26/9/2023
TL912-07F02 Hotel Modification 1 (r1)

IRIS

Att: Warwick Bowyer

Dear Sir,

Steyne Hotel, Manly – Alterations and Additions - Acoustic Advice with Respect to Design Changes

Introduction

We have been asked to provide acoustic advice with respect to proposed alterations to the Steyne Hotel, Manly. The proposed changes consist predominantly of internal works:

- Reconfiguration of ground internal spaces.
- Alterations of the courtyard beer garden.
- New Steyne entry from the Corso via the former Bottle Shop.
- Construction of additional Level 1 guest rooms in place of existing Back of House/storage rooms and redundant commercial offices.
- Alterations and additions on Level 2 to relocate existing kitchen and create new internal area areas to the eastern wing.
- Facade amendments including new accommodation room windows on L1 (Henrietta Lane) and new eastern doors on ground floor.
- Installation of roof top solar.

No changes to either hotel patron capacity or trading times are proposed as part of the application.

Being predominantly internal works, the proposed works will not result in any increase in operational noise emitted by the site. In fact, the changes create the opportunity to provide acoustic benefit to neighbouring development:

- The degree of coverage/enclosure of the outdoor dining areas within the ground floor beer garden and Level 2 balconies will increase.
- Where practicable, noise absorptive linings will also be incorporated within new building works in order to further reduce noise emissions.

This advice is based on architectural drawings by Squillace, dated September 2023.

Site Description / Proposed Development

The Steyne Hotel is located at 75 The Corso, Manly.

The Hotel was originally constructed in 1859, and reconstructed in 1864 and 1923 (following fire damage). The 1923 construction has been retained since, with a number of alterations/additions in the intervening period.

The site is adjoined by residential development to the north (42 North Steyne). 42 North Steyne has been purchased by IRIS (owners of the Steyne Hotel) and has had development approval (2021/2257) for the construction of a new mixed used/residential development (ground floor retail and four levels of residential apartments). The new 42 North Steyne building has been designed with a high acoustic performance building shell to protect it from existing noise sources (Steyne Hotel, North Steyne road traffic and general Manly CBD noise).

The next nearest residential development is the Pacific Waves residential development at 9-15 Central Ave, to the west of the site (across Henrietta Lane). This building was opened in 2000. The Pacific Waves development overlooks the Steyne Hotel building with apartments above approximately level 6 having a line of site to the Steyne Hotel courtyard/beer garden.

Development to the immediate west and south is commercial. See aerial photo below.

Proposed Design Changes and Acoustic Impacts

Proposed design changes consist of:

- Ground floor:
    - Internal areas - Internal reconfiguration (new round bar, beach bar/lounge and new Accommodation Reception).
    - External Area – Alterations and repositioning of the existing courtyard bar below the Level 1 accommodation, installation of acoustic lining to soffit over New Bar area. Outdoor area capacity to remain the same.
    - Level 1 – Construction of nine new guest rooms noting that 4 existing rooms were approved to be deleted under approval (2021/2257), six of which face into the central courtyard and three face Henrietta Lane.

- Level 2:
    - Refurbishment of existing internal spaces and new building work at the northern end of the site to enable construction of new bar areas, cool room and amenities.
    - The new works on Level 2 will extend out over the ground floor courtyard/beer garden, increasing the extent that the courtyard is covered. In addition, a new awning is proposed a Level 2 in the north-western corner of the courtyard, further increasing the level of coverage over the internal courtyard/beer garden.
    - The soffit of both the overhanging Level 2 internal areas and the awning are to be lined with acoustic lining.
    - The installation of acoustic linings above the reconfigured bar on ground floor
    - Additional coverage over the Level 2 balconies on the North Steyne and Corso frontages due to the inward extension of the Level 2 floor plate wrapping around the entirety of the Level 2 Balconies on the Corso and North Steyne Frontages

<u>Acoustic implications of new works</u>

There are a number of items that provide acoustic benefit in the existing hotel – partially covered beer garden areas on ground floor and level 2, retractable awning on ground floor and Level 2 balcony airlock. These will all be retained.

