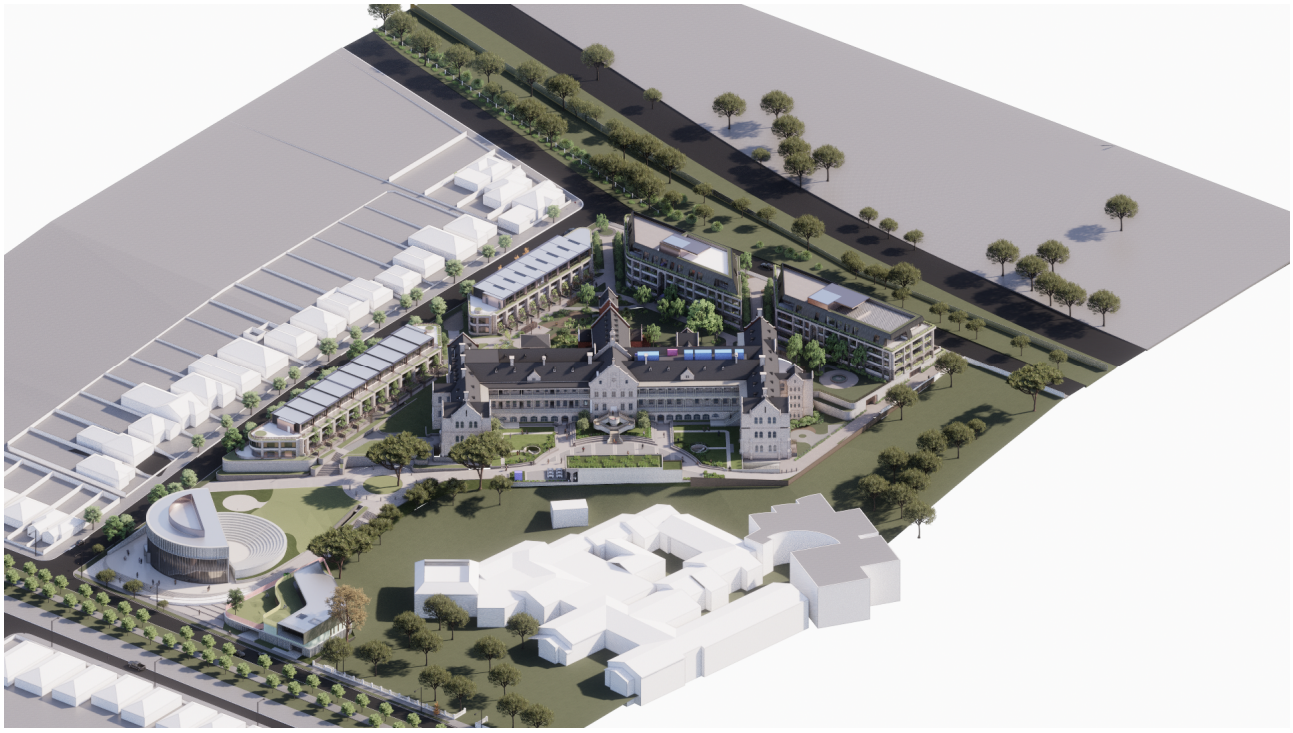
Hub.
Property Group

CHORA
7 Hartington Street, Northcote
Operating Management Plan



Operating Management Plan
CHORA – 7 Hartington St, Northcote

1 Introduction

This Operating Management Plan (OMP) has been prepared by Ratio Consultants with inputs from Hub Property Group and Holy Monastery of Axion Esti to accompany a development application for a mixed-use development on the land located at 7 Hartington Street, Northcote.

1.1 Purpose of this Plan

The purpose of this OMP is to describe the operational, parking and management details of the non-residential uses on the site and outline measures that should be implemented in order to mitigate any potential impacts on both the proposed residential uses on the site and any adjoining properties.

Details in the plan include the proposed patron and staff numbers, access and parking arrangements as well as noise and patron management.

1.2 Site Management

The precinct will be managed by an independent board, comprising seven directors to be appointed based on their professional skills in specialist areas that will assist the successful operation of the precinct. One of the seven directors will be a representative of the Church.

The day-to-day operation of the Precinct will be the responsibility of a Precinct CEO, supported by a small management team responsible for different areas of the operation. The Board's priority will be to establish the guiding principles and policies for the Precinct and produce an appropriate Governance Plan for the organisation. It will then delegate responsibility and authority to the CEO (who is then responsible for enacting these principles and policies within the framework of the Governance Plan).

The Board will continuously monitor compliance with those guiding principles and policies, and ensure the CEO (and management) is held accountable for their performance. Once formulated, the Precinct's Governance Plan will be embedded within the constitution of the organisation and it will be deemed the Governance direction in perpetuity.

2 Patron Numbers and Hours of Operation

2.1 Introduction

The site will comprise the following non-residential uses:

- Hotel including function centre/ballroom
- Workshop spaces
- Church
- Early Learning Centre
- Amphitheatre
- Restaurant

Each of these uses will operate independently of one another, however, there will be synergies between uses such that it is unlikely that all will be operating at the same time. For example, patrons may attend the church for a wedding and then have the wedding reception within the function centre/ballroom with attendees staying at the hotel.

2.2 Patron Numbers

The following table outlines the patron capacity of each of the proposed non-residential uses:

USE	OCCUPANCY
Hotel	100
Function Centre/Ballroom	250
Makers spaces	60
Church	200
Early Learning Centre	110 CHILDREN
Amphitheatre	430
Restaurant	150 (100 internal, 50 external)

2.3 Hours of Operation

The following table outlines the proposed hours of operation for a typical weekday and a typical weekend:

USE	WEEKDAY	WEEKEND
Hotel	24 hours a day Check in: 2pm Check out: 10am	24 hours a day Check in: 2pm Check out: 10am
Function Centre/Ballroom	8am – 12am	8am – 1am
Makers spaces	6am – 10pm	8am – 6pm
Church[1]	6am – 10pm	6am – 10pm
Early Learning Centre	7am – 6pm	9am – 5pm
Amphitheatre	8am – 12am	8am – 12am
Restaurant	8am – 11pm	8am – 11pm

[1] These hours represent when the Church is open for reflection. Weekly mass occurs on Sunday, with more irregular/infrequent smaller/shorter morning or early evening services throughout the week (avg. 3-4 times a week).

3 Noise and Amenity

This section should be read in conjunction with the Acoustic Assessment prepared by Acoustic Logic.

There are several uses within the site that are expected to be a source of noise including the outdoor play area for the early learning centre, the amphitheatre, the function centre/ballroom and the restaurant.

3.1 Early Learning Centre

The outdoor play spaces have been located to front St Georges Road and located away from any residential uses on the site.

The Acoustic Assessment indicates that the predicted noise level from children playing outside complies with the assessment criteria at identified nearby noise sensitive residential receivers.

The following key management controls and associated acoustic measures will be incorporated into the development:

- 1.7m high solid imperforate screen to the level 1 outdoor play area.
- 1.5m high solid imperforate screen to the level 2 outdoor play area.
- Children permitted in the outdoor play area only during the hours of 7.00am to 6.00pm Monday to Friday.
- Use of amplified music shall be limited to internal spaces within the building.
- Crying children to be taken inside and comforted as soon as practicable.
- Height of play equipment not to exceed the height of the acoustic screening to outdoor play area set out above.

3.2 Amphitheatre

The Amphitheatre has both internal and external performance areas that will incorporate live music / amplified music.

Whilst the Amphitheatre will be permitted to operate between 8am and 12am, this will be restricted to times when there is an event on and therefore not likely to occur on a daily basis.

The following acoustic recommendations shall be implemented to ensure compliance with the assessment criteria:

- Music noise shall be limited by electronic 1/1 Octave band noise limiter installed on site.
- Any amplified music shall be operated through in-house speakers only.
- Speakers shall be vibrated isolated from the building structure.
- All external windows and doors shall be closed during events, except when patrons are entering/exiting the venue.
- No external amplification systems are permitted except for emergency requirements.
- Signage requesting patrons leave in an orderly manner and respect neighbours shall be installed outside venue.
- Patrons will be directed to disperse via St Georges Road.
- External glazing shall be selected to achieve a nominal rating of Rw 38.

3.3 Restaurant

The restaurant is located along the southern boundary of the site and is shielded from the townhouses and the apartment building by the existing heritage building.

It will have a direct interface with the apartments within the heritage building although separated by the platia.

The following acoustic measures shall be incorporated in relation to the operation of the restaurant:

- Any amplified music will be limited to background music only and be limited by the operator to ensure compliance with EPA Publication 1826.4 – Part 2 requirements.
- Use of amplified music only permitted until close of business provided that it is background music only. Music noise shall only be played within the premises.
- Glass bottles shall not be emptied/transferred externally before 7am or after 10pm.
- Staff are to be instructed not to drop heavy garbage items/bottles into the bin.

3.4 Function Centre / Ballroom

The operation of the function centre / ballroom will occur on an as-needed basis.

Appropriate acoustic measures in relation to the use of the function centre / ballroom will be subject to final review and approval from Heritage Victoria given the historical significance of the heritage building.

However, it is expected that appropriate noise mitigation measures can be incorporated into the final design including installation of a secondary pane of glazing spaced from the existing windows by approximately 50-100mm.

3.5 Complaint Response Procedure

All noise or amenity-related complaints received from members of the public, nearby residents, Council, or other relevant authorities will be recorded and addressed in accordance with the following procedures:

- A designated Precinct CEO (appointed from the Board) will act as the primary contact for complaints and maintain a Complaint Register that logs the nature of the complaint, time and date received, complainant contact (where provided) and resolution steps.
- Complaints will be investigated within 48 hours of receipt.
- Where necessary, the Precinct CEO will engage an acoustic consultant for further monitoring or assessment.
- Where non-compliance is identified, appropriate rectification measures (such as operational changes, equipment calibration, or acoustic upgrades) will be implemented as soon as practicable.
- Complainants who have provided contact details will be informed of the outcome of the investigation and any corrective actions taken.
- The Complaint Register will be available for inspection by the Responsible Authority upon request.

3.6 Staff training

All staff associated with noise producing uses will be provided with a copy of the Operating Management Plan as part of their induction.

This will ensure that they understand:

- Any noise-related permit conditions applicable to the use.
- The importance of minimising noise, particularly during sensitive hours (10pm-7am).
- How to respond to complaints and escalate them to management when required.

3.7 Ongoing Acoustic Compliance

If required by permit conditions, the Precinct Manager will engage a suitably qualified acoustic consultant to carry out post-development / ongoing acoustic testing to ensure compliance with the relevant EPA Publication 1826.4 – Part 2 requirements.

It is the responsibility of each commercial tenant to ensure ongoing compliance as set out in this OMP.

4 Patron Access and Car Parking

4.1 Patron Access

Patrons will access the site via its various street frontages as follows:

- St Georges Road
- Hawthorn Road
- Hartington Street

The purpose of their visit will determine where they access the site from, with St Georges Road primarily used for the ELC and Amphitheatre whilst the remaining uses can be accessed from the other street frontages.

There will be various pedestrian access points throughout the site including internal laneways providing access through the site and the platia which will allow users already on-site to access other parts of the site.

4.2 Car Parking

Car parking is provided in a series of basements located under each of the proposed buildings as follows:

- Building A: 120 spaces within a 2-storey split level basement. This will service the hotel, function centre/ballroom, church, makers workshops and apartments within the heritage building.
- Building B: 44 spaces within 22 double or tandem garages to service the townhouses.
- Building C: 81 spaces in a single level basement servicing the apartment buildings.
- Building D: 70 spaces in a single level basement servicing the ELC and Amphitheatre.

A Car Parking Management Plan can be prepared allocating spaces for staff or individual uses as required.

5 Waste Management

A Waste Management Plan has been prepared that outlines the appropriate waste management requirements including provision for bins and frequency of collection.

All waste material that is generated on-site will be collected and sorted on-site, before disposal in the area allocated for rubbish bin storage.

Waste will be collected by a private contractor in accordance with the details set out in the Waste Management Plan.

6 Appendices to Report

Appendix A –Acoustic Assessment Report
Appendix B – Waste Management Plan

Appendix A –
Acoustic Assessment

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2	7/08/2025	20250428.1/0708A/R2/JT	JT	MS	MS

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1 INTRODUCTION

Acoustic Logic (AL) has been engaged to undertake an acoustic assessment of the proposed mix-used development located at 7 Hartington Street, Northcote. The assessment addresses external noise intrusion into the development as well as potential noise emissions from site. The assessment has been conducted based on the following documentation.

Table 1 – Referenced Documents

Prepared By	Document	Reference	Date
KUD Architecture	Architectural Drawings	Project No. 22-004	Refer Appendix 1
-	Victorian Planning Provisions Clause 58.04-3	-	14 December 2023
-	Australian Standard AS/NZS 2107:2016	-	2016
EPA Victoria	Noise Limit and Assessment Protocol (Noise Protocol)	Publication 1826.4	2021

2 SITE DESCRIPTION

The subject development is located at 7 Hartington Street, Northcote. The site is bounded by St Georges Road to the west, Hawthorn Road to the north, Hartington Street and Mernda rail corridor to the east and existing residential and retirement home to the south.

St Georges Road is an arterial road which has an Annual Average Daily Traffic (AADT) volume of 34,000 vehicles and also carries the Tram Route 11. Other surrounding roadways are minor and carry only local traffic. Mernda railway line carries metropolitan passenger trains only. An industrial zone area is located approximately 200m to the northeast of subject site.

Figure 1 below details the subject site and surrounding environment.

Figure 1 Subject Site, Measurement Location and Surrounding Environment (source: Google Maps™)

2.1 PROPOSED DEVELOPMENT

The proposal development comprises of the following:

- Refurbishment of the existing heritage building (demolition of modern additions) and incorporation of apartments, boutique hotel, artist studios and retention of Church within the building.
- Early learning centre (ELC) fronting St Georges Road.
- Theatre located on north west corner of the site,
- Café/Restaurant
- Townhouses fronting Hawthorn Road – 3 stories and a basement for carparking,
- Apartment Buildings fronting Hartington Street – 4 stories and a basement for carparking
- Refer to Figure below for the location of each building

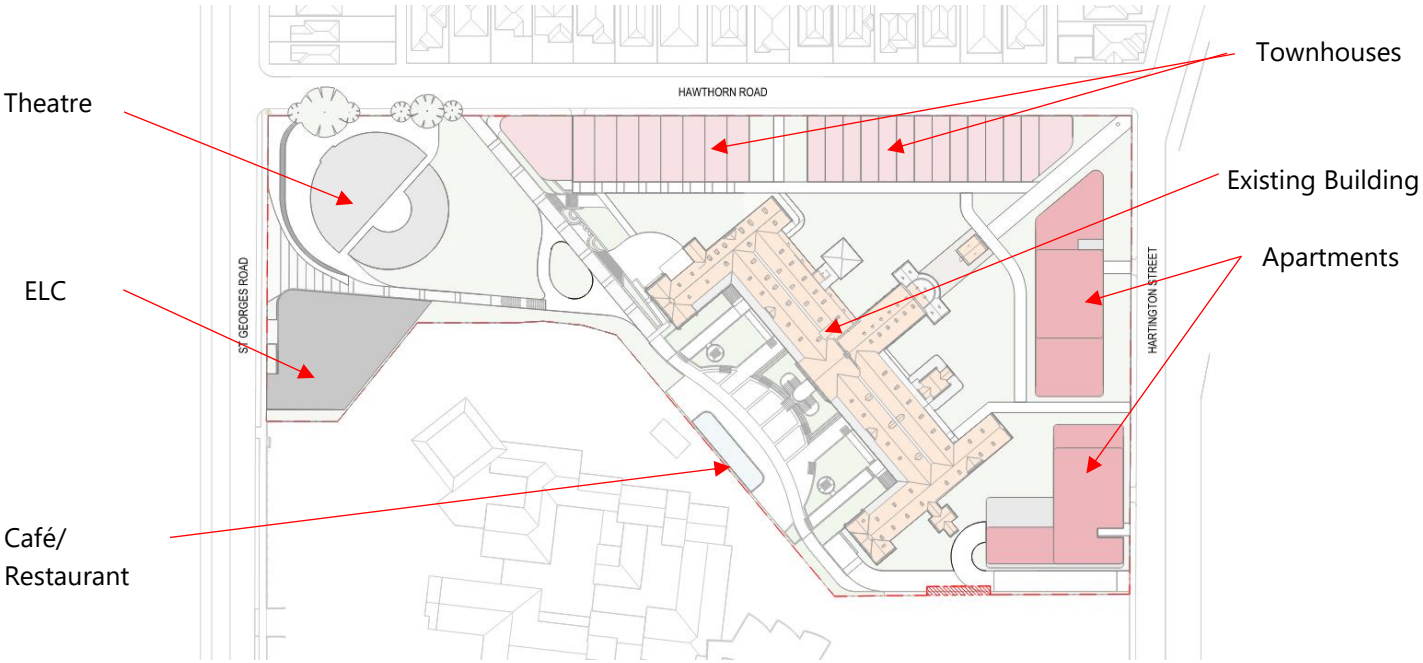


Figure 2 – Proposed Development Layout

2.2 LOCAL NOISE SOURCES

Acoustic Logic attended site on multiple occasions during which it was observed that the primary noise sources were traffic noise associated with St Georges Road and train movement on the Mernda Rail Corridor to the east. Tram movements were generally masked by traffic associated with St Georges Road.

The industrial area to the northeast of the site typical consists of a mixture of uses including warehouses, workshops, offices, and residential dwellings. Inspection of the subject site indicates that noise associated with operation was inaudible at the site. Therefore, no further assessment of the industrial zoned area is undertaken within this assessment.

3 ENVIRONMENTAL NOISE DESCRIPTORS

Environmental noise constantly varies in level, due to fluctuations in local noise sources including traffic and rail. Accordingly, a 15-minute measurement interval is normally utilised. Over this period, noise levels are monitored on a continuous basis and statistical and integrating techniques are used to determine noise description parameters.

In the case of environmental noise three principal measurement parameters are used, namely L_{10}, L_{90} and L_{eq}.

The L_{10} and L_{90} measurement parameters are statistical levels that represent the average maximum and average minimum noise levels respectively, over the measurement intervals.

The L_{10} parameter is commonly used to measure noise produced by a particular intrusive noise source since it represents the average of the loudest noise levels produced by the source.

Conversely, the L_{90} level (which is commonly referred to as the background noise level) represents the noise level heard in the quieter periods during a measurement interval. The L_{90} parameter is used to set the allowable noise level for new, potentially intrusive noise sources since the disturbance caused by the new source depends on how audible it is above the pre-existing noise environment, particularly during quiet periods, as represented by the L_{90} level.

The L_{eq} parameter represents the average noise energy during a measurement period. This parameter is derived by integrating the noise levels measured over the measurement period. L_{eq} is important in the assessment of traffic and rail noise impact as it closely corresponds with human perception of a changing noise environment; such is the character of industrial noise.

The L_1 parameter (or the noise level exceeded for 1% of the time) is used during the night period to assess potential sleep arousal effects due to transient noise sources.

4 NOISE LEVEL MEASUREMENTS

4.1 MEASUREMENT LOCATIONS AND DATE OF MEASUREMENTS

Unattended and attended noise level measurements were conducted at the locations indicated in Figure 1. The noise level measurement locations are described below:

- **Location 1 –** An unattended noise monitor was installed on a western boundary of subject site. The monitor was approximately 1.5 metres above grade and had full view of the St Georges Road. The monitor was in free field conditions. The monitor was installed between 9 and 16 May 2025.

- **Location 1 –** Attended traffic noise level measurements conducted on the St Georges Road at the western boundary of subject site. The sound level meter was approximately 1.5 metres above grade with a full view of St Georges Road and was in free field conditions. Measurements were undertaken on the 16 May 2025.

- **Location 2 –** An unattended noise monitor was installed on the northern boundary of the subject site (in line with where the townhouses are). The monitor was installed approximately 1.5 metres above grade. The monitor was in free field conditions. The monitor was installed between 9 and 16 May 2025.

- **Location 3 –** An unattended noise monitor was installed on the southern boundary of the subject site. The monitor was installed approximately 1.5 metres above grade and was within 2m of a reflective surface. The monitor was installed between 9 and 16 May 2025.

- **Location 4 –** An unattended noise monitor was installed on the eastern boundary of the subject site. The monitor was installed approximately 1.5 metres above grade with a full view of rail corridor. The monitor was in free field conditions. The monitor was installed between 9 and 16 May 2025.

- **Location 5 –** Attended train noise level measurements were conducted. The sound level meter was approximately 1.5 metres above grade with a full view of rail corridor and was in free field conditions. Measurements were undertaken on 15 May 2025.

- **Location 6 –** Attended train noise level measurements were conducted. The sound level meter was approximately 1.5 metres above grade with a full view of rail corridor and was in free field conditions. Measurements were undertaken on 15 May 2025.

4.2 MEASUREMENT EQUIPMENT

Unattended noise monitoring was conducted using three ARL Ngara and two Rion noise monitors. The equipment was calibrated at the beginning and the end of the measurement using a Rion NC-75 calibrator; no significant drift was detected. All measurements were taken on fast response mode.

A Norsonic Nor140 Sound Level Analyser was used for the attended noise level measurements. The equipment was calibrated at the beginning and the end of the measurement using a Rion NC-75 calibrator; no significant drift was detected. All measurements were taken on fast response mode.

4.3 MEASURED NOISE LEVELS

The tables below detail the measured noise levels obtained from the unattended and attended noise measurements.

Table 2 – Attended Traffic Noise Level Measurements

Measurement Location	Date and Time of Measurements	Measured Noise Levels dB(A) $L_{eq,15mins}$
Location 1	16/05/2025 (16:30-16:45)	70
	16/05/2025 (16:45-17:00)	70

Table 3 – Unattended Traffic Noise Level Measurements

Measurement Location	Period	Measured Noise Levels
Location 1	Day (7:00-22:00)	72 dB(A) $L_{eq,1hr}$
	Night (22:00-7:00)	71 dB(A) $L_{eq,1hr}$
Location 2	Day (7:00-22:00)	60 dB(A) $L_{eq,1hr}$
	Night (22:00-7:00)	60 dB(A) $L_{eq,1hr}$

Table 4 – Unattended Train Noise Level Measurements

Measurement Location	Period	Measured Noise Levels
Location 4	Day (6:00-22:00)	57 dB(A) $L_{eq,16hr}$
	Night (22:00-6:00)	51 dB(A) $L_{eq,8hr}$

Table 5 – Attended Train Noise Level Measurements

Measurement Location	Period	Measured Noise Levels[1]
Location 5	Day (6:00-22:00)	56 dB(A) $L_{eq,16hr}$
	Night (22:00-6:00)	51 dB(A) $L_{eq,8hr}$
Location 6	Day (6:00-22:00)	50 dB(A) $L_{eq,16hr}$
	Night (22:00-6:00)	45 dB(A) $L_{eq,8hr}$

Note 1 – Train noise L_{eq} is derived by measuring the level of 10 train pass-bys and deriving a Sound Exposure Level (SEL). A L_{eq} value is then derived from this based on the frequency of the train service during these periods.

Table 6 – Unattended Background Noise Level Measurements

Period	Time	Measured Background $L_{90,Period}$ dB(A)			
		Location 1	Location 2	Location 3	Location 4
Day	7am – 6pm (Mon – Sat)	52	51	39	41
Evening	6pm – 10pm (Mon – Sat) 7am – 10pm (Sun)	53	45	39	42
Night	10pm – 7am	45	40	36	38
Night	1am – 2am	Refer Table 7 below.			

Note 1 - Measurements have been corrected by -2.5dB to account for façade reflections.

Table 7 – Unattended Background Noise Level Measurements with Spectrum

Location	Measurement Start Time	Noise Levels dB(A) L_{90}	Noise Level Spectrum L_{90} dB SPL						
			63Hz	125Hz	250Hz	500Hz	1 kHz	2 kHz	4 kHz
Location 1	13/05/2025 (1:00am-2:00am)	42	46	40	36	35	39	34	18
Location 2	13/05/2025 (1:00am-2:00am)	40	46	39	34	35	37	31	16
Location 3	13/05/2025 (1:00am-2:00am)	36[1]	44[1]	41[1]	35[1]	31[1]	31[1]	25[1]	16[1]
Location 4	13/05/2025 (1:00am-2:00am)	38	45	41	35	34	35	28	16

Note 1 - Measurements have been corrected by -2.5dB to account for façade reflections. Typical lowest measured noise level throughout monitoring period.

5 ASSESSMENT CRITERIA

5.1 STANDARD D16 OF CLAUSE 58.04-3

Standard D16 of Clause 58.04-3 contains the following condition:

Standard D16

Noise sources, such as mechanical plants should not be located near bedrooms of immediately adjacent existing dwellings or small second dwellings.

The layout of new dwellings and buildings should minimise noise transmission within the site.

Noise sensitive rooms (such as living areas and bedrooms) should be located to avoid noise impacts from mechanical plants, lifts, building services, non-residential uses, car parking, communal areas and other dwellings.

New dwellings should be designed and constructed to include acoustic attenuation measures to reduce noise levels from off-site noise sources.

Buildings within a noise influence area specified in Table D5 should be designed and constructed to achieve the following noise levels:

- Not greater than 35dB(A) for bedrooms, assessed as an LAeq,8h from 10pm to 6am.
- Not greater than 40dB(A) for living areas, assessed LAeq,16h from 6am to 10pm.

Buildings, or part of a building screened from a noise source by an existing solid structure, or the natural topography of the land, do not need to meet the specified noise level requirements.

Noise levels should be assessed in unfurnished rooms with a finished floor and the windows closed.

Table D5 Noise influence area

Noise Source	***Noise influence area***
Zone interface	
Industry	*300 metres from the industrial 1, 2 and 3 zone boundaries*
Roads	
Freeways, tollways and other roads carrying 40,000 Annual Average Daily Traffic Volume	*300 metres from the nearest trafficable lane*
Railways	
Railway servicing passengers in Victoria	*80 metres from the centre of the nearest track*
Railway servicing freight outside Metropolitan Melbourne	*80 metres from the centre of the nearest track*
Railway servicing freight in Metropolitan Melbourne	*135 metres from the centre of the nearest track*

Note: The noise influence area should be measured from the closest part of the building to the noise source.

Decision guidelines

Before deciding on an application, the responsible authority must consider:

- The design response.
- Whether it can be demonstrated that the design treatment incorporated into the development meets the specified noise levels or an acoustic report by a suitably qualified specialist submitted with the application.
- Whether the impact of potential noise sources within a development have been mitigated through design, location and siting.
- Whether the layout of rooms within a dwelling mitigates noise transfer within and between dwellings.
- Whether an alternative design meets the relevant objectives having regard to the amenity of the dwelling or small second dwelling and the site context.

Based on these conditions, the subject site has been reviewed as follows:

1. The development **is** within 300m of an industrial zone.
2. The industrial zone is located to the northeast of the subject site.
3. The development is **not** within 300m of a freeway, tollway or road carrying an AADT >40,000.
4. The development **is** within 80m of railway servicing passengers and freight.
5. The Mernda railway line is located to the east of the subject site

Based on the above, refer the following comments:

1. Noise from the industrial zoned area was not evident from multiple site inspections. As such no further assessment is provided of the industrial zoned area.
2. The train noise shall be designed to comply with the Clause 58.04-3 criteria per below.

Table 8 – Internal Noise Criteria (Rail Noise)

Location	Internal Design Noise Level[1]
Living Rooms	40 dB(A) $L_{eq(16hr)}$ (6am – 10pm)
Bedrooms	35 dB(A) $L_{eq(8hr)}$ (10pm – 6am)

Note 1: Assessed with external windows and doors closed. Apartments are unfurnished with finished floor.

3. The external noise intrusion from the surrounding road shall be designed in accordance with Australian Standards AS/NZS 2107:2016.

5.2 AS/NZS 2107:2016

Australian Standard AS/NZS2107:2016 *"Recommended Design Sound Levels and Reverberation Times for Building Interiors"* sets out recommended design sound levels for residential developments depending on locality to minor or major roads. Table 9 below details the criterion set for this development.

Table 9 – Internal Noise Criteria Traffic

Location	Internal Noise Level[1]	
	dB(A) L_{eq} (7am – 10pm)	**dB(A) L_{eq} (10pm – 7am)**
Bedrooms	35-45[2]	35-40
Living Areas	35-45	N/A

Note 1: Assessment is based on apartments suitably furnished ready for occupation with windows and doors closed.
Note 2: Bedrooms assessed as living rooms outside 10pm-7am.

5.3 EPA PUBLICATION 1826.4

5.3.1 Receiver Zone Allocations

EPA noise emission criteria for the subject site have been established and is discussed below. Nearby noise sensitive receiver locations have been divided into the below zones based on typical ambient noise levels in these areas. Refer Figure 3 below. Background noise levels for each zone have been based on the following:

Zone 1 – Results of background noise monitoring at location 1 have been used to formulate noise emission criteria for this zone. **Note zone 1 is inclusive of proposed future ELC as indicated in Figure 2.**

Zone 2 – Results of background noise monitoring at location 2 have been used to formulate noise emission criteria for this zone. **Note zone 2 is inclusive of proposed future town houses as indicated in Figure 2.**

Zone 3 – Results of background noise monitoring at location 3 have been used to formulate noise emission criteria for this zone.

Zone 4 – Results of background noise monitoring at location 4 have been used to formulate noise emission criteria for this zone. **Note Zone 4 is inclusive of the proposed future apartments as indicated in Figure 2.**

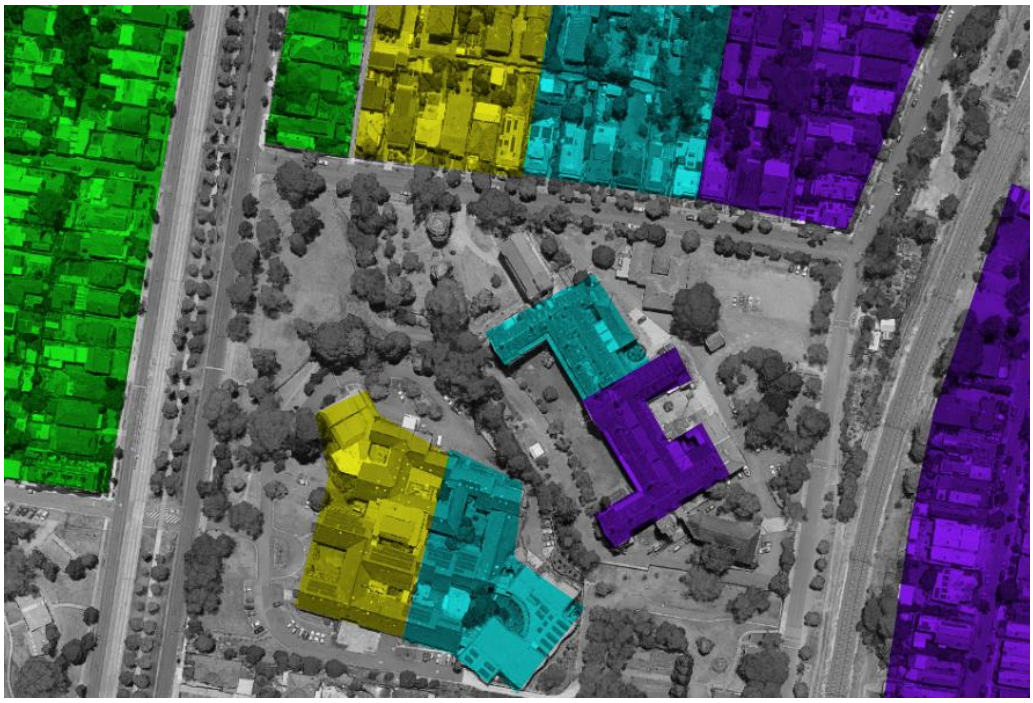


Figure 3 – Noise Emission Zone Allocation

5.3.2 Part 1

To ensure that noise emissions from the proposed development site do not impact adversely on the amenity of the surrounding noise sensitive areas, the proposed development should be designed to comply with the requirements of EPA Publication 1826.4 – Part 1.

