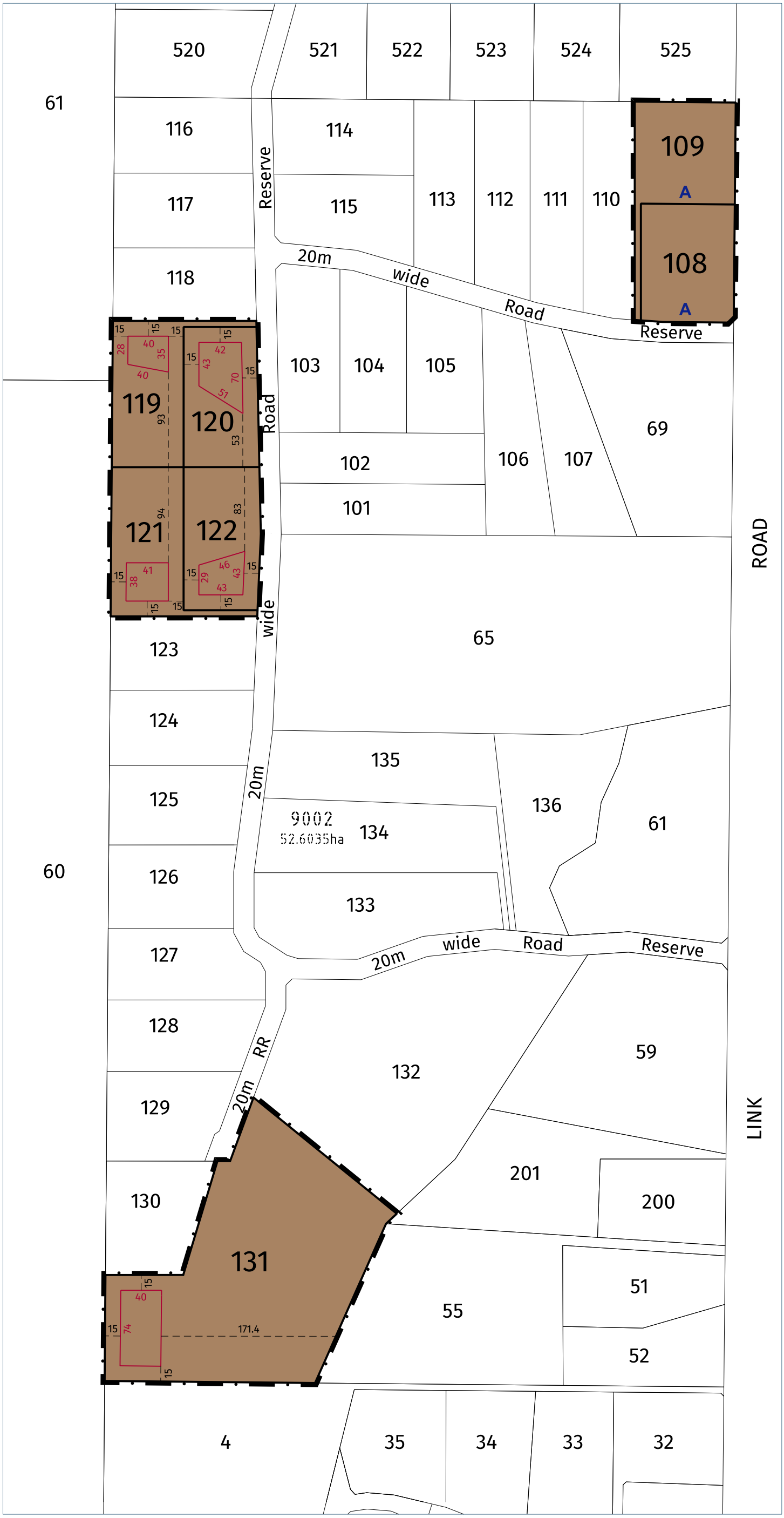

LEGEND

Lots Subject to this LDP

Rural Residential

Building Envelopes

A — Package A Quiet House Design and Notification on Title

APPLICATION OF LOCAL DEVELOPMENT PLAN

This Local Development Plan (LDP) applies to the development of proposed lots as shown on the Plan appended to the WAPC subdivision approval (WAPC Ref. 202367).

