

All lots encompassed by this Local Development Plan (LDP) are pursuant to Clause 5 - *Medium Density Single Houses in Structure Plan Areas* (RMD Codes) of the City of Mandurah's **Local Planning Policy LPP1 – Residential Design Codes Policy**.

All additional Estate provisions proposed by this LDP constitute Residential Design Code (R-Codes) Volume 1, Single House Development, 'Deemed to Comply' requirements and are provided to ensure consistent built form outcomes.

All other requirements of the Town Planning Scheme and R-Codes shall be satisfied in all other matters.

Consultation with the adjoining or other landowners to achieve a variation to the R-Codes, as provided by this LDP, is not required.

Local Development Plan Provisions – Ocean Hill Private Estate		
1. Noise Management – Rail Noise		a) 'Package A', 'Package B' and 'Package C' – Deemed to Satisfy Construction Standards are required for ground and upper floors as identified on the LDP; said lots affected by rail noise pertaining to the Perth - Mandurah rail line. b) Building permit applications to the City of Mandurah must demonstrate compliance with the relevant 'Deemed to Satisfy Construction Standards', including the provision of mechanical ventilation. Alternative construction methodology can be used subject to City of Mandurah approval upon advice from a suitably qualified acoustic consultant. c) Specialist acoustic advice is required for specified lots where an upper floor is proposed.
PROVISIONS FOR R25, R30 & R40 CODED AREAS AS PER VOLUME 1, ALL SINGLE HOUSE DEVELOPMENT		ADDITIONAL ESTATE BUILT FORM PROVISIONS – ALL DENSITIES
1. Street Setback and Front Fences (R-Codes 5.1.2 & 5.2.4)	Per relevant density and development provisions under City of Mandurah's LPP 1 – RMD Codes .	a) The design of dwellings for nominated corner lots shall include a side return which has at least one major opening facing the direction of the Secondary Street. The side return shall be articulated so to present as an extension of the front elevation and shall not be obstructed by visually impermeable fencing. <ul style="list-style-type: none">NB. This provision does not apply to lots with a Secondary Street boundary to a Laneway. b) Any Estate provided fencing/retaining on private lots shall not be modified without written approval from the City of Mandurah and shall be maintained as visually permeable by landowners where applicable.
2. Street and Lot Boundary Setback (R-Codes 5.1.2 & 5.1.3)		a) Nil
3. Boundary Walls (Lot Boundary Setback) (R-Codes 5.1.3)		a) Nil
4. Open Space (R-Codes 5.1.4)		a) Nil
5. Setback of carports and garages, Garage width and Parking (R-Codes 5.2.1, 5.2.2, 5.3.3 and 5.3.5)		Rear load a) All structures, including fencing and garages, shall be set back minimum 1.0m from the laneway boundary. <ul style="list-style-type: none">NB. This provision exceeds standard RMD Codes requirements to the City's satisfaction. General a) Designated garage locations apply to some lots as identified on Plan; this referencing the side of the lot to which the garage should be located. Designated garage locations do not prescribe boundary walls. b) All other garage locations are subject to the location of infrastructure services, dedicated on-street parking bays and Estate retaining, landscaping and fencing. It is not mandatory for garages to access the lot via a Secondary Street where available. c) Garages to corner lots may be exempt from being 0.5m behind the main part of the dwelling subject to: <ul style="list-style-type: none">the garage protruding no greater than 1.5m forward of the main building line; andprovision of a portico, porch or veranda to the Primary Street façade to offset the garage protrusion.
6. Overshadowing (R-Codes 5.4.1)		Nil
7. Privacy (R-Codes 5.4.1)		Nil
8. Other		a) Designated 1.5m x 1.0m bin-recess areas shall be provided within the available laneway setback area; this may be provided in front of the garage door where lot width restrictions apply. b) Street trees will be provided by the developer generally at a rate of one tree per lot. c) No street trees or Estate retaining, landscaping or fencing shall be removed or modified without written consent from the City of Mandurah.