5.3.2.1 Zoning Level

The 'Zoning' level is determined by the Influencing Factor (IF) and is calculated by the formula and the 'Zoning Level versus Influencing Factor' graph nominated in Section 1.1 of EPA Publication 1826.4 and VicPlan Mapping. The IF is calculated from the proportion of industrial and commercial land around noise sensitive areas. Influencing factor and zoning levels have been presented in Table 10 below.

Table 10 - Zoning Levels

Period	Zoning Level dB(A			
	Zone 1	Zone 2	Zone 3	Zone 4
Influencing Factor	0.26	0.07	0.06	0.13
Day	55	51	51	52
Evening	48	45	45	46
Night	43	40	40	41

5.3.2.2 Criteria

Table 11 below details the assessment criteria based on both the zoning levels and the measured background noise levels.

Table 11 – Noise Limits – Zone 1

Period	Background dB(A) $L_{90,Period}$	Zoning limit	Classification	Project Noise Limits dB(A) L_{eq}
Day Monday – Saturday (7am – 6pm)	52	55	High	58
Evening Monday – Saturday (6pm – 10pm) Sunday (7am – 10pm)	53	48	High	56
Night Monday – Sunday (10pm – 7am)	45	43	High	47
Night Monday – Sunday (1am – 2am)	41	43	High	44

Table 12 – Noise Limits – Zone 2

Period	Background dB(A) $L_{90,Period}$	Zoning limit	Classification	Project Noise Limits dB(A) L_{eq}
Day Monday – Saturday (7am – 6pm)	50	51	High	**56**
Evening Monday – Saturday (6pm – 10pm) Sunday (7am – 10pm)	50	45	High	**53**
Night Monday – Sunday (10pm – 7am)	42	40	High	**45**
Night Monday – Sunday (1am – 2am)	38	40	High	**41**

Table 13 – Noise Limits – Zone 3

Period	Background dB(A) $L_{90,Period}$	Zoning limit	Classification	Project Noise Limits dB(A) L_{eq}
Day Monday – Saturday (7am – 6pm)	39	51	Low	**51**
Evening Monday – Saturday (6pm – 10pm) Sunday (7am – 10pm)	39	45	Neutral	**45**
Night Monday – Sunday (10pm – 7am)	36	40	Neutral	**40**
Night Monday – Sunday (1am – 2am)	36	40	Neutral	**40**

Table 14 – Noise Limits – Zone 4

Period	Background dB(A) $L_{90,Period}$	Zoning limit	Classification	Project Noise Limits dB(A) L_{eq}
Day Monday – Saturday (7am – 6pm)	41	52	Neutral	**52**
Evening Monday – Saturday (6pm – 10pm) Sunday (7am – 10pm)	42	46	Neutral	**46**
Night Monday – Sunday (10pm – 7am)	38	41	Neutral	**41**
Night Monday – Sunday (1am – 2am)	36	41	Neutral	**41**

5.3.3 Part 2 Criteria

EPA Publication 1826.4 details the methodology to be used in assessing environmental noise emissions from music such that residential amenity may be preserved. The acoustic criteria are determined by measuring the background noise levels over an extended period and then deriving effective noise limit. The effective noise limit for an indoor venue of this type is the L_{Aeq} for the day/evening period and is derived from the measured L_{A90} + 5dB(A). The effective noise limit for the night period is L_{OCT90} + 8 dB. Table 15 and Table 16 below details the criteria based on the background measurements detailed in Table 6 and Table 7.

Table 15 – Music Noise Limits dB (Day/Evening)

Period	Time	Project Noise Limits dB(A)L_{eq}			
		Zone 1	**Zone 2**	**Zone 3**	**Zone 4**
Day / Evening	Monday to Saturday: 7am-11pm Sunday: 9am-10pm	46	45	45	46
Night	Monday to Friday: 11pm-2am Saturday: 11pm-2am Sunday: 10pm-2am	Refer Table 16 below.			

Table 16 – Music Noise Limits dB (Night)

Receiver Location	Music Noise Level Limits L_{OCT10} dB[1]						
	63Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz
Zone 1	54	48	44	43	47	42	26
Zone 2	54	47	42	43	45	39	24
Zone 3	49	46	43	38	37	30	24
Zone 4	53	49	43	42	43	36	24

Note 1 - Based on the background noise levels presented in Table 7.

5.4 CHILDREN IN OUTDOOR PLAY AREAS

There are currently no specific statutory requirements to assess noise emissions with respect to childcare centres from noise associated with children playing in outdoor play areas. This specific issue has been addressed in the VCAT matter of PHHH Investments Pty Ltd v Bayside City Council (VCAT Reference No P2294/2014 with Permit Application No. 2014/130/1) which has been adopted for this assessment.

The above matter proposed a childcare centre in a Neighbourhood Residential Zone near existing residential premises. The centre proposed to cater for up to 102 children. In determining the matter Member Fong concluded that "I adopt AAAC's approach to noise and the criterion of 10 dB above background noise and adoption of permit conditions with regard to noise attenuation measures and management plan".

Based on the above the following criteria would apply based on the measured background noise level. Note that it is proposed that the outdoor area will be used between 7:00am and 6:00pm on Monday to Friday.

Table 17 – Environmental Noise Criteria – Children in Outdoor Play Areas

Time	Measured Background $L_{90,period}$ dB(A)[1]	Criteria L_{eq} dB(A)	Project Noise Limits L_{eq} dB(A)
Day Period 7am – 6pm (Mon – Fri)	39	L_{90} +10	**49**

Note 1 – Background noise measurement is based on the background noise level presented in Table 6.

6 CHILDCARE OUTDOOR PLAY AREAS NOISE ASSESSMENT

Noise emissions to nearby residential receivers have been assessed for children playing in the outdoor area of the childcare centre.

6.1 NOISE MODELLING PARAMETERS

Noise emissions from children playing in the outdoor play areas have been assessed using the following assumptions:

1. Figures 3 and 4 below indicate the dedicated outdoor play area, acoustic screening extent and modelled acoustic screen heights.

2. The screen height to the lower level outdoor play area (Figure 3 - Level 1) is 1.7m while the access gate to the external shall be of the same surface density with all gaps minimised (<20mm)

3. The screen height to the upper level outdoor play area (Figure 4 - Level 2) is 1.5m

Figure 3 – Childcare Level 1 (lower level)

Figure 4 – Childcare Level 2

4. Assessment of children in the outdoor playgrounds has been based on access being limited to 7:00am to 6:00pm.

5. Number of children located in the outdoor play areas indicated in Figure 2 are the following within the worst 1 hour period:

    a. Level 1 outdoor play area: 66 children

    b. Level 2 outdoor play area: 36 children

6. Recommendations in Section 6.4 are assumed to have been implemented including solid imperforate acoustic screen and roof as shown in Figure 2.

7. Sound power levels associated with specific activities on site are detailed in Table 18 below. Provided noise levels are based on measurements conducted by this office of existing childcare centres.

Table 18 – Operational Sound Power Levels

Noise Source	Sound Power Level
Children Playing (per 10 children)	82dB(A)

6.2 SOUNDPLAN™ MODEL

A SoundPlan™ model was used to simulate the noise impact from children in playgrounds. Noise levels at the receiver façades have been predicted using the above model implementing the ISO 9613-2:1996 "*Acoustics – Attenuation of Sound During Propagation Outdoors – Part 2: General Method of Calculation*" noise propagation standard. The predicted noise levels for each scenario is presented in Appendix 5 – Noise Modelling Graphics

6.3 PREDICTED NOISE IMPACTS

Noise impacts to the nearby noise sensitive residential receivers have been predicted and presented in Table 19 below based on the management controls indicated in Section 6.4 being adopted. For each receiver, the levels have been predicted at the worst affected façade and assessed against the requirements criteria nominated in Table 17 of this report.

Table 19 – Predicted Noise Levels of Children in Outdoor Areas

Nearby Noise Sensitive Residential Receivers	Predicted Noise Level dB(A) $L_{eq(30min)}$	Noise Emission Criteria dB(A) $L_{eq(30min)}$	Complies?
Existing Residential Buildings Along Hawthorn Road	<45	≤49	Yes
Existing Residential Buildings Along St Georges Road	<42	≤49	Yes
Proposed Townhouse within the development	<47	≤49	Yes
Existing Heritage Building Within Development	<45	≤49	Yes
St Joesph's Home 112 St Georges Road	<42	≤49	Yes

Assessment detailed in Table 16 indicates that the predicted noise levels from children noise in outdoor areas comply with the assessment criteria at identified nearby noise sensitive residential receivers. Compliance at these locations will ensure compliance will be achieved at other locations.

6.4 MANAGEMENT CONTROLS AND ASSOCIATED ACOUSTIC MEASURES

The following management controls and acoustic measures are recommended to be adopted as part of the development. The following has been assumed to be incorporated within the proposed development:

6. An acoustic screen to the external play areas with heights indicated in section 6.1 and extents as shown in Figure 3 and Figure 4.

   The acoustic screen shall be of solid imperforate construction. The construction can be from transparent or opaque materials such as double lapped timber, plywood, FC sheet, masonry, glazing, minimum 5mm polycarbonate panels, Colorbond or similar with minimum surface density of 3.6kg/m^2 or alternative as approved by a suitably qualified acoustic consultant.

   Note that the heights specified are from the height of the surface level of the outdoor play area.

7. Children shall be permitted within playgrounds only during the hours of 7:00am to 6:00pm Monday to Friday.

8. Children shall be supervised at all times when located in playgrounds.

9. Waste / recycling collection shall occur only between 7am and 6pm Monday to Saturday.

10. Use of amplified music shall be limited to internal spaces within the building.

11. Crying children are to be taken inside the centre and comforted as soon as practical.

12. Behaviour of children are to be monitored by suitably trained childcare workers.

13. Parents and guardians are to be informed of the importance to minimise noise when entering the site, dropping off or collecting children.

14. Loudspeakers apart from those required for security/emergency purposes are not recommended to be located in outdoor areas.

15. Height of play equipment shall be restricted to ensure the children playing do not exceed the height of the screens indicated in Figure 3 and 4 above.

7 EVALUATION OF EXTERNAL NOISE INTRUSION

Internal noise levels will primarily be as a result of noise transfer through the windows, doors and lightweight walls as these are relatively light building elements that offer less resistance to the transmission of sound. Walls that are proposed to be heavy masonry elements and concrete roofs will not require upgrading.

The predicted noise levels through the windows, doors and lightweight walls are discussed below. The predicted noise levels have been based on the predicted level and spectral characteristics of the external noise, the area of building elements exposed to noise, the absorption characteristics of the rooms and the noise reduction performance of the building elements.

Glazing/façade treatment was determined based on the measured noise levels, the predicted loss across the site, and the transmission loss of the façade. The constructions set out below are necessary for the satisfactory control of external noise to comply with the internal noise level criteria.

7.1 RECOMMENDED GLAZING

The glass thicknesses shown in the schedule do not take into account thermal, structural, safety or any other requirements other than acoustic requirements and thus may require upgrading in some instances. In these instances, increasing the glass thickness beyond the acoustic requirement will be acceptable. Where the glazing thickness has not been specified, standard glazing will be acceptable.

Table 20 below details the minimum R_w performance requirements for the glazing assembly installed. Where open-able windows or sliding doors are installed, the total R_w performance of the system shall not be lower than the values listed in this table**.** It is noted that the system supplied shall meet the overall minimum R_w ratings nominated based on a laboratory test report for the system. If an alternative system is proposed the system shall be reviewed and will require approval by a suitably qualified acoustic consultant to ensure that the proposed system is acceptable and will ensure compliance with the nominated internal noise design criteria.

Table 20 – Glazing Requirements

Location	Required Glazing Construction[1]	Minimum R_w of Installed Window System	Acoustic Seals[2]
Refer to Appendix 1 – Façade Markup	6/12/6mm IGU	29	Yes
	6/12/6.38mm IGU	31	Yes
	6/12/11.52mm lam IGU	35	Yes
	6/12/13.52mm lam IGU	37	Yes

Note 1 – Or alternative glazing system approved by a suitable qualified acoustic consultant.
Note 2 – Mohair Seals in windows and doors are **not** acceptable where acoustic seals are required. Seals in these instances shall be equal to Schlegel Q-lon.

7.1.1 Existing Building

Due to heritage significance of the Existing Heritage Building and ongoing architectural review, final glazing constructions have not been provided as part of this assessment. Based on current design intent, internal noise levels with SOU / Hotel guest rooms will be managed by installing secondary pane of glazing spaced from the existing windows.

Final glazing construction shall be reviewed and approved during detailed design stage noting that compliance is predicted to be achievable with use of standard / medium-weight glazing configurations. We

note that the existing heritage building incorporates residential accommodation currently and as such upgrade will improve current amenity over existing levels.

7.2 EXTERNAL WALL CONSTRUCTION

Any non-glazed sections of the façade which are proposed to be constructed from lightweight materials shall be designed to ensure compliance with the nominated internal noise criteria. Penetrations in walls must be sealed gap free with a flexible sealant. Any ventilation openings in walls shall be acoustically treated to maintain the acoustic performance of the external wall construction.

7.3 ROOF CONSTRUCTION

The heritage building will incorporate similar ceiling construction to existing with thermal insulation installed over to address external traffic and rail noise intrusion.

The apartment and townhouse buildings shall be treated in accordance with Appendix 1 – façade markup to achieve internal noise level criteria or alternative as approved by a suitably qualified acoustic consultant. Any ventilation openings through the roof would need to be acoustically treated to maintain the acoustic performance of the roof/ceiling construction.

8 ASSESSMENT OF PLANT AND EQUIPMENT FROM THE SUBJECT SITE

To ensure that noise emissions from mechanical plant and equipment serving the development do not impact adversely on the amenity of neighbouring residential properties, noise emissions from the mechanical plant and equipment serving the development shall comply with the requirements of EPA Publication 1826.4 – Part I.

The mechanical plant and equipment selections / design have not yet been finalised at this stage. To ensure amenity for future residents and nearby noise sensitive receivers is preserved, the mechanical plant and equipment serving the development shall be reviewed during the detailed design stage by a suitably qualified acoustic consultant to ensure that compliance with EPA Publication 1826.4 – Part I is achieved. This will be achieved by the use of standard acoustic treatment such as internally lined ductwork, acoustic screens/louvres, acoustic attenuators, variable speed drives, and vibration isolation mounts.

Although no design is finalised the following high level comments are provided

8.1 HERITAGE BUILDING

It is recommended that the rooftop mechanical plant incorporates a solid and imperforate screen to the rooftop plant areas as shown below. The minimum height of the screen to be min. 200mm higher than the height of the highest equipment / discharge point and to be of solid and imperforate construction from materials such as FC sheet, sheet metal or similar. Final acoustic screening requirements to be reviewed and confirmed during detailed design stage once mechanical services equipment selections and locations have been determined.

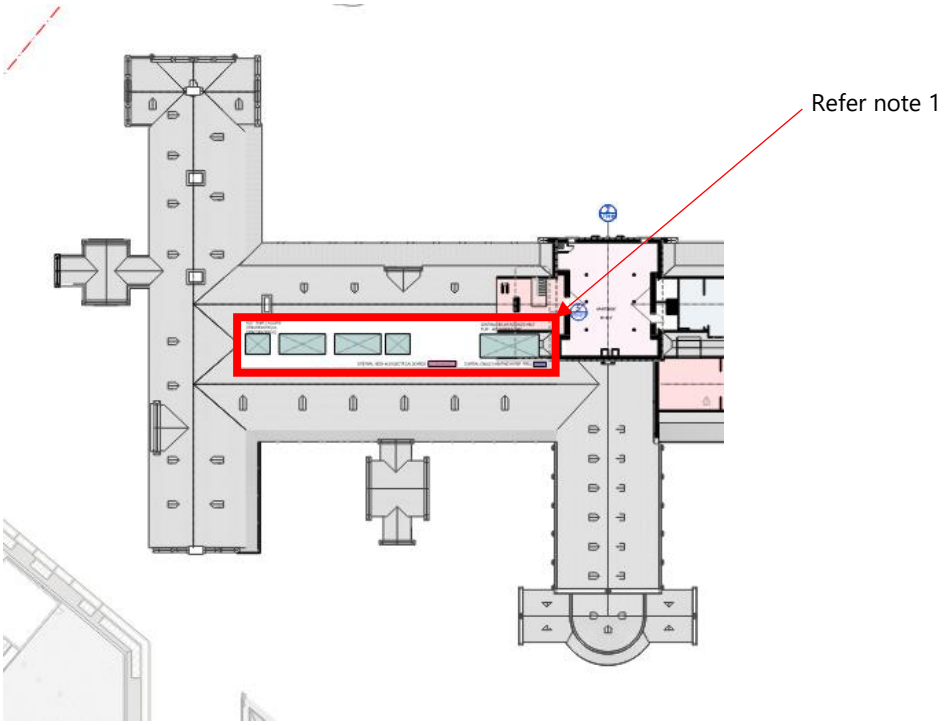


Figure 5 – Rooftop Plant Screening (Plan View)

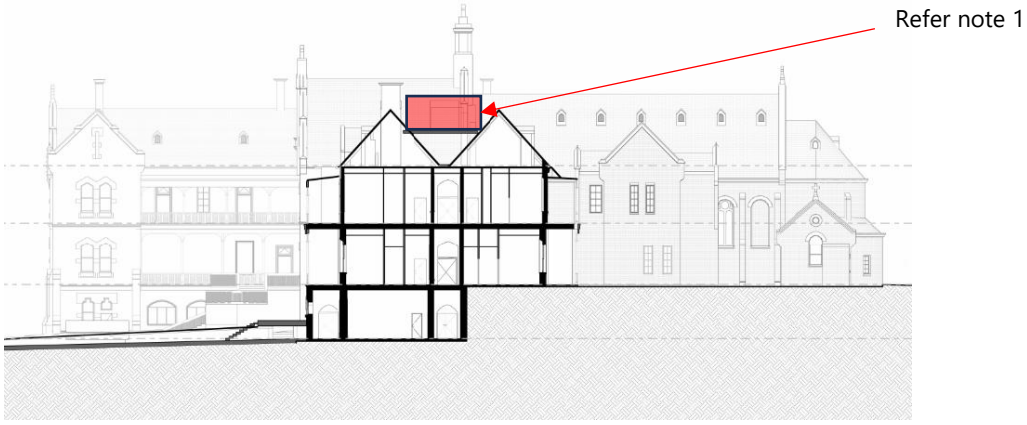


Figure 6 – Rooftop Plant Screening (Section View)

Note 1: Acoustic screen to be nom. 200mm higher than the height of the highest equipment or discharge point. Screen to be constructed from a solid and imperforate material such as FC sheet, sheet metal or similar. The screen shall be lined internally with absorptive material generally with nominal NRC of 0.75. Final specification of the treatment for the screen shall be confirmed by a suitably qualified acoustic consultant.

8.2 PROPOSED CAFÉ/RESTAURANT

For café and restaurant tenancies, it is expected noise emissions from kitchen exhaust fans will be the dominant noise source from mechanical services serving the tenancy, remaining equipment shall be reviewed during detailed design stage noting compliance will likely be achievable based on use of standard acoustic treatment and controls.

16. An inline kitchen exhaust and make up air fans are recommended.

17. Fans shall where required incorporate acoustic silencing/lined duct to the fan intakes and discharges.

18. Fans may require acoustic wrapping.

19. It is recommended that an acoustic screen be installed to approximately 300mm higher than the fan/discharges/Intakes.

20. Screening shall be solid and imperforate and constructed of 6mm FC sheet or 1mm sheet metal or approved alternative by a suitably qualified acoustic consultant.

21. Equipment serving the tenancy shall be selected and acoustically treated to achieve compliance with EPA noise emission criteria.

22. The final equipment selections and design shall be reviewed by a suitably qualified acoustic consultant during detailed design stage and provide recommended acoustic treatment measures to meet environmental noise criteria.

8.3 PROPOSED THEATRE

We note that the following are provided as a guide only and will require review once the plant and equipment design is finalised. It is noted that conventional acoustic treatment methodologies can be adopted to ensure compliance with environmental noise assessment criteria.

It is expected that heat rejection plant such as cooling towers or heat pumps / air handling units will be located on the roof of the proposed theatre. A preliminary cooling tower selection was confirmed by the mechanical engineer. The initial selection indicated a noise level of 52 dB(A) at 15m.

23. An acoustic screen shall be installed to the full perimeter of the plant area on the roof.

24. The screen shall extend to approximately 3.2m above roof level or nominal 200mm higher than the discharge. Note that this height may change during the detailed design stage of the project once actual mechanical services design is completed.

25. The acoustic screen shall be solid and imperforate and constructed of minimum 6mm FC sheet or 1mm sheet metal or product achieving nominal 7.5kgm^2 surface density. Alternative options are acceptable provided they are reviewed and approved by a suitably qualified acoustic consultant.

26. A gap between the base of the screen and the roof sheeting of up to 50mm would be acceptable for drainage.

27. If louvres are required to rooftop plant screen for ventilation then an acoustic louvre / silencer will be required. Final acoustic performance requirements shall be determined by a suitably qualified acoustic consultant.

28. It is recommended that the internal face of the acoustic screen be lined generally with an absorptive finish that achieves an NRC of 0.75. Note final treatment and recommendations would be subject

to review by a suitably qualified acoustic consultant of plant and equipment design/selections during detailed design.

29. Other plant and equipment serving the theatre shall be designed to ensure compliance with environmental noise criteria by a suitably qualified acoustic consultant.

Formal review of mechanical services and final equipment selections shall be undertaken by a suitably qualified acoustic consultant during the detailed design stage of the project to ensure compliance with EPA noise emission criteria is achieved.

9 PROPOSED CAFÉ TENANCY

The following requirements shall be incorporated into the proposed cafe;

- All mechanical plant and equipment associated with future tenants must comply with the EPA Publication 1826.4 – Part 1.
- Any amplified music associated with the tenancies will be limited to background music only and be limited by the operator to ensure that they comply with the EPA Publication 1826.4 – Part 2 requirements.
- Use of amplified music until close of business is permitted provided that it is background music only (conversation level). Music noise shall only be played within the premises.
- Glass bottles shall not be emptied/transferred externally before 7am or after 10pm. Outside this time period all glass must be emptied / transferred within the premises and removed in containers.
- Staff are to be instructed not to drop heavy garbage items/bottle into bins – they must be placed so as to minimise impact noise.
- The collection of waste and recycling must only occur during the hours of garbage collection for the remainder of the development.
- Refer Section 8.2 above for review of mechanical services.

10 PROPOSED THEATRE NOISE ASSESSMENT

Assessment of music noise emissions from the proposed Theatre has been undertaken and presented below. Note that if noise emissions comply during the night period they will comply at other times.

10.1 ASSESSMENT – NIGHT PERIOD

Music noise has been predicted to the identified residential receivers based on the following:

1. It is proposed that the Theatre will incorporate live music / amplified music.

2. Assessment based on music noise level spectrum indicated in Table 21 which has been based on measured noise levels of a amplified music in a similar-type venue by Acoustic Logic.

Table 21 – Music Noise Levels SPL dB(A)L_{10}

63Hz	125Hz	250Hz	500Hz	1 kHz	2 kHz	4 kHz	A-wt
105	100	98	95	97	91	85	100 L_{10}

3. All primary sound re-enforcement within the auditorium shall be via the house PA system.

4. 1/1 Octave band noise limiting system shall be incorporated within the auditorium and foyer/bar area to ensure music noise are limited to the final levels discussed in point above.

5. Final operational levels shall be confirmed prior to occupation and set using The above music noise levels are in principle only and shall be finalised via in situ testing prior to occupation.

6. Assessment based on operation of night time period for the below hours:

7. Between the hours of 10:00PM – 2:00AM Monday to Thursday and Sunday.

8. Between the hours of 11:00PM – 2:00AM Friday and Saturday.

9. The assumptions above have been incorporated into a SoundPLAN™ noise model to simulate the noise impact from music noise to the façade of identified residential receivers. Noise level prediction has been based on ISO 9613-2:1996 "Acoustics – Attenuation of Sound During Propagation Outdoors – Part 2: General Method of Calculation" noise propagation standard.

10. Noise modelling results are attached in Appendix 3

11. As the night period is most stringent assessment period, compliance during the above hours will ensure compliance is achieved during the day and evening. Note that consideration has been given to the proposed adjacent early learning centre with assessment shown in Table 23 below which is not proposed to operate during the night period thus will be assessed against day and evening criteria only.

12. Final music noise shall be limited by octave band noise limiter to ensure compliance with EPA Publication Part 2 criteria.

The predicted music noise levels at the noise sensitive receiver are detailed below which have been assessed against the established music noise level criteria.

Table 22 – Music Noise Prediction (Night)

	Music Noise Level L_{OCT10} dB[1]						
	63Hz	**125 Hz**	**250 Hz**	**500 Hz**	**1 kHz**	**2 kHz**	**4 kHz**
Zone 1							
Predicted Music Levels	42	31	20	-	-	-	-
Criteria	54	48	44	43	47	42	26
Complies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Zone 2							
Predicted Music Levels	54	45	40	-	-	-	-
Criteria	54	47	42	43	45	39	24
Complies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Zone 3							
Predicted Music Levels	49	40	35	-	-	-	-
Criteria	49	46	43	38	37	30	24
Complies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Zone 4							
Predicted Music Levels	34	22	13	-	-	-	-
Criteria	53	49	43	42	43	36	24
Complies	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Note 1 – The predicted typical worst case noise level in zone has been presented in the assessment.

Table 23 – Predicted Noise Levels to ELC (Day/Evening)

Location	**Predicted Noise Level dB(A)**	**Criteria dB(A)**	**Complies?**
Level 1 – Play Room Facade	<37	≤46	Yes
Level 2 – Play Room Facade	<37	≤46	Yes

10.1.1 Mechanical Plant And Equipment

Refer Section 8.3 above.

10.2 RECOMMENDATIONS AND MANAGEMENT CONTROLS

The following acoustic treatment recommendations shall be implemented to ensure compliance with assessment criteria is achieved:

1. All mechanical plant and equipment associated with future tenants must comply with the EPA Publication 1826.4 – Part I.

2. The music noise levels presented in Table 21 are in principle only and shall be finalised via in situ testing prior to occupation.

3. Music noise shall be limited by electronic 1/1 Octave band noise limiter installed on site. The noise limiter shall be set by a suitably qualified acoustic engineer to ensure compliance with the EPA Publication 1826.4 Part 2.

4. Any amplified music shall be operated through in the in-house speakers only (to avoid third-party speakers exceeding the noise limits)

5. Speakers shall be vibrated isolated from the building structure.

6. All external windows and doors shall be closed during events, except when patrons are entering/exiting the venue. Noting that airlock entry door system is currently proposed which will be used for egress purposes.

7. No external amplification systems are permitted except for emergency requirements.

8. Signage requesting patrons to leave in an orderly manner and respect neighbours shall be installed outside of the venue. Note that noise control of patrons can only be managed while patrons are inside the building.

9. The assessment based on the following in principle roof / ceiling construction as following or . alternative roof/ceiling systems provided they are reviewed by a suitably qualified acoustic consultant:

    a) Sheetmetal roof installed on roofing channels over,
    b) 2x22mm Structafloor installed or similar element on structural roof framing.
    c) Nominal 600mm cavity with bulk insulation.
    d) 2x13mm plasterboard ceiling on resilient mounts.
    e) Architectural ceiling below.

10. The external walls are assumed to be of masonry or concrete based construction. Wall systems shall be approved by a suitably qualified acoustic consultant during detailed design stage.

11. External glazing to the auditorium space has been assumed to be based on a IGU glazing system incorporating 12mm glass / 15mm airgap /8.76mm or similar with a nominal Rw rating of Rw 42. Alternative glazing systems shall be reviewed and approved by a suitably acoustic consultant.

A final review shall be undertaken during detailed design stage to confirm final design internal music noise levels and final external building fabric construction to ensure compliance with music noise emission criteria.

11 PROPOSED BALLROOM AND FUNCTION SPACE

Within the heritage building it is currently proposed to incorporate a function space to ground level and ballroom to level 1. As the design and layouts are set at a preliminary level and noting further coordination is required with the architect, structural engineer, heritage consultants, etc, we note the following preliminary comments:

1. Upgraded ceilings are proposed to be installed within the function rooms to address acoustic separation both to the adjoining spaces and environmentally

2. Amplified music or live music shall be limited by 1/1 octave band noise limiter with final limits to be approved based on in-situ testing.

3. Airlocks are recommended to be installed to external balcony areas connecting to the function space and ballroom.

4. Due to the heritage nature and construction of the building, complete separation between the function space, ballroom and surrounding areas of the building cannot be achieved. On that basis it is recommended that amplified music or live music played within the function room and ballroom be limited by 1/1 octave band noise limiter with final limits set prior to occupation to manage to both environmental noise emissions and internal transfer of amplified music to acceptable levels.

5. Mechanical layouts and equipment selections have not been finalised at this stage. Major equipment is proposed to be located at roof level and as such can be acoustically treated to achieve compliance with EPA noise emission criteria.

