

MANAGING DIRECTORS

MATTHEW PALAVIDIS
VICTOR FATTORETTO

DIRECTORS

MATTHEW SHIELDS
BEN WHITE



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Tallawoladah Pty Ltd
C/- Altus Page Kirkland

Email: reece.mackie@altusgroup.com

ATTN: REECE MACKIE

SSD 7056: Campbell's Stores, The Rocks - Acoustic Response

This letter has been prepared in response to the commentary provided by Koikas Acoustics Pty Ltd in the Hawes & Swan Planning submission dated 10 November 2016 in relation to the remediation, renewal, adaptive re-use and revitalisation of Campbell's Stores, The Rocks.

The main contention appears to be the adoption of the EPA Industrial Noise Policy (INP) commercial amenity criterion for the hotel rooms overlooking the site. In this regard we note:

- Hotel rooms are not defined as residential dwellings and as such the requirements of the OLGR do not apply.
- Applying the CoS requirement of "background + 3dB, L₁₀" for commercial uses externally would be stricter than the "background + 5dB, L₁₀" criteria for residential uses which makes no practical sense.
- In ALC's experience, the commercial criteria adopted by Sydney City Council applies indoors with air-conditioning on. Koikas have not provided measured internal noise levels within the hotel rooms or established internal noise objectives which may be reviewed in lieu of targets required by the EPA and ILGA.

SYDNEY

A: 9 Sarah St Mascot NSW 2020
T: (02) 8339 8000
F: (02) 8338 8399

SYDNEY MELBOURNE BRISBANE CANBERRA
LONDON DUBAI SINGAPORE GREECE

ABN: 11 068 954 343

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With regard to contentions raised in relation to noise monitoring conducted by ALC.

- The background noise spectrum was recorded during the late evening period which represents the worst potential period for noise impact. Compliance during this period based on the maximum occupancies would therefore result in compliance during the evening and daytime period.
- The noise spectrum recorded by ALC is stricter in comparison with the Koikas measurement at the critical frequencies associated with speech and patron noise. In this regard, the ALC assessment is conservative.
- In any case, there are no external noise targets applicable to commercial tenancies which incorporate the 1/1 octave noise spectrum as an assessment basis. Therefore, the external noise spectrum is not applicable to the hotel as a commercial receiver and as such no additional monitoring externally is required.

With regard to patron noise source levels.

- The noise levels adopted by ALC have been established from on-site noise measurements on a multitude of similar developments. Given that the measurements were conducted on active outdoor seating areas, the Lombard Effect as noted by Koikas is automatically incorporated into our assumed patron sound levels. In this regard, our assessment does take into account the Lombard Effect contrary to the statement by Koikas.
- Further to above, Koikas references the document titled *Prediction of Noise from Small to Medium Sized Crowds (Hayne, Taylor, Rumble, Mee, 2011)* for establishment of source noise levels associated with patrons. It appears that Koikas has adopted the equations on Page 6 of the document as represented below.

The A-weighted sound power levels for a crowd size, N, can be approximated by:

$$L_{WAmax} = 11\log N + 81\text{dB(A)} \quad (5)$$

$$L_{WA01} = 11\log N + 77\text{dB(A)} \quad (6)$$

$$L_{WA10} = 15\log N + 67\text{dB(A)} \quad (7)$$

$$L_{WAeq} = 15\log N + 64\text{dB(A)} \quad (8)$$

These prediction equations would be considered applicable for a typical crowd in an outdoor social setting such as those at a bar or club. Using these source levels, it would be possible to apply adjustments to take into account factors such as the orientation of the crowd and whether it is random or synchronised.

The notation describes the above equations are applicable for a typical crowd in an outdoor setting such as those at a bar or club. In ALC's experience, noise from an outdoor seated restaurant is significantly quieter than that associated with a bar beer garden. In this regard, we would contend that the 92.5dB(A) L_{10} noise level adopted by Koikas is overly onerous and would not be representative of an outdoor restaurant setting.

- On this basis, the noise levels adopted by ALC are conservative in context with the Koikas assumed noise levels.

In conclusion, ALC have reviewed the objections raised by Koikas on behalf of the Park Hyatt Sydney. In this regard;

- The ALC assessment has been conducted in accordance with the relevant EPA and OLGR noise emission criteria. Compliance with supplementary noise criteria is not required.
- The noise monitoring conducted by Koikas confirmed via way of the noise spectrum that the ALC noise measurement was conservative. In any case, the external noise targets based on the 1/1 octave spectrum are not applicable to a commercial development and as such are irrelevant.
- The assumed patron noise levels by ALC in context with those described by Koikas are conservative and as such are acceptable.
- The proposed external criteria of “background + 5dB, L₁₀” adopted by the OLGR for residential uses or the “background + 3dB, L₁₀” adopted internally by CoS are in our opinion overly strict given the short term accommodation of the hotel.

In any case, no internal noise objectives within the hotel rooms have been produced which can be used as a means of comparison with predicted noise levels or for the assessment of potential impacts on the operation of the proposal.

We trust this information is satisfactory. Please contact us should you have any further queries.

Yours faithfully,



Acoustic Logic Consultancy Pty Ltd
James Small