See Appendix 1.

Appendix 1 provides a mark up of the key differences between existing and proposed designs with respect to acoustics. Provided that the recommendations in the following section are adopted, all design changes will not result in any increase in existing operational noise, and are expected to provide a 2-3dB(A) improvement compared to existing conditions (which is a perceptible improvement):

- Improvements with respect to Ground Floor Courtyard Beer Garden noise:
    - As shown in Appendix 1, there is an increase in the covered areas in the courtyard beer garden of approximately 20% as a result of the proposal and arising from the new inward floor plate extension and Level 2 building works. In addition, soffit linings encompassing acoustic treatments are proposed to these new overhanging areas.
    - The courtyard bar is relocated to a position that is more enclosed from above compared to existing conditions, and acoustic lining to be applied to underside of the soffit over. The Courtyard Bar/service area is typically a high generator of noise during busy times (high population density given a standing area, raised voice when ordering). Use of acoustic lining in this area dramatically reduces the tendency for patrons to speak loudly to make themselves understood when ordering.

  - The increase in covered areas and existing courtyard bar are both located in the northern part of the courtyard bar, which is the area most overlooked by 9-15 Central Ave. The proposed courtyard refurbishment will provide additional noise screening in this critical area, and move a significant noise source (Courtyard Bar) to a more screened location.

- The new Level 2 inward floor plate extension (eastern façade) will provide additional benefit to the future occupants of 42 North Steyne.

- The additional airlock to Level 2 balcony will provide two entry/exit points from the Level 2 internal bar areas and will enable better control of noise emitted from internal areas as patrons move between internal spaces (loud music) to quieter external areas.

Further, through use appropriate building shell materials for new works on Level 2 (new internal bar areas at northern end of site), noise from these new spaces will be less than from any existing area on the site and will not result in any increase in noise emission – see Recommendations below.

The new guest room windows on the Henrietta Lane façade will have no impact with respect to noise emissions. Suitable glazing to these rooms to protect them from Hotel noise and Henrietta Lane pedestrian noise is detailed in the "Recommendations" section.

The ground floor new entry doors (located via Hotel accommodation reception on the Corso frontage and on the North Steyne façade) are similar in position to existing openings, face away from residential development in the vicinity of the site, and will not impact noise emitted from the site.

Recommendations

In order to achieve the improvement in noise emissions discussed above, and to ensure that the future occupants of the guest rooms are protected from courtyard beer garden noise, we recommend:

- Acoustic lining – acoustic lining is to be installed to the following areas:
    - Soffit over Ground Floor new Courtyard Bar.
    - Soffit of Level 2 inward floor plate extension in north-west corner of courtyard.
    - Soffit of new Level 2 inward floor plate extension overhanging the courtyard.

      Acoustic lining to consist of 50mm thick Echosoft insulation or similar insulation suitable for outdoor use with minimum NRC of 0.8. Any decorative/protective facing to the insulation must be perforated (minimum 20% open area).
- Building form for new Level 2 internal space is to adopt the following for control of external noise emissions:
    - New windows to Level 2 façade facing into the internal courtyard to consist of min 12.5mm (Rw 39) glass for control of external noise emissions.
    - New areas of roof to consist of sheet metal with 2x13mm plasterboard ceiling (75mm thick 14kg/m3 glasswool insulation). Acoustic lining (50mm thick Quietspace or similar) with NRC of at least 0.8 to 60% of ceiling area.
    - New glass roof elements to consist of 12.5mm laminated glass.
- While the extent ot new mechanical plant associated with the proposal is minimal, all new mechanical plant is to be selected and acoustically treated such that noise emissions comply with the EPA Noise Policy for Industry at nearby development. These acoustic treatments (in-duct lining or similar) to be determined at Construction Certificate Stage following final equipment selections.
- New windows to the Level 1 Guestrooms facing the courtyard to be constructed using a double glazed system (indicatively 10mm glass/100mm airgap/10.38mm laminated glass – Rw approx. 45 to provide suitable guest protection from courtyard noise. New guest room windows on the Henrietta Lane façade to be 10.38mm laminated glass (Rw 35).
- New glass entry doors on Ground Floor Corso and North Steyne frontages to be minimum 10mm thick.