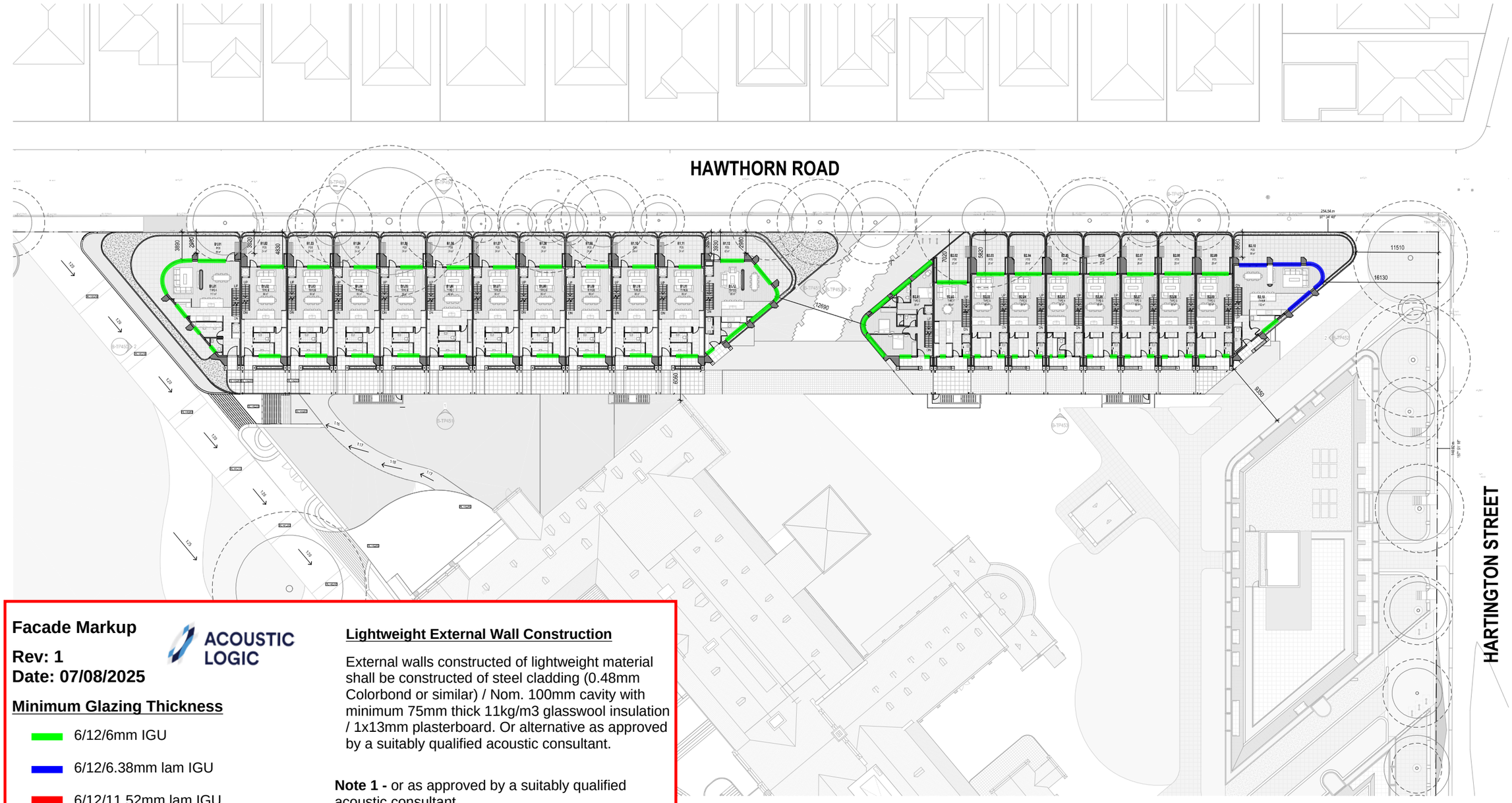
12 CONCLUSION

This report details our acoustic assessment of the proposed development located at 7 Hartington Street, Northcote. The assessment addresses external noise intrusion into the development as well as potential noise emissions from site. We trust this information is satisfactory. Please contact us should you have any further queries.

Yours faithfully,

Acoustic Logic Pty Ltd
Jason Thompson

APPENDIX 1 – FAÇADE MARKUP



Facade Markup

Rev: 1
Date: 07/08/2025

ACOUSTIC LOGIC

Minimum Glazing Thickness

- 6/12/6mm IGU
- 6/12/6.38mm lam IGU
- 6/12/11.52mm lam IGU

Roof Construction

Roof shall be constructed: Minimum 0.48mm Colorbond or similar / minimum 200mm cavity with 75mm thick 11kg/m3 glass wool insulation / 1x13mm plasterboard.

Masonry External Wall Construction

External walls constructed of masonry/precast construction will not require further acoustic upgrade.

Lightweight External Wall Construction

External walls constructed of lightweight material shall be constructed of steel cladding (0.48mm Colorbond or similar) / Nom. 100mm cavity with minimum 75mm thick 11kg/m3 glasswool insulation / 1x13mm plasterboard. Or alternative as approved by a suitably qualified acoustic consultant.

Note 1 - or as approved by a suitably qualified acoustic consultant.
Note 2 - All glazing to contain Q-lon bulb seals External doors and awning windows to contain multi-point latching
Note 3 - Roof construction shall be min 150mm concrete slab. Final construction TBC architectural design review and acoustic review.

SUSTAINABILITY MANAGEMENT PLAN

01. NON-TRAFFICABLE ROOF AREAS TO BE DIRECTED INTO A 60,000L LEITE RAINWATER TANK CONNECTED TO ALL TOILETS AND LANDSCAPE IRRIGATION.
02. TERRACES (INCLUDING PLANTER) TO BE DIRECTED INTO RAINGARDENS TOTALLING 81m² MINIMUM 1.200MM DEEP RAINGARDEN WITH 300MM OF EXTENDED DETENTION.
03. SECURE RESIDENTIAL SPACES: 22. RESIDENTIAL VISITOR SPACES:5

GENERAL NOTES - SITE

SITE

01. DRAWINGS TO BE READ IN CONJUNCTION WITH CIVIL DOCUMENTATION AND OTHER RELATED DRAWINGS.
02. BEWARE OF UNDERGROUND SERVICES, THE CONTRACTOR WILL LOCATE ALL SERVICES ON-SITE PRIOR TO COMMENCEMENT OF WORK.
03. REFER TO CIVIL AND LANDSCAPE DRAWINGS FOR ROAD PAVING SETOUT AND LEVELS.
04. INDICATIVE UNDERGROUND SERVICES RELATING TO PROPOSED STORMWATER DRAINAGE AND ON-SITE STORAGE HAVE BEEN SHOWN DASHED.
05. CONTRACTOR TO CONFIRM ALL EXISTING SERVICE LOCATIONS.
06. PROPERTY BOUNDARY AND FOOTPATH LEVELS ARE TO BE REINSTATED TO THE ORIGINAL LEVELS AS DEFINED BY VICROADS AND/OR LOCAL AUTHORITY.
07. ALL DRAINS PENETRATING FOOTINGS OR ANY OTHER CONCRETE OR MASONRY WORK ARE TO BE SLEEVED TO ALLOW FOR SETTLEMENT OF STRUCTURE AND/OR GROUND MOVEMENT (TYPICAL HEAVE AND SIGH OUTLINED IN GEOTECHNICAL ENGINEERING SOIL REPORT).
08. LANDSCAPING AS PER LANDSCAPE ARCHITECTS DESIGN UNLESS OTHERWISE NOTED. SPOT LEVELS SHOWN ON SITE PLAN ARE INDICATIVE AND SHOULD BE READ IN CONJUNCTION WITH LANDSCAPE ARCHITECT'S DOCUMENTATION AND DETAILS.

TREE PROTECTION

10. PRIOR TO COMMENCEMENT OF WORKS, SET UP A TREE PROTECTION ZONE (TPZ). TREE PROTECTION ZONES ARE TO BE IN ACCORDANCE WITH THE ARBORIST REPORT, TREE PROTECTION PLAN AND/OR AS 4970. TREE PROTECTION MEASURES MAY INCLUDE FENCING, MULCH OR GROUND PROTECTION AND MUST BE IN PLACE FOR THE DURATION OF THE WORKS.
11. TREE PROTECTION ZONES ARE INDICATIVELY SHOWN WITH DASHED CIRCLES AND ARE TO BE CALCULATED IN ACCORDANCE WITH AS 4970-2009 AND INCLUDE AREAS ABOVE AND BELOW GROUND.
12. AVOID ANY WORKS IN THE TREE PROTECTION ZONE AND ENSURE ANY DEMOLITION, EXCAVATION AND CONSTRUCTION WORKS UNDERTAKEN WITHIN THE TREE PROTECTION ZONE DO NOT CAUSE DAMAGE TO A TREE. THE FOLLOWING ACTIVITIES MUST BE RESTRICTED OR PREVENTED WITHIN THE TREE PROTECTION ZONE, UNLESS APPROVED BY AN ARBORIST AND/OR COUNCIL.

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REV	ISSUE	DATE
A	FOR REVIEW	06/08/2025

NOT FOR CONSTRUCTION

Project Management Level 2/3 Newton St, Cremorne VIC 3121 T. (03) 9081 1611	HUB PROPERTY GROUP	**Fire Engineer** Colbee House, Suite 1, Level 9/359 Flinders Ln Melbourne, VIC 3000 T. 04 0206 8818	SQUARE 1 ENGINEERING
Structural & Civil Engineers -	-	**Access Consultant (DDA)** 1st floor, 181 Bay Street, Brighton, VIC 3186 T. +61 9943 3478	FUNCTIONAL ACCESS SOLUTIONS PTY LTD
Services Engineer Level 2 600 Church St. Cremorne VIC 3121 T. (03) 9428 7567	WRAP ENGINEERING	**Building Surveyor** Level 5, 136 Exhibition Street, Melbourne VIC 3000 T. 03 9660 7999	CODUS
Town Planner Level 6/68 Dover St, Cremorne VIC 3121 T. (03) 9429 3111	RATIO CONSULTANTS	**Landscape Architect** 3/4 Brown St, Collingwood, VIC 3066 T. 03 7518 3135	ACRE
Traffic & Waste Engineer Level 6/68 Dover St, Cremorne VIC 3121 T. (03) 9429 3111	RATIO CONSULTANTS	**Arborist** 324 Victoria Street, Richmond, VIC 3121 T. 03 9429 4856	JOHN PATRICK LANDSCAPE ARCHITECTS
ESD Consultant 285 Lennox Street, Richmond VIC 3121 T. 03 9044 5111	GIW	**Land Surveyor** Suite 9, 303 Maroondah Hwy, Ringwood VIC 3134 T. 03 9230 4225	JCA

CLIENT NAME:
GREEK ORTHODOX ARCHDIOCESE OF AUSTRALIA

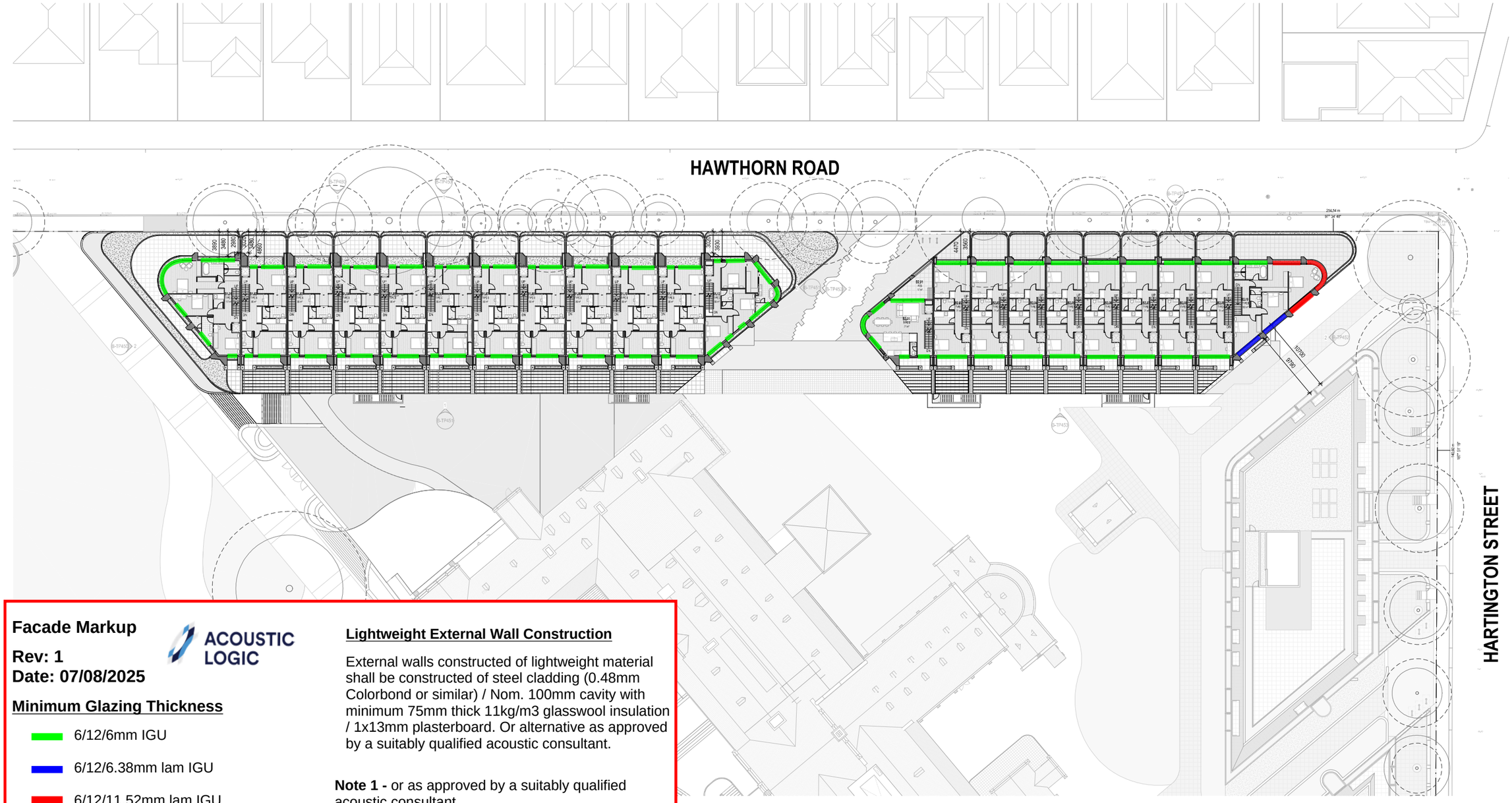
CONTRACTOR NAME:
-

TITLE:
GROUND FLOOR SITE PLAN

ADDRESS:
7 HARTINGTON STREET, NORTHCOTE

PROJECT NO.
22-004

CHECKED BY:	DRAWN BY:	@A1 (50% @ A2):	REV:	SHEET NO.
BK	AV	1:200	A	B-TP052



Facade Markup

Rev: 1
Date: 07/08/2025

ACOUSTIC LOGIC

Minimum Glazing Thickness

- 6/12/6mm IGU
- 6/12/6.38mm lam IGU
- 6/12/11.52mm lam IGU

Roof Construction

Roof shall be constructed: Minimum 0.48mm Colorbond or similar / minimum 200mm cavity with 75mm thick 11kg/m3 glass wool insulation / 1x13mm plasterboard.

Masonry External Wall Construction

External walls constructed of masonry/precast construction will not require further acoustic upgrade.

Lightweight External Wall Construction

External walls constructed of lightweight material shall be constructed of steel cladding (0.48mm Colorbond or similar) / Nom. 100mm cavity with minimum 75mm thick 11kg/m3 glasswool insulation / 1x13mm plasterboard. Or alternative as approved by a suitably qualified acoustic consultant.

Note 1 - or as approved by a suitably qualified acoustic consultant.
Note 2 - All glazing to contain Q-lon bulb seals External doors and awning windows to contain multi-point latching
Note 3 - Roof construction shall be min 150mm concrete slab. Final construction TBC architectural design review and acoustic review.

SUSTAINABILITY MANAGEMENT PLAN

01. NON-TRAFFICABLE ROOF AREAS TO BE DIRECTED INTO A 60,000L LEITE RAINWATER TANK CONNECTED TO ALL TOILETS AND LANDSCAPE IRRIGATION.
02. TERRACES (INCLUDING PLANTER) TO BE DIRECTED INTO RAINGARDENS TOTALLING 81m² MINIMUM 1.200MM DEEP RAINGARDEN WITH 300MM OF EXTENDED DETENTION.
03. SECURE RESIDENTIAL SPACES: 22. RESIDENTIAL VISITOR SPACES:5

GENERAL NOTES - SITE

SITE

01. DRAWINGS TO BE READ IN CONJUNCTION WITH CIVIL DOCUMENTATION AND OTHER RELATED DRAWINGS.
02. BEWARE OF UNDERGROUND SERVICES, THE CONTRACTOR WILL LOCATE ALL SERVICES ON-SITE PRIOR TO COMMENCEMENT OF WORK.
03. REFER TO CIVIL AND LANDSCAPE DRAWINGS FOR ROAD PAVING SETOUT AND LEVELS.
04. INDICATIVE UNDERGROUND SERVICES RELATING TO PROPOSED STORMWATER
05. DRAINAGE AND ON-SITE STORAGE HAVE BEEN SHOWN DASHED.
06. CONTRACTOR TO CONFIRM ALL EXISTING SERVICE LOCATIONS.
07. PROPERTY BOUNDARY AND FOOTPATH LEVELS ARE TO BE REINSTATED TO THE ORIGINAL LEVELS AS DEFINED BY VICROADS AND/OR LOCAL AUTHORITY.
08. ALL DRAINS PENETRATING FOOTINGS OR ANY OTHER CONCRETE OR MASONRY WORK ARE TO BE SLEEVED TO ALLOW FOR SETTLEMENT OF STRUCTURE AND/OR GROUND MOVEMENT (TYPICAL HEAVE AND SIGH OUTLINED IN GEOTECHNICAL ENGINEERING SOIL REPORT).
09. LANDSCAPING AS PER LANDSCAPE ARCHITECTS DESIGN UNLESS OTHERWISE NOTED. SPOT LEVELS SHOWN ON SITE PLAN ARE INDICATIVE AND SHOULD BE READ IN CONJUNCTION WITH LANDSCAPE ARCHITECT'S DOCUMENTATION AND DETAILS.

TREE PROTECTION

10. PRIOR TO COMMENCEMENT OF WORKS, SET UP A TREE PROTECTION ZONE (TPZ). TREE PROTECTION ZONES ARE TO BE IN ACCORDANCE WITH THE ARBORIST REPORT. TREE PROTECTION PLAN AND/OR AS 4970. TREE PROTECTION MEASURES MAY INCLUDE FENCING, MULCH OR GROUND PROTECTION AND MUST BE IN PLACE FOR THE DURATION OF THE WORKS.
11. TREE PROTECTION ZONES ARE INDICATIVELY SHOWN WITH DASHED CIRCLES AND ARE TO BE CALCULATED IN ACCORDANCE WITH AS 4970-2009 AND INCLUDE AREAS ABOVE AND BELOW GROUND.
12. AVOID ANY WORKS IN THE TREE PROTECTION ZONE AND ENSURE ANY DEMOLITION, EXCAVATION AND CONSTRUCTION WORKS UNDERTAKEN WITHIN THE TREE PROTECTION ZONE DO NOT CAUSE DAMAGE TO A TREE. THE FOLLOWING ACTIVITIES MUST BE RESTRICTED OR PREVENTED WITHIN THE TREE PROTECTION ZONE, UNLESS APPROVED BY AN ARBORIST AND/OR COUNCIL.

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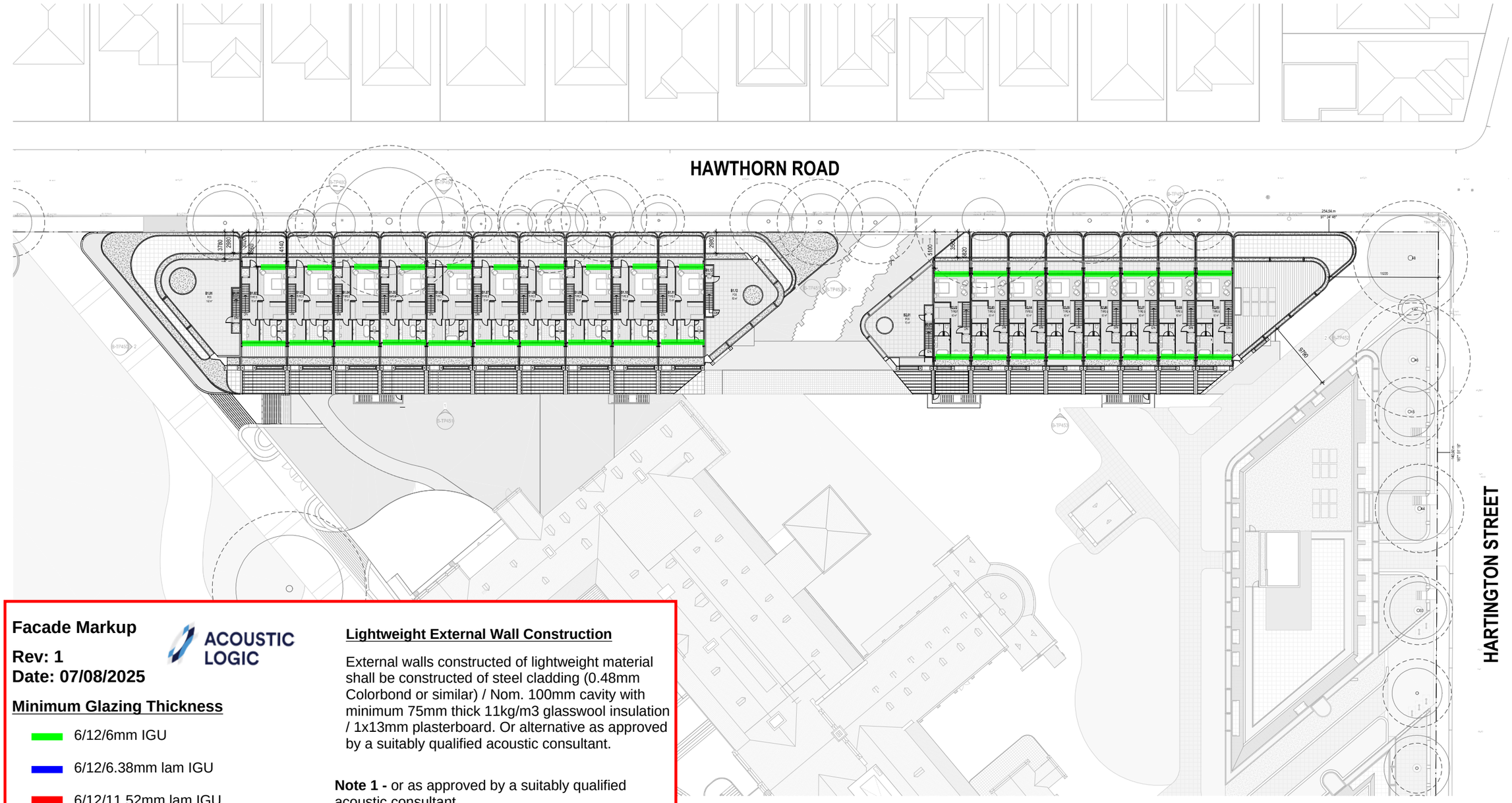
REV	ISSUE	DATE
A	FOR REVIEW	06/08/2025

Project Management Level 2/3 Newton St, Cremorne VIC 3121 T. (03) 9081 1611	HUB PROPERTY GROUP	**Fire Engineer** Colline House, Suite 1, Level 9/359 Flinders Ln Melbourne, VIC 3000 T. 04 0206 8818	SQUARE 1 ENGINEERING
Structural & Civil Engineers -	-	**Access Consultant (DDA)** 1st floor, 181 Bay Street, Brighton, VIC 3186 T. +61 9943 3478	FUNCTIONAL ACCESS SOLUTIONS PTY LTD
Services Engineer Level 2 600 Church St. Cremorne VIC 3121 T. (03) 9428 7567	WRAP ENGINEERING	**Building Surveyor** Level 5, 136 Exhibition Street, Melbourne VIC 3000 T. 03 9660 7999	CODUS
Town Planner Level 6/68 Dover St, Cremorne VIC 3121 T. (03) 9429 3111	RATIO CONSULTANTS	**Traffic & Waste Engineer** Level 6/68 Dover St, Cremorne VIC 3121 T. (03) 9429 3111	RATIO CONSULTANTS
Landscape Architect 3/4 Brown St, Collingwood, VIC 3066 T. 03 7518 3135	ACRE	**ESD Consultant** 285 Lennox Street, Richmond VIC 3121 T. 03 9044 5111	GIW
Land Surveyor Suite 9, 303 Maroondah Hwy, Ringwood VIC 3134 T. 03 9230 4225	JCA	**Arborist** 324 Victoria Street, Richmond, VIC 3121 T. 03 9429 4856	JOHN PATRICK LANDSCAPE ARCHITECTS

CLIENT NAME: **GREEK ORTHODOX ARCHDIOCESE OF AUSTRALIA**
CONTRACTOR NAME: -

TITLE: **LEVEL 01 SITE PLAN**
ADDRESS: **7 HARTINGTON STREET, NORTHCOTE**
PROJECT NO. **22-004**

CHECKED BY: BK | DRAWN BY: AV | @A1 (50% @ A2): 1:200 | REV: A | SHEET NO.: B-TP053



Facade Markup

Rev: 1
Date: 07/08/2025

ACOUSTIC LOGIC

Minimum Glazing Thickness

- 6/12/6mm IGU
- 6/12/6.38mm lam IGU
- 6/12/11.52mm lam IGU

Roof Construction

Roof shall be constructed: Minimum 0.48mm Colorbond or similar / minimum 200mm cavity with 75mm thick 11kg/m3 glass wool insulation / 1x13mm plasterboard.

Masonry External Wall Construction

External walls constructed of masonry/precast construction will not require further acoustic upgrade.

Lightweight External Wall Construction

External walls constructed of lightweight material shall be constructed of steel cladding (0.48mm Colorbond or similar) / Nom. 100mm cavity with minimum 75mm thick 11kg/m3 glasswool insulation / 1x13mm plasterboard. Or alternative as approved by a suitably qualified acoustic consultant.

Note 1 - or as approved by a suitably qualified acoustic consultant.
Note 2 - All glazing to contain Q-lon bulb seals External doors and awning windows to contain multi-point latching
Note 3 - Roof construction shall be min 150mm concrete slab. Final construction TBC architectural design review and acoustic review.

SUSTAINABILITY MANAGEMENT PLAN

01. NON-TRAFFICABLE ROOF AREAS TO BE DIRECTED INTO A 40,000L LEITE RAINWATER TANK CONNECTED TO ALL TOILETS AND LANDSCAPE IRRIGATION.
02. TERRACES (INCLUDING PLANTER) TO BE DIRECTED INTO RAINGARDENS TOTALLING 21m² MINIMUM 1.200MM DEEP RAINGARDEN WITH 300MM OF EXTENDED DETENTION.
03. SECURE RESIDENTIAL SPACES: 22. RESIDENTIAL VISITOR SPACES:5

GENERAL NOTES - SITE

SITE

01. DRAWINGS TO BE READ IN CONJUNCTION WITH CIVIL DOCUMENTATION AND OTHER RELATED DRAWINGS.
02. BEWARE OF UNDERGROUND SERVICES, THE CONTRACTOR WILL LOCATE ALL SERVICES ON-SITE PRIOR TO COMMENCEMENT OF WORK.
03. REFER TO CIVIL AND LANDSCAPE DRAWINGS FOR ROAD PAVING SETOUT AND LEVELS.
04. INDICATIVE UNDERGROUND SERVICES RELATING TO PROPOSED STORMWATER
05. DRAINAGE AND ON-SITE STORAGE HAVE BEEN SHOWN DASHED.
06. CONTRACTOR TO CONFIRM ALL EXISTING SERVICE LOCATIONS.
07. PROPERTY BOUNDARY AND FOOTPATH LEVELS ARE TO BE REINSTATED TO THE ORIGINAL LEVELS AS DEFINED BY VICROADS AND/OR LOCAL AUTHORITY.
08. ALL DRAINS PENETRATING FOOTINGS OR ANY OTHER CONCRETE OR MASONRY WORK ARE TO BE SLEEVED TO ALLOW FOR SETTLEMENT OF STRUCTURE AND/OR GROUND MOVEMENT (TYPICAL HEAVE AND SIGH OUTLINED IN GEOTECHNICAL ENGINEERING SOIL REPORT).
09. LANDSCAPING AS PER LANDSCAPE ARCHITECTS DESIGN UNLESS OTHERWISE NOTED. SPOT LEVELS SHOWN ON SITE PLAN ARE INDICATIVE AND SHOULD BE READ IN CONJUNCTION WITH LANDSCAPE ARCHITECT'S DOCUMENTATION AND DETAILS.

TREE PROTECTION

10. PRIOR TO COMMENCEMENT OF WORKS, SET UP A TREE PROTECTION ZONE (TPZ). TREE PROTECTION ZONES ARE TO BE IN ACCORDANCE WITH THE ARBORIST REPORT, TREE PROTECTION PLAN AND/OR AS 4970. TREE PROTECTION MEASURES MAY INCLUDE FENCING, MULCH OR GROUND PROTECTION AND MUST BE IN PLACE FOR THE DURATION OF THE WORKS.
11. TREE PROTECTION ZONES ARE INDICATIVELY SHOWN WITH DASHED CIRCLES AND ARE TO BE CALCULATED IN ACCORDANCE WITH AS 4970-2009 AND INCLUDE AREAS ABOVE AND BELOW GROUND.
12. AVOID ANY WORKS IN THE TREE PROTECTION ZONE AND ENSURE ANY DEMOLITION, EXCAVATION AND CONSTRUCTION WORKS UNDERTAKEN WITHIN THE TREE PROTECTION ZONE DO NOT CAUSE DAMAGE TO A TREE. THE FOLLOWING ACTIVITIES MUST BE RESTRICTED OR PREVENTED WITHIN THE TREE PROTECTION ZONE, UNLESS APPROVED BY AN ARBORIST AND/OR COUNCIL.