1. Dwelling Design – Acoustic Requirements

- Lots 108 and 109: Development on Lots 108 and 109 must be consistent with the approved Local Development Plan and shall incorporate the following:

  - Lot 108: Quiet House Design Package A *
  - Lot 109: Quiet House Design Package A *

  * State Planning Policy 5.4 – Road and Rail Noise Guidelines (2019) refer attached

- All dwellings on these lots must be constructed in accordance with the specifications, layout, and acoustic treatments shown in the respective Quiet House design packages to achieve the intended internal amenity and noise mitigation outcomes. (See Appendix A.)

- Any modifications to the Quiet House design packages require the prior written approval of the local government to ensure ongoing compliance with the acoustic performance objectives of this Local Development Plan.

2. Building Envelopes / Setbacks – Lots 119, 120, 121, 122 and 131

- Development on these lots must comply with the specified building envelopes / setbacks to ensure consistency with the approved Local Development Plan and the intended streetscape and amenity outcomes.

- Any variation to the building envelope / setbacks beyond those shown on the plan requires written approval of the local government.

- Non-habitable and habitable buildings are permitted to be constructed within the building envelopes / setbacks as shown on the approved Local Development Plan.

2. Building Envelopes / Setbacks – Lots 119, 120, 121, 122 and 131

- Development on these lots must comply with the specified building envelopes / setbacks to ensure consistency with the approved Local Development Plan and the intended streetscape and amenity outcomes.

- Any variation to the building envelope / setbacks beyond those shown on the plan requires written approval of the local government.

- Non-habitable and habitable buildings are permitted to be constructed within the building envelopes / setbacks as shown on the approved Local Development Plan.

3. Waste Water Management

- All development on the lots shall incorporate a Secondary Treatment System (STS) and implement the specific Land Application Area (LAA) configuration prescribed within the approved Site-and-Soil Evaluation (SSE) prepared by South Environmental (Report Ref: A037), dated 16 September 2025.

APPLICATION OF LOCAL DEVELOPMENT PLAN 17

The Local Development Plan has been approved by the City of Albany under Schedule 2, Clause 52 of the Planning and Development (Local Planning Scheme) Regulations 2015.

Jan van der Mescht

Digitally signed by Jan van der Mescht
Date: 2026.08.21 08:58:19 +08'00'

Signature *Date*

LOCAL DEVELOPMENT PLAN 17

Lot 9002 (No. 238) Link Road, MARBELUP

Date	20/08/26
Drawn	TJ
Checked	SD
Base Data	Landgate Jul 25
Projection	MGA2020 Z50
Plan No.	24701-04
Rev.	G

Scale: 1:4000 @A3

0 50m 100m

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4.4 QUIET HOUSE DESIGN

Quiet house design aims to reduce the impact of noise to meet the noise targets where reasonable and practical, through a combination of lot and building design and configuration; and if required through bespoke construction standards that generally rely on improving wall and roof insulation and glazing thickness.

4.4.1 BUILDING DESIGN AND CONFIGURATION

Acoustic design to mitigate noise generally recommend:

- positioning noise-sensitive spaces such as bedroom and living areas away from noise source and less noise-sensitive spaces, such as the garage, bathrooms and laundry, closer to the noise source (**Figure 13**);
- private and communal open space located furthest away from the noise source, preferably screened by the building itself;
- use of podiums and extended facade elements to provide useful shielding of floors above and provide distance offset (**Figure 14**);
- designing balustrades to be continuous without gaps to shield noise sources below;
- fully enclosing balconies with operable windows to create winter gardens;
- applying sound-absorptive/diffusive elements to the underside of balcony ceilings (soffit) to reduce reflected sound into the dwelling; and
- avoiding designs and configurations which 'collect' and 'focus' noise (**Figure 15**).

