; and
  - (ii) noise control measures required including barriers and enclosures.

#### **NOTIFICATIONS ON TITLE**

Notifications on title may be proposed by the Council as a condition of approval for subdivision/development proposals where the area forms part of (or is adjacent to) a current and/or proposed mixed use area or environmental noise source.

The title notifications are proposed because future resident's response to noise intrusion into their property can be influenced by their expectations for the environment they are entering. In a mixed use environment, the noise levels experienced are generally higher than those within a more traditional suburban environment. At the subdivision and/or development approval stage of any development with a residential component, notifications shall be sought on the title pursuant to

section 70A of Transfer of Land Act 1893, together with section 165 of the Planning and Development Act 2005 to inform prospective future residents of the likelihood of higher noise levels in the locality.

**Sample Conditions of Subdivision and or Development**

1. A Notification under Section 70A of the Transfer of Land Act 1893 must be registered over the Certificate Of Title to the land (the subject of the proposed subdivision/development) prior to works proceeding on site, to notify owners and prospective purchasers of the land, that the land is located in (or adjacent to) an area where non-residential uses may be approved and the land may be affected by activities and noise not normally associated with residential development.
2. The Section 70A Notification shall be prepared to the satisfaction of the Town of East Fremantle and all costs of and incidental to the preparation of and registration of the Section 70A notification including related Council Solicitors' costs shall be met by the applicant or the owner of the land.

<b>Responsible Directorate:</b>	Regulatory Services
<b>Reviewing Officer:</b>	Executive Manager Regulatory Services
<b>Decision making Authority:</b>	Council
<b>Policy Adopted:</b>	15/2/11
<b>Policy Amended/Reviewed:</b>	20/7/15
<b>Former Policy No:</b>	3.1.2