Closure

We have examined the noise impact associated with proposed alterations and additions at the Steyne Hotel.

For the most part, the design changes relate to reconfiguration of internal spaces and there is no change to operation times or patron capacity of the site. As such, there will be no increase in operational noise as a result of the changes.

In the event that the recommendations in this report are adopted, there is the opportunity to provide a degree of acoustic benefit compared to existing conditions (2-3dB(A)):

- There will be a reduction in overall noise emission from the central courtyard/beer garden, which is the main noise source to the nearest residential development (Pacific Waves apartments at 9-15 Central Ave). This benefit arises through increased coverage of the courtyard (using awnings and new building structure), use of noise absorptive surface linings where possible, and relocation of a major noise source (ground floor beer garden bar) to a space that is more effectively enclosed compared to the existing conditions.

- The retention of the Level 2 air-lock and introduction of a new airlock will help minimise noise breakout from Level 2 internal spaces via the balcony entry doors.

- The new Level 2 balcony awning will also provide an improvement in emitted noise to the eastern façade of adjoining residential building at 42 North Steyne.

- The building shell of the new Level 2 internal areas will be such that noise emitted from these areas will less than any existing areas on Level 2 or elsewhere in the development.

In light of the above, the proposed changes should be considered reasonable from an acoustic viewpoint.

Regards,

Thomas Taylor
Principal Engineer
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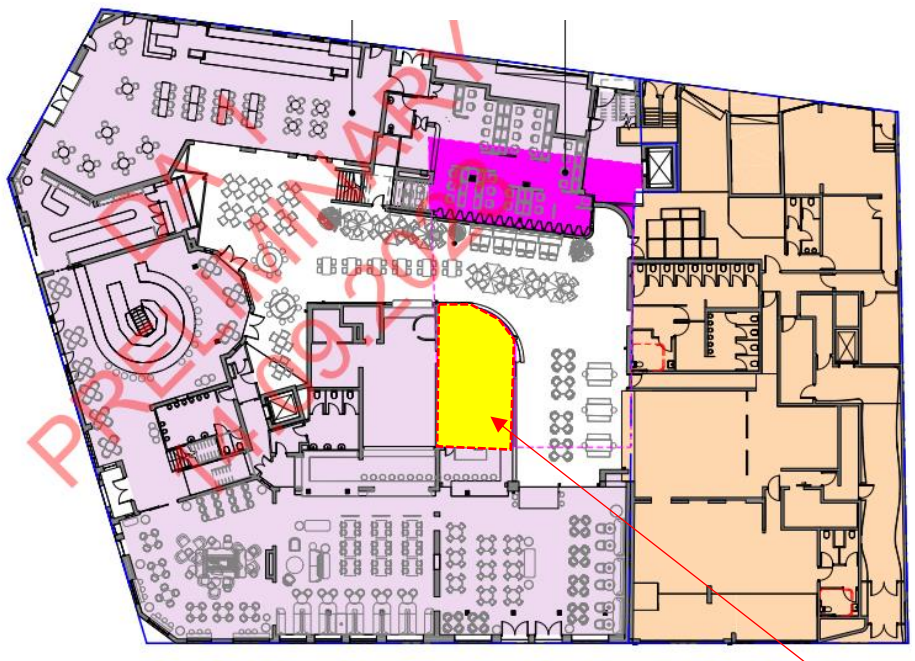
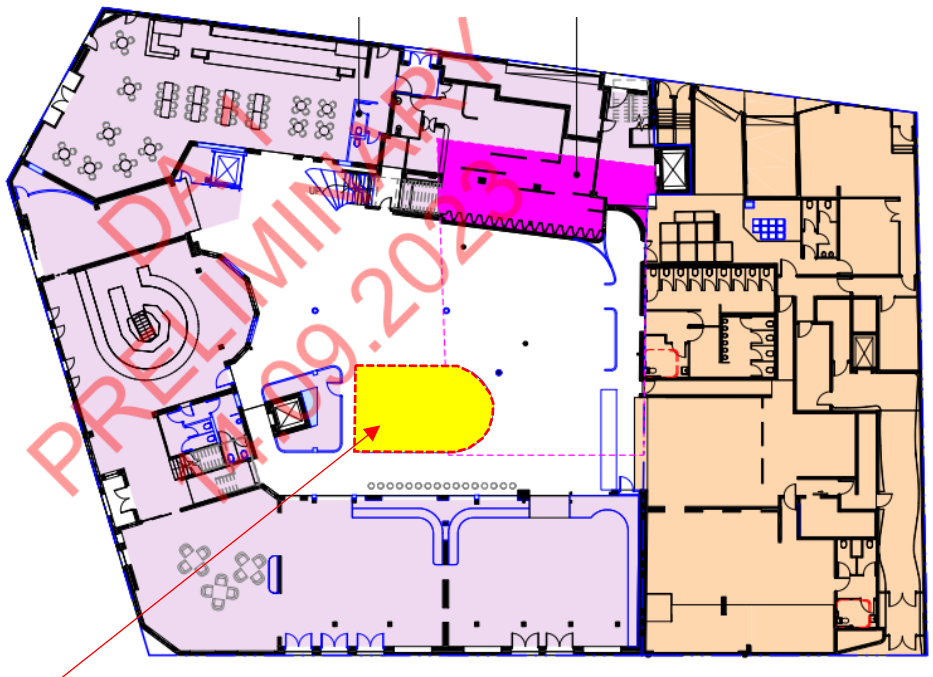
Appendix – Acoustic Analysis of Proposed Alterations

