GREEN
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GEOTECHNICAL INVESTIGATION

FOR

BALFOUR GROUP PTY LTD

19-25 BALFOUR STREET, LINDFIELD

REPORT GG11934.001B
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Geotechnical Investigation for a proposed residential unit development at 19-25 Balfour Street, Lindfield

Prepared for

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Appendix B – Laboratory Test Results

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1. EXECUTIVE SUMMARY

This Geotechnical Investigation Report has been prepared by Green Geotechnics on behalf of *Balfour Group Pty Ltd* to accompany a State Significant Development Application (SSDA) for a proposed residential flat building (including in-fill affordable housing) at 19 – 25 Balfour Street, Lindfield, within the Ku-ring-gai Local Government Area (LGA).

This report has been prepared to address the Secretary's Environmental Assessment Requirements (SEARs) issued for the project (SSD-82709458) on 22 April 2025.

This report concludes that the proposed residential flat building is suitable and warrants approval subject to the implementation of the following mitigation measures.

- The design of foundations, shoring systems and buried concrete structures in accordance with the recommendations given in Section 5 of this report
- Construction stage inspections to address the following:
    - Inspection of shoring piles during installation
    - Inspections of foundations during construction
    - Observations of groundwater seepage to validate the hydraulic design
    - Vibration monitoring during rock excavation, and
    - Geotechnical supervision and testing by a Geotechnical Inspection and Testing Authority (GITA) during any bulk earthworks or detailed earthworks including the

Following the implementation of the above mitigation measures, the remaining impacts are considered appropriate.

2. INTRODUCTION

This report presents the results of a Geotechnical Investigation undertaken by Green Geotechnics Pty Limited for a proposed residential unit development to be constructed at 19-25 Balfour Street, Lindfield, NSW. The investigation was commissioned by Balfour Group Pty Limited by acceptance of Proposal PROP-2025-115, dated 5 March 2025.

The SSDA seeks development consent for a proposed residential flat building, including in-fill affordable housing at 19 – 25 Balfour Street, Lindfield. The proposed works include demolition of existing structures, site preparation works, excavation and construction of the building and associated landscaping works.

Specifically, the SSDA seeks development consent for:

- demolition of existing buildings and structures on site
- construction of a ten storey residential flat building featuring:
- basement level car parking
- approximately 90 market residential units
- approximately 30 affordable housing units
- associated landscaping works, including a communal open space.
- associated infrastructure and services

The proposal incorporates 17% affordable housing pursuant to Chapter 2, Section 15C and Chapter 5, Section 156 of the Housing SEPP. The proposal seeks to utilise the incentive controls under Chapter 2, Part 2, Division 1, Section 16 of the State Environmental Planning Policy (Housing) 2021 (Housing SEPP) to achieve 30% additional building height and floor space ratio (FSR).

This report has been prepared in response to the requirements contained within the Secretary's Environmental Assessment Requirements (SEARs) dated 22 April 2025 (SSD-82709458). Specifically, this report has been prepared to respond to the SEARs requirement issued below.

TABLE 2.1 – Sears Requirement

Item	Description of requirement	Section Reference
12. Ground and Groundwater Conditions	• Assess potential impacts on soil resources and related infrastructure and riparian lands on and near the site and including soil erosion.	5.4, 5.5, 5.6 & 5.7 & Appendix C
	• Where required provide a Groundwater Impact Assessment in accordance with relevant Groundwater Guidelines. If the proposed development is on land identified as having high salinity or acid sulfate soil potential in an EPI provide a Salinity Management Plan or Acid Sulfate Soil Management Plan that includes appropriate management measures and strategies.	5.5, 5.7, 5.9 & 7 & Appendix C

The lower basement level has a proposed finished floor level (FFL) of Reduced Level (RL) 74.2 metres Australian Height Datum (AHD). A Bulk Excavation Level (BEL) of RL 74.0 metres AHD is assumed, which includes allowance for the construction of the basement slab. To achieve the BEL, excavation depths from 4.5 metres to 15 metres Below Existing Ground Level (BEGL) have been estimated. Locally deeper excavations may be required for footings, lift overrun pits, crane pads, and service trenches.

Structural loads have not been advised but we have assumed column loads in the moderate to high range will apply for this type of development.

The purpose of the investigation was to:

- assess the subsurface conditions over the site including ground water levels,
- classify the site in accordance with AS2870,
- classify the site in accordance with AS1170.4.
- provide recommendations regarding the appropriate foundation system for the site including design parameters,
- comment on excavation conditions,
- provide recommendations regarding vibration control during rock excavation, and
- provide parameters for the temporary and permanent support of the excavation including design parameters and recommendations for temporary batter slopes, and
- provide an exposure classification in accordance with AS2870 & AS2159 and comment on soil salinity, and
- undertake a preliminary Acid Sulfate Soils Assessment.

3. INVESTIGATION PROCEDURE

3.1 Fieldwork Details

The fieldwork was carried out on 26 and 27 March 2025 and comprised a site walkover together with the drilling of two (2) cored and five (5) non cored boreholes numbered BH1 to BH7, to depths of 0.4 metres to 19.2 metres below existing ground surface levels.

The boreholes were drilled using a combination of Hanjin DB8 track mounted drilling rig (BH1 and BH2), supplied and operated by BG Drilling, Christie Utility mounted drilling rig (BH3, BH5 and BH7), supplied and operated by Green Geotechnics and a hand auger (BH4 and BH6). All boreholes were commenced using rotary solid flight augers with the exception of BH4 and BH6. BH1 and BH2 were advanced using augers until at least low strength bedrock was encountered. These boreholes were then advanced into the underlying bedrock to the target depths using NMLC sized diamond coring equipment. BH3, BH4, BH5 and BH6 were drilled to auger refusal.

Soil strengths in BH1 and BH2 were assessed by undertaking Standard Penetration Tests (SPT's) at regular depth intervals in the boreholes. The SPT N values were then augmented by undertaking pocket penetrometer readings on cohesive soil samples recovered from the SPT split spoon sampler. Soil strengths in BH3, BH4, BH5, BH7 and BH7 were assessed by undertaking Dynamic Cone Penetrometer (DCP) tests adjacent to each borehole.

The recovered rock core from BH1 and BH2 was logged, boxed and photographed. To assist in assessing rock strengths the recovered rock core was Point Load Index tested, with tests undertaken at a nominal depth interval of 1 metre.

Groundwater observations were made in all boreholes during auger drilling. To further assess groundwater levels, PVC standpipe piezometers were installed in BH1 and BH2 shortly after drilling. The piezometers were bailed of drill water shortly after installation.

The surface reduced levels of the boreholes were determined by interpolation between spot levels shown on the provided site survey plan, and so should be considered to be approximate. The datum of the levels is Australian Height Datum (AHD).

The site location is shown in the attached Figure A. The borehole locations, as shown on Figure B, were determined by taped measurements from existing surface features shown on the survey plan provided by the client. Photographs of the site indicating the borehole locations are provided in Figure C.

The fieldwork was completed in the full-time presence of our Senior Field Geologist who set out the boreholes, nominated the sampling and testing, and prepared the borehole logs. The logs which include the approximate surface reduced levels and groundwater observations together with photos of the rock core and Point Load Index test results, are attached to this report, together with a glossary of the terms and symbols used in the logs.

For further details of the investigation techniques adopted, reference should be made to the attached explanation notes.

Environmental and contamination testing of the soils was beyond the agreed scope of the works.

3.2 Laboratory Testing

In order to assess the soils for their aggressiveness in accordance with AS2159 and AS2870, selected representative soil samples were tested to determine the following:

- pH,
- Sulphate Content (SO4),
- Chloride Content (CL), and
- Electrical Conductivity (EC).

The detailed test reports are provided in Appendix B and are further discussed in Section 4.9 of this report.

4. RESULTS OF INVESTIGATION

4.1 Site Description

The site is identified as Lot 1 in DP 654363, Lot 1 in DP 121527, Lot 13 in DP 657173 and Lot 13 in DP663524, and comprises a roughly rectangular shaped parcel of land with a combined area of approximately 4,771m^2. The site is zoned R2 Low Density Residential pursuant to the Ku-Ring Gai Local Environmental Plan 2015 (KLEP 2015).

At the time of our investigation the individual allotments were occupied by double storey brick and brick rendered residential dwellings with tile and metal roofs. The dwelling on No.19 includes an in-ground swimming pool in the rear garden area together with a rear garage accessed via a brick driveway. The dwellings on No.21, No.23 and No.25 also include in-ground swimming pools in the rear garden area together with gazebos, timber decks, small sheds and patio areas. The driveway and garage area for No.25 has been cut into the natural hill slope with the front garden area retained from the driveway by sandstone block walls up to 2 metres high.

Site vegetation comprises grassed garden areas, garden beds and numerous mature trees. The ground surface on the site falls approximately 11 metres to the south – southwest, from approximately RL89 metres AHD to RL78 metres AHD.

To the southeast of the site is Balfour Steet and to the northwest are the rear gardens of No.10 and No.14 Highfield Road. The dwellings on No.10 and No.14 are set back around 20 metres from the boundary with the subject site, however there are sheds and smaller structures built closer to the boundary.

To the northeast of the site is the residential dwelling of No.17 Balfour Street, a double storey brick residential dwelling with tile roof set back around 2.1 metres from the boundary with the subject site. To the southwest of the site are the residential dwellings of No.23 Bent Street, 1 Wallace Parade and 3 Wallace Parade which comprise two and three storey residential dwellings set back 2 to 7 metres from the boundary with the subject site.

4.2 Regional Geology & Subsurface Conditions

The 1:100,000 series geological map of Sydney (Geological Survey of NSW, Geological Series Sheet 9030) indicates that the site is underlain by Triassic Age bedrock belonging to the Ashfield Shale formation of the Wianamatta Group. Bedrock within this formation comprises dark grey shale, claystone and laminite. Bedrock within the Ashfield Shale formation typically weathers to form residual clayey soils of medium to high plasticity.

For the development of a site-specific geotechnical model, the observed subsurface conditions from the boreholes have been grouped into five (5) geotechnical units which are summarised below in Table 4.1.

TABLE 4.1 – Summary of Subsurface Conditions

Unit	Material Type	Depth to top of Layer (m)*	Depth to base of Layer (m)*	Material Description
1	Topsoil / Fill	Surface	0.3 – 0.6m	Low and medium plasticity silty clays, dark brown in colour, moist. Traces or organics in topsoil materials. Fill contains some gravels. 50mm thick brick pavers were encountered at the surface in BH3 with a sand bedding below, and a concrete slab was encountered in BH2 with a thickness of 180mm and a sandy gravel sub-base
2	Residual Soil – Firm to Stiff, Stiff and to Very Stiff Clay	0.3 – 0.6m	1.2 – 2.7m	Silty clays of medium and high plasticity with traces of ironstone and shale gravel. Generally firm to stiff becoming stiff and very stiff with depth, and moist becoming dry to moist.
3	Class 5 Shale & Sandstone	1.2 – 2.7m	1.3 – 2.9m	Extremely weathered extremely low to very low strength shale and low strength sandstone, orange to brown and grey brown with pale grey in colour with frequent clay seams. Not core drilled.
4	Class 4 Shale & Sandstone	1.3 – 2.9m	3.8 – 6.6m	Moderately weathered to slightly weathered dark grey to grey shale bedrock and orange brown to red brown and grey brown fine to medium grained sandstone with frequent clay seams, iron stained bedding partings and inclined to sub-horizonal joints.
5	Class 3 Sandstone	3.8 – 6.6m	6.0 – 9.5m	Slightly weathered to fresh pale orange brown and pale grey fine to medium grained sandstone bedrock. Mostly medium and occasionally high strength.
6	Class 2 Sandstone	6.0 – 9.5m	End of hole in BH1 and BH2	Slightly weathered to fresh pale orange brown and pale grey fine to medium grained sandstone bedrock Mostly medium and occasionally high strength.

TABLE 4.2 – Summary of Bedrock Classification

Borehole ID	Depth of Rock Classification (m)			
	Class 5	Class 4	Class 3	Class 2
1	1.9 – 2.3m	2.3 – 6.6m	6.6 – 9.5m	9.5 – 20.0m
2	1.5 – 2.5m	2.5 – 3.8m	3.8 – 6.0m	6.0 – 11.9m
3	2.7 – 2.9m	>2.9m	-	-
4	-	-	-	-
5	1.2 – 1.3m	>1.3m	-	-
6	-	-	-	-
7	-	-	-	-

Groundwater seepage was not observed during auger drilling of the boreholes.

The piezometers installed in BH1 and BH2 were re-measured after a period of 3 days, with groundwater recorded at a depth of 4.4 metres in BH1 and 2.8 metres in BH2, which is within the upper residual soils or soil/rock interface.

5. GEOTECHNICAL RECOMMENDATIONS

5.1 Primary Geotechnical Considerations

Based on the results of the assessment, we consider the following to be the primary geotechnical considerations for the development:

- Basement excavation and retention to limit lateral deflections and ground loss as a result of excavations, resulting in damage to nearby structures,
- Rock excavation and the generation of ground borne vibrations, and
- Foundation design for structural loads.

5.2 Site Classification to AS2870

The classification has been prepared in accordance with the guidelines set out in the "Residential Slabs and Footings" Code, AS2870 – 2011.

Because there are trees and structures/pavements present on the site, abnormal moisture conditions (AMC) prevail at the subject site (Refer to Section 1.3.3 of AS2870).

Because of the AMC and fill present, the site is classified a ***Problem Site (P).*** However, provided the recommendations given in Section 4.8 are adopted and the footings bear in the underlying shale bedrock, the site may be reclassified ***Moderately Reactive (M).***

5.3 Site Classification to AS1170.4 (Earthquake)

The site sub-soil classification has been determined using AS1170.4-2007. The classification is based on the results of the borehole drilling. The depth of soil recorded in the subsurface profile is less than 3 metres in the majority of test locations, therefore the site is classified as a Rock Site (B_e). An earthquake hazard factor (Z) of 0.08 applies to sites within the Sydney region.

5.4 Excavation Conditions and Vibration Control

All excavation recommendations should be complemented with reference to the NSW Government Code of Practice for Excavation work, dated January 2020.

It would be appropriate before commencing excavation to undertake a dilapidation survey of any adjacent structures that may potentially be damaged. This will provide a reasonable basis for assessing any future claims of damage.

Based on the subsurface conditions observed in boreholes, the proposed basement excavation is expected to encounter topsoil, fill residual soils and weathered to fresh shale and sandstone bedrock. The bedrock was assessed to be extremely low strength becoming medium and possibly high strength with depth. Based on the results of the point load index testing, the fresh sandstone bedrock has correlated Unconfined Compressive Strengths up to 40 MPa, with majority of the fresh bedrock having correlated Unconfined Compressive Strengths around 15-30 MPa.

Excavation of the soils and the upper extremely low strength shale will be achievable using conventional excavation equipment, such as the buckets of hydraulic excavators. Excavators alone without assistance will not be able to remove any significant amount of the fresh sandstone and shale bedrock. Hydraulic breakers mounted on an excavator or jack hammers will be required to break up the majority of the rock before it can be removed using an excavator.

During the use of hydraulic impact hammers, precautions must be made to reduce the risk of vibrational damage to adjoining structures. At the commencement of the use of hydraulic impact hammers we recommend that full time quantitative vibration monitoring be carried out on the adjoining residences or at the boundaries by an experienced vibration consultant or geotechnical engineer to check that vibrations are within acceptable limits.

Australian Standard AS 2187: Part 2-2006 recommends the frequency dependent guideline values and assessment methods given in BS 7385 Part 2-1993 “Evaluation and measurement for vibration in buildings Part 2” as they “are applicable to Australian conditions”. The standard sets guide values for building vibration based on the lowest vibration levels above which damage has been credibly demonstrated. These levels are judged to give a minimum risk of vibration-induced damage, where the minimal risk for a named effect is usually taken as a 95% probability of no effect.

Sources of vibration that are considered in the standard include demolition, blasting (carried out during mineral extraction or construction excavation), piling, ground treatments (e.g. compaction), construction equipment, tunnelling, road and rail traffic and industrial machinery.

For residential structures, BS 7385 recommends vibration criteria of 7.5 mm/s to 10 mm/s for frequencies between 4 Hz and 15 Hz, and 10 mm/s to 25 mm/s for frequencies between 15 Hz to 40 Hz and above. These values would normally be applicable for new residential structures or residential structures in good condition.

Higher values would normally apply to commercial structures, and more conservative criteria would normally apply to heritage structures. However, structures can withstand vibration levels significantly higher than those required to maintain comfort for their occupants. Human comfort is therefore likely to be the critical factor in vibration management.

Excavation methods should be adopted which limit ground vibrations at the adjoining developments to not more than 10mm/sec. Vibration monitoring is recommended to verify that this is achieved. The limits of 5mm/sec and 10mm/sec are expected to be achievable if rock breaker equipment or other excavation methods are restricted as indicated in Table 4.1.

Table 5.1 – Recommendations for rock breaking equipment

Distance from adjoining structure (m)	Maximum Peak Particle Velocity 5mm/sec		Maximum Peak Particle Velocity 10mm/sec	
	Equipment	Operating Limit (% of maximum capacity)	Equipment	Operating Limit (% of maximum capacity)
1.5 to 2.5	Hand operated hack hammer only	100	300 kg rock hammer	50
2.5 to 5.0	300 kg rock hammer	50	300 kg rock hammer	100
			600 kg rock hammer	50
5.0 to 1.00	300 kg rock hammer	100	600 kg rock hammer	100
	600 kg rock hammer	50	900 kg rock hammer	50

At all times, the excavation equipment must be operated by experienced personnel, per the manufacturer's instructions, and in a manner, consistent with minimising vibration effects.

If during excavation with the hydraulic impact hammers, vibrations are found to be excessive or there is concern, then alternative lower vibration emitting equipment, such as rock saws, rock grinders or smaller hammers may need to be used. The use of a rotary grinder or rock sawing in conjunction with ripping presents an alternative low vibration excavation technique, however, productivity is likely to be slower. When using a rock saw or rotary grinder, the resulting dust must be suppressed by spraying with water.

It is pointed out that the rock classification system used in Table 4.1 is intended primarily for use in the design of foundations, and is not intended to be used to directly assess rock excavation characteristics.

Excavation contractors should refer to the detailed engineering logs and where available, core photographs, laboratory strength tests, and inspection of rock core samples, and should not rely solely on the rock classifications presented in geotechnical engineering reports when assessing the suitability of their excavation equipment for the proposed development. Further geotechnical advice must be sought if rock excavation characteristics are critical to the proposed development.

It should be noted that vibrations that are below threshold levels for building damage may be experienced at adjoining developments. Rock excavation methodology should also consider acceptable noise limits as per the “Interim Construction Noise Guideline” (NSW EPA).

The excavated material will also need to be classified for disposal purposes, which will require environmental testing of the various materials.

5.5 Groundwater Considerations

Groundwater or significant seepage was not observed during auger drilling of the boreholes.

A groundwater impact assessment has been carried out by D&N Geotechnics and is provided in Appendix C.

The estimated inflow rate from the impact assessment is 4.5ML/year during construction and 4.0ML/year during the operation phase. These values are considered typical for the encountered geological profile and depth of excavation. The impact of any drawdown outside of the basement is expected to be negligible due to the groundwater seepage mostly occurring within bedrock.

Based on the results of the groundwater impact assessment a conventional drained basement may be feasible for the site, subject to the acquisition of a Water Access Licence (WAL) from WaterNSW and approval to discharge from Council. Altenativly, a tanked basement may be constructed with an appropriate allowance of hydrostatic uplift.

We expect seepage to be controllable by a conventional sump and pump system. We recommend that a sump-and-pump system be used both during construction and for permanent groundwater control below the basement floor slab where a drained basement is constructed.

For a drained basement in the long term, drainage should be provided behind all basement retaining walls, around the perimeter of the basement and below the basement slab. The completed excavation should be inspected by the hydraulic engineer to confirm that adequate drainage has been allowed for. Drainage should be connected to the sump-and-pump system and discharging into the stormwater system. The permanent groundwater control system should take into account any possible soluble substances in the groundwater which may dictate whether or not groundwater can be pumped into the stormwater system.

The design of drainage and pump systems should take the above issues into account along with careful ongoing inspections and maintenance programs.

5.6 Excavation Retention & Support Design

From a geotechnical perspective, it is critical to maintain the stability of all adjacent structures and infrastructures during demolition, excavation and construction works.

Based on the provided architectural plans, the depth of the excavation, the encountered subsurface conditions and limited setbacks, temporary batters are not recommended for this site. Unsupported vertical cuts of the soil are not recommended for this site as these carry the risk of potential slumping especially after a period of wet weather. Slumping of the material may result in injury to personnel and/or damage to nearby structures/infrastructures and equipment.

A suitable retention system will be required for the support of the soil and weathered bedrock within the excavation. For this site, we consider that an anchored and/or propped soldier pile wall with mass concrete in between the piles to be the most suitable. Anchors/props and mass concrete must be installed progressively as excavation proceeds. The piles should be founded in shale bedrock.

The existence of significant horizontal in-situ stresses in bedrock, particularly in the Sydney basin, is well established. The release of such stresses during the basement excavation may cause adverse impact on the stability of the excavation faces and thus increase the movements. Monitoring of several deep excavations within sandstone and shale in the Sydney region indicates that the lateral displacement at the top of the excavation is generally between 0.5mm to 2mm per meter depth of excavation.

As the maximum depth of excavation into bedrock is of about 15m, a lateral deflection at the crest of the excavation between 7.5mm to 30mm can be expected which will reduce in a stepped fashion to zero at the bulk excavation level. Monitoring of the lateral movement as the excavation progresses is recommended.

Bored piles are considered to be the most suitable for this site. However, relatively large capacity piling rigs will be required for drilling through the shale bedrock. The proposed pile locations should take into account the presence of buried services. Further advice should be sought from prospective piling contractors who should be provided with a copy of this report.

When considering the design of the support system, it will be necessary to allow for the loading from structures in adjoining properties, any ground surface slope and the water table present.

For the design of temporary structures where some ground movement is acceptable, an active earth pressure coefficient (K_a) may be adopted. However, where adjoining structures are within the zone of influence of the excavation, or it is necessary to limit lateral deflections, it will be necessary to adopt at rest (K_o) conditions. K_o conditions should also be used to design the permanent support system.

A triangular lateral earth pressure distribution should be adopted for cantilevered walls, and a rectangular or trapezoidal lateral earth pressure distribution should be adopted for walls that are progressively propped at their top and base, and/or where two or more rows of anchors are used. A triangular earth pressure distribution should be adopted when determining the load on shotcrete infill panels.

As previously discussed, anchors or internal props can also be considered. Where anchors are used and they extend into the adjoining property, it will be necessary to obtain the permission of the property owners. Anchor designs should be based on bonding to be developed behind an 'active zone' determined by drawing a line from the base of the retained height at 45° from horizontal.

Anchors should be proof loaded as follows:

- 1.5 times working load for permanent anchors;
- 1.3 times working load for temporary anchors.

Anchors should be installed into the weathered rock.

Retaining walls may be designed using the parameters provided below in Table 5.2.

TABLE 5.2 – Retaining Wall Design Parameters

Material Unit	Bulk Unit Weight (kN/m^3)	Effective Cohesion C' (kPa)	Effective Angle of Friction, ϕ (Deg)	Poisson's Ratio	Elastic Modulus E' (MPa)	Earth Pressure Co-efficients			Allowable Bond Stress for Anchors (kPa)
						At Rest (K_o)	Active (K_a)	Allowable Toe Resistance (kPa)	
1	18	0	24	0.3	8	0.6	0.4	-	-
2	19	2	27	0.3	25	0.55	0.36	-	-
3	21	30	28	0.25	80	0.53	0.36	70	35
4	22	50	31	0.25	150	0.47	0.31	150	70
5	23	100	34	0.20	350	0.44	0.28	350	250
6	23	200	39	0.20	500	0.37	0.2	500	400

The embedment of retaining walls can be used to achieve passive support. A triangular passive earth pressure distribution (increasing linearly with depth) may be assumed, starting from 0.5 m below excavation toe/base level.

5.7 Drainage and Basement Floor Slab Construction

Following bulk excavations for the proposed basement, sandstone bedrock is expected to be exposed at the basement floor BEL.

Following the removal of all loose and softened materials, we recommend that underfloor drainage be provided and should comprise a strong, durable, single sized washed aggregate such as 'blue metal gravel'. Joints in the concrete floor slab should be designed to accommodate shear forces but not bending moments by using dowelled and keyed joints. The basement floor slab should be isolated from columns. The completed excavation should be inspected by the hydraulic engineer to confirm the extent of the drainage required.

In addition, a system of sub-soil drains comprising a durable single sized aggregate with perforated drains/pipes leading to sumps should be provided. The basement floor slab should be isolated from columns.

Permission may need to be obtained from the NSW Department of Primary Industries (DPI) and possibly Council for any permanent discharge of seepage into the drainage system. If a WAL cannot be obtained, or permission for discharge is not granted by Council, then the basement will need to be designed as a tanked structure.

5.8 Foundation Design

On completion of bulk excavation, Class 3 bedrock is expected to be encountered over the majority of the basement footprint, and therefore to limit risks associated with differential settlement we recommend that the proposed building be uniformly supported on footings founded in the underlying bedrock.

Foundation design parameters for the various units are provided in Table 5.3 below:

TABLE 5.3 – Foundation Design Parameters

(Unit) Material	Maximum Allowable (Working Stress) Values (kPa)			Ultimate Strength Limit State Values (kPa)		
	End Bearing Pressure	Shaft Friction in compression#	Shaft Friction in tension*	End Bearing Pressure	Shaft Friction in compression#	Shaft Friction in tension*
(1) Fill	-	-	-	-	-	-
(2) Stiff Clay	150	20	10	450	60	30
(3) Class 5 Shale / Sandstone	700	70	35	3,000	100	50
(4) Class 4 Shale / Sandstone	1000	100	50	4,500	150	75
(5) Class 3 Sandstone	3500	350	175	10,000	600	300
(6) Class 2 Sandstone	6,000	600	300	30,000	800	400

Note: Parameters for Class 3 shale bedrock are provided for bored piles only – these should not be used for CFA piles.

* Uplift capacity of piles in tension loading should also be checked for inverted cone pull out mechanism.

clean socket of roughness category R2 or better is assumed

In accordance with AS2159-2009 "Piling–Design and Installation", for limit state design, the ultimate geotechnical pile capacity shall be multiplied by a geotechnical reduction factor (Φg). This factor is derived from an Average Risk Rating (ARR) which considers geotechnical uncertainties, redundancy of the foundation system, construction supervision, and the quantity and type of pile testing (if any). Where testing is undertaken, or more comprehensive ground investigation is carried out, it may be possible to adopt a larger Φ_g value that results in a more economical pile design. Further geotechnical advice will be required in consultation with the pile designer and piling contractor, to develop an appropriate Φ_g value.

Settlements for footings on rock are anticipated to be about 1% of the minimum footing dimension, based on serviceability parameters as per Table 5.3. Settlements for pad footings in clayey soils are anticipated to be up to about 15mm where loading does not exceed the maximum allowable values.

All shallow footings should be poured with minimal delay (i.e. preferably on the same day of excavation) or the base of the footing should be protected by a concrete blinding layer after cleaning of loose spoil and inspection.

Drilling of rock sockets into the low to medium strength or better shale will require the use of large piling rigs equipped with rock augers. Some limited groundwater inflow should be anticipated into the bored pile excavations. We expect any minor seepage to be controllable by conventional pumping methods. However, some contingency for pouring concrete by tremie methods should be allowed.

Bored pile footings should be drilled, cleaned, inspected and poured with minimal delay, on the same day. Water should be prevented from ponding in the base of footings as this will tend to soften the foundation material, resulting in further excavation and cleaning being required.

The initial stages of footing excavation/drilling should be inspected by a geotechnical engineer/engineering geologist to ascertain that the recommended foundation material has been reached and to check initial assumptions about foundation conditions and possible variations that may occur between borehole locations. The need for further inspections can be assessed following the initial visit.

5.9 Exposure Classification to AS2870 & AS2159 & Soil Salinity

The aggressiveness or erosion potential of an environment in building materials, particularly concrete and steel is dependent on the levels of soil pH and the types of salts present, generally sulphates and chlorides. In order to determine the degree of aggressiveness, the test values obtained are compared to Tables 6.4.2 (C) and 6.5.2 (C) in AS2159 – 2009 Piling – Design and Installation and Tables 5.1 and 5.2 of AS2870-2011. In regard to the electrical conductivity, the laboratory test results have been multiplied by the appropriate factor to convert the results to EC_e.

The soils on the site consist of low permeability clays and shale bedrock above a regional groundwater table. Therefore, the soil conditions B are considered appropriate. The test results are summarised in Table 5.4 below.

Table 5.4 – Exposure Classification Summary Table

Sample ID	Location	Depth (m)	pH	EC_e (dS/m)	Sulfate (ppm)	Chloride (ppm)	Exposure Classification AS2159		Exposure Classification AS2870
							Steel Piles	Concrete Piles	
S1	BH3	0.6	6.0	0.7	50	130	Non Aggressive	Non Aggressive	A1
S2	BH3	1.5	4.7	0.8	30	40	Non Aggressive	Mild	A2
S3	BH5	0.6	5.2	0.4	40	20	Non Aggressive	Mild	A2
S4	BH5	1.0	5.0	0.5	60	60	Non Aggressive	Mild	A2

The site is located in an area of very low salinity potential. Reference to DLWC (2002) "Site Investigations for Urban Salinity" indicates that ECe values of 0.4 dS/m and 0.8 dS/m are consistent with the presence of **non-saline soils**.

6. FURTHER GEOTECHNICAL INPUT

The following summarises the scope of further geotechnical work recommended within this report. For specific details reference should be made to the relevant sections of this report.

- Complete dilapidation surveys of the adjoining buildings and structures.
- Inspection of shoring piles during installation,
- Regular routine inspections of cut faces during bulk excavation,
- Inspection of footing excavations to ascertain that the recommended foundation has been reached and to check initial assumptions regarding foundation conditions and possible variations that may occur.
- We also recommend that Green Geotechnics view the proposed earthworks and structural drawings in order to confirm they are within the guidelines of this report.

Nevertheless, it will be essential during excavation and construction works that progressive geotechnical inspections be commissioned to check initial assumptions about excavation and foundation conditions and possible variations that may occur between inspected and tested locations and to provide further relevant geotechnical advice.

7. ACID SULFATE SOILS ASSESSMENT

7.1 Introduction

ASS are the common name given to sediments and soils containing iron sulfides which, when exposed to oxygen generate sulfuric acid. Natural processes formed the majority of acid sulfate sediments when certain conditions existed in the Holocene geological period (the last 10,000 years). Formation conditions require the presence of iron-rich sediments, sulfate (usually from seawater), removal of reaction products such as bicarbonate, the presence of sulfate reducing bacteria and a plentiful supply of organic matter. It should be noted that these conditions exist in mangroves, salt marsh vegetation or tidal areas, and at the bottom of coastal rivers and lakes.

The relatively specific conditions under which acid sulfate soils are formed usually limit their occurrence to low lying parts of coastal floodplains, rivers and creeks. This includes areas with saline or brackish water such as deltas, coastal flats, backswamps and seasonal or permanent freshwater swamps that were formerly brackish. Due to flooding and stormwater erosion, these sulfidic sediments may continue to be re-distributed through the sands and sediments of the estuarine floodplain region. Sulfidic sediment may be found at any depth in suitable coastal sediments – usually beneath the water table.

Any lowering in the water table that covers and protects potential ASS will result in their aeration and the exposure of iron sulfide sediments to oxygen. The lowering in the water table can occur naturally due to seasonal fluctuations and drought or any human intervention, when carrying out any excavations during site development. Potential ASS can also be the exposed to air during physical disturbance with the material at the disturbance face, as well as the extracted material, both potentially being oxidised. The oxidation of iron sulfide sediments in potential ASS results in ASS soils.

Successful management of areas with ASS is possible but must take into account the specific nature of the site and the environmental consequences of development. While it is preferable that sites exhibiting acid sulfate characteristics not be disturbed, management techniques have been devised to minimise and manage impacts in certain circumstances.

When works involving the disturbance of soil or the change of groundwater levels are proposed in coastal areas, a preliminary assessment should be undertaken to determine whether acid sulfate soils are present and if the proposed works are likely to disturb these soils.

7.2 Prescence of ASS

Reference to the Prospect – Parramatta ASS Risk Map indicates the property is within an area where there are no known occurrences of ASS. It should however be noted that maps are a guide only.

The following geomorphic or site criteria are normally used to determine if acid sulfate soils are likely to be present:

- sediments of recent geological age (Holocene)
- soil horizons less than 5 in AHD
- marine or estuarine sediments and tidal lakes
- in coastal wetlands or back swamp areas

7.3 Assessment

Excavations on the subject site will not extend below RL74m AHD, and the site is underlain by localised topsoil/fill deposits overlying residual clays and shale bedrock belonging to the Ashfield Shale Formation. This is not consistent with the geomorphic criteria necessary for the presence of ASS. Based on our onsite observations and the subsurface conditions exposed in the boreholes, it is our opinion that the proposed construction will not intercept any ASS.

Based on the observations during drilling, it appears that any seepage into the excavations would be minor and as a consequence, construction will not result in the lowering of any groundwater that may be present in the area.

Our assessment is the proposed construction will not require the preparation of an Acid Sulfate Soil Management Plan.

8. MITIGATION MEASURES

Table 8.1 – Mitigation Measures

Project Stage	Mitigation Measures	Reason for Mitigation Measures	Section of Report
D	Foundations must be designed by a qualified structural engineer as per the recommendations given in Section 5.8 of this report and take into consideration the general recommendations given in Section 5	To avoid uneconomical design and ensure serviceability for built structures. To ensure compliance with AS2870 and AS2159.	5.8 and 5.9
D	Temporary and permanent basement shoring walls must be designed by a qualified structural engineer as per the recommendations given in Section 5.6 of this report and take into consideration the general recommendations given in Section 5	To ensure stability to excavations in both the short and long term phases of the development	5.6
D	Buried concrete and steel foundations and structures must be designed to withstand soil and groundwater aggression (durability)	To prevent corrosion or degradation of buried structures over its design life. To ensure compliance with AS2870 and AS2159	5.9
C	Inspection of foundation excavations during construction	To ascertain that the recommended foundation has been reached and to check initial assumptions regarding foundation conditions and possible variations that may occur	6
C	Observations of Groundwater Seepage during bulk excavation	To ensure the hydraulic design is appropriate for the encountered hydrogeological conditions	5.5 & 6
C	Vibration Monitoring During Rock Hammering	To ensure transmitted vibrations do not exceed safe threshold values when utility hydraulic rock hammer of rock breakers on site	5.4 & 6
C	Geotechnical supervision and testing by a Geotechnical Inspection and Testing Authority (GITA) during any bulk earthworks or detailed earthworks including the construction of pavements and subgrade areas and the backfilling of service trenches	To ensure compliance with AS3798	6

9. GENERAL RECOMMENDATIONS

The recommendations presented in this report include specific issues to be addressed during the construction phase of the project. In the event that any of the construction phase recommendations presented in this report are not implemented, the general recommendations may become inapplicable and Green Geotechnics accept no responsibility whatsoever for the performance of the structure where recommendations are not implemented in full and properly tested, inspected and documented.

Occasionally, the subsurface conditions may be found to be different (or may be interpreted to be different) from those expected. Variation can also occur with groundwater conditions, especially after climatic changes. If such differences appear to exist, we recommend that you immediately contact this office.

This report provides advice on geotechnical aspects for the proposed civil and structural design. As part of the documentation stage of this project, Contract Documents and Specifications may be prepared based on our report. However, there may be design features we are not aware of or have not commented on for a variety of reasons. The designers should satisfy themselves that all the necessary advice has been obtained. If required, we could be commissioned to review the geotechnical aspects of contract documents to confirm the intent of our recommendations has been correctly implemented.

This report has been prepared for the particular project described and no responsibility is accepted for the use of any part of this report in any other context or for any other purpose. If there is any change in the proposed development described in this report then all recommendations should be reviewed.

Copyright in this report is the property of Green Geotechnics. We have used a degree of care, skill and diligence normally exercised by consulting engineers in similar circumstances and locality. No other warranty expressed or implied is made or intended. Subject to payment of all fees due for the investigation, the client alone shall have a licence to use this report. The report shall not be reproduced except in full.

REPORT INFORMATION

Introduction

These notes have been provided to amplify Green Geotechnics report in regard to classification methods, field procedures and the comments section. Not all are necessarily relevant to all reports.

Green Geotechnics reports are based on information gained from limited subsurface excavations and sampling, supplemented by knowledge of local geology and experience. For this reason, they must be regarded as interpretive rather than factual documents, limited to some extent by the scope of information on which they rely.

Borehole and Test Pit Logs

The borehole and test pit logs presented in this report are an engineering and/or geological interpretation of the subsurface conditions, and their reliability will depend to some extent on frequency of sampling and the method of drilling or excavation.

Interpretation of the information and its application to design and construction should therefore take into account the spacing of boreholes or pits, the frequency of sampling, and the possibility of other than 'straight line' variations between the test locations.

Groundwater

Where groundwater levels are measured in boreholes there are several limitations, namely:

- In low permeability soils groundwater may enter the hole very slowly or perhaps not at all during the time the hole is left open;
- A localised, perched water table may lead to an erroneous indication of the true water table;
- Water table levels will vary from time to time with seasons or recent weather changes. They may not be the same at the time of construction as are indicated in the report; and
- The use of water or mud as a drilling fluid will mask any groundwater inflow. The borehole must be flushed, and any water must be extracted from the hole if further water measurements are to be made.

More reliable measurements can be made by installing standpipes which are read at intervals over several days, or perhaps weeks for low permeability soils. Piezometers, sealed in a particular stratum, may be advisable in low permeability soils or where there may be interference from a perched water table.

Reports

The report has been prepared by qualified personnel, is based on the information obtained from field and laboratory testing, and has been undertaken to current engineering standards of interpretation and analysis. Where the report has been prepared for a specific design proposal, the information and interpretation may not be relevant if the design proposal is changed. If this happens, Green Geotechnics will be pleased to review the report and the sufficiency of the investigation work.

Every care is taken with the report as it relates to interpretation of subsurface conditions, discussion of geotechnical and environmental aspects, and recommendations or suggestions for design and construction. However, Green Geotechnics cannot always anticipate or assume responsibility for:

- Unexpected variations in ground conditions. The potential for this will depend partly on borehole or pit spacing and sampling frequency;
- Changes in policy or interpretations of policy by statutory authorities; or
- The actions of contractors responding to commercial pressures.

If these occur, Green Geotechnics will be pleased to assist with investigations or advice to resolve the matter.

Site Anomalies

In the event that conditions encountered on site during construction appear to vary from those which were expected from the information contained in the report, Green Geotechnics requests that it be immediately notified. Most problems are much more readily resolved when conditions are exposed rather than at some later stage, well after the event.

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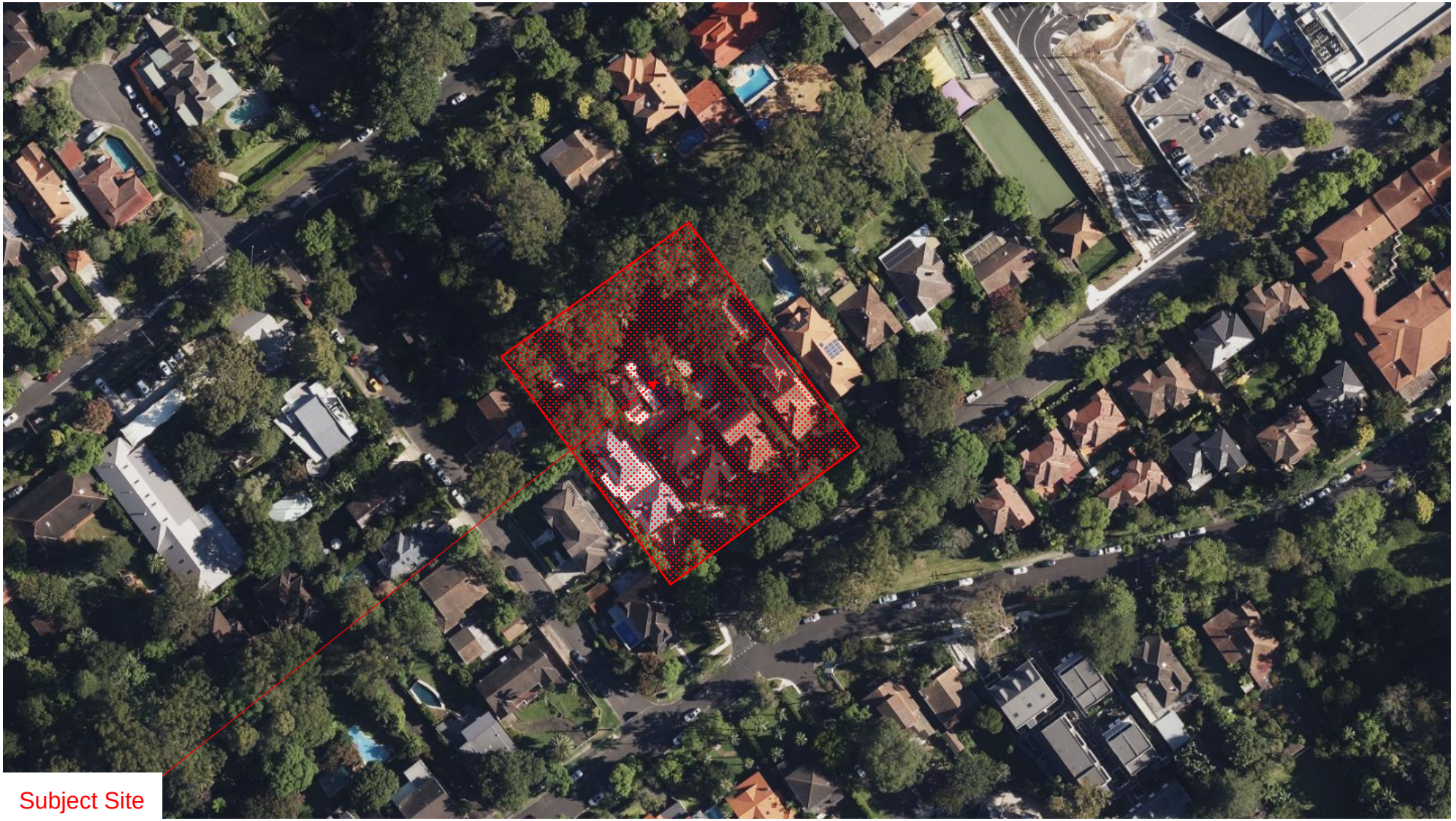
FIGURES

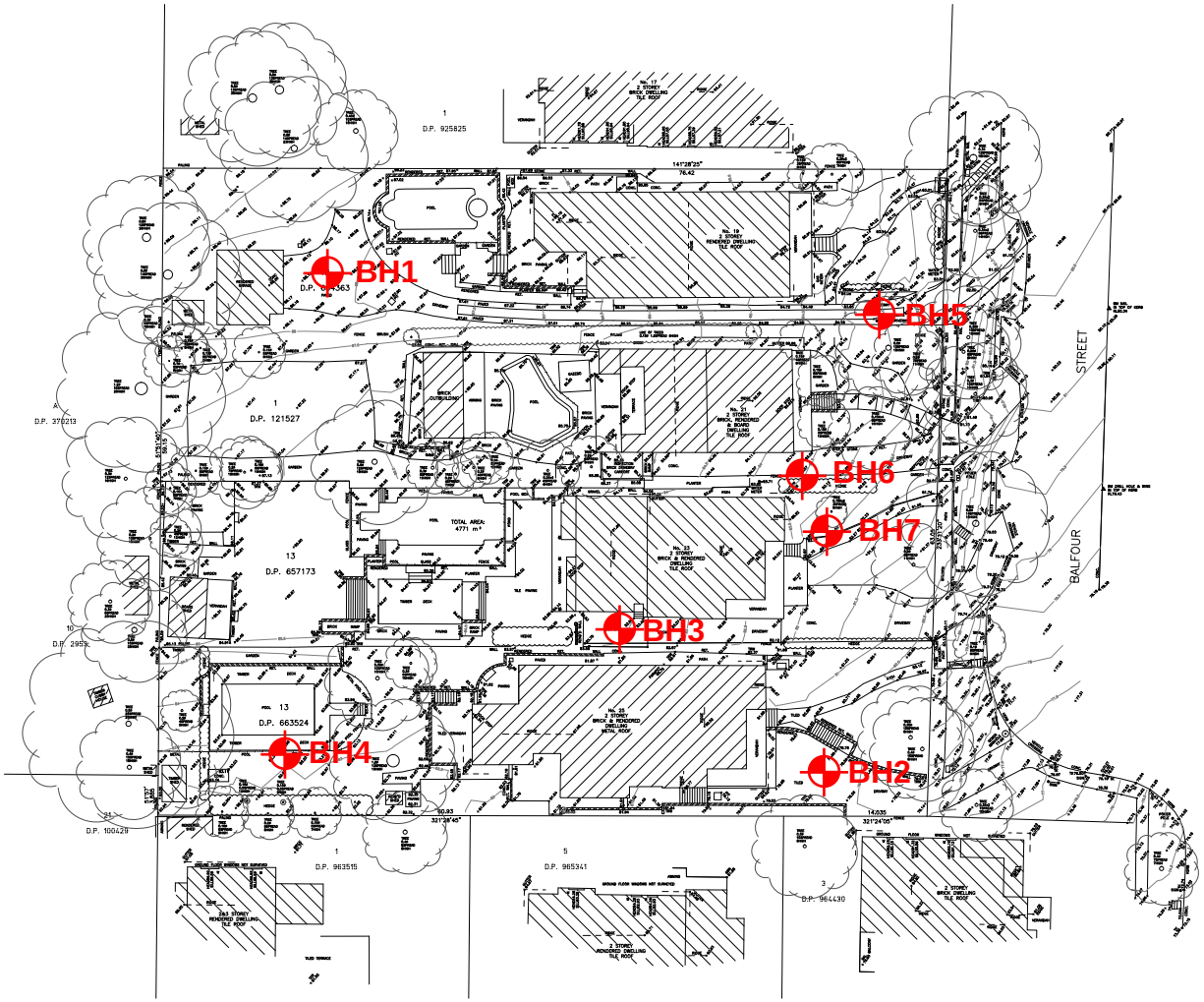


GREEN GEOTECHNICS	Project No: GG11934.001	Geotechnical Investigation 19-25 Balfour Street, Lindfield	Figure No: GG11934.001A
	Client: Balfour Group Pty Limited		Drawn By: MG
	Date: 15 May 2025	**SITE LOCATION PLAN**	Scale: Unknown

Legend:

= Borehole = DCP

= Test Pit



GREEN GEOTECHNICS	Project No: GG11934.001	Geotechnical Investigation 19-25 Balfour Street, Lindfield	Figure No: GG11934.001B
	Client: Balfour Group Pty Limited		Drawn By: MG
	Date: 15 May 2025	**TEST LOCATION PLAN**	Scale: Unknown

Location of BH1

Location of BH2

GREEN GEOTECHNICS	Project No: GG11934.001	Geotechnical Investigation 19-25 Balfour Street, Lindfield	Page: 1 of 4
	Client: Balfour Group Pty Limited		
	Date: 15 May 2025	**SITE PHOTOGRAPHS**	

Location of BH3

Location of BH4

GREEN GEOTECHNICS	Project No: GG11934.001	Geotechnical Investigation 19-25 Balfour Street, Lindfield	Page: 2 of 4
	Client: Balfour Group Pty Limited		
	Date: 15 May 2025	**SITE PHOTOGRAPHS**	

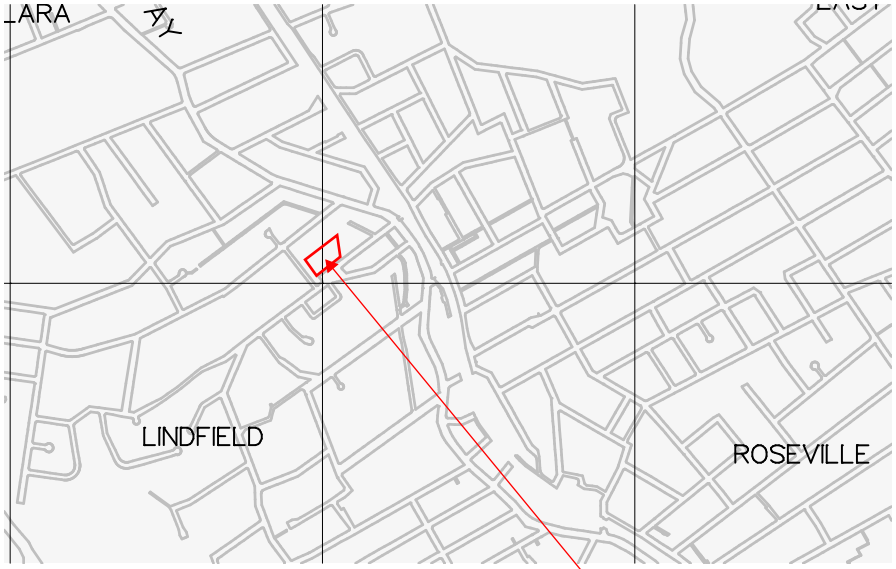
Location of BH5

Location of BH6

GREEN GEOTECHNICS	Project No: GG11934.001	Geotechnical Investigation 19-25 Balfour Street, Lindfield	Page: 3 of 4
	Client: Balfour Group Pty Limited		
	Date: 15 May 2025	**SITE PHOTOGRAPHS**	

Location of BH7

GREEN GEOTECHNICS	Project No: GG11934.001	Geotechnical Investigation 19-25 Balfour Street, Lindfield	Page: 4 of 4
	Client: Balfour Group Pty Limited		
	Date: 15 May 2025	**SITE PHOTOGRAPHS**	



Prospect - Parramatta Acid Sulfate Soils Risk Map

Acid Sulfate Soils Classification Mapping (Source ePlanning Spatial Viewer)

Subject Site

GREEN GEOTECHNICS	Project No: GG11934.001	Geotechnical Investigation 19-25 Balfour Street, Lindfield	Figure No: GG11934.001D
	Client: Balfour Group Pty Limited		Drawn By: MG
	Date: 15 May 2025	**ACID SULFATE SOILS MAPPING**	Scale: Unknown

APPENDIX A – BOREHOLE LOGS , CORE PHOTOS AND POINT LOAD TEST RESULTS

GREEN GEOTECHNICS

Borehole No.
BH1
Page 1 of 5

Engineering Log - Borehole

Project No.: GG11934.001

Client:	Balfour Group Pty Limited	Commenced:	26/3/2025
Project Name:	Geotechnical Investigation: 19-25 Balfour Street, Lindfield	Completed:	26/3/2025
Hole Location:	19-25 Balfour Street, Lindfield	Logged By:	MG/JK
Hole Position:	See Plan	Checked By:	MG

Drill Model and Mounting:	Hanjin DB8	Inclination:	-90°	RL Surface:	89.00 m		
Hole Diameter:	110 mm	Bearing:		Datum:	AHD	Operator:	LP

Drilling Information							***Soil Description***			***Observations***
Method	Support	Penetration	Groundwater Levels	Samples & Field Tests	Recovery	RL (m) / Depth (m)	Graphic Log / Group Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency Relative Density	Structure and Additional Observations
AD/T						88.0 / 1	CL /Cl	TOPSOIL Sandy Silty CLAY: low to medium plasticity, brown to grey brown, with organics. 0.30m	D / M		TOPSOIL
							Cl /CH	Silty CLAY: medium to high plasticity, red brown, mottled grey. 1.00m	M	F / St St	RESIDUAL SOIL
				1.50m SPT 4,10,19 N=29 1.95m			Cl	Gravelly Silty CLAY: medium plasticity, pale grey, mottled red and orange, with ironstone and shale gravel. 1.90m	M	VSt / H	
						87.0 / 2		SHALE: orange brown to grey, estimate extremely weathered, very low strength (class V). 2.30m	D		ROCK
								SHALE: dark grey, estimate moderately weathered, low strength (class IV). 2.50m	D		
								Continued on cored borehole sheet			
						86.0 / 3					
						85.0 / 4					
						84.0 / 5					

Method
AS - Auger Screwing
ADV Auger V Bit
ADT Auger Tungsten Carbide Bit
RR - Rock Roller
WB- Washbore

Support
C - Casing

Penetration
No resistance ranging to refusal

Water
Level (Date)
Inflow
Partial Loss
Complete Loss

Graphic Log/Core Loss
Core recovered (hatching indicates material)
Core loss

Samples and Tests
U - Undisturbed Sample
D - Disturbed Sample
SPT - Standard Penetration Test
PP - Pocket Penetrometer

Classification Symbols and Soil Descriptions
Based on Unified Soil Classification System

Moisture Condition
D - Dry
M - Moist
W - Wet
w - Moisture Content
PL - Plastic Limit
LL - Liquid Limit

Consistency/Relative Density
VS - Very Soft
S - Soft
F - Firm
VSt - Very Stiff
H - Hard
Fr - Friable
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

GREEN GEO 1.01.5 LIB.GLB Log GREEN GEO BOREHOLE GG11934.001.GPJ <<DrawingFile>> 7/4/2025 16:17 10.03.00.09 Datgel Lab and In Situ Tool - DGD | Lib: Green Geo 1.01.5 2023-07-05 Prj: Green Geo 1.01.5 2023-07-05

Engineering Log - Cored Borehole

Project No.: GG11934.001

Client:	Balfour Group Pty Limited	Commenced:	26/3/2025
Project Name:	Geotechnical Investigation: 19-25 Balfour Street, Lindfield	Completed:	26/3/2025
Hole Location:	19-25 Balfour Street, Lindfield	Logged By:	MG/JK
Hole Position:	See Plan	Checked By:	MG

Drill Model and Mounting:	Hanjin DB8	Inclination:	-90°	RL Surface:	89.00 m		
Barrel Type and Length:	IMPREG 3 m	Bearing:		Datum:	AHD	Operator:	LP

Drilling Information							Rock Substance				Rock Mass Defects	
Method	Support	Water	TCR (%)	RQD (%)	RL (m)	Depth (m)	Graphic Log	Material Description rock type: grain characteristics, colour, structure, minor components	Weathering	Strength UCS=$I_{(50)}$ ● - Axial ○ - Diametral ■ - UCS (VL L M H VH EH)	Average Defect Spacing (mm) (10 30 100 300 1000)	Defect Description thickness, type, inclination, planarity, roughness, coating/infilling
					88.0	1						
					87.0	2						
						2.50m		Continued from non-cored borehole sheet				
NMLC		95% Water Return	72	0	86.0	3		NO CORE 0.55m (2.50-3.05)				
						3.05m		SANDSTONE: fine grained, orange brown with pale grey and dark grey, with occasional shale lenses.	MW / HW			CS, clay P, 0°, PR, SM P, 0°, VN, PR, RF, ironstone CS P, 0°, clay VN, PR, RF J, 90°, clay, IR, RF, infill J, 85°, clay, IR, RF, infill J, 90°, clay, IR, RF, infill J, 90°, clay, IR, RF, infill P, 0°, PR, RF P, 0°, PR, RF P, 0°, PR, RF clay, SM J, 90°, IR, RF P, 0°, PR, RF P, 0°, clay VN, PR, SM J, 90°, clay, IR, RF P, 0°, PR, SM P, 0°, PR, SM
					85.0	4						
						4.50m		NO CORE 0.27m (4.50-4.77)				
		95% Water Return	93	33	84.0	5		SANDSTONE: fine grained, orange brown with pale grey and dark grey, with occasional shale lenses.	MW / HW			CS, clay DB P, 0°, clay, PR, RF clay, SM P, 0°, VN, PR, RF, ironstone P, 0°, PR, SM P, 0°, PR, RF, ironstone P, 0°, PR, RF P, 0°, PR, RF P, 0°, PR, RF P, 0°, PR, RF P, 0°, PR, RF
						5.35m		SANDSTONE: fine grained, pale grey with dark grey and orange brown, with sahle interbeds.	SW			
						5.88m			SW			

Method
AS - Auger Screwing
WB - Washbore
HQ3 - HQ3 Core Barrel
NQ3 - NQ3 Core Barrel
NMLC - NMLC Core Barrel

Water
Level (Date)
Inflow
Partial Loss
Complete Loss

Support
T - Timbering

Graphic Log/Core Loss
Core recovered (hatching indicates material)
Core loss

Weathering
FR - Fresh
SW - Slightly Weathered
MW - Moderately Weathered
DW - Distinctly Weathered
HW - Highly Weathered
XW - Extremely Weathered
RS - Residual Soil

Strength
VL - Very Low
L - Low
M - Medium
H - High
VH - Very High
EH - Extremely High

GREEN GEO 1.01.5 LIB.GLB Log GREEN GEO CORED BOREHOLE GG11934.001.GPJ <<DrawingFile>> 7/4/2025 16:18 10.03.00.09 Datgel Lab and In Situ Tool - DGD | Lib: Green Geo 1.01.5 2023-07-05 Prj: Green Geo 1.01.5 2023-07-05

Engineering Log - Cored Borehole

Project No.: GG11934.001

Client:	Balfour Group Pty Limited	Commenced:	26/3/2025
Project Name:	Geotechnical Investigation: 19-25 Balfour Street, Lindfield	Completed:	26/3/2025
Hole Location:	19-25 Balfour Street, Lindfield	Logged By:	MG/JK
Hole Position:	See Plan	Checked By:	MG

Drill Model and Mounting:	Hanjin DB8	Inclination:	-90°	RL Surface:	89.00 m		
Barrel Type and Length:	IMPREG 3 m	Bearing:		Datum:	AHD	Operator:	LP

Drilling Information							***Rock Substance***			***Rock Mass Defects***	
Method	Support	Water	TCR (%)	RQD (%)	RL (m)	Depth (m)	Graphic Log	Material Description rock type: grain characteristics, colour, structure, minor components	Weathering	Strength UCS=$I_{(50)}$ ● - Axial ○ - Diametral ■ - UCS (VL L M H VH EH)	Average Defect Spacing (mm) (10 30 100 300 1000)	Defect Description thickness, type, inclination, planarity, roughness, coating/infilling
NMLC		95% Water Return	93	33	82.0	7		6.08m SANDSTONE: fine to medium grained, mottled orange brown, red brown and pale grey.*(continued)*	FR / SW			P, 0°, PR, RF P, 0°, PR, RF P, 0°, PR, SM P, 0°, PR, RF P, 0°, PR, RF P, 0°, PR, SM P, 0°, PR, SM P, 0°, PR, SM P, 0°, PR, RF P, 0°, PR, SM
								SHALE: dark grey with pale grey. 6.57m				
								SANDSTONE: fine to medium grained, pale grey with orange brown, with occasional shale lenses.	SW			J, 90°, clay, IR, RF, infill P, 0°, PR, RF P, 0°, PR, SM P, 0°, PR, SM P, 0°, clay VN, PR, RF P, 0°, PR, RF J, 90°, clay, IR, RF P, 0°, SM P, 0°, RF P, 0°, RF P, 0°, RF P, 0°, RF P, 0°, SM
								7.24m SHALE: dark grey with pale grey. 7.50m	FR / SW			
		100% Water Return	100	66	81.0	8		SANDSTONE: fine to medium grained, pale grey with dark grey, with shale lenses.	FR			J, 90°, clay, IR, RF clay, SM P, 0°, PR, RF P, 0°, PR, SM clay, SM P, 0°, PR, SM P, 0°, PR, SM P, 0°, PR, SM J, 85°, clay, IR, RF clay, SM clay, SM P, 0°, clay, PR, RF clay, SM DB P, 0°, PR, RF P, 0°, PR, RF P, 0°, PR, RF clay, SM P, 0°, PR, SM P, 0°, PR, SM P, 0°, PR, SM J, 90°, clay VN, IR, RF J, 90°, clay, IR, RF, open-tight P, 0°, PR, RF P, 0°, PR, RF clay, SM clay, SM clay, SM P, 0°, clay, PR, SM J, 90°, IR, RF P, 0°, PR, RF P, 0°, PR, SM HB HB DB P, 2°, PR, SM P, 3°, PR, RF
					80.0	9						
					79.0	10						
		100% Water Return	100	99	78.0	11						HB

Method
AS - Auger Screwing
WB - Washbore
HQ3 - HQ3 Core Barrel
NQ3 - NQ3 Core Barrel
NMLC - NMLC Core Barrel

Water
Level (Date)
Inflow
Partial Loss
Complete Loss

Support
T - Timbering

Graphic Log/Core Loss
Core recovered (hatching indicates material)
Core loss

Weathering
FR - Fresh
SW - Slightly Weathered
MW - Moderately Weathered
DW - Distinctly Weathered
HW - Highly Weathered
XW - Extremely Weathered
RS - Residual Soil

Strength
VL - Very Low
L - Low
M - Medium
H - High
VH - Very High
EH - Extremely High

GREEN GEO 1.01.5 LIB.GLB Log GREEN GEO CORED BOREHOLE GG11934.001.GPJ <<DrawingFile>> 7/4/2025 16:18 10.03.00.09 Datgel Lab and In Situ Tool - DGD | Lib: Green Geo 1.01.5 2023-07-05 Prj: Green Geo 1.01.5 2023-07-05

GREEN GEOTECHNICS

Cored Borehole No.