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+61 3 9429 4733
enquiries@kud.com.au
kud.com.au

REV	ISSUE	DATE
A	FOR REVIEW	06/08/2025

Project Management Level 2/3 Newton St, Cremorne VIC 3121 T. (03) 9081 1611	HUB PROPERTY GROUP	**Fire Engineer** Cellino House, Suite 1, Level 9/289 Flinders Ln Melbourne, VIC 3000 T. 04 0206 8818	SQUARE 1 ENGINEERING
Structural & Civil Engineers -	-	**Access Consultant (DDA)** 1st floor, 181 Bay Street, Brighton, VIC 3186 T. +61 9943 3478	FUNCTIONAL ACCESS SOLUTIONS PTY LTD
Services Engineer Level 2 600 Church St. Cremorne VIC 3121 T. (03) 9428 7567	WRAP ENGINEERING	**Building Surveyor** Level 5, 136 Exhibition Street, Melbourne VIC 3000 T. 03 9660 7999	CODUS
Town Planner Level 6/68 Dover St, Cremorne VIC 3121 T. (03) 9429 3111	RATIO CONSULTANTS	**Landscape Architect** 3/4 Brown St, Collingwood, VIC 3066 T. 03 7018 3135	ACRE
Traffic & Waste Engineer Level 6/68 Dover St, Cremorne VIC 3121 T. (03) 9429 3111	RATIO CONSULTANTS	**ESD Consultant** 285 Lennox Street, Richmond VIC 3121 T. 03 9044 5111	GIW
Land Surveyor Suite 9, 303 Maroondah Hwy, Ringwood VIC 3134 T. 03 9230 4225	JCA	**Arborist** 324 Victoria Street, Richmond, VIC 3121 T. 03 9429 4856	JOHN PATRICK LANDSCAPE ARCHITECTS

CLIENT NAME:
GREEK ORTHODOX ARCHDIOCESE OF AUSTRALIA

CONTRACTOR NAME:
-

TITLE:
LEVEL 02 SITE PLAN

ADDRESS:
7 HARTINGTON STREET, NORTHCOTE

PROJECT NO.
22-004

CHECKED BY:	DRAWN BY:	@A1 (50% @ A2):	REV:	SHEET NO.
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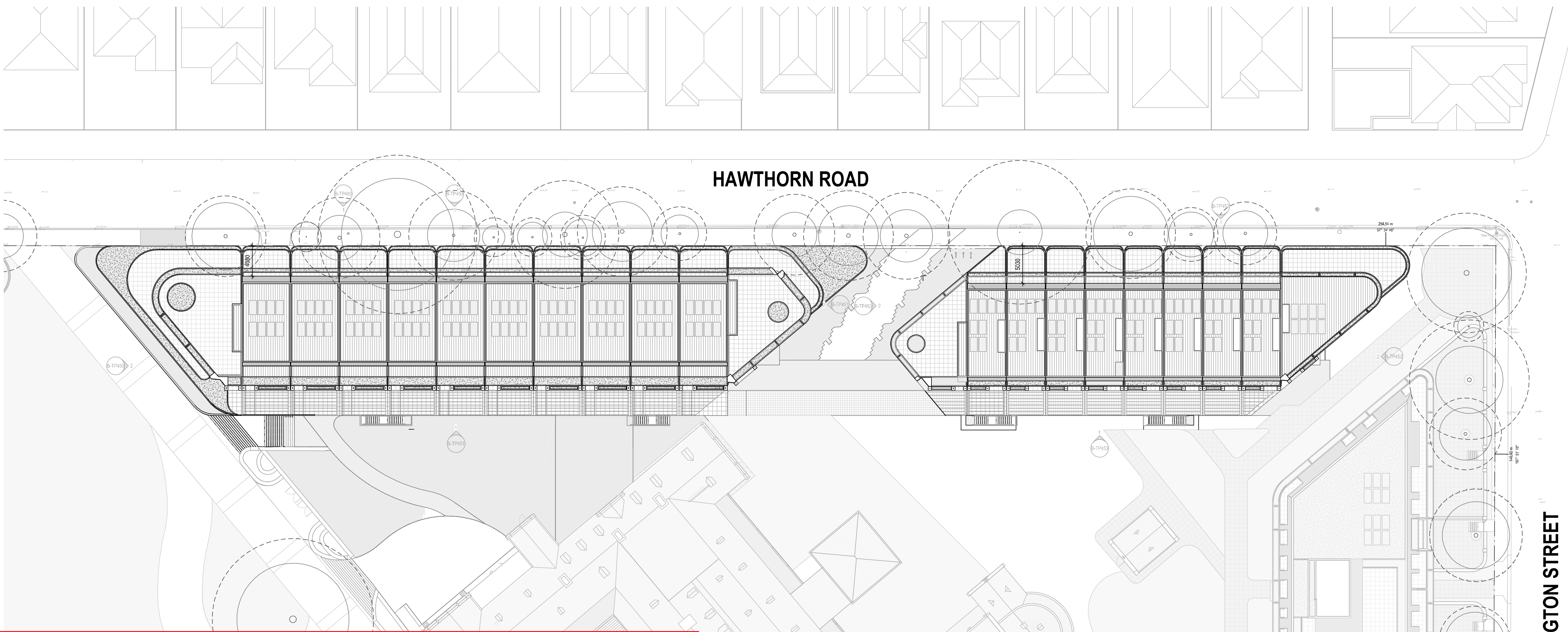

Facade Markup

Rev: 1
Date: 07/08/2025

ACOUSTIC LOGIC

Minimum Glazing Thickness

- (green) 6/12/6mm IGU
- (blue) 6/12/6.38mm lam IGU
- (red) 6/12/11.52mm lam IGU

Roof Construction

Roof shall be constructed: Minimum 0.48mm Colorbond or similar / minimum 200mm cavity with 75mm thick 11kg/m3 glass wool insulation / 1x13mm plasterboard.

Masonry External Wall Construction

External walls constructed of masonry/precast construction will not require further acoustic upgrade.

Lightweight External Wall Construction

External walls constructed of lightweight material shall be constructed of steel cladding (0.48mm Colorbond or similar) / Nom. 100mm cavity with minimum 75mm thick 11kg/m3 glasswool insulation / 1x13mm plasterboard. Or alternative as approved by a suitably qualified acoustic consultant.

Note 1 - or as approved by a suitably qualified acoustic consultant.
Note 2 - All glazing to contain Q-lon bulb seals External doors and awning windows to contain multi-point latching
Note 3 - Roof construction shall be min 150mm concrete slab. Final construction TBC architectural design review and acoustic review.

SUSTAINABILITY MANAGEMENT PLAN

01. NON-TRAFFICABLE ROOF AREAS TO BE DIRECTED INTO A 60,000-LITRE RAINWATER TANK CONNECTED TO ALL TOILETS AND LANDSCAPE IRRIGATION.
02. TERRACES (INCLUDING PLANTER) TO BE DIRECTED INTO RAINGARDENS TOTALLING ≥17m², MINIMUM 1,250MM DEEP RAINGARDEN WITH 300MM OF EXTENDED DETENTION.
03. SECURE RESIDENTIAL SPACES: 22; RESIDENTIAL VISITOR SPACES:5

GENERAL NOTES - SITE

SITE

01. DRAWINGS TO BE READ IN CONJUNCTION WITH CIVIL DOCUMENTATION AND OTHER RELATED DRAWINGS.
02. BEWARE OF UNDERGROUND SERVICES. THE CONTRACTOR WILL LOCATE ALL SERVICES ON-SITE PRIOR TO COMMENCEMENT OF WORK.
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TREE PROTECTION

10. PRIOR TO COMMENCEMENT OF WORKS, SET UP A TREE PROTECTION ZONE (RPZ). TREE PROTECTION ZONES ARE TO BE IN ACCORDANCE WITH THE ARBORIST REPORT, TREE PROTECTION PLAN AND/OR AS 4970. TREE PROTECTION MEASURES MAY INCLUDE FENCING, MULCH OR GROUND PROTECTION AND MUST BE IN PLACE FOR THE DURATION OF THE WORKS.
11. TREE PROTECTION ZONES ARE INDICATIVELY SHOWN WITH DASHED CIRCLES AND ARE TO BE CALCULATED IN ACCORDANCE WITH AS 4970-2009 AND INCLUDE AREAS ABOVE AND BELOW GROUND.
12. AVOID ANY WORKS IN THE TREE PROTECTION ZONE AND ENSURE ANY DEMOLITION, EXCAVATION AND CONSTRUCTION WORKS UNDERTAKEN WITHIN THE TREE PROTECTION ZONE DO NOT CAUSE DAMAGE TO A TREE. THE FOLLOWING ACTIVITIES MUST BE RESTRICTED OR PREVENTED WITHIN THE TREE PROTECTION ZONE, UNLESS APROVED BY AN ARBORIST AND/OR COUNCIL

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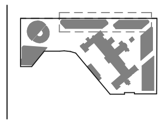
enquiries@kud.com.au
kud.com.au

REV	ISSUE	DATE
A	FOR REVIEW	06/06/2025

NOT FOR CONSTRUCTION

Role	Details	Firm
Project Management	Level 2/3 Newton St, Cremorne VIC 3121 T. (03) 9081 1611	HUB PROPERTY GROUP
Structural & Civil Engineers	-	-
Services Engineer	Level 2/600 Church St, Cremorne VIC 3121 T. (03) 9428 7987	WRAP ENGINEERING
Fire Engineer	Carlow House, Suite 1, Level 9/289 Flinders Ln Melbourne, VIC 3000 T. 04 0206 8818	SQUARE 1 ENGINEERING
Access Consultant (DDA)	1st Floor, 181 Bay Street, Brighton, VIC 3186 T. +61 9943 3478	FUNCTIONAL ACCESS SOLUTIONS PTY LTD
Building Surveyor	Level 5, 136 Exhibition Street, Melbourne VIC 3000 T. 03 9650 7999	CODUS
Town Planner	Level 5/65 Dover St, Cremorne VIC 3121 T. (03) 9429 3111	RATIO CONSULTANTS
Traffic & Waste Engineer	Level 5/65 Dover St, Cremorne VIC 3121 T. (03) 9429 3111	RATIO CONSULTANTS
Landscape Architect	3/4 Brown St, Collingwood, VIC 3066 T. 03 7018 3135	ACRE
ESD Consultant	285 Lennox Street, Richmond VIC 3121 T. 03 9044 5111	GIW
Land Surveyor	Suite 9, 303 Maroondah Hwy, Ringwood VIC 3134 T. 03 9020 4225	JCA
Arborist	324 Victoria Street, Richmond, VIC 3121 T. 03 9429 4855	JOHN PATRICK LANDSCAPE ARCHITECTS



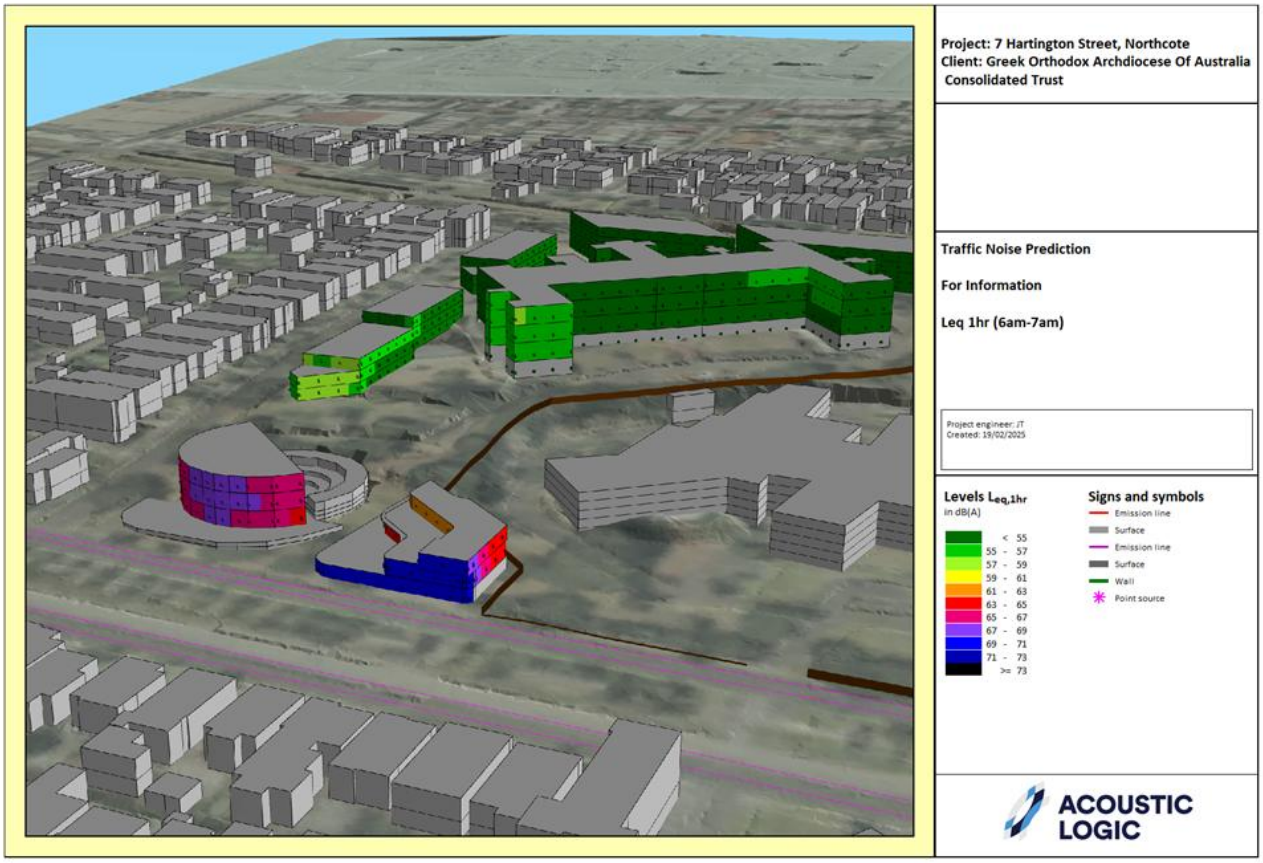
CLIENT NAME: GREEK ORTHODOX ARCHDIOCESE OF AUSTRALIA
CONTRACTOR NAME: -

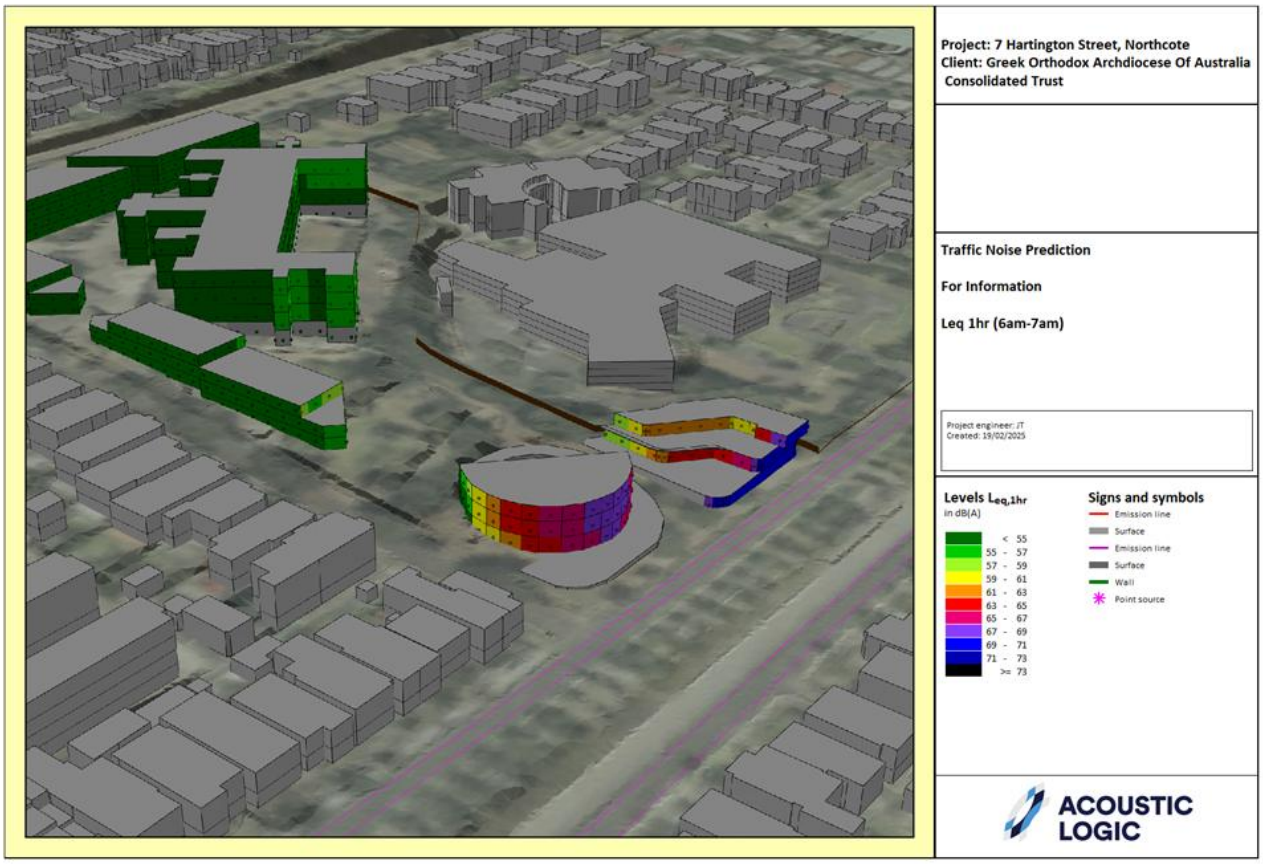
TITLE: ROOF SITE PLAN
ADDRESS: 7 HARTINGTON STREET, NORTHCOTE
PROJECT NO. 22-004

CHECKED BY:	DRAWN BY:	@A0 (50% @ A2):	REV:	SHEET NO.
BK	AV	1:200	A	B-TP055

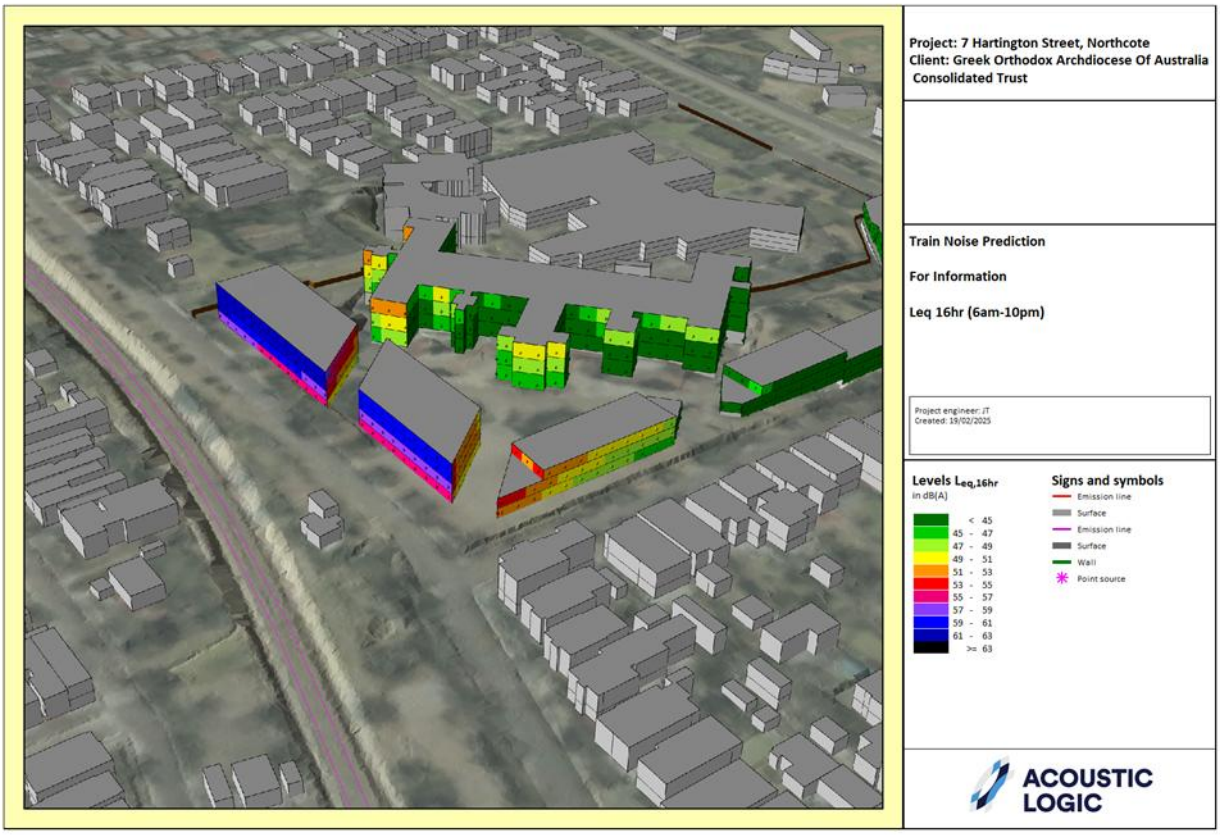
APPENDIX 2 – NOISE MODELLING GRAPHICS

12.1 TRAFFIC (ST GEORGES ROAD)



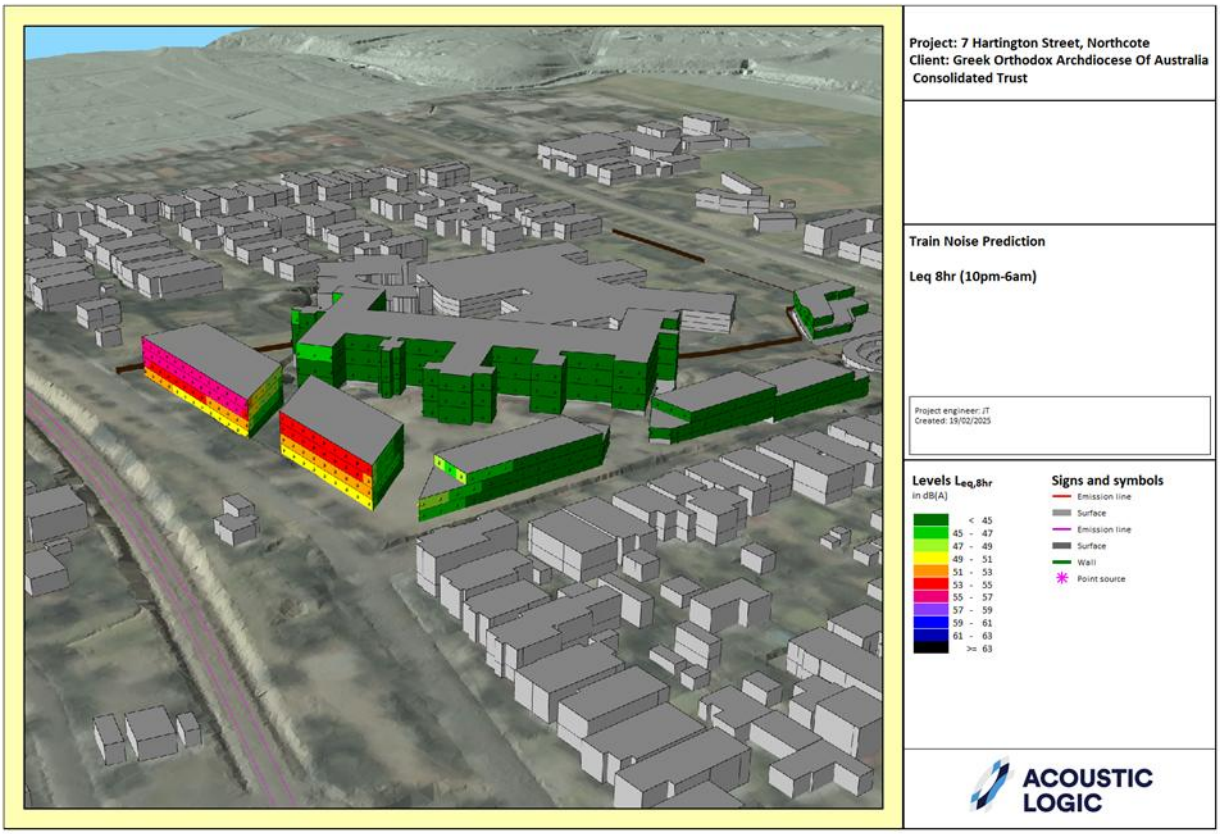


12.2 RAIL NOISE (DAY PERIOD – 18 HOUR LEQ)

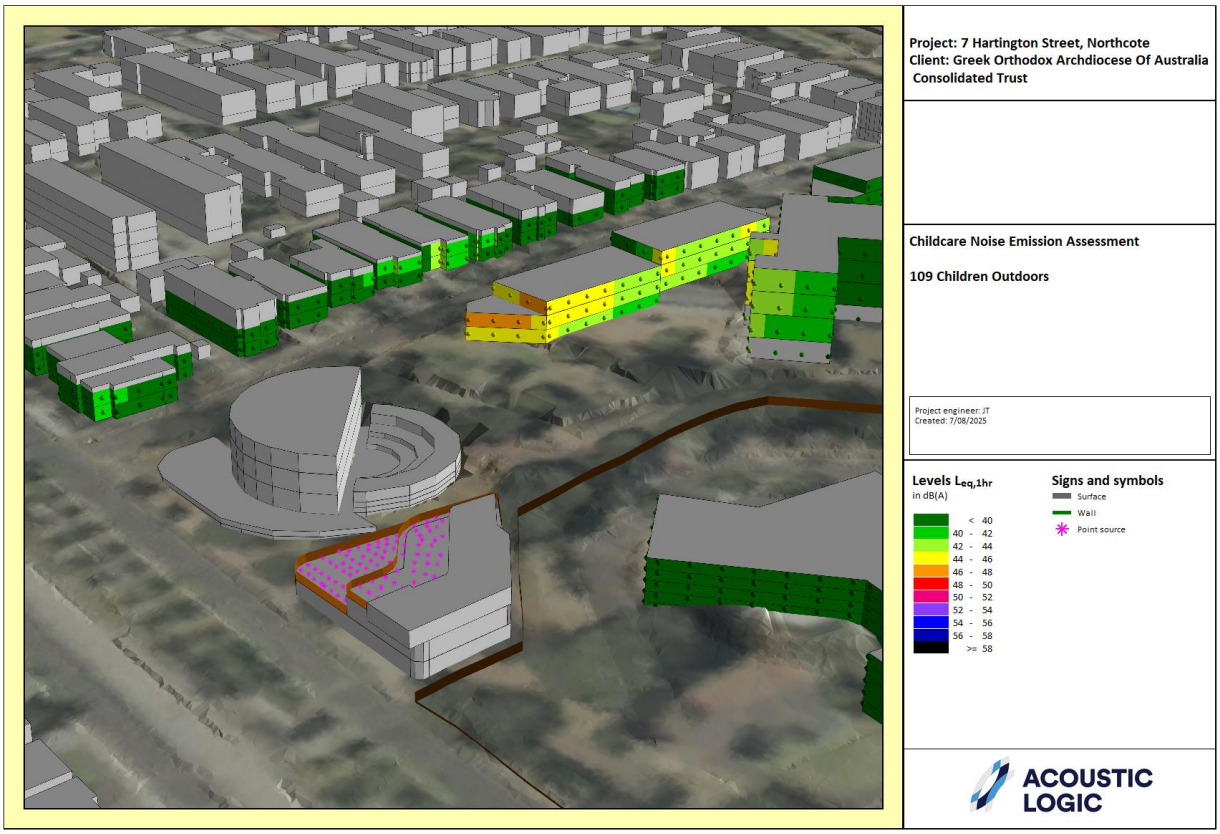


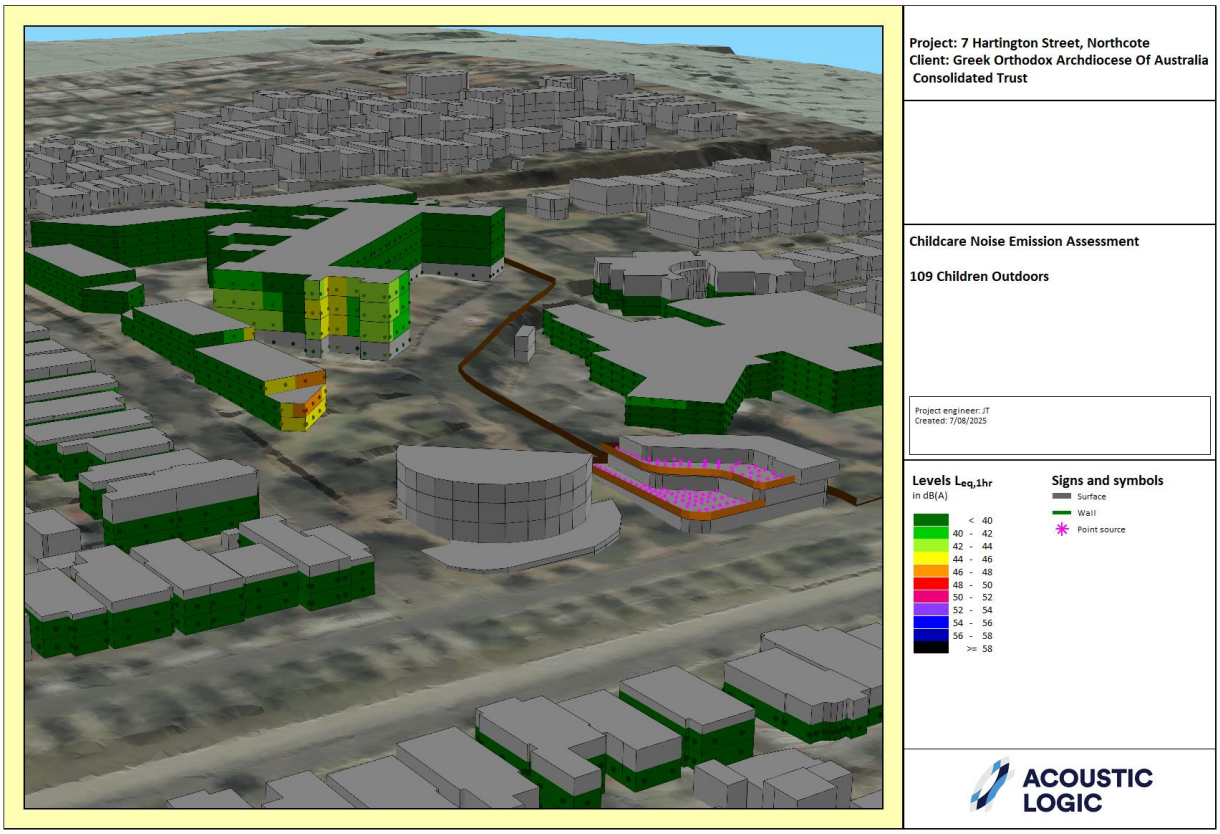

Project: 7 Hartington Street, Northcote
Client: Greek Orthodox Archdiocese Of Australia Consolidated Trust
Train Noise Prediction
For Information
Leq 16hr (6am-10pm)
Project engineer: JT
Created: 19/02/2025
Levels Leq,16hr
in dB(A)
< 45
45 - 47
47 - 49
49 - 51
51 - 53
53 - 55
55 - 57
57 - 59
59 - 61
61 - 63
>= 63
Signs and symbols
Emission line
Surface
Emission line
Surface
Wall
Point source
ACOUSTIC LOGIC

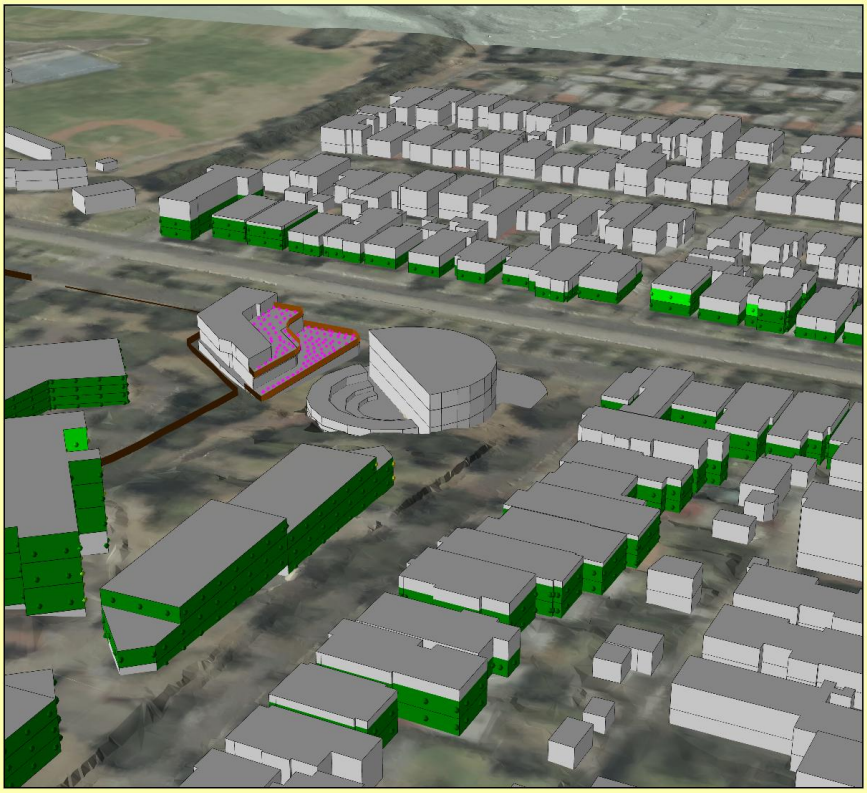
12.3 RAIL NOISE (NIGHT PERIOD – 8 HOUR LEQ)