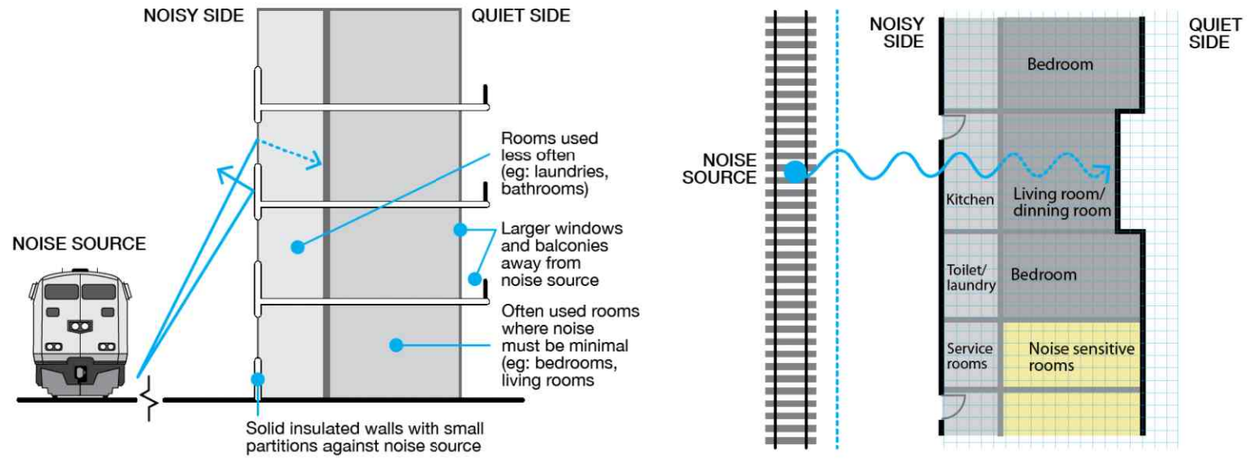

Figure 13: *Locating noise-sensitive rooms away from the noise source*

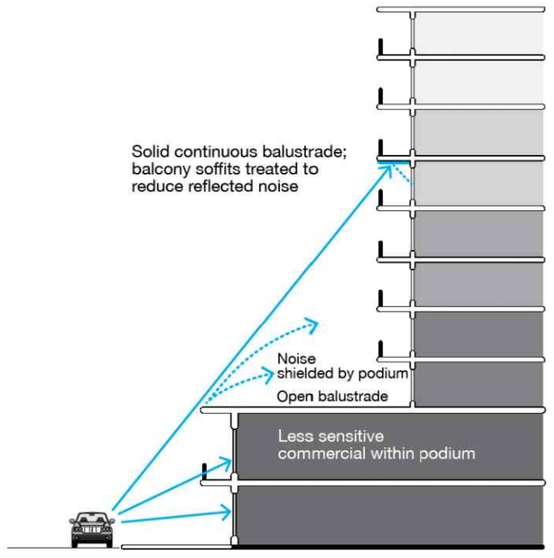

Figure 14: *Shielding effects of commercial podium developments*

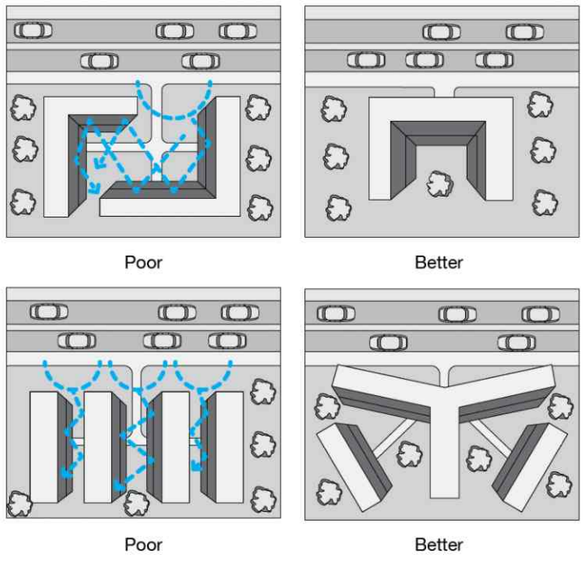

Figure 15: *Acoustic design for the effective orientation of buildings in transport noise zones*

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The positioning of noise-sensitive spaces away from noise sources should not be considered in isolation and should be balanced against other relevant considerations such as solar access, privacy and crime prevention through urban design.