BH1

Engineering Log - Cored Borehole

Project No.: GG11934.001

Client:	Balfour Group Pty Limited	Commenced:	26/3/2025
Project Name:	Geotechnical Investigation: 19-25 Balfour Street, Lindfield	Completed:	26/3/2025
Hole Location:	19-25 Balfour Street, Lindfield	Logged By:	MG/JK
Hole Position:	See Plan	Checked By:	MG

Drill Model and Mounting:	Hanjin DB8	Inclination:	-90°	RL Surface:	89.00 m		
Barrel Type and Length:	IMPREG 3 m	Bearing:		Datum:	AHD	Operator:	LP

Drilling Information							Rock Substance			Rock Mass Defects	
Method	Support	Water	TCR (%)	RQD (%)	RL (m)	Depth (m)	Graphic Log	Material Description rock type: grain characteristics, colour, structure, minor components	Weathering	Strength UCS=$I_{s(50)}$ ● - Axial ○ - Diametral ■ - UCS (VL L M H VH EH)	Average Defect Spacing (mm) (10 30 100 300 1000)	Defect Description thickness, type, inclination, planarity, roughness, coating/infilling
NMLC		100% Water Return	100	99	76.0	13		SANDSTONE: fine to medium grained, pale grey with dark grey, with shale lenses *(continued)*	FR			HB P, 0°, PR, RF P, 0°, PR, SM P, 0°, PR, SM DB P, 0°, PR, RF
		100% Water Return	100	92	75.0	14		14.50m SANDSTONE: fine to medium grained, orange brown with pale grey and red brown.				P, 0°, PR, RF P, 0°, PR, RF P, 0°, PR, RF P, 2°, clay VN, PR, RF P, 0°, PR, SM clay, SM P, 0°, PR, RF P, 0°, PR, RF P, 0°, PR, RF HB
					74.0	15						
					73.0	16			MW			P, 0°, PR, SM P, 5°, IR, RF
		100% Water Return	100	88	72.0	17						P, 0°, PR, RF P, 0°, PR, RF P, 0°, PR, RF J, 85°, IR, RF

Method
- AS - Auger Screwing
- WB - Washbore
- HQ3 - HQ3 Core Barrel
- NQ3 - NQ3 Core Barrel
- NMLC - NMLC Core Barrel

Water
- Level (Date)
- Inflow
- Partial Loss
- Complete Loss

Support
- T - Timbering

Graphic Log/Core Loss
- Core recovered (hatching indicates material)
- Core loss

Weathering
- FR - Fresh
- SW - Slightly Weathered
- MW - Moderately Weathered
- DW - Distinctly Weathered
- HW - Highly Weathered
- XW - Extremely Weathered
- RS - Residual Soil

Strength
- VL - Very Low
- L - Low
- M - Medium
- H - High
- VH - Very High
- EH - Extremely High

GREEN GEO 1.01.5 LIB.GLB Log GREEN GEO CORED BOREHOLE GG11934.001.GPJ <<DrawingFile>> 7/4/2025 16:18 10.03.00.09 Datgel Lab and In Situ Tool - DGD | Lib: Green Geo 1.01.5 2023-07-05 Prj: Green Geo 1.01.5 2023-07-05

Engineering Log - Cored Borehole

Project No.: GG11934.001

Client:	Balfour Group Pty Limited	Commenced:	26/3/2025
Project Name:	Geotechnical Investigation: 19-25 Balfour Street, Lindfield	Completed:	26/3/2025
Hole Location:	19-25 Balfour Street, Lindfield	Logged By:	MG/JK
Hole Position:	See Plan	Checked By:	MG

Drill Model and Mounting:	Hanjin DB8	Inclination:	-90°	RL Surface:	89.00 m		
Barrel Type and Length:	IMPREG 3 m	Bearing:		Datum:	AHD	Operator:	LP

Drilling Information							Rock Substance				Rock Mass Defects	
Method	Support	Water	TCR (%)	RQD (%)	RL (m)	Depth (m)	Graphic Log	Material Description rock type: grain characteristics, colour, structure, minor components	Weathering	Strength UCS=$L_{(50)}$ ● - Axial ○ - Diametral ■ - UCS (VL L M H VH EH)	Average Defect Spacing (mm) (10 30 100 300 1000)	Defect Description thickness, type, inclination, planarity, roughness, coating/infilling
NMLC		100% Water Return	100	88	70.0	19		SANDSTONE: fine to medium grained, orange brown with pale grey and red brown *(continued)*	MW	M H		P, 0°, PR, RF P, 3°, PR, RF P, 0°, PR, SM P, 0°, PR, RF P, 0°, PR, RF P, 5°, PR, SM
							19.20m	Hole Terminated at 19.20 m End - Target Depth				
					69.0	20						
					68.0	21						
					67.0	22						
					66.0	23						

Method
AS - Auger Screwing
WB - Washbore
HQ3 - HQ3 Core Barrel
NQ3 - NQ3 Core Barrel
NMLC - NMLC Core Barrel

Water
Level (Date)
Inflow
Partial Loss
Complete Loss

Support
T - Timbering

Graphic Log/Core Loss
Core recovered (hatching indicates material)
Core loss

Weathering
FR - Fresh
SW - Slightly Weathered
MW - Moderately Weathered
DW - Distinctly Weathered
HW - Highly Weathered
XW - Extremely Weathered
RS - Residual Soil

Strength
VL - Very Low
L - Low
M - Medium
H - High
VH - Very High
EH - Extremely High

GREEN GEO 1.01.5 LIB.GLB Log GREEN GEO CORED BOREHOLE GG11934.001.GPJ <<DrawingFile>> 7/4/2025 16:18 10.03.00.09 Datgel Lab and In Situ Tool - DGD | Lib: Green Geo 1.01.5 2023-07-05 Prj: Green Geo 1.01.5 2023-07-05

GREEN GEOTECHNICS	Project No: GG11934.001	Geotechnical Investigation 19-25 Balfour Street, Lindfield	Box : 1 of 1
	Client: Balfour Group Pty Limited		
	Date Cored: 26 March 2025	**CORE PHOTO - BH1**	

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POINT LOAD STRENGTH INDEX

Project No: GG11934.001
Project Address: 19-25 Balfour Street, Lindfield
Client: Balfour Group Pty Limited

Test Method: AS 4133.4.1
Test Date: 30/03/2025
Tested By: MG

Borehole No: BH1
Date Drilled: 26/03/2025

Depth	Test Type	Is(50) (Mpa)	Rock Type	Rock Structure	Moisture
3.87	A	**1.16**	SS	BE	D
4.94	A	**0.85**	SS	MA	D
5.30	A	**1.05**	SS	BE	D
6.36	D	**0.06**	SH	LA	D
	A	**0.66**	SH	LA	D
7.75	D	**0.71**	SS	BE	D
	A	**1.05**	SS	BE	D
8.77	D	**0.63**	SS	BE	D
	A	**1.23**	SS	BE	D
9.80	D	**0.27**	SS	BE	D
	A	**1.00**	SS	BE	D

Borehole No: BH1
Date Drilled: 26/03/2025

Depth	Test Type	Is(50) (Mpa)	Rock Type	Rock Structure	Moisture
16.90	D	**1.32**	SS	BE	D
	A	**1.57**	SS	BE	
11.46	D	**1.34**	SS	BE	D
	A	**0.88**	SS	BE	D
12.24	D	**1.77**	SS	MA	D
	A	**1.55**	SS	MA	D
13.43	D	**0.84**	SS	MA	D
	A	**2.00**	SS	MA	D
14.49	D	**0.19**	SS	MA	D
	A	**0.98**	SS	MA	D
15.45	D	**1.30**	SS	MA	D
	A	**1.40**	SS	MA	D

STRUCTURE
MA= MASSIVE
BE= BEDDED
LA= LAMINATED
CR= CRYSTALLINE

TEST TYPE
A= AXIAL
D= DIAMETRAL
I= IRREGULAR
C= CUBE

MOISTURE CONDITION
W= WET
M= MOIST
D= DRY

ROCK TYPE
SS= SANDSTONE
ST= SILTSTONE
SH= SHALE
YS= CLAYSTONE
IG= IGNEOUS

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POINT LOAD STRENGTH INDEX

Project No: GG11934.001
Project Address: 19-25 Balfour Street, Lindfield
Client: Balfour Group Pty Limited

Test Method: AS 4133.4.1
Test Date: 30/03/2025
Tested By: MG

Borehole No: BH1
Date Drilled: 26/03/2025

Depth	Test Type	Is(50) (Mpa)	Rock Type	Rock Structure	Moisture
16.63	D	**0.82**	SS	BE	D
	A	**0.95**	SS	BE	D
17.64	D	**0.84**	SS	BE	D
	A	**0.95**	SS	BE	D
18.32	D	**1.77**	SS	MA	D
	A	**1.92**	SS	MA	D
19.16	D	**1.03**	SS	MA	D
	A	**1.51**	SS	MA	D

Borehole No: BH1
Date Drilled: 26/03/2025

Depth	Test Type	Is(50) (Mpa)	Rock Type	Rock Structure	Moisture

STRUCTURE
MA= MASSIVE
BE= BEDDED
LA= LAMINATED
CR= CRYSTALLINE

TEST TYPE
A= AXIAL
D= DIAMETRAL
I= IRREGULAR
C= CUBE

MOISTURE CONDITION
W= WET
M= MOIST
D= DRY

ROCK TYPE
SS= SANDSTONE
ST= SILTSTONE
SH= SHALE
YS= CLAYSTONE
IG= IGNEOUS

GREEN GEOTECHNICS

Borehole No.
BH2
Page 1 of 3

Engineering Log - Borehole

Project No.: GG11934.001

Client:	Balfour Group Pty Limited	Commenced:	27/3/2025
Project Name:	Geotechnical Investigation: 19-25 Balfour Street, Lindfield	Completed:	27/3/2025
Hole Location:	19-25 Balfour Street, Lindfield	Logged By:	JK
Hole Position:	See Plan	Checked By:	MG

Drill Model and Mounting:	Hanjin DB8	Inclination:	-90°	RL Surface:	78.60 m		
Hole Diameter:	110 mm	Bearing:		Datum:	AHD	Operator:	LP

Drilling Information							***Soil Description***				***Observations***
Method	Support	Penetration	Groundwater Levels	Samples & Field Tests	Recovery	RL (m)	Depth (m)	Graphic Log	Group Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency Relative Density	Structure and Additional Observations
										0.18m CONCRETE: 180mm thick.			
									GW	0.30m FILL Sandy GRAVEL: pale grey with dark grey, sand is fine grained.	M / D		FILL
									CL	Gravelly Silty CLAY: low plasticity, pale grey with red brown, with some ironstone/ sandstone gravel; (completely weathered sandstone).			RESIDUAL SOIL
AD/T						77.6	1			1.50m	M / D	VSt	
						76.6	2			SANDSTONE: fine to medium grained, orange brown with pale grey and red brown, with clay seams.Estimate very low strength (Class 5). 2.50m	D		ROCK
						75.6	3			Continued on cored borehole sheet			
						74.6	4						
						73.6	5						

Method
AS - Auger Screwing
ADV Auger V Bit
ADT Auger Tungsten Carbide Bit
RR - Rock Roller
WB- Washbore

Support
C - Casing

Penetration
No resistance ranging to refusal

Water
Level (Date)
Inflow
Partial Loss
Complete Loss

Graphic Log/Core Loss
Core recovered (hatching indicates material)
Core loss

Samples and Tests
U - Undisturbed Sample
D - Disturbed Sample
SPT - Standard Penetration Test
PP - Pocket Penetrometer

Classification Symbols and Soil Descriptions
Based on Unified Soil Classification System

Moisture Condition
D - Dry
M - Moist
W - Wet
w - Moisture Content
PL - Plastic Limit
LL - Liquid Limit

Consistency/Relative Density
VS - Very Soft
S - Soft
F - Firm
VSt - Very Stiff
H - Hard
Fr - Friable
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

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Engineering Log - Cored Borehole

Project No.: GG11934.001

Client:	Balfour Group Pty Limited	Commenced:	27/3/2025
Project Name:	Geotechnical Investigation: 19-25 Balfour Street, Lindfield	Completed:	27/3/2025
Hole Location:	19-25 Balfour Street, Lindfield	Logged By:	JK
Hole Position:	See Plan	Checked By:	MG

Drill Model and Mounting:	Hanjin DB8	Inclination:	-90°	RL Surface:	78.60 m		
Barrel Type and Length:	IMPREG 3 m	Bearing:		Datum:	AHD	Operator:	LP

Drilling Information							Rock Substance			Rock Mass Defects	
Method	Support	Water	TCR (%)	RQD (%)	RL (m)	Depth (m)	Graphic Log	Material Description rock type: grain characteristics, colour, structure, minor components	Weathering	Strength UCS=$I_{(50)}$ ● - Axial ○ - Diametral ■ - UCS VL L M H VH EH	Average Defect Spacing (mm) 10 30 100 300 1000	Defect Description thickness, type, inclination, planarity, roughness, coating/infilling
					77.6	1						
					76.6	2		2.50m Continued from non-cored borehole sheet				
NMLC		100% Water Return	70	20	75.6	3		SANDSTONE: fine to medium grained, orange brown with pale grey and red brown. 2.90m	MW			P, 0°, PR, SM J, 90°, IR, RF P, 0°, PR, SM HB
								NO CORE 0.45m (2.90-3.35) 3.35m				
								SANDSTONE: fine to medium grained, orange brown with pale grey and red brown. 4.00m	MW			clay, SM P, 0°, PR, SM clay, SM P, 0°, PR, SM
					74.6	4		SANDSTONE: fine to medium grained, orange brown with pale grey (dark brown and grey bands).				P, 3°, PR, RF P, 0°, PR, RF P, 0°, PR, SM P, 0°, PR, SM P, 0°, PR, SM P, 0°, PR, SM P, 0°, PR, SM P, 0°, PR, SM P, 0°, PR, RF P, 0°, PR, RF P, 0°, PR, SM P, 0°, PR, RF P, 0°, IR, RF P, 5°, PR, SM HB
		100% Water Return	100	62	73.6	5			MW			P, 10°, PR, RF DB P, 0°, PR, SM
			100	80								

Method
AS - Auger Screwing
WB - Washbore
HQ3 - HQ3 Core Barrel
NQ3 - NQ3 Core Barrel
NMLC - NMLC Core Barrel

Water
Level (Date)
Inflow
Partial Loss
Complete Loss

Support
T - Timbering

Graphic Log/Core Loss
Core recovered (hatching indicates material)
Core loss

Weathering
FR - Fresh
SW - Slightly Weathered
MW - Moderately Weathered
DW - Distinctly Weathered
HW - Highly Weathered
XW - Extremely Weathered
RS - Residual Soil

Strength
VL - Very Low
L - Low
M - Medium
H - High
VH - Very High
EH - Extremely High

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Engineering Log - Cored Borehole

Project No.: GG11934.001

Client:	Balfour Group Pty Limited	Commenced:	27/3/2025
Project Name:	Geotechnical Investigation: 19-25 Balfour Street, Lindfield	Completed:	27/3/2025
Hole Location:	19-25 Balfour Street, Lindfield	Logged By:	JK
Hole Position:	See Plan	Checked By:	MG

Drill Model and Mounting:	Hanjin DB8	Inclination:	-90°	RL Surface:	78.60 m		
Barrel Type and Length:	IMPREG 3 m	Bearing:		Datum:	AHD	Operator:	LP

Drilling Information							***Rock Substance***			***Rock Mass Defects***	
Method	Support	Water	TCR (%)	RQD (%)	RL (m)	Depth (m)	Graphic Log	Material Description rock type: grain characteristics, colour, structure, minor components	Weathering	Strength UCS=$I_{(50)}$ ● - Axial ○ - Diametral ■ - UCS VL L M H VH EH	Average Defect Spacing (mm) 10 30 100 300 1000	Defect Description thickness, type, inclination, planarity, roughness, coating/infilling
NMLC		100% Water Return	100	80	71.6	7		SANDSTONE: fine to medium grained, orange brown with pale grey (dark brown and grey bands).*(continued)*	MW			P, 2°, PR, RF P, 0°, PR, RF P, 0°, PR, RF P, 0°, PR, RF P, 0°, PR, SM P, 0°, PR, SM P, 0°, PR, RF HB P, 0°, PR, SM HB P, 0°, PR, SM P, 0°, PR, SM P, 0°, PR, SM HB DB HB HB P, 0°, PR, SM
					70.6	8						
					69.6	9		9.52m				
		100% Water Return	10	85	68.6	10		SANDSTONE: fine to medium grained, pale grey with orange brown.	SW			P, 2°, PR, SM P, 0°, PR, SM HB P, 0°, PR, SM P, 0°, PR, RF P, 0°, PR, RF P, 0°, PR, RF P, 0°, PR, SM
								10.72m				
					67.6	11		SANDSTONE: fine grained, pale grey with dark grey bands.	FR			HB P, 0°, PR, SM P, 0°, PR, SM
								11.34m				
								SANDSTONE: fine to medium grained, pale grey with dark grey bands.	FR			P, 0°, PR, SM P, 0°, PR, SM
								11.90m				

Hole Terminated at 11.90 m
End - Target Depth

Method
AS - Auger Screwing
WB - Washbore
HQ3 - HQ3 Core Barrel
NQ3 - NQ3 Core Barrel
NMLC - NMLC Core Barrel

Water
Level (Date)
Inflow
Partial Loss
Complete Loss

Support
T - Timbering

Graphic Log/Core Loss
Core recovered (hatching indicates material)
Core loss

Weathering
FR - Fresh
SW - Slightly Weathered
MW - Moderately Weathered
DW - Distinctly Weathered
HW - Highly Weathered
XW - Extremely Weathered
RS - Residual Soil

Strength
VL - Very Low
L - Low
M - Medium
H - High
VH - Very High
EH - Extremely High

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GREEN GEOTECHNICS	Project No: GG11934.001	Geotechnical Investigation 19-25 Balfour Street, Lindfield	Box : 1 of 1
	Client: Balfour Group Pty Limited		
	Date Cored: 27 March 2025	**CORE PHOTO - BH2**	

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POINT LOAD STRENGTH INDEX

Project No: GG11934.001
Project Address: 19-25 Balfour Street, Lindfield
Client: Balfour Group Pty Limited

Test Method: AS 4133.4.1
Test Date: 30/03/2025
Tested By: MG
Page: 1 of 1

Borehole No: BH2
Date Drilled: 27/03/2025

Depth	Test Type	Is(50) (Mpa)	Rock Type	Rock Structure	Moisture
2.72	D	**0.29**	SS	MA	D
	A	**0.39**	SS	MA	D
3.90	D	**1.01**	SS	MA	D
	A	**0.98**	SS	MA	D
4.59	D	**1.56**	SS	MA	D
	A	**1.27**	SS	MA	D
5.54	D	**2.25**	SS	BE	D
	A	**1.23**	SS	BE	D
6.63	D	**1.04**	SS	BE	D
	A	**1.19**	SS	BE	D
7.65	D	**1.16**	SS	MA	D
	A	**0.80**	SS	MA	D

Borehole No: BH2
Date Drilled: 27/03/2025

Depth	Test Type	Is(50) (Mpa)	Rock Type	Rock Structure	Moisture
8.67	D	**2.09**	SS	MA	D
	A	**1.75**	SS	MA	D
9.66	D	**2.08**	SS	MA	D
	A	**1.62**	SS	MA	D
10.63	D	**2.02**	SS	MA	D
	A	**1.76**	SS	MA	D
11.58	D	**1.36**	SS	BE	D
	A	**1.02**	SS	BE	D

STRUCTURE
MA= MASSIVE
BE= BEDDED
LA= LAMINATED
CR= CRYSTALLINE

TEST TYPE
A= AXIAL
D= DIAMETRAL
I= IRREGULAR
C= CUBE

MOISTURE CONDITION
W= WET
M= MOIST
D= DRY

ROCK TYPE
SS= SANDSTONE
ST= SILTSTONE
SH= SHALE
YS= CLAYSTONE
IG= IGNEOUS

GREEN GEOTECHNICS

Borehole No.
BH3
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Engineering Log - Borehole

Project No.: GG11934.001

Client:	Balfour Group Pty Limited	Commenced:	27/3/2025
Project Name:	Geotechnical Investigation: 19-25 Balfour Street, Lindfield	Completed:	27/3/2025
Hole Location:	19-25 Balfour Street, Lindfield	Logged By:	JK
Hole Position:	See Plan	Checked By:	MG

Drill Model and Mounting:	Christie Utility	Inclination:	-90°	RL Surface:	83.50 m		
Hole Diameter:	110 mm	Bearing:		Datum:	AHD	Operator:	JK

Drilling Information							***Soil Description***				***Observations***
Method	Support	Penetration	Groundwater Levels	Samples & Field Tests	Recovery	RL (m)	Depth (m)	Graphic Log	Group Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency Relative Density	Structure and Additional Observations
AD/T				0.60m D-S1 0.70m		82.5	1		SP	0.05m PAVERS: 50mm thick.	M		FILL
									SC	0.12m FILL SAND: fine to medium grained, yellow brown.			FILL
										0.20m CONCRETE: 80mm thick.	M / D		
									CI /CH	0.50m FILL Gravelly Clayey SAND: fine to medium grained, dark grey with pale grey, with some gravel.			RESIDUAL SOIL
										Clayey CLAY: medium to high plasticity, orange brown.	M	F to St	
				1.50m D-S2 1.60m		81.5	2		CL	1.00m Gravelly CLAY: low plasticity, red brown with pale grey and orange brown, (completely weathered sandstone/ shale).	M / D	VSt	
									CL	2.00m Sandy CLAY: low plasticity, pale grey, sand is fine to medium grained; (completely weathered sandstone).	M / D	H	
						80.5	3			2.70m SANDSTONE: fine to medium grained, pale grey with orange brown, Estimate very low strength (Class 5).	D		ROCK
										2.90m Hole Terminated at 2.90 m Refusal on weathered sandstone (Class 4)			
						79.5	4						
						78.5	5						

Method
AS - Auger Screwing
ADV Auger V Bit
ADT Auger Tungsten Carbide Bit
RR - Rock Roller
WB- Washbore

Support
C - Casing

Penetration
No resistance ranging to refusal

Water
Level (Date)
Inflow
Partial Loss
Complete Loss

Graphic Log/Core Loss
Core recovered (hatching indicates material)
Core loss

Samples and Tests
U - Undisturbed Sample
D - Disturbed Sample
SPT - Standard Penetration Test
PP - Pocket Penetrometer

Classification Symbols and Soil Descriptions
Based on Unified Soil Classification System

Moisture Condition
D - Dry
M - Moist
W - Wet
w - Moisture Content
PL - Plastic Limit
LL - Liquid Limit

Consistency/Relative Density
VS - Very Soft
S - Soft
F - Firm
VSt - Very Stiff
H - Hard
Fr - Friable
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

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GREEN GEOTECHNICS

Borehole No.
BH4
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Engineering Log - Borehole

Project No.: GG11934.001

Client:	Balfour Group Pty Limited	Commenced:	27/3/2025
Project Name:	Geotechnical Investigation: 19-25 Balfour Street, Lindfield	Completed:	27/3/2025
Hole Location:	19-25 Balfour Street, Lindfield	Logged By:	JK
Hole Position:	See Plan	Checked By:	MG

Drill Model and Mounting:	Hand Auger	Inclination:	-90°	RL Surface:	83.20 m		
Hole Diameter:	65 mm	Bearing:		Datum:	AHD	Operator:	JK

Drilling Information								***Soil Description***			***Observations***
Method	Support	Penetration	Groundwater Levels	Samples & Field Tests	Recovery	RL (m)	Depth (m)	Graphic Log	Group Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency Relative Density	Structure and Additional Observations
HA						83.2	0		CI	FILL Silty CLAY: medium plasticity, dark brown, trace gravel.	M		FILL
										0.40m			
									CI /CH	FILL Gravelly Silty CLAY: medium to high plasticity, orange brown with pale grey and dark grey, with some gravel (tree roots).	M		
										0.60m			
										Hole Terminated at 0.60 m Refusal in fill			
						82.2	1						
						81.2	2						
						80.2	3						
						79.2	4						
						78.2	5						

Method
AS - Auger Screwing
ADV Auger V Bit
ADT Auger Tungsten Carbide Bit
RR - Rock Roller
WB- Washbore

Support
C - Casing

Penetration
No resistance ranging to refusal

Water
Level (Date)
Inflow
Partial Loss
Complete Loss

Graphic Log/Core Loss
Core recovered (hatching indicates material)
Core loss

Samples and Tests
U - Undisturbed Sample
D - Disturbed Sample
SPT - Standard Penetration Test
PP - Pocket Penetrometer

Classification Symbols and Soil Descriptions
Based on Unified Soil Classification System

Moisture Condition
D - Dry
M - Moist
W - Wet
w - Moisture Content
PL - Plastic Limit
LL - Liquid Limit

Consistency/Relative Density
VS - Very Soft
S - Soft
F - Firm
VSt - Very Stiff
H - Hard
Fr - Friable
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

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GREEN GEOTECHNICS

Borehole No.
BH5
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Engineering Log - Borehole

Project No.: GG11934.001

Client:	Balfour Group Pty Limited	Commenced:	27/3/2025
Project Name:	Geotechnical Investigation: 19-25 Balfour Street, Lindfield	Completed:	27/3/2025
Hole Location:	19-25 Balfour Street, Lindfield	Logged By:	JK
Hole Position:	See Plan	Checked By:	MG

Drill Model and Mounting:	Christie Utility	Inclination:	-90°	RL Surface:	83.50 m		
Hole Diameter:	110 mm	Bearing:		Datum:	AHD	Operator:	JK

Drilling Information								Soil Description				Observations
Method	Support	Penetration	Groundwater Levels	Samples & Field Tests	Recovery	RL (m)	Depth (m)	Graphic Log	Group Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency Relative Density	Structure and Additional Observations
AD/T				0.60m D-S3 0.70m					CL	FILL Silty Sandy CLAY: low plasticity, dark brown, sand is fine grained. 0.30m	M		FILL
									CI /CH	Silty CLAY: medium to high plasticity, orange brown. 0.60m	M	F to St	RESIDUAL SOIL
				1.00m D-S4 1.10m		82.5	1		CL	Silty Sandy CLAY: low plasticity, orange brown, sand is fine grained. 1.00m	D	VSt	
										Sandy CLAY: red brown, sand is fine to medium grained. 1.20m	D	VSt	
										1.30m SANDSTONE: fine to medium grained, red brown, Estimate very low strength (Class 5).	D		ROCK
						81.5	2			Hole Terminated at 1.30 m Refusal on weathered sandstone (Class 4)			
						80.5	3						
						79.5	4						
						78.5	5						

Method
AS - Auger Screwing
ADV Auger V Bit
ADT Auger Tungsten Carbide Bit
RR - Rock Roller
WB- Washbore

Penetration
No resistance ranging to refusal

Water
Level (Date)
Inflow
Partial Loss
Complete Loss

Samples and Tests
U - Undisturbed Sample
D - Disturbed Sample
SPT - Standard Penetration Test
PP - Pocket Penetrometer

Moisture Condition
D - Dry
M - Moist
W - Wet
w - Moisture Content
PL - Plastic Limit
LL - Liquid Limit

Consistency/Relative Density
VS - Very Soft
S - Soft
F - Firm
VSt - Very Stiff
H - Hard
Fr - Friable
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

Support
C - Casing

Graphic Log/Core Loss
Core recovered (hatching indicates material)
Core loss

Classification Symbols and Soil Descriptions
Based on Unified Soil Classification System

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GREEN GEOTECHNICS

Borehole No.
BH6
Page 1 of 1

Engineering Log - Borehole

Project No.: GG11934.001

Client:	Balfour Group Pty Limited	Commenced:	27/3/2025
Project Name:	Geotechnical Investigation: 19-25 Balfour Street, Lindfield	Completed:	27/3/2025
Hole Location:	19-25 Balfour Street, Lindfield	Logged By:	JK
Hole Position:	See Plan	Checked By:	MG

Drill Model and Mounting:	Hand Auger	Inclination:	-90°	RL Surface:	83.50 m		
Hole Diameter:	65 mm	Bearing:		Datum:	AHD	Operator:	JK

Drilling Information							Soil Description				Observations
Method	Support	Penetration	Groundwater Levels	Samples & Field Tests	Recovery	RL (m)	Depth (m)	Graphic Log	Group Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency Relative Density	Structure and Additional Observations
HA									CL	FILL Silty CLAY: low plasticity, dark brown, trace of fine grained sand; trace of gravel.	M		FILL
										0.40m Hole Terminated at 0.40 m Refusal in fill			
						82.5	1						
						81.5	2						
						80.5	3						
						79.5	4						
						78.5	5						

Method
AS - Auger Screwing
ADV Auger V Bit
ADT Auger Tungsten Carbide Bit
RR - Rock Roller
WB- Washbore

Support
C - Casing

Penetration
No resistance ranging to refusal

Graphic Log/Core Loss
Core recovered (hatching indicates material)
Core loss

Water
Level (Date)
Inflow
Partial Loss
Complete Loss

Samples and Tests
U - Undisturbed Sample
D - Disturbed Sample
SPT - Standard Penetration Test
PP - Pocket Penetrometer

Classification Symbols and Soil Descriptions
Based on Unified Soil Classification System

Moisture Condition
D - Dry
M - Moist
W - Wet
w - Moisture Content
PL - Plastic Limit
LL - Liquid Limit

Consistency/Relative Density
VS - Very Soft
S - Soft
F - Firm
VSt - Very Stiff
H - Hard
Fr - Friable
VL - Very Loose
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GREEN GEOTECHNICS

Borehole No.
BH7
Page 1 of 1

Engineering Log - Borehole

Project No.: GG11934.001

Client:	Balfour Group Pty Limited	Commenced:	27/3/2025
Project Name:	Geotechnical Investigation: 19-25 Balfour Street, Lindfield	Completed:	27/3/2025
Hole Location:	19-25 Balfour Street, Lindfield	Logged By:	JK
Hole Position:	See Plan	Checked By:	MG

Drill Model and Mounting:	Christie Utility	Inclination:	-90°	RL Surface:	82.50 m		
Hole Diameter:	110 mm	Bearing:		Datum:	AHD	Operator:	JK

Drilling Information							Soil Description				Observations
Method	Support	Penetration	Groundwater Levels	Samples & Field Tests	Recovery	RL (m)	Depth (m)	Graphic Log	Group Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency Relative Density	Structure and Additional Observations
AD/T									CL	FILL Silty Sandy CLAY: low plasticity, dark brown, sand is fine grained.	M		FILL
									CL	0.30m FILL Gravelly Sandy CLAY: low plasticity, dark brown with orange brown, sand is fine grained; with some gravel/ brick/ cobbles.	M		
										0.60m Hole Terminated at 0.60 m Refusal in fill (x3 locations)			
						81.5	1						
						80.5	2						
						79.5	3						
						78.5	4						
						77.5	5						

Method
AS - Auger Screwing
ADV Auger V Bit
ADT Auger Tungsten Carbide Bit
RR - Rock Roller
WB- Washbore

Support
C - Casing

Penetration
No resistance ranging to refusal

Water
Level (Date)
Inflow
Partial Loss
Complete Loss

Graphic Log/Core Loss
Core recovered (hatching indicates material)
Core loss

Samples and Tests
U - Undisturbed Sample
D - Disturbed Sample
SPT - Standard Penetration Test
PP - Pocket Penetrometer

Classification Symbols and Soil Descriptions
Based on Unified Soil Classification System

Moisture Condition
D - Dry
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Dynamic Cone Penetrometer Test Report

Project Number: GG11934.001

Site Address: 19-25 Balfour Street, Lindfield

Test Date: 27/03/2025

Test Method: **AS1289.6.3.2**

Technician: JK

Test No	BH3	BH4	BH5	BH6	BH7	
Starting Level	Surface Level	Surface Level	Surface Level	Surface Level	Surface Level	
Depth (m)	Penetration Resistance (blows / 150mm)					
0.00 - 0.15	*	1	*	1	1	
0.15 - 0.30	*	3	3	3	4	
0.30 - 0.45	*	12	4	4	22	
0.45 - 0.60	*	22	6	10	Refusal	
0.60 - 0.75	2	Refusal	6	11		
0.75 - 0.90	4		14	22		
0.90 - 1.05	18		22	Refusal		
1.05 - 1.20	22		Refusal			
1.20 - 1.35	Refusal					
1.35 - 1.50						
1.50 - 1.65						
1.65 - 1.80						
1.80 - 1.95						
1.95 - 2.10						
2.10 - 2.25						
2.25 - 2.40						
2.40 - 2.55						
2.55 - 2.70						
2.70 - 2.85						
2.85 - 3.00						

Remarks: * Pre drilled prior to testing

SAMPLING & IN-SITU TESTING

GREEN GEOTECHNICS

Sampling

Sampling is carried out during drilling or test pitting to allow engineering examination (and laboratory testing where required) of the soil or rock. Disturbed samples taken during drilling provide information on colour, type, inclusions and, depending upon the degree of disturbance, some information on strength and structure. Undisturbed samples are taken by pushing a thin walled sample tube into the soil and withdrawing it to obtain a sample of the soil in a relatively undisturbed state. Such samples yield information on structure and strength and are necessary for laboratory determination of shear strength and compressibility.

Test Pits

Test pits are usually excavated with a backhoe or an excavator, allowing close examination of the in-situ soil if it is safe to enter into the pit. The depth of excavation is limited to about 3 m for a backhoe and up to 6 m for a large excavator.

Large Diameter Augers

Boreholes can be drilled using a large diameter auger, typically up to 300 mm or larger in diameter mounted on a standard drilling rig. The cuttings are returned to the surface at intervals (generally not more than 0.5 m) and are disturbed but usually unchanged in moisture content.

Continuous Spiral Flight Augers

The borehole is advanced using 90-115 mm diameter continuous spiral flight augers which are withdrawn at intervals to allow sampling or in-situ testing. This is a relatively economical means of drilling in clays and sands above the water table. Samples are returned to the surface, or may be collected after withdrawal of the auger flights, but they are disturbed and may be mixed with soils from the sides of the hole.

Non-core Rotary Drilling

The borehole is advanced using a rotary bit, with water or drilling mud being pumped down the drill rods and returned up the annulus, carrying the drill cuttings. Only major changes in stratification can be determined from the cuttings, together with some information from the rate of penetration.

Diamond Core Rock Drilling

A continuous core sample of can be obtained using a diamond tipped core barrel, usually with a 50 mm internal diameter (NMLC). The borehole is advanced using a water or mud flush to lubricate the bit and removed cuttings.

Standard Penetration Tests

Standard penetration tests (SPT) are used as a means of estimating the density or strength of soils and of obtaining a relatively undisturbed sample. The test procedure is described in Australian Standard 1289, Methods of Testing Soils for Engineering Purposes - Test 6.3.1. The test is carried out in a borehole by driving a 50 mm diameter split sample tube under the impact of a 63 kg hammer with a free fall of 760 mm. It is normal for the tube to be driven in three successive 150 mm increments and the 'N' value is taken as the number of blows for the last 300 mm. In dense sands, very hard clays or weak rock, the full 450 mm penetration may not be practicable, and the test is discontinued.

The test results are reported in the following form.

- In the case where full penetration is obtained with successive blow counts for each 150 mm of, say, 4, 6 and 7 as:

  4,6,7
  N=13

- In the case where the test is discontinued before the full penetration depth, say after 15 blows for the first 150 mm and 30 blows for the next 40 mm as: 15, 30/40 mm.

The results of the SPT tests can be related empirically to the engineering properties of the soils.

Dynamic Cone Penetrometer Tests / Perth Sand Penetrometer Tests

Dynamic penetrometer tests (DCP or PSP) are carried out by driving a steel rod into the ground using a standard weight of hammer falling a specified distance. As the rod penetrates the soil the number of blows required to penetrate each successive 150 mm depth are recorded. Two types of penetrometer are commonly used.

- Perth sand penetrometer - a 16 mm diameter flat ended rod is driven using a 9 kg hammer dropping 600 mm (AS 1289, Test 6.3.3). This test was developed for testing the density of sands and is mainly used in granular soils and filling.

- Cone penetrometer - a 16 mm diameter rod with a 20 mm diameter cone end is driven using a 9 kg hammer dropping 510 mm (AS 1289, Test 6.3.2). This test was developed initially for pavement subgrade investigations, and correlations of the test results with California Bearing Ratio have been published by various road authorities.

SOIL DESCRIPTIONS

GREEN GEOTECHNICS

Description and Classification Methods

The methods of description and classification of soils and rocks used in this report are based on Australian Standard AS 1726, Geotechnical Site Investigations Code. In general, the descriptions include strength or density, colour, structure, soil or rock type and inclusions.

Soil Types

Soil types are described according to the predominant particle size, qualified by the grading of other particles present:

Type	Particle Size (mm)
Boulder >200	Boulder >200
Cobble 63 - 200	Cobble 63 - 200
Gravel 2.36 - 63	Gravel 2.36 - 63
Sand 0.075 - 2.36	Sand 0.075 - 2.36
Silt 0.002 - 0.075	Silt 0.002 - 0.075
Clay <0.002	Clay <0.002

The sand and gravel sizes can be further subdivided as follows:

Type	Particle Size (mm)
Coarse Gravel	20 – 63
Medium Gravel	6 – 20
Fine Sand	2.36 – 6
Coarse Sand	0.6 – 2.36
Medium Sand	0.2 – 0.6
Fine Sand	0.075 – 0.2

The proportions of secondary constituents of soils are described as:

Term	Proportion
And	Specify
Adjective	20 - 35%
Slightly	12 - 20%
With some	5 - 12%
With a trace of	0 - 5%

Definitions of grading terms used are:

- Well graded - a good representation of all particle sizes
- Poorly graded - an excess or deficiency of particular sizes within the specified range
- Uniformly graded - an excess of a particular particle size
- Gap graded - a deficiency of a particular particle size with the range

Cohesive Soils

Cohesive soils, such as clays, are classified on the basis of undrained shear strength. The strength may be measured by laboratory testing, or estimated by field tests or engineering examination. The strength terms are defined as follows:

Description	Abbreviation	Undrained Shear Strength (kPa)
Very soft	VS	<12
Soft	S	12 - 25
Firm	F	25 - 50
Stiff	ST	50 - 100
Very stiff	VST	100 - 200
Hard	H	200

Cohesionless Soils

Cohesionless soils, such as clean sands, are classified on the basis of relative density, generally from the results of standard penetration tests (SPT), cone penetration tests (CPT) or dynamic penetrometers (DCP). The relative density terms are given below:

Relative Density	Abbreviation	SPT N Value	CPT qc value (MPa)
Very loose	VL	<4	<2
Loose	L	4 - 10	2 -5
Medium Dense	MD	10-30	5-15
Dense	D	30-50	15-25
Very Dense	VD	>50	>25

Soil Origin

It is often difficult to accurately determine the origin of a soil. Soils can generally be classified as:

- Residual soil - derived from in-situ weathering of the underlying rock;
- Transported soils - formed somewhere else and transported by nature to the site; or
- Fill - moved by man.

Transported soils may be further subdivided into:

- Alluvium - river deposits
- Lacustrine - lake deposits
- Aeolian - wind deposits
- Littoral - beach deposits
- Estuarine - tidal river deposits
- Talus - scree or coarse colluvium
- Slopewash or Colluvium - transported downslope by gravity assisted by water. Often includes angular rock fragments and boulders.

ROCK DESCRIPTIONS

GREEN GEOTECHNICS

Rock Strength

The Rock strength is defined by the Point Load Strength Index ($Is_{(50)}$) and refers to the strength of the rock substance and not the strength of the overall rock mass, which may be considerably weaker due to defects. The test procedure is described by Australian Standard 4133.4.1 - 1993. The terms used to describe rock strength are as follows:

Term	Abbreviation	Point Load Index $IS_{(50)}$ MPa	Approximate Unconfined Compressive Strength MPa*
Extremely low	EL	<0.03	<0.6
Very low	VL	0.03 - 0.1	0.6 - 2
Low	L	0.1 - 0.3	2 - 6
Medium	M	0.3 - 1.0	6 - 20
High	H	1 - 3	20 - 60
Very high	VH	3 - 10	60 - 200

* Assumes a ratio of 20:1 for UCS to $IS_{(50)}$

Degree of Weathering

The degree of weathering of rock is classified as follows:

Term	Abbreviation	Description
Residual Soil	RS	Soil developed on extremely weathered rock, the mass structure and substance fabric are no longer evident.
Extremely weathered	EW	Rock substance has soil properties, i.e. it can be remoulded and classified as a soil but the texture of the original rock is still evident.
Highly weathered	HW	Limonite staining or bleaching affects whole of rock substance and other signs of decomposition are evident. Porosity and strength may be altered as a result of iron leaching or deposition. Colour and strength of original fresh rock is not recognisable.
Distinctly Weathered	DW	Rock strength usually changed by weathering. The rock may be highly discoloured usually by iron staining.
Moderately weathered	MW	Staining and discolouration of rock substance has taken place.
Slightly weathered	SW	Rock substance is slightly discoloured but shows little or no change of strength from fresh rock.
Fresh	FR	No signs of decomposition or staining.

Degree of Fracturing

The following classification applies to the spacing of natural fractures in core samples (bedding plane partings, joints and other defects, excluding drilling breaks

Term	Description
Fragmented	Fragments of <20 mm
Highly Fractured	Core lengths of 20-40 mm with some fragments
Fractured Core	Core lengths of 40-200 mm with some shorter and longer sections
Slightly Fractured	Core lengths of 200-1000 mm with some shorter and loner sections
Unbroken	Unbroken Core lengths mostly > 1000 mm

Stratification Spacing

For sedimentary rocks the following terms may be used to describe the spacing of bedding partings:

Term	Separation of Stratification Planes
Thinly laminated	6 mm
Laminated	6 mm to 20 mm
Very thinly bedded	20 mm to 60 mm
Thinly bedded	60 mm to 0.2 m
Medium bedded	0.2 m to 0.6 m
Thickly bedded	0.6 m to 2 m
Very thickly bedded	2 m

Rock Quality Designation

The quality of the cored rock can be measured using the Rock Quality Designation (RQD) index, defined as:

$$\text{RQD \%} = \frac{\text{cumulative length of 'sound' core sections} \geq 100 \text{ mm long}}{\text{total drilled length of section being assessed}}$$

'sound' rock is assessed to be rock of low strength or better. The RQD applies only to natural fractures. If the core is broken by drilling/handling, then the broken pieces are fitted back together and are not included in the calculation of RQD.

ABBREVIATIONS

GREEN GEOTECHNICS

Introduction

These notes summarise abbreviations commonly used on borehole logs and test pit reports.

Drilling or Excavation Methods

C	Core Drilling
R	Rotary drilling
ADT	Auger Drill TC Bit
ADV	Auger Drill V Brit
NMLC	Diamond core - 52 mm dia
NQ	Diamond core - 47 mm dia
HQ	Diamond core - 63 mm dia
PQ	Diamond core - 81 mm dia

Water

Z	Water seep
V	Water level

Sampling and Testing

A	Auger sample
B	Bulk sample
D	Disturbed sample
S	Chemical sample
U50	Undisturbed tube sample (50mm)
W	Water sample
PP	Pocket Penetrometer (kPa)
PL	Point load strength Is(50) MPa
S	Standard Penetration Test
V	Shear vane (kPa)

Description of Defects in Rock

The abbreviated descriptions of the defects should be in the following order: Depth, Type, Orientation, Coating, Shape, Roughness and Other. Drilling and handling breaks are not usually included on the logs.

Defect Type

C	Crushed Seam
DB	Drilling Break
DL	Drilling Lift
EW	Extremely Weathered Seam
HB	Handling Break
IS	Infilled Seam
J	Joint
MB	Mechanical Break
P	Parting
S	Sheared Surface
SS	Sheared Seam
SZ	Sheared Zone

Orientation

The inclination of defects is always measured from the perpendicular to the core axis.

h	horizontal
v	vertical
sh	sub-horizontal
sv	sub-vertical

Coating or Infilling Term

cn	clean
ct	coating
sn	stained
vn	veneer

Coating Descriptor

ca	calcite
cbs	carbonaceous
cly	clay
fe	iron oxide
mn	manganese
slt	silty

Shape

cu	curved
ir	irregular
pr	planar
st	stepped
un	undulating

Roughness

po	polished
rf	rough
sl	slickensided
sm	smooth
vr	very rough

Other

fg	fragmented
bnd	band
qtz	quartz

SYMBOLS

Graphic Symbols for Soil and Rock

General

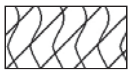
Asphalt

Road base

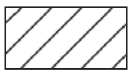
Concrete

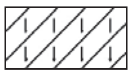
Filling

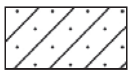
Soils


Topsoil

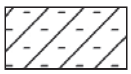
Peat


Clay

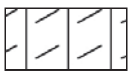

Silty clay

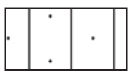

Sandy clay

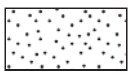
Gravelly clay

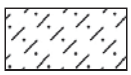

Shaly clay

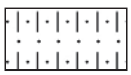
Silt


Clayey silt


Sandy silt

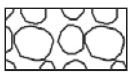

Sand

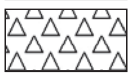

Clayey sand


Silty sand

Gravel

Sandy gravel


Cobbles, boulders

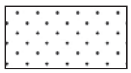

Talus

Sedimentary Rocks

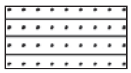
Boulder conglomerate

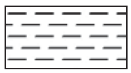
Conglomerate

Conglomeratic sandstone

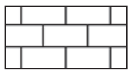

Sandstone

Siltstone

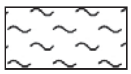

Laminite

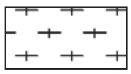

Mudstone, claystone, shale

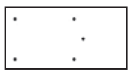
Coal


Limestone

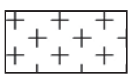
Metamorphic Rocks

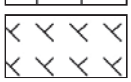

Slate, phyllite, schist

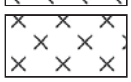

Gneiss

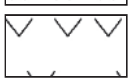

Quartzite

Igneous Rocks


Granite


Dolerite, basalt, andesite


Dacite, epidote

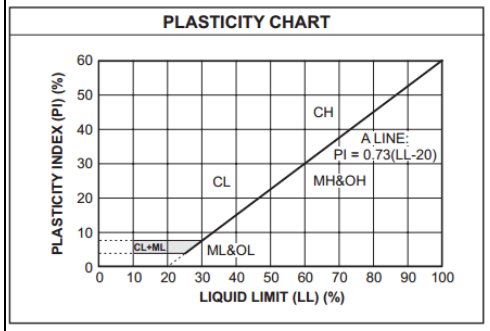

Tuff, breccia

Porphyry

UNIFIED SOIL CLASSIFICATION TABLE

GREEN GEOTECHNICS

Field Identification Procedures (Excluding particles larger than 75um and basing fractions on estimated weights)				Group Symbols	Typical Names	Information Required for Describing Soils	Laboratory Classification Criteria
Coarse-grained soils More than half of the material is large that 75um sieve size[b] (The 75um sieve size is about the particle visible to the naked eye)	Gravels More than half of the coarse fraction is larger than a 4mm sieve	Clean gravels (little or no fines)	Wide range in grain size and substantial amounts of all intermediate particle sizes	*GW*	Well graded gravels, gravel-sand mixtures, little or no fines	Give typical name: indicative approximate percentages of sand and gravel; maximum size; angularity; surface condition, and hardness of the coarse grains; local of geologic name and other pertinent descriptive information; and symbols in parentheses For undisturbed soils add information on stratification, degree of compactness, cementation, moisture conditions and drainage characteristics Example: *Silty Sand*, gravelly; about 20% hard, angular gravel particles 12mm maximum size; rounded and subangular sand grains, coarse to fine, about 15% non-plastic fines low dry strength; well compacted and moist in place; alluvial sand; *(SM)*	Use grain size curve in identifying the fractions as given under field identification Determine percentages of gravel and sand from grain size curve Depending on percentage of fines (fraction smaller than 75um sieve size) coarse grained soils are classified as follows Less than 5% GW, GP, SW, SP More than 12% GM, GC, SM, SC 5 to 12% Borderline cases requiring use of dual symbol $C_u = \frac{D_{60}}{D_{10}}$ Greater than 4 $C_c = \frac{(D_{30})^2}{D_{10} \times D_{60}}$ Between 1 and 3 Not meeting all graduation requirements for *GW* Atterberg limits below "A" line or *PI* less than 4 — Above "A" line with *PI* between 4 and 7 are borderline cases of requiring use of dual symbols Atterberg limits above "A" line with *PI* greater than 7
			Predominantly one size or range of sizes with some intermediate sizes missing	*GP*	Poorly graded gravels, grave-sand mixtures, little or no fines		
		Gravels with fines (appreciable amount of fines)	Nonplastic fines (for identification procedures see *ML* below)	*GM*	Silty gravels, poorly graded gravel-sand-silt mixtures		
			Plastic fines (for identification procedures see *CL* below)	*GC*	Clayey gravels, poorly graded gravel-sand-clay mixtures		
	Sands More than half of the coarse fraction is smaller than a 4mm sieve	Clean sands (little or no fines)	Wide range in grain size and substantial amounts of all intermediate particle sizes	*SW*	Well graded sands, gravelly sands, little or no fines		$C_u = \frac{D_{60}}{D_{10}}$ Greater than 6 $C_c = \frac{(D_{30})^2}{D_{10} \times D_{60}}$ Between 1 and 3 Not meeting all graduation requirements for *SW* Atterberg limits below "A" line or *PI* less than 5 — Above "A" line with *PI* between 4 and 7 are borderline cases of requiring use of dual symbols Atterberg limits above "A" line with *PI* greater than 7
			Predominantly one size or range of sizes with some intermediate sizes missing	*SP*	Poorly graded sands, gravelly sands, little or no fines		
		Sands with fines (appreciable amount of fines)	Nonplastic fines (for identification procedures see *ML* below)	*SM*	Silty sands, poorly graded sand-silt mixtures		
			Plastic fines (for identification procedures see *CL* below)	*SC*	Clayey sands, poorly graded sand-clay mixtures		
Find-grained soils More than half of the material is smaller than 75um sieve size	Identification Procedures of Fractions Smaller than 380 um Sieve Size						
	Silts and clays liquid limit less than 50	Dry Strength (crushing characteristics)	Dilatancy (reaction to shaking)	Toughness (consistency near plastic limit)			
		None to slight	Quick to slow	None	*ML*	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands with slit plasticity	Give typical name: indicative degree and character of plasticity, amount and maximum size of coarse grains; colour in wet condition, odour if any, local or geologic name, and other pertinent descriptive information, and symbol in parentheses For undisturbed soils add information on structure, stratification, consistency in undisturbed and remoulded states, moisture and drainage conditions Example: *Clayey Silt,* brown; slightly plastic; small percentage of fine sand; numerous vertical root holes; firm and dry in place; loess; *(ML)*
		Medium to high	None to very slow	Medium	*CL*	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays	
		Slight to medium	Slow	Slight	*OL*	Organic silts and organic silt-clays of low plasticity	
	Silts and clays liquid limit greater than 50	Slight to medium	Slow to none	Slight to medium	*MH*	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, clastic silts	
		High to very high	None	High	*CH*	Inorganic clays of high plasticity, fat clays	
		Medium to high	None to very slow	Slight to medium	*OH*	Organic clays of medium to high plasticity	
Highly Organic Soils		Readily identified by colour, odour, spongy feel and frequently by fibrous texture			*Pt*	Peat and other highly organic soils	



Plasticity Chart
For laboratory classification of fine-grained soils

Note: 1 Soils possessing characteristics of two groups are designated by combinations of group symbols (eg. GW-GC, well graded gravel-sand mixture with clay fines

2 Soils with liquid limits of the order of 35 to 50 may be visually classified as being of medium plasticity

APPENDIX B

LABORATORY TEST RESULTS

CERTIFICATE OF ANALYSIS

Work Order	: **ES2508851**	Page	: 1 of 4
Client	: **GREEN GEOTECHNICS PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR MATTHEW GREEN	Contact	: Customer Services ES
Address	: PO BOX 3244 ROUSE HILL 2155	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61-2-8784 8555
Project	: GG11934/GG11189	Date Samples Received	: 28-Mar-2025 07:50
Order number	: GG11934/GG11189	Date Analysis Commenced	: 28-Mar-2025
C-O-C number	: ----	Issue Date	: 02-Apr-2025 13:09
Sampler	: J C		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 8		
No. of samples analysed	: 8		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- ED045G: The presence of Thiocyanate, Thiosulfate and Sulfite can positively contribute to the chloride result, thereby may bias results higher than expected. Results should be scrutinised accordingly.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	GG11934/S1	GG11934/S2	GG11934/S3	GG11934/S4	GG11189/S1
			Sampling date / time	24-Mar-2025 00:00	24-Mar-2025 00:00	24-Mar-2025 00:00	24-Mar-2025 00:00	26-Mar-2025 00:00
Compound	CAS Number	LOR	Unit	ES2508851-001	ES2508851-002	ES2508851-003	ES2508851-004	ES2508851-005
				Result	Result	Result	Result	Result
EA002: pH 1:5 (Soils)								
pH Value	---	0.1	pH Unit	6.0	4.7	5.2	5.0	8.6
EA010: Conductivity (1:5)								
Electrical Conductivity @ 25°C	---	1	µS/cm	93	73	53	67	217
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	---	0.1	%	18.0	7.9	13.3	11.4	18.5
ED040S : Soluble Sulfate by ICPAES								
Sulfate as SO4 2-	14808-79-8	10	mg/kg	50	30	40	60	40
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	10	mg/kg	130	40	20	60	50

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	GG11189/S2	GG11189/S3	GG11189/S4	----	----
			Sampling date / time	26-Mar-2025 00:00	26-Mar-2025 00:00	26-Mar-2025 00:00	----	----
Compound	CAS Number	LOR	Unit	ES2508851-006	ES2508851-007	ES2508851-008	-------	------
				Result	Result	Result	---	---
EA002: pH 1:5 (Soils)								
pH Value	----	0.1	pH Unit	7.0	6.1	6.4	----	----
EA010: Conductivity (1:5)								
Electrical Conductivity @ 25°C	----	1	µS/cm	28	40	65	----	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	14.3	22.0	17.5	----	----
ED040S : Soluble Sulfate by ICPAES								
Sulfate as SO4 2-	14808-79-8	10	mg/kg	10	20	40	----	----
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	10	mg/kg	20	20	30	----	----

APPENDIX C

GROUNDWATER INFLOW ASSESSMENT

Project Memorandum

To:	Vivian Zhang	**Company:**	Balfour Group
CC:		**Date:**	20 May 2026
From:	Siva Annapareddy		
Project Ref:	S-0359.00 M1 Rev5		
Subject:	19-25 Balfour Street, Lindfield NSW		

1 Introduction

1.1 General Information

Green Geotechnics Pty Ltd (Green Geo) previously undertook a geotechnical investigation for the site located at 19-25 Balfour Street, Lindfield NSW, on behalf of Balfour Group Pty Ltd.