12.4 CHILDCARE NOISE EMISSION PREDICTION







Project: 7 Hartington Street, Northcote
Client: Greek Orthodox Archdiocese Of Australia Consolidated Trust

Childcare Noise Emission Assessment

109 Children Outdoors

Project engineer: JT
Created: 7/08/2025

Levels $L_{eq,1hr}$
in dB(A)

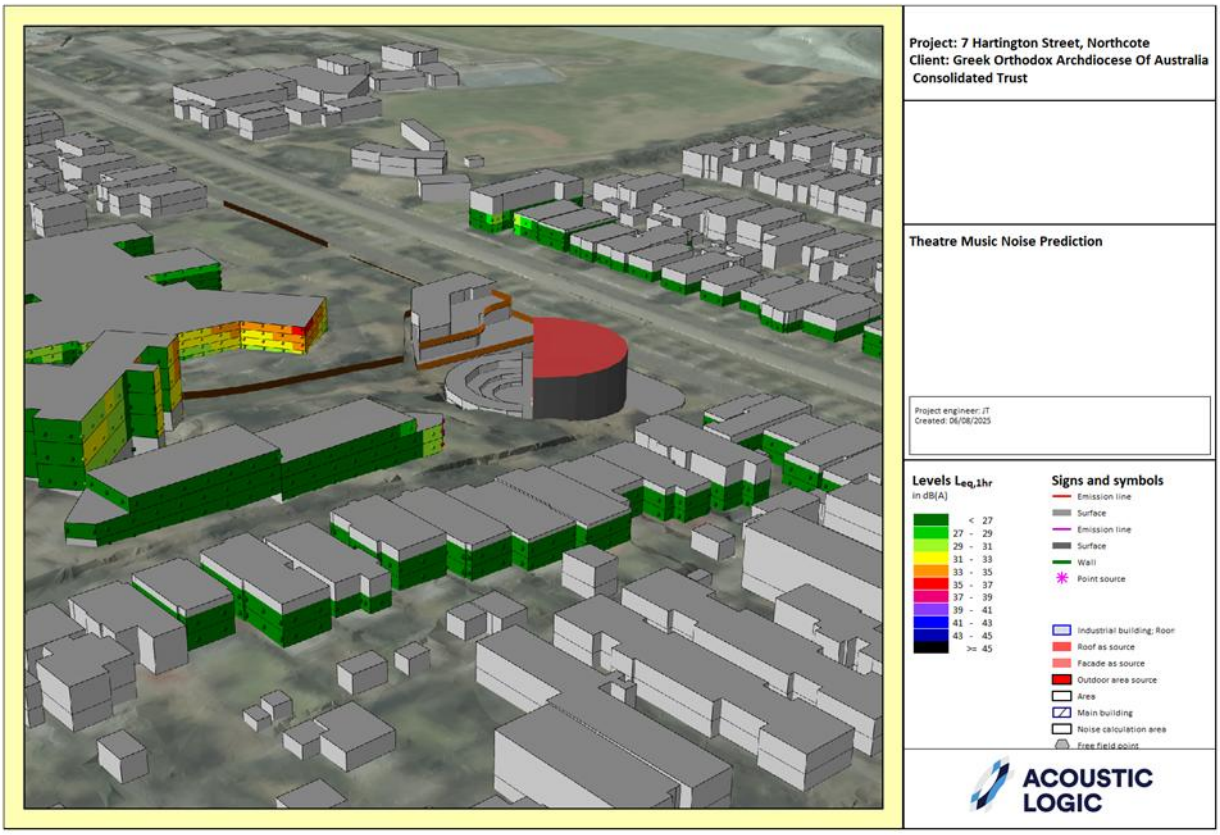
< 40
40 - 42
42 - 44
44 - 46
46 - 48
48 - 50
50 - 52
52 - 54
54 - 56
56 - 58
>= 58

Signs and symbols

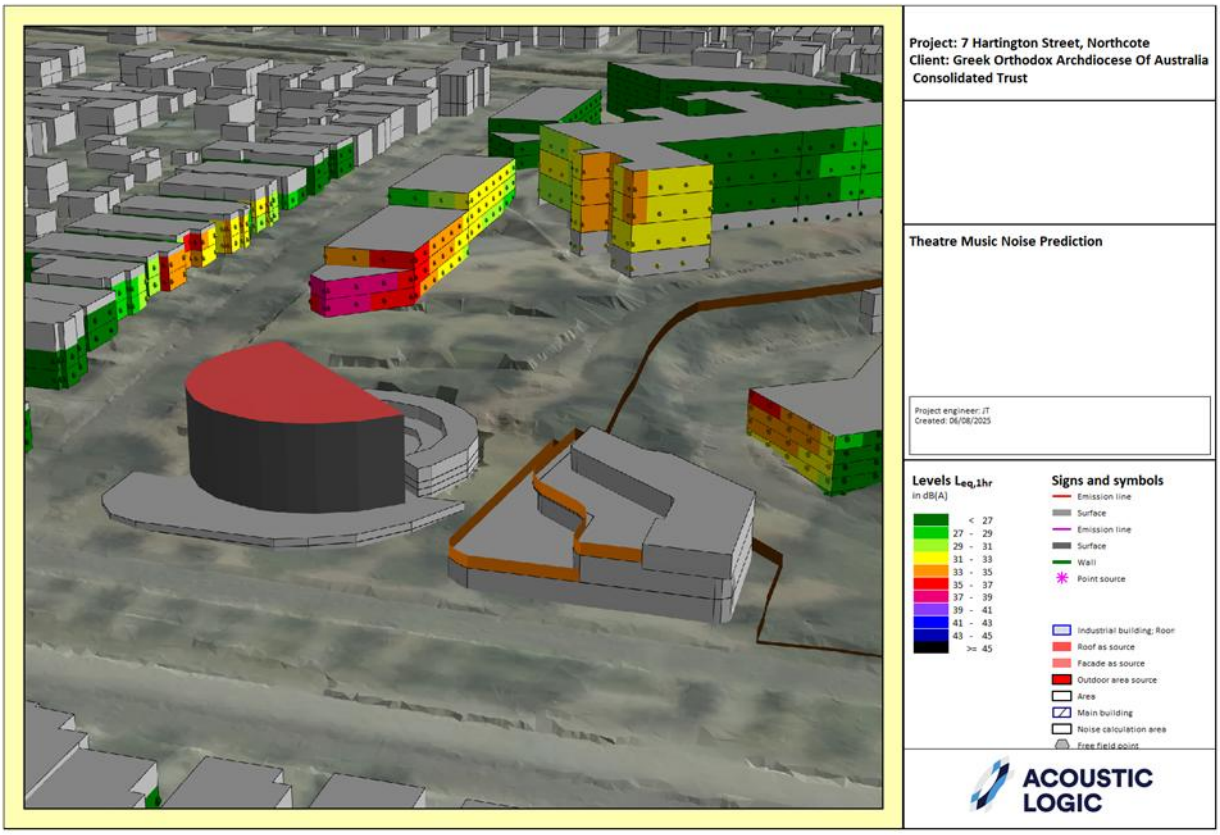
- Surface
- Wall
- Point source

ACOUSTIC LOGIC

12.5 THEATRE NOISE EMISSION PREDICTION




Project: 7 Hartington Street, Northcote
Client: Greek Orthodox Archdiocese Of Australia Consolidated Trust
Theatre Music Noise Prediction
Project engineer: JT
Created: 06/08/2025
Levels $L_{eq,1hr}$
in dB(A)
< 27
27 - 29
29 - 31
31 - 33
33 - 35
35 - 37
37 - 39
39 - 41
41 - 43
43 - 45
>= 45
Signs and symbols
Emission line
Surface
Emission line
Surface
Wall
Point source
Industrial building; Roof
Roof as source
Facade as source
Outdoor area source
Area
Main building
Noise calculation area
Free field point
ACOUSTIC LOGIC


Project: 7 Hartington Street, Northcote
Client: Greek Orthodox Archdiocese Of Australia Consolidated Trust
Theatre Music Noise Prediction
Project engineer: JT
Created: 06/08/2025
Levels $L_{eq,1hr}$
in dB(A)
< 27
27 - 29
29 - 31
31 - 33
33 - 35
35 - 37
37 - 39
39 - 41
41 - 43
43 - 45
>= 45
Signs and symbols
Emission line
Surface
Emission line
Surface
Wall
Point source
Industrial building; Roof
Roof as source
Facade as source
Outdoor area source
Area
Main building
Noise calculation area
Free field point
ACOUSTIC LOGIC

APPENDIX 3 – TRAIN NOISE LEVELS

Train Pass-By	Line	Measured Noise Levels dB(A) L_{eq}
Location 5	Outbound	61
	Inbound	68
	Outbound	60
	Inbound	69
	Outbound	58
	Inbound	65
	Outbound	63
	Inbound	65
	Outbound	63
	Inbound	67
Location 6	Outbound	63
	Inbound	66
	Outbound	61
	Inbound	66
	Outbound	67
	Inbound	68
	Outbound	61
	Inbound	64
	Outbound	73
	Inbound	66

APPENDIX 4 – SITE PHOTOS

Figure 7 – Monitoring Location 1

Figure 8 – Monitoring Location 2

Figure 9 – Monitoring Location 3

Figure 10 – Monitoring Location 4

Figure 11 – Attended Measurement Location 5

Figure 12 – Attended Measurement Location 6

Appendix B –
Waste Management Plan

Client
Holy Monastery of Axion Estin

Date
22 August 2025

Waste Management Plan

Proposed Mixed Use Development

7 Hartington Street, Northcote VIC

Planning
Transport
Urban Design
Waste Management

ratio:

ratio.com.au

Project
7 Hartington Street, Northcote VIC

Prepared for
Holy Monastery of Axion Estin

Our reference
19797W-R01F04

Directory path https://ratioconsultants1.sharepoint.com/sites/19797W/Shared Documents/General/9. Reports/19797W-R01F04.docx

Version	Date	Issue	Prepared by	Checked by
R01F01	25/07/2025	Town Planning v1	W Psiwa & M Fairlie	M Fairlie
R01F02	1/08/2025	Town Planning v2	W Psiwa & M Fairlie	M Fairlie
R01F03	15/08/2025	Town Planning v3	W Psiwa & M Fairlie	M Fairlie
R01F04	22/08/2025	Town Planning v4	W Psiwa & M Fairlie	M Fairlie

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Appendices

1. Introduction

1.1. Project Details

Site Address

7 Hartington Street, Northcote VIC

Local Council

Darebin City Council: (Phone: 03 8470 8888)

Planning Application Number

To be assigned

Summary of Development Components

Building A (Heritage)

Residential

Waste Source	Quantity
1-bedroom Apartment	4
3-bedroom Apartment	9
Total	**13**

Commercial – Main Building

Level	Waste Source	Operational Days (per week)	Floor Area / Quantity
Lower Ground	Makers Space	7	488.8 m^2
Lower Ground	Hotel Lobby	7	139.7 m^2
Lower Ground	Hotel Lounge	7	63.9 m^2
Ground	Bookstore	7	168.1 m^2
Ground	Church	7	528.1 m^2
Ground	Function Space	7	147.6 m^2
Ground	Hotel Room	7	9 Beds
Level 1	Hotel Room	7	9 Beds
Level 1	Ballroom	7	288.2 m^2
Level 1	Church Office / VIP Area	7	258.2 m^2
Level 2	Office	7	143.3 m^2

Level 2	Hotel Room	7	5 Beds

Commercial – Café

Level	Waste Source	Operational Days (per week)	Floor Area / Quantity
Lower Ground	Café	7	158.2 m^2

Building B (Townhouses)

Eastern

Waste Source	Quantity
3-bedroom Townhouse	10
Total	**10**

Western

Waste Source	Quantity
3-bedroom Townhouse	12
Total	**12**

Building C (Apartments)

Northern Apartments

Waste Source	Quantity
1-bedroom Apartment	3
2-bedroom Apartment	3
3-bedroom Apartment	16
Total	**22**

Southern Apartments

Waste Source	Quantity
1-bedroom Apartment	3
2-bedroom Apartment	4
3-bedroom Apartment	18
Total	**25**

Building D (ELC & Theatre)

Level	Waste Source	Operational Days (per week)	Floor Area (m²)
Ground	Theatre	7	808
Level 1	Theatre	7	283
Level 1	ELC Classrooms	7	300
Level 2	Theatre	7	197
Level 2	ELC Classrooms	7	189
Total			**1,777**

Refer to the Architectural Plans submitted with the Town Planning Application (prepared by KUD) for a copy of the floorplans reviewed in the preparation of this Waste Management Plan.

1.2. Report Purpose

This Waste Management Plan has been prepared to accompany the Town Planning Application for the proposed development.

This Waste Management Plan establishes an effective waste management system that is compatible with the design of the development and compliant with national, state, and local policies / best practice guidelines. This Waste Management Plan will form a document that achieves effective communication of the waste management system so that waste system managers and users can be properly informed of its design and the roles and responsibilities involved in its implementation.

1.3. Report Limitations

Waste management arrangements during the construction and fit-out stages of the development, and on-going operation and monitoring of the waste management arrangements for the development following the occupation of the development, are outside the scope of this Waste Management Plan.

1.4. Applicable Standards and References

Relevant policies and guidelines considered as part of the preparation of this Waste Management Plan include:

— Australian Government – National Waste Policy: Less Waste, More Resources (2018).

— Australian Standards:

- AS 4123.1-7 (Mobile Waste Containers).
- AS 1668.2 (Odour).
- AS 2890.2 (Parking Facilities).
- AS 5377:2013 (E-waste).
- AS 4736-2006 & AS 5810-2010 (Biodegradable plastics).
- AS 4564-2012 (Composts).
- AS 1319 (Safety signs).

— Environment Protection Act 2017.

— Environment Protection Regulations 2021.

— Disability Discrimination Act 1992.

— Victorian Government – Recycling Victoria: A New Economy (2020).

— Sustainability Victoria – Better Practice Guide for Waste Management and Recycling in Multi-Unit Developments (2019).

— EPA Victoria – Noise Control Guidelines (2021).

— Darebin City Council – Waste Management Guidelines (2021).

2. Operational Waste Management Guide

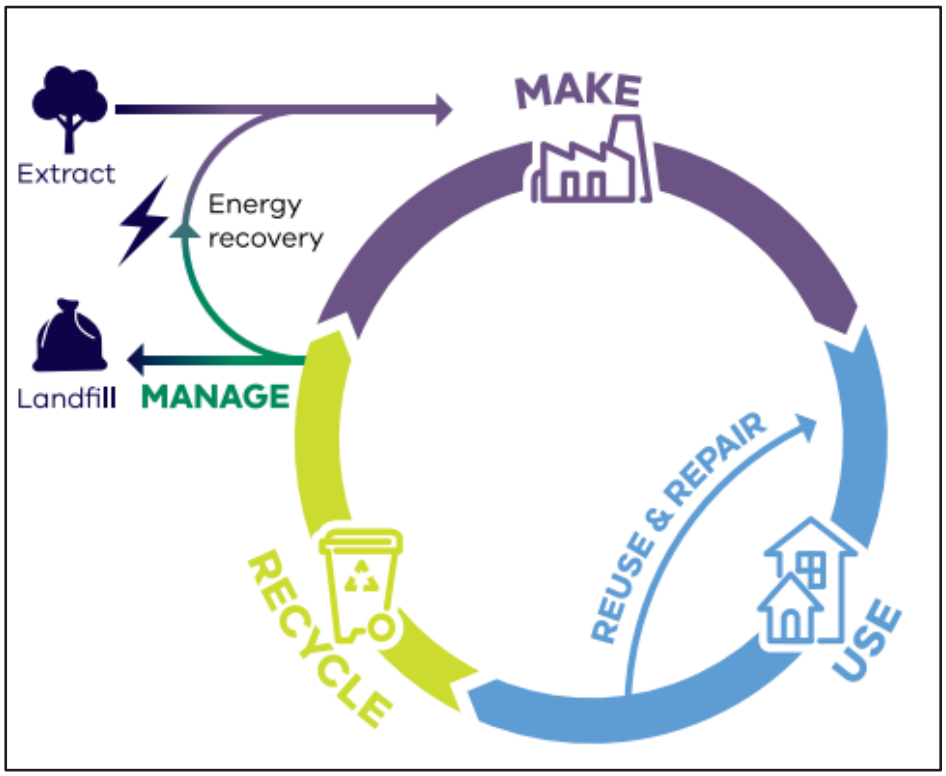
2.1. Recycling Victoria: A New Economy

The Victorian Government's Recycling Victoria: A New Economy was released in 2020 and sets out strategies to reduce the amount of waste generated in Victoria and increase the amount of materials for recycling and reprocessing to reduce damage to the environment caused by waste.

Ongoing education and dedicated ongoing management services are critical factors in encouraging users to continue to use the services and systems as intended. The future Occupiers of the development shall promote the above strategy where practicable and encourage users to participate in minimising the impact of waste on the environment. In particular, consideration should be made to the circular economy as shown in Figure 2.1 below.

A circular economy continually seeks to reduce the environmental impacts of production and consumption, while enabling economic growth through more productive use of natural resources.

Figure 2.1: The Circular Economy



Source: Recycling Victoria: A New Economy

2.2. Guide for Residents (Townhouses & Apartments)

To ensure residents are aware of their responsibilities with regard to waste management, Facilities Management shall provide an information package to all new residents that includes the following information:

— A copy of this Waste Management Plan.

— Methods and techniques for waste reduction and minimisation.

— Information regarding waste collection days and requirements.

— Student responsibilities with regard to bin usage, storage, and collection.

— Student responsibilities with regard to litter and waste removal from the common property.

The proposed disposal methodology for each waste stream expected to be generated is outlined as follows:

General Waste

— Residents of all townhouses and apartments within the site shall dispose of general waste into an appropriately sized receptacle, stored internally within their kitchen area.

— Residents shall empty full general waste receptacles into the general waste collection bins provided within their assigned bin room.

— Residents should ensure that general waste is placed within tied bags prior to disposal into the general waste collection bins.

Organics

— Residents of all townhouses and apartments within the site shall dispose of organics (food waste) into an appropriately sized receptacle, stored internally within their kitchen area.

— Residents shall empty full organics receptacles into the organics collection bins provided within their assigned bin room.

— If bagged, residents must ensure that organics is placed within contractor-approved compostable bags prior to disposal into the organics collection bins.

Recycling

— Residents of all townhouses and apartments within the site shall dispose of recycling (commingled excluding glass) into an appropriately sized receptacle, stored internally within their kitchen area.

— Residents shall empty full recycling receptacles into the recycling collection bins provided within their assigned bin room.

— Resident should ensure that bottles, cans, and containers are rinsed, cardboard is flattened, and lids/packaging are separated, prior to disposal into the recycling collection bins.

— Residents must ensure that recycling is loose and unbagged prior to disposal into the recycling collection bins.

Glass

— Residents of all townhouses and apartments within the site shall dispose of glass into an appropriately sized receptacle, stored internally within their kitchen area.

— Residents shall empty full glass receptacles into the glass collection bins provided within their assigned bin room.

— Resident should ensure that bottles and jars are rinsed, and lids are separated, prior to disposal into the glass collection bins.

— Residents must ensure that glass is loose and unbagged prior to disposal into the glass collection bins.

Hard Waste & E-waste

— Residents of the apartments and townhouses shall take any hard waste and e-waste items to the dedicated storage area provided within their assigned bin room.

— Facilities Management shall be responsible for organising hard waste and e-waste to be collected by a private contractor on an as-required basis.

— E-waste is prohibited under Victorian law from being disposed of into landfill-bound bins.

2.3. Guide for Staff (Heritage Commercial, ELC & Theatre)

To ensure staff are aware of their responsibilities with regard to waste management, Facilities Management shall provide an information package to all staff that includes the following information:

— A copy of this Waste Management Plan.

— Methods and techniques for waste reduction and minimisation.

— Information regarding waste collection days and requirements.

— Retail tenant responsibilities with regard to bin usage, storage, and collection.

— Retail tenant responsibilities with regard to litter and waste removal from the common property.

The proposed disposal methodology for each waste stream expected to be generated is outlined as follows:

General Waste Disposal

— Staff associated with the heritage (commercial), ELC, and theatre components shall dispose of general waste into appropriately sized receptacles, stored internally at the point of generation (kitchen, BOH, breakout, activity room, public office/admin areas etc.).

— Staff and/or appointed cleaners shall empty full general waste receptacles into the general waste collection bins provided within the appropriate bin room.

— Staff and/or cleaners should ensure that general waste is placed within tied bags prior to disposal into the general waste collection bins.

Organics Disposal

— Staff associated with the heritage (commercial), ELC, and theatre components shall dispose of organics (food waste) into appropriately sized receptacles, stored internally at the point of generation (kitchen, BOH, breakout, activity room, public, office/admin areas etc.).

— Staff and/or appointed cleaners shall empty full organics receptacles into the organics collection bins provided within the appropriate bin room.

— If bagged, staff and/or cleaners must ensure that organics is placed within contractor-approved compostable bags prior to disposal into the organics collection bins.

Recycling Disposal

— Staff associated with the heritage (commercial), ELC, and theatre components shall dispose of recycling (commingled) into appropriately sized receptacles, stored internally at the point of generation (kitchen, BOH, breakout, activity room, office/admin areas etc.).

— Staff and/or appointed cleaners shall empty full recycling receptacles into the recycling collection bins provided within the appropriate bin room.

— Staff and/or cleaners should ensure that bottles, cans, and containers are rinsed, and lids/packaging are separated, prior to disposal into the recycling collection bins.

— Staff and/or cleaners must ensure that recycling is loose and unbagged prior to disposal into the recycling collection bins.

Paper and Cardboard Disposal

— Staff associated with the heritage (commercial), ELC, and theatre components shall dispose of paper and cardboard (unsoiled) into appropriately sized receptacles, stored internally at the point of generation (kitchen, BOH, breakout, activity room, office/admin areas etc.).

— Staff and/or appointed cleaners shall empty full paper and cardboard receptacles into the paper and cardboard collection bins provided within the appropriate bin room.

— Staff and/or cleaners should ensure that cardboard is flattened and/or broken into smaller pieces prior to disposal into the paper and cardboard collection bins.

— Staff and/or cleaners must ensure that paper and cardboard is loose and unbagged prior to disposal into the paper and cardboard collection bins.

Hard Waste & E-waste

— Staff associated with the heritage (commercial), ELC, and theatre components shall take any hard waste and e-waste items to the dedicated storage area provided within the appropriate bin room.

— Facilities Management shall be responsible for organising hard waste and e-waste to be collected by a private contractor on an as-required basis.

— E-waste is prohibited under Victorian law from being disposed of into landfill-bound bins.

2.4. Facilities Management Responsibilities

Facilities Management shall be responsible for the following:

- Ongoing management of the waste management systems, including the maintenance of all bin rooms and associated equipment and components, to the satisfaction of all waste system users and the relevant authority, and in accordance with the manufacturer's specifications.
- Engaging and managing the private waste collection contractor(s).
- Publishing and distributing information to ensure that all waste system users are familiar about the waste management systems.
- Informing all waste system users that bagged recycling, glass, and paper and cardboard is not permitted.
- Informing all waste system users that any bags used for disposing of organics must be made from a contractor-approved material.
- Informing all waste system users that e-waste is prohibited under Victorian law from being disposed of into landfill-bound bins.
- Developing and implementing adequate safe operating procedures (including the preparation of Safe Work Method Statements).
- Labelling/numbering the bins according to the property address to protect them from theft and vandalism.
- Servicing all public and communal areas through sweeping and removal of litter on a regular basis.
- Arrange and manage the disposal of common garden organics via a landscaping contractor.
- Preventing overfilled bins by keeping lids closed.
- Ensuring that bins are not removed from the site.
- Ensuring that all bin rooms and associated equipment and components are provided as per the design requirements outlined in Section 6 of this report.

2.5. Waste Management Plan Communication Strategy

Facilities Management shall ensure that all waste systems users are informed about the development's waste management systems, including where and how to correctly dispose of each waste stream. It is highly recommended that this Waste Management Plan is electronically provided to all residents, staff, cleaners, and contractors.

Facilities Management (in conjunction with the waste collection contractor) shall provide educational material to inform all waste system users about the development's waste management system and advise all waste system users how to correctly separate and dispose of each waste stream with care, to minimise waste sent to landfill and reduce the contamination of recyclables.

2.6. Waste Management Plan Revisions

From time to time, due to changes in legislative requirements, changes in the development's needs and/or waste patterns (such as waste composition, volume, or distribution), or to address unforeseen operational issues, Facilities Management shall be responsible for coordinating the necessary Waste Management Plan revisions, including (on an as-required basis):

— A waste audit and new waste management strategy.

— Revision of the waste system (bin size / quantity / waste streams / collection frequency / update of equipment).

— Revision of the services provided by the waste collection contractor(s).

— Re-education of users.

— Any necessary statutory / regulatory requirements / approvals.

3. Waste Volume Assessment

3.1. Residential Waste Volume Assessment

The residential waste generation rates specified within Darebin City Council's *Waste Management Guidelines 2021* are considered appropriate to undertake a waste volume assessment for the residential components of the proposed development. These rates are outlined below:

1-Bedroom Units

- General Waste: 60 L/unit/week
- Organics: 25 L/unit/week
- Recycling: 80 L/unit/week
- Glass: 24 L/unit/week

2-Bedroom Units

- General Waste: 80 L/unit/week
- Organics: 40 L/unit/week
- Recycling: 100 L/unit/week
- Glass: 30 L/unit/week

3-Bedroom Units

- General Waste: 80 L/unit/week
- Organics: 45 L/unit/week
- Recycling: 120 L/unit/week
- Glass: 36 L/unit/week

Applying the above residential waste generation rates, the waste volume estimates for the residential components of the proposed development are outlined in Tables 3.1 and 3.2 below.

Table 3.1: Residential General Waste & Organics Volume Estimates

Development Component	Waste Source	Quantity	General Waste Generation Rate (L/Unit/Week)	General Waste Volume (L/Week)	Organics Generation Rate (L/Unit/Week)	Organics Volume (L/Week)
Building A (Heritage – Residential)	1-bedroom Apartment	4	60	240	25	100
	3-bedroom Apartment	9	80	720	45	405
	Total	**13**	-	**960**	-	**505**
Building B (Eastern Townhouses)	3-bedroom Townhouse)	10	80	800	45	450
	Total	**10**	-	**800**	-	**450**
Building B (Western Townhouses)	3-bedroom Townhouse	12	80	960	45	540
	Total	**12**	-	**960**	-	**540**
Building C (Apartments – Northern)	1-bedroom Apartment	3	60	180	25	75
	2-bedroom Apartment	3	80	240	40	120
	3-bedroom Apartment	16	80	1,280	45	720
	Total	**22**	-	**1,700**	-	**915**
Building C (Apartments – Southern)	1-bedroom Apartment	3	60	180	25	75
	2-bedroom Apartment	4	80	320	40	160
	3-bedroom Apartment	18	80	1,440	45	810

	Total	**25**	**-**	**1,940**	**-**	**1,045**

Table 3.2: Residential Recycling & Glass Volume Estimates

Development Component	Waste Source	Quantity	Recycling Generation Rate (L/Unit/Week)	Recycling Volume (L/Week)	Glass Generation Rate (L/Unit/Week)	Glass Volume (L/Week)
Building A (Heritage – Residential)	1-bedroom Apartment	4	80	320	24	96
	3-bedroom Apartment	9	120	1,080	36	324
	Total	**13**	**-**	**1,400**	**-**	**420**
Building B (Eastern Townhouses)	3-bedroom Townhouse	10	120	1,200	36	360
	Total	**10**	**-**	**1,200**	**-**	**360**
Building B (Western Townhouses)	3-bedroom Townhouse	12	120	1,440	36	432
	Total	**12**	**-**	**1,440**	**-**	**432**
Building C (Apartments – Northern)	1-bedroom Apartment	3	80	240	24	72
	2-bedroom Apartment	3	100	300	30	90
	3-bedroom Apartment	16	120	1,920	36	576
	Total	**22**	**-**	**2,460**	**-**	**738**
	1-bedroom Apartment	3	80	240	24	72

Building C (Apartments – Southern)	2-bedroom Apartment	4	100	400	30	120
	3-bedroom Apartment	18	120	2,160	36	648
	Total	**25**	**-**	**2,800**	**-**	**840**

3.2. Commercial Waste Volume Assessment

The commercial waste generation rates specified within Sustainability Victoria's *Waste Management and Recycling in Multi-Unit Developments: Better Practice Guide* are considered appropriate to undertake a waste volume assessment for the commercial components of the proposed development. These rates are outlined below:

Café

— General Waste: 300 L/100m^2/Day

— Recycling: 200 L/100m^2/Day

Note: to allow for the separation of organics from the general waste stream, and paper and cardboard from the recycling stream, an **80 : 20** split shall be adopted for **general waste : organics** and a **50 : 50** split shall be adopted for **recycling : paper and cardboard**.

Shops (Non-Food)

— General Waste: 50 L/100m^2/Day

— Recycling: 50 L/100m^2/Day

Note: to allow for the separation of paper and cardboard from the recycling stream, a **50 : 50** split shall be adopted for **recycling : paper and cardboard**.

Licensed Club

— General Waste: 50 L/100m^2/Day

— Recycling: 50 L/100m^2/Day

Note: to allow for the separation of paper and cardboard from the recycling stream, a **50 : 50** split shall be adopted for **recycling : paper and cardboard**.

Office

— General Waste: 10 L/100m^2/Day

— Recycling: 10 L/100m^2/Day

Note: to allow for the separation of paper and cardboard from the recycling stream, a **50 : 50** split shall be adopted for **recycling : paper and cardboard**.

Hotel Rooms

— General Waste: 5 L/Bed/Day

— Recycling: 5 L/Bed/Day

Note: to allow for the separation of organics from the general waste stream, and paper and cardboard from the recycling stream, an **80 : 20** split shall be adopted for **general waste : organics** and a **50 : 50** split shall be adopted for **recycling : paper and cardboard**.