Refer to *State Planning Policy 7.3 Apartment Design* for more detailed guidance on built form design for multi-storey buildings.

4.5 QUIET HOUSE REQUIREMENTS

Where outdoor and indoor noise levels received by a noise-sensitive land-use and/or development exceed the policy's noise target, implementation of quiet house requirements (**Table 3**) is an acceptable solution.

Quiet house requirements can be proposed early in the planning process (scheme amendment/structure plan stages) either by utilising the noise forecast table but more likely from a site-specific detailed noise management plan. At the subdivision and development stage utilising the quiet house requirements in the noise forecast table can provide a deemed to comply route and conditioned accordingly. A combination of quiet house design and physical barriers may be required in circumstances where the noise levels exceed the criteria by 11dB or more and conditioned accordingly.

Quiet house design aims to minimise the extent of noise insulation needed to meet the indoor noise level standards and provide for at least one protected outdoor living area. The approaches to acoustic treatment of a building is generally through providing acceptable glazing thicknesses (refer to **Figure 17**) and improving insulation to walls, roofs and above-ceiling space.

Table 3 provides three levels of quiet house packages that have been designed specifically to address noise from road and rail and be applied as a deemed-to-comply solution. Proposed quiet house design packages within a noise management plan can also take into account the need to mitigate short-term noise events from freight rail through additional building construction standards, that will increase the level of protection for residents, as per the additional quiet house + requirements specified in both **Table 2 and Table 3** of these guidelines.

The quiet house packages are not the only solution to achieving acceptable internal transport noise levels. A suitably qualified acoustical engineer or consultant may also determine more tailored acoustic design requirements for buildings in a transport noise corridor by carrying out acoustic design in accordance with relevant industry standards. This includes the need to meet the relevant design targets specified in AS/NZS 2107:2016 for road traffic noise.

Table 3 also introduces several new terms defined below and illustrated in **Figure 16**:

- **'Facing'** the transport corridor (red): Any part of a building facade is 'facing' the transport corridor if any straight line drawn perpendicular (at a 90 degree angle) to its nearest road lane or railway line intersects that part of the façade without obstruction (ignoring any fence).
- **'Side on'** to transport corridor (blue): Any part of a building facade that is not 'facing' is 'side on' to the transport corridor if any straight line, at any angle, can be drawn from it to intersect the nearest road lane or railway line without obstruction (ignoring any fence).
- **'Opposite'** to transport corridor (green): Neither 'side on' nor 'facing', as defined above.

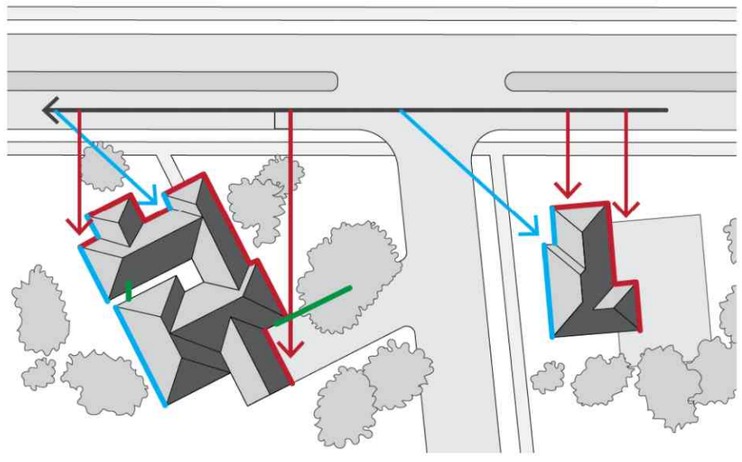

Figure 16: *Determining building face orientation*

LOCAL DEVELOPMENT PLAN 17

Lot 9002 (No. 238) Link Road,
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Date | 20/08/26
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APPENDIX A