It is understood that the proposed development is expected to include the following key elements:

- Demolition of existing buildings and structures on site
- Construction of a 10-storey residential flat building featuring:
  - basement level car parking
  - 30 affordable housing units
  - 90 market residential units
- Associated landscaping works, including a communal open space
- Associated infrastructure and services.

Based on the current architectural design, the lowest basement finished floor level is proposed at approximately RL 74 m AHD. Given the sloping site topography, this corresponds to bulk excavation depths of up to approximately 13.8 m below existing ground level. Additional localised excavations below the basement level are anticipated to accommodate lift pits, services, and floor slab.

Balfour Group Pty Ltd, C/- Green Geo has requested a supplementary groundwater assessment groundwater assessment and seepage modelling to support a State Significant Development Application (SSDA).

The objectives of this groundwater assessment are to:

- Estimate the steady-state groundwater inflow rate for a drained basement system;
- Assess potential groundwater drawdown effects beyond the excavation footprint and associated risks to adjacent property and infrastructure; and
- Provide recommendations for groundwater monitoring during construction.

D&N Geotechnical Pty Ltd (D&N) has been engaged by Balfour Group to undertake the groundwater seepage modelling.

1.2 Scope of Work

The scope of work for this groundwater assessment was defined in our fee proposal (Ref: S-0359.00 P1, dated 3 November 2025) and includes the following tasks:

- Interpretation of hydraulic conductivity for the encountered geological units based on in-situ rising / falling head tests;
- Review and interpretation of groundwater level (GWL) monitoring data obtained from installed monitoring wells (by others); and
- Seepage modelling of a representative unit section to estimate groundwater inflow rates to the proposed basement excavation.

This memorandum presented the adopted ground model, test findings, interpretation of groundwater monitoring results, estimated hydraulic conductivity values and the results of seepage modelling and groundwater inflow analysis.

1.3 Available Information

The content of this memorandum is based on the information available at the time of this assessment. The following information was made available to D&N:

- **Green Geotechnics** – Geotechnical Investigation Report, *19-25 Balfour Street, Lindfield*. Reference: GG11934.001, dated 15 May 2025.
- **Giles Tribe** – Architectural Drawings, *Residential Flat Building 19-25 Balfour Street, Lindfield*. Reference: 24062, dated 10 July 2025.

2 Subsurface Model

A summary of main geotechnical units encountered in the two (2 no.) cored boreholes completed within the proposed development site is presented in Table 1.

Table 1 – Summary of depths below ground level to geological units encountered in the boreholes

Geological Unit	BH1	BH2
Concrete/ Pavers	–	0.0 – 0.18
Topsoil/ Fill	0.0 – 0.3	0.18 – 0.3
Silty CLAY (Residual)	0.3 – 1.9	0.3 – 1.5
XW SHALE / SANDSTONE	1.9 – 2.3	1.5 – 2.5
MW SHALE / SANDSTONE	2.3 – 5.4 & 14.5 – 19.2	2.5 – 9.5
SW SHALE / SANDSTONE	5.4 – 7.5	9.5 – 10.7
FR SHALE / SANDSTONE	7.5 – 14.5	10.7 – 11.9

The subsurface model adopted for this assessment has been developed from the borehole logs provided by Green Geotechnics (refer Appendix B). In general, the interpreted subsurface profile comprises a thin surficial layer of concrete, pavers and/or uncontrolled fill of variable thickness, underlain by residual cohesive soils, grading with depth into extremely weathered to fresh bedrock.

The rock mass is characterised by an interlaminated shale sandstone sequence, with shale lenses and laminations becoming less frequent with depth, transitioning to more competent sandstone-dominated units in the slightly weathered to fresh rock.

3 Monitoring Well Observations

Green Geotechnics Pty Ltd (Green Geo) installed two (2) standpipe piezometers within the subject site. Monitoring well construction details, including screened intervals, filter pack/backfill, and casing details, were provided to D&N.

D&N installed automated water level loggers in each monitoring well on 2 February 2026, with groundwater levels recorded at 30-minute intervals. The loggers were retrieved on 3 March 2026, and the complete time-series dataset is presented in Appendix C.

Rising head and falling head (slug) tests were completed on 9 April 2026 to support the estimation of in-situ hydraulic conductivity of the rock mass. Standing water levels (SWL) were measured using an electronic dip meter: (i) prior to slug testing, (ii) immediately following addition/removal of water, and (iii) at the end of the recovery period. The manual measurements are summarised in Table 2.

Table 2 – Standing level of groundwater measured from top of casing

MW	Test Type	SWL prior to test on 9/04/2026 (m BTOC)	Depth immediately after water added/removed (m BTOC)	Depth at end of test (m BTOC)
MW1	Rising Head	3.86	4.00	3.85
	Falling Head	3.84	3.52	3.86
MW2	Rising Head	1.65	2.24	1.73
	Falling Head	1.77	1.08	1.65

Notes: (1) BTOC – Below Top of Collar (i.e., depth measured from the top of the monitoring well collar)

Continuous monitoring indicates that groundwater levels remained relatively stable over the monitoring period, with minor fluctuations likely attributable to short-term recharge and local hydrogeological variability. Groundwater levels were interpreted using the reduced levels (RLs) from the borehole logs and are summarised as follows:

- MW1: approximately RL 83 m AHD to RL 84 m AHD
- MW2: approximately RL 75 m AHD to RL 76 m AHD

The observed difference in groundwater elevations between monitoring wells indicates the presence of a hydraulic gradient across the site, generally consistent with site topography and subsurface conditions.

Based on borehole stratigraphy and monitoring well construction (i.e. screened intervals), the groundwater table is interpreted to be located within the weathered shale/sandstone rock mass. The overlying residual soil profile is inferred to be partially saturated, with groundwater flow into the proposed excavation predominantly controlled by:

- Secondary permeability within the rock mass (e.g. fractures, bedding planes); and
- Local variability in weathering and lithology.

These observations have been adopted to define the initial groundwater conditions and boundary conditions for the subsequent seepage and groundwater inflow modelling.

4 Hydraulic Conductivity Estimation

4.1 Nature of Groundwater Inflow

As noted in Section 3, the interpreted groundwater table lies within the shale/sandstone bedrock unit. While the permeability of intact rock is typically very low, groundwater flow within a rock mass is commonly governed by secondary porosity and discontinuities such as bedding planes, joints, fractures, and localised weathering features. Accordingly, groundwater inflows to the proposed excavation are expected to be controlled primarily by the presence, orientation and connectivity of discontinuities intersecting the excavation, rather than flow through the intact rock.

The storage capacity of discontinuities in shale/sandstone is generally limited and may be periodically recharged by rainfall infiltration and other surface inflows (e.g. preferential seepage pathways and/or leakage from buried services). As a result, groundwater inflows may be relatively higher during the initial stages of excavation but are expected to reduce to a long-term steady-state condition once local fracture storage is depleted and drainage conditions stabilise.

4.2 Slug Test Results

Rising head and falling head slug tests were analysed using the Hvorslev (1951) method within the AQTESOLV software. The interpreted hydraulic conductivity (K_{sat}) values are summarised in Table 3, and the AQTESOLV outputs are provided in Appendix D.

Table 3 – Summary of interpreted hydraulic conductivity values from slug testing

MW ID	Test Type	Manual K_{sat} (m/s)	Automatic (HOBO) K_{sat} (m/s)
MW1	Falling	1.8×10^{-6}	4.4×10^{-6}
	Rising	5.9×10^{-5}	5.9×10^{-5}
MW2	Falling	6.8×10^{-7}	1.8×10^{-7}
	Rising	9.6×10^{-9}	9.6×10^{-9}

4.3 Applicability to Seepage Modelling

The residual clay unit is located above the monitored groundwater levels and is therefore not expected to govern groundwater inflows to the basement excavation. Accordingly, the hydraulic conductivity of the residual clay has not been estimated for this assessment and has not been included in the seepage modelling (noting that its influence may be relevant for infiltration/perched seepage, depending on excavation staging and site drainage provisions).

The interpreted hydraulic conductivity values span several orders of magnitude (Table 3), which is generally consistent with groundwater flow in fractured rock where local discontinuities may govern individual and localised test results. The higher interpreted values are therefore considered likely to reflect fracture-dominant short-term behaviour and/or localised preferential flow paths intersected by the boreholes. Given that slug tests involve relatively small test volumes and are completed over short durations, the interpreted results may be more representative of initial transient inflow behaviour, rather than the long-term steady seepage rates relevant to basement excavation performance. Accordingly, for modelling purposes a range of hydraulic conductivity values has been adopted, as summarised in Table 4.

Table 4 – Adopted hydraulic conductivity (m/s) for seepage analysis

Material Unit	Observed Rate (m/s)	Adopted Value (m/s)	Ratio of Vertical to Horizontal Permeability
Shale/Sandstone (rock mass)	10^{-9} to 10^{-5}	Lower Bound (LB): 1 x 10^{-8} (tighter rock mass) Middle Estimate (ME): 1 x 10^{-7} (typical rock mass average) Upper Bound (UB): 1 x 10^{-6} (fractured rock mass)	0.5

An anisotropy ratio of 0.5 is considered appropriate for bedded rock masses where horizontal permeability typically exceeds vertical permeability due to bedding and fracture orientation.

Notwithstanding this, there are natural variations in the permeability rates of soils and rock and variations of one order of magnitude should not be considered unexpected.

5 Groundwater Inflow Modelling

Two-dimensional finite element seepage analyses were undertaken to estimate groundwater inflows to the proposed basement excavation under steady-state conditions. The analyses were completed using the commercially licensed software Slide2 (Version 9.021, 2022).

The seepage model was developed based on the basement cross-sections prepared by Giles Tribe and the adopted hydrogeological parameters described in Section 4. The key assumptions adopted in the seepage analyses are summarised below:

- An initial boundary groundwater level (GWL) of RL +84 m AHD was adopted to represent a typical SLS groundwater condition. This level corresponds to the highest groundwater level recorded during the monitoring period.
- An additional scenario was modelled with a boundary GWL of RL +85 m AHD, representing +1.0 m increase above typical conditions to simulate an ULS groundwater condition.
- Based on the provided basement sections, the bulk excavation level was interpreted as approximately RL +74 m AHD, allowing for an assumed 0.2 m thick basement slab and potential minor over excavation.
- It is anticipated that a soldier-pile wall or an equivalent shoring system will be adopted to provide temporary support to the soils and the underlying poor-quality shale bedrock.
- No impervious lining or seepage cut-off measure was considered on the cut faces. The excavation will therefore be maintained in a dry state by draining the excavation by means of a sump and pump system located in the base of the excavation. By way of draining of the seepage from the floor and walls, it is assumed that no uplift pore pressure would develop onto the floor system of a drained basement with sufficient drainage blanket material to convey seepage from the floor underside to the collector system.

6 Assessment Results

The predicted steady-state groundwater inflow rates for the assessed groundwater scenarios are summarised in Table 5. The seepage analyses were undertaken for a drained excavation condition with no seepage cut-off applied to the excavation faces. The total inflow volumes for the full basement footprint have been estimated by multiplying the predicted unit inflow rate by the assumed retained excavation perimeter of approximately 225 m (to be verified by Balfour Group).

It is noted that higher transient inflow rates may occur during the initial stages of excavation and dewatering (prior to achieving steady-state conditions), particularly in fractured rock where short-term inflows are influenced by local fracture storage and localised preferential flow paths. Outputs from seepage analysis, showing the unit inflow rates per meter run and the calculated groundwater (phreatic) surface, are provided in Appendix E.

Table 5 – Predicted steady-steady inflow rates for no cut-off/drained system

Modelling Case	Unit Inflow Rate (L/day/m run of wall)			Annual Inflow Rate (ML/year)		
	LB	ME	UB	LB	ME	UB
SLS (GWL = RL +84 m AHD)	5	50	500	0.4	4.0	40
ULS (GWL = RL +85 m AHD)	6	55	550	0.5	4.5	45

The predicted inflow rates are based on the currently proposed excavation geometry (three basement levels) and the adopted groundwater levels adopted for the SLS and ULS scenarios. For a drained excavation without a seepage cut-off, the estimated annual inflows are summarised by development phase in Table 6.

Table 6 – Estimated annual groundwater inflow by development phase

Phase	Recommended Planning Estimate	Comment
Construction	Approximately 4.5 ML/year	This estimate is based on the ULS groundwater scenario.
Operational	Approximately 4.0 ML/year	This estimate is based on the SLS groundwater scenario and represents the expected long-term drained basement condition, assuming no seepage cut-off or tanked basement system is adopted.

The upper-bound estimates in Table 5 are considered representative of localised zones of enhanced permeability, rather than uniform conditions around the full excavation perimeter. If a seepage cut-off system, such as a secant pile wall, or a fully tanked basement system is adopted, the actual groundwater inflow volumes during construction and/or operation would be expected to be significantly lower than the values presented above.

Regional groundwater drawdown beyond the excavation is expected to be limited and gradual, given that the excavation is predominantly within shale/sandstone bedrock of relatively low compressibility. Based on the interpreted ground conditions, adopted groundwater model, and predicted inflow rates, drawdown-induced settlement outside the excavation is expected to be low, approximately in the order of 5 to 6 mm. Note that the estimated settlement relates **only to groundwater drawdown effects** and does not include potential movements associated with excavation support deflection, and construction loading. The magnitude and extent of drawdown-induced settlement will depend on the degree of hydraulic connectivity within the rock mass and the historical range of groundwater fluctuations.

Given the depth of excavation, proximity of adjacent infrastructure, and potential variability of fractured rock permeability, groundwater levels and inflow rates should be monitored during construction to validate the model predictions. Monitoring should commence prior to dewatering to establish baseline conditions and should continue throughout excavation and dewatering works. If measured inflows or groundwater

drawdown exceed the predicted range, the dewatering methodology and mitigation measures should be reviewed and adjusted as required.

Based on the observed groundwater levels and predicted inflow rates for an open/drained retention system, such as a soldier pile wall with temporary ground anchor or an equivalent system, the overall dewatering demand is considered manageable. However, the adopted design assumptions should be validated during staged excavation and dewatering, with close review of measured inflow rates and groundwater response during the early stages of works. Where discrepancies between predicted and observed conditions are identified, appropriate mitigation measures and design refinements should be implemented as required.

Depending on the observed groundwater response and actual inflow conditions encountered during construction, additional groundwater control measures may be required locally, including supplementary sump and pump, localised seepage control, grouting, or modifications to the excavation and dewatering methodology. Consideration should also be given to monitoring potential impacts on adjacent infrastructure throughout the excavation and dewatering works.

The adopted retention system will influence groundwater loading conditions, seepage control requirements and the associated shoring design pressures, which should be confirmed during detailed design.

7 Conclusion and Recommendations

The seepage modelling has been undertaken based on the interpreted geological profile and hydraulic conductivity values derived from the in-situ slug testing within the shale/sandstone rock mass. It is noted that permeability in fractured rock can be highly variable and anisotropic; therefore, seepage modelling results should generally be considered accurate to within approximately one order of magnitude.

Based on the completed seepage analyses and the adopted assumptions, groundwater drawdown outside the proposed excavation is not expected to adversely impact adjoining structures. However, it is essential that groundwater levels are monitored during construction to validate the model predictions and confirm the response of the groundwater regime to dewatering.

The following recommendations are provided:

- *Groundwater Monitoring*: Install and maintain a network of groundwater monitoring wells around the perimeter of the excavation (minimum 4 wells or as required), located outside the zone of direct influence of construction activities. Monitoring should commence prior to dewatering to establish baseline conditions and continue throughout excavation and dewatering works.
- *Review of Monitoring Data*: Groundwater monitoring results should be reviewed regularly by the project geotechnical and hydrogeological engineers. If groundwater drawdown or inflow rates differ materially from model predictions, adjustments to the dewatering methodology (e.g., pumping rates, staged excavation, supplementary controls) may be required.
- *Staged Dewatering Validation*: During the early stages of excavation, inflow rates should be measured and compared against predicted inflows to validate model assumptions and refine dewatering requirements for subsequent stages.
- *Predicted Extraction Rates*: For the assessed drained system, the expected steady-state long-term extraction demand is approximately 4.0 ML/year (middle estimate).
- *Disposal Approvals*: Offsite groundwater disposal is expected to discharge to nearby stormwater infrastructure (subject to final design). This will require consultation and approvals (as applicable) from NSW Department of Planning and Environment – Water (DPE Water) / local council, and/or Sydney Water, including confirmation of allowable discharge quality and maximum discharge rates.

8 Limitations

The information contained in this report is solely intended for the client's use, and no responsibility or liability is assumed towards any third party. The data and opinions in the report are not to be used elsewhere without our prior review and agreement. The design and drawings provided herein are based on data collected from specific locations. It should be noted that there are inherent variations in subsurface conditions across the site that cannot be fully defined, even though exhaustive investigation. Subsurface conditions, including groundwater levels, may undergo changes over time.

In cases where data has been furnished by the client or obtained from external sources, including previous site inspections or investigations, it has been assumed that the information is accurate, unless otherwise specified. D&N (D&N Geotechnical Pty Ltd) cannot accept responsibility for any inaccuracies within the data supplied by others.

It is strongly advised that any plans and specifications prepared by other parties pertaining to the content of this report, as well as any subsequent modifications to the original plans and specifications, be thoroughly reviewed by D&N to ensure that our recommendations are appropriately reflected in the design. Furthermore, during the construction phase, we request the opportunity to evaluate our interpretations if the actual site conditions significantly differ from those initially anticipated.

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9 Closing

We trust this memorandum meets your current needs. Should you have questions feel free to contact the undersigned on 0431 628 825.

For and on behalf of D&N

Siva Annapareddy
Associate Geotechnical Engineer

Enclosed:

Appendix A – Client Provided Information

Appendix B – Geotechnical Information

Appendix C – Groundwater Monitoring Data

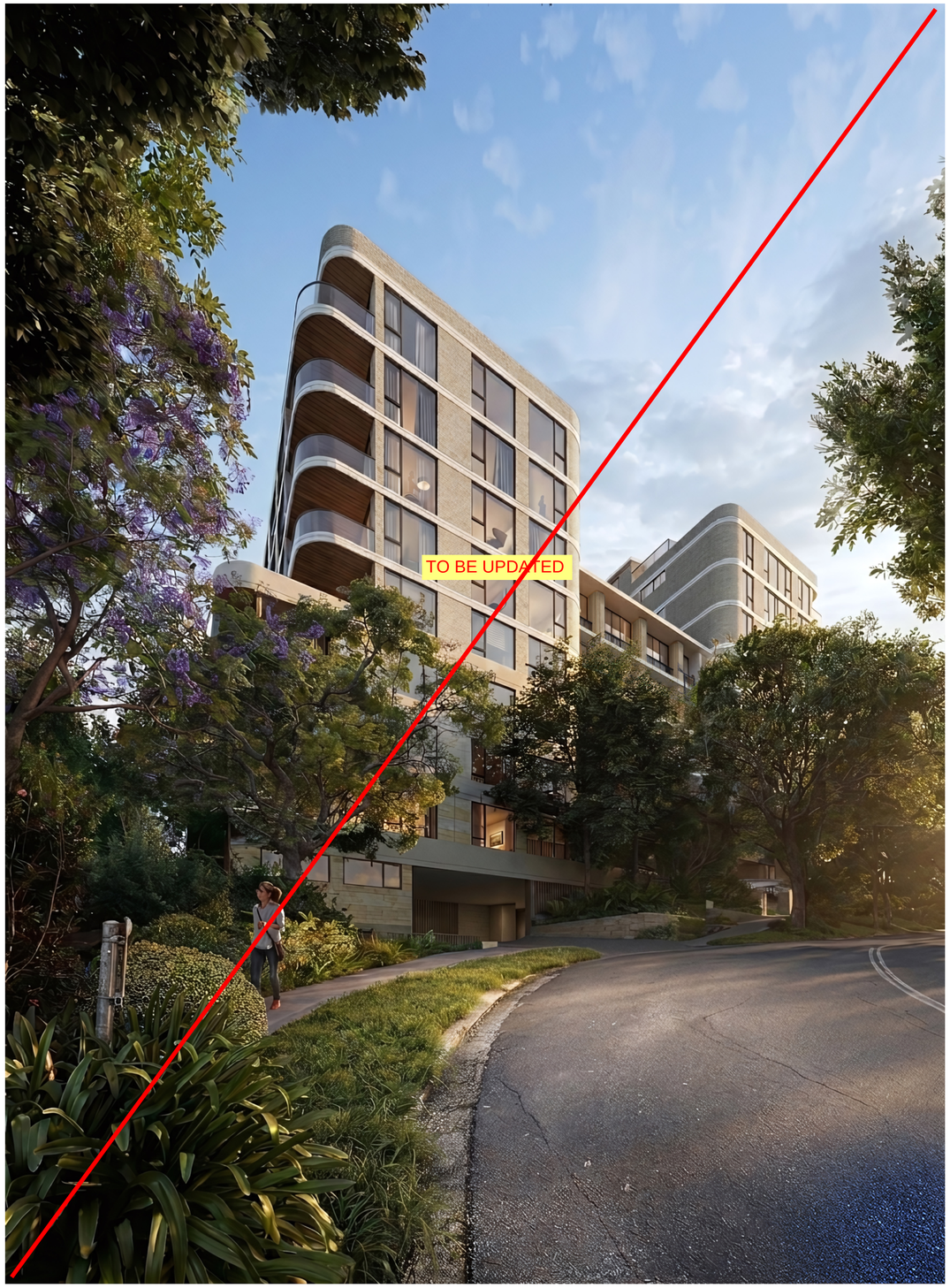
Appendix D – AQTESOLV Outputs

Appendix E – Seepage Analysis: Graphical Outputs

Appendix A – Client Provided Information

PROPOSED RESIDENTIAL BUILDING

19-25 BALFOUR STREET LINDFIELD



NO.	Sheet Name	REV
DA000	COVER PAGE	G
DA00.1	SUMMARY	D
DA001	SITE ANALYSIS	E
DA002	SITE ANALYSIS - CONTEXT AND SURROUNDINGS	E
DA003	DEMOLITION PLAN	E
DA100	SITE PLAN - PROPOSED	E
DA101	SITE PLAN - INDICATIVE FUTURE CONTEXT	C
DA200	BASEMENT 2 PLAN	F
DA201	BASEMENT 1 PLAN	F
DA202	LOWER GROUND LEVEL PLAN	G
DA203	GROUND LEVEL PLAN	G
DA204	LEVEL 1 PLAN	G
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DA211	LEVEL 8 PLAN	G
DA212	LEVEL 9 PLAN	G
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DA300	SOUTH ELEVATION	F
DA301	NORTH ELEVATION	F
DA302	EAST ELEVATION	F
DA303	WEST ELEVATION	F
DA304	EAST ELEVATION (SECTION THRU COURTYARD)	F
DA305	WEST ELEVATION (SECTION THRU COURTYARD)	F
DA310	SECTION	F
DA311	SECTION	F
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DA313	SECTION	F
DA320	DRIVEWAY DETAILS	E
DA321	DRIVEWAY DETAILS	E
DA330	SECTION THRU WEST WING LOWER GROUND UNITS	E
DA331	SECTION THRU EAST WING LOWER GROUND UNITS	E
DA332	SECTION THRU EAST WING LEVEL 1 UNITS	A
DA400	AREA SCHEDULE - GFA DIAGRAM	F
DA401	AFFORDABLES GFA	D
DA404	CROSS VENTILATION	F
DA410	COMMUNAL, DEEP SOIL, SITE COVERAGE	C
DA503	SOLAR ACCESS DIAGRAMS	F
DA504	SOLAR ACCESS DIAGRAMS	F
DA505	SOLAR ACCESS DIAGRAMS	F
DA506	SOLAR ACCESS DIAGRAMS	F
DA507	COMMUNAL OPEN SPACE SOLAR ACCESS	B
DA510	UNIT SCHEDULE	E
DA515	STORAGE DIAGRAMS - LOWER GROUND	C
DA516	STORAGE DIAGRAMS - GROUND	C
DA517	STORAGE DIAGRAMS - LEVEL 1	C
DA518	STORAGE DIAGRAMS - LEVEL 2	C
DA519	STORAGE DIAGRAMS - LEVEL 3	C
DA520	STORAGE DIAGRAMS - LEVEL 4	C
DA521	STORAGE DIAGRAMS - LEVEL 5	C
DA522	STORAGE DIAGRAMS - LEVEL 6	C
DA523	STORAGE DIAGRAMS - LEVEL 7	C
DA524	STORAGE DIAGRAMS - LEVEL 8	C
DA525	STORAGE DIAGRAMS - LEVEL 9	C
DA530	OVERSHADOWING DIAGRAMS (PROPOSED)	F
DA531	OVERSHADOWING DIAGRAMS (PROPOSED)	F
DA532	OVERSHADOWING DIAGRAMS (PROPOSED)	F
DA533	OVERSHADOWING DIAGRAMS (PROPOSED)	F
DA534	OVERSHADOWING DIAGRAMS (PROPOSED)	B
DA535	OVERSHADOWING DIAGRAMS (PROPOSED)	B
DA536	OVERSHADOWING DIAGRAMS (PROPOSED)	B
DA580	1 WALLACE PARADE AND 23 BENT STREET	B
DA581	OVERSHADOWING DIAGRAMS - RESERVE	A
DA600	HEIGHT PLANE DIAGRAM	F
DA601	HEIGHT PLANE SECTION DIAGRAMS	A
DA610	INTERNAL UNIT DEPTH DIAGRAMS	A
DA702	MATERIAL SAMPLE BOARD	E
DA703	PERSPECTIVES	F

TOTAL SHEETS: 71

No.	Date	Description
G	15-05-2026	SSDA - FOR SUBMISSION
F	20-03-2026	SSDA - FOR SUBMISSION
E	16-02-2026	ISSUE FOR COORDINATION
D	10-07-2025	SSDA - FOR SUBMISSION
C	30-05-2025	SSDA - FOR SUBMISSION

Amendments

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19-25 BALFOUR STREET

LINDFIELD

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SUMMARY

SITE AREA
4771 m²

PLANNING CONTROLS

ZONE R4

FSR 1.3:1

FSR (TOD) 2.5:1

PERMISSIBLE GFA (TOD) 11927.5 sqm

AFFORDABLE BONUS (30%) 3578.25 sqm

MAXIMUM PERMISSIBLE GFA/FSR		
SITE AREA	Max FSR (TOD + 30% Bonus)	Max GFA
4771.0 m²	3.25	15505.8 m²

BUILDING HEIGHT 18.5m

BUILDING HEIGHT (TOD) 22 m

BUILDING HEIGHT (TOD + AFFORDABLES) 28.6 m

PROPOSED FLOOR TO FLOOR HEIGHT : 3.2m

REQUIRED AFFORDABLE HOUSING GFA			
Maximum GFA (FSR 3.25)	SEPP (15% of Max GFA)	INFILL (TOD 2% of MAX GFA)	TOTAL (17% of MAX GFA)
15505.8 m²	2325.9 m²	310.1 m²	2636.0 m²

PROPOSED DEVELOPMENT

PROPOSED FSR		
SITE AREA	PROPOSED GFA	FSR
4771.0 m²	15401.0 m²	3.23

PROPOSED GFA	
Level	TOTAL GFA
GF	1615.0 m²
L1	1993.0 m²
L2	1992.0 m²
L3	1842.0 m²
L4	1736.0 m²
L5	1579.0 m²
L6	1411.0 m²
L7	1298.0 m²
L8	1027.0 m²
L9	366.0 m²
LG	542.0 m²
TOTALS: 11	15401.0 m²

PROPOSED AFFORDABLE GFA		
SEPP	INFILL	TOTAL AFFORDABLES
2353.8 m²	315.8 m²	2669.6 m²
AFFRORDABLES PERCENTAGE TO MAX 3.25 FSR		
SEPP %	INFILL %	TOTAL %
15.180%	2.037%	17.217%

PROPOSED PARKING SPACES

PROPOSED PARKING SPACES	
Type	Count
Car Share - 5.4m x 2.4m	2
Removalist/Truck Bay - 3.0m x 7.0m	1
Residential - 5.4m x 2.4m	108
Residential_Platinum - 6.0m x 4.8m	18
Residential_Tandem - 5.4m x 2.4m	36
Visitor - 5.4m x 2.4m	19
Visitor_Accessible - 5.4m x 2.4m	1
Total Car Parking Spaces: 185	

12 Visitor BICYCLE PARKING SPACES
120 Residential BICYCLE PARKING SPACES

RESIDENTIAL PARKING BREAKDOWN:

90x Market Units : 132 Parking spaces

27x Affordables(15%) : 27 Parking spaces

3x TOD Affordables (2%) : 3 Parking spaces

PARKING SPACE CALCULATION

Type	No. of Dwellings	Parking Requirements		Proposed Parking
		Minimum (SEPP)	Maximum (DCP)	
Affordable Housing (TOD - 2%)				
One-bedroom	0	0	0	3
Two-bedroom	2	1	2.5	
Three-bedroom	1	1	2	
Affordable Housing (HOUSING SEPP 2021 - 15%)				
One-bedroom	0	0	0	27
Two-bedroom	22	11	27.5	
Three-bedroom	5	5	10	
Residential Dwellings				
Two-bedroom	31	31	38.75	
Three-bedroom	50	75	100	
Four-bedroom	9	13.5	18	132
Car Share			2	2
Visitor			20	20
Totals		**138**	**221**	**184**
Removalist/Truck Parking bay			*1*	*1*

PROPOSED UNIT MIX:

UNIT MIX (ALL)	
Name	Count
2B	55
3B	56
4B	9
Grand total: 120	

UNIT MIX - Affordable Units	
Name	Count
2B	24
3B	6
Grand total: 30	

UNIT MIX - Platinum Units	
Name	Count
2B	1
3B	17
Grand total: 18	

BASIX THERMAL SPECIFICATIONS TABLE

Table 12: Thermal Construction Details

Thermal Construction Details	
Glazing	
Sliding and Fixed Max U-value 2.28 SHGC 0.41 (± 10%) Double Glazed Aluminium Frame – Low-E Clear	**Awning and Bi fold** Max U-value 2.58 SHGC 0.34 (± 10%) Double Glazed Aluminium Frame – Low-E Clear
External Walls	
External Walls of Units	Additional R2.50 insulation – if metal framed wall, sarking of R0.2 is required between stud and cladding as a thermal break *Note external walls to have an air gap between the external skin and metal frame, otherwise an R0.20 thermal break will be required.*
Internal Walls	
Between Corridor / Lifts to Units	Additional R2.00 insulation *Note external walls to have an air gap between the external skin and metal frame, otherwise an R0.20 thermal break will be required.*
Intertenancy Walls	No additional insulation modelled
Internal Walls Inside Units	No additional insulation modelled
Dwelling Floors	
Floors To Internal Areas	Concrete - No additional insulation
Floors To Basement / External	Concrete - Additional R2.30 insulation board
Dwelling Roofs	
Roof To External Air	Concrete - Additional R2.75 insulation soffit board
Other Commitments	
Ceilings	

LOCALITY MAP

SOLAR AND CROSS VENTILATION

SOLAR ACCESS - POS/BAL (21 JUNE)

84/120 (70%)
70% REQUIRED AS PER ADG

SOLAR ACCESS - LIVING ROOM (21 JUNE)

84/120 (70%)
70% REQUIRED AS PER ADG

CROSS-VENTILATED UNITS

95/120 (79.2%)
60% REQUIRED AS PER ADG

COMMUNAL, DEEP SOIL,SITE COVERAGE, LANDSCAPE AREA

COMMUNAL OPEN SPACE

PRIMARY AT L8, L9 : 390 SQM
SECONDARY @ GROUND & L1 : 808.3 SQM
TOTAL: 1,198.3 SQM (25.11%)

EXAVATION
= 3141.574 SQM (65.8%)

SITE COVERAGE
= 2439.0 SQM (51.1%)

TOTAL DEEP SOIL AREA
1474.0 SQM (31%)

ADG DEEP SOIL AREA
- MIN 6m DIMENSION
- NO BUILT ELEMENTS, RETAINING WALL ETC.
460.0 sqm (9.6%)

7% MINIMUM REQUIREMENT BY ADG FOR SITES GREATER THAN 1500sqm

LANDSCAPE AREA
= 2132.69 (44.7%)

SITE AREA : 4771 SQM

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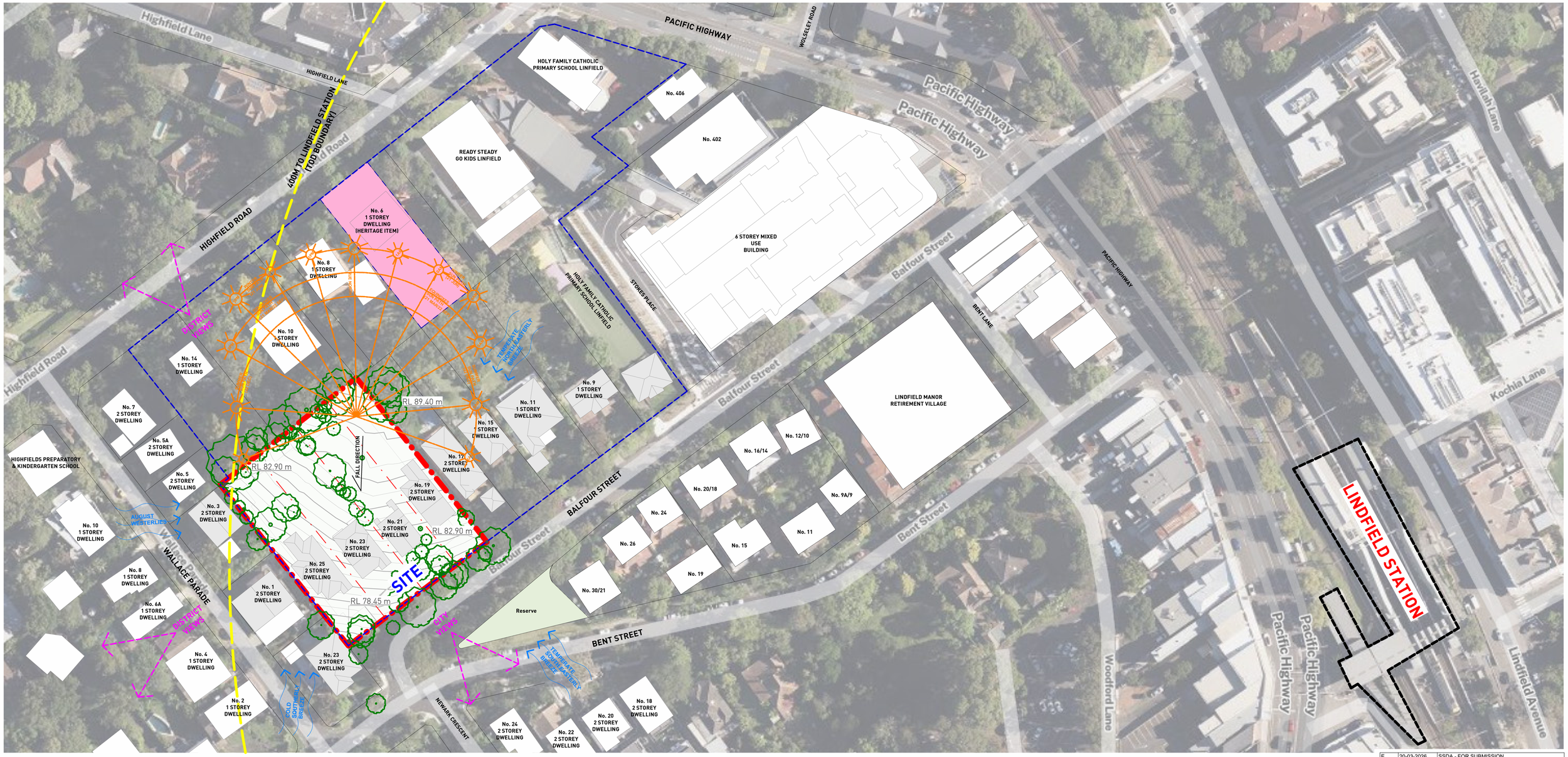

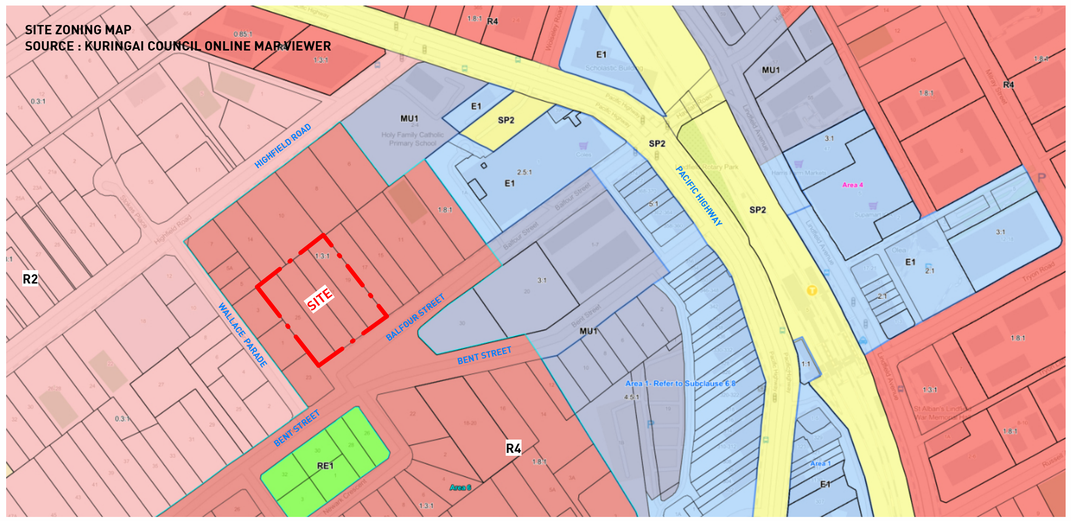

HERITAGE ITEM - GENERAL

HERITAGE CONSERVATION AREA

PROPERTY BOUNDARIES

SITE AND NEIGBOURING SITE EXISTING TREES

No.	Date	Description
E	20-03-2026	SSDA - FOR SUBMISSION
D	16-02-2026	ISSUE FOR COORDINATION
C	30-05-2025	SSDA - FOR SUBMISSION
B	16-05-2025	SSDA - ISSUE FOR COORDINATION
A	07-05-2025	ISSUE FOR DA SUBMISSION

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SITE ANALYSIS

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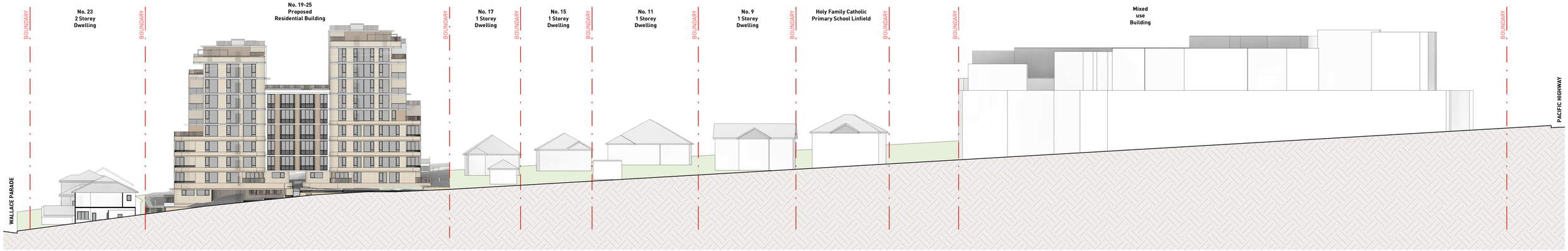

2 DA002

STREETSCAPE ELEVATION AT BALFOUR STREET

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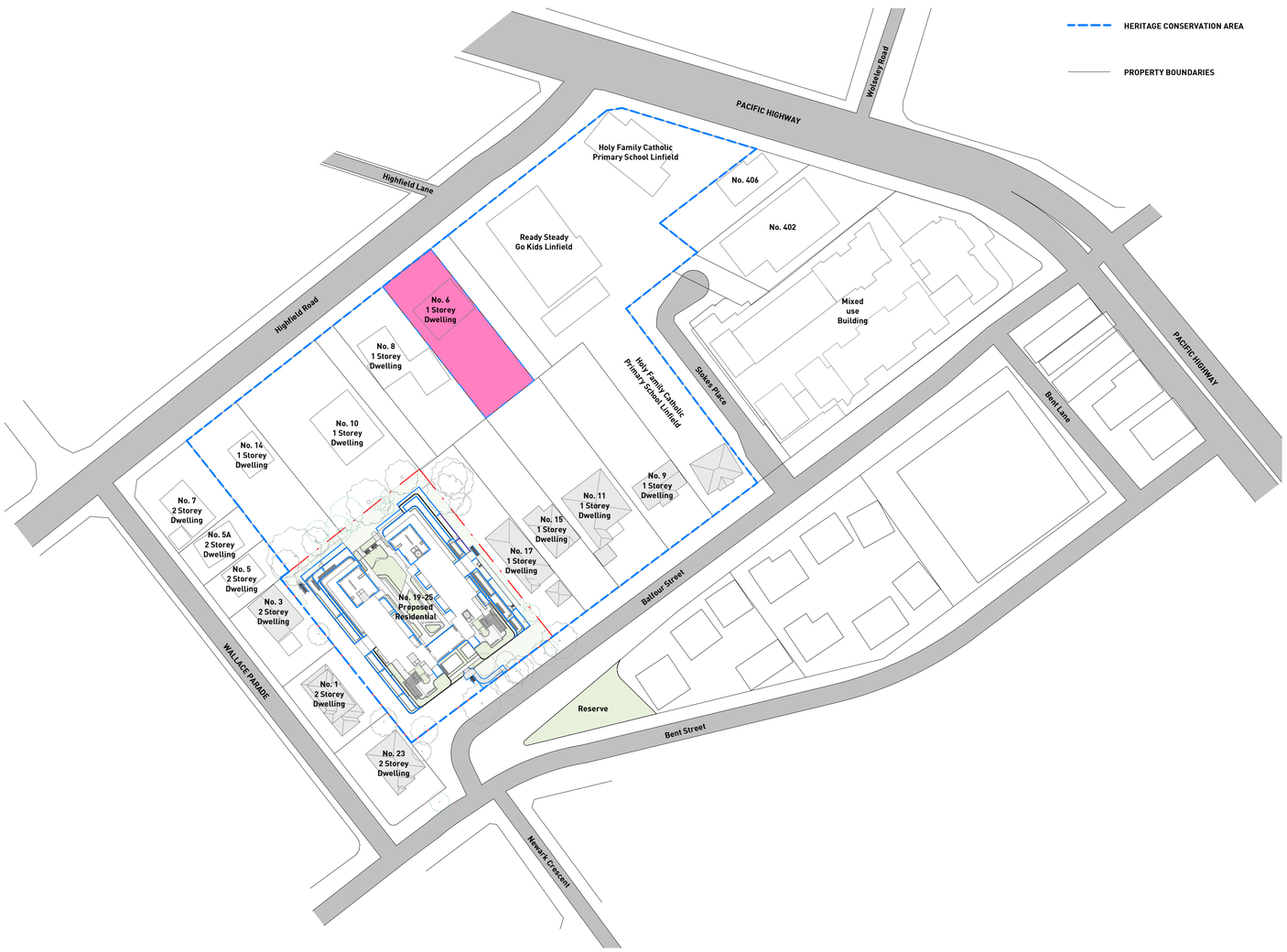


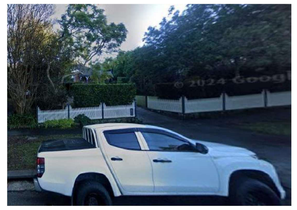
1 DA002

SITE PLAN - BALFOUR STREET/HIGHFIELD ROAD CONSERVATION AREA

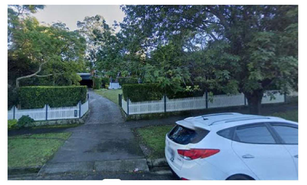
1 : 1000

No. 17
1 Storey
Dwelling

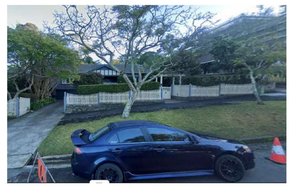
No. 15
1 Storey
Dwelling



No. 11
1 Storey
Dwelling



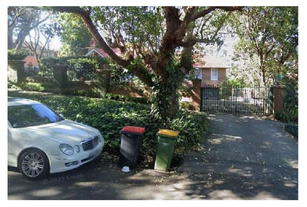
No. 9
1 Storey
Dwelling



Mixed use Building

Mixed use Building

No. 6
1 Storey
Dwelling



Reserve

Holy Family Catholic
Primary School Linfield

No.	Date	Description
F	15-05-2026	SSDA - FOR SUBMISSION
E	20-03-2026	SSDA - FOR SUBMISSION
D	16-02-2026	ISSUE FOR COORDINATION
C	30-05-2025	SSDA - FOR SUBMISSION
B	16-05-2025	SSDA - ISSUE FOR COORDINATION

Amendments

GILES TRIBE
Level 1, 1 Chandos Street
St Leonards 2065 NSW AUSTRALIA
t: 61 2 9264 5005
e: gta@gilestribe.com.au
Giles Tribe Pty Ltd ABN 50 001259 507
Nominated Architects: Mark G Broadley [5803] Victor Schneider [11157]

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Use figured dimensions in preference to scaling.
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Project:
RESIDENTIAL FLAT BUILDING
19-25 BALFOUR STREET

LINDFIELD

Drawing:
SITE ANALYSIS - CONTEXT AND SURROUNDINGS

Status:

Scale: As indicated Job No. 24062 Drawing No. DA002 Rev. F
Sheet Size:
Date: 03/26/25
Drawn: Author Reviewed Checker

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HOUSE TO BE DEMOLISHED

TO BE REMOVED/DEMOLISHED

TREE PROTECTION ZONE BOUNDARY [TPZ]

No.	Date	Description
E	20-03-2026	SSDA - FOR SUBMISSION
D	16-02-2026	ISSUE FOR COORDINATION
C	30-05-2025	SSDA - FOR SUBMISSION
B	16-05-2025	SSDA - ISSUE FOR COORDINATION
A	07-05-2025	ISSUE FOR DA SUBMISSION

Amendments

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St Leonards 2065 NSW AUSTRALIA
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Giles Tribe Pty Ltd ABN 50 001259 507

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Project:

RESIDENTIAL FLAT BUILDING
19-25 BALFOUR STREET

LINDFIELD

Drawing:

DEMOLITION PLAN

Status: FOR APPROVAL

Scale:	As indicated	Job No.	Drawing No. Rev.
Sheet Size:	A1	24062	DA003 E
Date:	02/22/22		
Drawn:	RM	Reviewed	DY

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No. 14
1 STOREY
DWELLING

No. 10
1 STOREY
DWELLING

No. 11
1
STORE
Y
DWEL
LING

No. 9
1 STOREY
DWELLING

No. 15
1 STOREY
DWELLING

No. 17
2 STOREY
DWELLING

No. 5A
2 STOREY
DWELLING

No. 5
2 STOREY
DWELLING

No. 3
2 STOREY
DWELLING

No. 1
2 STOREY
DWELLING

No. 6A
1 STOREY
DWELLING

WALLACE PARADE

BALFOUR STREET

Reserve

PROPOSED TEN STOREY RESIDENTIAL
BUILDING
19-25 BALFOUR STREET

TOWER A

TOWER B

A
D.P. 370213

1
D.P. 925825

10
D.P. 2953

21
D.P. 100429

1
D.P. 963515

5
D.P. 965341

RL 117.80 m

RL 116.40 m

RL 114.60 m

RL 113.20 m

RL 97.10 m

RL 117.80 m

RL 112.10 m

RL 114.60 m

RL 103.50 m

RL 83.00 m

RL 109.90 m

RL 80.00 m

SUBSTATION

DRIVEWAY TO LG

REGRADED FOOTPATH

9m SETBACK

6m SETBACK

4m SETBACK

TPZ

T1 T2 T3 T4 T5 T6 T7 T8 T9 T10 T11 T12 T13 T14 T15 T16 T17 T18 T19 T20 T21 T22 T23 T24 T25 T26 T27 T28 T29 T30 T31 T32 T33 T34 T35 T36 T37 T38 T39 T40 T41 T42 T43 T44 T45 T46 T47 T48

No.	Date	Description
E	20-03-2026	SSDA - FOR SUBMISSION
D	16-02-2026	ISSUE FOR COORDINATION
C	30-05-2025	SSDA - FOR SUBMISSION
B	16-05-2025	SSDA - ISSUE FOR COORDINATION
A	07-05-2025	ISSUE FOR DA SUBMISSION

Amendments

GILES TRIBE
Level 1, 1 Chandos Street
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Giles Tribe Pty Ltd ABN 50 001259 507

Nominated Architects: Mark G Broadley [5823] Victor Schneider [11157]

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Project:
RESIDENTIAL FLAT BUILDING
19-25 BALFOUR STREET

LINDFIELD

Drawing:
SITE PLAN - PROPOSED

Status:
FOR APPROVAL

Scale:	1 : 200	Job No.	Drawing No.	Rev.
Sheet Size:	A1	24062	DA100	E
Date:	09/04/2025			
Drawn:	RM		Reviewed DY	

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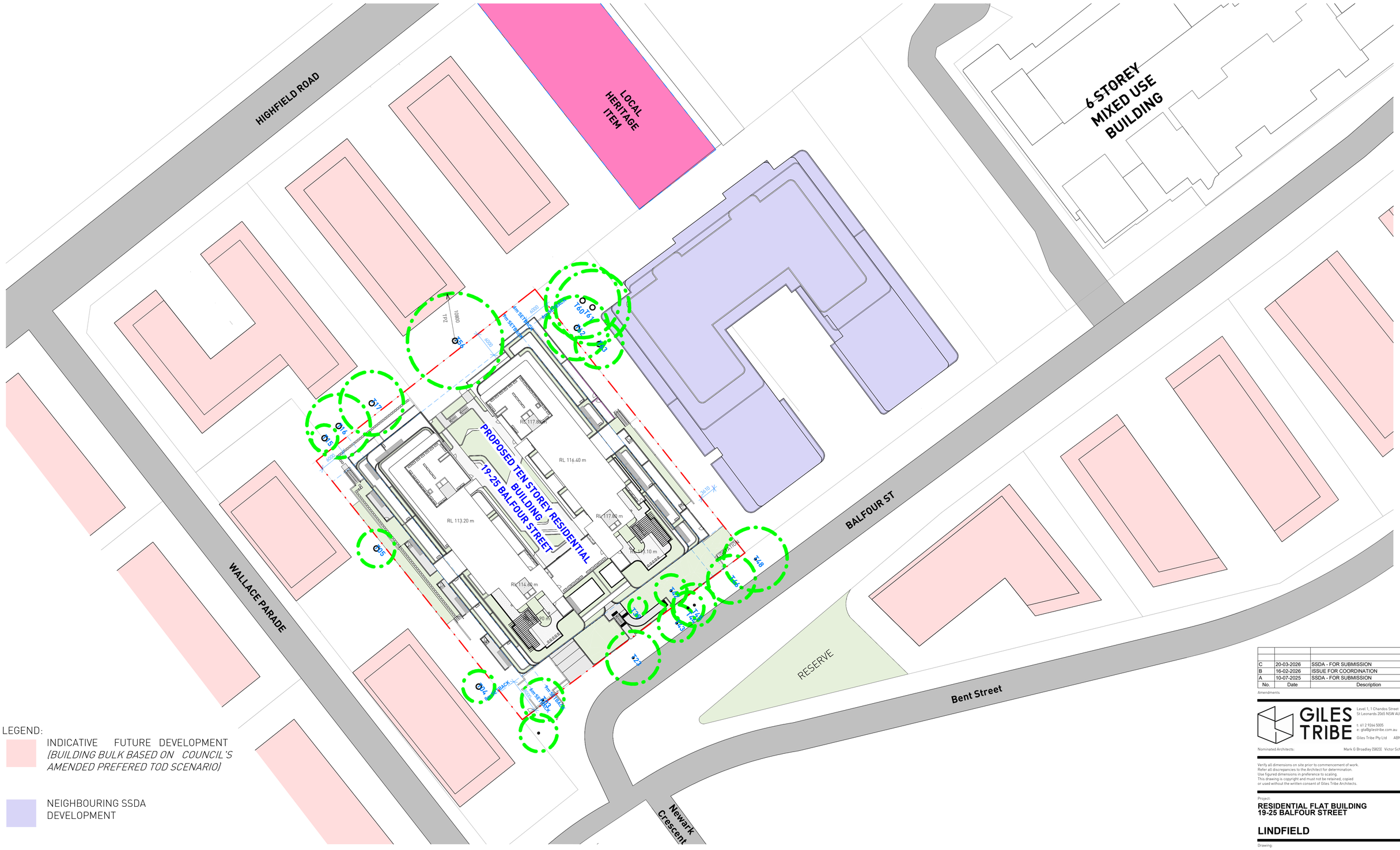
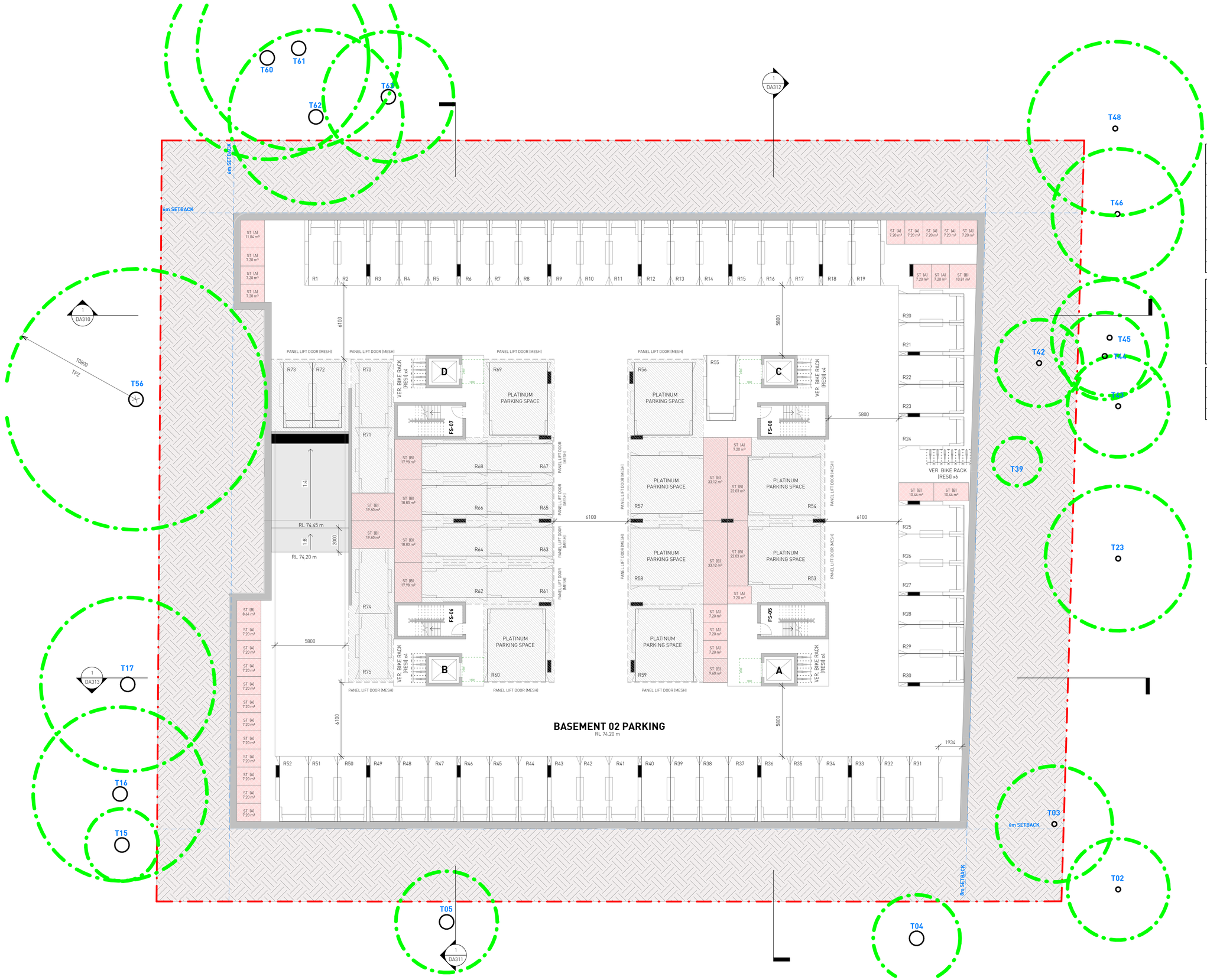