Childcare

— General Waste: 350 L/100m^2/Week

— Recycling: 350 L/100m^2/Week

Note: to allow for the separation of organics from the general waste stream, and paper and cardboard from the recycling stream, an **80 : 20** split shall be adopted for **general waste : organics** and a **50 : 50** split shall be adopted for **recycling : paper and cardboard**.

Applying the above commercial waste generation rates (with modifications to allow for waste stream separation as noted), the waste volume estimates for the commercial components of the development are outlined in Tables 3.3 and 3.4 below.

Table 3.3: Commercial General Waste & Organics Volume Estimates

Development Component	Waste Source	Floor Area / Number of Beds	Operational Days (per week)	General Waste Generation Rate (L/100m²/Day)	General Waste Volume (L/Week)	Organics Generation Rate (L/100m²/Day)	Organics Volume (L/Week)
Building A (Heritage – Commercial, Main Building)	Makers Space	488.4 m²	7	50	1,709	-	-
	Hotel Lobby	139.7 m²	7	10	96	-	-
	Hotel Lounge	63.9 m²	7	50	224	-	-
	Bookstore	168.1 m²	7	50	588	-	-
	Church	528.1 m²	7	50	1,848	-	-
	Function Space	147.6 m²	7	50	517	-	-
	Hotel Room	9 Beds	7	4	252	1	63
	Hotel Room	9 Beds	7	4	252	1	63
	Ballroom	288.2 m²	7	240	4,842	60	1,210
	Church Office / VIP Area	258.2 m²	7	10	181	-	-
	Office	143.3 m²	7	10	100	-	-
	Hotel Room	5 Beds	7	4	140	1	35
	Total	**-**	**-**	**-**	**10,751**	**-**	**1,336**
Building A (Heritage – Commercial, Café)	Café	158.2 m²	7	240	2,658	60	664
	Total	**-**	**-**	**-**	**2,658**	**-**	**664**
Building D (ELC & Theatre)	Theatre	808 m²	7	10	566	-	-
	Theatre	283 m²	7	10	198	-	-
	ELC Classrooms	300 m²	7	280	840	70	210
	Theatre	197 m²	7	10	138	-	-
	ELC Classrooms	189 m²	7	280	529	70	529
	Total	**1,662 m²**	**-**	**-**	**2,271**	**-**	**342**

Table 3.4: Commercial Recycling and Paper & Cardboard

Development Component	Waste Source	Floor Area / Number of Beds	Operational Days (per week)	Recycling Generation Rate (L/100m²/Day)	Recycling Volume (L/Week)	Paper & Cardboard Generation Rate (L/100m²/Day)	Paper & Cardboard Volume (L/Week)
Building A (Heritage – Commercial)	Makers Space	488.4 m²	7	25	855	25	855
	Hotel Lobby	139.7 m²	7	5	49	5	49
	Hotel Lounge	63.9 m²	7	25	112	25	112
	Bookstore	168.1 m²	7	25	294	25	294
	Church	528.1 m²	7	25	924	25	924
	Function Space	147.6 m²	7	25	258	25	258
	Hotel Room	9 Beds	7	2.5	158	2.5	158
	Hotel Room	9 Beds	7	2.5	158	2.5	158
	Ballroom	288.2 m²	7	100	2,017	100	2,017
	Church Office / VIP Area	258.2 m²	7	5	90	5	90
	Office	143.3 m²	7	5	50	5	50
	Hotel Room	5 Beds	7	2.5	88	2.5	88
	Total	-	-	-	**5,052**	-	**5,052**
Building A (Heritage – Commercial, Café)	Café	158.2 m²	7	100	1,107	100	1,107
	Total	-	-	-	**1,107**	-	**1,107**
Building D (ELC & Theatre)	Theatre	808 m²	7	5	283	5	283
	Theatre	283 m²	7	5	99	5	99
	ELC Classrooms	300 m²	7	175	525	175	525
	Theatre	197 m²	7	5	69	5	69
	ELC Classrooms	189 m²	7	175	331	175	331

	Total	**1,662 m²**	**-**	**-**	**1,307**	**-**	**1,307**

4. Waste Equipment and Storage Details

4.1. Residential Waste Equipment and Storage Requirements

The waste equipment and storage requirements for the residential components of the proposed development are outlined in Table 4.1 below.

Table 4.1: Residential Waste Equipment and Storage Requirements

Development Component	Waste Stream	Bin Size (L)	Quantity	Height per bin (mm)	Width per bin (mm)	Depth per bin (mm)	Footprint (m^2)
Building A (Heritage – Residential)	General Waste	240	3	1060	585	730	1.28
	Organics	240	2	1060	585	730	0.85
	Recycling	240	3	1060	585	730	1.28
	Glass	240	1	1060	585	730	0.43
	Hard Waste & E-waste	2sqm Storage Area	1	1000	2000	1000	2.00
	Total Footprint Required Excluding Circulation (m^2)						**5.84**
Building B (Townhouses – Eastern)	General Waste	1,100	1	1330	1240	1070	1.33
	Organics	240	2	1060	585	730	0.85
	Recycling	660	2	1200	1260	780	1.97
	Glass	240	2	1060	585	730	0.85

	Total Footprint Required Excluding Circulation (m²)						**5.00**
Building B (Townhouses – Western)	General Waste	1,100	1	1330	1240	1070	1.33
	Organics	240	3	1060	585	730	1.28
	Recycling	1,100	2	1330	1240	1070	2.65
	Glass	240	2	1060	585	730	0.85
	Hard Waste & E-waste	2sqm Storage Area	1	1000	2000	1000	2.00
	Total Footprint Required Excluding Circulation (m²)						**8.12**
Building C (Apartments – Northern)	General Waste	1,100	2	1330	1240	1070	2.65
	Organics	240	4	1060	585	730	1.71
	Recycling	1,100	3	1330	1240	1070	3.98
	Glass	240	4	1060	585	730	1.71
	Hard Waste & E-waste	2sqm Storage Area	1	1000	2000	1000	2.00
	Total Footprint Required Excluding Circulation (m²)						**12.05**
Building C (Apartments – Southern)	General Waste	1,100	2	1330	1240	1070	2.65
	Organics	240	5	1060	585	730	2.14
	Recycling	1,100	3	1330	1240	1070	3.98
	Glass	240	4	1060	585	730	1.71
	Hard Waste & E-waste	2sqm Storage Area	1	1000	2000	1000	2.00
	Total Footprint Required Excluding Circulation (m²)						**12.48**

4.2. Commercial Waste Equipment and Storage Requirements

The waste equipment and storage requirements for the commercial components of the proposed development are outlined in Table 4.2 below.

Table 4.2: Commercial Waste Equipment and Storage Requirements

Development Component	Waste Stream	Bin Size (L)	Quantity	Height per bin (mm)	Width per bin (mm)	Depth per bin (mm)	Footprint (m^2)
Building A (Heritage – Commercial, Main Building)	General Waste	1,100	5	1330	1240	1070	6.63
	Organics	240	3	1060	585	730	1.28
	Recycling	1,100	3	1330	1240	1070	3.98
	Paper and Cardboard	1,100	3	1330	1240	1070	3.98
	Hard Waste & E-waste	1sqm Storage Area	1	1000	1000	1000	1.00
	Total Footprint Required Excluding Circulation (m^2)						**16.88**
Building A (Heritage – Commercial, Café)	General Waste	1,100	1	1330	1240	1070	1.33
	Organics	240	1	1060	585	730	0.43
		120	1	930	480	545	0.26
	Recycling	660	1	1200	1260	780	0.98
	Paper and Cardboard	660	1	1200	1260	780	0.98
	Total Footprint Required Excluding Circulation (m^2)						**3.98**
Building D (ELC & Theatre)	General Waste	1,100	3	1200	1260	780	2.95
	Organics	240	2	1060	585	730	0.85
	Recycling	1,100	2	1330	1240	1070	2.65

	Paper and Cardboard	1,100	2	1330	1240	1070	2.65
	Hard Waste & E-waste	1sqm Storage Area	1	1000	1000	1000	1.00
	Total Footprint Required Excluding Circulation (m^2)						**10.11**

4.3. Residential Bin Room Layouts

The proposed bin room layouts for the residential components of the proposed development are shown in Figures 4.1 to 4.5 below.

Figure 4.1: Bin Room Layout – Building A (Heritage – Residential)

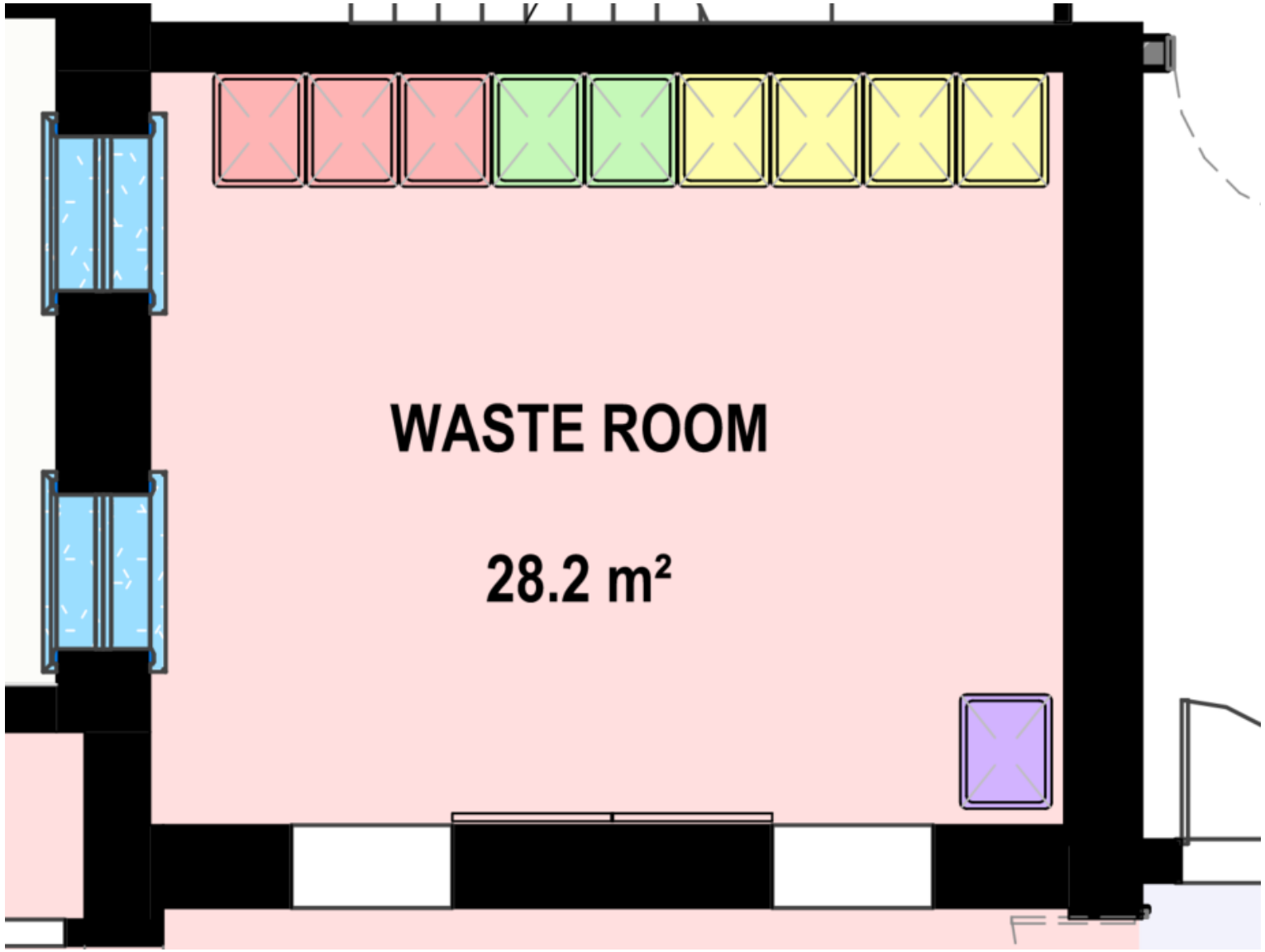


Figure 4.2: Bin Room Layout – Building B (Eastern Townhouses)

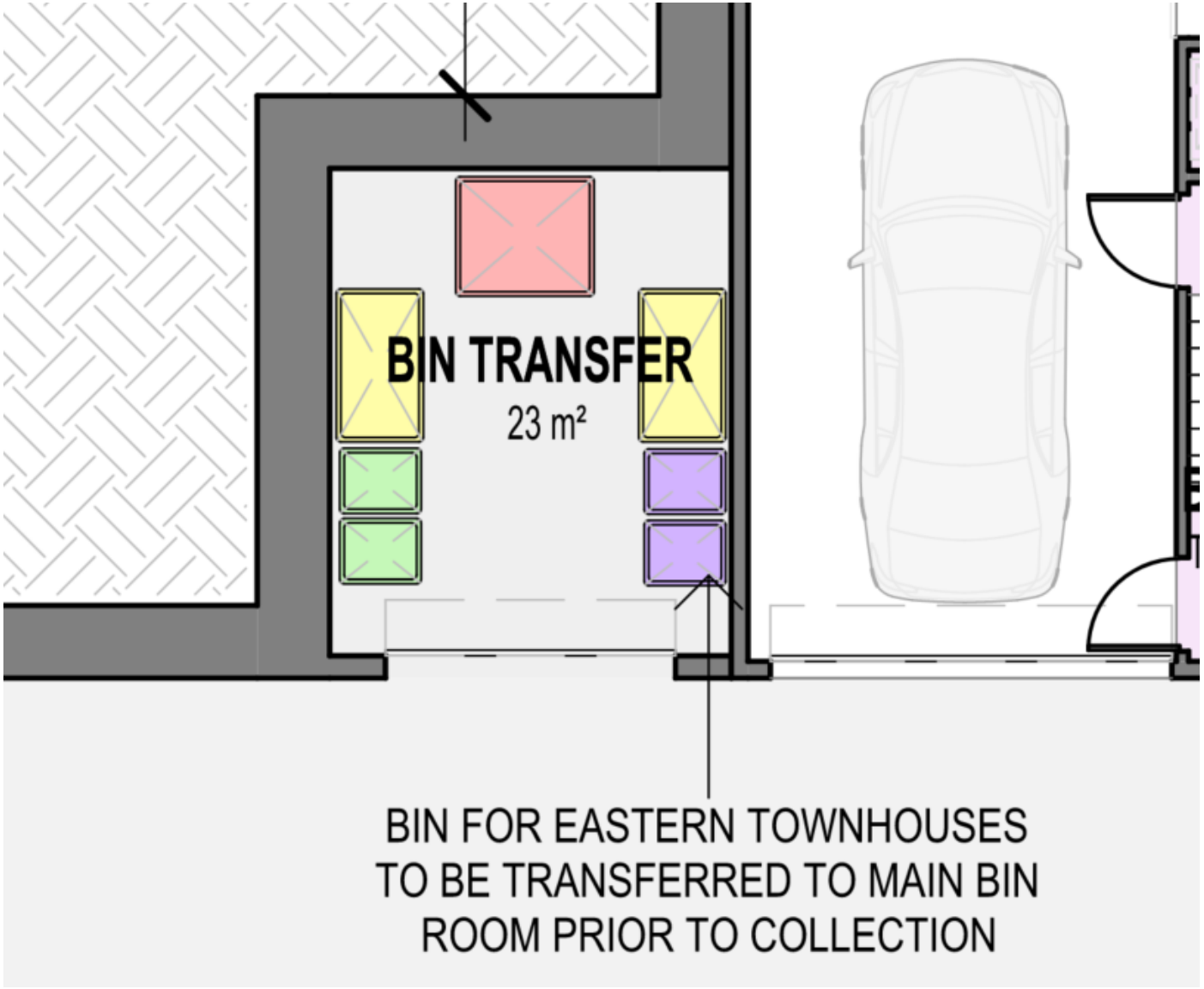


Figure 4.3: Bin Room Layout – Building B (Western Townhouses)

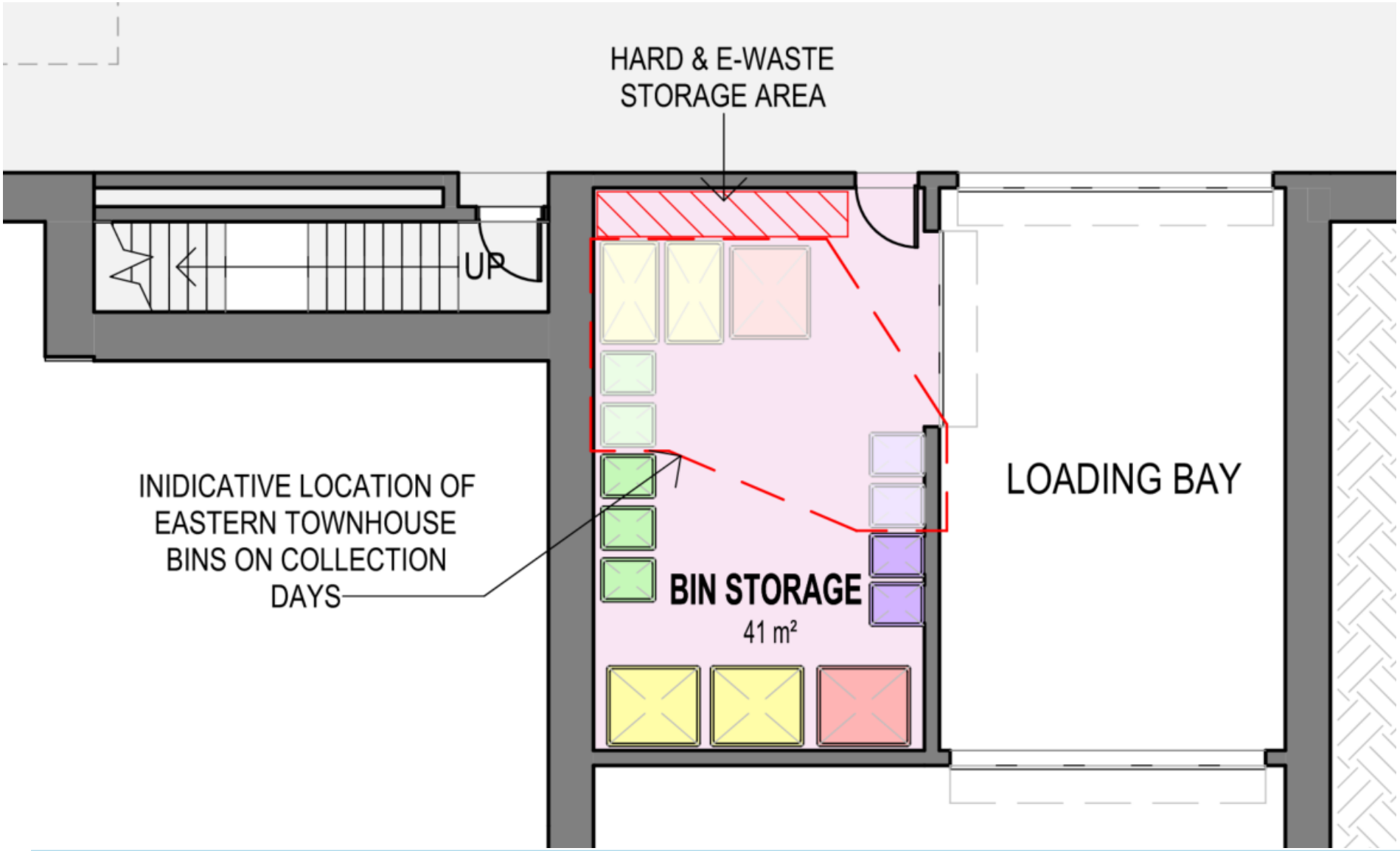


Figure 4.4: Bin Room Layout – Building C (Apartments – Northern)

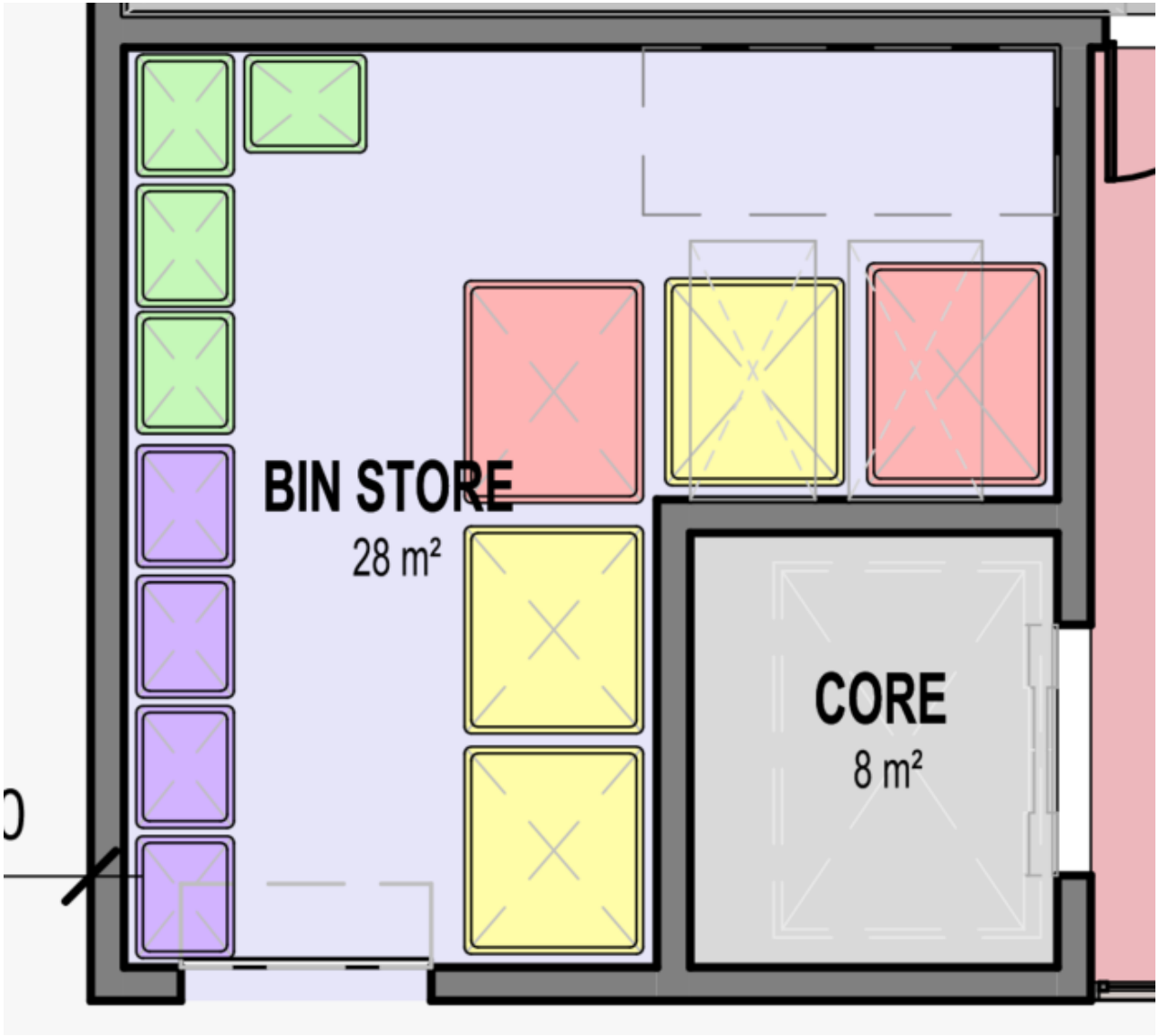
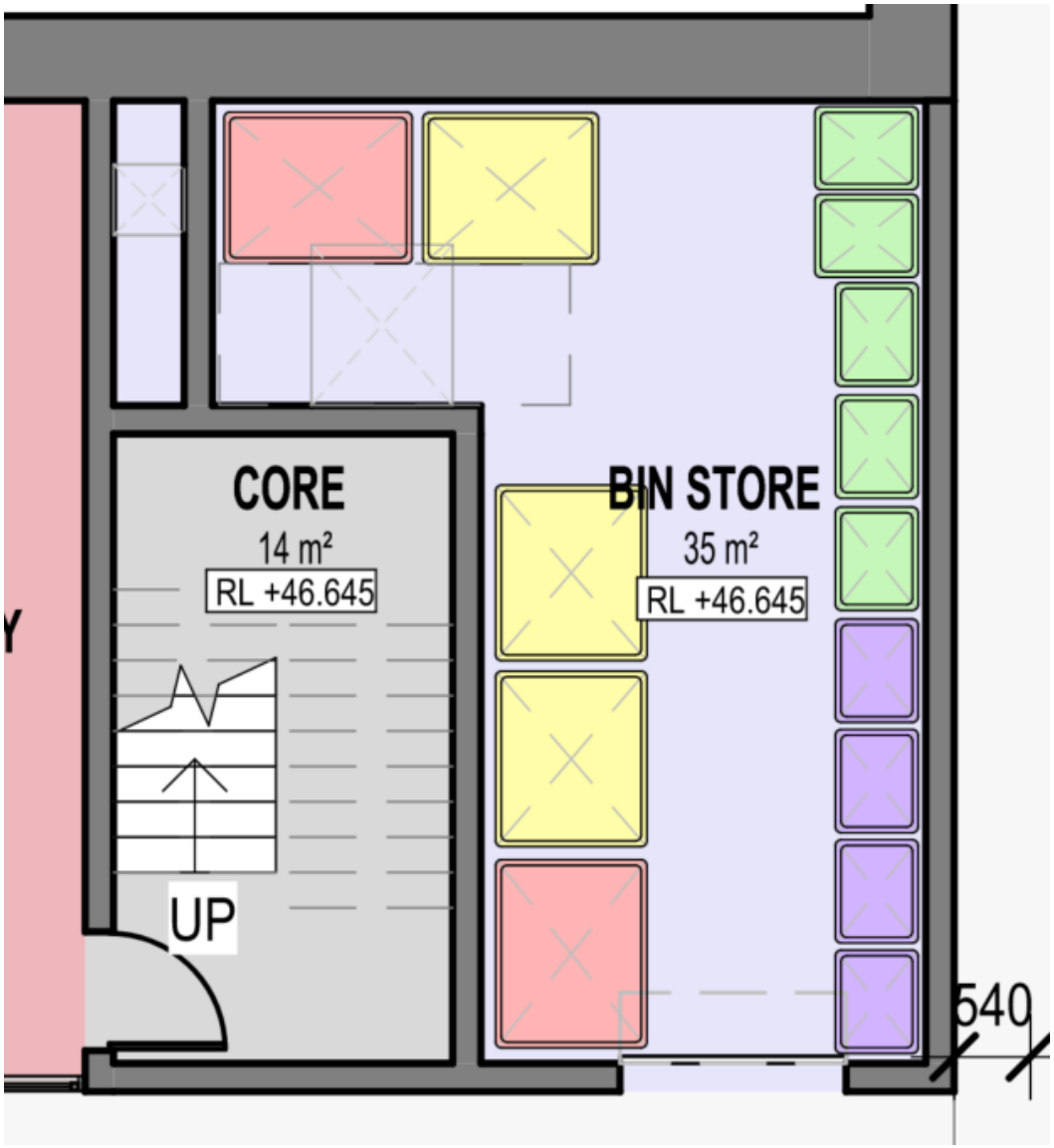


Figure 4.5: Bin Room Layout – Building C (Apartments – Southern)



4.4. Commercial Bin Room Layouts

The proposed bin room layouts for the commercial components of the proposed development are shown in Figures 4.5 to 4.7 below.