Table 3: *Quiet house requirements*

Exposure Category	Orientation to corridor	Acoustic rating and example constructions					Mechanical ventilation / air conditioning considerations
		Walls	**External doors**	**Windows**	**Roofs and ceilings of highest floors**	**Outdoor living areas**	
A Quiet House A	Facing	**Bedroom and indoor living and work areas to Rw+Ctr 45dB** • One row of 92mm studs at 600mm centres with: – Resilient steel channels fixed to the outside of the studs; and – 9.5mm hardboard or 9mm fibre cement sheeting or 11mm fibre cement weatherboards or one layer of 19mm board cladding fixed to the outside of the channels; and – 75mm glass wool (11kg/m3) or 75mm polyester (14kg/m3) insulation, positioned between the studs; and – Two layers of 16mm fire-protective grade plasterboard fixed to the inside face of the studs. – Single leaf of 150mm brick masonry with 13mm cement render on each face. – Double brick: two leaves of 90mm clay brick masonry with a 20mm cavity between leaves.	**Bedrooms:** • Fully glazed hinged door with certified Rw+Ctr 28dB rated door and frame including seals and 6mm glass Other external doors to Rw+Ctr 25dB, e.g. • 35mm solid core timber hinged door and frame system certified to Rw 28dB including seals • Glazed sliding door with 10mm glass and weather seals	**Bedrooms:** • Total external door and window system area up to 40% of room floor area: Sliding or double hung with minimum 10mm single or 6mm-12mm-10mm double insulated glazing (Rw+Ctr 28 dB). Sealed awning or casement windows may use 6 mm glazing instead. • Up to 60% floor area: as per above but must be sealed awning or casement type windows (Rw+Ctr 31dB). **Indoor living and work areas** • Up to 40% floor area: Sliding, awning, casement or double hung with minimum 6mm single pane or 6mm-12mm-6mm double insulated glazing (Rw+Ctr 25dB). • Up to 60% floor area: As per Bedrooms at up to 40% area (Rw+Ctr 28 dB). • Up to 80% floor area: As per Bedrooms at up to 60% area (Rw+Ctr 31dB).	**To Rw+Ctr 35dB** • Concrete or terracotta tile or metal sheet roof with sarking and at least 10mm plasterboard ceiling	At least one outdoor living area located on the opposite side of the building from the transport corridor and/or at least one ground level outdoor living area screened using a solid continuous fence or other structure of minimum 2 metres height above ground level.	• Acoustically rated openings and ductwork to provide a minimum sound reduction performance of Rw 40dB into sensitive spaces • Evaporative systems require attenuated ceiling air vents to allow closed windows • Refrigerant-based systems need to be designed to achieve National Construction Code fresh air ventilation requirements • Openings such as eaves, vents and air inlets must be acoustically treated, closed or relocated to building sides facing away from the corridor where practicable
	Side on						
	Opposite		As per 'Facing' above, except Rw+Ctr values may be 3dB less, e.g. glazed sliding door with 10mm glass and weather seals for bedrooms.	As above, except Rw+Ctr values may be 3dB less, or max % area increased by 20%			
			No specific requirements				