HIGHFIELD ROAD
LOCAL HERITAGE ITEM
6 STOREY MIXED USE BUILDING
PROPOSED TEN STOREY RESIDENTIAL BUILDING 19-25 BALFOUR STREET
RL 117.80 m
RL 116.40 m
RL 113.20 m
RL 117.80 m
RL 113.10 m
RL 114.60 m
RL 110.80 m
10800
241
6000
3m SETBACK
4000
4m SETBACK
6m SETBACK
6m BLOCK
4m SETBACK
3m SETBACK
6m SETBACK
6m SETBACK
6



PROPOSED PARKING SPACES	
Type	**Count**
Car Share - 5.4m x 2.4m	2
Removalist/Truck Bay - 3.0m x 7.0m	1
Residential - 5.4m x 2.4m	108
Residential_Platinum - 6.0m x 4.8m	18
Residential_Tandem - 5.4m x 2.4m	36
Visitor - 5.4m x 2.4m	19
Visitor_Accessible - 5.4m x 2.4m	1
Total Car Parking Spaces: 185	

Parking Schedule (Basement 02)	
Type	**Count**
Residential - 5.4m x 2.4m	55
Residential_Platinum - 6.0m x 4.8m	8
Residential_Tandem - 5.4m x 2.4m	12
Grand total: 75	

Storage Area (Basement 2)		
	Count	**Total Area**
Storage Cage: Residential	42	196.3 m²

1 DA200 BASEMENT 2 FLOOR PLAN

1 : 150

No.	Date	Description
F	20-03-2026	SSDA - FOR SUBMISSION
E	16-02-2026	ISSUE FOR COORDINATION
D	09-02-2026	ISSUE FOR COORDINATION - LANDSCAPE
C	30-05-2025	SSDA - FOR SUBMISSION
B	16-05-2025	SSDA - ISSUE FOR COORDINATION

Amendments

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Project:
RESIDENTIAL FLAT BUILDING
19-25 BALFOUR STREET

LINDFIELD

Drawing:
BASEMENT 2 PLAN

Status: FOR APPROVAL

Scale:	1 : 150	Job No.	Drawing No.	Rev.
Sheet Size:	A1	24062	DA200	F
Date:	09/04/2025			
Drawn:	RM/RB	Reviewed	DY/RM	

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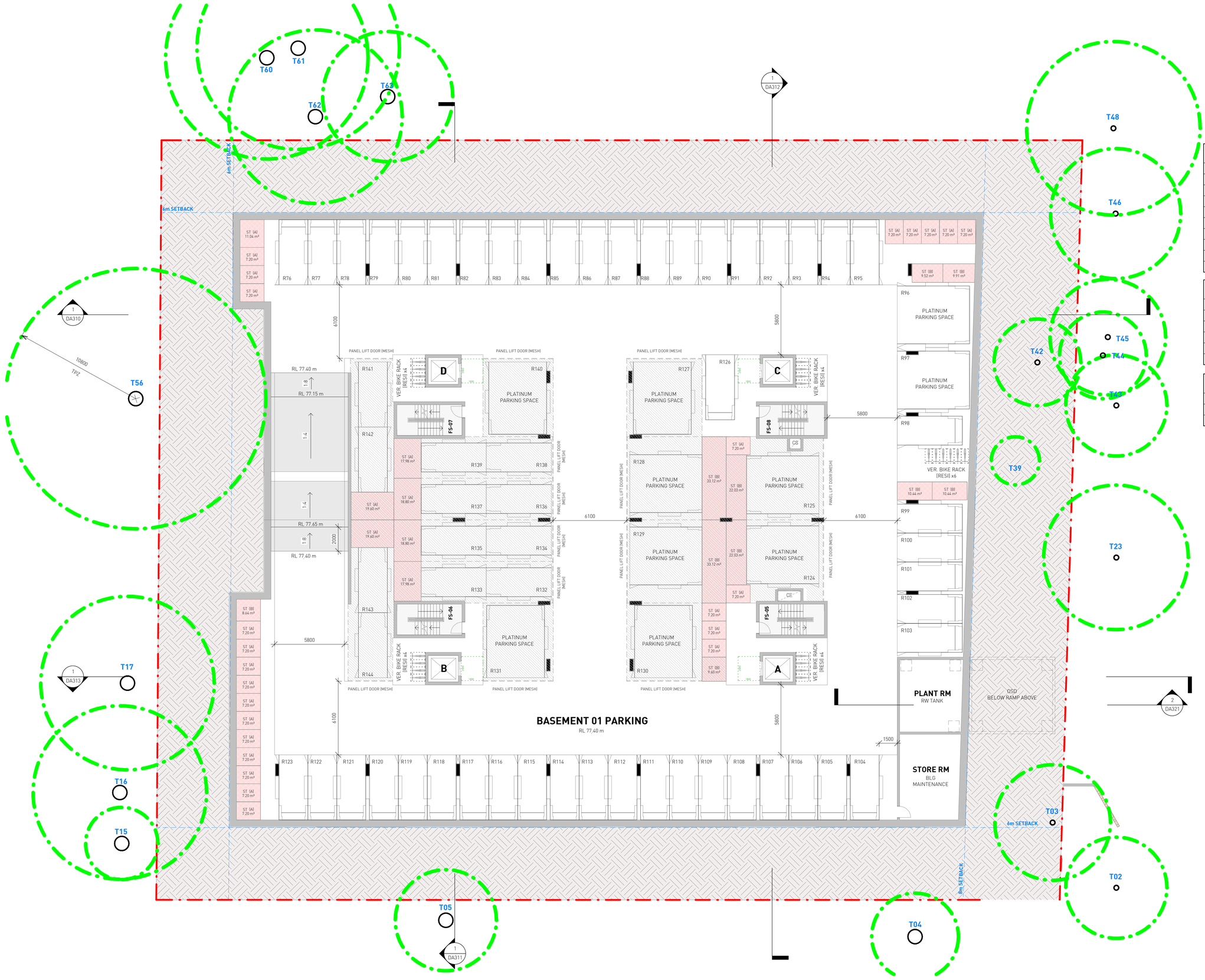

PROPOSED PARKING SPACES	
Type	**Count**
Car Share - 5.4m x 2.4m	2
Removalist/Truck Bay - 3.0m x 7.0m	1
Residential - 5.4m x 2.4m	108
Residential_Platinum - 6.0m x 4.8m	18
Residential_Tandem - 5.4m x 2.4m	36
Visitor - 5.4m x 2.4m	19
Visitor_Accessible - 5.4m x 2.4m	1
Total Car Parking Spaces: 185	

Parking Schedule (Basement 01)	
Type	**Count**
Residential - 5.4m x 2.4m	47
Residential_Platinum - 6.0m x 4.8m	10
Residential_Tandem - 5.4m x 2.4m	12
Grand total: 69	

Storage Area (Basement 1)		
	Count	**Total Area**
Storage Cage: Residential	41	193.9 m²

No.	Date	Description
F	20-03-2026	SSDA - FOR SUBMISSION
E	16-02-2026	ISSUE FOR COORDINATION
D	09-02-2026	ISSUE FOR COORDINATION - LANDSCAPE
C	30-05-2025	SSDA - FOR SUBMISSION
B	16-05-2025	SSDA - ISSUE FOR COORDINATION

Amendments

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Project:
RESIDENTIAL FLAT BUILDING
19-25 BALFOUR STREET

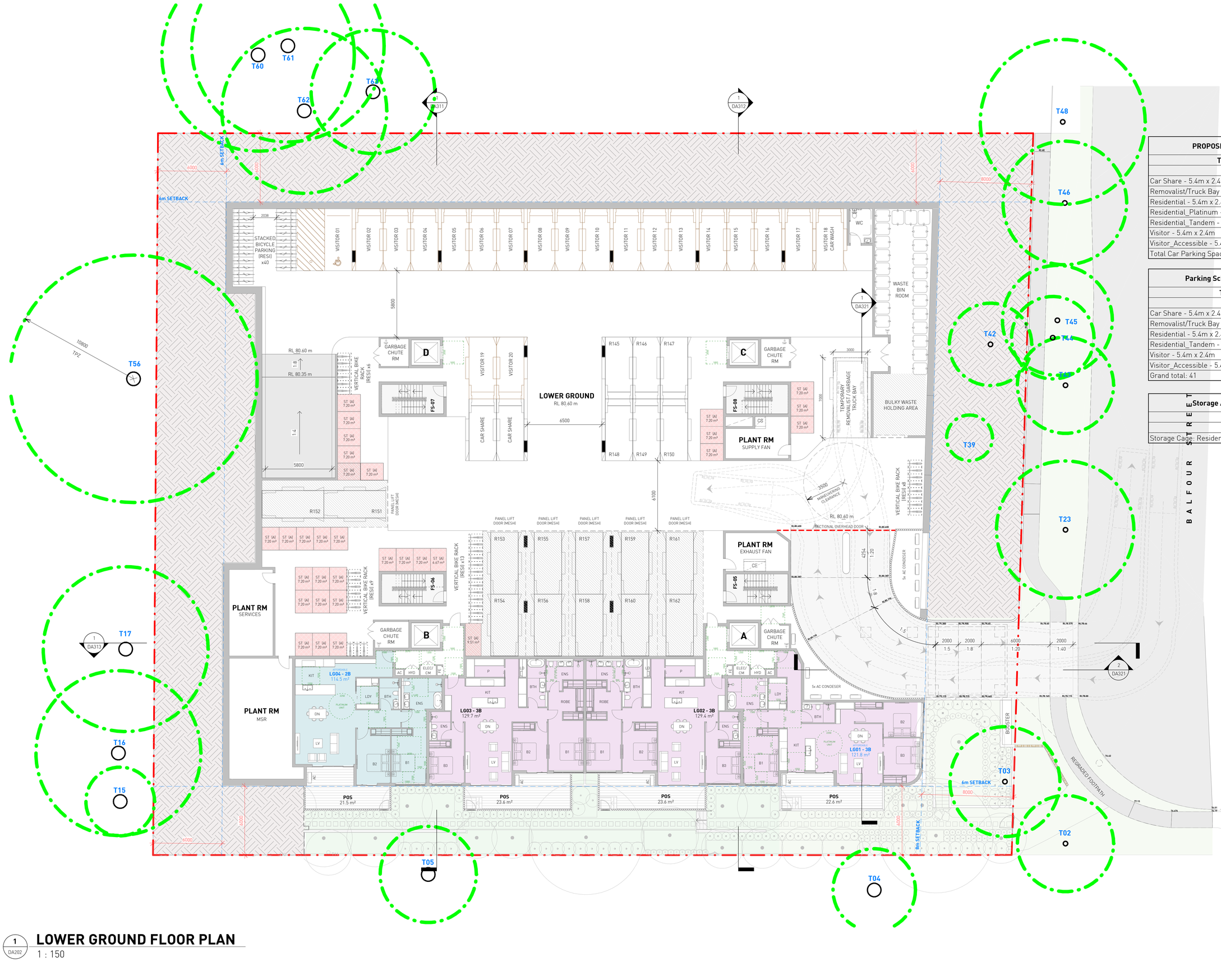
LINDFIELD

Drawing:
BASEMENT 1 PLAN

Status:
FOR APPROVAL

Scale: 1 : 150
Sheet Size: A1
Date: 09/04/2025
Job No. 24062
Drawing No. DA201
Rev. F
Drawn: RM/RB
Reviewed: DY/RM

1 DA201 **BASEMENT 1 FLOOR PLAN**
1 : 150



PROPOSED PARKING SPACES	
Type	**Count**
Car Share - 5.4m x 2.4m	2
Removalist/Truck Bay - 3.0m x 7.0m	1
Residential - 5.4m x 2.4m	108
Residential_Platinum - 6.0m x 4.8m	18
Residential_Tandem - 5.4m x 2.4m	36
Visitor - 5.4m x 2.4m	19
Visitor_Accessible - 5.4m x 2.4m	1
Total Car Parking Spaces: 185	

Parking Schedule (Lower Ground)	
Type	**Count**
Car Share - 5.4m x 2.4m	2
Removalist/Truck Bay - 3.0m x 7.0m	1
Residential - 5.4m x 2.4m	6
Residential_Tandem - 5.4m x 2.4m	12
Visitor - 5.4m x 2.4m	19
Visitor_Accessible - 5.4m x 2.4m	1
Grand total: 41	

Storage Area (Lower Ground)		
	Count	**Total Area**
Storage Cage: Residential	31	93.7 m²

No.	Date	Description
F	20-03-2026	SSDA - FOR SUBMISSION
E	16-02-2026	ISSUE FOR COORDINATION
D	06-02-2026	ISSUE FOR COORDINATION - ARBORIST
C	30-05-2025	SSDA - FOR SUBMISSION
B	16-05-2025	SSDA - ISSUE FOR COORDINATION

Amendments

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Level 1, 1 Chandos Street
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Giles Tribe Pty Ltd ABN 50 001259 507
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Project:
RESIDENTIAL FLAT BUILDING
19-25 BALFOUR STREET

LINDFIELD

Drawing:
LOWER GROUND LEVEL PLAN

Status:
FOR APPROVAL

Scale: 1 : 150
Sheet Size: A1
Date: 09/04/2025
Job No. 24062
Drawing No. DA202
Rev. F
Drawn: RM
Reviewed DY

1 DA202 **LOWER GROUND FLOOR PLAN**
1 : 150

Storage Area (Ground)		
	Count	Total Area
Storage Cage: Residential	11	34.4 m²

1 DA203 **GROUND FLOOR PLAN**
1 : 150

No.	Date	Description
G	15-05-2026	SSDA - FOR SUBMISSION
F	20-03-2026	SSDA - FOR SUBMISSION
E	16-02-2026	ISSUE FOR COORDINATION
D	06-02-2026	ISSUE FOR COORDINATION - ARBORIST
C	30-05-2025	SSDA - FOR SUBMISSION

Amendments

GILES TRIBE
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Project:
RESIDENTIAL FLAT BUILDING
19-25 BALFOUR STREET

LINDFIELD

Drawing:
GROUND LEVEL PLAN

Status:
FOR APPROVAL

Scale:	1 : 150	Job No.	Drawing No.	Rev.
Sheet Size:	A1	24062	DA203	G
Date:	09/04/2025			
Drawn:	RM	Reviewed	DY	

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1 DA204 **LEVEL 1 FLOOR PLAN**
1 : 150

No.	Date	Description
G	15-05-2026	SSDA - FOR SUBMISSION
F	20-03-2026	SSDA - FOR SUBMISSION
E	16-02-2026	ISSUE FOR COORDINATION
D	09-02-2026	ISSUE FOR COORDINATION - LANDSCAPE
C	30-05-2025	SSDA - FOR SUBMISSION

Amendments

GILES TRIBE
Level 1, 1 Chandos Street
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e: gta@gilestribe.com.au
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Project:
RESIDENTIAL FLAT BUILDING
19-25 BALFOUR STREET

LINDFIELD

Drawing:
LEVEL 1 PLAN

Status:
FOR APPROVAL

Scale: 1 : 150
Sheet Size: A1
Date: 09/04/2025
Job No. 24062
Drawing No. DA204
Rev. G
Drawn: RM
Reviewed: DY

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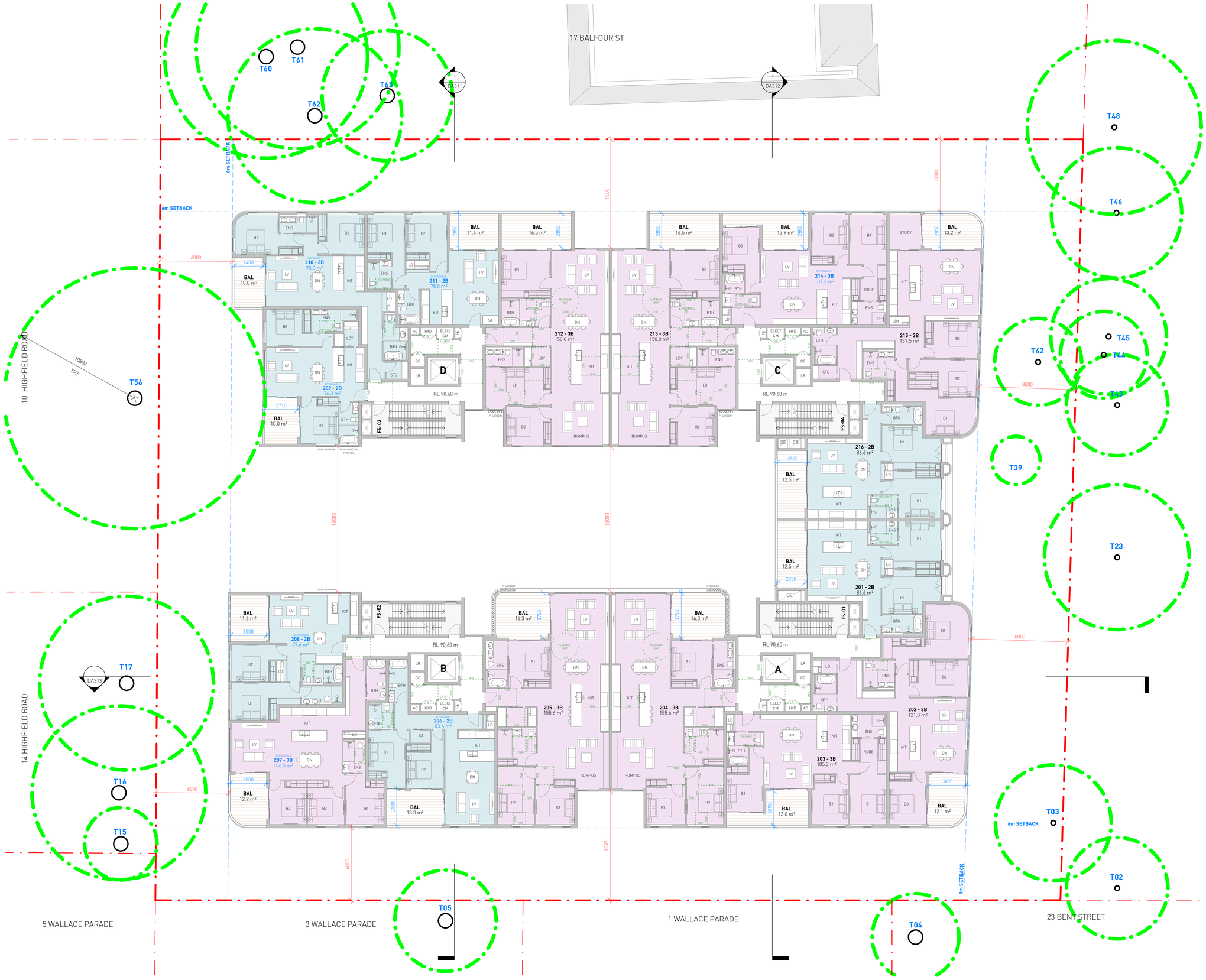

1 DA205 **LEVEL 2 FLOOR PLAN**
1 : 150

No.	Date	Description
G	15-05-2026	SSDA - FOR SUBMISSION
F	20-03-2026	SSDA - FOR SUBMISSION
E	16-02-2026	ISSUE FOR COORDINATION
D	09-02-2026	ISSUE FOR COORDINATION - LANDSCAPE
C	30-05-2025	SSDA - FOR SUBMISSION

Amendments

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Project:
RESIDENTIAL FLAT BUILDING
19-25 BALFOUR STREET

LINDFIELD

Drawing:
LEVEL 2 PLAN

Status:
FOR APPROVAL

Scale: 1 : 150	Job No.	Drawing No.	Rev.
Sheet Size: A1	24062	DA205	G
Date: 09/04/2025			
Drawn: RM	Reviewed: DY		

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1 DA206 **LEVEL 3 FLOOR PLAN**
1 : 150

No.	Date	Description
G	15-05-2026	SSDA - FOR SUBMISSION
F	20-03-2026	SSDA - FOR SUBMISSION
E	16-02-2026	ISSUE FOR COORDINATION
D	09-02-2026	ISSUE FOR COORDINATION - LANDSCAPE
C	30-05-2025	SSDA - FOR SUBMISSION

Amendments

GILES TRIBE
Level 1, 1 Chandos Street
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e: gta@gilestribe.com.au
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Project:
RESIDENTIAL FLAT BUILDING
19-25 BALFOUR STREET

LINDFIELD

Drawing:
LEVEL 3 PLAN

Status:
FOR APPROVAL

Scale: 1 : 150	Job No.	Drawing No.		Rev.
Sheet Size: A1	24062	DA206		G
Date: 09/04/2025				
Drawn: RM		Reviewed: DY		

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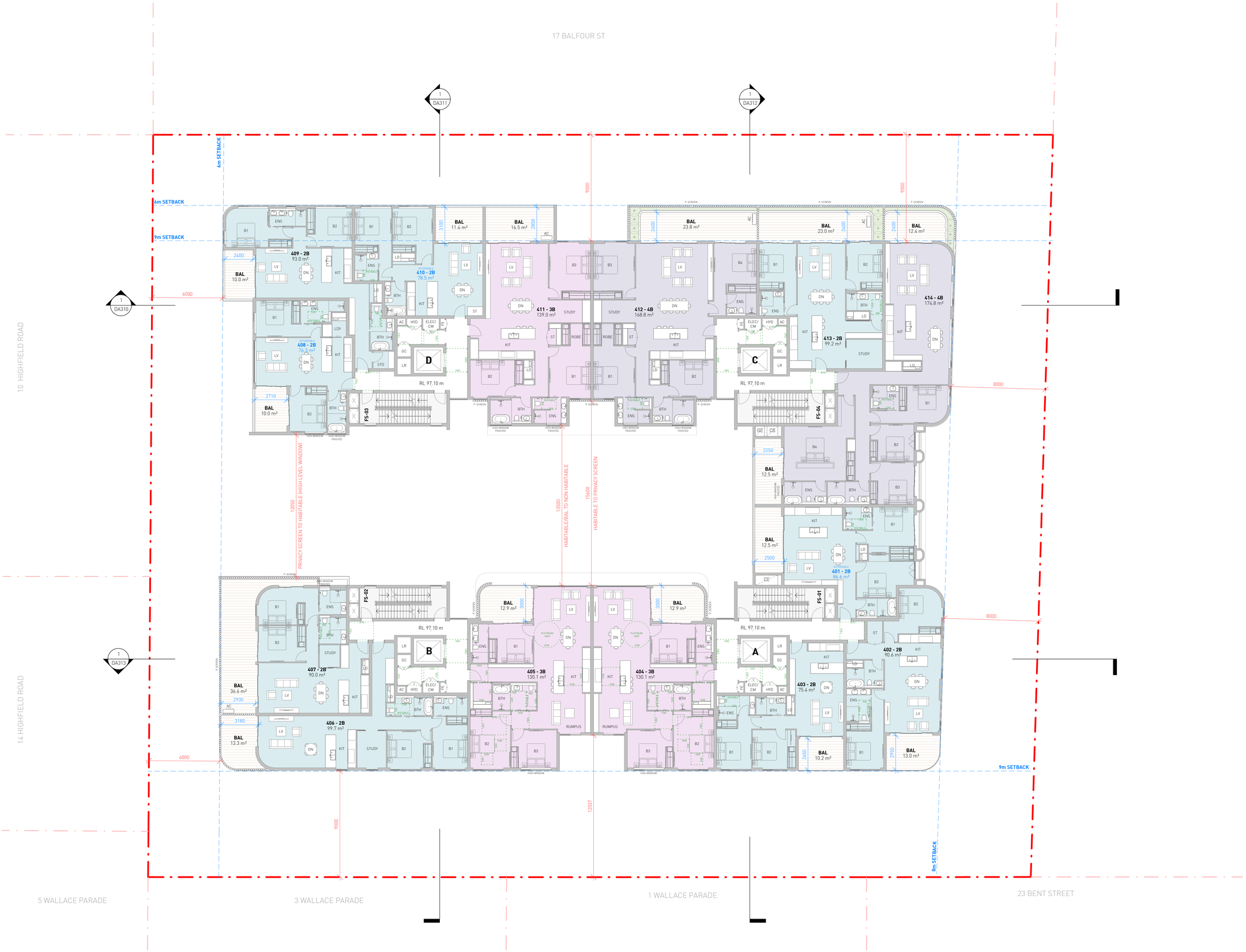

1 DA207

LEVEL 4 FLOOR PLAN

1 : 150

No.	Date	Description
G	15-05-2026	SSDA - FOR SUBMISSION
F	20-03-2026	SSDA - FOR SUBMISSION
E	16-02-2026	ISSUE FOR COORDINATION
D	09-02-2026	ISSUE FOR COORDINATION - LANDSCAPE
C	30-05-2025	SSDA - FOR SUBMISSION

Amendments

GILES TRIBE
Level 1, 1 Chandos Street
St Leonards 2065 NSW AUSTRALIA
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e: gta@gilestribe.com.au
Giles Tribe Pty Ltd ABN 50 001259 507
Nominated Architects: Mark G Broadley [5823] Victor Schneider [11157]

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Project:
RESIDENTIAL FLAT BUILDING
19-25 BALFOUR STREET

LINDFIELD

Drawing:
LEVEL 4 PLAN

Status:
FOR APPROVAL

Scale: 1 : 150	Job No.	Drawing No.	Rev.
Sheet Size: A1	24062	DA207	G
Date: 09/04/2025			
Drawn: RM	Reviewed DY		

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1 DA208 **LEVEL 5 FLOOR PLAN**
1 : 150

No.	Date	Description
G	15-05-2026	SSDA - FOR SUBMISSION
F	20-03-2026	SSDA - FOR SUBMISSION
E	16-02-2026	ISSUE FOR COORDINATION
D	09-02-2026	ISSUE FOR COORDINATION - LANDSCAPE
C	30-05-2025	SSDA - FOR SUBMISSION

Amendments

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e: gta@gilestribe.com.au
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Project:
RESIDENTIAL FLAT BUILDING
19-25 BALFOUR STREET

LINDFIELD

Drawing:
LEVEL 5 PLAN

Status: FOR APPROVAL

Scale: 1 : 150 Job No. 24062 Drawing No. DA208 Rev. G
Sheet Size:
Date: 09/04/2025
Drawn: RM Reviewed DY

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1 DA209 **LEVEL 6 FLOOR PLAN**
1 : 150

No.	Date	Description
G	15-05-2026	SSDA - FOR SUBMISSION
F	20-03-2026	SSDA - FOR SUBMISSION
E	16-02-2026	ISSUE FOR COORDINATION
D	09-02-2026	ISSUE FOR COORDINATION - LANDSCAPE
C	30-05-2025	SSDA - FOR SUBMISSION

Amendments

GILES TRIBE
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e: gta@gilestribe.com.au
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Nominated Architects: Mark G Broadley [5823] Victor Schneider [11157]

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Project:
RESIDENTIAL FLAT BUILDING
19-25 BALFOUR STREET

LINDFIELD

Drawing:
LEVEL 6 PLAN

Status:
FOR APPROVAL

Scale: 1 : 150
Job No. 24062
Drawing No. DA209
Rev. G
Sheet Size:
Date: 09/04/2025
Drawn: RM
Reviewed: DY

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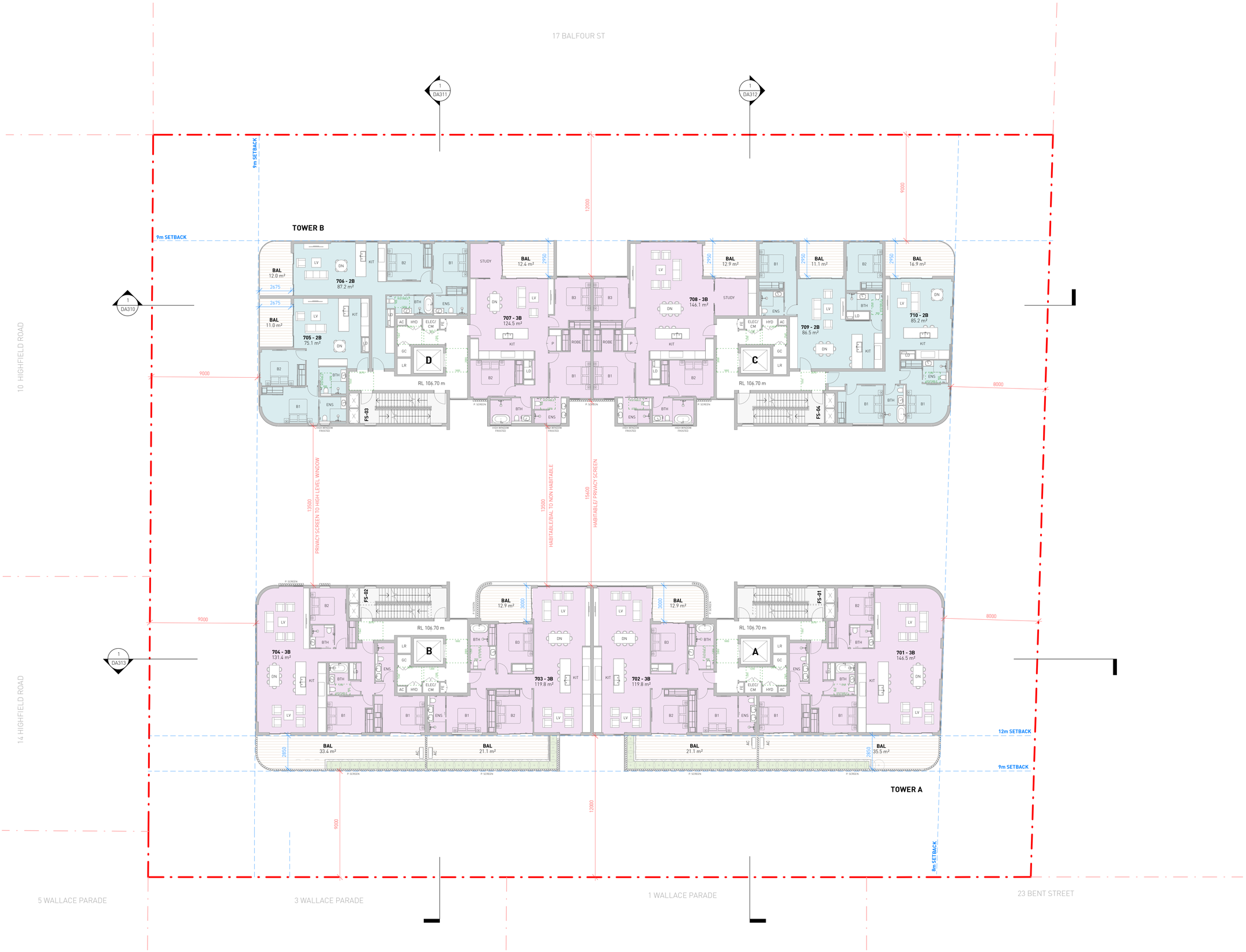

1 DA210

LEVEL 7 FLOOR PLAN

1 : 150

No.	Date	Description
G	15-05-2026	SSDA - FOR SUBMISSION
F	20-03-2026	SSDA - FOR SUBMISSION
E	16-02-2026	ISSUE FOR COORDINATION
D	09-02-2026	ISSUE FOR COORDINATION - LANDSCAPE
C	30-05-2025	SSDA - FOR SUBMISSION

Amendments

GILES TRIBE
Level 1, 1 Chandos Street
St Leonards 2065 NSW AUSTRALIA
t: 61 2 9264 5005
e: gta@gilestribe.com.au
Giles Tribe Pty Ltd ABN 50 001259 507

Nominated Architects: Mark G Broadley [5823] Victor Schneider [11157]

Verify all dimensions on site prior to commencement of work.
Refer all discrepancies to the Architect for determination.
Use figured dimensions in preference to scaling.
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Project:
RESIDENTIAL FLAT BUILDING
19-25 BALFOUR STREET

LINDFIELD

Drawing:
LEVEL 7 PLAN

Status: FOR APPROVAL

Scale: 1 : 150 Job No. 24062 Drawing No. DA210 Rev. G
Sheet Size:
Date: 09/04/2025
Drawn: Author Reviewed Checker

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1 DA211

LEVEL 8 FLOOR PLAN

1 : 150

No.	Date	Description
G	15-05-2026	SSDA - FOR SUBMISSION
F	20-03-2026	SSDA - FOR SUBMISSION
E	16-02-2026	ISSUE FOR COORDINATION
D	09-02-2026	ISSUE FOR COORDINATION - LANDSCAPE
C	30-05-2025	SSDA - FOR SUBMISSION

Amendments

GILES TRIBE
Level 1, 1 Chandos Street
St Leonards 2065 NSW AUSTRALIA
t: 61 2 9264 5005
e: gta@gilestribe.com.au
Giles Tribe Pty Ltd ABN 50 001259 507
Nominated Architects: Mark G Broadley [5823] Victor Schneider [11157]

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Project:

RESIDENTIAL FLAT BUILDING
19-25 BALFOUR STREET

LINDFIELD

Drawing:

LEVEL 8 PLAN

Status:

FOR APPROVAL

Scale: 1 : 150
Sheet Size:
Date: 09/04/2025
Job No. 24062
Drawing No. DA211
Rev. G
Drawn: Author
Reviewed: Checker

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1 DA212 **LEVEL 9 FLOOR PLAN**
1 : 150

No.	Date	Description
G	15-05-2026	SSDA - FOR SUBMISSION
F	20-03-2026	SSDA - FOR SUBMISSION
E	16-02-2026	ISSUE FOR COORDINATION
D	09-02-2026	ISSUE FOR COORDINATION - LANDSCAPE
C	30-05-2025	SSDA - FOR SUBMISSION

Amendments

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t: 61 2 9264 5005
e: gta@gilestribe.com.au
Giles Tribe Pty Ltd ABN 50 001259 507
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Project:
RESIDENTIAL FLAT BUILDING
19-25 BALFOUR STREET

LINDFIELD

Drawing:
LEVEL 9 PLAN

Status:
FOR APPROVAL

Scale: 1 : 150
Sheet Size:
Date: 09/04/2025
Drawn: Author
Job No. 24062
Drawing No. DA212
Rev. G
Reviewed Checker

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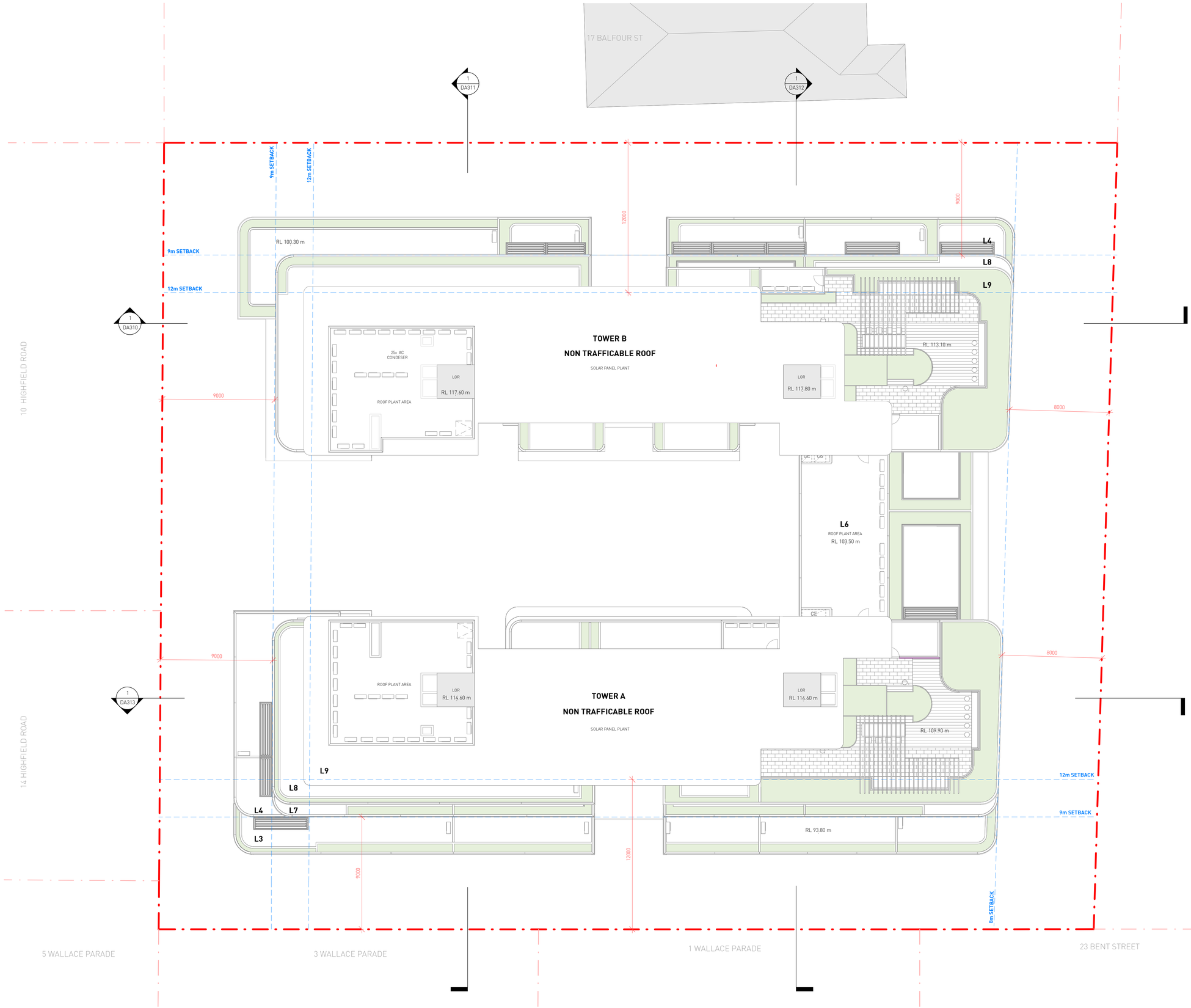

1 DA213 **ROOF PLAN**
1 : 150

No.	Date	Description
G	15-05-2026	SSDA - FOR SUBMISSION
F	20-03-2026	SSDA - FOR SUBMISSION
E	16-02-2026	ISSUE FOR COORDINATION
D	09-02-2026	ISSUE FOR COORDINATION - LANDSCAPE
C	30-05-2025	SSDA - FOR SUBMISSION

Amendments

GILES TRIBE
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St Leonards 2065 NSW AUSTRALIA
t: 61 2 9264 5005
e: gta@gilestribe.com.au
Giles Tribe Pty Ltd ABN 50 001259 507
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Project:
RESIDENTIAL FLAT BUILDING
19-25 BALFOUR STREET

LINDFIELD

Drawing:
ROOF PLAN

Status: FOR APPROVAL

Scale: 1 : 150 Job No. 24062 Drawing No. DA213 Rev. G
Sheet Size:
Date: 09/04/2025
Drawn: RM Reviewed: DY

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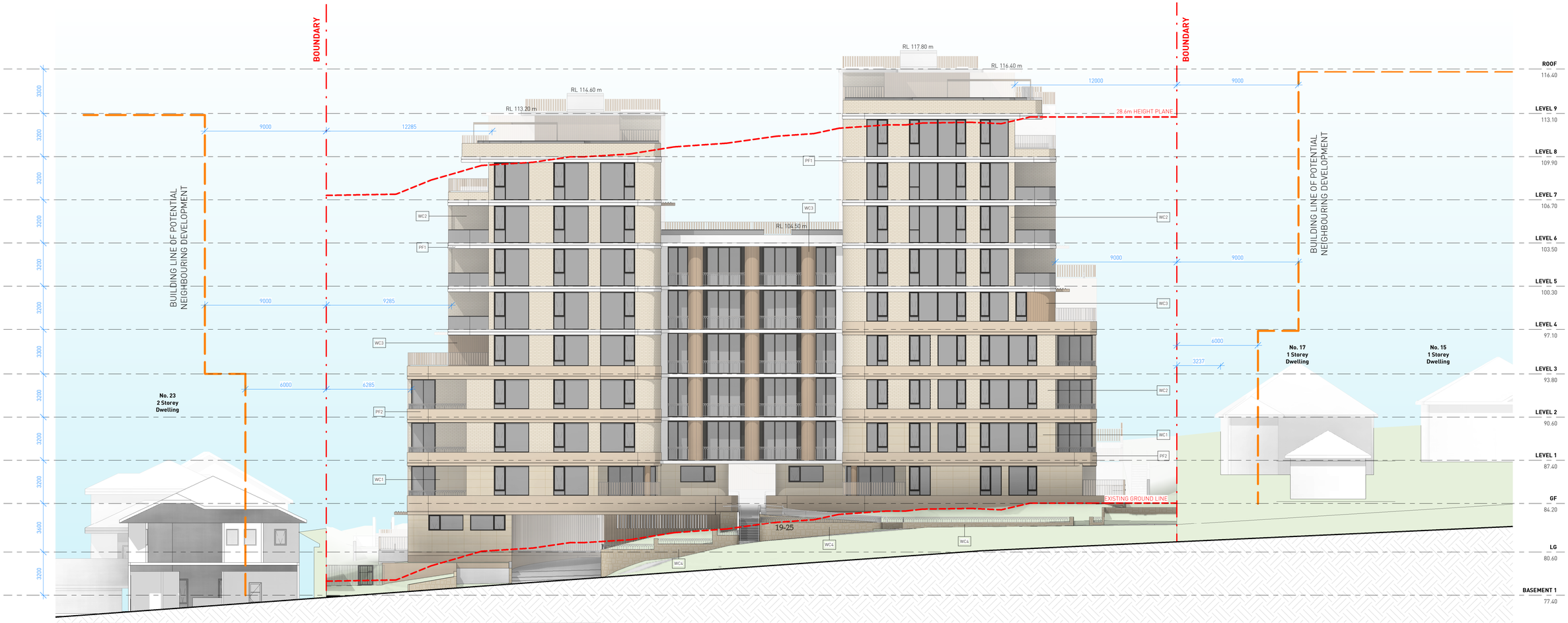
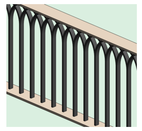


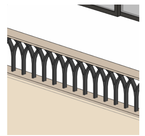
1 DA300 **SOUTH ELEVATION**
1 : 150

SCHEDULE OF EXTERNAL FINISHES AND MATERIALS

BAL1
BALUSTRADE TYPE 1
SEMI FRAMELESS GLASS

BAL2 
BALUSTRADE TYPE 2
METAL BALUSTRADE

BAL3
BALUSTRADE TYPE 3
SEMI FRAMELESS GLASS FIXED
TO LOW WALL

BAL4 
BALUSTRADE TYPE 4
METAL BALUSTRADE FIXED TO
LOW WALL

WC1
WALL CLADDING TYPE 1
SANDSTONE CLADDING
OR SIMILAR

WC2
WALL CLADDING TYPE2
LIGHT BEIGE COLOUR BRICKWORK
OR SIMILAR

WC3
WALL CLADDING TYPE 3
TIMBER LOOK ALUMINUM CLADDING
OR SIMILAR

WC4
WALL CLADDING TYPE 4
ROCKFACE SANDSTONE CLADDING
OR SIMILAR

PF1
PAINT FINISH TYPE 4
DULUX "APPLIANCE WHITE"
OR SIMILAR

PF2
PAINT FINISH TYPE 2
DULUX "BREADCRUMB"
OR SIMILAR

PF3
PAINT FINISH TYPE 3
DULUX "HOG BRISTLE QUARTER"
OR TO COLOUR MATCH WC2

PF4
PAINT FINISH TYPE 3
DULUX "CAMEL HIDE"
OR TO MATCH WC3

AL1
ALUM FRAME OF WINDOWS/DOORS
POWDERCOAT FINISH TO MATCH
COLORBOND MONUMENT

SC1
PRIVACY SCREEN TYPE 1
POWDERCOAT FINISH TO MATCH
WC3/PF4

BT1
BATTENS TYPE 1
TIMBER LOOK ALUMINUM BATTENS
TO MATCH WC3/PF4

No.	Date	Description
F	15-05-2026	SSDA - FOR SUBMISSION
E	20-03-2026	SSDA - FOR SUBMISSION
D	16-02-2026	ISSUE FOR COORDINATION
C	30-05-2025	SSDA - FOR SUBMISSION
B	16-05-2025	SSDA - ISSUE FOR COORDINATION

Amendments

GILES TRIBE
Level 1, 1 Chandos Street
St Leonards 2065 NSW AUSTRALIA
t: 61 2 9264 5005
e: gta@gilestribe.com.au
Giles Tribe Pty Ltd ABN 50 001259 507
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Project:
RESIDENTIAL FLAT BUILDING
19-25 BALFOUR STREET

LINDFIELD

Drawing:
SOUTH ELEVATION

Status: FOR APPROVAL

Scale: As indicated Job No. 24062 Drawing No. DA300 Rev. F
Sheet Size: A1
Date: 09/04/2025
Drawn: RM Reviewed DY

C:\Users\rseller\Documents\19-25 Balfour St_Lindfield 100 - SSDA_25125 - DHM_rseller.mainrdn0UK.rvt

1 NORTH ELEVATION

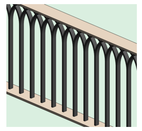
1 : 150

SCHEDULE OF EXTERNAL FINISHES AND MATERIALS

BAL1

BALUSTRADE TYPE 1
SEMI FRAMELESS GLASS

BAL2

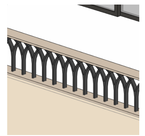


BALUSTRADE TYPE 2
METAL BALUSTRADE

BAL3

BALUSTRADE TYPE 3
SEMI FRAMELESS GLASS FIXED TO LOW WALL

BAL4



BALUSTRADE TYPE 4
METAL BALUSTRADE FIXED TO LOW WALL

WC1

WALL CLADDING TYPE 1
SANDSTONE CLADDING
OR SIMILAR

WC2

WALL CLADDING TYPE2
LIGHT BEIGE COLOUR BRICKWORK
OR SIMILAR

WC3

WALL CLADDING TYPE 3
TIMBER LOOK ALUMINUM CLADDING
OR SIMILAR

WC4

WALL CLADDING TYPE 4
ROCKFACE SANDSTONE CLADDING
OR SIMILAR

PF1

PAINT FINISH TYPE 4
DULUX "APPLIANCE WHITE"
OR SIMILAR

PF2

PAINT FINISH TYPE 2
DULUX "BREADCRUMB"
OR SIMILAR

PF3

PAINT FINISH TYPE 3
DULUX "HOG BRISTLE QUARTER"
OR TO COLOUR MATCH WC2

PF4

PAINT FINISH TYPE 3
DULUX "CAMEL HIDE"
OR TO MATCH WC3

AL1

ALUM FRAME OF WINDOWS/DOORS
POWDERCOAT FINISH TO MATCH
COLORBOND MONUMENT

SC1

PRIVACY SCREEN TYPE 1
POWDERCOAT FINISH TO MATCH
WC3/PF4

BT1

BATTENS TYPE 1
TIMBER LOOK ALUMINUM BATTENS
TO MATCH WC3/PF4

No.	Date	Description
F	15-05-2026	SSDA - FOR SUBMISSION
E	20-03-2026	SSDA - FOR SUBMISSION
D	16-02-2026	ISSUE FOR COORDINATION
C	30-05-2025	SSDA - FOR SUBMISSION
B	16-05-2025	SSDA - ISSUE FOR COORDINATION

Amendments

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St Leonards 2065 NSW AUSTRALIA
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Giles Tribe Pty Ltd ABN 50 001259 507

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Project:
RESIDENTIAL FLAT BUILDING
19-25 BALFOUR STREET

LINDFIELD

Drawing:
NORTH ELEVATION

Status:
FOR APPROVAL

Scale: As indicated Job No. Drawing No. Rev.
Sheet Size: A1 24062 DA301 F
Date: 09/04/2025
Drawn: RM Reviewed: DY

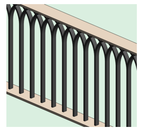
C:\Users\Vroseller\Documents\19-25 Balfour St, Lindfield 1TDD - SSDA_25 V15 - DPHL_roseller.rvadrdf\UNIX.rvt

1 DA302 **EAST ELEVATION**
1 : 150

SCHEDULE OF EXTERNAL FINISHES AND MATERIALS

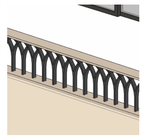
BAL1

BALUSTRADE TYPE 1
SEMI FRAMELESS GLASS

BAL2

BALUSTRADE TYPE 2
METAL BALUSTRADE

BAL3

BALUSTRADE TYPE 3
SEMI FRAMELESS GLASS FIXED TO LOW WALL

BAL4

BALUSTRADE TYPE 4
METAL BALUSTRADE FIXED TO LOW WALL

WC1

WALL CLADDING TYPE 1
SANDSTONE CLADDING
OR SIMILAR

WC2

WALL CLADDING TYPE2
LIGHT BEIGE COLOUR BRICKWORK
OR SIMILAR

WC3

WALL CLADDING TYPE 3
TIMBER LOOK ALUMINUM CLADDING
OR SIMILAR

WC4

WALL CLADDING TYPE 4
ROCKFACE SANDSTONE CLADDING
OR SIMILAR

PF1
PAINT FINISH TYPE 4
DULUX "APPLIANCE WHITE"
OR SIMILAR

PF2
PAINT FINISH TYPE 2
DULUX "BREADCRUMB"
OR SIMILAR

PF3
PAINT FINISH TYPE 3
DULUX "HOG BRISTLE QUARTER"
OR TO COLOUR MATCH WC2

PF4

PAINT FINISH TYPE 3
DULUX "CAMEL HIDE"
OR TO MATCH WC3

AL1

ALUM FRAME OF WINDOWS/DOORS
POWDERCOAT FINISH TO MATCH
COLORBOND MONUMENT

SC1

PRIVACY SCREEN TYPE 1
POWDERCOAT FINISH TO MATCH
WC3/PF4

BT1

BATTENS TYPE 1
TIMBER LOOK ALUMINUM BATTENS
TO MATCH WC3/PF4

No.	Date	Description
F	15-05-2026	SSDA - FOR SUBMISSION
E	20-03-2026	SSDA - FOR SUBMISSION
D	16-02-2026	ISSUE FOR COORDINATION
C	30-05-2025	SSDA - FOR SUBMISSION
B	16-05-2025	SSDA - ISSUE FOR COORDINATION

Amendments

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Level 1, 1 Chandos Street
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Project:
RESIDENTIAL FLAT BUILDING
19-25 BALFOUR STREET

LINDFIELD

Drawing:
EAST ELEVATION

Status:
FOR APPROVAL

Scale:	As indicated	Job No.	Drawing No.	Rev.
Sheet Size:	A1	24062	DA302	F
Date:	09/04/2025			
Drawn:	RM	Reviewed	DY	

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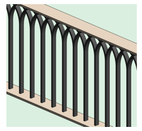
1 DA303 **WEST ELEVATION**
1 : 150

SCHEDULE OF EXTERNAL FINISHES AND MATERIALS

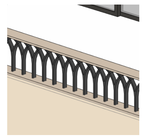
BAL1

BALUSTRADE TYPE 1
SEMI FRAMELESS GLASS

BAL2

BALUSTRADE TYPE 2
METAL BALUSTRADE

BAL3

BALUSTRADE TYPE 3
SEMI FRAMELESS GLASS FIXED TO LOW WALL

BAL4

BALUSTRADE TYPE 4
METAL BALUSTRADE FIXED TO LOW WALL

WC1

WALL CLADDING TYPE 1
SANDSTONE CLADDING
OR SIMILAR

WC2

WALL CLADDING TYPE2
LIGHT BEIGE COLOUR BRICKWORK
OR SIMILAR

WC3

WALL CLADDING TYPE 3
TIMBER LOOK ALUMINUM CLADDING
OR SIMILAR

WC4

WALL CLADDING TYPE 4
ROCKFACE SANDSTONE CLADDING
OR SIMILAR

PF1
PAINT FINISH TYPE 4
DULUX "APPLIANCE WHITE"
OR SIMILAR

PF2
PAINT FINISH TYPE 2
DULUX "BREADCRUMB"
OR SIMILAR

PF3
PAINT FINISH TYPE 3
DULUX "HOG BRISTLE QUARTER"
OR TO COLOUR MATCH WC2

PF4

PAINT FINISH TYPE 3
DULUX "CAMEL HIDE"
OR TO MATCH WC3

AL1

ALUM FRAME OF WINDOWS/DOORS
POWDERCOAT FINISH TO MATCH
COLORBOND MONUMENT

SC1

PRIVACY SCREEN TYPE 1
POWDERCOAT FINISH TO MATCH
WC3/PF4

BT1

BATTENS TYPE 1
TIMBER LOOK ALUMINUM BATTENS
TO MATCH WC3/PF4

No.	Date	Description
F	15-05-2026	SSDA - FOR SUBMISSION
E	20-03-2026	SSDA - FOR SUBMISSION
D	16-02-2026	ISSUE FOR COORDINATION
C	30-05-2025	SSDA - FOR SUBMISSION
B	16-05-2025	SSDA - ISSUE FOR COORDINATION

Amendments

GILES TRIBE
Level 1, 1 Chandos Street
St Leonards 2065 NSW AUSTRALIA
t: 61 2 9264 5005
e: gta@gilestribe.com.au
Giles Tribe Pty Ltd ABN 50 001259 507
Nominated Architects: Mark G Broadley [5823] Victor Schneider [11157]

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Project:
RESIDENTIAL FLAT BUILDING
19-25 BALFOUR STREET