Figure 4.5: Bin Room Layout – Building A (Heritage – Commercial, Main Building)

Figure 4.6: Bin Room Layout – Building A (Heritage – Commercial, Café)

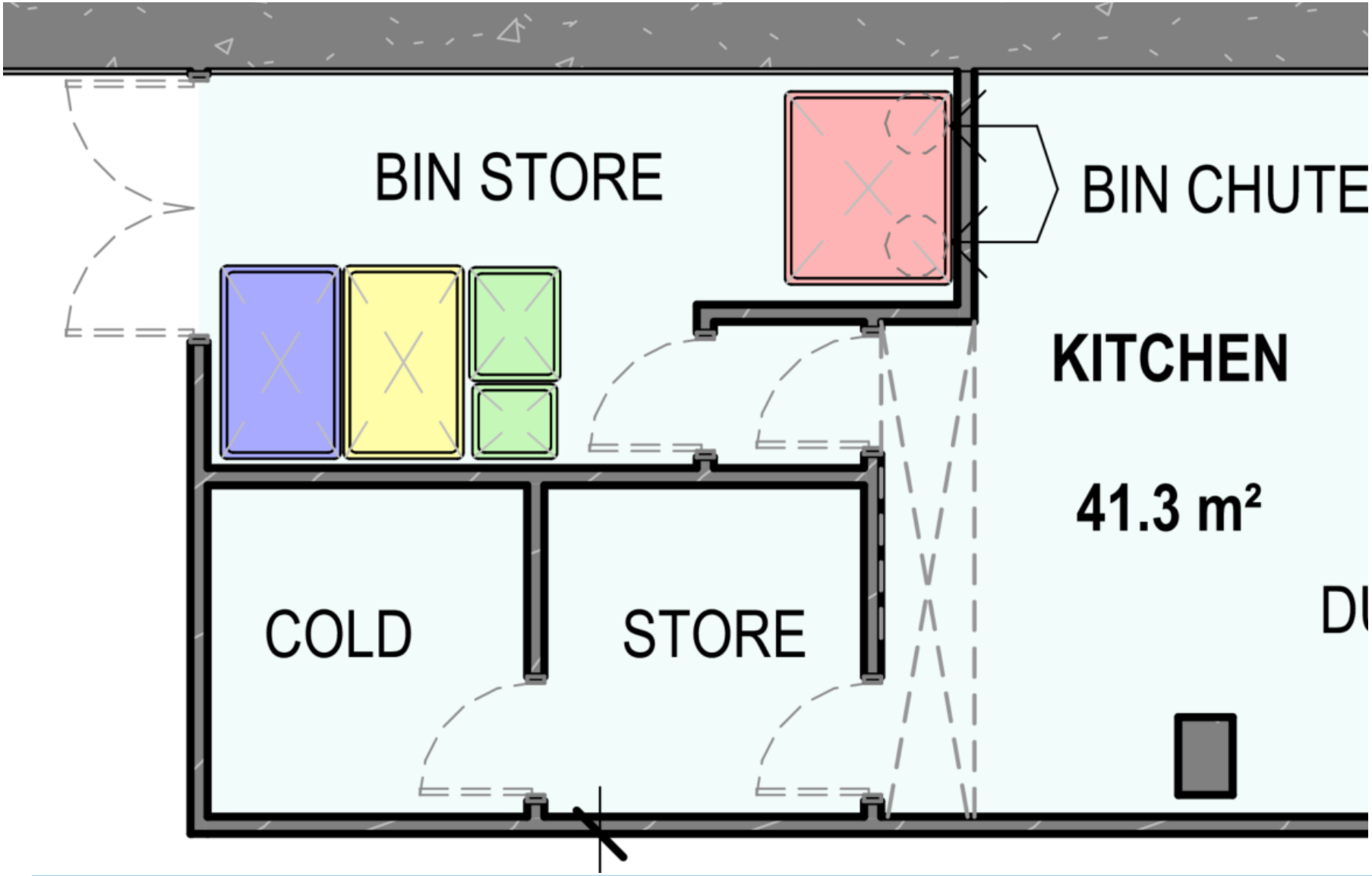
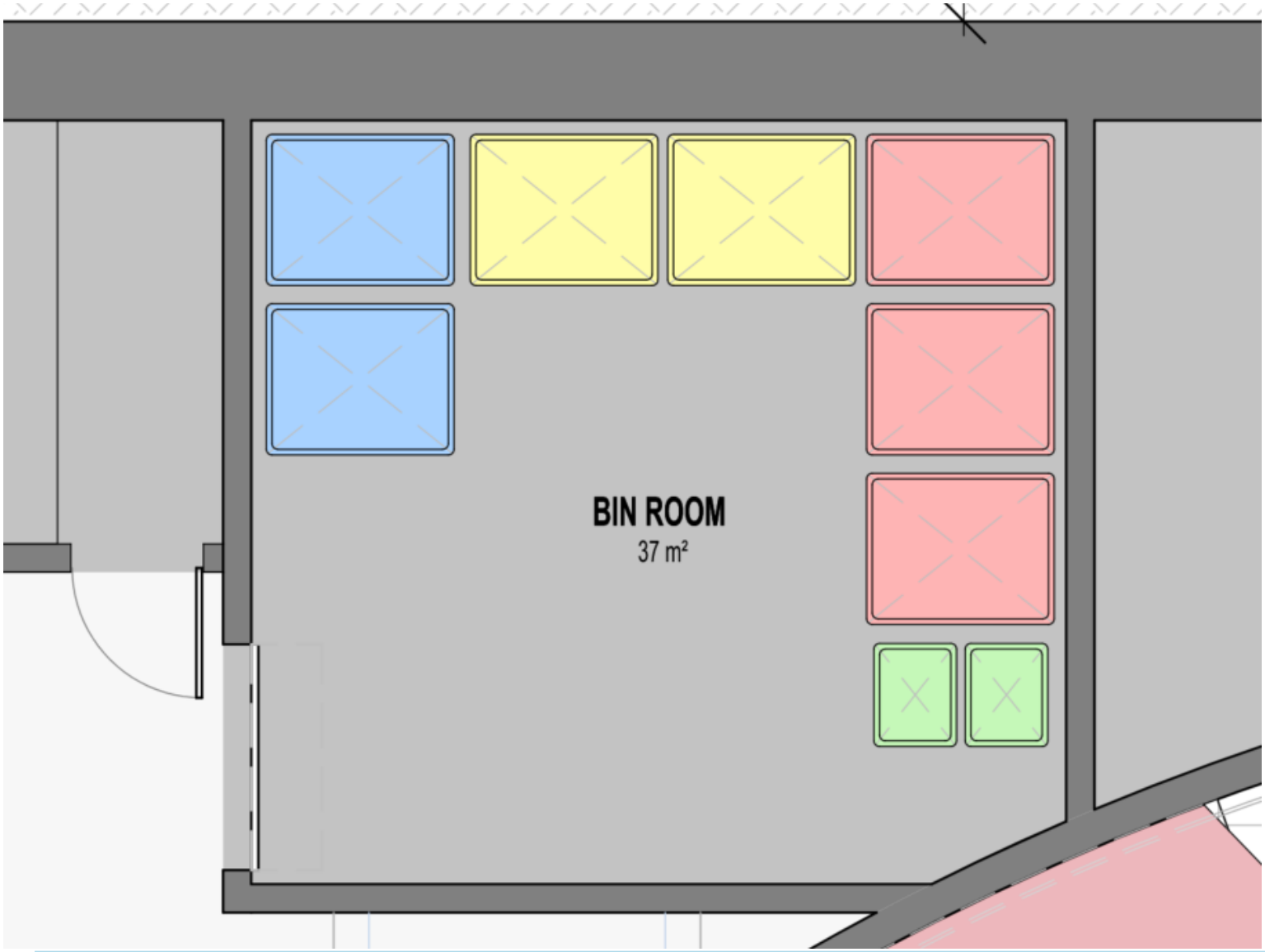


Figure 4.7: Bin Room Layout – Building D (ELC & Theatre)



5. Waste Collection Details

5.1. Residential Waste Collection Requirements

The waste collection requirements for the residential components of the proposed development are outlined in Table 5.1 below.

Table 5.1: Residential Waste Collection Requirements

Development Component	Waste Stream	Volume (L/Week)	Bin Size (L)	Quantity	Collection Frequency (per Week)	Capacity (L/Week)
Building A (Heritage – Residential)	General Waste	960	240	3	2	1,440
	Organics	505	240	2	2	960
	Recycling	1,400	240	4	2	1,920
	Glass	420	240	1	2	480
	Hard Waste & E-waste	-	2sqm per Collection		As Required	-
Building B (Townhouses – Eastern)	General Waste	800	1,100	1	1	1,100
	Organics	450	240	2	1	480
	Recycling	1,200	660	2	1	1,320

	Glass	360	240	2	1	480
Building B (Townhouses – Western)	General Waste	960	1,100	1	1	1,100
	Organics	540	240	3	1	720
	Recycling	1,440	1,100	2	1	2,200
	Glass	432	240	2	1	480
	Hard Waste & E-waste	-	2sqm per Collection		As Required	-
Building C (Apartments – Northern)	General Waste	1,700	1,100	2	1	2,200
	Organics	915	240	4	1	960
	Recycling	2,460	1,100	3	1	3,300
	Glass	738	240	4	1	960
	Hard Waste & E-waste	-	2sqm per Collection		As Required	-
Building C (Apartments – Southern)	General Waste	1,940	1,100	2	1	2,200
	Organics	1,045	240	5	1	1,200
	Recycling	2,800	1,100	3	1	3,300
	Glass	840	240	4	1	960
	Hard Waste & E-waste	-	2sqm per Collection		As Required	-

5.2. Commercial Waste Collection Requirements

The waste collection requirements for the commercial components of the proposed development are outlined in Table 5.2 below.

Table 5.2: Commercial Waste Collection Requirements

Development Component	Waste Stream	Volume (L/Week)	Bin Size (L)	Quantity	Collection Frequency (per Week)	Capacity (L/Week)
Building A (Heritage – Commercial, Main Building)	General Waste	10,751	1,100	5	2	11,000
	Organics	1,336	240	3	2	1,440
	Recycling	5,052	1,100	3	2	6,600
	Paper and Cardboard	5,052	1,100	3	2	6,600
	Hard Waste & E-waste	-	1sqm per Collection		As Required	-
Building A (Heritage – Commercial, Café)	General Waste	2,658	1,100	1	2-3	2,200-3,300
	Organics	664	240	1	2	720
			120	1	2	
	Recycling	1,107	660	1	2	1,320
	Paper and Cardboard	1,107	660	1	2	1.320
Building D (ELC & Theatre)	General Waste	2,271	1,100	3	1	3,300
	Organics	342	240	2	1	480
	Recycling	1,307	1,100	2	1	2,200
	Paper and Cardboard	1,307	1,100	2	1	2,200

	Hard Waste & E-waste	-	1sqm per Collection	As Required	-

5.3. Waste Collection Arrangements

The waste collection arrangements for the proposed development are outlined below and in Table 5.3.

Waste Collection Service Provider

Waste collection sitewide shall be performed by a private waste collection contractor, to be arranged by Facilities Management.

Waste Collection Responsibilities

Facilities Management shall be responsible for transferring the collections bins from the bin rooms to the assigned collection points prior to contractor arrival and returning the collection bins to their respective bin room once collection is complete.

The waste collection contractor shall be responsible for transferring the collection bins to the rear of the waste vehicle for emptying and returning the emptied bins to their original placement locations after collections is complete.

Waste Collection Swept Path Assessments

Swept path assessments have been prepared using Autodesk Vehicle Tracking Software, demonstrating that the nominated waste collection vehicle can access the site, conduct waste collection from the nominated waste collection points, and enter/exit the site/buildings in a forward direction (refer to the Traffic Impact Assessment report prepared by Ratio Consultants for the swept path assessments).

Waste Collection Times

Waste collection shall be undertaken in accordance with *EPA Noise Control Guidelines*, as outlined below:

— Between 6:30am and 8:00pm Monday to Saturday; and

— Between 9:00am and 8:00pm Sunday and public holidays.

Further to the above, waste collection should be restricted to off-peak AM and PM commuter periods to minimise disruption to vehicles accessing and circulating the site (i.e. between 10:00am and 3:00pm on weekdays).

Table 5.3: Waste Collection Locations and Vehicle Requirements

Development Component	Collection Location	Vehicle Size	Vehicle Travel Height Clearance	Vehicle Operational Height Clearance
Building A (Heritage – Residential)	Building A Lower Ground Loading Dock	6.4-metre-long rear loader	2.2 metres	Up to 2.5 metres
Building A (Heritage – Commercial)				
Building A (Heritage – Commercial, Café)	Building A Basement Carpark Aisle			
Building B (Townhouses – Eastern)	Building B Basement Loading Dock			
Building B (Townhouses – Western)				
Building C (Apartments – Northern)	Building C Basement Carpark Aisle			
Building C (Apartments – Southern)				
Building D (ELC & Theatre)	Building D Basement Carpark Aisle			

6. Design Standards

6.1. Bin Room Design Requirements

All bin rooms shall be designed to meet the following requirements:

- Designed to comply with Building Code of Australia (BCA) and all relevant Australian Standards.
- Allow storage of all collection bins on site at all times.
- Allow easy access to bins for all waste system users.
- Allow direct and convenient transfer of bins to/from the collection point.
- Appropriately screened to prevent unsightly impacts on amenity.
- Provided with artificial light to enable waste system users to dispose of waste safely and appropriately.
- Sized to accommodate all waste arising on the premises together with any associated waste management equipment
- Concrete (or similar) floor finished to a smooth, even surface, covered at the intersection of walls and plinths.
- Ventilated in accordance with the requirements of the Building Code of Australia and AS1668.2.
- Ventilation openings protected against flies and vermin.
- Provided with tight-fitting doors.
- Provided with adequate bin washing facilities (wall-mounted hot and cold mixing tap with floor graded to wastewater drain with litter trap) in accordance with the relevant authority requirements.

6.2. Chute System Design Requirements

Chute systems (if provided) shall be provided in accordance with the following requirements:

- Designed in accordance with the manufacturer's specifications.
- Designed to have deviation angles of no more than 45 degrees (ideally no more than 22.5 degrees from the vertical axis for recycling chutes).
- Designed to comply with Building Code of Australia (BCA) and all relevant Australian Standards.
- Designed to achieve minimum fire rating requirements of the BCA and/or Building Surveyor and fitted with fire sprinklers and any other safety devices as required by the manufacturer or certifier of the system.
- Residential chute intake rooms (if provided) designed to be DDA compliant.

— Chutes shall terminate directly into 660L or 1100L bins.

Specifications for a suitable chute system are attached to Appendix A.

6.3. Bin Colour and Signage Requirements

It is recommended that all collection bins are provided in the following colours:

— General waste collection bins: dark green or black body and red lid.
— Organics collection bins: dark green or black body and lime green lid.
— Recycling collection bins: dark green or black body and yellow lid.
— Glass waste collection bins: dark green or black body and purple lid.
— Paper and cardboard collection bins: dark green or black body and light blue lid.

All collection bins shall be provided with Sustainability Victoria or equivalent signage (visit: https://www.sustainability.vic.gov.au/recycling-and-reducing-waste/waste-systems-in-residential-commercial-and-industrial-buildings/waste-signage).

6.4. Residential Internal Waste Receptacle Requirements

Internal waste receptacles for the residential components of the proposed development should meet the following requirements:

— General waste: large enough to hold at least 2 days' worth of waste, but no larger than 25 litres.

— Organics: large enough to hold at least 2 days' worth of organics (~10 litres).

— Recycling: large enough to hold at least 2 days' worth of recycling, but no larger than 25 litres.

— Glass: large enough to hold at least 2 days' worth of glass (~10 litres).

6.5. Commercial Internal Waste Receptacle Requirements

Internal waste receptacles for the commercial components of the proposed development should meet the following requirements:

— No larger than 60 litres for each waste stream, to ensure ease of manual handling when being emptied into the collection bins.

— If receptacles are required to be larger than 60 litres, a bin lifter will need to be provided within the respective bin room for emptying into the larger collection bins.

7. Contact Information

Table 7.1 below includes a complimentary listing of contractors and equipment suppliers. The Project Principal shall not be obligated to procure goods / services from these companies. Ratio Consultants does not warrant or make representations for the goods / services provided by these contractors and suppliers.

Table 7.1: Contractors and Supplier Details

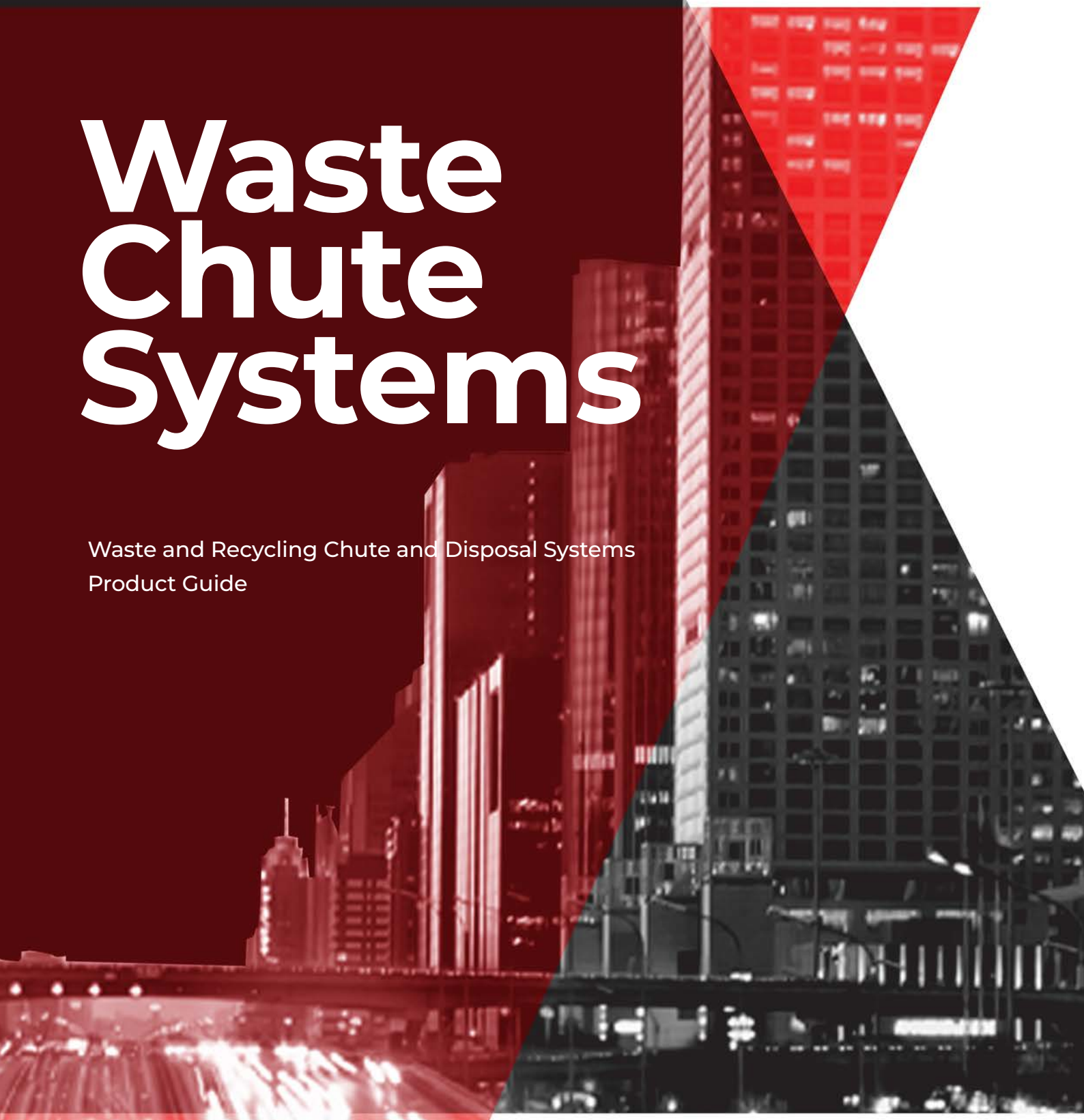
Service	Contractor/ Supplier	Phone	Website
Private Waste Collection Contractor and/or Bin Supplier	Cleanaway	13 13 39	www.cleanaway.com.au
	CSC Waste & Recycling	1300 499 927	www.cscwaste.com.au
	iDump	1300 443 867	www.idump.com.au
	JJ Richards	03 9794 5722	www.jjrichards.com.au
	Premier Waste	1300 219 001	www.premierwaste.com.au
	SUEZ	13 13 35	www.suez.com.au/en-AU
	Veolia	132 955	www.veolia.com/anz
	Wastewise Environmental	1300 550 408	www.wastewise.com.au
	Sulo Australia	1300 364 388	www.sulo.com.au
Chute System Supplier	Wastech Engineering	1800 465 465	www.wastech.com.au
Bin Washing	The Bin Butlers	1300 788 123	www.thebinbutlers.com.au
	Calcorp Services	1800 225 267	www.calcorpservices.com.au
	Kerbside Clean-A-Bin	03 9830 7381	www.kerbsidecleanabin-srp.com.au
	WBCM Environmental Australia	1300 800 621	www.wbcm-aust.com.au
Odour Control	Eco-Safe Technologies	1300 135 039	www.eco-safe.com.au
	WBCM Environmental Australia	1300 800 621	www.wbcm-aust.com.au
E-Waste Collection	Tech Collect	1300 229 837	www.techcollect.com.au

Appendix A : Chute System Specifications

WASTECH ENGINEERING

Waste Chute Systems

Waste and Recycling Chute and Disposal Systems
Product Guide



1800 465 465
www.wastech.com.au
info@wastech.com.au
Wastech Engineering

Welcome to your complete guide to Wastech Waste Management Systems and Chutes range

Company Profile

We are an Australian design, engineering and manufacturing company that services the waste management and resource recovery sectors across Australia and New Zealand.

Our extensive product range and end-to-end service offerings support a diverse range of businesses big and small, and governments local to federal, that are seeking technology-enabled solutions to effectively manage waste and resources and drive efficiency.

We have been at the forefront of Australian engineering innovation for more than 25 years and continuously strive to improve our products and services through investment in research and development, adoption of best-practice design and the procurement of high-quality technology and materials. We implement a quality-focused, lean manufacturing model in design and production so that we can reduce wastage and unnecessary use of materials.

Our commitment to sustainability also extends to our energy consumption with all our products fabricated using power sourced from our own 85kw solar array. This efficient product development process means we can pass savings onto customers while also helping the environment.

Customer Centric.

Dedicated and experienced teams for every product

When commissioning new equipment, our engineers and technicians work with our customers until the equipment is fully operational and they know how to use it. We work as one team to get the job done.

Proudly Australian.

On-site and local manufacturing capabilities

Our organisation has grown to become an award-winning and highly respected Australian manufacturing and engineering company committed to creating and supporting local jobs. With a local workforce of more than 100 people, we maintain a deep inhouse capability with Australia-wide operations.

Trusted. Reliable.

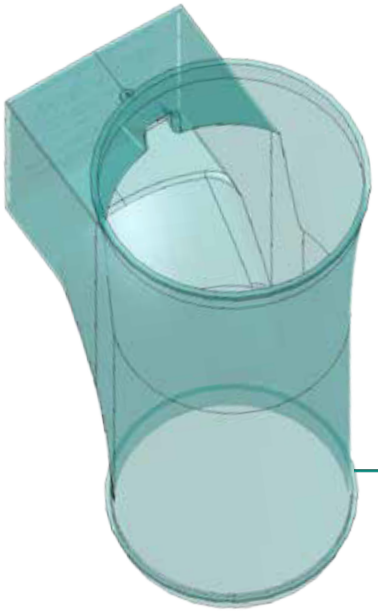
On-time project delivery backed by 24/7 service and support

Our service and support team operates out of dedicated facilities to maintain a high level of service. Our qualified technicians can attend all sites to service, repair and refurbish all products in the industry.

Waste Recycling Linen Organics

Smoothtubes™ Plastic Chutes

Introducing Wastech's very own super smooth plastic Waste Chute system offering 80% less friction than steel, allowing for quieter and smoother waste disposal, whilst being a more cost effective solution.



Pioneering the design of Australia's first plastic chutes, Wastech's Smoothtubes™ Chutes system offers:

- Superior industrial grade plastic(LLDPE)
- Australian designed and developed
- Superior acoustic properties
- Made from recycled* Polyethylene
- Low density, flexible material
- Offers less unrestricted continuous flow
- Corrosion proof
- Self cleaning smooth internal surface

Recommended configuration/installation options are:

Single Chute System | Dual Chute System | Triple Chute System

For more detailed specifications on Single, Dual and Triple chute systems, please refer to page 14.

Innovative Design

The Smoothtubes™ modular design caters for any application without the need to custom build sections. The innovative slip-joint assembly system significantly reduces installation time.

Smoothtubes™ also offer UV and impact resistance while weighing less than 15kg per section.

Builder Friendly

Easy installation by offering:

- In-built block-off panels that seal the chute until installation of the loading doors is complete. This helps to ensure no usage or damage can occur during construction and installation.
- Self supporting modular sections with built in mounts.
- Lightweight for easy handling.

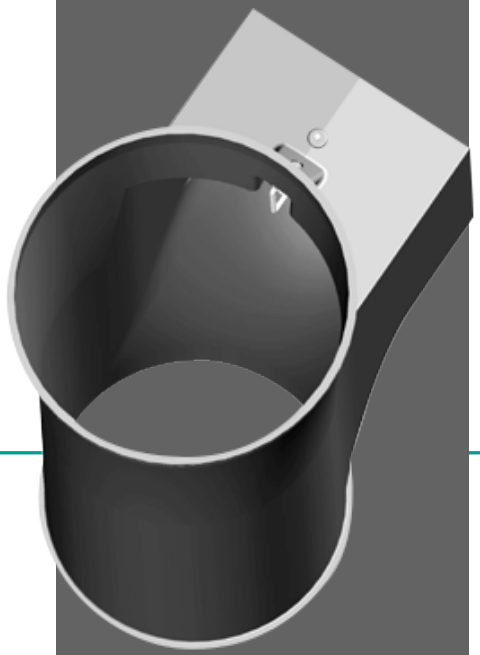
Cleaner & Quiter

Smoothtubes™ are designed to be cleaner whilst eliminating noise by:

- Offering crevice free joints with no sharp angles eliminating collection of any waste particles.
- Closed cell, non-porous material repelling grime, bacteria, odour and liquid.

Fact!

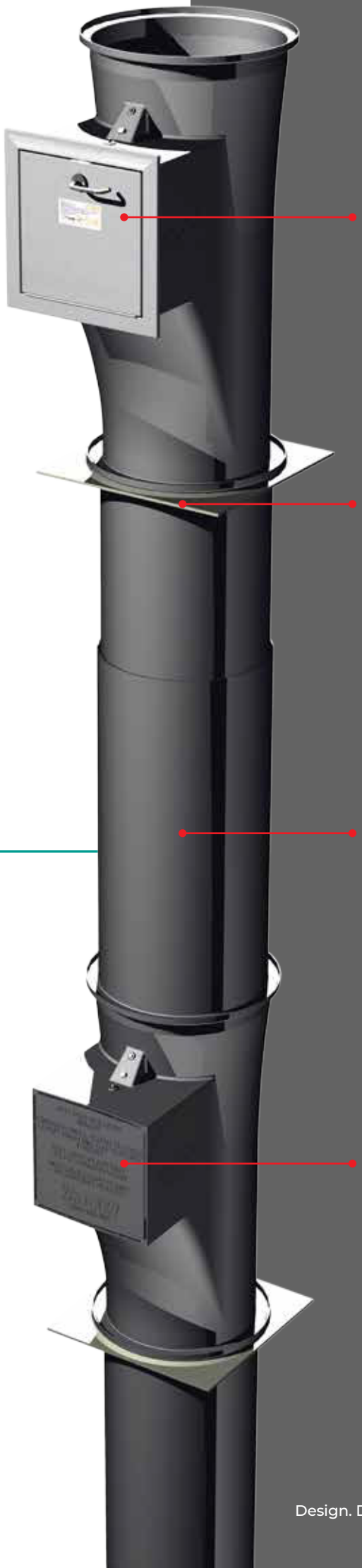
Wastech pioneered the plastic chute system withSmoothtubes^{T} and have successfully manufactured, delivered and installed over 2000 waste chute major commercial projects Australia wide!



Contact Us

A large range of options are available including Steel chutes and custom built solutions.

To arrange a detailed discussion, contact a Waste Management consultant today on 1800 465 465.



Stainless Steel fire rated door. (AS1530)

Floor mounts supported by Embelton NRD isolation mounts

Lightweight self supporting chute modular section.

In-built installation block off panel.

For detailed specifications, please refer to page 12.

Waste Recycling Linen Organics

Smoothtubes™ Diverter

A smart, space saving, single chute diverter system for both waste and recycling.

Designed for use with a single chute waste disposal system, the Smarttubes™ diverter provides a simple and efficient method for disposing of multiple waste streams while saving valuable building space.

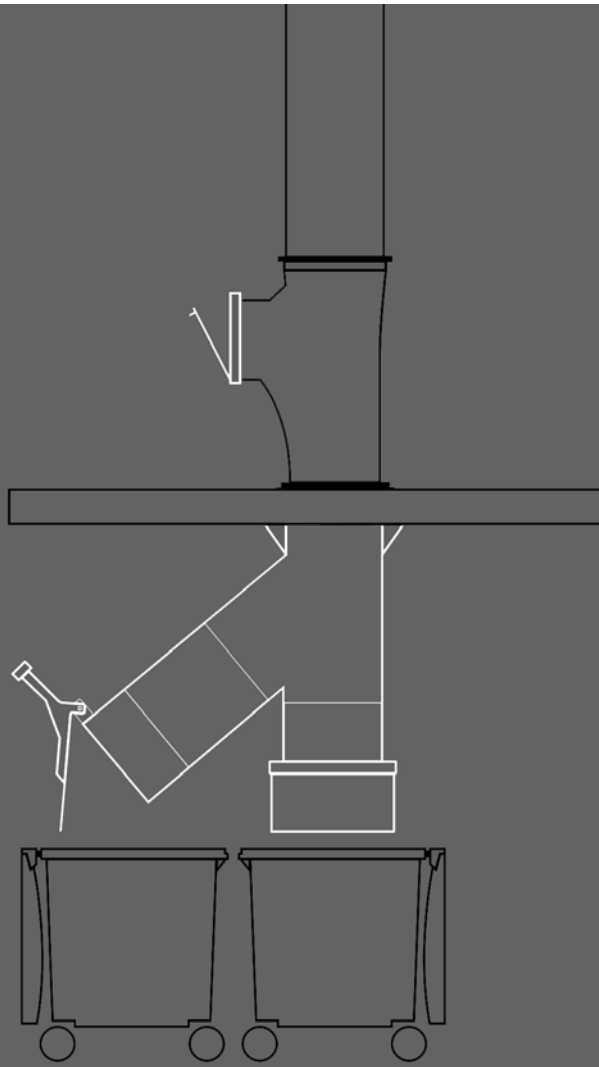
Smarttubes™ is an intelligent system that is simple to use for residents and building managers alike. The door control panel allows residents to easily select their desired waste stream, while the advanced web-based dial in system allows building managers to control the chute from anywhere within the building through wifi access!

Wifi Dial-In

The SmarttubesTM single chute diverter systems allow for web based, wifi dial-in. This enables the user to lock individual or sets of doors, lock out of all doors for maintenance, or setting of the programmable timer. (i.e. disposal only allowed between 6am and 12am).

Programmable & Remote Lock-Out

The SmarttubesTM system is fully programmable, allowing building managers to lock out specific levels or even the entire system for maintenance. Additionally, the system can be used to enforce a building disposable curfew via a programmable timer.



Easy Installation & Maintenance

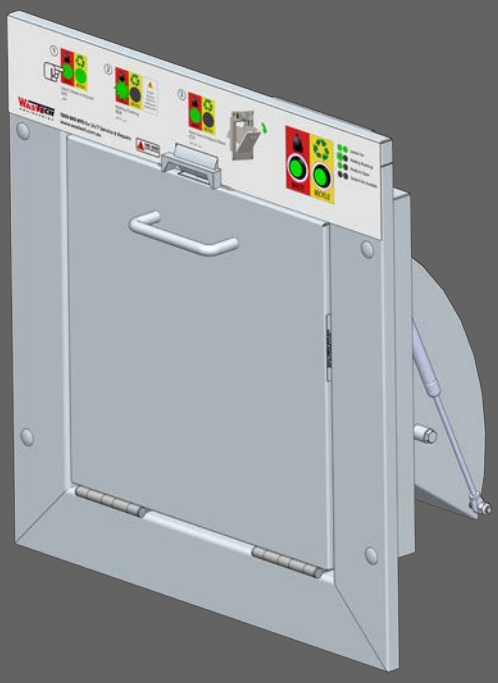
The electric actuator of the SmarttubesTM system eliminates the need for expensive hydraulics and results in lower lifetime maintenance costs. The electric motor also allows for lower power requirements, only requiring one standard 240V outlet.

Simplified Operation

1. Select waste stream (waste or recycling).
2. Wait* - Diverter arm will move to the appropriate position.
3. Open - Chute door unlocks for disposal.

To ensure correct disposal, the chute door will only open for one waste stream at any stage of operation.

Smarttubes™ Door Control Panel



Waste Recycling Linen Organics

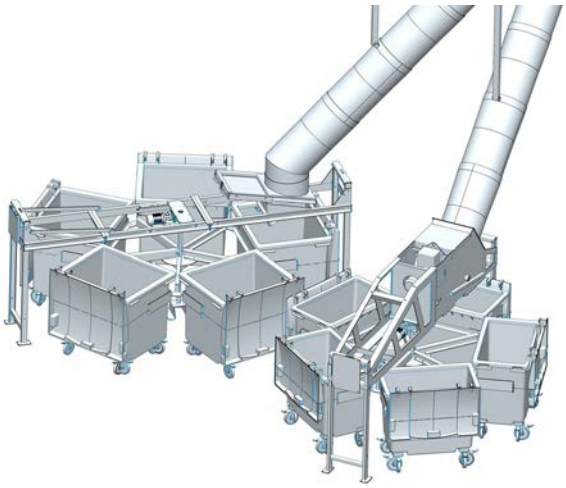
Discharge Room

Introducing Wastech Chute compactors designed for efficient waste disposal for multi-story or multi-level buildings.

Binpac™ Compactor

Introducing an extremely quiet and fast, hydraulic free, state-of-the-art compactor, designed to handle high volumes of even the most diverse garbage types with ease.

Running costs are minimised, while maintenance and cleaning is kept simple and safe.