A Quiet House A+	All	As per Quiet House A, except double leaf masonry / brick construction only.	As per Quiet House A.	As per Quiet House A, except that • 'Side-on' requirements same as 'Facing'. • All windows comprise minimum 6 mm thick laminated or toughened glass in sealed awning or casement frames. Polymer (e.g. uPVC) window framing should be used. Evaporative air conditioning systems are not recommended. • No external doors for bedrooms with entry 'Facing' transport corridor	No specific requirements		
B Quiet House B	Facing	**Bedroom and indoor living and work areas to Rw+Ctr 50dB** • Single leaf of 90mm clay brick masonry with: – A row of 70mm x 35mm timber studs or 64mm steel studs at 600mm centres; – A cavity of 25mm between leaves; – 50mm glass wool or polyester cavity insulation (R2.0+) insulation between studs; and – One layer of 10mm plasterboard fixed to the inside face • Single leaf of 220mm brick masonry with 13mm cement render on each face • 150mm thick unlined concrete panel or 200mm thick concrete panel with one layer of 13mm plasterboard or 13mm cement render on each face • Double brick: two leaves of 90mm clay brick masonry with: – A 50mm cavity between leaves – 50mm glass wool or polyester cavity insulation (R2.0+) – resilient ties where required to connect leaves • Double brick: two leaves of 110mm clay brick masonry with a 50mm cavity between leaves and R2.0+ cavity insulation	**Bedrooms** • Fully glazed hinged door with certified Rw+Ctr 31dB rated door and frame including seals and 10mm glass • Other external doors to Rw+Ctr 28dB, e.g. • As per Quiet House A Bedrooms.	**Bedrooms:** • Total external door and window system area up to 40% of room floor area: Fixed sash, awning or casement with minimum 6mm single or 6mm-12mm-6mm double insulated glazing (Rw+Ctr 31 dB). • Up to 60% floor area: as per above but must be minimum 10 mm single or 6mm-12mm-10mm double insulated glazing (Rw+Ctr 34dB). **Indoor living and work areas** • Up to 40% floor area: Sliding or double hung with minimum 6mm single pane or 6mm-12mm-6mm double insulated glazing (Rw+Ctr 28dB). Sealed awning or casement windows may use 6 mm glazing instead. • Up to 60% floor area: As per Bedrooms at up to 40% area (Rw+Ctr 31 dB). • Up to 80% floor area: As per Bedrooms at up to 60% area (Rw+Ctr 34dB).	**To Rw+Ctr 35dB** • Concrete or terracotta tile or metal sheet roof, sarking and at least 10mm plasterboard ceiling, R3.0+ insulation	At least one outdoor living area located on the opposite side of the building from the corridor and/or at least one ground level outdoor living area screened using a solid continuous fence or other structure of minimum 2.4 metres height above ground level	
	Side-on		As per Quiet House A 'Facing' above (Rw+Ctr values may be 3dB less, or max % area increased by 20%).				
	Opposite		As per Quiet House A 'Side-on' above.				
B Quiet House B+	All	As per Quiet House B example above, except use double leaf masonry construction only.	As per Quiet House B, except • No external doors for bedrooms with entry 'Facing' or 'Side-on' to transport corridor	As per Quiet House B, except that • 'Side-on' requirements become the same as Quiet House B 'Facing'. • All windows comprise minimum 6 mm thick laminated or toughened glass in sealed awning or casement frames. Polymer (e.g. uPVC) window framing should be used. • Evaporative air conditioning systems are not recommended.	As per Quiet House C (to Rw+Ctr 40dB).		