LINDFIELD

Drawing:
WEST ELEVATION

Status:
FOR APPROVAL

Scale:	As indicated	Job No.	Drawing No.	Rev.
Sheet Size:	A1	24062	DA303	F
Date:	09/04/2025			
Drawn:	RM	Reviewed	DY	

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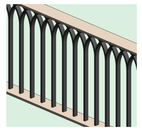
1 / DA304

INNER EAST ELEVATION

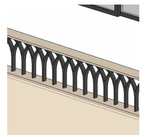
1 : 150

SCHEDULE OF EXTERNAL FINISHES AND MATERIALS

BAL1
BALUSTRADE TYPE 1
SEMI FRAMELESS GLASS

BAL2 
BALUSTRADE TYPE 2
METAL BALUSTRADE

BAL3
BALUSTRADE TYPE 3
SEMI FRAMELESS GLASS FIXED
TO LOW WALL

BAL4 
BALUSTRADE TYPE 4
METAL BALUSTRADE FIXED TO
LOW WALL

WC1
WALL CLADDING TYPE 1
SANDSTONE CLADDING
OR SIMILAR

WC2
WALL CLADDING TYPE2
LIGHT BEIGE COLOUR BRICKWORK
OR SIMILAR

WC3
WALL CLADDING TYPE 3
TIMBER LOOK ALUMINUM CLADDING
OR SIMILAR

WC4
WALL CLADDING TYPE 4
ROCKFACE SANDSTONE CLADDING
OR SIMILAR

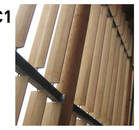
PF1
PAINT FINISH TYPE 4
DULUX "APPLIANCE WHITE"
OR SIMILAR

PF2
PAINT FINISH TYPE 2
DULUX "BREADCRUMB"
OR SIMILAR

PF3
PAINT FINISH TYPE 3
DULUX "HOG BRISTLE QUARTER"
OR TO COLOUR MATCH WC2

PF4
PAINT FINISH TYPE 3
DULUX "CAMEL HIDE"
OR TO MATCH WC3

AL1
ALUM FRAME OF WINDOWS/DOORS
POWDERCOAT FINISH TO MATCH
COLORBOND MONUMENT

SC1 
PRIVACY SCREEN TYPE 1
POWDERCOAT FINISH TO MATCH
WC3/PF4

BT1
BATTENS TYPE 1
TIMBER LOOK ALUMINUM BATTENS
TO MATCH WC3/PF4

No.	Date	Description
F	15-05-2026	SSDA - FOR SUBMISSION
E	20-03-2026	SSDA - FOR SUBMISSION
D	16-02-2026	ISSUE FOR COORDINATION
C	30-05-2025	SSDA - FOR SUBMISSION
B	16-05-2025	SSDA - ISSUE FOR COORDINATION

Amendments

GILES TRIBE
Level 1, 1 Chandos Street
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e: gtal@gilestribe.com.au
Giles Tribe Pty Ltd ABN 50 001259 507
Nominated Architects: Mark G Broadley [5823] Victor Schneider [11157]

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Project:
RESIDENTIAL FLAT BUILDING
19-25 BALFOUR STREET

LINDFIELD

Drawing:
EAST ELEVATION (SECTION THRU COURTYARD)

Status:

Scale: As indicated Job No. 24062 Drawing No. DA304 Rev. F
Sheet Size:
Date: 03/11/25
Drawn: Author Reviewed Checker

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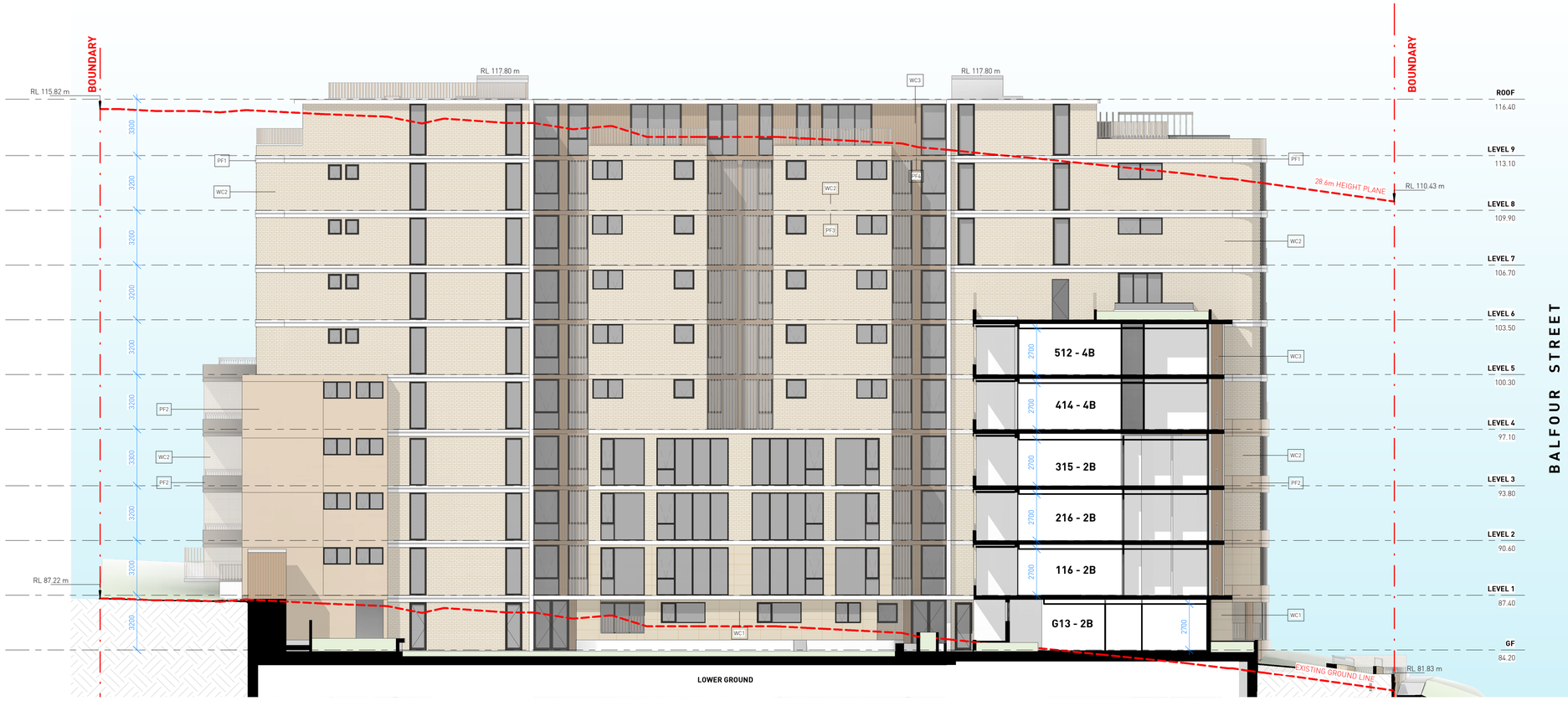


1 DA305

INNER WEST ELEVATION

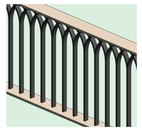
1 : 150

SCHEDULE OF EXTERNAL FINISHES AND MATERIALS

BAL1

BALUSTRADE TYPE 1
SEMI FRAMELESS GLASS

BAL2

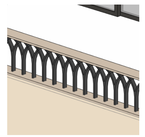


BALUSTRADE TYPE 2
METAL BALUSTRADE

BAL3

BALUSTRADE TYPE 3
SEMI FRAMELESS GLASS FIXED TO LOW WALL

BAL4



BALUSTRADE TYPE 4
METAL BALUSTRADE FIXED TO LOW WALL

WC1

WALL CLADDING TYPE 1
SANDSTONE CLADDING
OR SIMILAR

WC2

WALL CLADDING TYPE2
LIGHT BEIGE COLOUR BRICKWORK
OR SIMILAR

WC3

WALL CLADDING TYPE 3
TIMBER LOOK ALUMINUM CLADDING
OR SIMILAR

WC4

WALL CLADDING TYPE 4
ROCKFACE SANDSTONE CLADDING
OR SIMILAR

PF1

PAINT FINISH TYPE 4
DULUX "APPLIANCE WHITE"
OR SIMILAR

PF2

PAINT FINISH TYPE 2
DULUX "BREADCRUMB"
OR SIMILAR

PF3

PAINT FINISH TYPE 3
DULUX "HOG BRISTLE QUARTER"
OR TO COLOUR MATCH WC2

PF4

PAINT FINISH TYPE 3
DULUX "CAMEL HIDE"
OR TO MATCH WC3

AL1

ALUM FRAME OF WINDOWS/DOORS
POWDERCOAT FINISH TO MATCH
COLORBOND MONUMENT

SC1

PRIVACY SCREEN TYPE 1
POWDERCOAT FINISH TO MATCH
WC3/PF4

BT1

BATTENS TYPE 1
TIMBER LOOK ALUMINUM BATTENS
TO MATCH WC3/PF4

No.	Date	Description
F	15-05-2026	SSDA - FOR SUBMISSION
E	20-03-2026	SSDA - FOR SUBMISSION
D	16-02-2026	ISSUE FOR COORDINATION
C	30-05-2025	SSDA - FOR SUBMISSION
B	16-05-2025	SSDA - ISSUE FOR COORDINATION

Amendments

GILES TRIBE
Level 1, 1 Chandos Street
St Leonards 2065 NSW AUSTRALIA
t: 61 2 9264 5005
e: gtal@gilestribe.com.au
Giles Tribe Pty Ltd ABN 50 001259 507

Nominated Architects: Mark G Broadley [5823] Victor Schneider [11157]

Verify all dimensions on site prior to commencement of work.
Refer all discrepancies to the Architect for determination.
Use figured dimensions in preference to scaling.
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Project:

RESIDENTIAL FLAT BUILDING
19-25 BALFOUR STREET

LINDFIELD

Drawing:

WEST ELEVATION (SECTION THRU COURTYARD)

Status:

Scale: As indicated Job No. Drawing No. Rev.
Sheet Size:
Date: 03/11/25 24062 DA305 F
Drawn: Author Reviewed Checker

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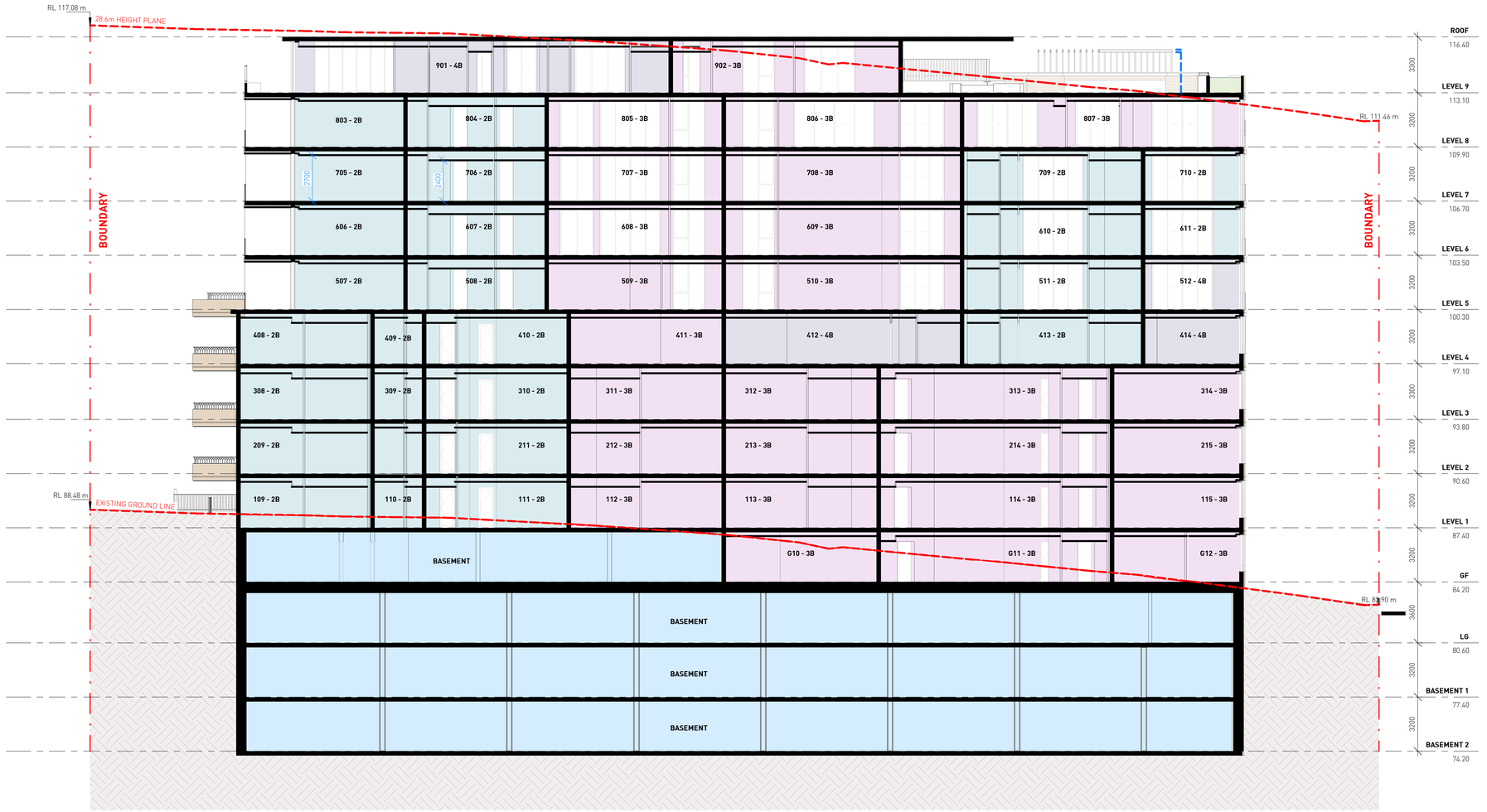

1 / DA310 **SECTION A**

1 : 150

No.	Date	Description
F	15-05-2026	SSDA - FOR SUBMISSION
E	20-03-2026	SSDA - FOR SUBMISSION
D	16-02-2026	ISSUE FOR COORDINATION
C	30-05-2025	SSDA - FOR SUBMISSION
B	16-05-2025	SSDA - ISSUE FOR COORDINATION

Amendments

GILES TRIBE
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e: gta@gilestribe.com.au
Giles Tribe Pty Ltd ABN 50 001259 507

Nominated Architects: Mark G Broadley [5823] Victor Schneider [11157]

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Project:

RESIDENTIAL FLAT BUILDING
19-25 BALFOUR STREET

LINDFIELD

Drawing:

SECTION

Status: FOR APPROVAL

Scale:	1 : 150	Job No.	Drawing No. Rev.
Sheet Size:	A1	24062	DA310 F
Date:	09/04/2025		
Drawn:	RM	Reviewed:	DY

C:\Users\rkeller\Documents\19-25 Balfour St, Lindfield 1DD - SSDA_25 R15 - DPHL_rkeller.mailnrDUNJK.rvt

1 / DA311 **SECTION B**

1 : 150

No.	Date	Description
F	15-05-2026	SSDA - FOR SUBMISSION
E	20-03-2026	SSDA - FOR SUBMISSION
D	16-02-2026	ISSUE FOR COORDINATION
C	30-05-2025	SSDA - FOR SUBMISSION
B	16-05-2025	SSDA - ISSUE FOR COORDINATION

Amendments

GILES TRIBE
Level 1, 1 Chandos Street
St Leonards 2065 NSW AUSTRALIA
t: 61 2 9264 5005
e: gta@gilestribe.com.au
Giles Tribe Pty Ltd ABN 50 001 259 507
Nominated Architects: Mark G Broadley [5823] Victor Schneider [11157]

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Project:

RESIDENTIAL FLAT BUILDING
19-25 BALFOUR STREET

LINDFIELD

Drawing:

SECTION

Status: FOR APPROVAL

Scale:	1 : 150	Job No.	Drawing No. Rev.
Sheet Size:	A1	24062	DA311 F
Date:	09/04/2025		
Drawn:	RM	Reviewed:	DY

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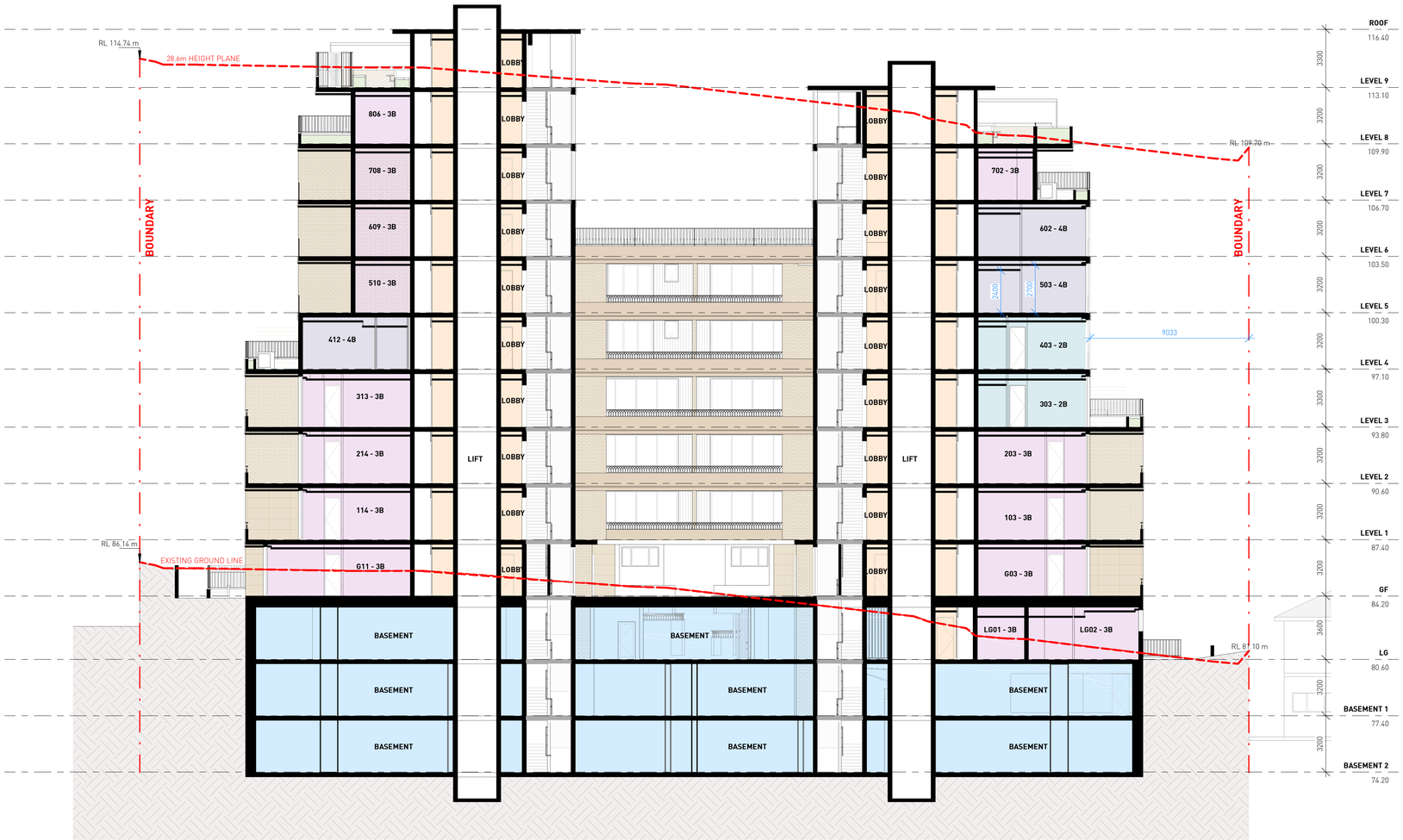

1 / DA312 **SECTION C**

1 : 150

No.	Date	Description
F	15-05-2026	SSDA - FOR SUBMISSION
E	20-03-2026	SSDA - FOR SUBMISSION
D	16-02-2026	ISSUE FOR COORDINATION
C	30-05-2025	SSDA - FOR SUBMISSION
B	16-05-2025	SSDA - ISSUE FOR COORDINATION

Amendments

GILES TRIBE
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St Leonards 2065 NSW AUSTRALIA
t: 61 2 9264 5005
e: gta@gilestribe.com.au
Giles Tribe Pty Ltd ABN 50 001259 507

Nominated Architects: Mark G Broadley [5823] Victor Schneider [11157]

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Project:

RESIDENTIAL FLAT BUILDING
19-25 BALFOUR STREET

LINDFIELD

Drawing:

SECTION

Status: FOR APPROVAL

Scale:	1 : 150	Job No.	Drawing No.	Rev.
Sheet Size:	A1	24062	DA312	F
Date:	09/04/2025			
Drawn:	RM	Reviewed	DY	

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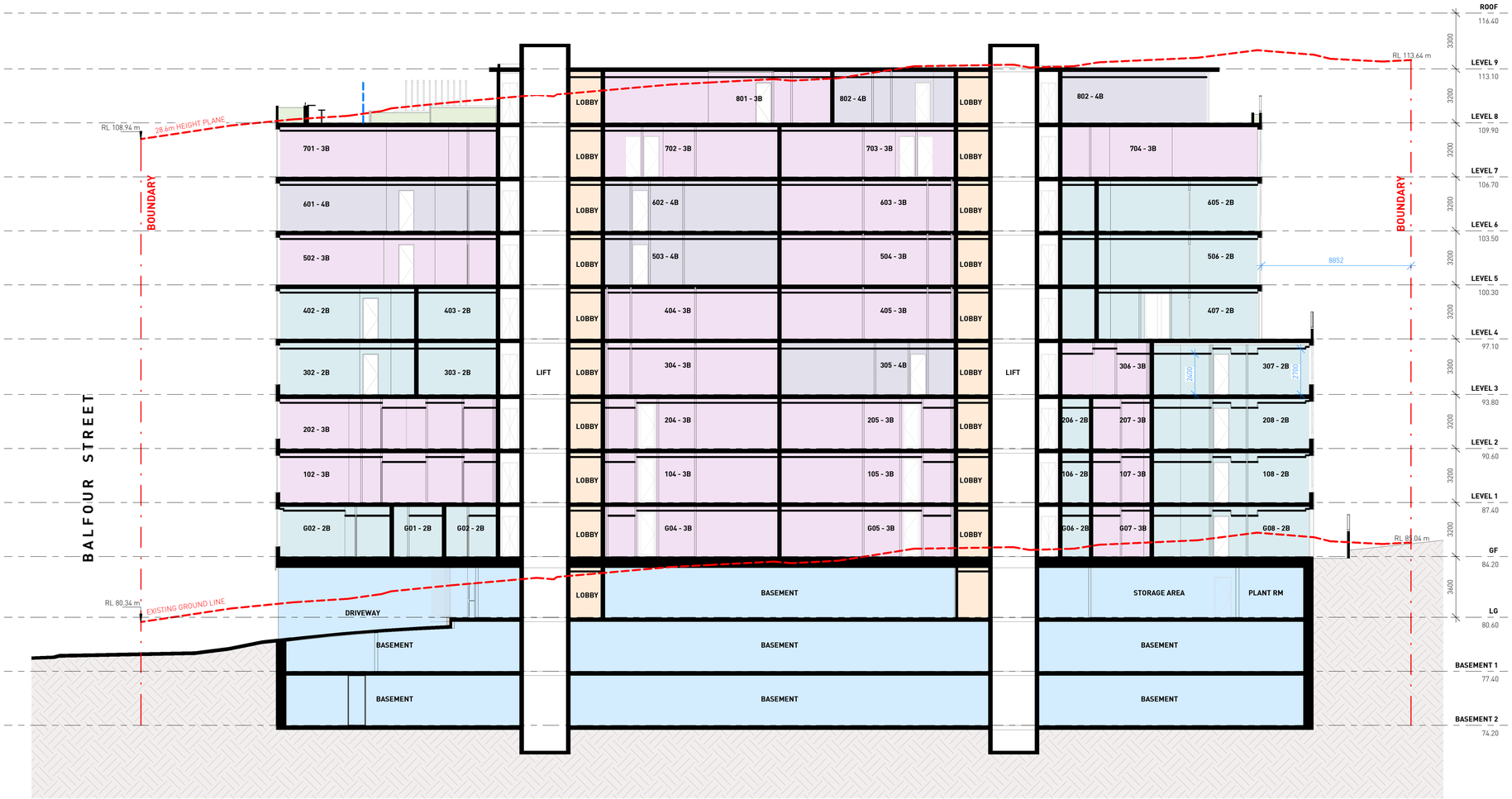

1 / DA313 **SECTION D**

1 : 150

No.	Date	Description
F	15-05-2026	SSDA - FOR SUBMISSION
E	20-03-2026	SSDA - FOR SUBMISSION
D	16-02-2026	ISSUE FOR COORDINATION
C	30-05-2025	SSDA - FOR SUBMISSION
B	16-05-2025	SSDA - ISSUE FOR COORDINATION

Amendments

GILES TRIBE
Level 1, 1 Chandos Street
St Leonards 2065 NSW AUSTRALIA
t: 61 2 9264 5005
e: gtal@gilestribe.com.au
Giles Tribe Pty Ltd ABN 50 001259 507
Nominated Architects: Mark G Broadley [5823] Victor Schneider [11157]

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Project:
RESIDENTIAL FLAT BUILDING
19-25 BALFOUR STREET

LINDFIELD

Drawing:
SECTION

Status:

Scale: 1 : 150 Job No. 24062 Drawing No. DA313 Rev. F
Sheet Size:
Date: 09/04/2025
Drawn: Author Reviewed Checker

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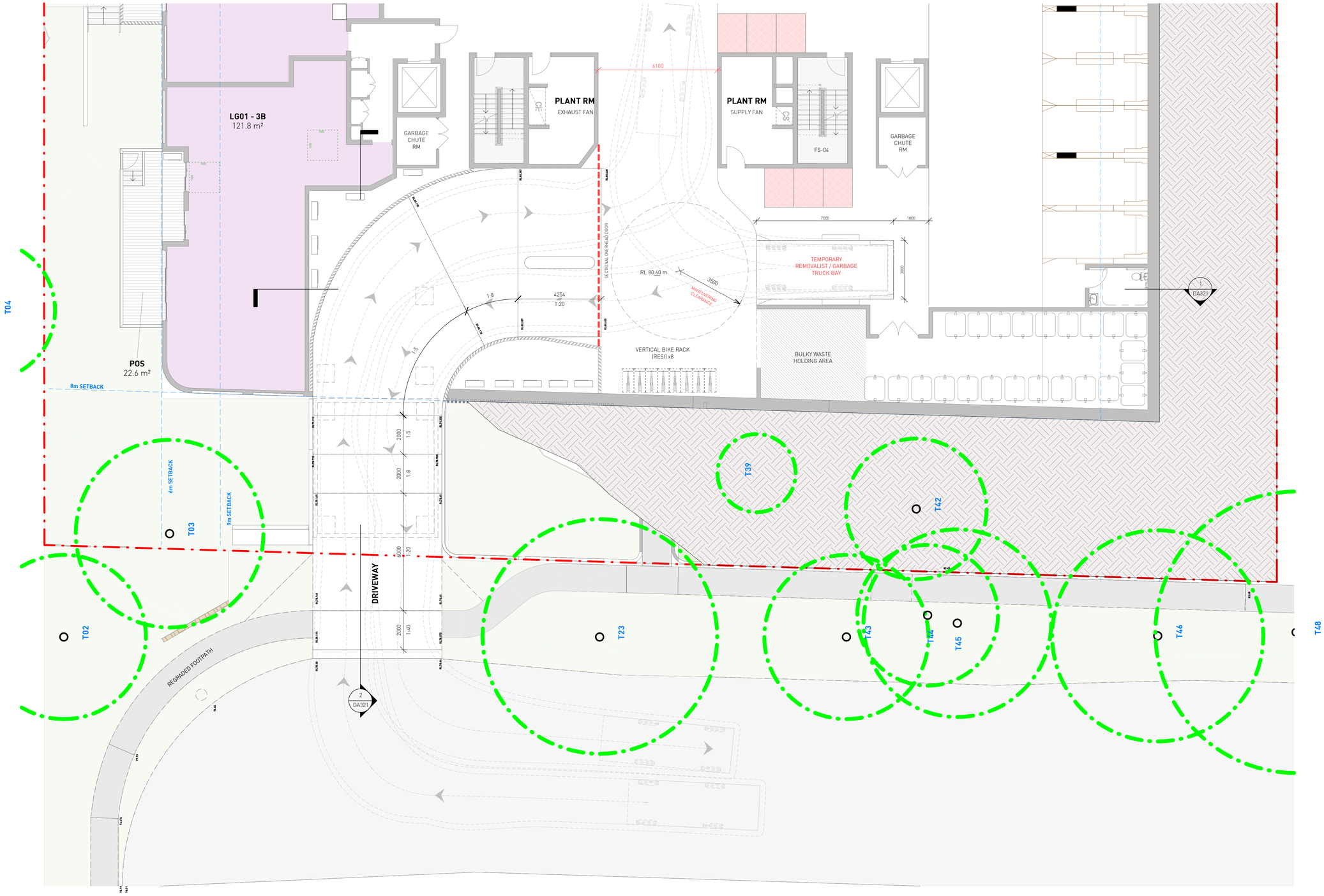

1 DA320

LOWER GROUND FLOOR PLAN - Driveway

1 : 100

No.	Date	Description
E	20-03-2026	SSDA - FOR SUBMISSION
D	16-02-2026	ISSUE FOR COORDINATION
C	30-05-2025	SSDA - FOR SUBMISSION
B	16-05-2025	SSDA - ISSUE FOR COORDINATION
A	07-05-2025	ISSUE FOR DA SUBMISSION

Amendments

GILES TRIBE
Level 1, 1 Chandos Street
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t: 61 2 9314 5005
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Giles Tribe Pty Ltd ABN 50 001259 507

Nominated Architects: Mark G Broadley [5823] Victor Schneider [11157]

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Project:

RESIDENTIAL FLAT BUILDING
19-25 BALFOUR STREET

LINDFIELD

Drawing:

DRIVEWAY DETAILS

Status:

Scale: 1 : 100 Job No. 24062 Drawing No. DA320 Rev. E

Sheet Size:

Date: 03/26/25

Drawn: Author Reviewed: Checker

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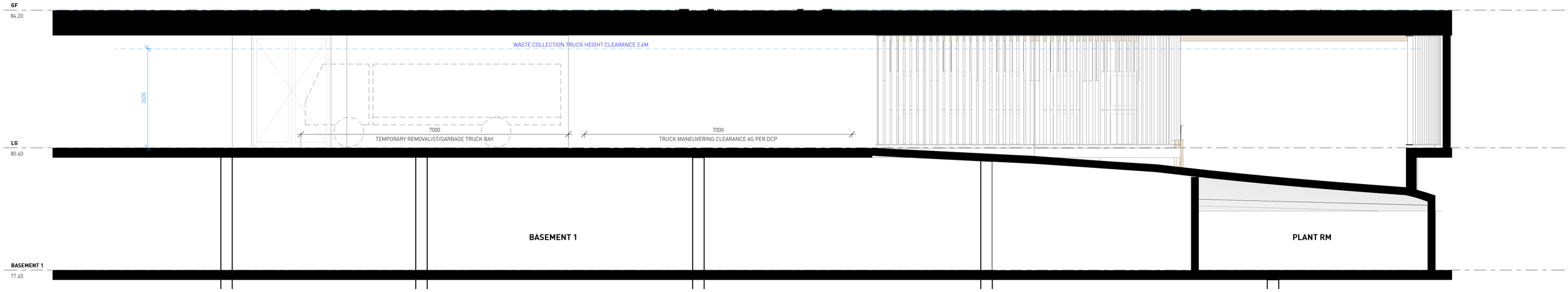
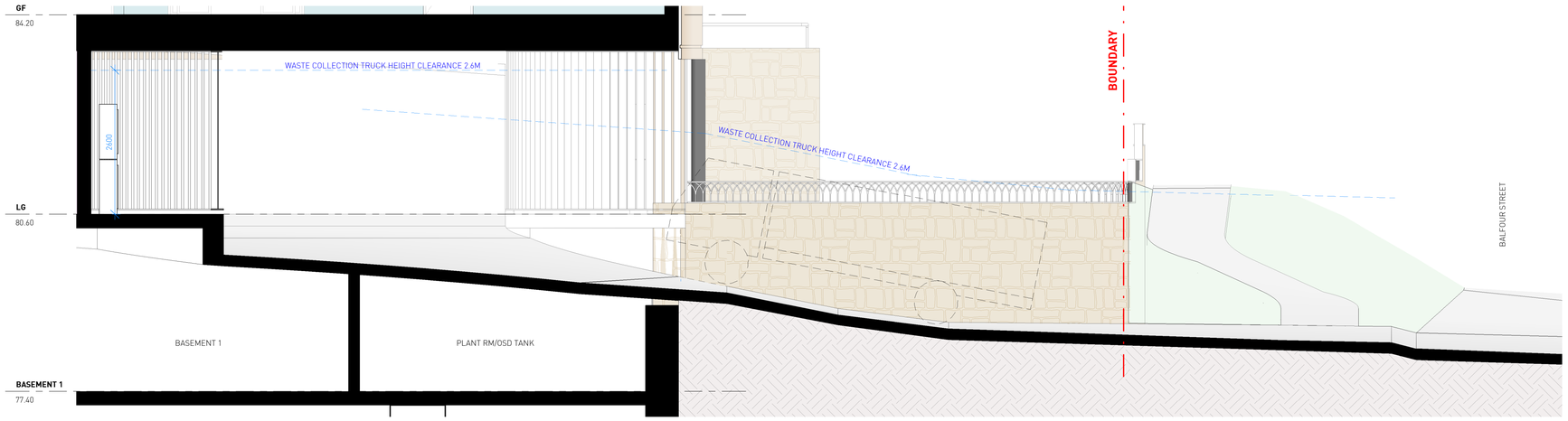


1 DA321

DRIVEWAY SECTION 1

1 : 50



2 DA321

DRIVEWAY SECTION 2

1 : 50

No.	Date	Description
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D	16-02-2026	ISSUE FOR COORDINATION
C	30-05-2025	SSDA - FOR SUBMISSION
B	16-05-2025	SSDA - ISSUE FOR COORDINATION
A	07-05-2025	ISSUE FOR DA SUBMISSION

Amendments

GILES TRIBE
Level 1, 1 Chandos Street
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t: 61 2 9264 5005
e: gtal@gilestribe.com.au
Giles Tribe Pty Ltd ABN 50 001259 507
Nominated Architects: Mark G Broadley [5823] Victor Schneider [11157]

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Project:

RESIDENTIAL FLAT BUILDING
19-25 BALFOUR STREET

LINDFIELD

Drawing:

DRIVEWAY DETAILS

Status: FOR APPROVAL

Scale:	1 : 50	Job No.	Drawing No. Rev.
Sheet Size:	A1	24062	DA321 E
Date:	24/07/15		
Drawn:	RM	Reviewed	DY

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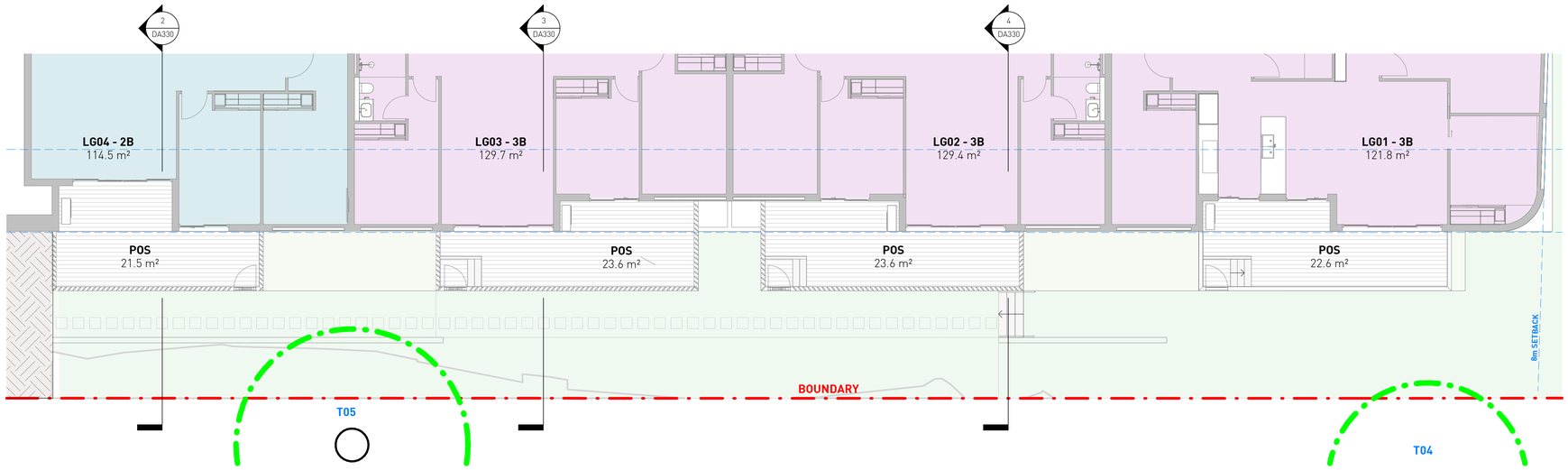
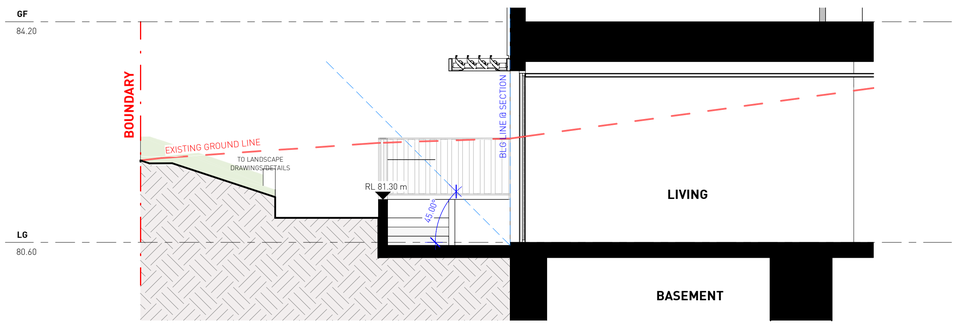
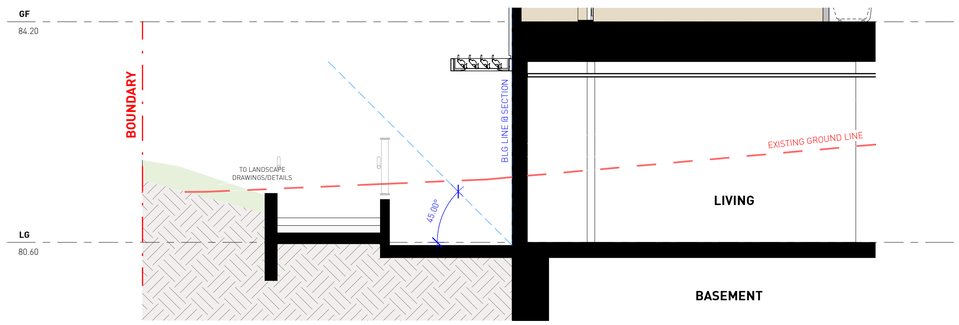


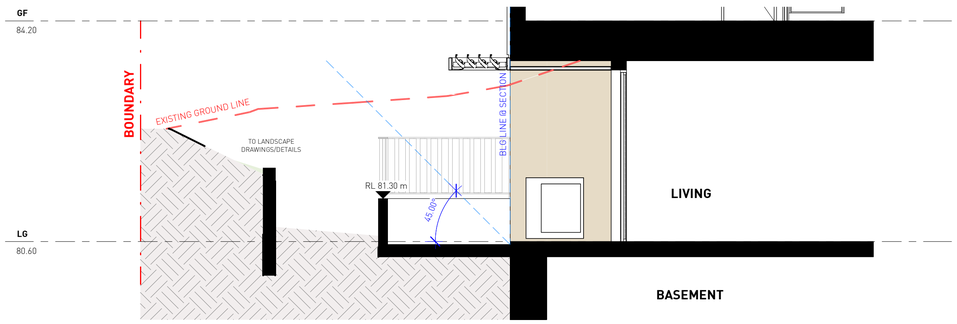
1 DA330 **LOWER GROUND - PRIVATE OPEN SPACE (LG02, LG03, LG04)**
1 : 100



3 DA330 **SECTION LG03**
1 : 50



4 DA330 **SECTION LG02**
1 : 50



2 DA330 **SECTION LG04**
1 : 50

No.	Date	Description
E	20-03-2026	SSDA - FOR SUBMISSION
D	16-02-2026	ISSUE FOR COORDINATION
C	30-05-2025	SSDA - FOR SUBMISSION
B	16-05-2025	SSDA - ISSUE FOR COORDINATION
A	07-05-2025	ISSUE FOR DA SUBMISSION

Amendments

GILES TRIBE
Level 1, 1 Chandos Street
St Leonards 2065 NSW AUSTRALIA
t: 61 2 9264 5005
e: gta@gilestribe.com.au
Giles Tribe Pty Ltd ABN 50 001259 507
Nominated Architects: Mark G Broadley [5823] Victor Schneider [11157]

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Project:
RESIDENTIAL FLAT BUILDING
19-25 BALFOUR STREET

LINDFIELD

Drawing:
SECTION THRU WEST WING
LOWER GROUND UNITS

Status:

Scale: As indicated
Job No. 24062
Drawing No. DA330
Rev. E
Sheet Size:
Date: 04/10/25
Drawn: Author
Reviewed: Checker

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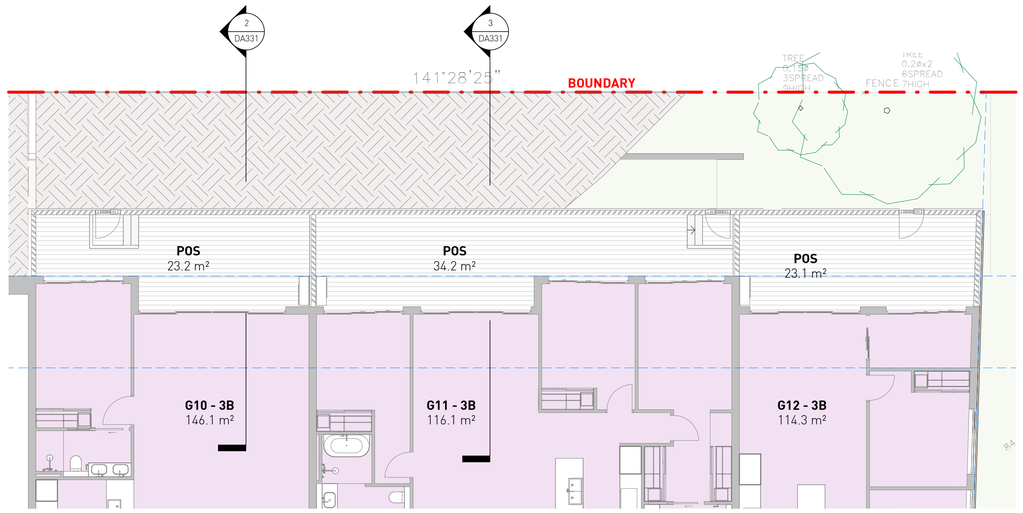
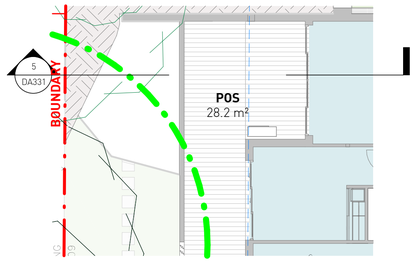
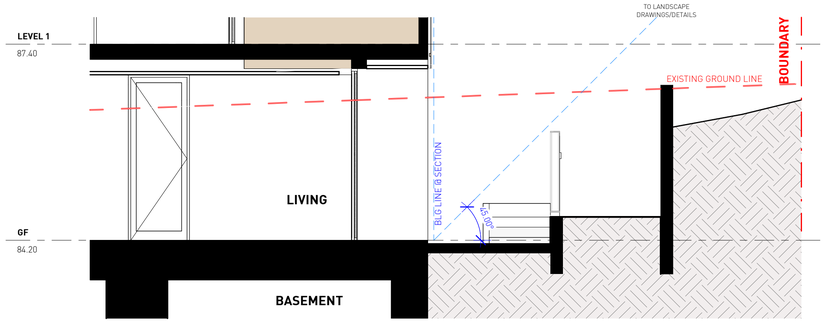


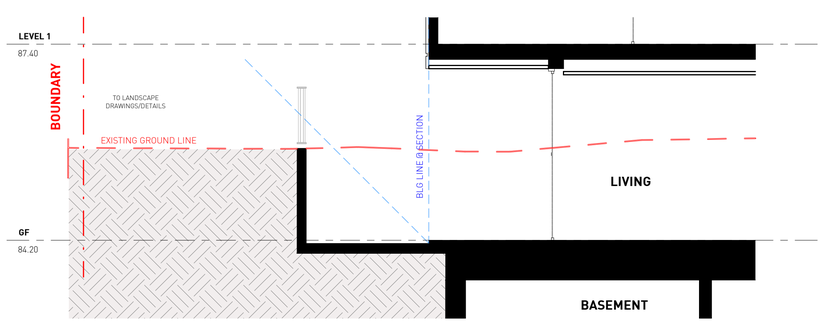
1 DA331 **GROUND FLOOR PRIVATE OPEN SPACE (G10, G11)**
1 : 100



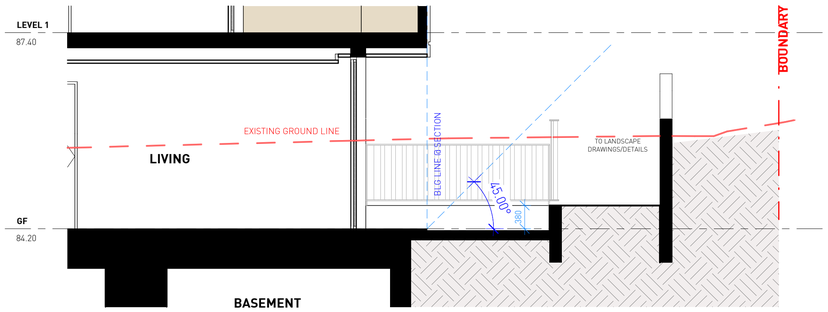
4 DA331 **GROUND FLOOR UNIT G07 - PRIVATE OPEN SPACE**
1 : 100



2 DA331 **SECTION G10**
1 : 50



5 DA331 **SECTION G07**
1 : 50



3 DA331 **SECTION G11**
1 : 50

No.	Date	Description
E	20-03-2026	SSDA - FOR SUBMISSION
D	16-02-2026	ISSUE FOR COORDINATION
C	30-05-2025	SSDA - FOR SUBMISSION
B	16-05-2025	SSDA - ISSUE FOR COORDINATION
A	07-05-2025	ISSUE FOR DA SUBMISSION

Amendments

GILES TRIBE
Level 1, 1 Chandos Street
St Leonards 2065 NSW AUSTRALIA
t: 61 2 9264 5005
e: gta@gilestribe.com.au
Giles Tribe Pty Ltd ABN 50 001259 507
Nominated Architects: Mark G Broadley [5823] Victor Schneider [11157]

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Project:
RESIDENTIAL FLAT BUILDING
19-25 BALFOUR STREET

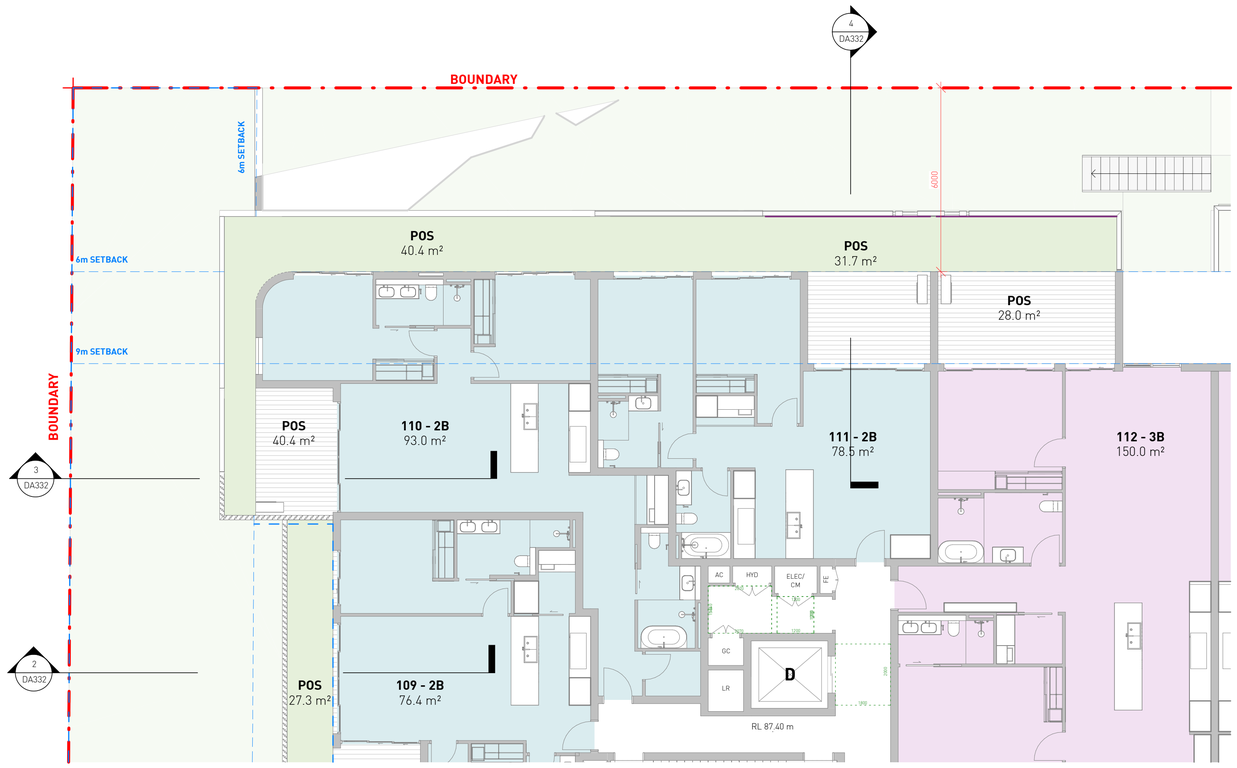
LINDFIELD

Drawing:
SECTION THRU EAST WING
LOWER GROUND UNITS

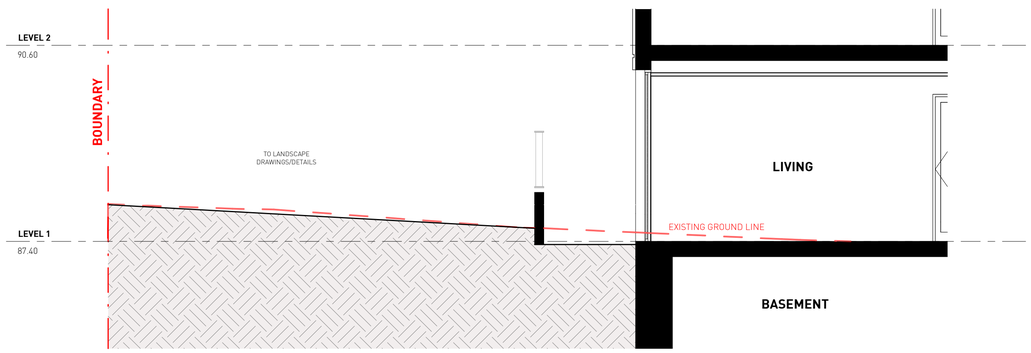
Status:

Scale: As indicated
Job No. 24062
Drawing No. DA331
Rev. E
Sheet Size:
Date: 04/10/25
Drawn: Author
Reviewed: Checker

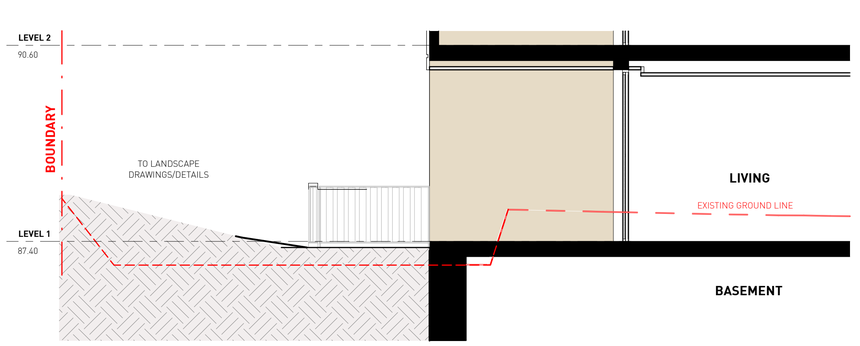
C:\Users\roseller\Documents\19-25 Balfour St, Lindfield TOD - SSDA_251215 - DPHI_roseller.madrid\YUNQX.rvt



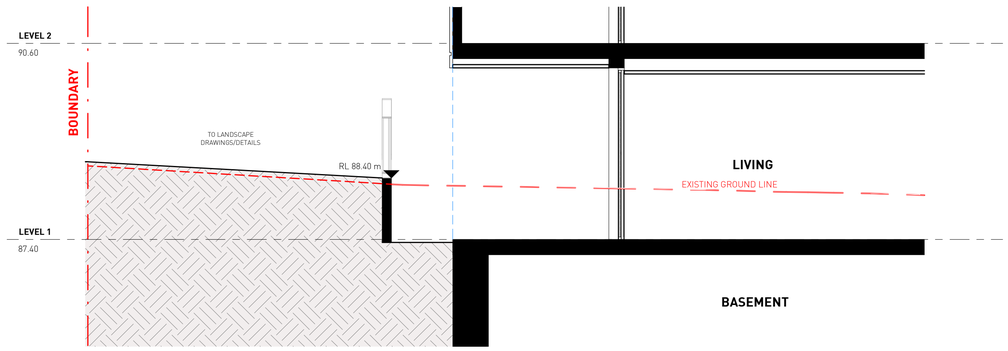
1 DA332 **LEVEL 1 PRIVATE OPEN SPACE (109,110,111,112)**
1 : 100



2 DA332 **SECTION 109**
1 : 50



4 DA332 **SECTION 111**
1 : 50



3 DA332 **SECTION 110**
1 : 50

No.	Date	Description
A	20-03-2026	SSDA - FOR SUBMISSION

Amendments

GILES TRIBE
Level 1, 1 Chandos Street
St Leonards 2065 NSW AUSTRALIA
t: 61 2 9264 5005
e: gta@gilestribe.com.au
Giles Tribe Pty Ltd ABN 50 001259 507
Nominated Architects: Mark G Broadley [5823] Victor Schneider [11157]

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Project:
RESIDENTIAL FLAT BUILDING
19-25 BALFOUR STREET

LINDFIELD

Drawing:
SECTION THRU EAST WING LEVEL 1 UNITS

Status:

Scale: As indicated
Job No. 24062
Drawing No. DA332
Rev. A
Sheet Size:
Date: 02/17/26
Drawn: Author
Reviewed Checker

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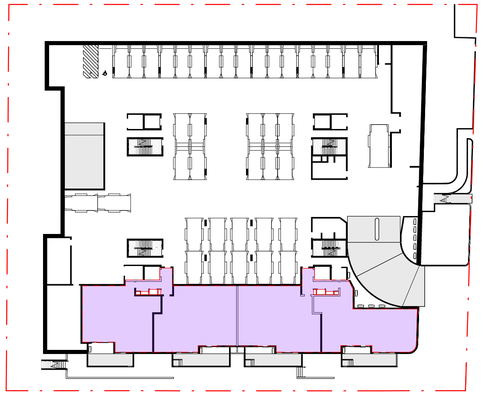
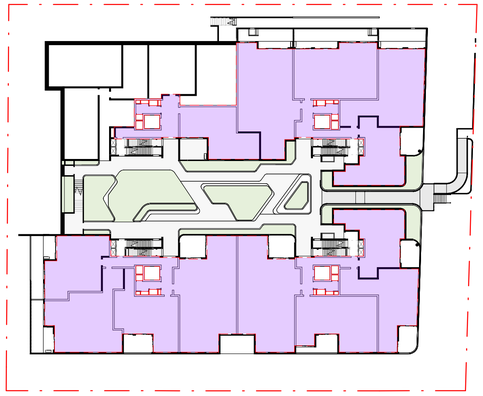