Not to Scale @ A3

PLAN: CPLOH-4-004
DATE: 16/07/2024
PROJECTION: PCG 94
DATUM: AHD

REVISION: A
DRAWN: JP
PLANNER: CE
CHECK: BK



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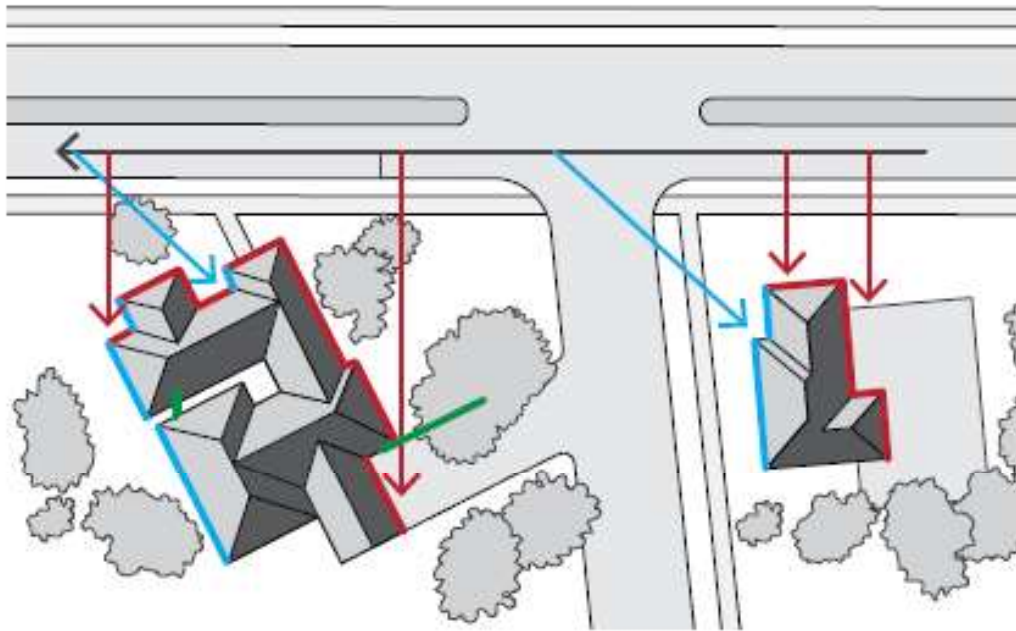
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The packages and information provided on the following pages are taken from *Road and Rail Noise Guidelines* (September 2019).

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 is an acceptable solution.

With regards to the packages, the following definitions are provided:

- **Facing** the transport corridor (red): Any part of a building façade 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 façade 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.



Quiet House Package A

56-58 dB $L_{Aeq}(\text{Day})$ & 51-53 dB $L_{Aeq}(\text{Night})$

Element	Orientation	Room	
		Bedroom	Indoor Living and Work Areas
External Windows	Facing	<ul style="list-style-type: none"> Up to 40% floor area ($R_w + C_{tr} \geq 28$): <ul style="list-style-type: none"> Sliding or double hung with minimum 10mm single or 6mm-12mm-10mm double insulated glazing; Sealed awning or casement windows with minimum 6mm glass. Up to 60% floor area ($R_w + C_{tr} \geq 31$): <ul style="list-style-type: none"> Sealed awning or casement windows with minimum 6mm glass. 	<ul style="list-style-type: none"> Up to 40% floor area ($R_w + C_{tr} \geq 25$): <ul style="list-style-type: none"> Sliding or double hung with minimum 6mm single or 6mm-12mm-6mm double insulated glazing; Up to 60% floor area ($R_w + C_{tr} \geq 28$); Up to 80% floor area ($R_w + C_{tr} \geq 31$).
	Side On	As above, except $R_w + C_{tr}$ values may be 3 dB less or max % area increased by 20%.	
	Opposite	No specific requirements	
External Doors	Facing	<ul style="list-style-type: none"> Fully glazed hinged door with certified $R_w + C_{tr} \geq 28$ rated door and frame including seals and 6mm glass. 	<ul style="list-style-type: none"> Doors to achieve $R_w + C_{tr} \geq 25$: <ul style="list-style-type: none"> 35mm Solid timber core hinged door and frame system certified to $R_w 28$ including seals; Glazed sliding door with 10mm glass and weather seals.
	Side On	As above, except $R_w + C_{tr}$ values may be 3 dB less.	
	Opposite	No specific requirements	
External Walls	All	<ul style="list-style-type: none"> $R_w + C_{tr} \geq 45$: <ul style="list-style-type: none"> Two leaves of 90mm thick clay brick masonry with minimum 20mm cavity; or Single leaf of 150mm brick masonry with 13mm cement render on each face; or One row of 92mm studs at 600mm centres with: <ul style="list-style-type: none"> Resilient steel channels fixed to the outside of the studs; and 9.5mm hardboard or fibre cement sheeting or 11mm fibre cement weatherboards fixed to the outside; 75mm thick mineral wool insulation with a density of at least 11kg/m³; and 2 x 16mm fire-rated plasterboard to inside. 	
Roofs and Ceilings	All	<ul style="list-style-type: none"> $R_w + C_{tr} \geq 35$; Concrete or terracotta tile or metal sheet roof with sarking and at least 10mm plasterboard. 	
Outdoor Living Areas		At least one outdoor living area located on the opposite side of the building from the transport corridor 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.	

