APPENDIX C

Deemed to Satisfy Quiet House Design Packages

Road Traffic and Passenger Rail
Quiet House Requirements
(Based on Table 3 of State Planning Policy 5.4 2019)

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 Stud Frame Walls □ One row of 92mm studs at 60mm centres with: □ Resilient steel channels fixed to the outside of the studs; and □ 9.5mm hardboard or 9mm 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. Brick Walls □ Single leaf of 150mm brick masonry with 13mm cement render on each face: OR □ Double brick: two leaves of 90 mm clay brick masonry with a 20mm cavity between leaves.	Bedrooms: □ Fully glazed hinged door with certified R_w+C_{tr} 28dB rated door and frame including seals and 6mm glass Indoor Living and work areas: □ 35mm solid core timber hinged door and frame system certified to Rw 28dB including seals: OR □ Glazed sliding door with 10 mm 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 10 mm single or 6mm-12mm-10mm double insulted glazing (R_w+C_{tr} 28 dB). Sealed awning or casement windows may use 6 mm glazing instead: OR □ Up to 60% floor area: as per above but must be sealed awning or casement type windows (R_w+C_{tr} 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 insulted glazing (R_w+C_{tr} 25dB): OR □ Up to 60% floor area: As per Bedrooms at up to 40% area (Rw+Ctr28 dB : OR □ Up to 80% floor area: As per Bedrooms at up to 60% area (R_w+C_{tr} 31 dB).	To R_w+C_{tr} 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		As per "Facing" above, except R_w+C_{tr} values may be 3dB less, e.g. glazed sliding door with 10 mm glass and weather seals for bedrooms	As above, except R_w+C_{tr} values may be 3dB less, or max % area increased by 20%			
	Opposite		No specific requirements	No specific requirements			

Road Traffic and Passenger Rail
Quiet House Requirements
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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	
B Quiet House B	Facing	Bedroom and indoor living and work areas to R_w+C_{tr} 50dB Single leaf of 90 mm clay brick masonry with: • A row of 70 mm x 35 mm timber studs or 64 mm steel studs at 600 mm centres; • A cavity of 25 mm between leaves; • 50 mm 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 • 50mm cavity between leaves and R2.0+ cavity insulation	Bedrooms • Fully glazed hinged door with certified R_w+C_{tr} 31dB rated door and frame including seals and 10mm glass Indoor Living and work areas • 35mm solid core timber hinged door and frame system certified to Rw 28dB including seals: OR • Glazed sliding door with 10 mm glass and weather seals	Bedrooms: • Total external door and window system area up to 40% of room floor areas: Fixed sash, awning or casement with minimum 6mm single or 6mm-12mm-6mm double insulted glazing (Rw+Ctr 31dB). • Up to 60% floor area: as per above but must be minimum10mm 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 insulted glazing (R_w+C_{tr} 28dB). Sealed awning or casement windows may use 6mm glazing instead. : OR • Up to 60% floor area: As per Bedrooms at up to 40% area (R_w+C_{tr} 31dB). : OR • Up to 80% floor area: As per Bedrooms at up to 60% area (R_w+C_{tr} 34dB).	To R_w+C_{tr} 35dB • Concrete or terracotta tile sarking and at least 10mm plasterboard ceiling, R3.0+ insulation 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	• 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		Bedrooms: • Fully glazed hinged door with certified R_w+C_{tr} 28dB rated door and frame including seals and 6mm glass Indoor Living and work areas: • 35mm solid core timber hinged door and frame system certified to Rw 28dB including seals: OR • Glazed sliding door with 10 mm 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 10 mm single or 6mm-12mm-10mm double insulted glazing (R_w+C_{tr} 28 dB). Sealed awning or casement windows may use 6 mm glazing instead. : OR • Up to 60% floor area: as per above but must be sealed awning or casement type windows (R_w+C_{tr} 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 insulted glazing (R_w+C_{tr} 25dB). : OR • Up to 60% floor area: As per Bedrooms at up to 40% area (Rw+Ctr28 dB) : OR • Up to 80% floor area: As per Bedrooms at up to 60% area (R_w+C_{tr} 31 dB).			
	Opposite		As above, except R_w+C_{tr} values may be 3dB less, or max % area increased by 20%	As above, except R_w+C_{tr} values may be 3dB less, or max % area increased by 20%			