1 DA400 **GFA - LOWER GROUND LEVEL**
1 : 500



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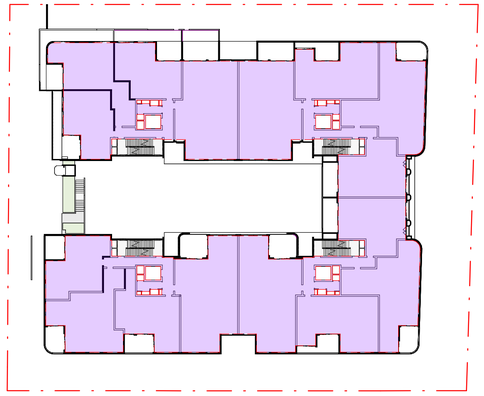

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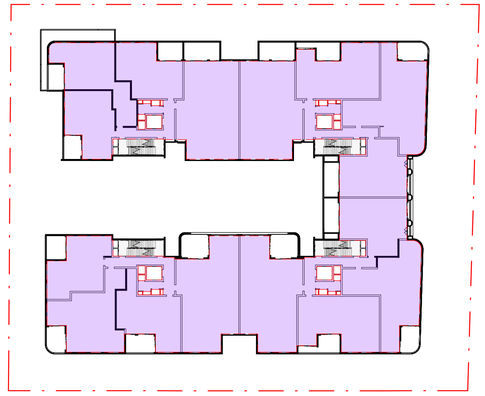

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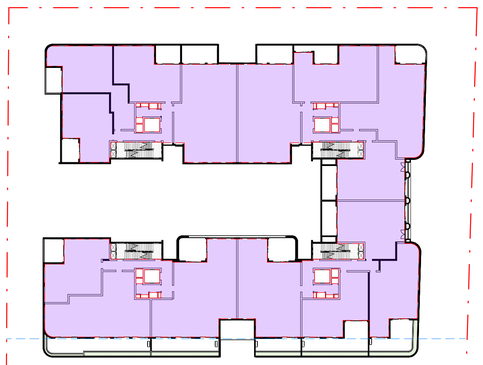

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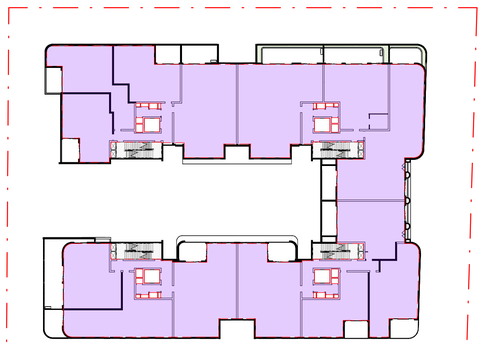

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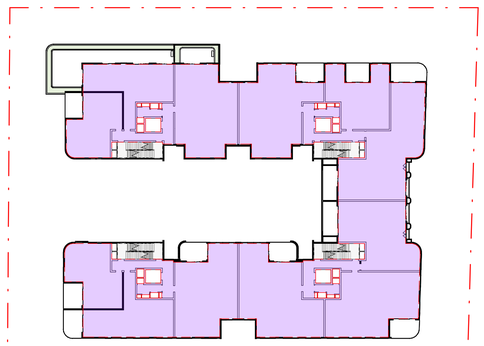

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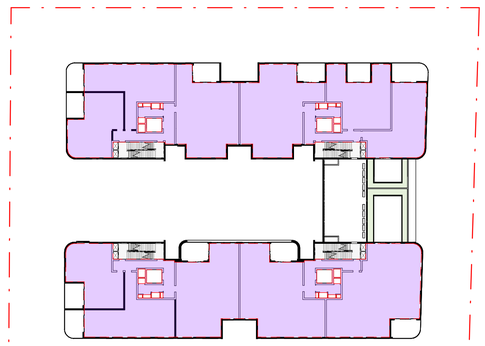

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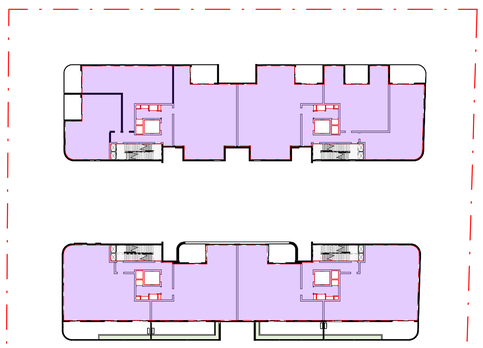

9 DA400 **GFA - LEVEL 7**
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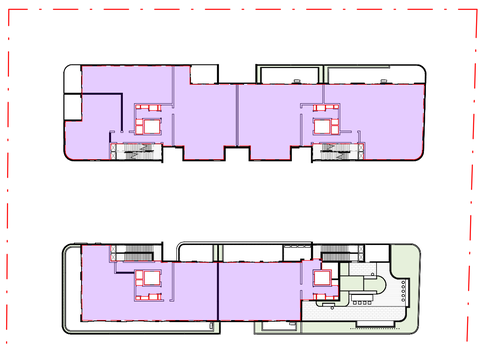

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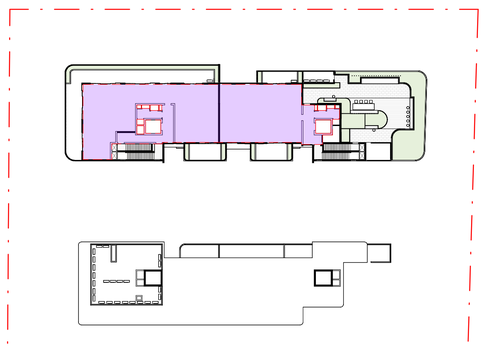

11 DA400 **GFA - LEVEL 9**
1 : 500

PROPOSED FSR		
SITE AREA	PROPOSED GFA	FSR
4771.0 m²	15401.0 m²	3.23

PROPOSED GFA	
Level	TOTAL GFA
GF	1615.0 m²
L1	1993.0 m²
L2	1992.0 m²
L3	1842.0 m²
L4	1736.0 m²
L5	1579.0 m²
L6	1411.0 m²
L7	1298.0 m²
L8	1027.0 m²
L9	366.0 m²
LG	542.0 m²
TOTALS: 11	15401.0 m²

No.	Date	Description
F	15-05-2026	SSDA - FOR SUBMISSION
E	20-03-2026	SSDA - FOR SUBMISSION
D	16-02-2026	ISSUE FOR COORDINATION
C	30-05-2025	SSDA - FOR SUBMISSION
B	16-05-2025	SSDA - ISSUE FOR COORDINATION

Amendments

GILES TRIBE
Level 1 1 Chandos Street
St Leonards 2065 NSW AUSTRALIA
t: 61 2 9244 5005
e: gta@gilestribe.com.au
Giles Tribe Pty Ltd ABN 50 001259 507
Nominated Architects: Mark G Broadley [5823] Victor Schneider [5717]

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Project:
RESIDENTIAL FLAT BUILDING
19-25 BALFOUR STREET

LINDFIELD

Drawing:
AREA SCHEDULE - GFA DIAGRAM

Status:
FOR APPROVAL

Scale: 1 : 500
Sheet Size: A1
Date: 09/04/2025
Drawn: RM
Job No. 24062
Drawing No. DA400
Rev. F
Reviewed DY

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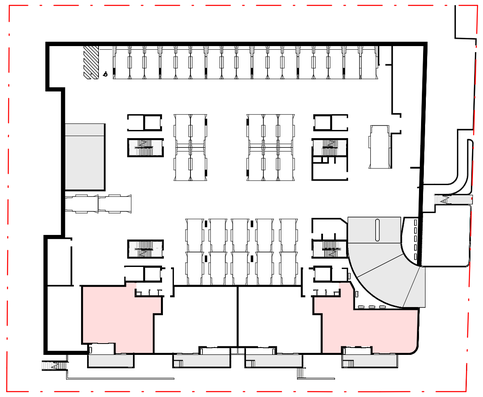

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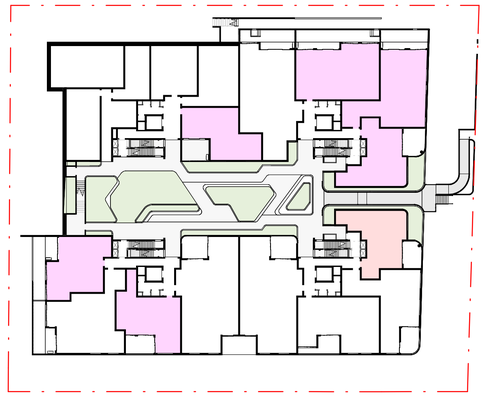
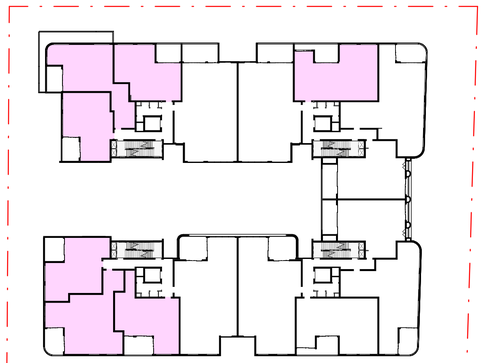


2 DA401 **AFFORDABLES GFA_GF**
1 : 500

3 DA401 **AFFORDABLES GFA_L1**
1 : 500



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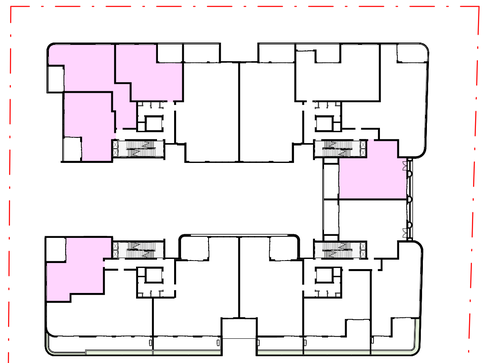

5 DA401 **AFFORDABLES GFA_L3**
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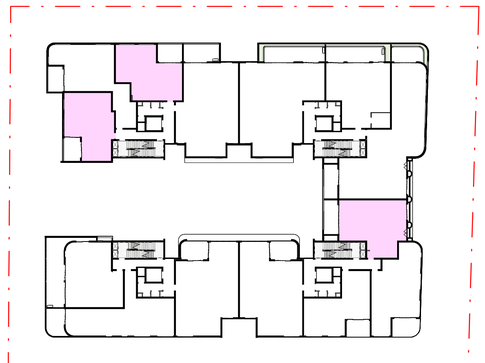

6 DA401 **AFFORDABLES GFA_L4**
1 : 500

AFFORDABLE UNIT GFA (HOUSING SEPP)

AFFORDABLE UNIT GFA (INFILL TOD)

MAXIMUM PERMISSIBLE GFA/FSR		
SITE AREA	Max FSR (TOD + 30% Bonus)	Max GFA
4771.0 m²	3.25	15505.8 m²

REQUIRED AFFORDABLE HOUSING GFA			
Maximum GFA (FSR 3.25)	SEPP (15% of Max GFA)	INFILL (TOD 2% of MAX GFA)	TOTAL (17% of MAX GFA)
15505.8 m²	2325.9 m²	310.1 m²	2636.0 m²

PROPOSED AFFORDABLE GFA		
SEPP	INFILL	TOTAL AFFORDABLES
2353.8 m²	315.8 m²	2669.6 m²
AFFRORDABLES PERCENTAGE TO MAX 3.25 FSR		
SEPP %	INFILL %	TOTAL %
15.180%	2.037%	17.217%

UNIT MIX | SOLAR ACCESS | CROSS VENT

UNIT MIX - Affordable Units	
Name	Count
2B	24
3B	6
Grand total: 30	

SOLAR ACCESS (Affordable)	
Solar Access	Count
-	5
0	4
✔	21
Grand total: 30	

CROSS VENTILATION (Affordable)	
Cross Ventilated	Count
x	12
✔	18
Grand total: 30	

GFA (AFFORDABLES VS MARKET UNITS)					
Level	SEPP	INFILL	TOTAL AFFORDABLES	MARKET	TOTAL GFA
GF	555.9 m²	79.5 m²	635.4 m²	979.6 m²	1615.0 m²
L1	517.6 m²	0.0 m²	517.6 m²	1475.4 m²	1993.0 m²
L2	624.8 m²	0.0 m²	624.8 m²	1367.2 m²	1992.0 m²
L3	414.0 m²	0.0 m²	414.0 m²	1428.0 m²	1842.0 m²
L4	241.5 m²	0.0 m²	241.5 m²	1494.5 m²	1736.0 m²
L5	0.0 m²	0.0 m²	0.0 m²	1579.0 m²	1579.0 m²
L6	0.0 m²	0.0 m²	0.0 m²	1411.0 m²	1411.0 m²
L7	0.0 m²	0.0 m²	0.0 m²	1298.0 m²	1298.0 m²
L8	0.0 m²	0.0 m²	0.0 m²	1027.0 m²	1027.0 m²
L9	0.0 m²	0.0 m²	0.0 m²	366.0 m²	366.0 m²
LG	0.0 m²	236.3 m²	236.3 m²	305.7 m²	542.0 m²
TOTALS	2353.8 m²	315.8 m²	2669.6 m²	12731.4 m²	15401.0 m²

AFFORDABLE UNIT SCHEDULE

AFFORDABLE UNITS (TOD - 2%)					
UNIT	BEDROOM	UNIT AREA	POS/ BAL	X-VENT	Solar Access
LG					
LG01	3B	121.8 m²	22.8	x	-
LG04	2B	114.5 m²	21.3	x	0
GF					
G01	2B	79.5 m²	12.4	✔	0
Total Units: 3		315.8 m²			

AFFORDABLE UNITS (HOUSING SEPP 2021 - 15%)					
UNIT	BEDROOM	AREA	POS/ BAL	X-VENT	Solar Access
GF					
G06	2B	83.6 m²	13.0	x	-
G08	2B	84.4 m²	28.2	✔	✔
G09	2B	78.0 m²	15.0	x	0
G11	3B	116.1 m²	34.4	x	✔
G12	3B	114.3 m²	23.1	✔	✔
G13	2B	79.5 m²	15.1	✔	0
LEVEL 1					
106	2B	83.6 m²	13.0	x	-
107	3B	106.5 m²	12.2	✔	✔
108	2B	79.6 m²	11.6	✔	✔
109	2B	76.4 m²	27.3	✔	✔
110	2B	93.0 m²	40.4	✔	✔
111	2B	78.5 m²	31.7	x	✔
LEVEL 2					
206	2B	83.6 m²	13.0	x	-
207	3B	106.5 m²	12.2	✔	✔
208	2B	79.6 m²	11.6	✔	✔
209	2B	76.3 m²	10.0	✔	✔
210	2B	93.0 m²	10.0	✔	✔
211	2B	78.5 m²	11.4	x	✔
214	3B	107.3 m²	13.9	x	✔
LEVEL 3					
307	2B	79.6 m²	11.6	✔	✔
308	2B	76.3 m²	10.0	✔	✔
309	2B	93.0 m²	10.0	✔	✔
310	2B	78.5 m²	11.4	x	✔
315	2B	86.6 m²	12.5	✔	-
LEVEL 4					
401	2B	86.6 m²	12.5	✔	✔
408	2B	76.3 m²	10.0	✔	✔
410	2B	78.5 m²	11.4	x	✔
Total Units: 27		2353.8 m²			

No.	Date	Description
D	15-05-2026	SSDA - FOR SUBMISSION
C	20-03-2026	SSDA - FOR SUBMISSION
B	16-02-2026	ISSUE FOR COORDINATION
A	10-07-2025	SSDA - FOR SUBMISSION

Amendments

GILES TRIBE
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Giles Tribe Pty Ltd ABN 50 001259 507
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Project:
RESIDENTIAL FLAT BUILDING
19-25 BALFOUR STREET

LINDFIELD

Drawing:
AFFORDABLES GFA

Status: FOR APPROVAL

Scale: As indicated Job No. 24062 Drawing No. DA401 Rev. D
Sheet Size: A1
Date: 09/04/2025
Drawn: RM Reviewed: DY

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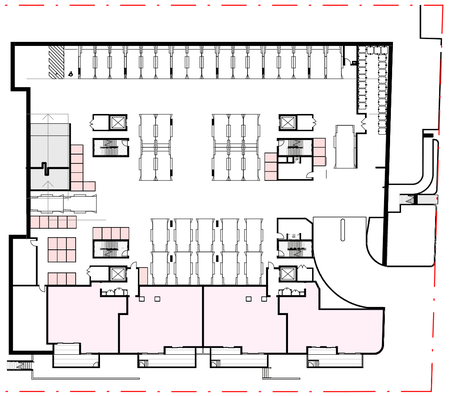

1 DA404 **XVENT - LOWER GROUND LEVEL**
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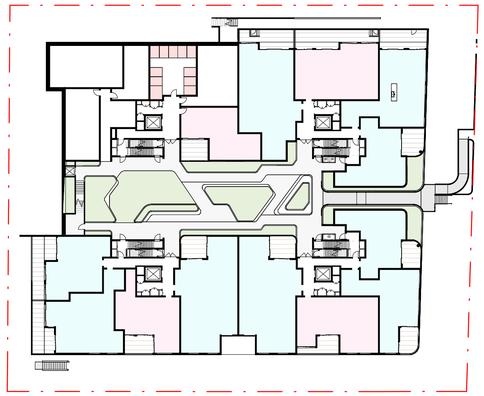

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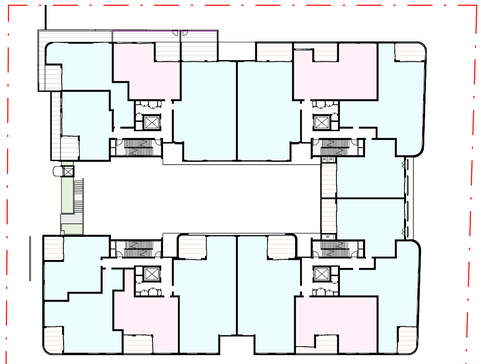

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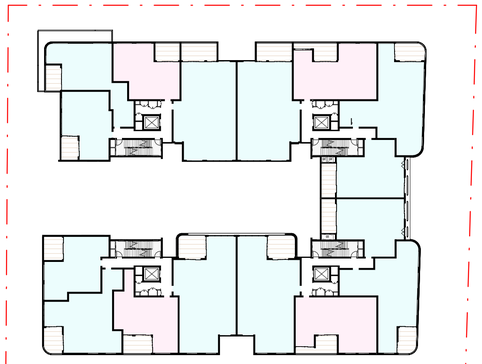

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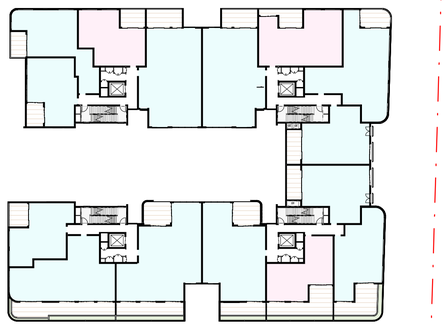

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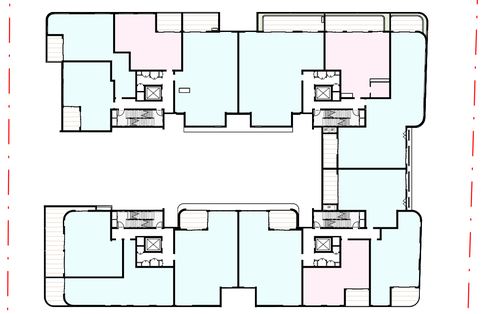

6 DA404 **XVENT - LEVEL 4**
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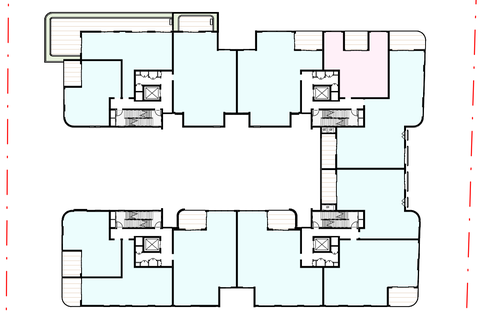

7 DA404 **XVENT - LEVEL 5**
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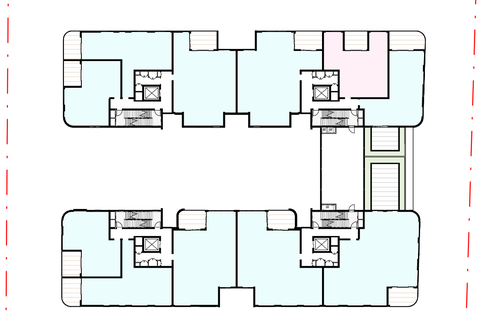
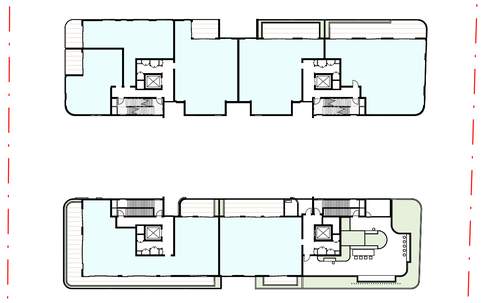


8 DA404 **XVENT - LEVEL 6**
1 : 500

9 DA404 **XVENT - LEVEL 7**
1 : 500

BALFOUR STREET



10 DA404 **XVENT - LEVEL 8**
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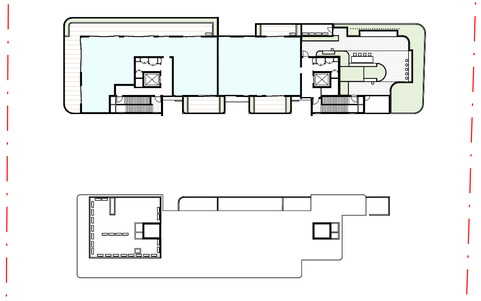

11 DA404 **XVENT - LEVEL 9**
1 : 500

CROSS VENTILATION

NO CROSS VENTILATION

95 OUT OF 120 UNITS ACHIEVE CROSS VENTILATION
= 79.2% (COMPLIES - MIN. 60%)

No.	Date	Description
F	15-05-2026	SSDA - FOR SUBMISSION
E	20-03-2026	SSDA - FOR SUBMISSION
D	16-02-2026	ISSUE FOR COORDINATION
C	30-05-2025	SSDA - FOR SUBMISSION
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Project:
RESIDENTIAL FLAT BUILDING
19-25 BALFOUR STREET

LINDFIELD

Drawing:
CROSS VENTILATION

Status:
FOR APPROVAL

Scale: As indicated Job No. 24062 Drawing No. DA404 Rev. F
Sheet Size: A1
Date: 09/04/2025
Drawn: RM Reviewed DY

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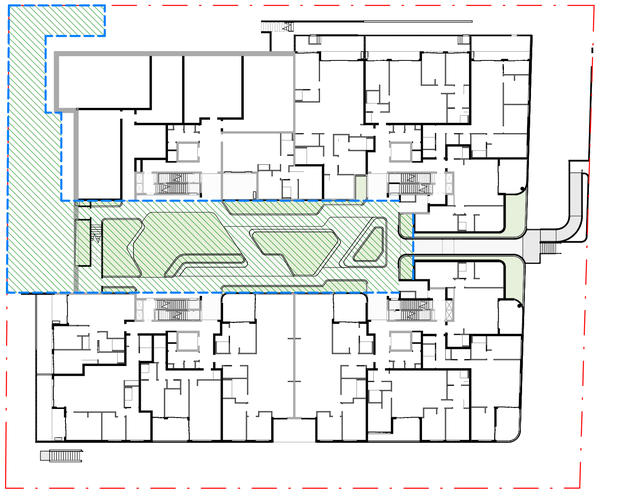
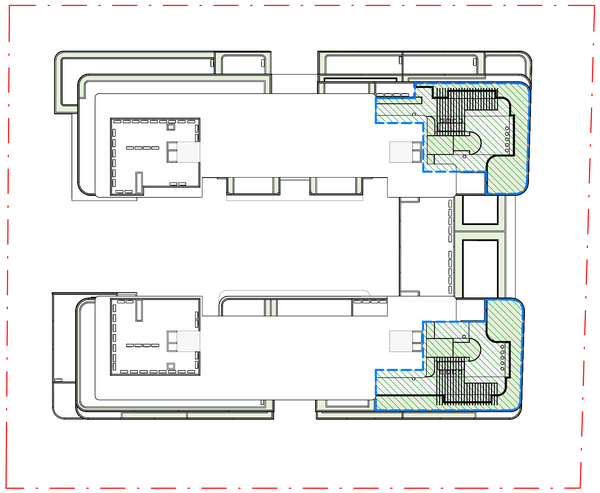


1 DA410 **COMMUNAL - GROUND LEVEL**
1 : 400



2 DA410 **COMMUNAL - ROOF**
1 : 400

COMMUNAL OPEN SPACE

PRIMARY AT L8, L9 : 390 SQM
SECONDARY @ GROUND & L1 : 808.3 SQM
TOTAL: 1,198.3 SQM (25.11%)

EXAVATION
= 3141.574 SQM (65.8%)

SITE COVERAGE
= 2439.0 SQM (51.1%)

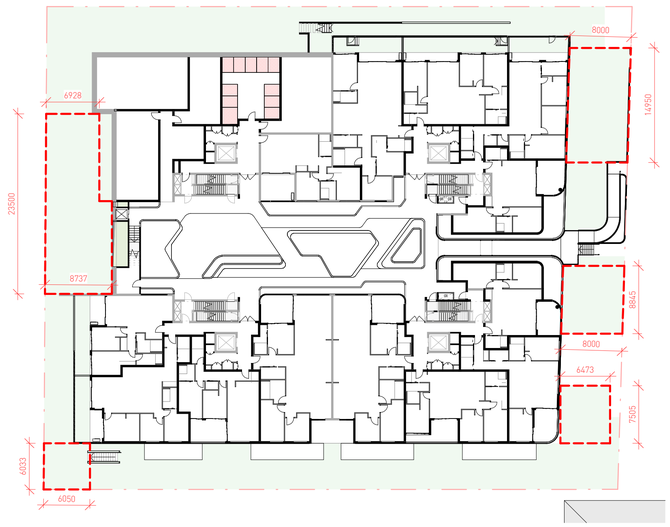
TOTAL DEEP SOIL AREA
1474.0 SQM (31%)

ADG DEEP SOIL AREA
- MIN 6m DIMENSION
- NO BUILT ELEMENTS, RETAINING WALL ETC.
460.0 sqm (9.6%)

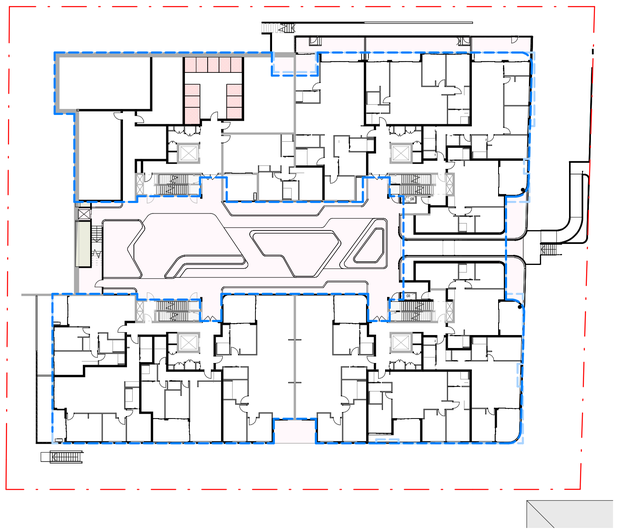
7% MINIMUM REQUIREMENT BY ADG
FOR SITES GREATER THAN 1500sqm

LANDSCAPE AREA
= 2132.69 (44.7%)

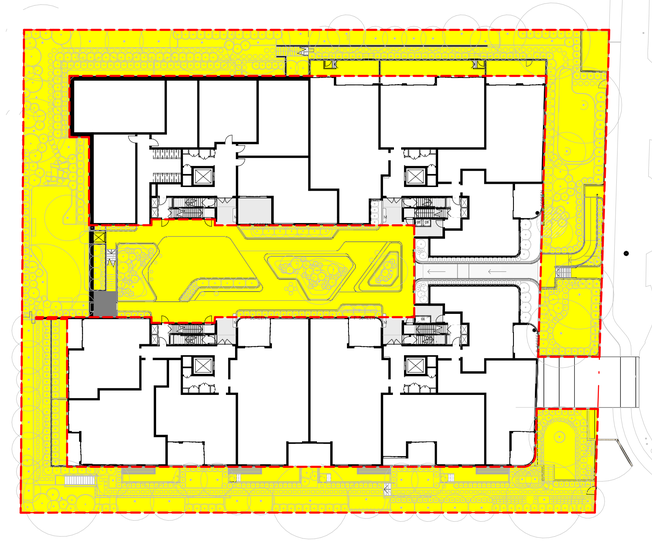
SITE AREA : 4771 SQM



3 DA410 **DEEP SOIL PLAN**
1 : 400



4 DA410 **EXCAVATION & SITE COVERAGE**
1 : 400



LANDSCAPE AREA AS PER HOUSING SEPP:

MEANS THE PART OF THE SITE AREA NOT OCCUPIED BY A BUILDING AND INCLUDES A PART USED OR INTENDED TO BE USED FOR A RAINWATER TANK, SWIMMING POOL OR OPEN-AIR RECREATION FACILITY, BUT DOES NOT INCLUDE A PART USED OR INTENDED TO BE USED FOR A DRIVEWAY OR PARKING AREA

5 DA410 **LANDSCAPE AREA**
1 : 400

0 1m 2m 5m 10m
SCALE 1:100

No.	Date	Description
C	15-05-2026	SSDA - FOR SUBMISSION
B	20-03-2026	SSDA - FOR SUBMISSION
A	16-02-2026	ISSUE FOR COORDINATION

Amendments

GILES TRIBE
Level 1 1 Chandos Street
St Leonards 2065 NSW AUSTRALIA
t: 61 2 9264 5005
e: gta@gilestribe.com.au
Giles Tribe Pty Ltd ABN 50 001259 507
Nominated Architects: Mark G Broadley [5823] Victor Schneider [5717]

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Project:
RESIDENTIAL FLAT BUILDING
19-25 BALFOUR STREET

LINDFIELD

Drawing:
COMMUNAL, DEEP SOIL, SITE COVERAGE

Status:

Scale: As indicated Job No. Drawing No. Rev.
Sheet Size: 24062 **DA410** **C**
Date: 01/15/26
Drawn: Author Reviewed Checker

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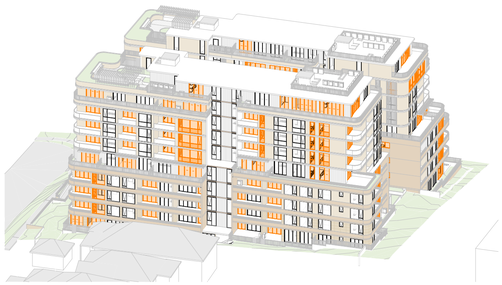
1 DA503 **JUNE 21 - 9.00**

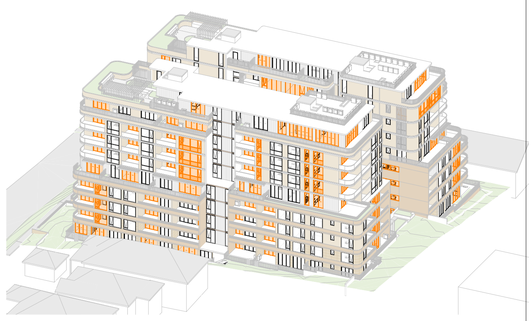
2 DA503 **JUNE 21 - 9.15**

3 DA503 **JUNE 21 - 9.30**

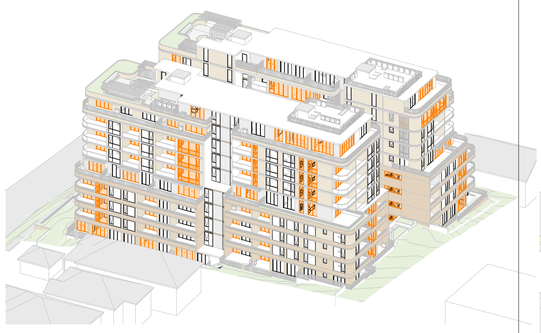


4 DA503 **JUNE 21 - 9.45**

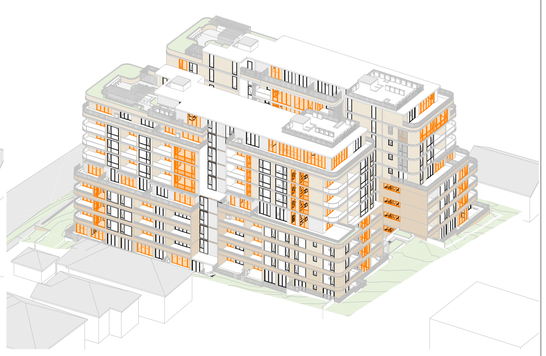
5 DA503 **JUNE 21 - 10.00**



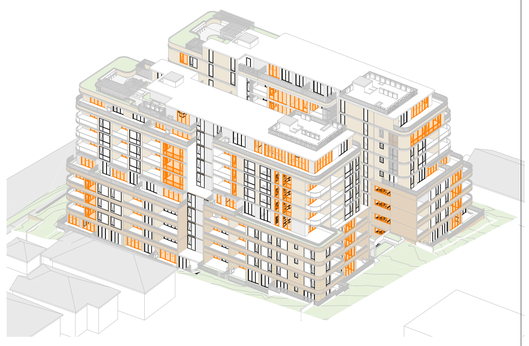
6 DA503 **JUNE 21 - 10.15**



7 DA503 **JUNE 21 - 10.30**



8 DA503 **JUNE 21 - 10.45**



9 DA503 **JUNE 21 - 11.00**

SOLAR ACCESS - POS/BAL (21 JUNE)

84/120 (70%)
70% REQUIRED AS PER ADG

SOLAR ACCESS - LIVING ROOM (21 JUNE)

84/120 (70%)
70% REQUIRED AS PER ADG

CROSS-VENTILATED UNITS

95/120 (79.2%)
60% REQUIRED AS PER ADG

LIVING ROOM GLAZING

No.	Date	Description
F	15-05-2026	SSDA - FOR SUBMISSION
E	20-03-2026	SSDA - FOR SUBMISSION
D	16-02-2026	ISSUE FOR COORDINATION
C	30-05-2025	SSDA - FOR SUBMISSION
B	16-05-2025	SSDA - ISSUE FOR COORDINATION

Amendments

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Level 1, 1 Chandos Street
St Leonards 2065 NSW AUSTRALIA
t: 61 2 9264 5005
e: gta@gilestribe.com.au
Giles Tribe Pty Ltd ABN: 50 001259 507

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Project:
RESIDENTIAL FLAT BUILDING
19-25 BALFOUR STREET

LINDFIELD

Drawing:
SOLAR ACCESS DIAGRAMS

Status: FOR APPROVAL

Scale:	1 : 50	Job No.	Drawing No. Rev.
Sheet Size:	A1	24062	DA503 F
Date:	09/04/2025		
Drawn:	RM	Reviewed	DY

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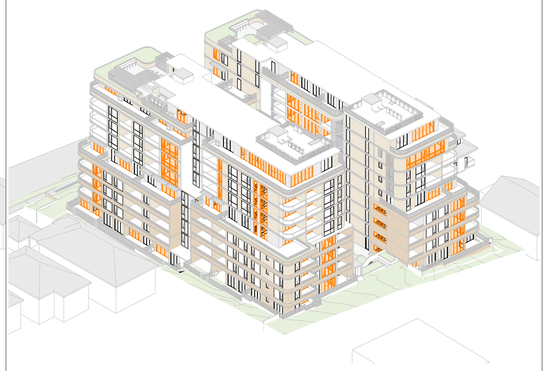
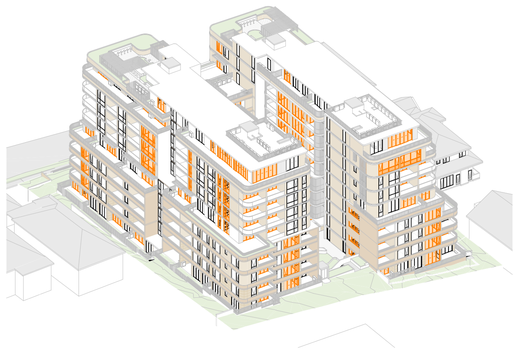
1 DA504 **JUNE 21 - 11.15**

2 DA504 **JUNE 21 - 11.30**



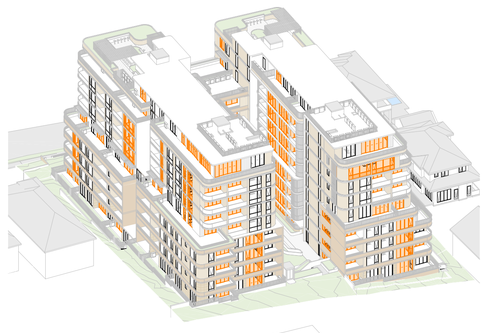
3 DA504 **JUNE 21 - 11.45**

4 DA504 **JUNE 21 - 12.00**



5 DA504 **JUNE 21 - 12.15**

6 DA504 **JUNE 21 - 12.30**



7 DA504 **JUNE 21 - 12.45**

8 DA504 **JUNE 21 - 13.00**

9 DA504 **JUNE 21 - 13.15**

SOLAR ACCESS - POS/BAL (21 JUNE)

84/120 (70%)
70% REQUIRED AS PER ADG

SOLAR ACCESS - LIVING ROOM (21 JUNE)

84/120 (70%)
70% REQUIRED AS PER ADG

CROSS-VENTILATED UNITS

95/120 (79.2%)
60% REQUIRED AS PER ADG

LIVING ROOM GLAZING

No.	Date	Description
F	15-05-2026	SSDA - FOR SUBMISSION
E	20-03-2026	SSDA - FOR SUBMISSION
D	16-02-2026	ISSUE FOR COORDINATION
C	30-05-2025	SSDA - FOR SUBMISSION
B	16-05-2025	SSDA - ISSUE FOR COORDINATION

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Project:
RESIDENTIAL FLAT BUILDING
19-25 BALFOUR STREET

LINDFIELD

Drawing:
SOLAR ACCESS DIAGRAMS

Status:
FOR APPROVAL

Scale:	1 : 50	Job No.	Drawing No.	Rev.
Sheet Size:	A1	24062	DA504	F
Date:	09/04/2025			
Drawn:	RM	Reviewed	DY	

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1 DA505 **JUNE 21 - 13.30**

2 DA505 **JUNE 21 - 13.45**

3 DA505 **JUNE 21 - 14.00**

4 DA505 **JUNE 21 - 14.15**

5 DA505 **JUNE 21 - 14.30**

6 DA505 **JUNE 21 - 14.45**

7 DA505 **JUNE 21 - 15.00**

SOLAR ACCESS - POS/BAL (21 JUNE)

84/120 (70%)
70% REQUIRED AS PER ADG

SOLAR ACCESS - LIVING ROOM (21 JUNE)

84/120 (70%)
70% REQUIRED AS PER ADG

CROSS-VENTILATED UNITS

95/120 (79.2%)
60% REQUIRED AS PER ADG

LIVING ROOM GLAZING

No.	Date	Description
F	15-05-2026	SSDA - FOR SUBMISSION
E	20-03-2026	SSDA - FOR SUBMISSION
D	16-02-2026	ISSUE FOR COORDINATION
C	30-05-2025	SSDA - FOR SUBMISSION
B	16-05-2025	SSDA - ISSUE FOR COORDINATION

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Project:
RESIDENTIAL FLAT BUILDING
19-25 BALFOUR STREET

LINDFIELD

Drawing:
SOLAR ACCESS DIAGRAMS

Status:

Scale: 1 : 50
Job No. 24062
Drawing No. DA505
Rev. F
Sheet Size:
Date: 04/11/25
Drawn: Author
Reviewed Checker

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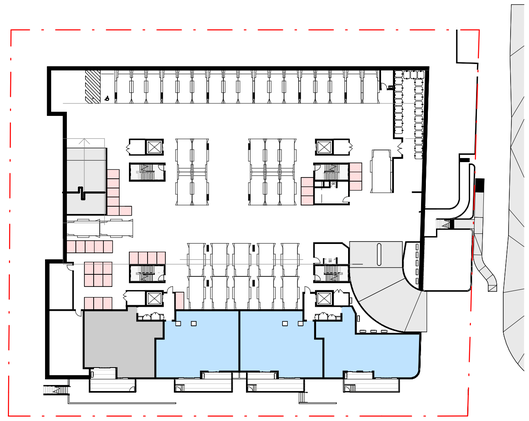
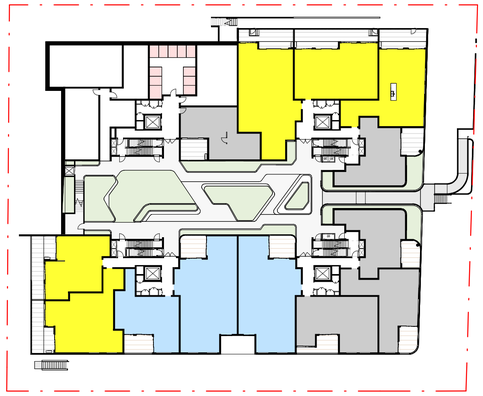


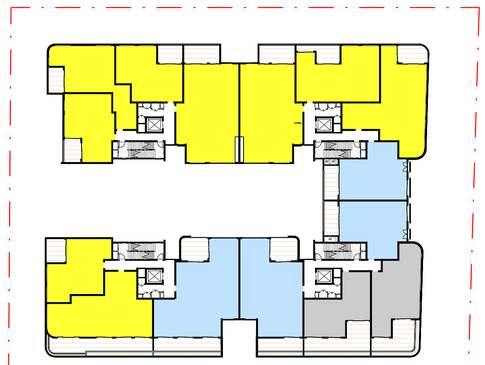
1 DA506 **Solar - LOWER GROUND LEVEL**
1 : 500



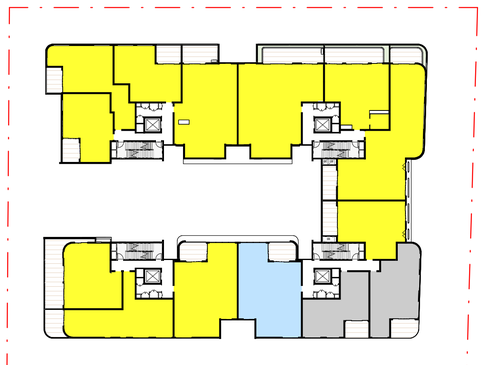
2 DA506 **Solar - GROUND LEVEL**
1 : 500

3 DA506 **Solar - LEVEL 1**
1 : 500

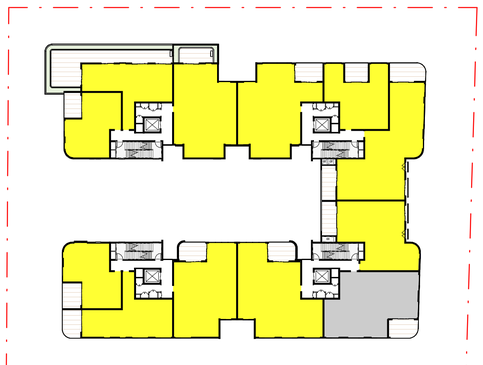
4 DA506 **Solar - LEVEL 2**
1 : 500



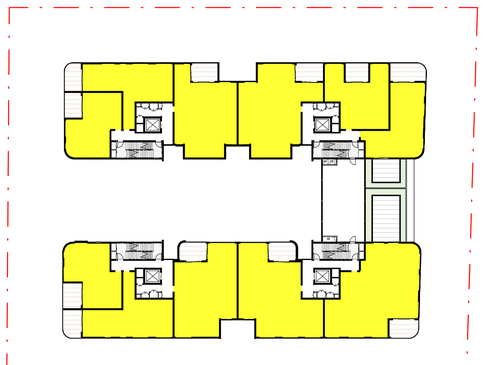
5 DA506 **Solar - LEVEL 3**
1 : 500



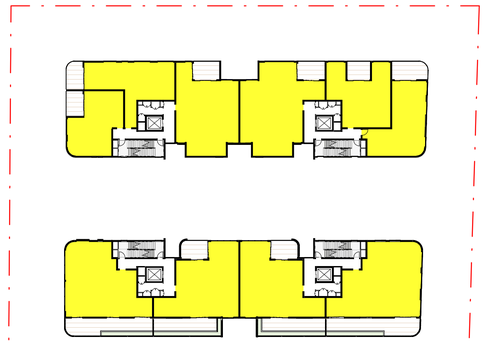
6 DA506 **Solar - LEVEL 4**
1 : 500



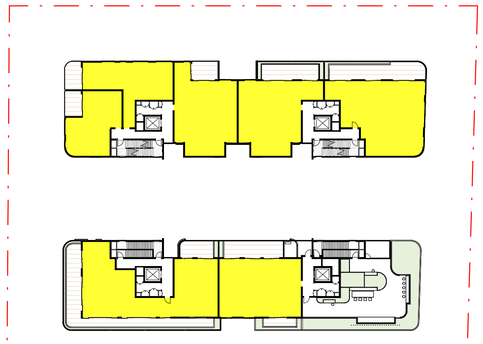
7 DA506 **Solar - LEVEL 5**
1 : 500



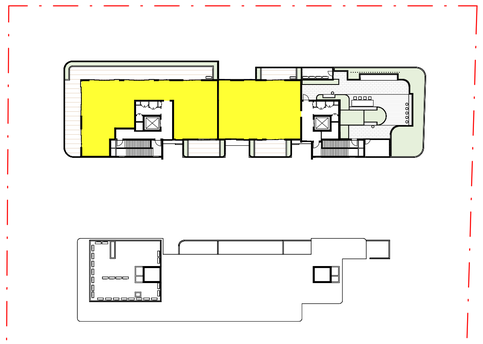
8 DA506 **Solar - LEVEL 6**
1 : 500



9 DA506 **Solar - LEVEL 7**
1 : 500



10 DA506 **Solar - LEVEL 8**
1 : 500



11 DA506 **Solar - LEVEL 9**
1 : 500

MIN. 2 HR SOLAR ACCESS = 70%
84 APARTMENTS RECEIVE MIN. 2 HOURS SOLAR ACCESS TO PRIMARY LIVING AREAS/BAL

LESS THAN 2 HR SOLAR ACCESS = 17.5%

21 APARTMENTS RECEIVE LESS THAN 2 HOURS SOLAR ACCESS TO UNITS

0 SOLAR ACCESS 12.5%

15 APARTMENTS RECEIVE 0 HOUR SOLAR ACCESS TO UNITS

TOTAL NUMBER OF APARTMENTS: 120

No.	Date	Description
F	15-05-2026	SSDA - FOR SUBMISSION
E	20-03-2026	SSDA - FOR SUBMISSION
D	16-02-2026	ISSUE FOR COORDINATION
C	30-05-2025	SSDA - FOR SUBMISSION
B	16-05-2025	SSDA - ISSUE FOR COORDINATION

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Project:
RESIDENTIAL FLAT BUILDING
19-25 BALFOUR STREET

LINDFIELD

Drawing:
SOLAR ACCESS DIAGRAMS

Status:

Scale: As indicated Job No. Drawing No. Rev.
Sheet Size: **24062** **DA506** **F**
Date: 09/04/2025
Drawn: Author Reviewed Checker

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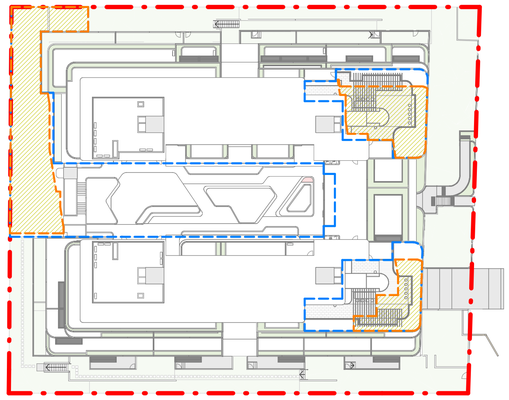
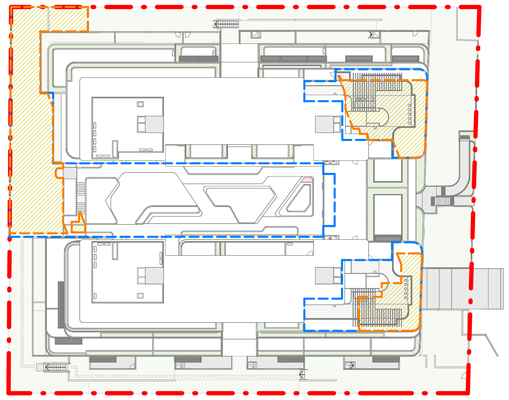


01 COS SOLAR ACCESS - 9AM
DA507
1 : 500

SOLAR ACCESS OF COMMUNAL OPEN SPACE:

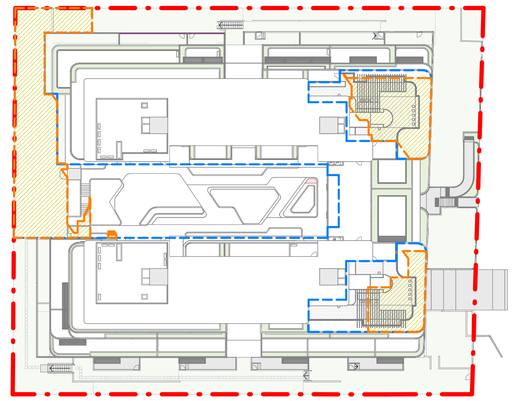
PRIMARY @ LEVEL 8 AND LEVEL 9 :	200.9SQM	(51.5%)
SECONDARY @ GROUND & L1 :	261.6SQM	(32.3%)



02 COS SOLAR ACCESS - 10AM
DA507
1 : 500

SOLAR ACCESS OF COMMUNAL OPEN SPACE:

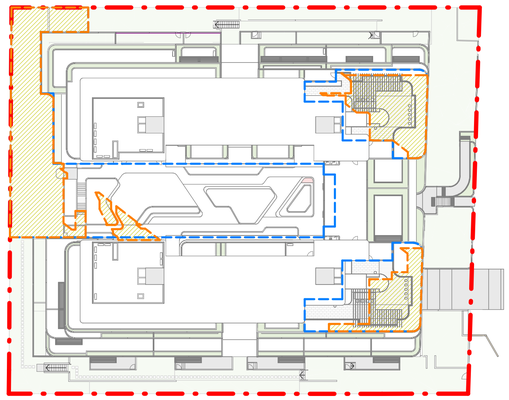
PRIMARY @ LEVEL 8 AND LEVEL 9 :	221.9SQM	(56.9%)
SECONDARY @ GROUND & L1 :	280.2SQM	(34.6%)



03 COS SOLAR ACCESS - 11AM
DA507
1 : 500

SOLAR ACCESS OF COMMUNAL OPEN SPACE:

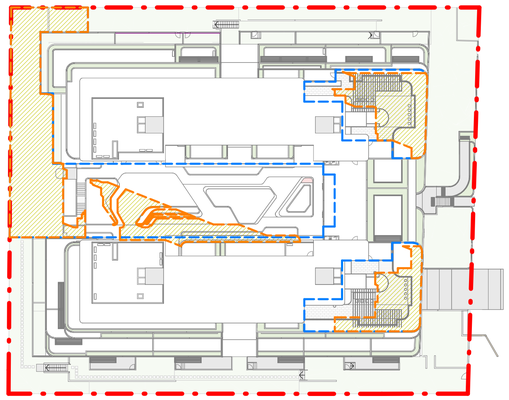
PRIMARY @ LEVEL 8 AND LEVEL 9 :	223.3SQM	(57.2%)
SECONDARY @ GROUND & L1 :	292.6SQM	(36.2%)



04 COS SOLAR ACCESS - 12PM
DA507
1 : 500

SOLAR ACCESS OF COMMUNAL OPEN SPACE:

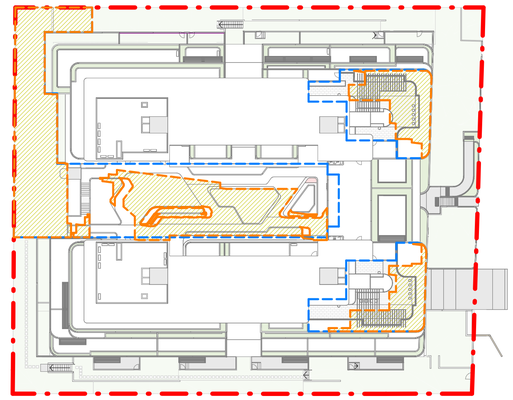
PRIMARY @ LEVEL 8 AND LEVEL 9 :	226.0SQM	(57.9%)
SECONDARY @ GROUND & L1 :	320.2SQM	(39.6%)



05 COS SOLAR ACCESS - 1PM
DA507
1 : 500

SOLAR ACCESS OF COMMUNAL OPEN SPACE:

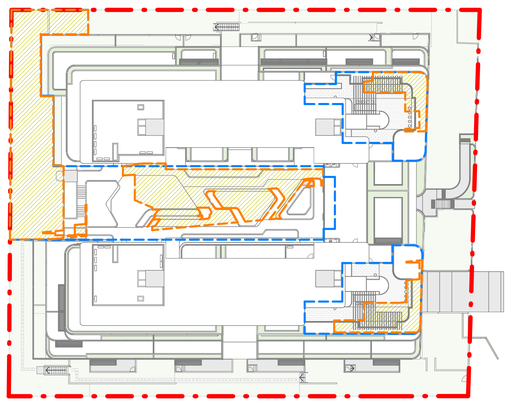
PRIMARY @ LEVEL 8 AND LEVEL 9 :	217.2SQM	(55.7%)
SECONDARY @ GROUND & L1 :	408.3SQM	(50.5%)



06 COS SOLAR ACCESS - 2PM
DA507
1 : 500

SOLAR ACCESS OF COMMUNAL OPEN SPACE:

PRIMARY @ LEVEL 8 AND LEVEL 9 :	187.9SQM	(48.2%)
SECONDARY @ GROUND & L1 :	539.7SQM	(66.8%)



07 COS SOLAR ACCESS - 3PM
DA507
1 : 500

SOLAR ACCESS OF COMMUNAL OPEN SPACE:

PRIMARY @ LEVEL 8 AND LEVEL 9 :	112.8SQM	(28.9%)
SECONDARY @ GROUND & L1 :	503.2SQM	(62.2%)

0 2m 5m 10m 20m 50m
SCALE 1:500

COMMUNAL OPEN SPACE

PRIMARY AT L8, L9 :	390 SQM
SECONDARY @ GROUND & L1 :	808.3 SQM
TOTAL:	1,198.3 SQM (25.11%)

AREA OF COMMUNAL OPEN SPACE WITH SOLAR ACCESS

No.	Date	Description
B	15-05-2026	SSDA - FOR SUBMISSION
A	20-03-2026	SSDA - FOR SUBMISSION

Amendments

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Project:
RESIDENTIAL FLAT BUILDING
19-25 BALFOUR STREET

LINDFIELD

Drawing:
COMMUNAL OPEN SPACE SOLAR ACCESS

Status:

Scale: As indicated Job No. 24062 Drawing No. DA507 Rev. B
Sheet Size:
Date: 02/17/26
Drawn: Author Reviewed Checker