Quiet House Package B

59-62 dB $L_{Aeq}(\text{Day})$ & 54-57 dB $L_{Aeq}(\text{Night})$

Element	Orientation	Room	
		Bedroom	Indoor Living and Work Areas
External Windows	Facing	<ul style="list-style-type: none"> Up to 40% floor area ($R_w + C_{tr} \geq 31$): <ul style="list-style-type: none"> Fixed sash, awning or casement with minimum 6mm glass or 6mm-12mm-6mm double insulated glazing. Up to 60% floor area ($R_w + C_{tr} \geq 34$): <ul style="list-style-type: none"> Fixed sash, awning or casement with minimum 10mm glass or 6mm-12mm-10mm double insulated glazing. 	<ul style="list-style-type: none"> Up to 40% floor area ($R_w + C_{tr} \geq 28$): <ul style="list-style-type: none"> Sliding or double hung with 6mm-12mm-10mm double insulated glazing; Sealed awning or casement windows with minimum 6mm glass. Up to 60% floor area ($R_w + C_{tr} \geq 31$); Up to 80% floor area ($R_w + C_{tr} \geq 34$).
	Side On	As above, except $R_w + C_{tr}$ values may be 3 dB less or max % area increased by 20%.	
	Opposite	As above, except $R_w + C_{tr}$ values may be 6 dB less or max % area increased by 20%.	
External Doors	Facing	<ul style="list-style-type: none"> Fully glazed hinged door with certified $R_w + C_{tr} \geq 31$ rated door and frame including seals and 10mm glass. 	<ul style="list-style-type: none"> Doors to achieve $R_w + C_{tr} \geq 28$: <ul style="list-style-type: none"> 40mm Solid timber core hinged door and frame system certified to $R_w 32$ including seals; Fully glazed hinged door with certified $R_w + C_{tr} \geq 28$ rated door and frame including seals and 6mm glass.
	Side On	As above, except $R_w + C_{tr}$ values may be 3 dB less or max % area increased by 20%.	
	Opposite	As above, except $R_w + C_{tr}$ values may be 6 dB less or max % area increased by 20%.	
External Walls	All	<ul style="list-style-type: none"> $R_w + C_{tr} \geq 50$: <ul style="list-style-type: none"> Two leaves of 90mm thick clay brick masonry with minimum 50mm cavity between leaves and 25mm glasswool or polyester (24kg/m³). Resilient ties used where required to connect leaves. Two leaves of 110mm clay brick masonry with minimum 50mm cavity between leaves and 25mm glasswool or polyester insulation (24kg/m³). 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. Single leaf of 90mm clay brick masonry with: <ul style="list-style-type: none"> A row of 70mm x 35mm timber studs or 64mm steel studs at 600mm centres; A cavity of 25mm between leaves; 50mm glasswool or polyester insulation (11kg/m³) between studs; and One layer of 10mm plasterboard fixed to the inside face. 	
Roofs and Ceilings	All	<ul style="list-style-type: none"> $R_w + C_{tr} \geq 35$: <ul style="list-style-type: none"> Concrete or terracotta tile or metal sheet roof with sarking and at least 10mm plasterboard ceiling with R3.0+ fibrous insulation. 	
Outdoor Living Areas		At least one outdoor living area located on the opposite side of the building from the transport corridor 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.	