Acoustic Treatment Items – Comparison Between Existing and Proposed

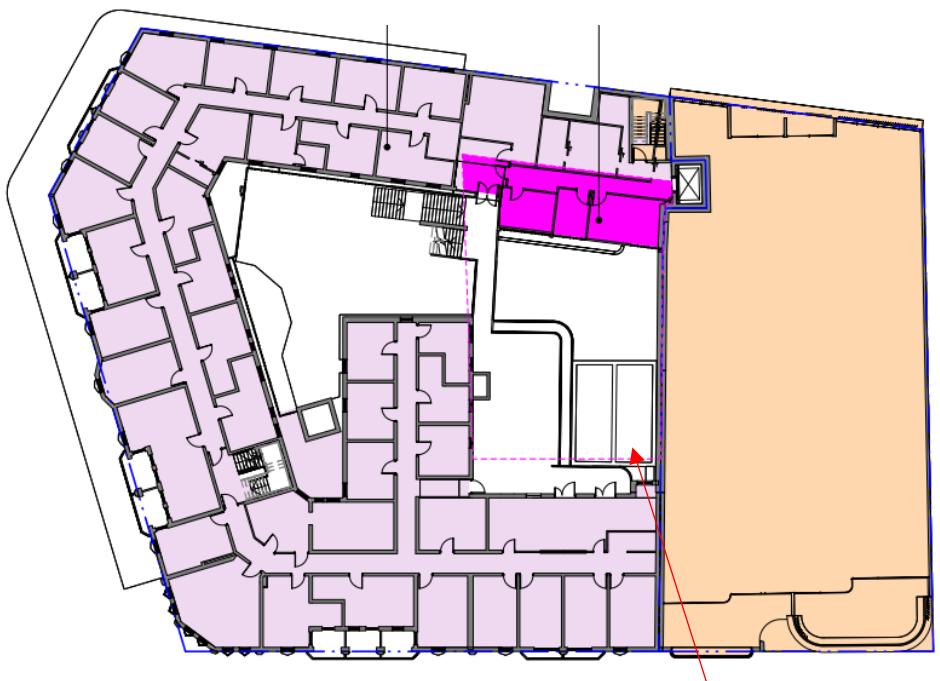


1 GROUND LEVEL - EXISTING
1 : 200 @ A1

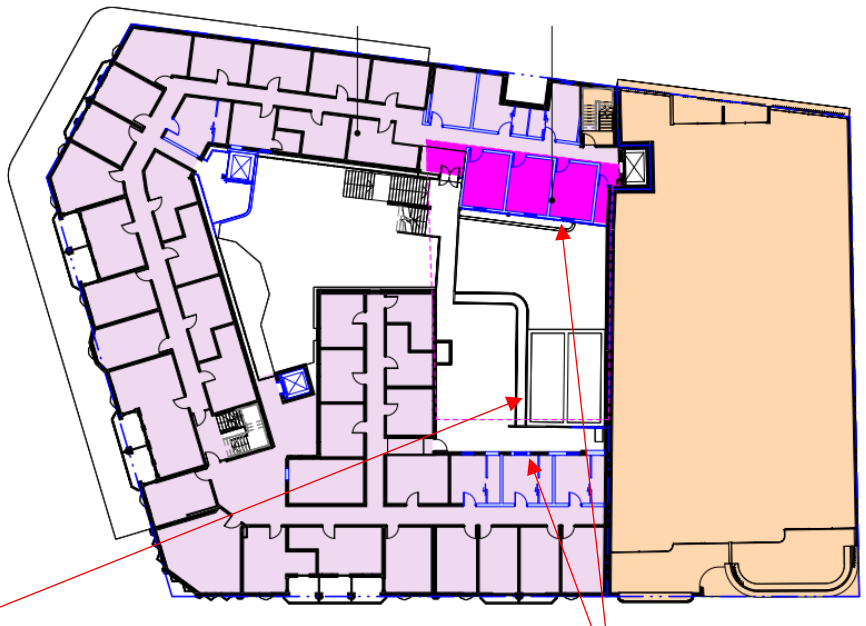


1 GROUND LEVEL - PROPOSED
1 : 200 @ A1

Relocated position of covered bar area more centrally located within covered area and acoustic lining to soffit over to be provided.