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UNIT SCHEDULE

UNIT		TYPE	AREA	POS/BAL Area	SOLAR LIVING	SOLAR BAL	X-VENT	NO. BATH	COMMENTS
LG									
LG01	3B	PLATINUM	121.8 m²	22.8	-	-	x	2	Affordable
LG02	3B	SILVER	129.4 m²	23.7	-	-	x	3	
LG03	3B	SILVER	129.7 m²	23.7	-	-	x	3	
LG04	2B	PLATINUM	114.5 m²	21.3	0	-	x	2	Affordable
GF									
G01	2B	SILVER	79.5 m²	12.4	0	0	✔	2	Affordable
G02	2B	SILVER	93.3 m²	12.1	0	0	✔	2	
G03	3B	SILVER	105.3 m²	13.0	0	-	x	2	
G04	3B	PLATINUM	153.6 m²	15.2	-	0	✔	2	
G05	3B	PLATINUM	153.6 m²	15.2	-	0	✔	2	
G06	2B	SILVER	83.6 m²	13.0	-	-	x	2	Affordable
G07	3B	SILVER	112.6 m²	23.9	✔	✔	✔	2	
G08	2B	SILVER	84.4 m²	28.2	✔	✔	✔	2	Affordable
G09	2B	SILVER	78.0 m²	15.0	0	-	x	2	Affordable
G10	3B	PLATINUM	146.1 m²	23.5	✔	✔	✔	3	
G11	3B	SILVER	116.1 m²	34.4	✔	✔	x	2	Affordable
G12	3B	SILVER	114.3 m²	23.1	✔	✔	✔	2	Affordable
G13	2B	SILVER	79.5 m²	15.1	0	0	✔	2	Affordable
LEVEL 1									
101	2B	SILVER	86.6 m²	12.5	-	-	✔	2	
102	3B	SILVER	121.6 m²	12.1	0	0	✔	2	
103	3B	SILVER	105.3 m²	13.0	0	-	x	2	
104	3B	PLATINUM	155.6 m²	16.3	-	-	✔	2	
105	3B	PLATINUM	155.6 m²	16.3	-	0	✔	2	
106	2B	SILVER	83.6 m²	13.0	-	-	x	2	Affordable
107	3B	SILVER	106.5 m²	12.2	✔	✔	✔	2	Affordable
108	2B	SILVER	79.6 m²	11.6	✔	✔	✔	2	Affordable
109	2B	SILVER	76.4 m²	27.3	✔	✔	✔	2	Affordable
110	2B	SILVER	93.0 m²	40.4	✔	✔	✔	2	Affordable
111	2B	SILVER	78.5 m²	31.7	✔	✔	x	2	Affordable
112	3B	PLATINUM	150.0 m²	28.0	✔	✔	✔	2	
113	3B	PLATINUM	150.0 m²	16.5	✔	✔	✔	2	
114	3B	SILVER	107.3 m²	13.9	✔	✔	x	2	
115	3B	SILVER	137.6 m²	13.2	✔	✔	✔	2	
116	2B	SILVER	86.6 m²	12.5	-	✔	✔	2	
LEVEL 2									
201	2B	SILVER	86.6 m²	12.5	-	-	✔	2	
202	3B	SILVER	121.8 m²	12.1	0	0	✔	2	
203	3B	SILVER	105.3 m²	13.0	0	-	x	2	
204	3B	PLATINUM	155.6 m²	16.3	-	-	✔	2	
205	3B	PLATINUM	155.6 m²	16.3	-	-	✔	2	
206	2B	SILVER	83.6 m²	13.0	-	-	x	2	Affordable
207	3B	SILVER	106.5 m²	12.2	✔	✔	✔	2	Affordable
208	2B	SILVER	79.6 m²	11.6	✔	✔	✔	2	Affordable
209	2B	SILVER	76.3 m²	10.0	✔	✔	✔	2	Affordable
210	2B	SILVER	93.0 m²	10.0	✔	✔	✔	2	Affordable
211	2B	SILVER	78.5 m²	11.4	✔	✔	x	2	Affordable
212	3B	PLATINUM	150.0 m²	16.5	✔	✔	✔	2	
213	3B	PLATINUM	150.0 m²	16.5	✔	✔	✔	2	
214	3B	SILVER	107.3 m²	13.9	✔	✔	x	2	Affordable
215	3B	SILVER	137.5 m²	13.2	✔	✔	✔	2	
216	2B	SILVER	86.6 m²	12.5	-	✔	✔	2	
LEVEL 3									
301	2B	SILVER	86.6 m²	12.5	-	-	✔	2	
302	2B	SILVER	90.6 m²	25.2	0	0	✔	2	
303	2B	SILVER	75.4 m²	32.5	0	-	x	2	
304	3B	PLATINUM	133.7 m²	31.4	-	-	✔	2	
305	4B	SILVER	155.7 m²	38.9	-	-	✔	3	
306	3B	SILVER	128.5 m²	36.6	✔	✔	✔	2	
307	2B	SILVER	79.6 m²	11.6	✔	✔	✔	2	Affordable
308	2B	SILVER	76.3 m²	10.0	✔	✔	✔	2	Affordable
309	2B	SILVER	93.0 m²	10.0	✔	✔	✔	2	Affordable
310	2B	SILVER	78.5 m²	11.4	✔	✔	x	2	Affordable
311	3B	PLATINUM	150.0 m²	16.5	✔	✔	✔	2	
312	3B	PLATINUM	150.0 m²	16.5	✔	✔	✔	2	
313	3B	SILVER	107.3 m²	13.9	✔	✔	x	2	
314	3B	SILVER	137.5 m²	13.2	✔	✔	✔	2	
315	2B	SILVER	86.6 m²	12.5	-	✔	✔	2	Affordable
LEVEL 4									
401	2B	SILVER	86.6 m²	12.5	✔	✔	✔	2	Affordable
402	2B	SILVER	90.6 m²	13.0	0	0	✔	2	
403	2B	SILVER	75.4 m²	10.2	0	0	x	2	
404	3B	PLATINUM	130.1 m²	12.9	-	-	✔	2	
405	3B	PLATINUM	130.1 m²	12.9	✔	-	✔	2	
406	2B	SILVER	99.7 m²	13.3	✔	✔	✔	2	
407	2B	SILVER	90.0 m²	36.6	✔	✔	✔	2	
408	2B	SILVER	76.3 m²	10.0	✔	✔	✔	2	Affordable
409	2B	SILVER	93.0 m²	10.0	✔	✔	✔	2	
410	2B	SILVER	78.5 m²	11.4	✔	✔	x	2	Affordable

UNIT SCHEDULE

UNIT		TYPE	AREA	POS/BAL Area	SOLAR LIVING	SOLAR BAL	X-VENT	NO. BATH	COMMENTS
411	3B	SILVER	139.0 m²	16.5	✔	✔	✔	2	
412	4B	SILVER	168.8 m²	23.8	✔	✔	✔	2	
413	2B	SILVER	99.2 m²	23.0	✔	✔	x	2	
414	4B	SILVER	174.8 m²	24.9	✔	✔	✔	3	
LEVEL 5									
501	3B	SILVER	113.9 m²	12.4	✔	✔	✔	2	
502	3B	SILVER	135.5 m²	13.7	0	-	✔	2	
503	4B	SILVER	152.1 m²	12.9	✔	✔	✔	3	
504	3B	SILVER	130.1 m²	12.9	✔	✔	✔	2	
505	2B	SILVER	87.2 m²	13.1	✔	✔	✔	2	
506	2B	SILVER	77.0 m²	12.1	✔	✔	✔	2	
507	2B	SILVER	75.1 m²	11.0	✔	✔	✔	2	
508	2B	SILVER	87.2 m²	59.7	✔	✔	✔	2	
509	3B	SILVER	137.2 m²	13.1	✔	✔	✔	2	
510	3B	SILVER	146.1 m²	12.9	✔	✔	✔	2	
511	2B	SILVER	86.5 m²	11.1	✔	✔	x	2	
512	4B	SILVER	157.9 m²	29.6	✔	✔	✔	3	
LEVEL 6									
601	4B	SILVER	177.4 m²	46.8	✔	✔	✔	3	
602	4B	SILVER	152.1 m²	12.9	✔	✔	✔	3	
603	3B	SILVER	130.1 m²	12.9	✔	✔	✔	2	
604	2B	SILVER	87.2 m²	13.1	✔	✔	✔	2	
605	2B	SILVER	77.0 m²	12.1	✔	✔	✔	2	
606	2B	SILVER	75.1 m²	11.0	✔	✔	✔	2	
607	2B	SILVER	87.2 m²	12.0	✔	✔	✔	2	
608	3B	SILVER	124.5 m²	12.4	✔	✔	✔	2	
609	3B	SILVER	146.1 m²	12.9	✔	✔	✔	2	
610	2B	SILVER	86.5 m²	11.1	✔	✔	x	2	
611	2B	SILVER	85.2 m²	33.3	✔	✔	✔	2	
LEVEL 7									
701	3B	SILVER	146.5 m²	35.5	✔	✔	✔	3	
702	3B	SILVER	119.8 m²	34.0	✔	✔	✔	2	
703	3B	SILVER	119.8 m²	34.0	✔	✔	✔	2	
704	3B	SILVER	131.4 m²	33.4	✔	✔	✔	3	
705	2B	SILVER	75.1 m²	11.0	✔	✔	✔	2	
706	2B	SILVER	87.2 m²	12.0	✔	✔	✔	2	
707	3B	SILVER	124.5 m²	12.4	✔	✔	✔	2	
708	3B	SILVER	146.1 m²	12.9	✔	✔	✔	2	
709	2B	SILVER	86.5 m²	11.1	✔	✔	x	2	
710	2B	SILVER	85.2 m²	16.9	✔	✔	✔	2	
LEVEL 8									
801	3B	SILVER	125.9 m²	32.5	✔	✔	✔	2	
802	4B	SILVER	174.3 m²	62.4	✔	✔	✔	4	
803	2B	SILVER	75.1 m²	11.0	✔	✔	✔	2	
804	2B	SILVER	87.2 m²	12.0	✔	✔	✔	2	
805	3B	SILVER	124.5 m²	12.4	✔	✔	✔	2	
806	3B	SILVER	127.9 m²	22.2	✔	✔	✔	2	
807	3B	SILVER	156.2 m²	39.9	✔	✔	✔	2	
LEVEL 9									
901	4B	SILVER	174.3 m²	79.7	✔	✔	✔	4	
902	3B	SILVER	125.9 m²	23.9	✔	✔	✔	2	
Total Units : 120									

AFFORDABLE UNITS (TOD - 2%)

UNIT	BEDROOM	UNIT AREA	POS/ BAL	X-VENT	Solar Access
LG					
LG01	3B	121.8 m²	22.8	x	-
LG04	2B	114.5 m²	21.3	x	0
GF					
G01	2B	79.5 m²	12.4	✔	0
Total Units: 3		315.8 m²			

AFFORDABLE UNITS (HOUSING SEPP 2021 - 15%)

UNIT	BEDROOM	AREA	POS/ BAL	X-VENT	Solar Access
GF					
G06	2B	83.6 m²	13.0	x	-
G08	2B	84.4 m²	28.2	✔	✔
G09	2B	78.0 m²	15.0	x	0
G11	3B	116.1 m²	34.4	x	✔
G12	3B	114.3 m²	23.1	✔	✔
G13	2B	79.5 m²	15.1	✔	0
LEVEL 1					
106	2B	83.6 m²	13.0	x	-
107	3B	106.5 m²	12.2	✔	✔
108	2B	79.6 m²	11.6	✔	✔
109	2B	76.4 m²	27.3	✔	✔
110	2B	93.0 m²	40.4	✔	✔
111	2B	78.5 m²	31.7	x	✔
LEVEL 2					
206	2B	83.6 m²	13.0	x	-
207	3B	106.5 m²	12.2	✔	✔
208	2B	79.6 m²	11.6	✔	✔
209	2B	76.3 m²	10.0	✔	✔
210	2B	93.0 m²	10.0	✔	✔
211	2B	78.5 m²	11.4	x	✔
214	3B	107.3 m²	13.9	x	✔
LEVEL 3					
307	2B	79.6 m²	11.6	✔	✔
308	2B	76.3 m²	10.0	✔	✔
309	2B	93.0 m²	10.0	✔	✔
310	2B	78.5 m²	11.4	x	✔
315	2B	86.6 m²	12.5	✔	-
LEVEL 4					
401	2B	86.6 m²	12.5	✔	✔
408	2B	76.3 m²	10.0	✔	✔
410	2B	78.5 m²	11.4	x	✔
Total Units: 27		2353.8 m²			

SOLAR LIVING = MID WINTER SOLAR ACCESS AT LIVING AREAS
SOLAR BAL = MID WINTER SOLAR ACCESS AT PRIVATE OPEN SPACE OR BALCONIES

✓ UNIT ACHIEVES MINIMUM 2 HOUR SOLAR ACCESS
- UNIT ACHIEVES LESS THAN 2 HOUR SOLAR ACCESS
0 UNIT RECIEVES NO SOLAR ACCESS

X-VENT (CROSS VENTILATION)
✓ UNIT ACHIEVES CROSS VENTILATION
x UNIT DOES NOT ACHIEVE CROSS VENTILATION

SOLAR ACCESS (ALL)	
Solar Access	Count
-	21
0	15
✔	84
Grand total: 120	

SOLAR ACCESS (Affordable)	
Solar Access	Count
-	5
0	4
✔	21
Grand total: 30	

CROSS VENTILATION (ALL)	
Cross Ventilated	Count
x	25
✔	95
Grand total: 120	

CROSS VENTILATION (Affordable)	
Cross Ventilated	Count
x	12
✔	18
Grand total: 30	

PROPOSED PARKING SPACES

Type	Count
Car Share - 5.4m x 2.4m	2
Removalist/Truck Bay - 3.0m x 7.0m	1
Residential - 5.4m x 2.4m	108
Residential_Platinum - 6.0m x 4.8m	18
Residential_Tandem - 5.4m x 2.4m	36
Visitor - 5.4m x 2.4m	19
Visitor_Accessible - 5.4m x 2.4m	1
Total Car Parking Spaces: 185	

12 Visitor BICYCLE PARKING SPACES
120 Residential BICYCLE PARKING SPACES

RESIDENTIAL PARKING BREAKDOWN:
90x Market Units : 132 Parking spaces
27x Affordables(15%) : 27 Parking spaces
3x TOD Affordables (2%) : 3 Parking spaces

UNIT MIX (ALL)	
Name	Count
2B	55
3B	56
4B	9
Grand total: 120	

UNIT MIX - Affordable Units	
Name	Count
2B	24
3B	6
Grand total: 30	

UNIT MIX - Market Units	
Name	Count
2B	31
3B	50
4B	9
Grand total: 90	

PLATINUM UNITS

UNIT		AREA	Minimum POS/BAL Area	SOLAR LIVING	SOLAR BAL	X VENT
LG						
LG01	3B	121.8 m²	22.8	-	-	x
LG04	2B	114.5 m²	21.3	0	-	x
GF						
G04	3B	153.6 m²	15.2	-	0	✔
G05	3B	153.6 m²	15.2	-	0	✔
G10	3B	146.1 m²	23.5	✔	✔	✔
LEVEL 1						
104	3B	155.6 m²	16.3	-	-	✔
105	3B	155.6 m²	16.3	-	0	✔
112	3B	150.0 m²	28.0	✔	✔	✔
113	3B	150.0 m²	16.5	✔	✔	✔
LEVEL 2						
204	3B	155.6 m²	16.3	-	-	✔
205	3B	155.6 m²	16.3	-	-	✔
212	3B	150.0 m²	16.5	✔	✔	✔
213	3B	150.0 m²	16.5	✔	✔	✔
LEVEL 3						
304	3B	133.7 m²	31.4	-	-	✔
311	3B	150.0 m²	16.5	✔	✔	✔
312	3B	150.0 m²	16.5	✔	✔	✔
LEVEL 4						
404	3B	130.1 m²	12.9	-	-	✔
405	3B	130.1 m²	12.9	✔	-	✔
Total Platinum Units: 18						

UNIT MIX - Platinum Units	
Name	Count
2B	1
3B	17
Grand total: 18	

No.	Date	Description
F	15-05-2026	SSDA - FOR SUBMISSION
E	20-03-2026	SSDA - FOR SUBMISSION
D	16-02-2026	ISSUE FOR COORDINATION
C	30-05-2025	SSDA - FOR SUBMISSION
B	16-05-2025	SSDA - ISSUE FOR COORDINATION

Amendments

GILES TRIBE
Level 1, 1 Chandos Street
St Leonards 2065 NSW AUSTRALIA
t: 61 2 9264 5005
e: gta@gilestribe.com.au
Giles Tribe Pty Ltd ABN 50 001259 507
Nominated Architects: Mark G Broadley [5823] Victor Schneider [11157]

Verify all dimensions on site prior to commencement of work.
Refer all discrepancies to the Architect for determination.
Use figured dimensions in preference to scaling.
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Project:
RESIDENTIAL FLAT BUILDING
19-25 BALFOUR STREET

LINDFIELD

Drawing:
UNIT SCHEDULE

Status:

Scale: Job No. Drawing No. Rev.
Sheet Size: 24062 **DA510** **F**
Date: 09/04/2025
Drawn: Author Reviewed: Checker

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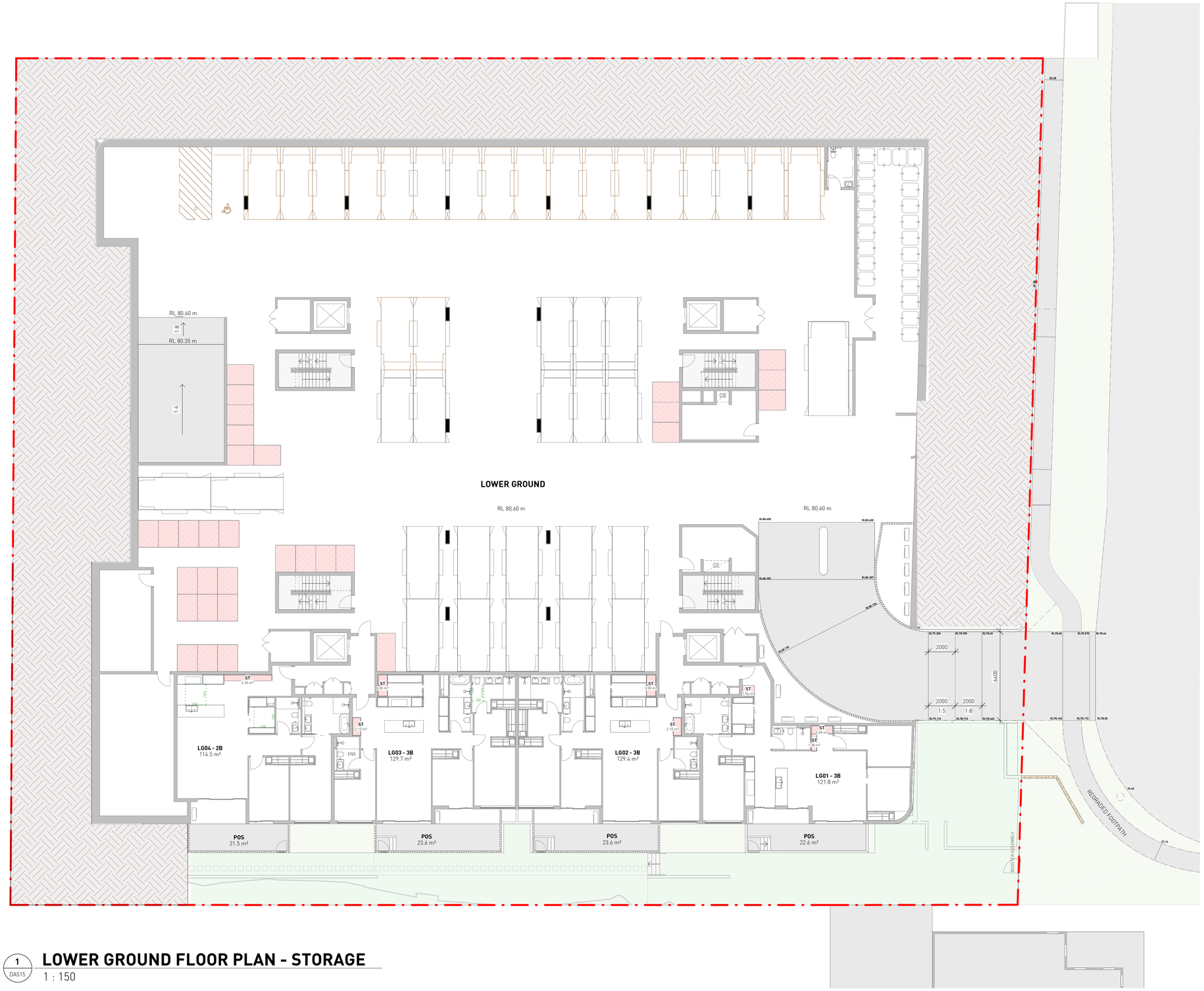
STORAGE SCHEDULE - LOWER GROUND			
UNIT	**BEDROOM**	**STORAGE - UNIT**	**STORAGE - BASEMENT**
LG01	3B	6.22 m³	7.20 m³
LG02	3B	5.15 m³	7.20 m³
LG03	3B	5.15 m³	7.20 m³
LG04	2B	4.35 m³	7.20 m³



1 DA515 **LOWER GROUND FLOOR PLAN - STORAGE**

1 : 150

C	15-05-2026	SSDA - FOR SUBMISSION
B	20-03-2026	SSDA - FOR SUBMISSION
A	16-02-2026	ISSUE FOR COORDINATION
No.	Date	Description

Amendments

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Level 1 1 Chandos Street
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Nominated Architects: Mark G Broadley [5823] Victor Schneider [7571]

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Project:
RESIDENTIAL FLAT BUILDING
19-25 BALFOUR STREET

LINDFIELD

Drawing:
STORAGE DIAGRAMS - LOWER GROUND

Status:

Scale:	1 : 150	Job No.	Drawing No.	Rev.
Sheet Size:		24062	DA515	C
Date:	01/22/26			
Drawn:	Author		Reviewed: Checker	

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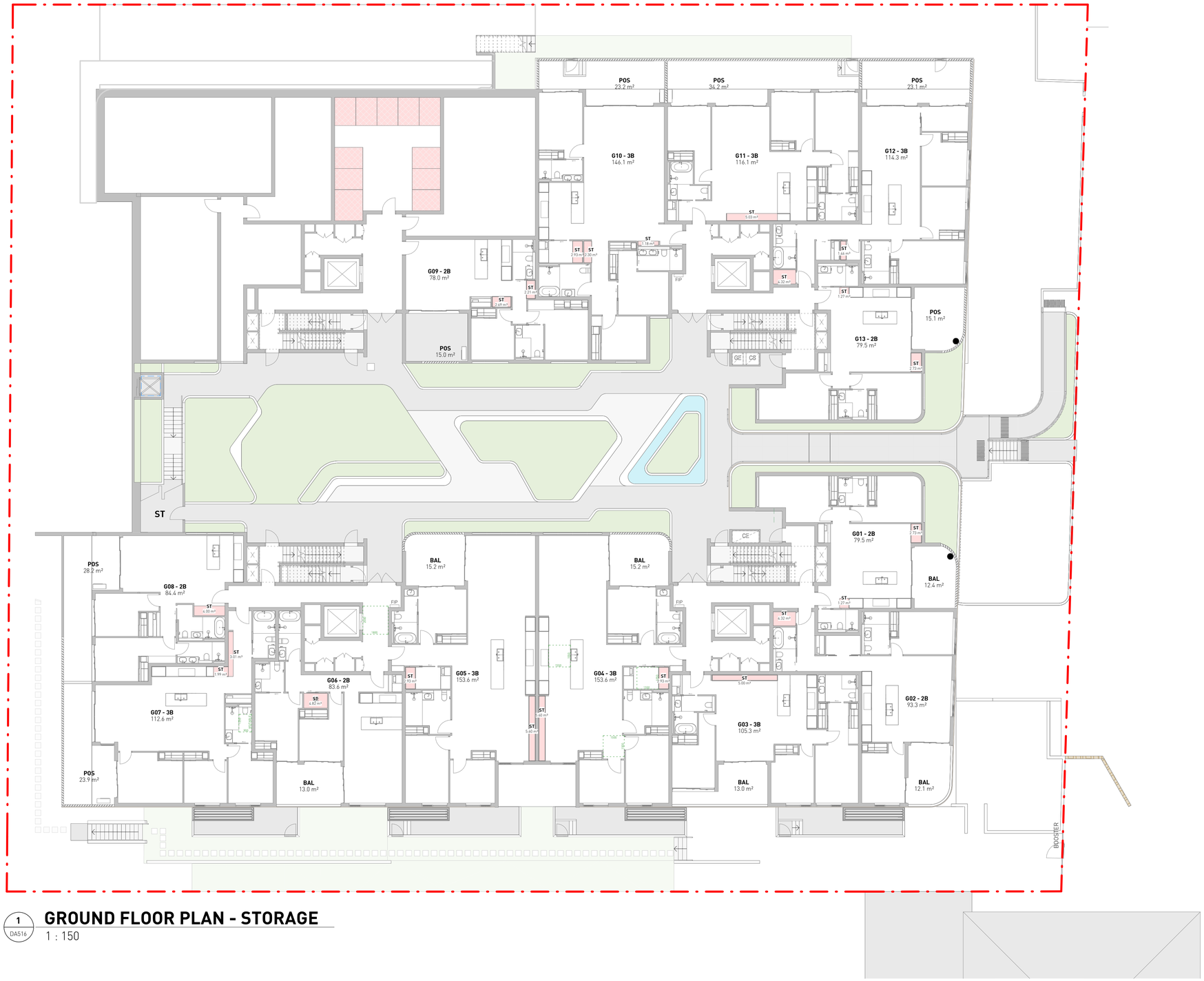
STORAGE SCHEDULE - GROUND			
UNIT	BEDROOM	STORAGE - UNIT	STORAGE - BASEMENT
G01	2B	4.00 m³	7.20 m³
G02	2B	4.32 m³	7.20 m³
G03	3B	5.00 m³	7.20 m³
G04	3B	8.53 m³	22.03 m³
G05	3B	8.53 m³	22.03 m³
G06	2B	4.82 m³	7.20 m³
G07	3B	5.00 m³	7.20 m³
G08	2B	4.00 m³	7.20 m³
G09	2B	4.90 m³	7.20 m³
G10	3B	6.41 m³	10.44 m³
G11	3B	5.03 m³	7.20 m³
G12	3B	5.78 m³	7.20 m³
G13	2B	4.00 m³	7.20 m³



1 DA516 **GROUND FLOOR PLAN - STORAGE**

1 : 150

No.	Date	Description
C	15-05-2026	SSDA - FOR SUBMISSION
B	20-03-2026	SSDA - FOR SUBMISSION
A	16-02-2026	ISSUE FOR COORDINATION

Amendments

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Nominated Architects: Mark G Broadley [5823] Victor Schneider [5717]

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Use figured dimensions in preference to scaling.
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Project:
RESIDENTIAL FLAT BUILDING
19-25 BALFOUR STREET

LINDFIELD

Drawing:
STORAGE DIAGRAMS - GROUND

Status:

Scale: 1 : 150 | Job No. 24062 | Drawing No. DA516 | Rev. C
Sheet Size:
Date: 01/22/26
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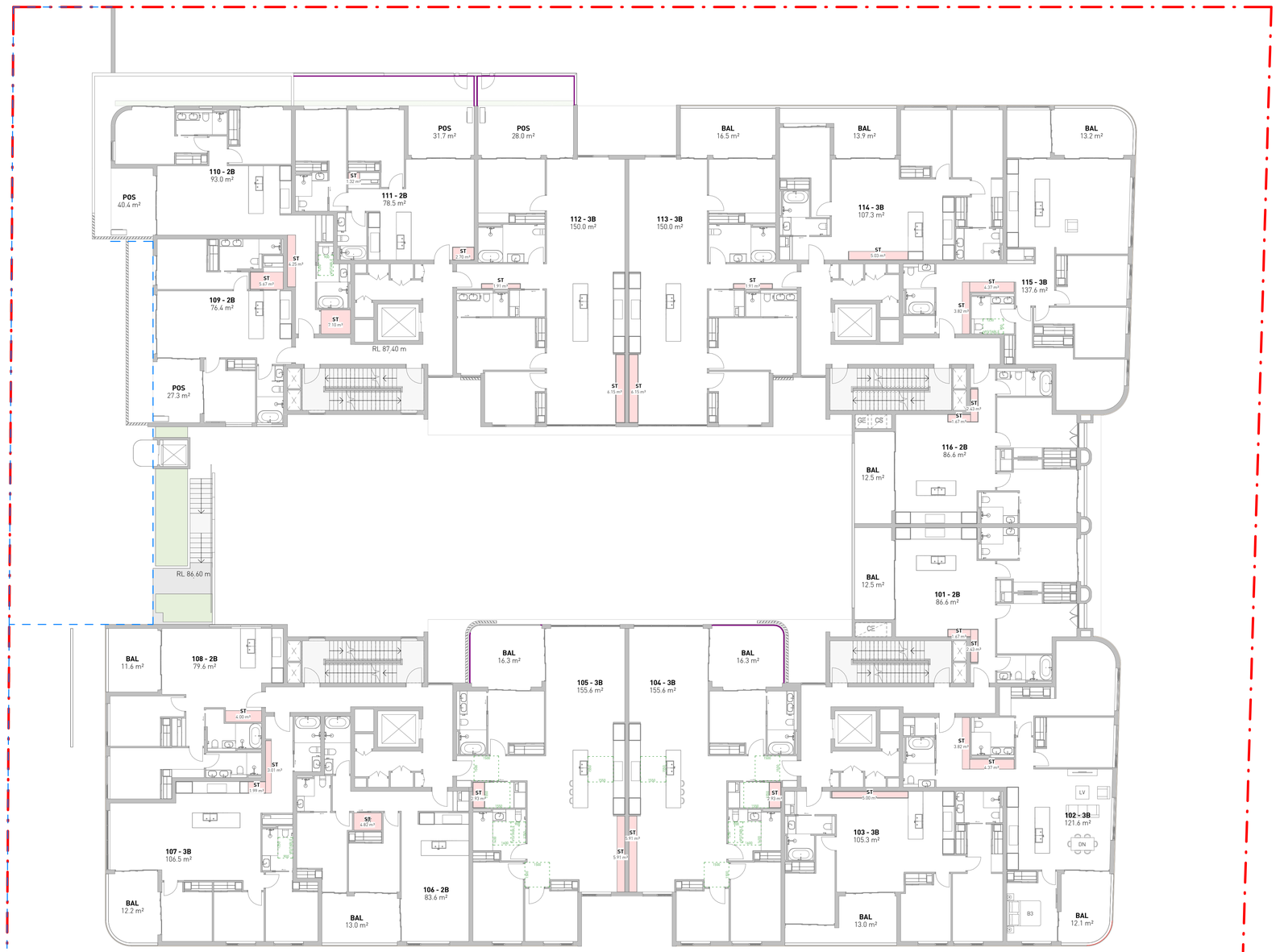
STORAGE SCHEDULE - LEVEL 1			
UNIT	**BEDROOM**	**STORAGE - UNIT**	**STORAGE - BASEMENT**
101	2B	4.10 m³	7.20 m³
102	3B	8.19 m³	7.20 m³
103	3B	5.00 m³	7.20 m³
104	3B	8.84 m³	33.12 m³
105	3B	8.84 m³	33.12 m³
106	2B	4.82 m³	7.20 m³
107	3B	5.00 m³	7.20 m³
108	2B	4.00 m³	7.20 m³
109	2B	5.67 m³	7.20 m³
110	2B	11.35 m³	7.20 m³
111	2B	4.02 m³	7.20 m³
112	3B	8.06 m³	22.03 m³
113	3B	8.06 m³	22.03 m³
114	3B	5.03 m³	7.20 m³
115	3B	8.19 m³	10.44 m³
116	2B	4.10 m³	7.20 m³



1 DA517 **LEVEL 1 FLOOR PLAN - STORAGE**

1 : 150

C	15-05-2026	SSDA - FOR SUBMISSION
B	20-03-2026	SSDA - FOR SUBMISSION
A	16-02-2026	ISSUE FOR COORDINATION
No.	Date	Description

Amendments

GILES TRIBE
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e: gta@gilestribe.com.au
Giles Tribe Pty Ltd ABN 50 001259 507
Nominated Architects: Mark G Broadley [5823] Victor Schneider [5717]

Verify all dimensions on site prior to commencement of work.
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Project:
RESIDENTIAL FLAT BUILDING
19-25 BALFOUR STREET

LINDFIELD

Drawing:
STORAGE DIAGRAMS - LEVEL 1

Status:

Scale:	1 : 150	Job No.	Drawing No.	Rev.
Sheet Size:		24062	DA517	C
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Drawn:	Author	Reviewed	Checker	

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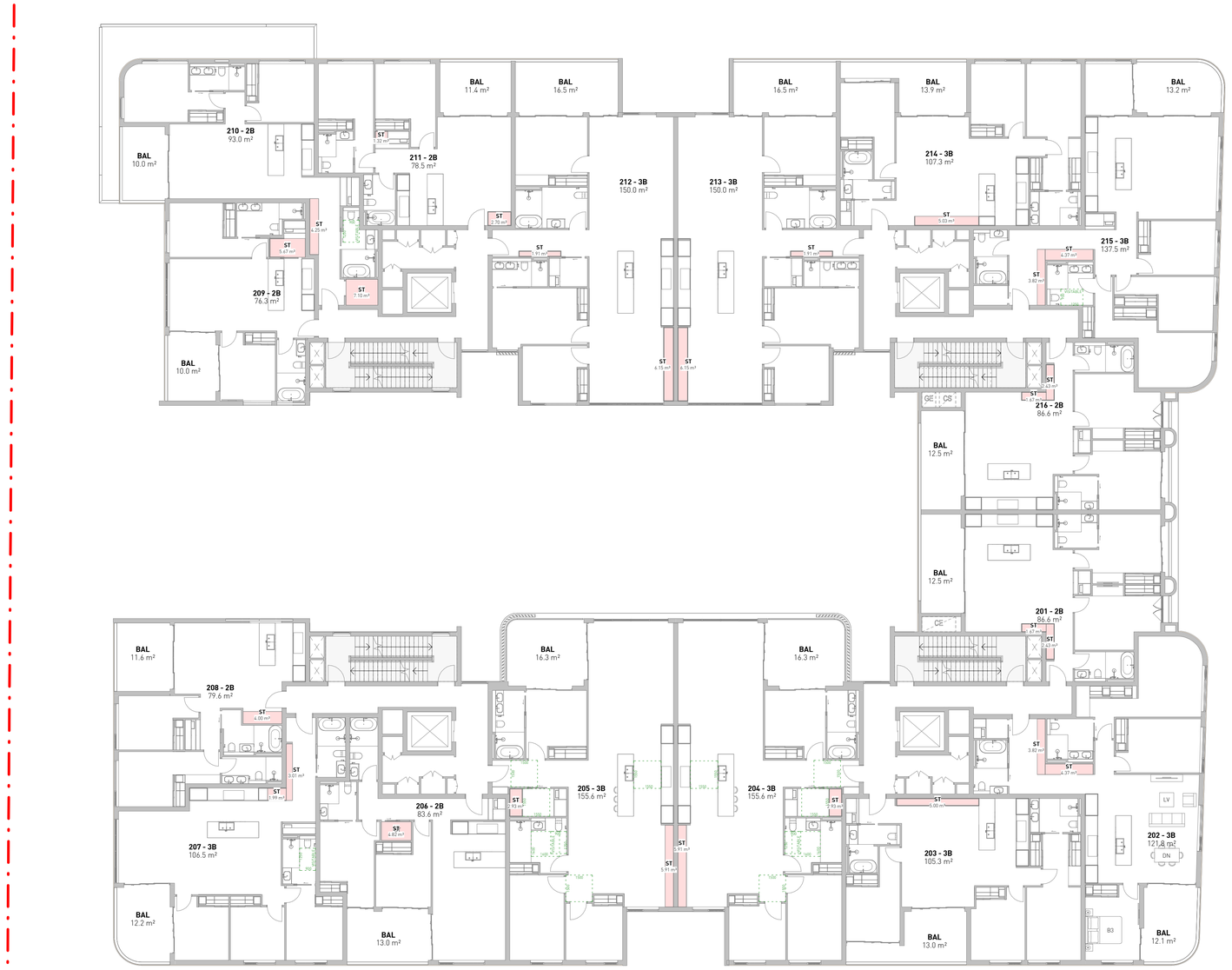
STORAGE SCHEDULE - LEVEL 2			
UNIT	**BEDROOM**	**STORAGE - UNIT**	**STORAGE - BASEMENT**
201	2B	4.10 m³	7.20 m³
202	3B	8.19 m³	7.20 m³
203	3B	5.00 m³	7.20 m³
204	3B	8.84 m³	33.12 m³
205	3B	8.84 m³	33.12 m³
206	2B	4.82 m³	7.20 m³
207	3B	5.00 m³	7.20 m³
208	2B	4.00 m³	7.20 m³
209	2B	5.67 m³	7.20 m³
210	2B	11.35 m³	7.20 m³
211	2B	4.02 m³	7.20 m³
212	3B	8.06 m³	17.98 m³
213	3B	8.06 m³	17.98 m³
214	3B	5.03 m³	7.20 m³
215	3B	8.19 m³	9.91 m³
216	2B	4.10 m³	7.20 m³



1 / DA518

LEVEL 2 FLOOR PLAN - STORAGE

1 : 150

No.	Date	Description
C	15-05-2026	SSDA - FOR SUBMISSION
B	20-03-2026	SSDA - FOR SUBMISSION
A	16-02-2026	ISSUE FOR COORDINATION

Amendments

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Project:
RESIDENTIAL FLAT BUILDING
19-25 BALFOUR STREET

LINDFIELD

Drawing:
STORAGE DIAGRAMS - LEVEL 2

Status:

Scale: 1 : 150 | Job No. 24062 | Drawing No. DA518 | Rev. C
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Date: 01/22/26
Drawn: Author | Reviewed Checker

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STORAGE SCHEDULE - LEVEL 3			
UNIT	**BEDROOM**	**STORAGE - UNIT**	**STORAGE - BASEMENT**
301	2B	4.10 m³	7.20 m³
302	2B	6.07 m³	7.20 m³
303	2B	4.04 m³	7.20 m³
304	3B	7.18 m³	8.64 m³
305	4B	5.02 m³	18.80 m³
306	3B	5.94 m³	7.20 m³
307	2B	4.00 m³	7.20 m³
308	2B	5.67 m³	7.20 m³
309	2B	11.35 m³	7.20 m³
310	2B	4.02 m³	7.20 m³
311	3B	8.06 m³	11.04 m³
312	3B	8.06 m³	9.60 m³
313	3B	5.03 m³	7.20 m³
314	3B	8.19 m³	10.44 m³
315	2B	4.10 m³	7.20 m³

1 DA519

LEVEL 3 FLOOR PLAN - STORAGE

1 : 150

No.	Date	Description
C	15-05-2026	SSDA - FOR SUBMISSION
B	20-03-2026	SSDA - FOR SUBMISSION
A	16-02-2026	ISSUE FOR COORDINATION

Amendments

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Project:
RESIDENTIAL FLAT BUILDING
19-25 BALFOUR STREET

LINDFIELD

Drawing:
STORAGE DIAGRAMS - LEVEL 3

Status:

Scale:	1 : 150	Job No.	Drawing No.	Rev.
Sheet Size:		24062	DA519	C
Date:	01/22/26			
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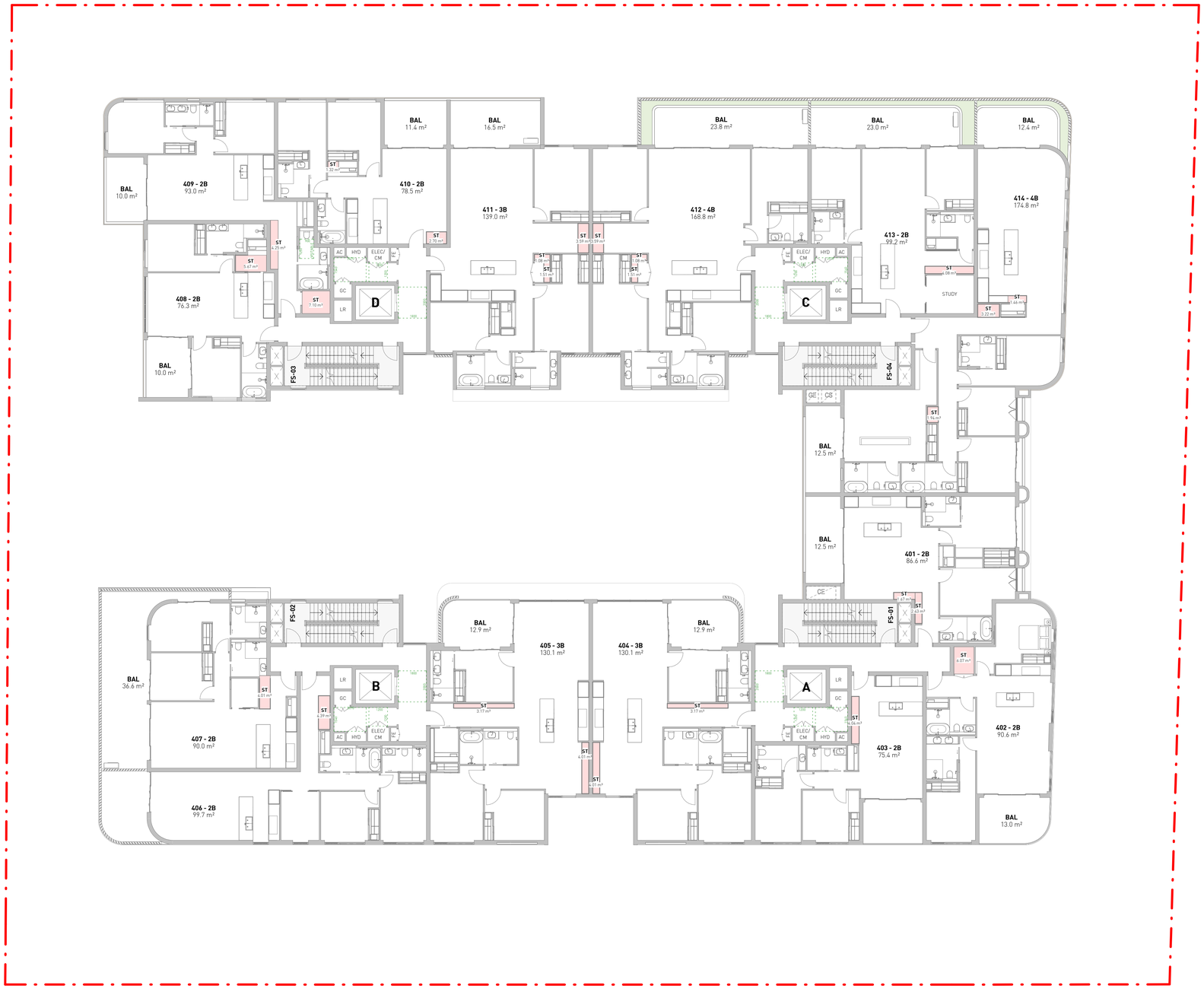
STORAGE SCHEDULE - LEVEL 4			
UNIT	BEDROOM	STORAGE - UNIT	STORAGE - BASEMENT
401	2B	4.10 m³	7.20 m³
402	2B	6.07 m³	7.20 m³
403	2B	4.04 m³	7.20 m³
404	3B	7.18 m³	7.20 m³
405	3B	7.18 m³	7.20 m³
406	2B	4.39 m³	7.20 m³
407	2B	4.01 m³	7.20 m³
408	2B	5.67 m³	7.20 m³
409	2B	11.35 m³	7.20 m³
410	2B	4.02 m³	7.20 m³
411	3B	6.18 m³	10.44 m³
412	4B	6.18 m³	18.80 m³
413	2B	4.08 m³	7.20 m³
414	4B	6.62 m³	19.60 m³



1 DA520

LEVEL 4 FLOOR PLAN - STORAGE

1 : 150

No.	Date	Description
C	15-05-2026	SSDA - FOR SUBMISSION
B	20-03-2026	SSDA - FOR SUBMISSION
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Project:
RESIDENTIAL FLAT BUILDING
19-25 BALFOUR STREET

LINDFIELD

Drawing:
STORAGE DIAGRAMS - LEVEL 4

Status:

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STORAGE SCHEDULE - LEVEL 5			
UNIT	BEDROOM	STORAGE - UNIT	STORAGE - BASEMENT
501	3B	8.45 m³	7.20 m³
502	3B	11.37 m³	8.64 m³
503	4B	5.02 m³	17.98 m³
504	3B	7.18 m³	7.20 m³
505	2B	4.39 m³	7.20 m³
506	2B	4.00 m³	7.20 m³
507	2B	4.00 m³	7.20 m³
508	2B	4.39 m³	7.20 m³
509	3B	6.20 m³	9.52 m³
510	3B	8.49 m³	11.04 m³
511	2B	8.00 m³	7.20 m³
512	4B	5.10 m³	18.80 m³

1 DA521 **LEVEL 5 FLOOR PLAN - STORAGE**

1 : 150

No.	Date	Description
C	15-05-2026	SSDA - FOR SUBMISSION
B	20-03-2026	SSDA - FOR SUBMISSION
A	16-02-2026	ISSUE FOR COORDINATION

Amendments

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Giles Tribe Pty Ltd ABN 50 001259 507
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Project:
RESIDENTIAL FLAT BUILDING
19-25 BALFOUR STREET

LINDFIELD

Drawing:
STORAGE DIAGRAMS - LEVEL 5

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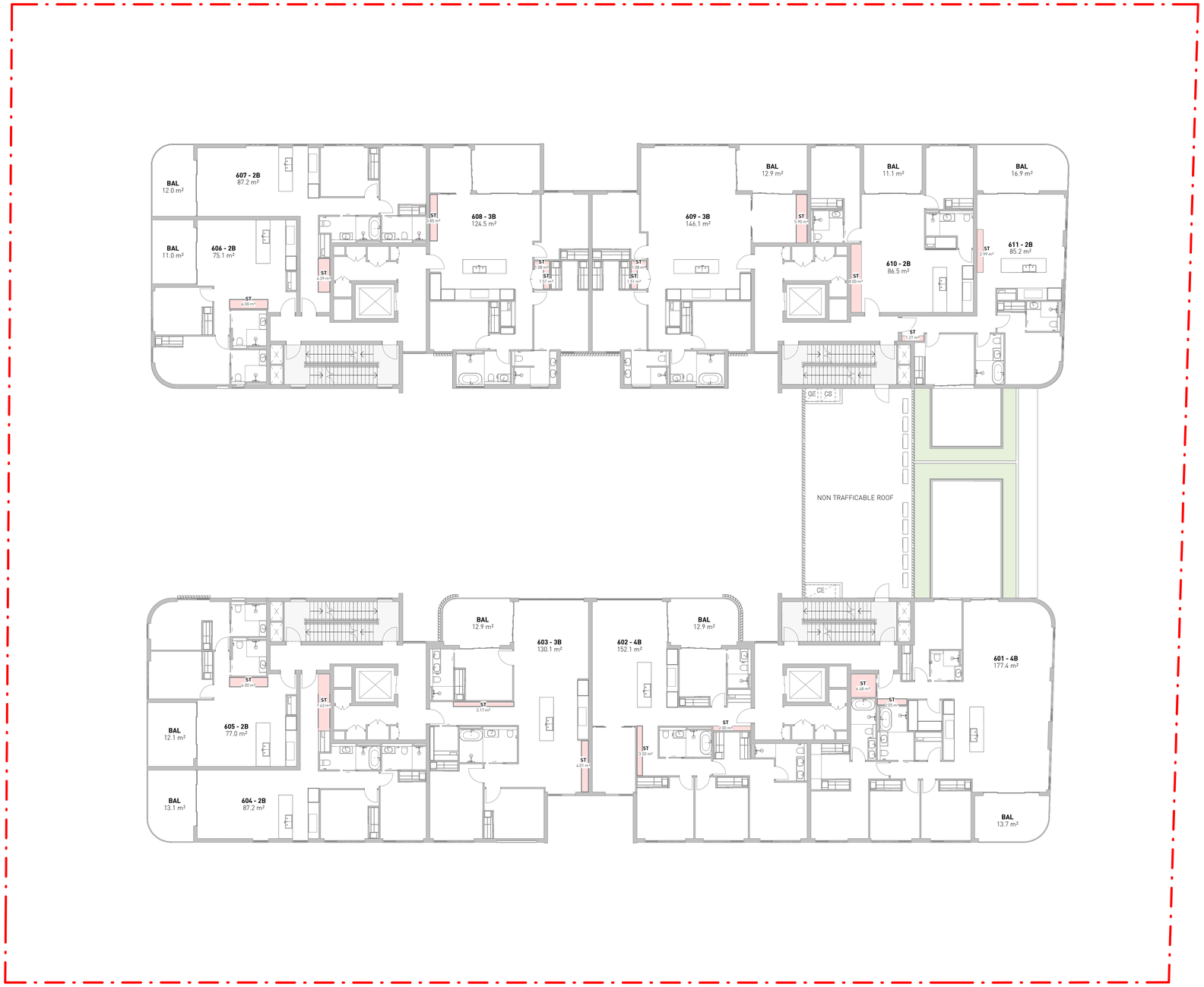
STORAGE SCHEDULE - LEVEL 6			
UNIT	BEDROOM	STORAGE - UNIT	STORAGE - BASEMENT
601	4B	8.53 m³	19.60 m³
602	4B	5.02 m³	17.98 m³
603	3B	7.18 m³	7.20 m³
604	2B	7.43 m³	7.20 m³
605	2B	4.00 m³	7.20 m³
606	2B	4.00 m³	7.20 m³
607	2B	4.39 m³	7.20 m³
608	3B	6.44 m³	7.20 m³
609	3B	8.49 m³	10.81 m³
610	2B	8.00 m³	7.20 m³
611	2B	4.26 m³	7.20 m³



1 DA522

LEVEL 6 FLOOR PLAN - STORAGE

1 : 150

No.	Date	Description
C	15-05-2026	SSDA - FOR SUBMISSION
B	20-03-2026	SSDA - FOR SUBMISSION
A	16-02-2026	ISSUE FOR COORDINATION

Amendments

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Project:
RESIDENTIAL FLAT BUILDING
19-25 BALFOUR STREET

LINDFIELD

Drawing:
STORAGE DIAGRAMS - LEVEL 6

Status:

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Job No. 24062
Drawing No. DA522
Rev. C
Sheet Size:
Date: 01/22/26
Drawn: Author
Reviewed Checker

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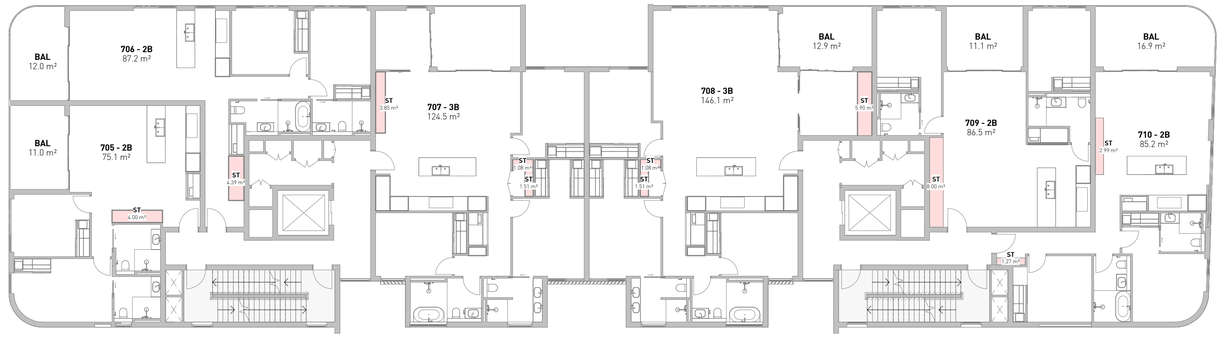
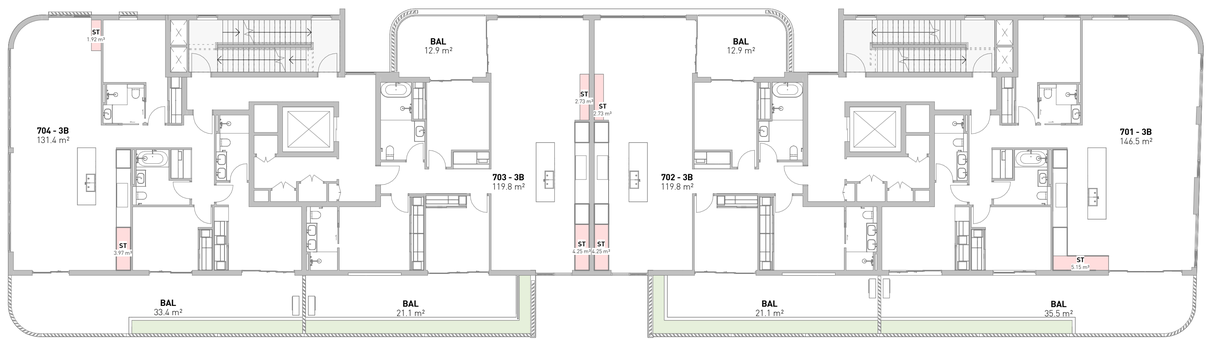
STORAGE SCHEDULE - LEVEL 7			
UNIT	**BEDROOM**	**STORAGE - UNIT**	**STORAGE - BASEMENT**
701	3B	5.15 m³	9.60 m³
702	3B	6.98 m³	7.20 m³
703	3B	6.98 m³	7.20 m³
704	3B	5.89 m³	7.20 m³
705	2B	4.00 m³	7.20 m³
706	2B	4.39 m³	7.20 m³
707	3B	6.44 m³	7.20 m³
708	3B	8.49 m³	10.61 m³
709	2B	8.00 m³	7.20 m³
710	2B	4.26 m³	7.20 m³





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DA523

LEVEL 7 FLOOR PLAN - STORAGE

1 : 150

No.	Date	Description
C	15-05-2026	SSDA - FOR SUBMISSION
B	20-03-2026	SSDA - FOR SUBMISSION
A	16-02-2026	ISSUE FOR COORDINATION

Amendments

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Giles Tribe Pty Ltd ABN 50 001259 507

Nominated Architects: Mark G Broadley [5823] Victor Schneider [5717]

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Project:
RESIDENTIAL FLAT BUILDING
19-25 BALFOUR STREET

LINDFIELD

Drawing:
STORAGE DIAGRAMS - LEVEL 7

Status:

Scale:	1 : 150	Job No.	Drawing No.	Rev.
Sheet Size:		24062	DA523	C
Date:	01/22/26			
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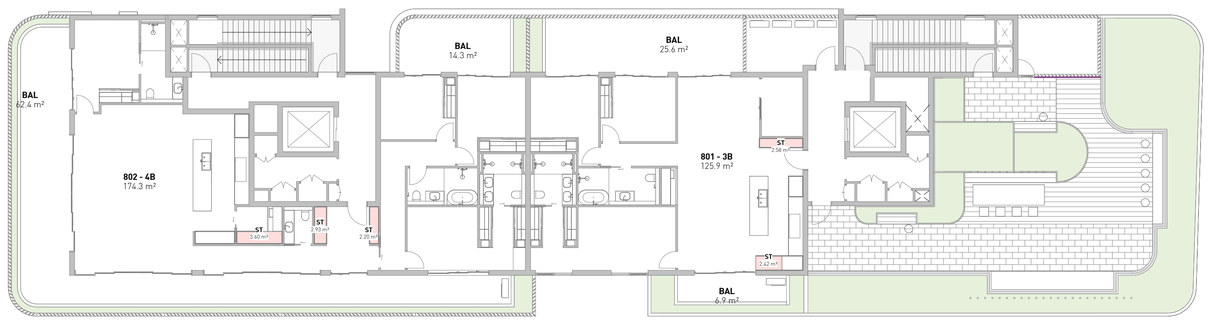
STORAGE SCHEDULE - LEVEL 8			
UNIT	**BEDROOM**	**STORAGE - UNIT**	**STORAGE - BASEMENT**
801	3B	5.00 m³	7.20 m³
802	4B	8.73 m³	19.60 m³
803	2B	4.00 m³	7.20 m³
804	2B	4.39 m³	7.20 m³
805	3B	6.48 m³	7.20 m³
806	3B	5.64 m³	7.20 m³
807	3B	8.81 m³	18.80 m³



1 / DA524

LEVEL 8 FLOOR PLAN - STORAGE

1 : 150

C	15-05-2026	SSDA - FOR SUBMISSION
B	20-03-2026	SSDA - FOR SUBMISSION
A	16-02-2026	ISSUE FOR COORDINATION
No.	Date	Description

Amendments

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Nominated Architects: Mark G Broadley [5823] Victor Schneider [5717]

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Project:
RESIDENTIAL FLAT BUILDING
19-25 BALFOUR STREET

LINDFIELD

Drawing:
STORAGE DIAGRAMS - LEVEL 8

Status:

