

25 October 2018

Drury South Limited  
c/- Barkers and Associates  
PO Box 1986  
Auckland 1140

**Attention: Rachel Morgan**

Dear Rachel

**DRURY SOUTH - PRELIMINARY RECOMMENDATIONS**

The Drury South Plan Change has recently been updated with the following changes:

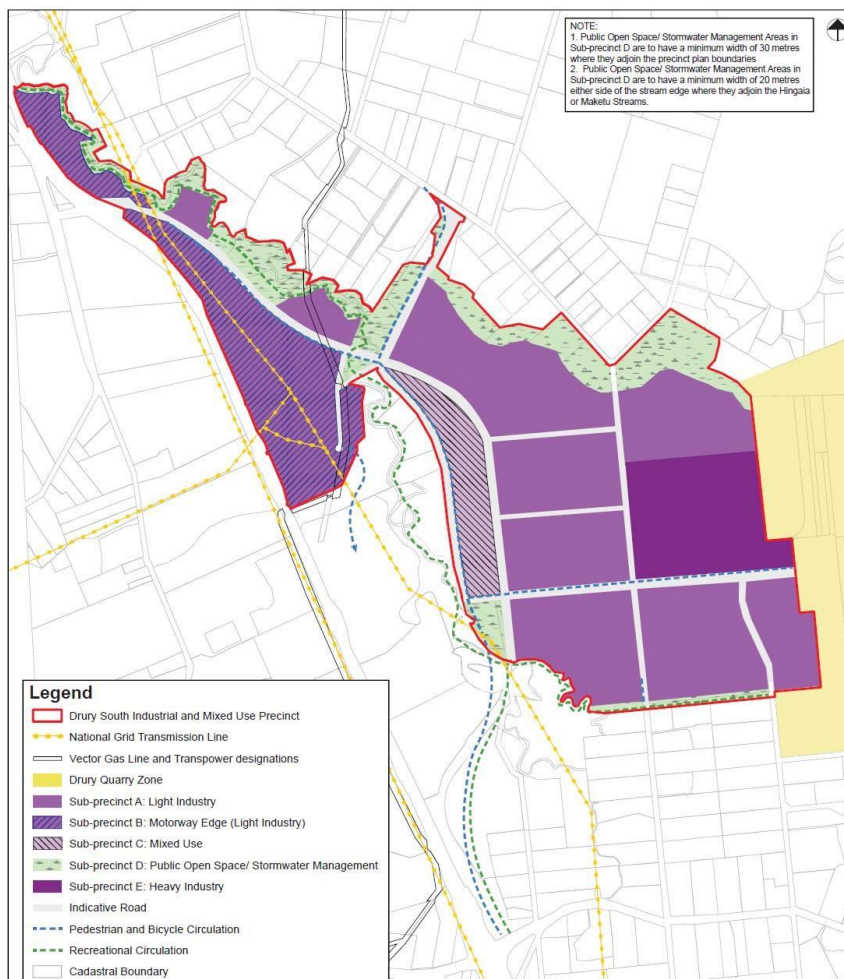
- Rezoning of Sub-Precinct C from Light Industry to Mixed Use
- Rezoning of some Heavy Industry zones to Light Industry

The precinct plan is shown in Figure 1 below.

**Figure 1: Precinct plan**

**I410.10. Precinct plans**

**I410.10.2 Drury South Industrial and Mixed Use: Precinct plan 1**

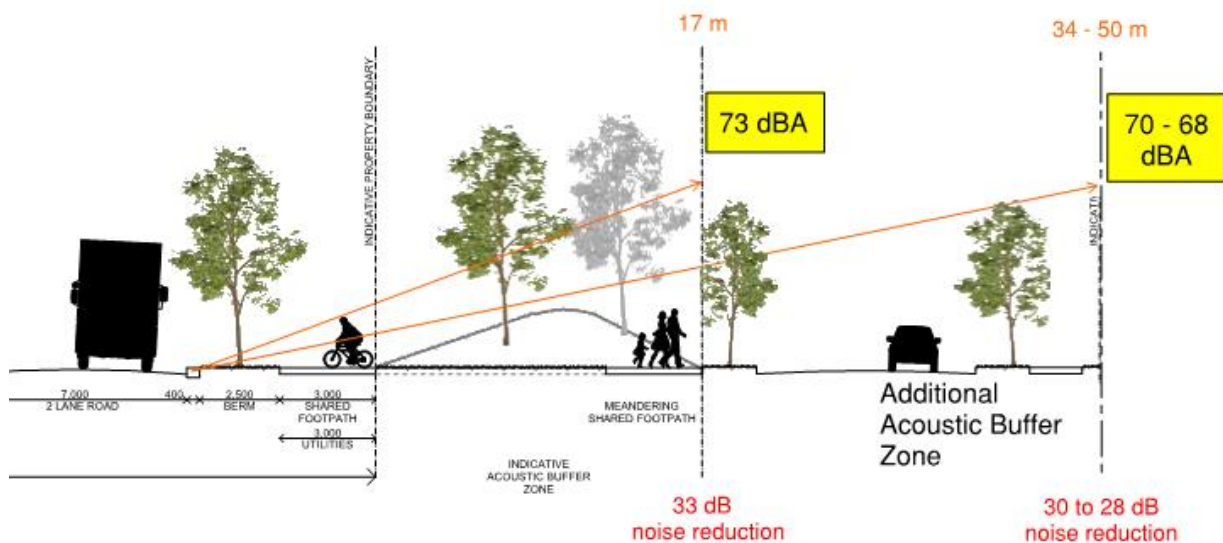


As such, an acoustic assessment is required to identify potential issues. This letter provides a high-level analysis of the updated Plan Change and makes some recommendations.