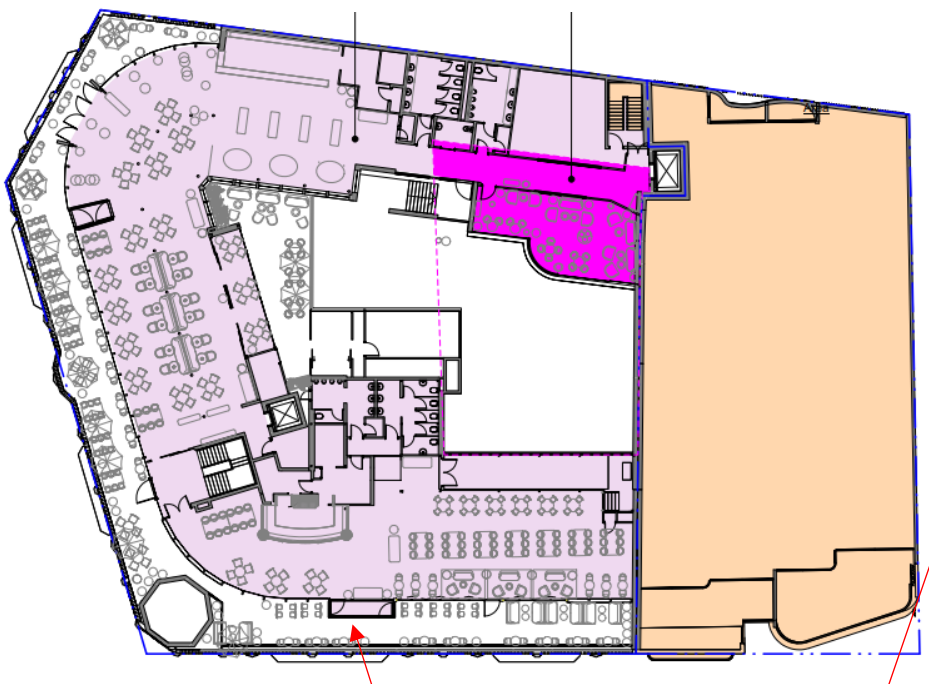
2 LEVEL 1 - EXISTING
1 : 200 @ A1



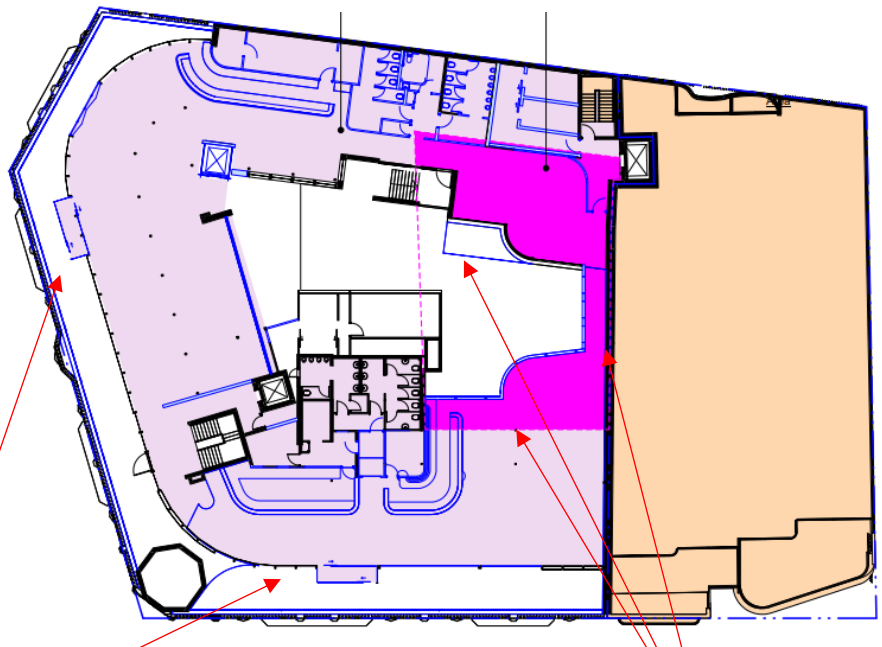
2 LEVEL 1 - PROPOSED
1 : 200 @ A1

Retractable awning cover to be retained

New Guest rooms overlooking courtyard to be provided with high performance acoustic glazing