- Low power drive motor
- Self cleaning compact drum
- Compact profile
- Large access panels
- Jam sensor switch
- Light weight bin cradles
- Configurable control box mount

Bin feed system compatible	✓
Compaction Ratio	2:1 to 10:1 (dependant on waste types.)
Construction	5mm to 10mm Grade 250 M/Steel
Chamber Dimensions	N/A
Waste Capacity	N/A
Power Requirements	240V / 10A GPO
Hydraulic Specs	N/A
Compaction Force	680kg
Waste Bin Qty	4x660ltr and 4x1100ltr Bins
Electric Control	PLC Control with Electronic Cycle
Service	Hydraulic Free 24 Hour Service
Warranty	12 months (terms & conditions apply)

Automatic Bin feed Systems

Designed for use with or without a Compactor, Wastech Automatic Bin Feed Systems help save time by automatically rotating through your bins as they are filled. Once the system detects the bin is full, it will automatically cycle to the next available empty bin using a powered carousel or conveyor machine system.

Smart alert options are available. For more information, contact a Wastech waste consultant on 1800 465 465.

Equipment

Eco-pack Compactor

Engineered for working installation within tight space restrictions, the economical Eco-pack is a hydraulic based compactor offering high packing force to help eliminate potential OH&S issues and bin damage.

- High compaction reducing bins required in floor space
- Robust high tensile steel construction
- Quiet and efficient hydraulic system
- Continually sealed door
- Suits all bin sizes
- Suits both carousel or linear bin feed systems
- Waste is compacted inside the compactor unit and not the bin
- No bin damage

2:1 to 10:1 (dependant on waste types.)
5mm and 20mm Grade 350 High Tensile Steel
560 x 600mm
80 ltr/sec per 15 second cycle = 20m3/hr
415V / 20A / 5 Pin power point
12 Lpm Pump / 5.5kW Motor
62kn or 6.3 tonnes force @ 14Mpa
On Carousel System: Multiple Configurations Available
PLC Control with Electronic Cycle
Comprehensive fixed price service available
12 months (terms & conditions apply)

Carousel System

Ideal for rooms with tighter space, this system rotates bins in a circular cycle system.

Conveyor System

Ideal for rooms with longer, narrower space, this system rotates bins in a linear cycle system.

For specifications and configuration examples, please refer to page 15.

Smoothtubes™ Plastic Chutes

Chute Construction

Nominal Internal Diameter: Garbage 530mm
Material LLDPE (linear low density polyethylene). Internal surface is closed cell, ultra smooth finish that resists waste residue build up, odour, blockages, corrosion and liquid. +Fire hazard property tests in accordance with BCA Clause C1.10 and Specification C1. 10 in complying with Australian Standard AS1530.4-2014 by Warrington Fire Research (Aust) Pty Ltd.

Material Thickness: Chute tubes 5mm nominal.

Mounts: Designed to be flexible and smoke seal at every level.

Noise & Vibration Prevention: Acoustic lagging is not necessary. Refer to #acoustic report. Isolation is provided at every level under the floor mounts. Flexible mount is isolated from concrete using polyurethane sealant that is acoustically rated.

Ventilation: 200mm diameter galvanised steel ventilation fan and discharge cowl assembly. The fan is supplied with 240 volt single phase plug and lead. The cowl assembly comes complete with dektite flashing. The vent is connected to the top of the chute by a flexible duct.

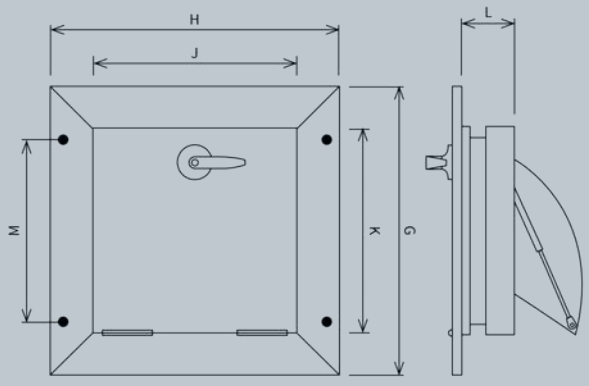
Loading throat door: SmoothtubesTM Loading Throats are molded within the chute tube creating a smooth flowing entry to reduce impact noise and minimise blockages. Loading doors -304 grade Stainless Steel with a fire block core, door frame sealed to wall using fire sealant. Compliance to Australian Standards AS1530.4-2014 (FRL:-/120/30). Doors are self closing. Key locks are supplied standard for Linen doors, Garbage and recycling doors. Fire sprinklers are installed in every loading throat ready for connection to fire services by others.

De lector: The discharge of the chute has a 3 or 5mm thick Galvanised Steel deflector, set at 45 degrees (min) for discharge directly into a bin. The deflector is fitted with a fire activated fusible link close-off door which can be manually overridden, to close the chute for bin changes. For garbage discharge into an EcoPack Compactor the fire door is not required as the Compactor isolates the chute at all times.

Installation

Chute sections weigh no more than 15kg each allowing easy transport and installation by hand without reliance on Tower Cranes. Bricking up instructions are detailed on the front panel of every loading throat, which stays fitted until installation of loading door to prevent unauthorised use and potential damage from building rubble.

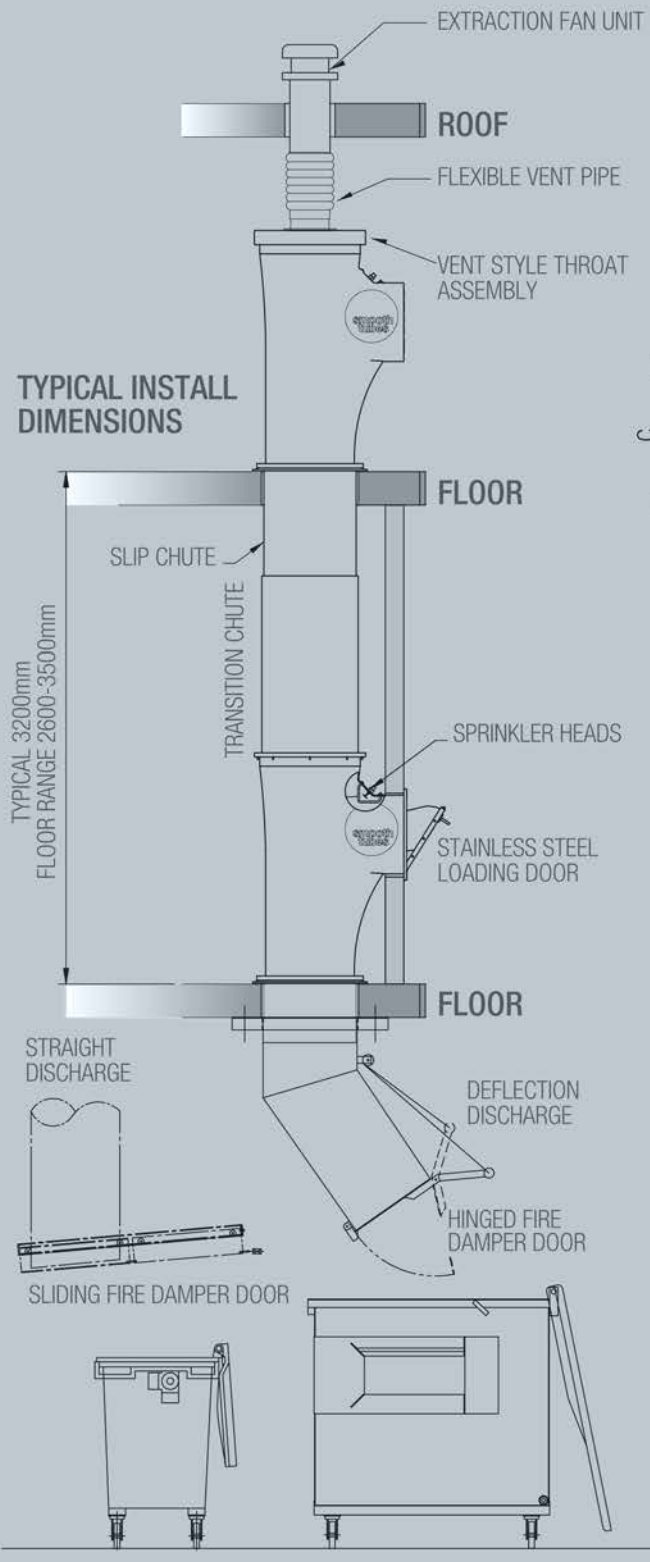
Chute Door Dimensions

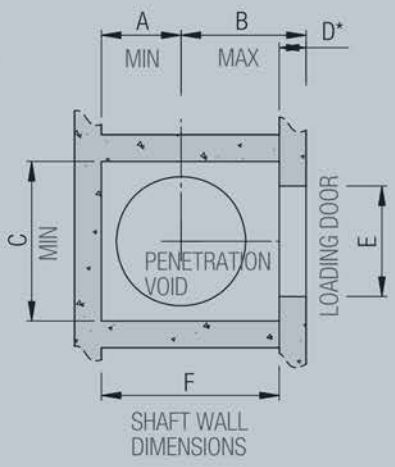


Dimensions

Label	Waste Door	Linen Door	Recycling Door
G	603mm	573mm	603mm
H	603mm	573mm	603mm
J	435mm	432mm	432mm
K	435mm	432mm	432mm
L	110mm	110mm	110mm
M	380mm	380mm	380mm

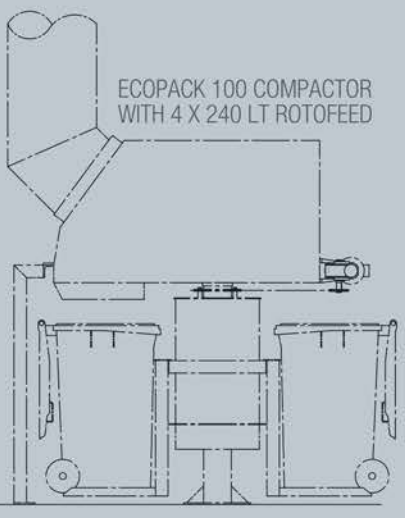
 A large range of configuration options and layouts are available. For more information or specifications, please contact a Wastech consultant on 1800 465 465.





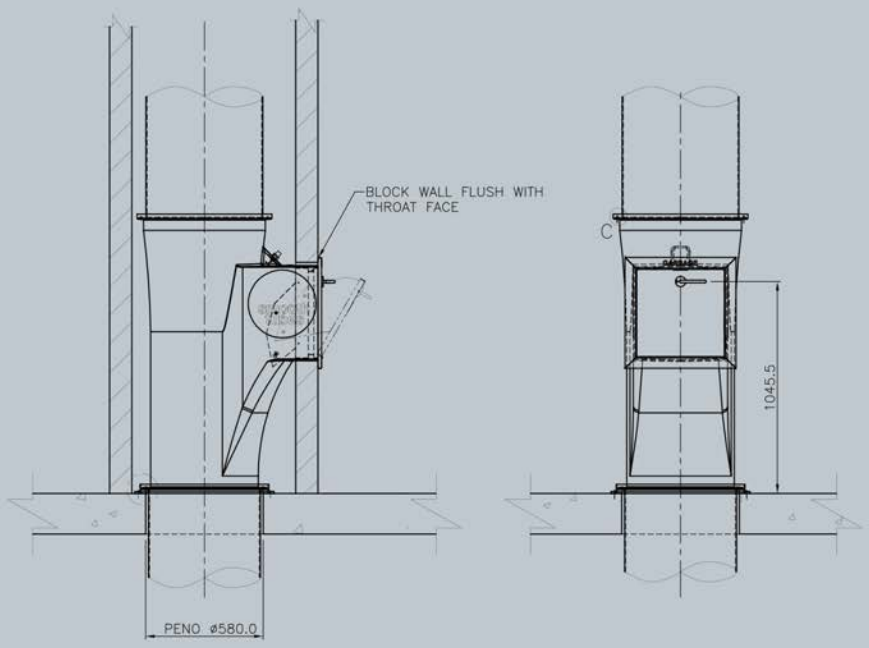
Label	Waste / Linen Chute	Smarttubes
A	357mm	397mm
B	560mm	610mm
C	715mm	795mm
D	110-140mm	110-140mm
E	470mm	505mm
F	808mm	808mm

*See installation notes for more information.

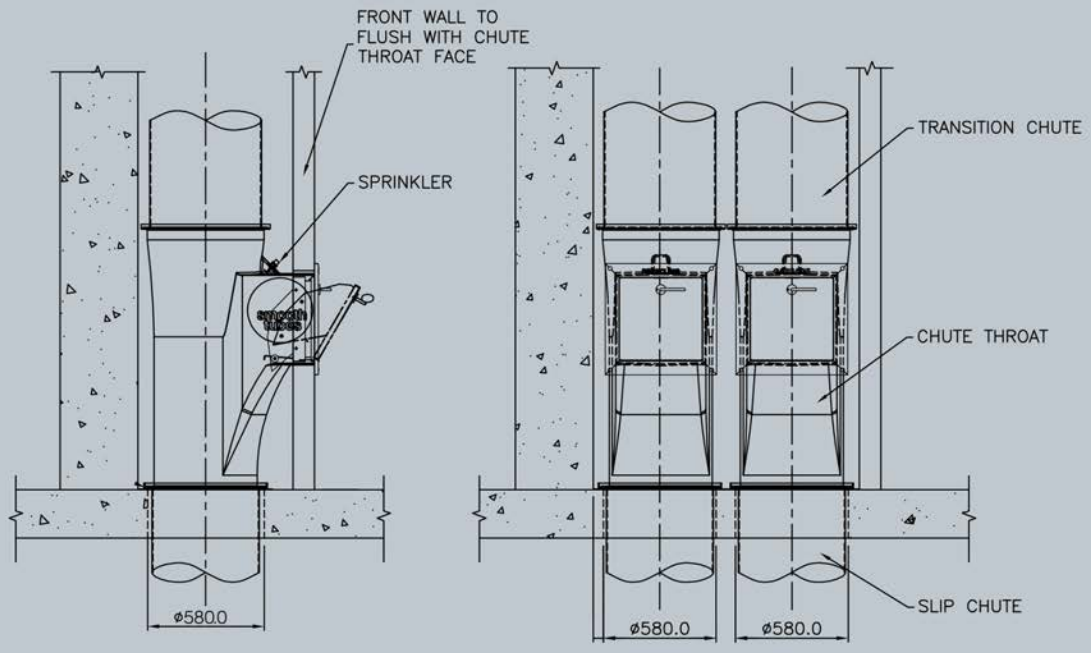


Smoothtubes™ Chute Assembly

Single Chute Assembly Example



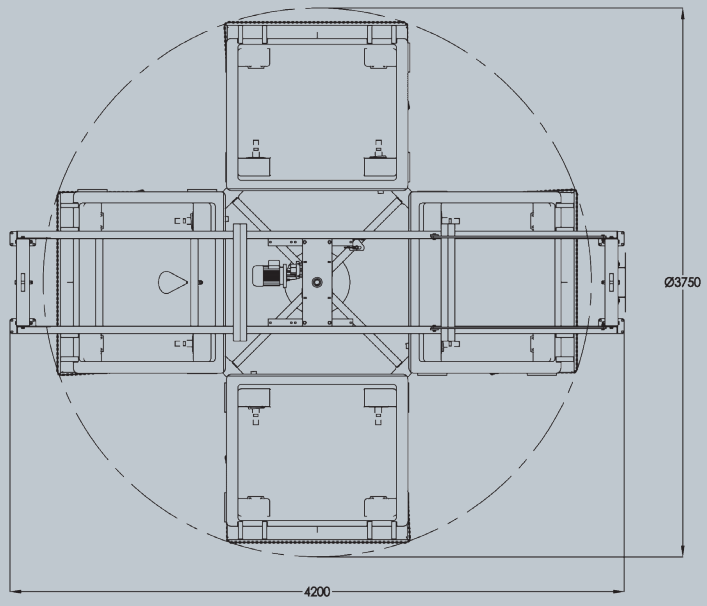
Dual Chute Assembly Example



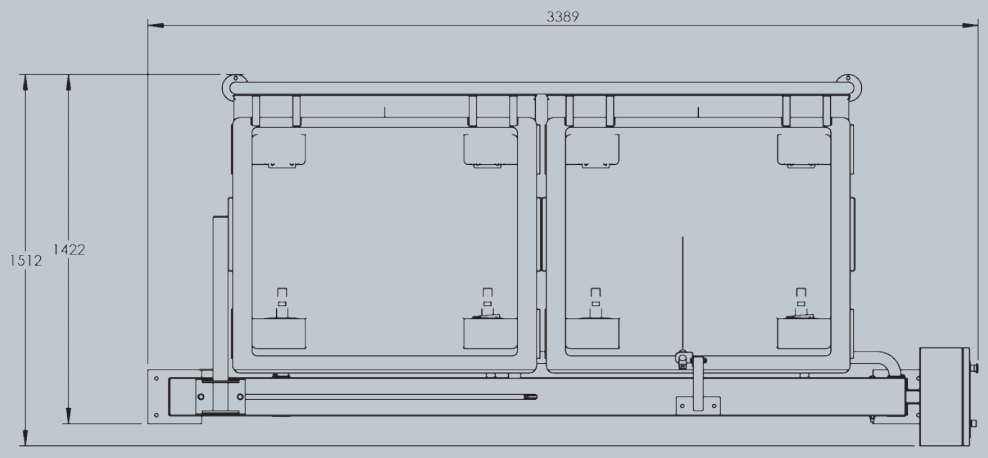
 A large range of configuration options and layouts are available. For more information or specifications, please contact a Wastech consultant on 1800 465 465.

Bin Feed System Examples

Carousel Bin Feed System Examples

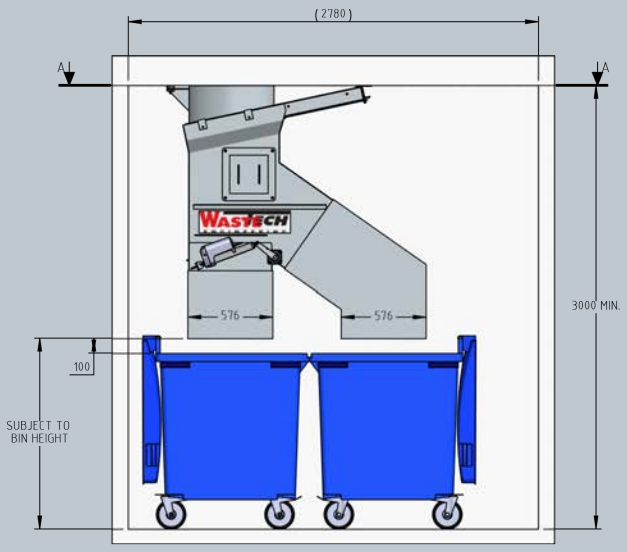


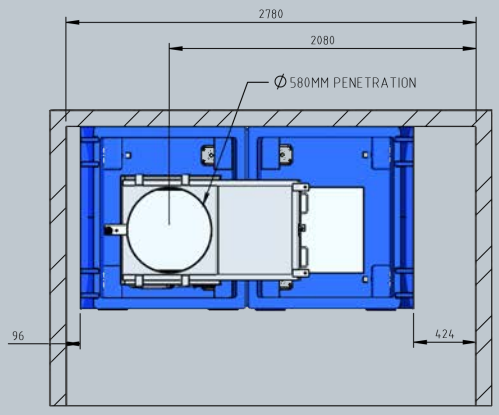
Conveyor Bin Feed System Example



Diverter Example Room Layouts

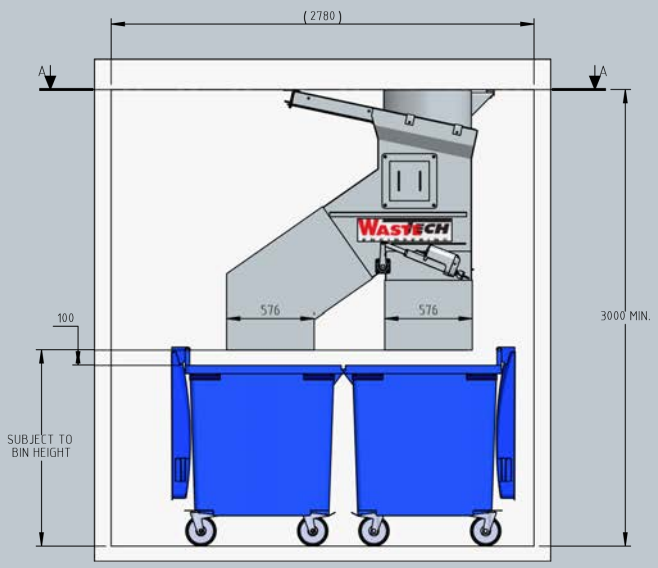
Standard Configuration 1

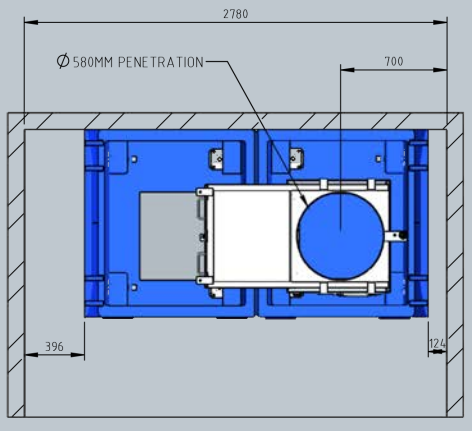




SECTION A-A

Standard Configuration 2





SECTION A-A

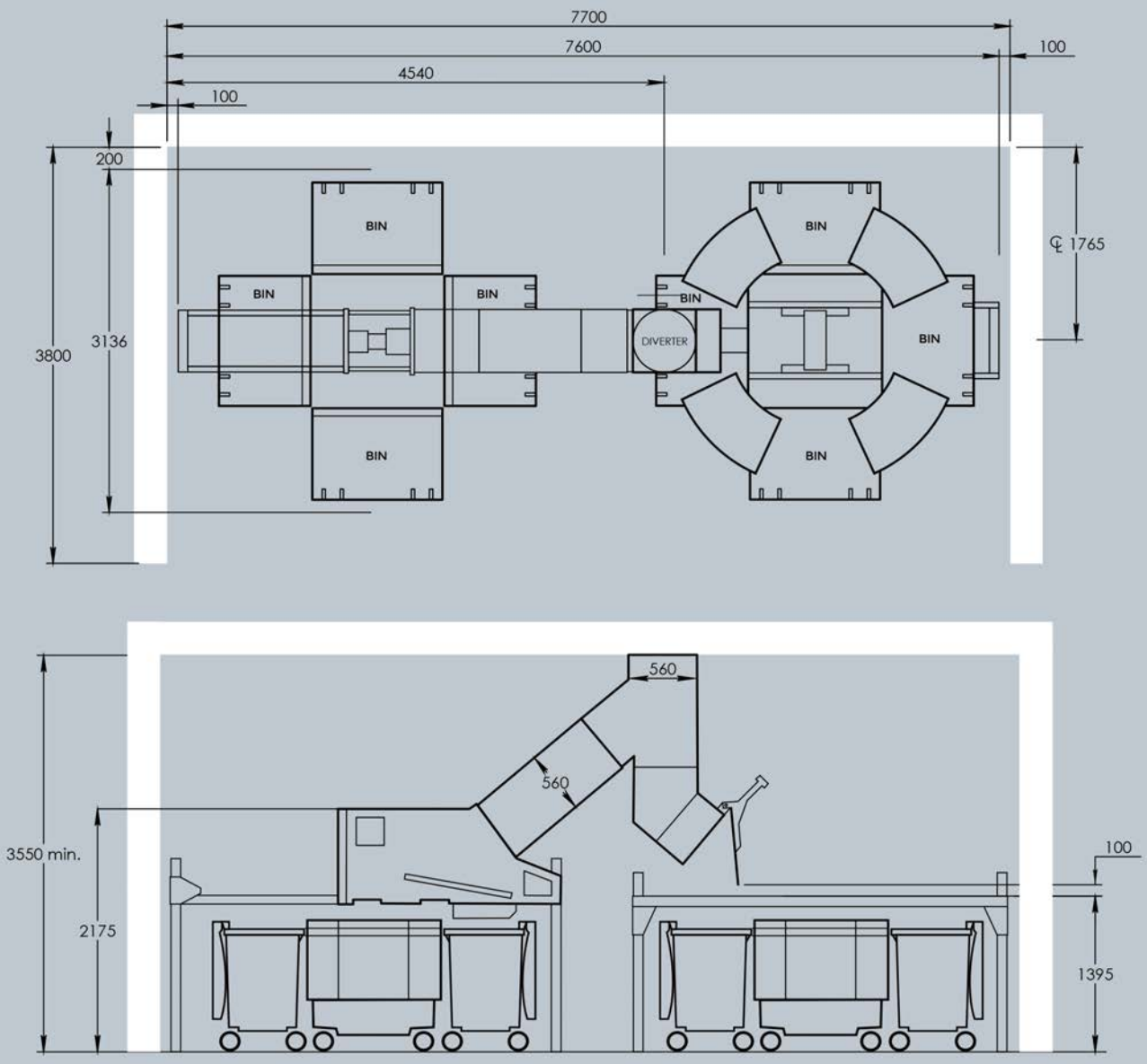
 A large range of configuration options and layouts are available. For more information or specifications, please contact a Wastech consultant on 1800 465 465.

Design Guides

The following are standard installation spacings and requirements solely intended to assist in the design of refuse rooms and chute systems. These are intended as guides only and do not constitute a complete site specific design. Bin arrangements and compacting options vary significantly and are unique to each site.

Please contact Wastech for a formal assessment of your site and for further options.

Carousel Feed System Configuration: Ecopac & Bin Carousel



Optional Parts & Accessories

Wastech offer a large range of additional spare parts and accesories to suit all your needs including:

Penetration Ring

Reusable circular steel mandrel for builder to set out and form floor penetrations.

Flushing Spray

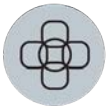
19mm diameter brass flushing spray head fitted to the top of the chute. Supplied complete with fire rate access door for maintenance.

Mounting Brackets

Site-specific brackets to suit oversized penetrations, large building shafts or wall-mounting.

Collector Bins

Plastic or steel collector bins available in all industry sizes.



Automatic Bin Feed Systems

Automatic bin feed systems available in Carousel and Conveyor layouts options.

Odour Control Systems

A range of diffferent products designed to control odour of Waste Chute systems.

Manual Bin Handling Equipment

Wastech offers a range of optional equipment to assist with safe and easy handling of your bins.

Equipment & Bin Monitoring System

Bin full notifications via email
Bin monitoring systems.

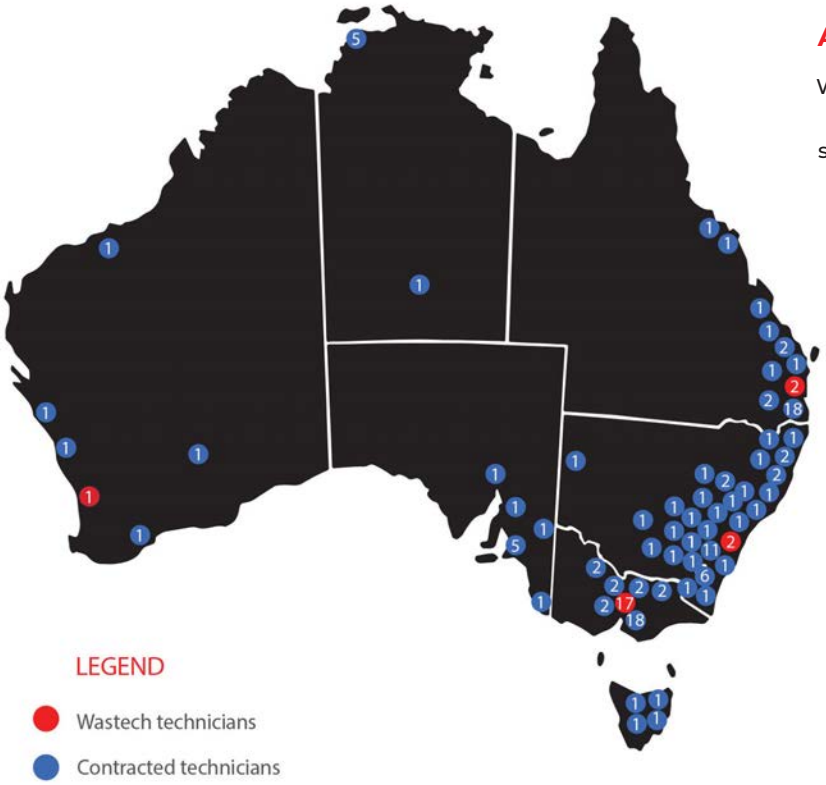
24/7 Service & Support

4 HOURS A DAY, 7 DAYS A WEEK, 365 DAYS A YEAR

Our skilled technicians operate around-the-clock Australia-wide and can attend on-site to service, repair and refurbish all products in the industry. Our national 24/7 service centres also provide breakdown response, refurbishments and preventative maintenance support.

Our own Cloud Based Service and Support Network (CBSSN) makes the tracking of equipment, scheduled servicing and inspections streamlined, simple and efficient. A full history for every single unit ensures the job is done right, with reports available at the touch of a button.

Each of our technicians has the ability to remotely access our CBSSN system directly via iPad. All the details of the service or breakdown are provided in full to the technician before they even reach the site; reducing your costs and downtime. Nation-wide, every minute of every day, Wastech have you covered.

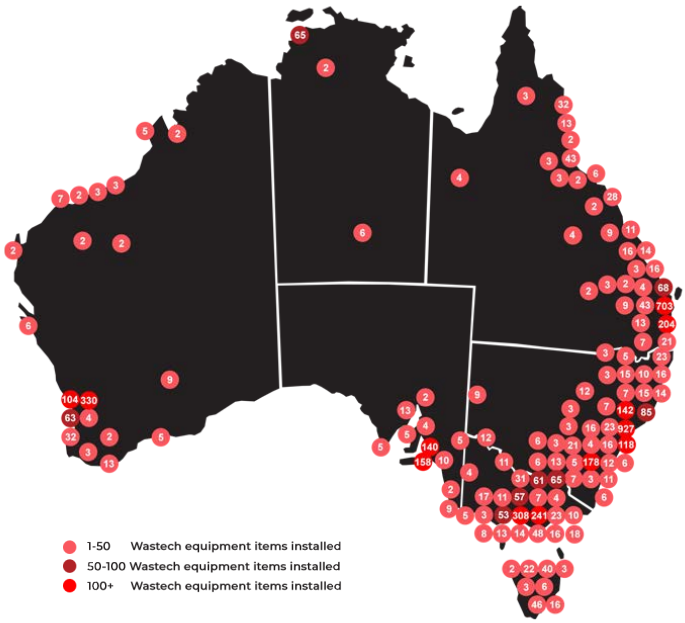


A VAST NETWORK OF TECHNICIANS

We have 20 Wastech technicians supported by a network of over 130 contract technicians, servicing more than 11,000 balers, compactors, MRFs and Transfer Stations nationally

For 24/7 Service, Simply Call

1300 665 870



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