Quiet House Package C

63-66 dB $L_{Aeq}(\text{Day})$ & 58-61 dB $L_{Aeq}(\text{Night})$

Element	Orientation	Room	
		Bedroom	Indoor Living and Work Areas
External Windows	Facing	<ul style="list-style-type: none"> Up to 20% floor area ($R_w + C_{tr} \geq 31$): <ul style="list-style-type: none"> Fixed sash, awning or casement with minimum 6mm glass or 6mm-12mm-6mm double insulated glazing. Up to 40% floor area ($R_w + C_{tr} \geq 34$): <ul style="list-style-type: none"> Fixed sash, awning or casement with minimum 10mm glass or 6mm-12mm-10mm double insulated glazing. 	<ul style="list-style-type: none"> Up to 40% floor area ($R_w + C_{tr} \geq 31$): <ul style="list-style-type: none"> Fixed sash, awning or casement with minimum 6mm glass or 6mm-12mm-6mm double insulated glazing. Up to 60% floor area ($R_w + C_{tr} \geq 34$): <ul style="list-style-type: none"> Fixed sash, awning or casement with minimum 10mm glass or 6mm-12mm-10mm double insulated glazing.
	Side On	As above, except $R_w + C_{tr}$ values may be 3 dB less or max % area increased by 20%.	
	Opposite	As above, except $R_w + C_{tr}$ values may be 6 dB less or max % area increased by 20%.	
External Doors	Facing	<ul style="list-style-type: none"> Not recommended. 	<ul style="list-style-type: none"> Doors to achieve $R_w + C_{tr} \geq 30$: <ul style="list-style-type: none"> Fully glazed hinged door with certified $R_w + C_{tr} \geq 31$ rated door and frame including seals and 10mm glass; 40mm Solid timber core side hinged door, frame and seal system certified to $R_w 32$ including seals. Any glass inserts to be minimum 6mm.
	Side On	As above, except $R_w + C_{tr}$ values may be 3 dB less or max % area increased by 20%.	
	Opposite	As above, except $R_w + C_{tr}$ values may be 6 dB less or max % area increased by 20%.	
External Walls	All	<ul style="list-style-type: none"> $R_w + C_{tr} \geq 50$: <ul style="list-style-type: none"> Two leaves of 90mm thick clay brick masonry with minimum 50mm cavity between leaves and 25mm glasswool or polyester insulation (24kg/m^3). Resilient ties used where required to connect leaves. Two leaves of 110mm clay brick masonry with minimum 50mm cavity between leaves and 25mm glasswool or polyester insulation (24kg/m^3). 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. Single leaf of 90mm clay brick masonry with: <ul style="list-style-type: none"> A row of 70mm x 35mm timber studs or 64mm steel studs at 600mm centres; A cavity of 25mm between leaves; 50mm glasswool or polyester insulation (11kg/m^3) between studs; and One layer of 10mm plasterboard fixed to the inside face. 	
Roofs and Ceilings	All	<ul style="list-style-type: none"> $R_w + C_{tr} \geq 40$: <ul style="list-style-type: none"> Concrete or terracotta tile roof with sarking, or metal sheet roof with foil backed R2.0+ fibrous insulation between steel sheeting and roof battens; R3.0+ insulation batts above ceiling; 2 x 10mm plasterboard ceiling or 1 x 13mm sound-rated plasterboard affixed using steel furring channel to ceiling rafters. 	
Outdoor Living Areas		At least one outdoor living area located on the opposite side of the building from the transport corridor 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.	

Mechanical Ventilation requirements

In implementing the acceptable treatment packages, fresh air requirements of the National Construction Code must be satisfied on the basis of windows closed. Whilst not the only solution, the most common is mechanical ventilation / air-conditioning is installed with the following considerations:

- Acoustically rated openings and ductwork to provide a minimum sound reduction performance of R_w 40 dB 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.

Notification

Notifications on title advise prospective purchasers of the potential for noise impacts from major transport corridors and help with managing expectations.

The Notification is to state as follows:

This lot is in the vicinity of a transport corridor and is affected, or may in the future be affected, by road and rail transport noise. Road and rail transport noise levels may rise or fall over time depending on the type and volume of traffic.