3 LEVEL 2 - EXISTING
1 : 200 @ A1

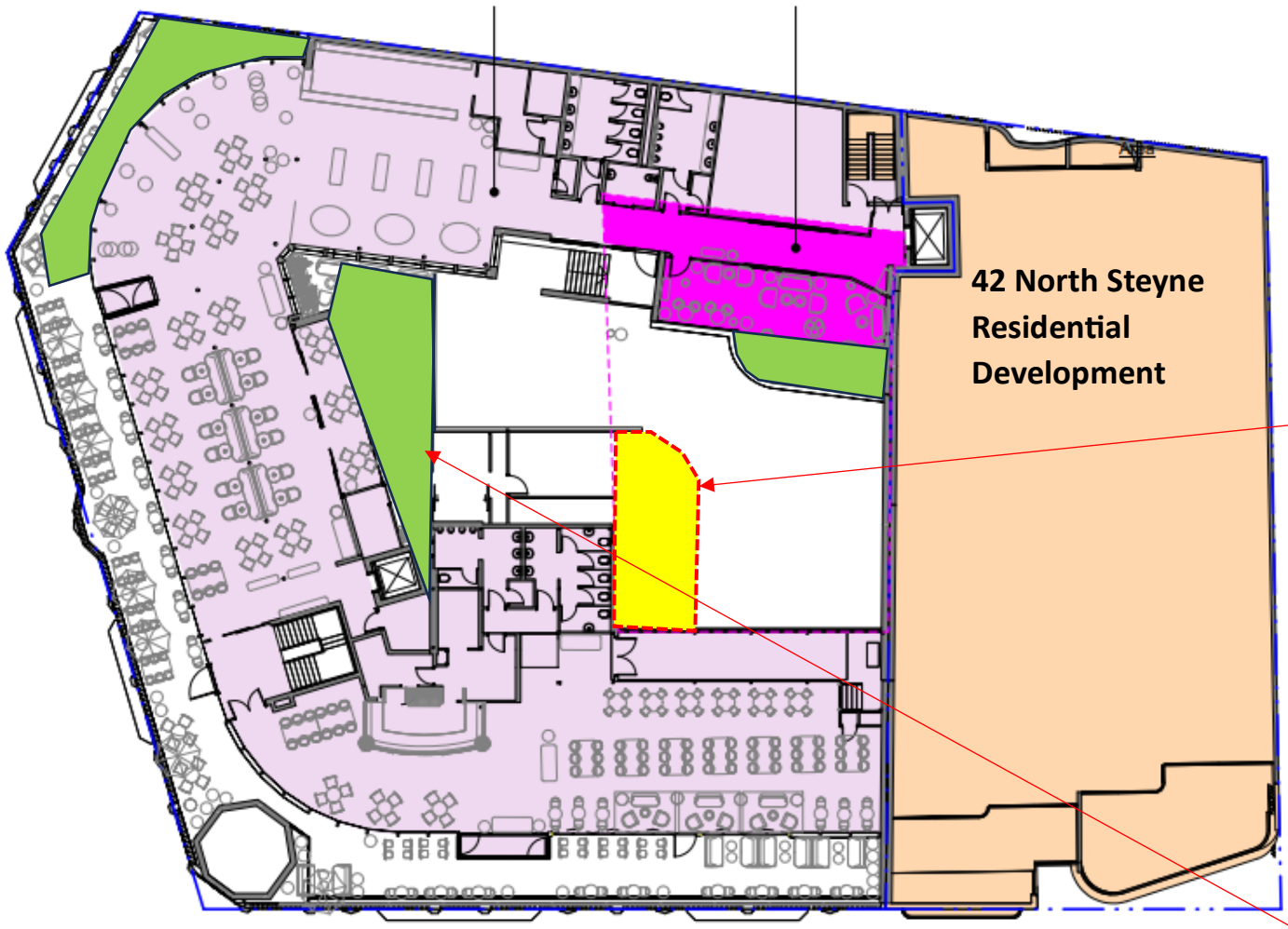


3 LEVEL 2 - PROPOSED
1 : 200 @ A1

Existing airlock to be retained to control music breakout from Level 2 internal areas. One additional airlock to be introduced in new design

New level two building form to provide additional covering of courtyard beer garden. Acoustic lining to soffit of new structure to reduce reverberant noise build up. Building shell materials to have high acoustic performance for control of noise emitted from internal areas.