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APPENDIX A

Exposure Category	Orientation to corridor	Acoustic rating and example constructions					Mechanical ventilation / air conditioning considerations
		Walls	**External doors**	**Windows**	**Roofs and ceilings of highest floors**	**Outdoor living areas**	
C **Quiet House C**	Facing	**Bedroom and indoor living and work areas to Rw+Ctr 50dB** • As per Quiet House B example above	**Bedrooms** • External doors to bedrooms facing the corridor are not recommended. Other external doors to Rw+Ctr 30dB, e.g. • Fully glazed hinged door with certified Rw+Ctr 31dB rated door and frame including seals and 10mm glass. • 40mm solid core timber frame and door (without glass or with glass inserts not less than 6mm), side hinged with certified Rw 32dB acoustically rated door and frame system including seals	**Bedrooms:** • Total external door and window system area up to 20% of room floor area: Fixed sash, awning or casement with minimum 6mm single or 6mm-12mm-6mm double insulated glazing (Rw+Ctr 31 dB). • Up to 40% floor area: as per above but must be minimum 10 mm single or 6mm-12mm-10mm double insulated glazing (Rw+Ctr 34dB). **Indoor living and work areas** • Up to 40% floor area: Sliding or double hung with minimum 6mm single pane or 6mm-12mm-6mm double insulated glazing (Rw+Ctr 31dB). Sealed awning or casement windows may use 6 mm glazing instead. • Up to 60% floor area: As per Bedrooms at up to 40% area (Rw+Ctr 34 dB).	**To Rw+Ctr 40dB** • To all bedrooms, 2 layers of 10mm plasterboard, or one layer 13 mm high density sealed plasterboard (minimum surface density of 12.5 kg/m2), affixed using steel furring channels beneath ceiling rafters / supports. • R3.0+ insulation batts laid in cavity. • Concrete or terracotta tile roof with sarking, or metal sheet roof with foil backed R2.0+ fibre insulation between steel sheeting and roof battens.	As per Quiet House B	• Acoustically rated openings and ductwork to provide a minimum sound reduction performance of Rw 40dB into sensitive spaces • Evaporative systems require attenuated ceiling air vents to allow closed windows • Refrigerant-based systems need to be designed to achieve National Construction Code fresh air ventilation requirements • Openings such as eaves, vents and air inlets must be acoustically treated, closed or relocated to building sides facing away from the corridor where practicable
	Side-on		As per Quiet House B 'Facing' above (Rw+Ctr values may be 3dB less, or max % area increased by 20%).				
	Opposite		As per Quiet House A 'Facing' above.				
C **Quiet House C+**	All	As per Quiet House B example above, except using double leaf masonry construction only. • Double brick: two leaves of 90mm clay brick masonry with: – A 50mm cavity between leaves – R2.0+ cavity insulation – resilient ties where required to connect • Double brick: two leaves of 110mm clay brick masonry with a 50mm cavity between leaves and R2.0+ cavity insulation	As per Quiet House C, except • No external doors for bedrooms with entry 'Facing' or 'Side-on' to transport corridor.	As per Quiet House C, except that • 'Side-on' requirements same as Quiet House C 'Facing'. • All windows into habitable areas comprise minimum 6 mm thick glazing in sealed awning or casement frames. Polymer (e.g. uPVC) window framing and hardware which cannot rattle loose should be used throughout. • Evaporative air conditioning systems are not recommended.	To Rw+Ctr 45dB As per Quiet House C, except • the roof must be concrete or terracotta tile construction with sarking (i.e. no steel sheet roof option). • Ceilings to bedrooms must be constructed from at least 2 overlapping layers of flush plasterboard.		

Footnotes:

- The airborne weighted sound reduction index (Rw) and traffic correction term (Ctr) are published by manufacturers/suppliers, can be determined by acoustical consultants or measured in accordance with AS ISO 717.1. Higher Rw+Ctr values infer greater sound insulation. All values are minimum Rw+Ctr (dB)
- Example construction for different external wall ratings of Rw+Ctr 45dB and 50dB are provided and are listed within Specification F5.2 in Volume 1 Part F of the National Construction Code. These values are based on the installation and sealing of joints and penetrations in accordance with Specification F5.2.
- Window and external door sound reduction values provided are based on the provision of suitable acoustic seals to prevent sound leakage. To comply with the above ratings, all external glass windows and doors specified under requirements A, B and C must have the following:
  - Operable windows and external doors must have a seal to restrict air infiltration fitted to each edge and doors must have a drop seal to provide an airtight seal when closed
  - Within doors or fixed framing, glazing must be set and sealed using an airtight arrangement of non-hardening sealant, soft rubber (elastomer) gasket and/or glazing tape, or be verified by manufacturer or approved person that the construction system as to be installed achieves the relevant Rw+Ctr value
  - In this context, a seal is foam or silicon based rubber compressible strip, fibrous seal with vinyl fin interleaf or the like. Brush / pile type seals without this seal included are not allowed.
  - Glazing referenced can be monolithic, laminated or toughened safety glass
- Any penetrations in a part of the building envelope must be acoustically treated so as not to degrade the performance of the building elements affected. Most penetrations in external walls such as pipes, cables or ducts can be sealed through caulking gaps with non-hardening mastic or suitable mortar

LOCAL DEVELOPMENT PLAN 17

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