### High-Level Review Comments and Recommendations

- The noise condition for residential activity near the Spine Road is for a noise limit of 40 dB  $L_{Aeq(24hr)}$  in a habitable area based on a Spine Road traffic noise level of 75 dB  $L_{Aeq(24hr)}$  at 10m. This would require a facade noise reduction of 33 decibels for any dwelling located immediately adjacent to the acoustic buffer zone and 28 decibels for those dwellings located approximately 50 m from the curb of the Spine Road (Figure 2).

Figure 2: Indicative noise level based on existing typical road section



- Furthermore, the Unitary Plan sets façade noise performance standards for habitable rooms to provide additional control from commercial uses. These are:
  - o Bedroom Noise reduction of 20 dB @ 63 and 125 Hz
  - o Living Noise reduction of 25 dBA
- It is considered that the two rules would provide an equivalent result at approximately 50 m from the curb of the Spine Road.

### Faced Constructions

Indicative façade constructions have been provided for habitable rooms at the following distances from the curb of the Spine Road. Note that this list is not exhaustive.

Façade Element	Suitable Construction Details (or approved acoustically equivalent)
<i>33 dB noise reduction</i>	
Glazing:	10.38 mm standard glass/12 mm air gap/6 mm standard glass.
Wall:	Concrete or brick cladding with an internal wall lining of one layer of 13 mm standard plasterboard with sound absorptive material <sup>2</sup> in the cavity.
Roof:	35 dB R <sub>w</sub> warm roof with 2x 13 mm standard plasterboard ceiling supported on a resilient suspension system with sound absorptive material in the cavity.
<i>30 dB noise reduction</i>	
Glazing:	8.38 mm standard glass/12 mm air gap/6 mm standard glass
Wall:	<p>Concrete or brick cladding with an internal wall lining of one layer of 13 mm standard plasterboard with sound absorptive material<sup>2</sup> in the cavity.</p> <p>Titan façade panel battened from 6mm RAB board on 140 mm timber studs, with an internal wall lining of one layer of 13 mm high density plasterboard supported on a resilient sound isolation clip with sound absorptive material<sup>2</sup> in the cavity.</p> <p>6mm ACM cladding battened from 6mm RAB board on 90-100 mm timber studs, with an internal wall lining of one layer of 13 mm high density plasterboard supported on a resilient sound isolation clip with sound absorptive material<sup>2</sup> in the cavity.</p>
Roof:	<p>35 dB R<sub>w</sub> warm roof with 2x 13 mm standard plasterboard ceiling supported on a resilient suspension system with sound absorptive material in the cavity.</p> <p>Steel cladding (minimum 0.55mm thick) or Gerand textured finish (7kg/m<sup>2</sup>) roofing tiles on plywood sarking with a ceiling lining of one layer of 10mm standard plasterboard (min 12.5 kg/m<sup>2</sup>) and sound absorptive material<sup>2</sup> in the cavity.</p> <p>Asphalt roofing tiles with a ceiling lining of one layer of 13 mm standard plasterboard, with sound absorptive material<sup>2</sup> in the cavity.</p>
<i>28 dB noise reduction</i>	
Glazing:	6.38 mm standard glass/12 mm air gap/6 mm standard glass
Wall:	<p>Façade panel battened from 6mm RAB board on 90-100 mm timber studs, with an internal wall lining of one layer of 13 mm standard plasterboard with sound absorptive material<sup>2</sup> in the cavity.</p> <p>6mm ACM cladding battened from 6mm RAB board on 90-100 mm timber studs, with an internal wall lining of one layer of 13 mm standard plasterboard with sound absorptive material<sup>2</sup> in the cavity.</p>
Roof:	<p>Steel cladding (minimum 0.55mm thick) or Gerard textured finish (7kg/m<sup>2</sup>) roofing tiles on plywood sarking with a ceiling lining of one layer of 10mm standard plasterboard (min 12.5 kg/m<sup>2</sup>) and sound absorptive material<sup>2</sup> in the cavity.</p> <p>Asphalt roofing tiles with a ceiling lining of one layer of 13 mm standard plasterboard, with sound absorptive material<sup>2</sup> in the cavity.</p>
<ol style="list-style-type: none"> <li>1. Resiliently suspended ceiling system such as GIB Rondo or USG Donn ScrewFix ceiling batten systems.</li> <li>2. Sound absorptive material such as R1.8 Pink Batts, Autex Greenstuff or approved equivalent.</li> </ol>	

**Further notes**

- Mechanical ventilation compliant with the Unitary Plan would be required for residential uses in the Mixed-Use area.
- Traffic vibration is not a concern given the setback (in the existing road section) and new road surface.
- Consideration needs to be given to any Resource Consent Applications that may have been made under the old Drury South Plan Change design scheme as the change in zone interfaces may have an effect on those applications.

We trust this information is satisfactory. If you have any further questions, please do not hesitate to contact us.

Yours faithfully

**MARSHALL DAY ACOUSTICS LTD**

**Micky Yang**

**Acoustician**