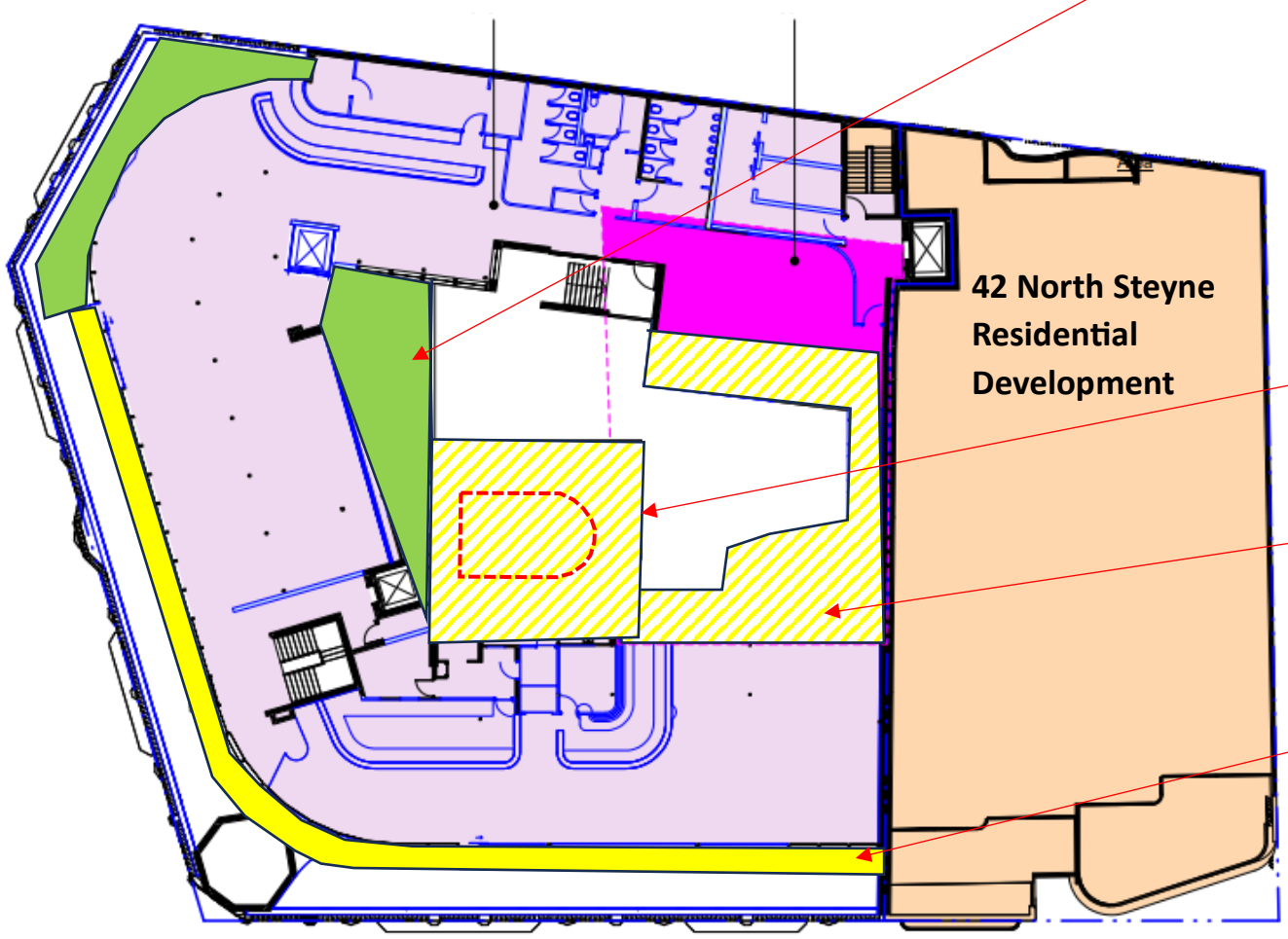
Covering of Outdoor Areas – Comparison Existing and Proposed



Existing bar/service area sits at edge of covered area, no acoustic lining over service area.

Existing covering over Ground Floor courtyard area to be retained

Existing Condition



New bar/service area sits centrally within new covered area, acoustic lining to soffit over covered area.

New covering over Ground Floor Courtyard Beer Garden with acoustic lining to soffit shown hatched.

New covering over Level 2 outdoor area (no soffit lining) providing additional screening to 42 North Steyne

Proposed Condition

New covering to outdoor dining areas

Existing/Retained covering to outdoor dining areas

Covering to outdoor dining areas AND acoustic lining to underside of covering