Scale:	1 : 150	Job No.	Drawing No.	Rev.
Sheet Size:		24062	DA524	C
Date:	01/22/26			
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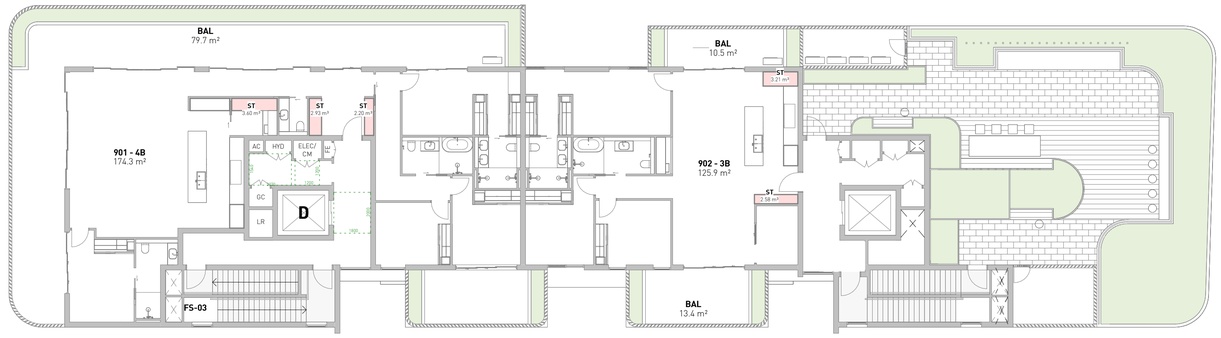
STORAGE SCHEDULE - LEVEL 9			
UNIT	BEDROOM	STORAGE - UNIT	STORAGE - BASEMENT
901	4B	8.73 m³	19.60 m³
902	3B	5.79 m³	7.20 m³



1 DA525

LEVEL 9 FLOOR PLAN - STORAGE

1 : 150

No.	Date	Description
C	15-05-2026	SSDA - FOR SUBMISSION
B	20-03-2026	SSDA - FOR SUBMISSION
A	16-02-2026	ISSUE FOR COORDINATION

Amendments

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Nominated Architects: Mark G Broadley [5823] Victor Schneider 1571

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Project:
RESIDENTIAL FLAT BUILDING
19-25 BALFOUR STREET

LINDFIELD

Drawing:
STORAGE DIAGRAMS - LEVEL 9

Status:

Scale: 1 : 150 Job No. Drawing No. Rev.
Sheet Size:
Date: 01/22/26 **24062** **DA525** **C**
Drawn: Author Reviewed Checker

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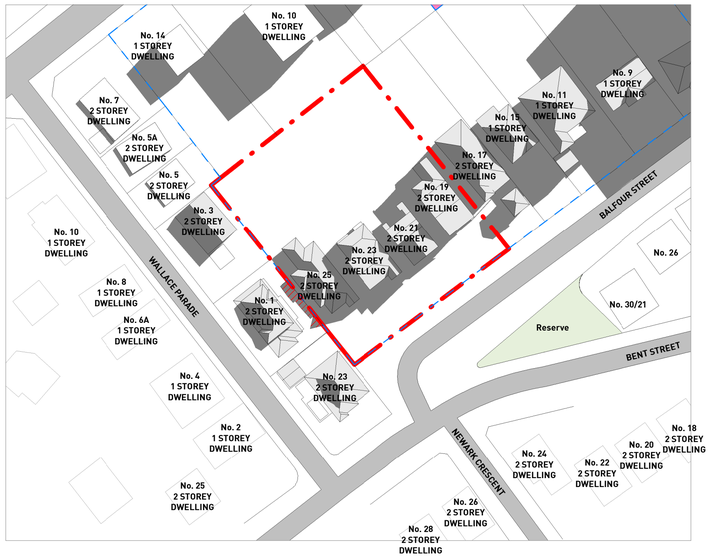
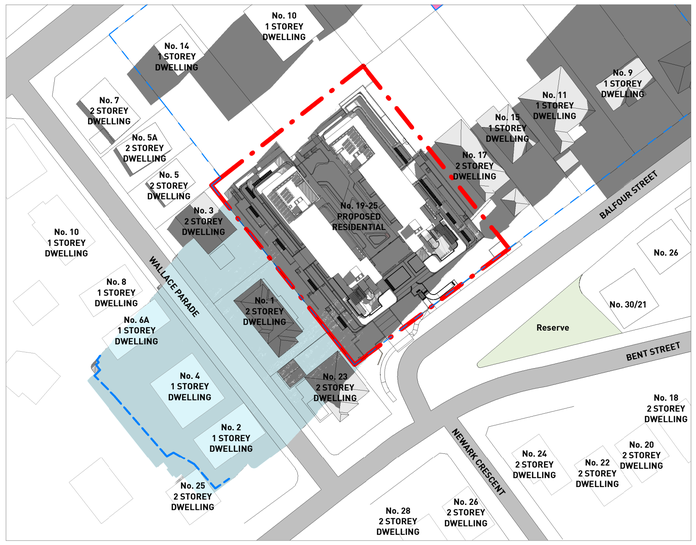


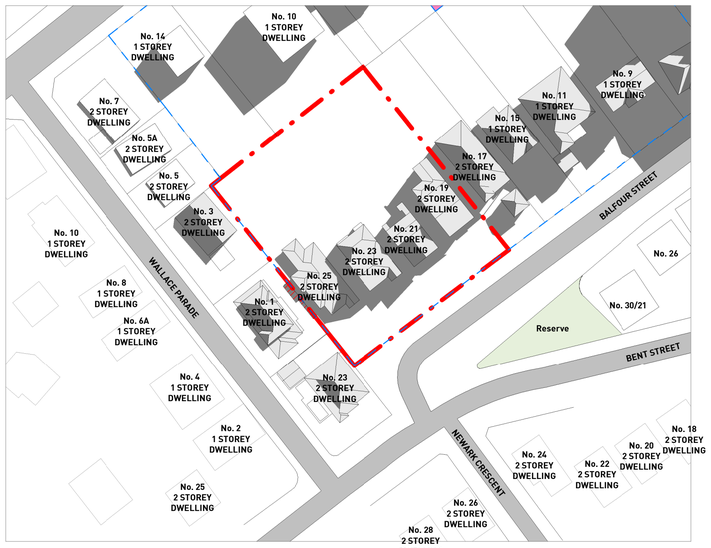
1 DA530 **OVERSHADOWING - 09AM JUNE 21 (EXISTING)**

1 : 1000



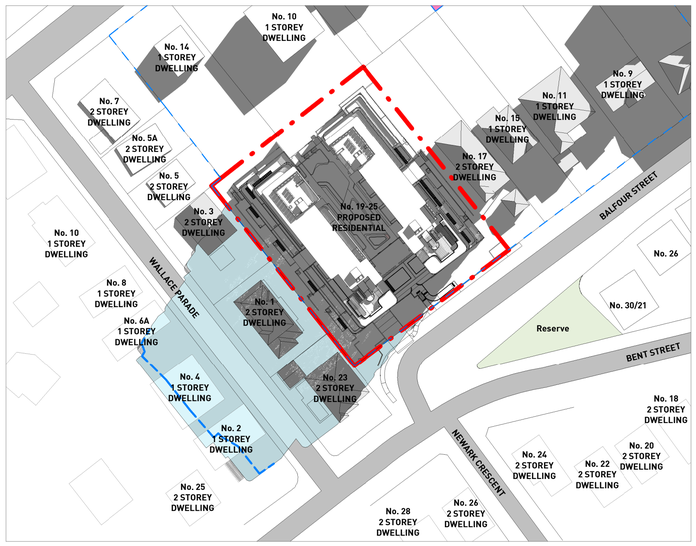
2 DA530 **OVERSHADOWING - 09AM JUNE 21 (PROPOSED)**

1 : 1000



3 DA530 **OVERSHADOWING - 09.30AM JUNE 21 (EXISTING)**

1 : 1000



4 DA530 **OVERSHADOWING - 09.30AM JUNE 21 (PROPOSED)**

1 : 1000

EXISTING PROPERTY SHADOWS

AREA OF PROPOSED SHADOWS PROJECTING OUTSIDE THE SITE BOUNDARY

COMPLIANT BUILDING HEIGHT SHADOW

No.	Date	Description
F	15-05-2026	SSDA - FOR SUBMISSION
E	20-03-2026	SSDA - FOR SUBMISSION
D	16-02-2026	ISSUE FOR COORDINATION
C	30-05-2025	SSDA - FOR SUBMISSION
B	16-05-2025	SSDA - ISSUE FOR COORDINATION

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Project:
RESIDENTIAL FLAT BUILDING
19-25 BALFOUR STREET

LINDFIELD

Drawing:
OVERSHADOWING DIAGRAMS (PROPOSED)

Status: FOR APPROVAL

Scale:	As indicated	Job No.	Drawing No. Rev.
Sheet Size:	A1	24062	DA530 F
Date:	09/04/2025		
Drawn:	RM	Reviewed	DY

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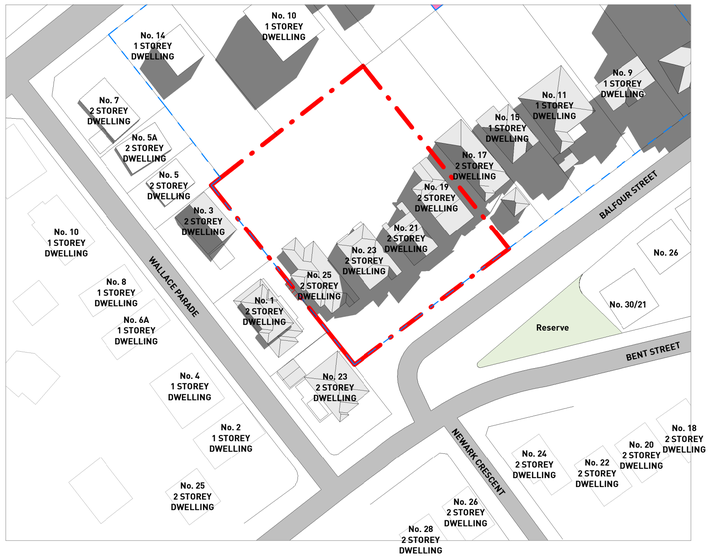
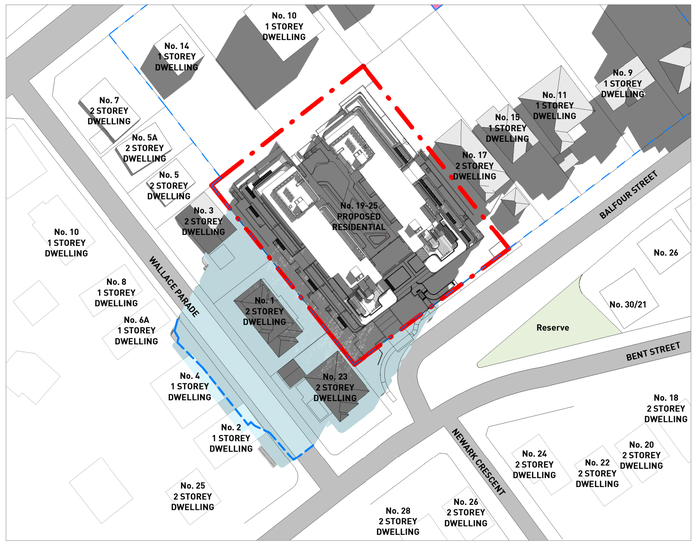
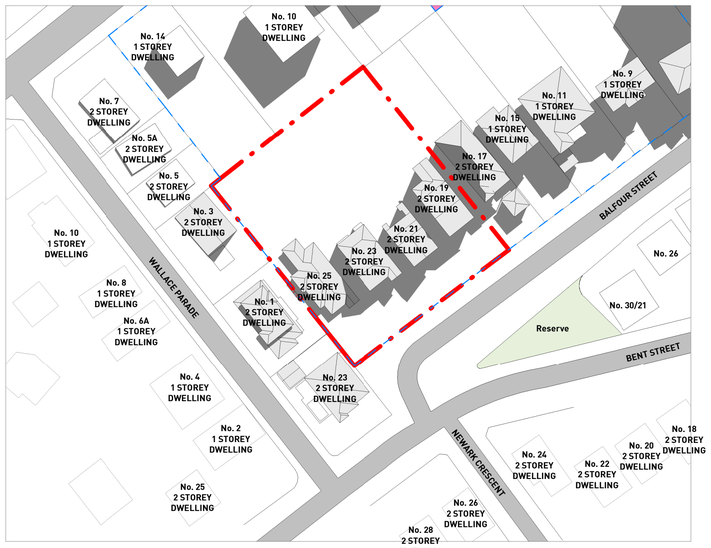


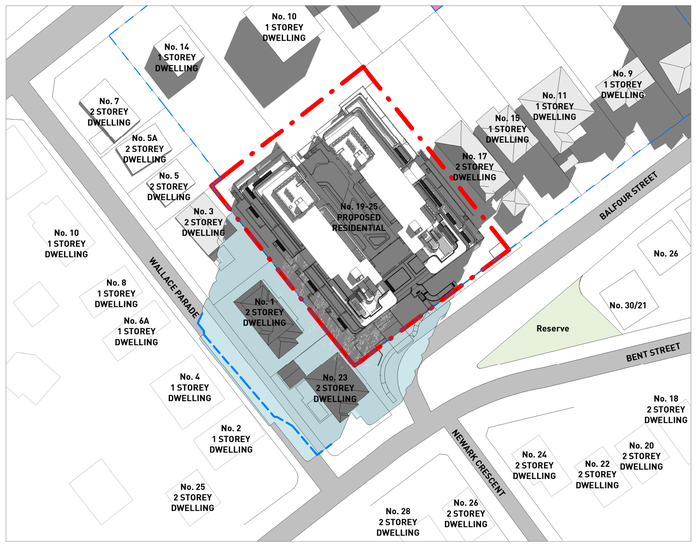
1 DA531 **OVERSHADOWING - 10AM JUNE 21 (EXISTING)**
1 : 1000



2 DA531 **OVERSHADOWING - 10AM JUNE 21 (PROPOSED)**
1 : 1000



3 DA531 **OVERSHADOWING - 10.30AM JUNE 21 (EXISTING)**
1 : 1000



4 DA531 **OVERSHADOWING - 10.30AM JUNE 21 (PROPOSED)**
1 : 1000

EXISTING PROPERTY SHADOWS

AREA OF PROPOSED SHADOWS PROJECTING OUTSIDE THE SITE BOUNDARY

COMPLIANT BUILDING HEIGHT SHADOW

No.	Date	Description
F	15-05-2026	SSDA - FOR SUBMISSION
E	20-03-2026	SSDA - FOR SUBMISSION
D	16-02-2026	ISSUE FOR COORDINATION
C	30-05-2025	SSDA - FOR SUBMISSION
B	16-05-2025	SSDA - ISSUE FOR COORDINATION

Amendments

GILES TRIBE
Level 1, 1 Chandos Street
St Leonards 2065 NSW AUSTRALIA
t: 61 2 9264 5005
e: gta@gilestribe.com.au
Giles Tribe Pty Ltd ABN 50 001259 507

Nominated Architects: Mark G Broadley [5823] Victor Schneider [11157]

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Project:
RESIDENTIAL FLAT BUILDING
19-25 BALFOUR STREET

LINDFIELD

Drawing:
OVERSHADOWING DIAGRAMS (PROPOSED)

Status: FOR APPROVAL

Scale:	As indicated	Job No.	Drawing No. Rev.
Sheet Size:	A1	24062	DA531 F
Date:	09/04/2025		
Drawn:	RM	Reviewed	DY

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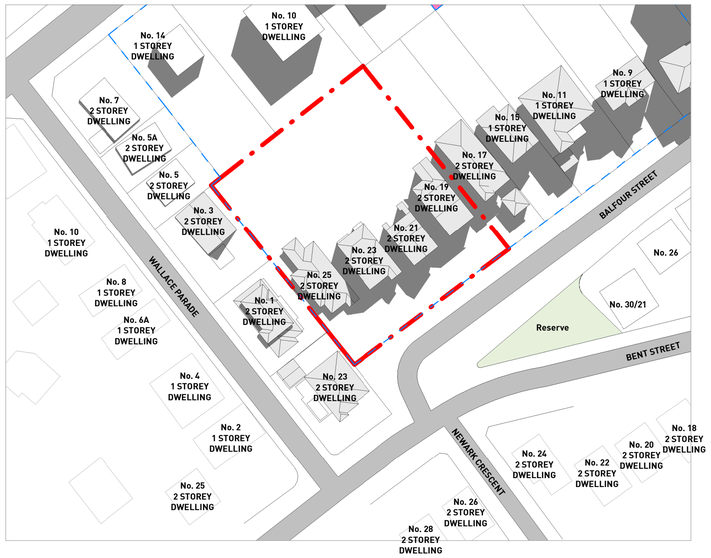

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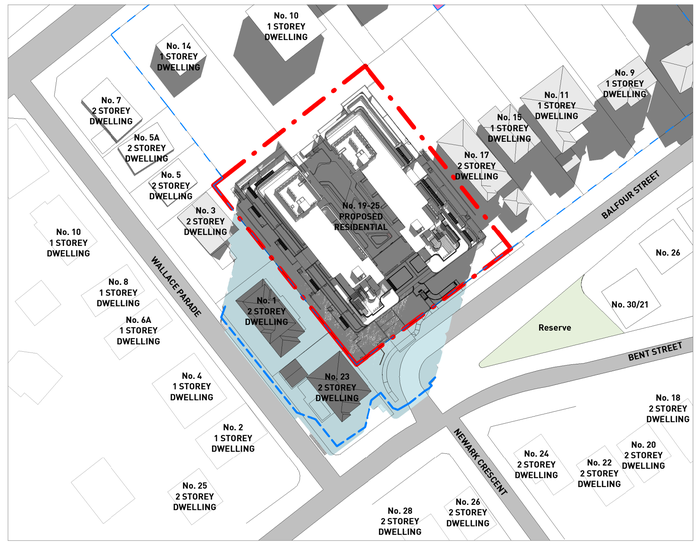

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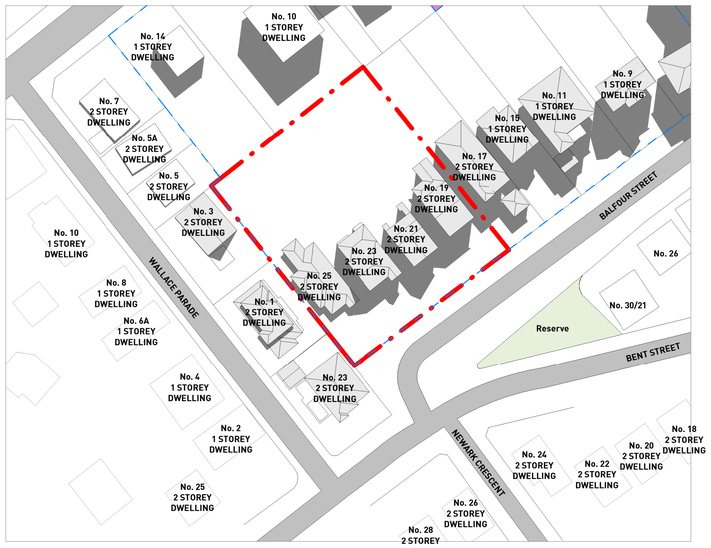

3 DA532 **OVERSHADOWING - 11.30AM JUNE 21 (EXISTING)**

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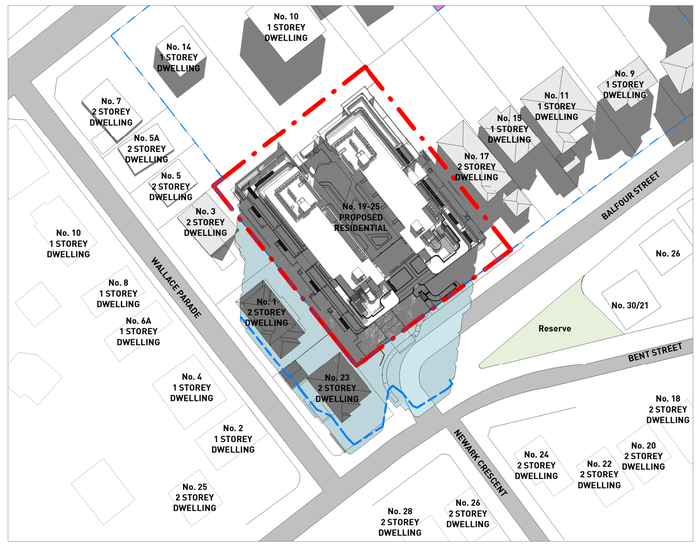

4 DA532 **OVERSHADOWING - 11.30AM JUNE 21 (PROPOSED)**

1 : 1000

EXISTING PROPERTY SHADOWS

AREA OF PROPOSED SHADOWS PROJECTING OUTSIDE THE SITE BOUNDARY

COMPLIANT BUILDING HEIGHT SHADOW

No.	Date	Description
F	15-05-2026	SSDA - FOR SUBMISSION
E	20-03-2026	SSDA - FOR SUBMISSION
D	16-02-2026	ISSUE FOR COORDINATION
C	30-05-2025	SSDA - FOR SUBMISSION
B	16-05-2025	SSDA - ISSUE FOR COORDINATION

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Project:
RESIDENTIAL FLAT BUILDING
19-25 BALFOUR STREET

LINDFIELD

Drawing:
OVERSHADOWING DIAGRAMS (PROPOSED)

Status: FOR APPROVAL

Scale:	As indicated	Job No.	Drawing No. Rev.
Sheet Size:	A1	24062	DA532 F
Date:	09/04/2025		
Drawn:	RM	Reviewed	DY

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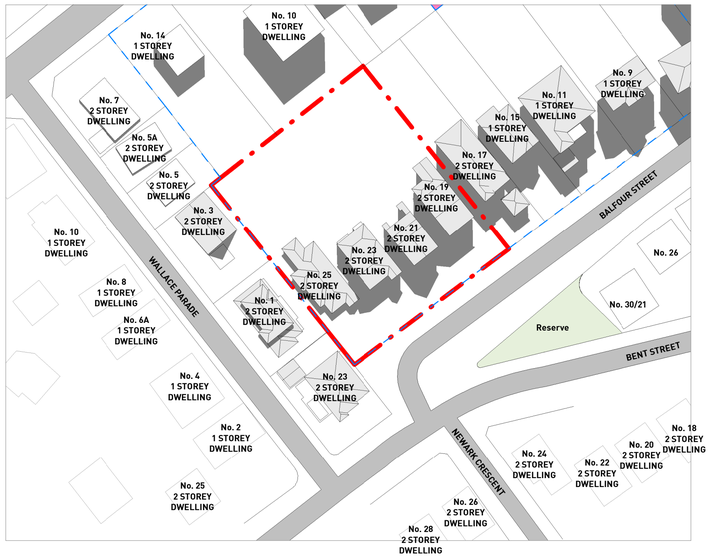

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OVERSHADOWING - 12PM JUNE 21 (EXISTING)

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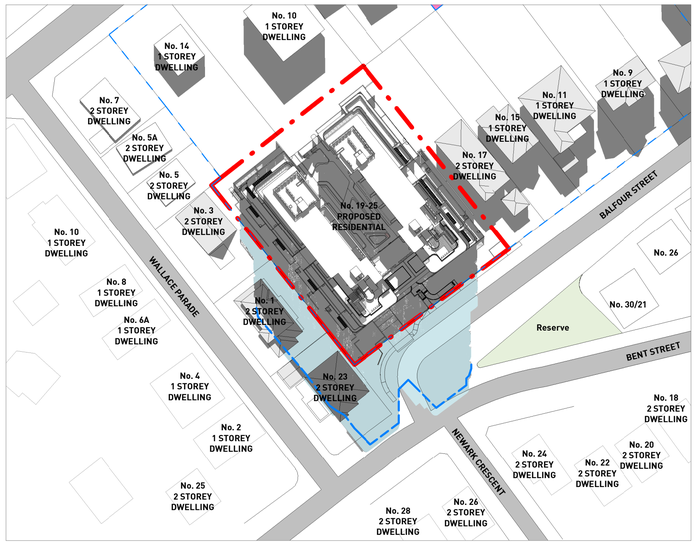


2 DA533

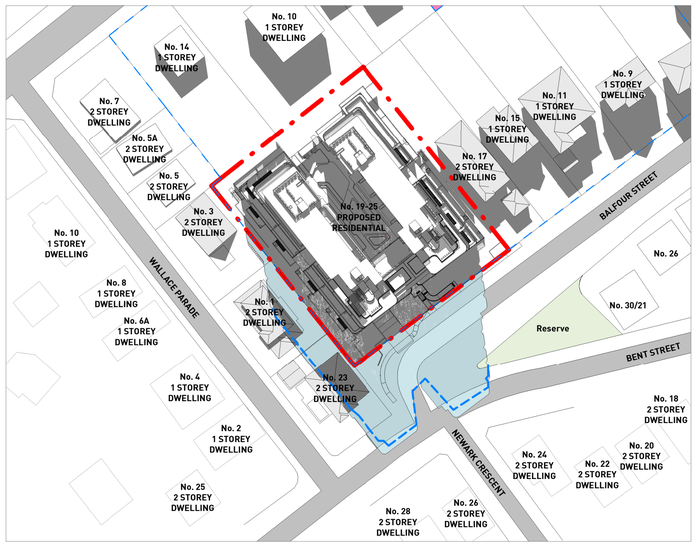
OVERSHADOWING - 12PM JUNE 21 (PROPOSED)

1 : 1000

3 DA533

OVERSHADOWING - 12.30PM JUNE 21 (EXISTING)

1 : 1000



4 DA533

OVERSHADOWING - 12.30PM JUNE 21 (PROPOSED)

1 : 1000

EXISTING PROPERTY SHADOWS

AREA OF PROPOSED SHADOWS PROJECTING OUTSIDE THE SITE BOUNDARY

COMPLIANT BUILDING HEIGHT SHADOW

No.	Date	Description
F	15-05-2026	SSDA - FOR SUBMISSION
E	20-03-2026	SSDA - FOR SUBMISSION
D	16-02-2026	ISSUE FOR COORDINATION
C	30-05-2025	SSDA - FOR SUBMISSION
B	16-05-2025	SSDA - ISSUE FOR COORDINATION

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Project:

RESIDENTIAL FLAT BUILDING
19-25 BALFOUR STREET

LINDFIELD

Drawing:

OVERSHADOWING DIAGRAMS (PROPOSED)

Status:

Scale: As indicated Job No. 24062 Drawing No. DA533 Rev. F

Sheet Size:

Date: 09/04/2025

Drawn: Author Reviewed Checker

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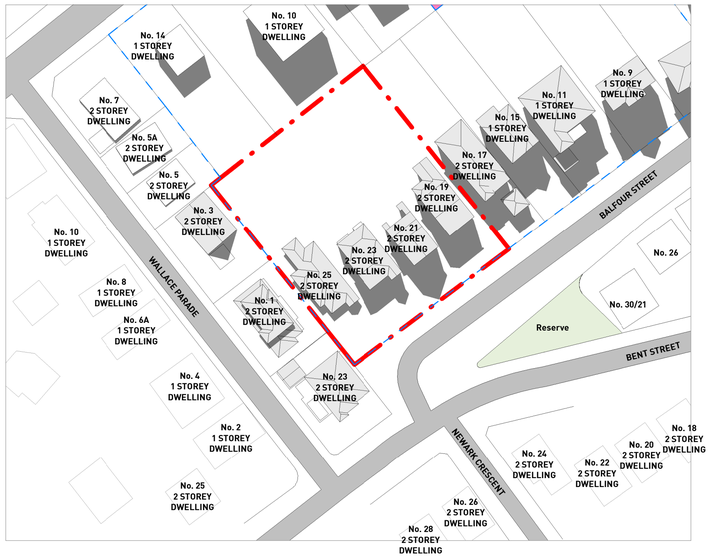

1 DA534

OVERSHADOWING - 01PM JUNE 21 (EXISTING)

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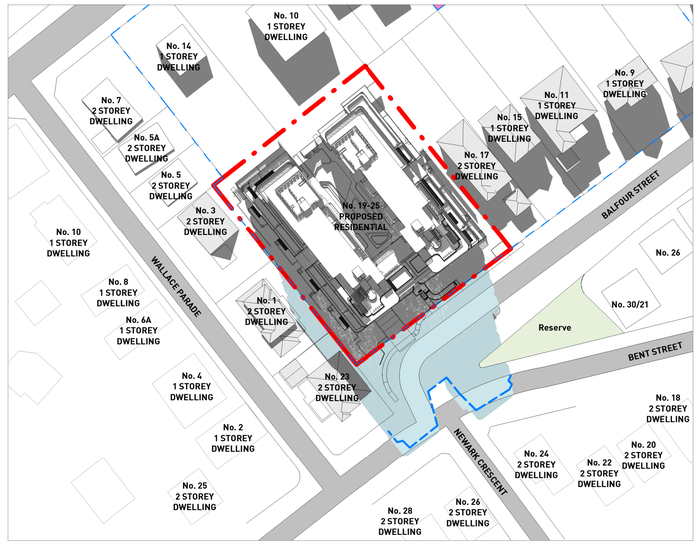


2 DA534

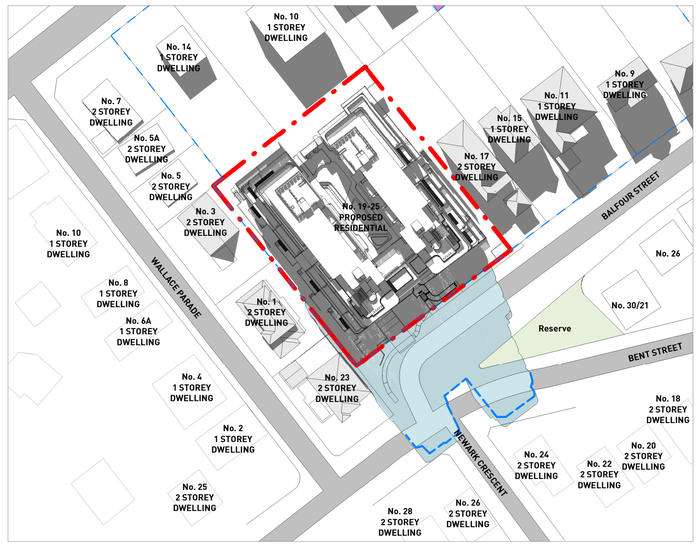
OVERSHADOWING - 01PM JUNE 21 (PROPOSED)

1 : 1000

3 DA534

OVERSHADOWING - 01.30PM JUNE 21 (EXISTING)

1 : 1000



4 DA534

OVERSHADOWING - 01.30PM JUNE 21 (PROPOSED)

1 : 1000

EXISTING PROPERTY SHADOWS

AREA OF PROPOSED SHADOWS PROJECTING OUTSIDE THE SITE BOUNDARY

COMPLIANT BUILDING HEIGHT SHADOW

No.	Date	Description
B	15-05-2026	SSDA - FOR SUBMISSION
A	20-03-2026	SSDA - FOR SUBMISSION

Amendments

GILES TRIBE
Level 1, 1 Chandos Street
St Leonards 2065 NSW AUSTRALIA
t: 61 2 9264 5005
e: gta@gilestribe.com.au
Giles Tribe Pty Ltd ABN 50 001259 507
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Project:
RESIDENTIAL FLAT BUILDING
19-25 BALFOUR STREET

LINDFIELD

Drawing:
OVERSHADOWING DIAGRAMS (PROPOSED)

Status:

Scale: As indicated Job No. Drawing No. Rev.
Sheet Size:
Date: 02/19/26 24062 DA534 B
Drawn: Author Reviewed Checker

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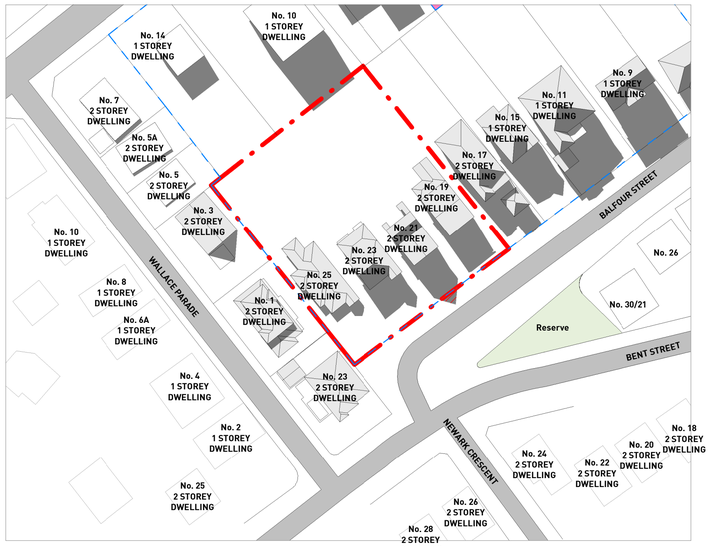

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OVERSHADOWING - 02PM JUNE 21 (EXISTING)

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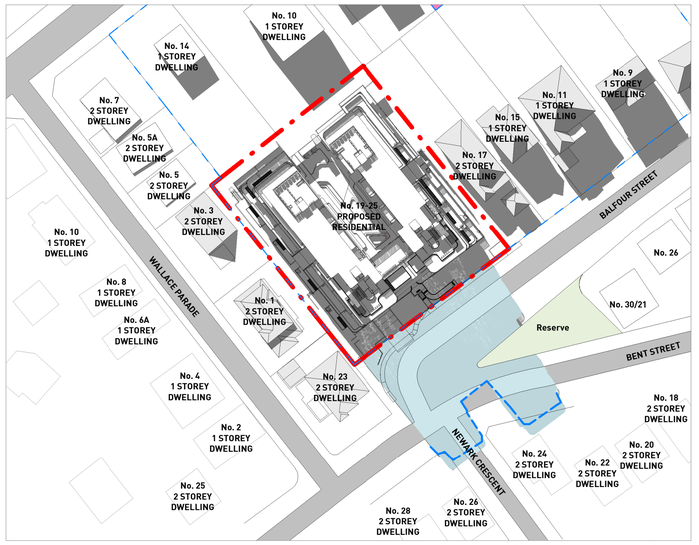

2 / DA535

OVERSHADOWING - 02PM JUNE 21 (PROPOSED)

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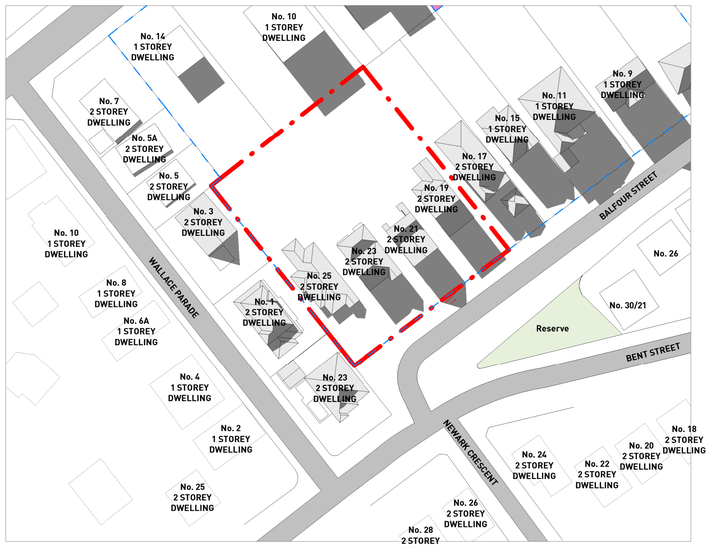

3 / DA535

OVERSHADOWING - 02.30PM JUNE 21 (EXISTING)

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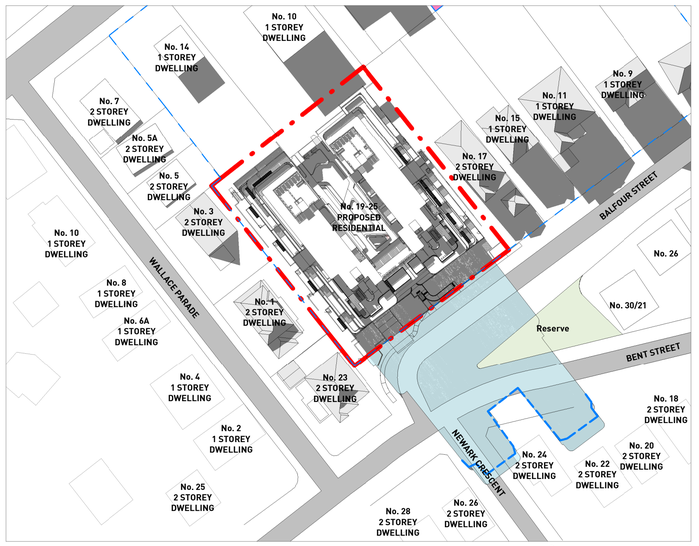

4 / DA535

OVERSHADOWING - 02.30PM JUNE 21 (PROPOSED)

1 : 1000

EXISTING PROPERTY SHADOWS

AREA OF PROPOSED SHADOWS PROJECTING OUTSIDE THE SITE BOUNDARY

COMPLIANT BUILDING HEIGHT SHADOW

No.	Date	Description
B	15-05-2026	SSDA - FOR SUBMISSION
A	20-03-2026	SSDA - FOR SUBMISSION

Amendments

GILES TRIBE
Level 1, 1 Chandos Street
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Project:
RESIDENTIAL FLAT BUILDING
19-25 BALFOUR STREET

LINDFIELD

Drawing:
OVERSHADOWING DIAGRAMS (PROPOSED)

Status:

Scale: As indicated
Job No. 24062
Drawing No. DA535
Rev. B
Sheet Size:
Date: 02/19/26
Drawn: Author
Reviewed Checker

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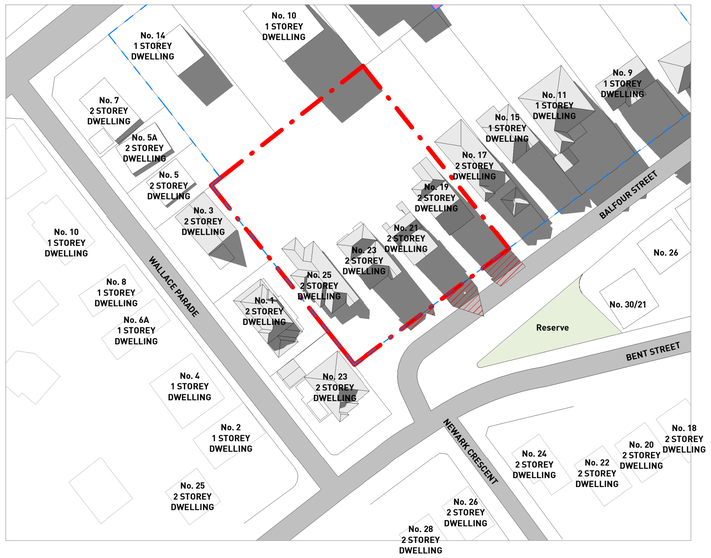

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OVERSHADOWING - 03PM JUNE 21 (EXISTING)

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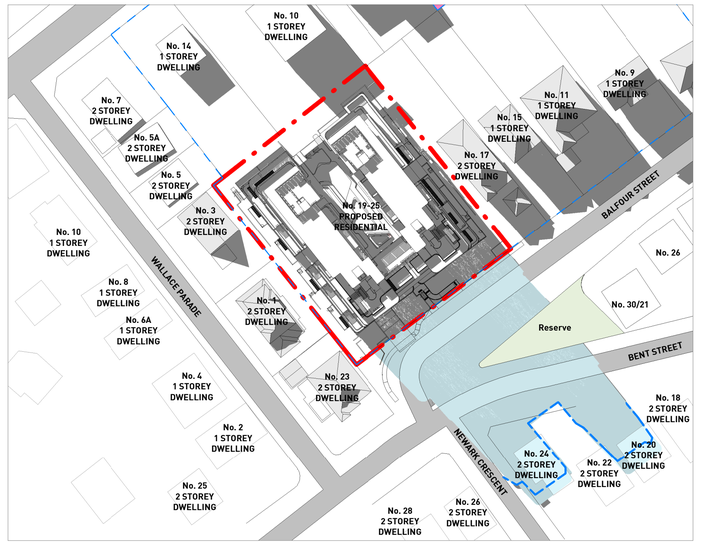

2 DA536

OVERSHADOWING - 03PM JUNE 21 (PROPOSED)

1 : 1000

EXISTING PROPERTY SHADOWS

AREA OF PROPOSED SHADOWS PROJECTING OUTSIDE THE SITE BOUNDARY

COMPLIANT BUILDING HEIGHT SHADOW

No.	Date	Description
B	15-05-2026	SSDA - FOR SUBMISSION
A	20-03-2026	SSDA - FOR SUBMISSION

Amendments

GILES TRIBE
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Project:

RESIDENTIAL FLAT BUILDING
19-25 BALFOUR STREET

LINDFIELD

Drawing:

OVERSHADOWING DIAGRAMS (PROPOSED)

Status:

Scale: As indicated
Job No. 24062
Drawing No. DA536
Rev. B
Sheet Size:
Date: 02/19/26
Drawn: Author
Reviewed Checker

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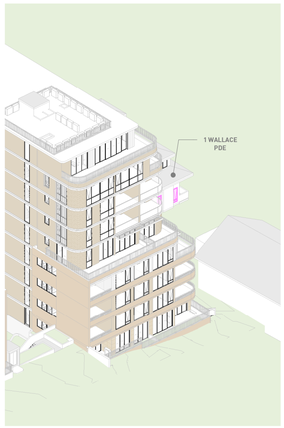
SUN EYE DIAGRAM | 11.45 to 15.00 - JUNE 21



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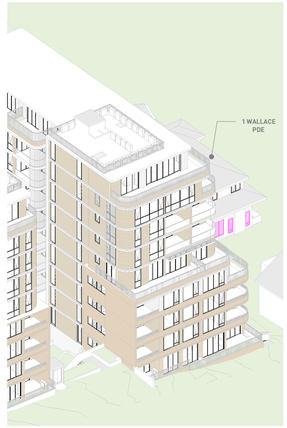

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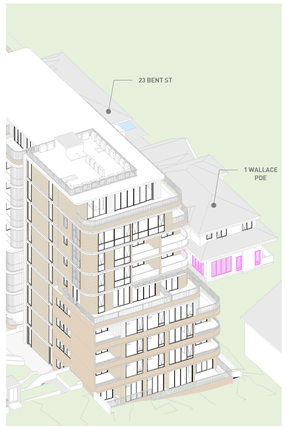

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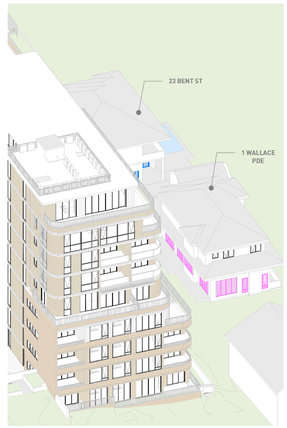

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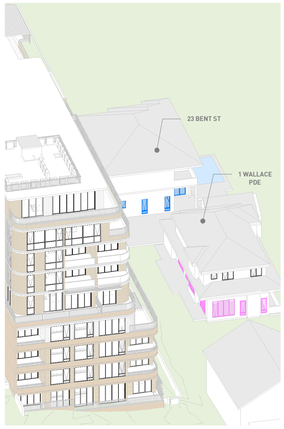

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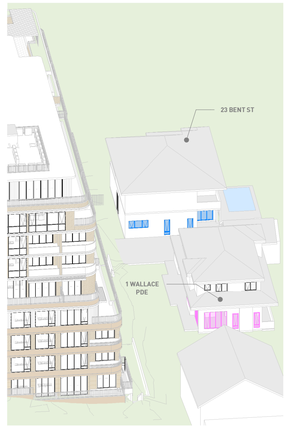

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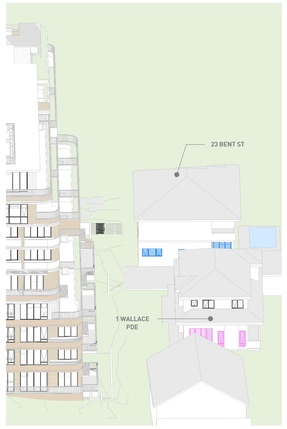

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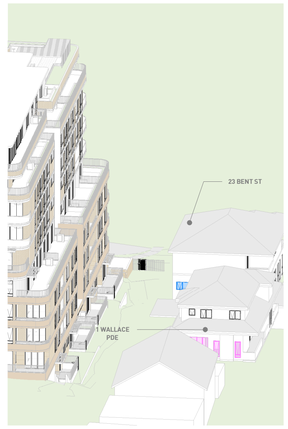

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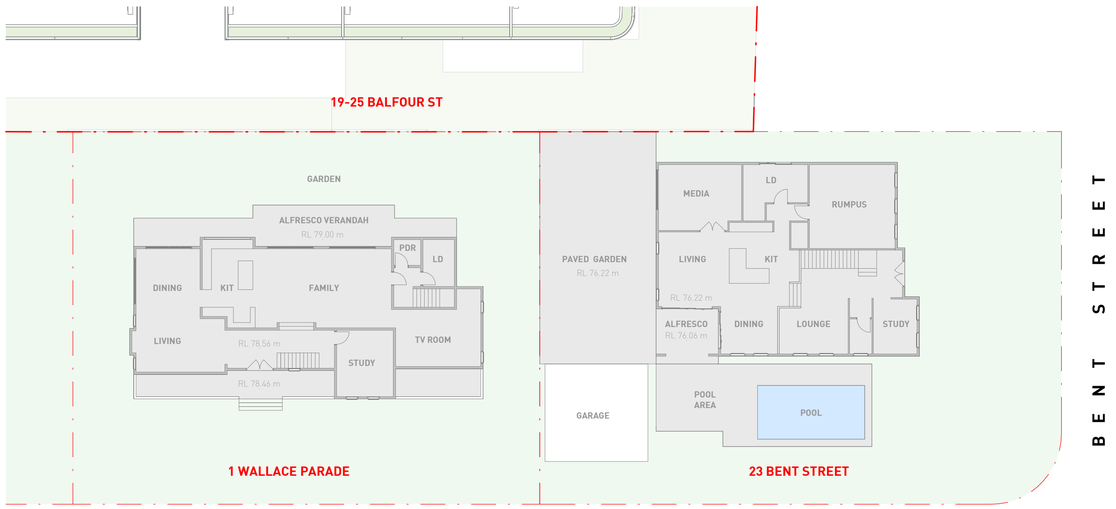
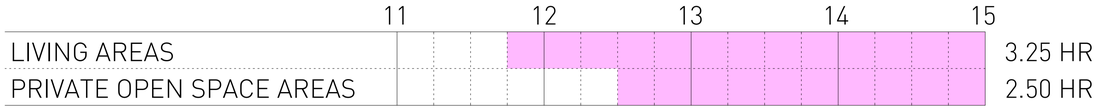


1 / DA580 **EXISTING GROUND FLOOR PLAN (1 WALLACE PARADE AND 23 BENT ST**

1 : 200

SOLAR ACCESS TABLE

1 WALLACE PARADE



LIVING AREAS : LIVING, DINING, KITCHEN, FAMILY RM

THE PRIMARY LIVING AREAS, INCLUDING THE LIVING ROOM, DINING ROOM, AND KITCHEN, ARE PROVIDED WITH NORTH AND EAST FACING WINDOWS, ENSURING ACCESS TO NATURAL DAYLIGHT AND SOLAR EXPOSURE.

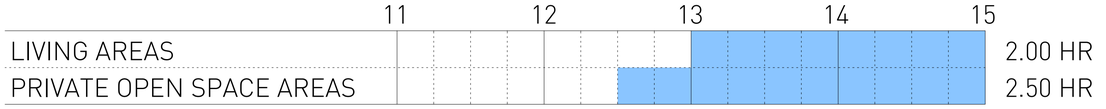
SECONDARY LIVING SPACES, COMPRISING THE STUDY AND TV ROOM, INCORPORATE WEST- AND SOUTH-FACING WINDOWS, RESPECTIVELY.

PRIMARY LIVING AREAS ACHIEVE AT LEAST 3.25HR SOLAR ACCESS DURING JUNE 21 WINTER SUN

POS AREAS : ALFRESCO VERANDA, GARDEN

PRIVATE OPEN SPACE AREAS ACHIEVE AT LEAST 2.5HR SOLAR ACCESS DURING JUNE 21 WINTER SUN

23 BENT ST



LIVING AREAS : LIVING, DINING, KITCHEN, MEDIA

THE PRIMARY LIVING AREAS, INCLUDING THE LIVING ROOM, DINING ROOM, AND KITCHEN, ARE PROVIDED WITH NORTH FACING WINDOWS, ENSURING ACCESS TO NATURAL DAYLIGHT AND SOLAR EXPOSURE.

AMONG SECONDARY LIVING SPACES, THE MEDIA ROOM HAS NORTH FACING WINDOW. THE LOUNGE STUDY AND RUMPUS AREAS HAVE WINDOWS FACING WEST AND SOUTH RESPECTIVELY.

THE ONLY EAST FACING WINDOW ON GROUND FLOOR IS FOR THE LAUNDRY ROOM

PRIMARY LIVING AREAS ACHIEVE AT LEAST 2.00 HR SOLAR ACCESS DURING JUNE 21 WINTER SUN

POS AREAS : PAVED GARDEN, ALFRESCO, POOL AREA

PRIVATE OPEN SPACE AREAS ACHIEVE AT LEAST 2.5HR SOLAR ACCESS DURING JUNE 21 WINTER SUN

No.	Date	Description
B	15-05-2026	SSDA - FOR SUBMISSION
A	20-03-2026	SSDA - FOR SUBMISSION

Amendments

GILES TRIBE
Level 1, 1 Chandos Street
St Leonards 2065 NSW AUSTRALIA
t: 61 2 9264 5005
e: gta@gilestribe.com.au
Giles Tribe Pty Ltd ABN 50 001259 507

Nominated Architects: Mark G Broadley [5823] Victor Schneider [11157]

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Project:
RESIDENTIAL FLAT BUILDING
19-25 BALFOUR STREET

LINDFIELD

Drawing:
1 WALLACE PARADE AND 23 BENT STREET

Status:

Scale: As indicated Job No. 24062 Drawing No. DA580 Rev. B
Sheet Size:
Date: 02/19/26
Drawn: Author Reviewed Checker

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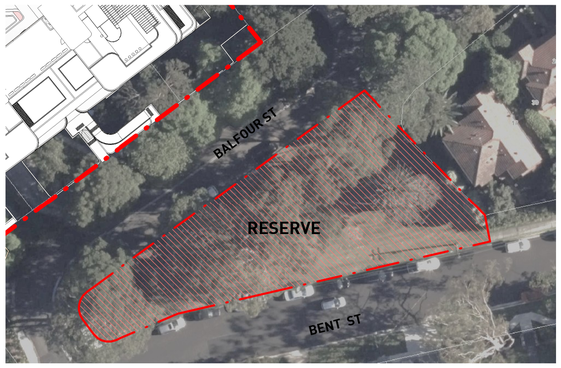
BALFOUR STREET RESERVE - OVERSHADOWING DIAGRAMS



1 DA581 **RESERVE - 9.00**
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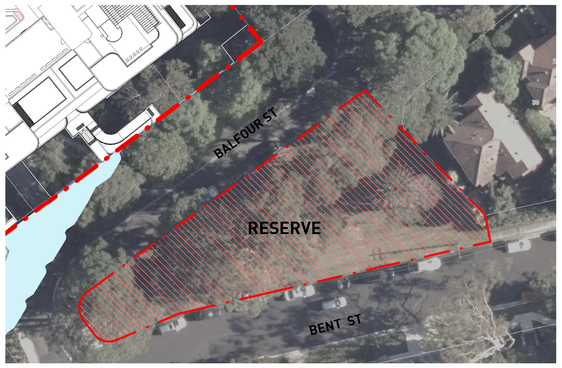
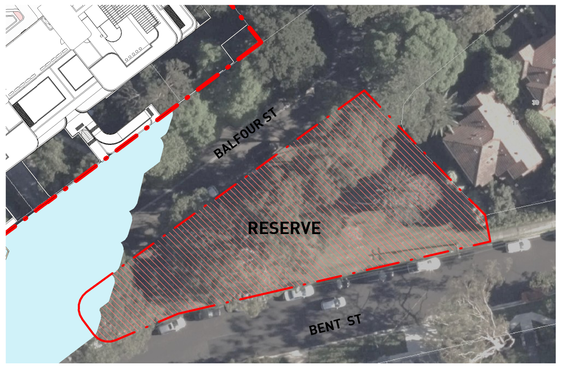


2 DA581 **RESERVE - 10.00**
1 : 500



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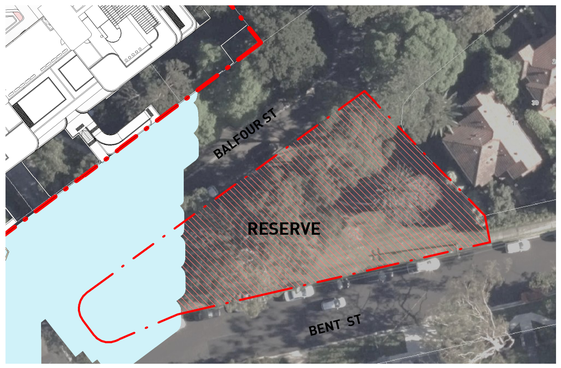

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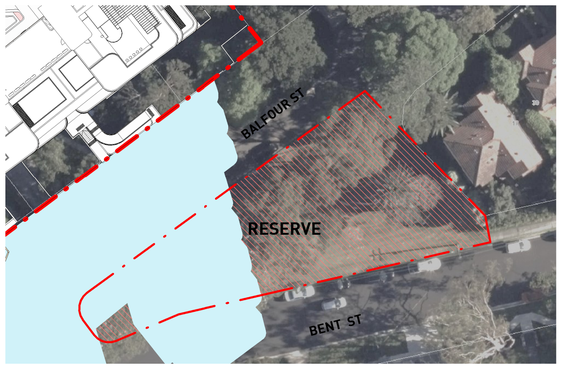

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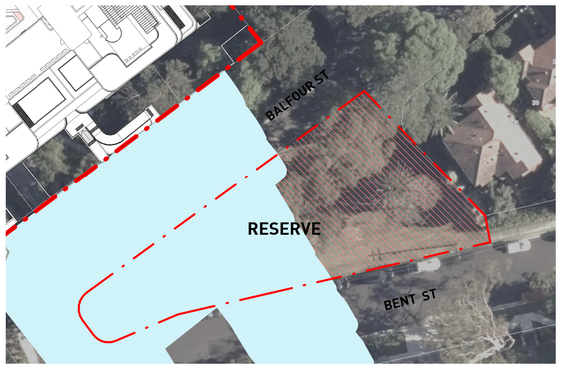

6 DA581 **RESERVE - 14.00**
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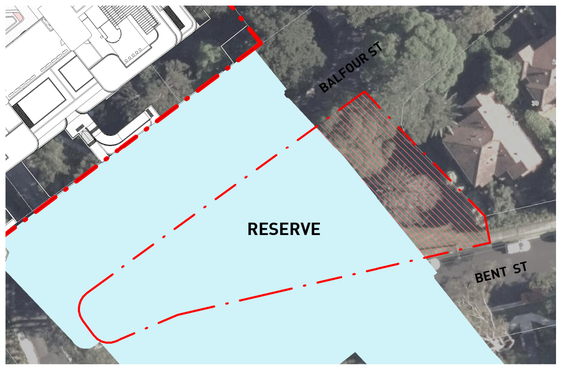

7 DA581 **RESERVE - 15.00**
1 : 500

SOLAR ACCESS PERCENTAGE FOR BALFOUR ST RESERVE

9.00	-	100%	(0% OVERSHADOWING BY PROPOSED DEVELOPMENT)
10.00	-	100%	(0% OVERSHADOWING BY PROPOSED DEVELOPMENT)
11.00	-	98%	(2% OVERSHADOWING BY PROPOSED DEVELOPMENT)
12.00	-	84%	(16% OVERSHADOWING BY PROPOSED DEVELOPMENT)
13.00	-	71%	(29% OVERSHADOWING BY PROPOSED DEVELOPMENT)
14.00	-	53%	(47% OVERSHADOWING BY PROPOSED DEVELOPMENT)
14.00	-	27%	(63% OVERSHADOWING BY PROPOSED DEVELOPMENT)

OVERSHADOWING BY PROPOSED DEVELOPMENT

AREA OF COUNCIL RESERVE NOT SUBJECT TO OVERSHADOWING

No.	Date	Description
A	20-03-2026	SSDA - FOR SUBMISSION

Amendments

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Project:
RESIDENTIAL FLAT BUILDING
19-25 BALFOUR STREET

LINDFIELD

Drawing:
OVERSHADOWING DIAGRAMS - RESERVE

Status:

Scale: As indicated Job No. Drawing No. Rev.
Sheet Size:
Date: 02/19/26 24062 DA581 A
Drawn: Author Reviewed Checker

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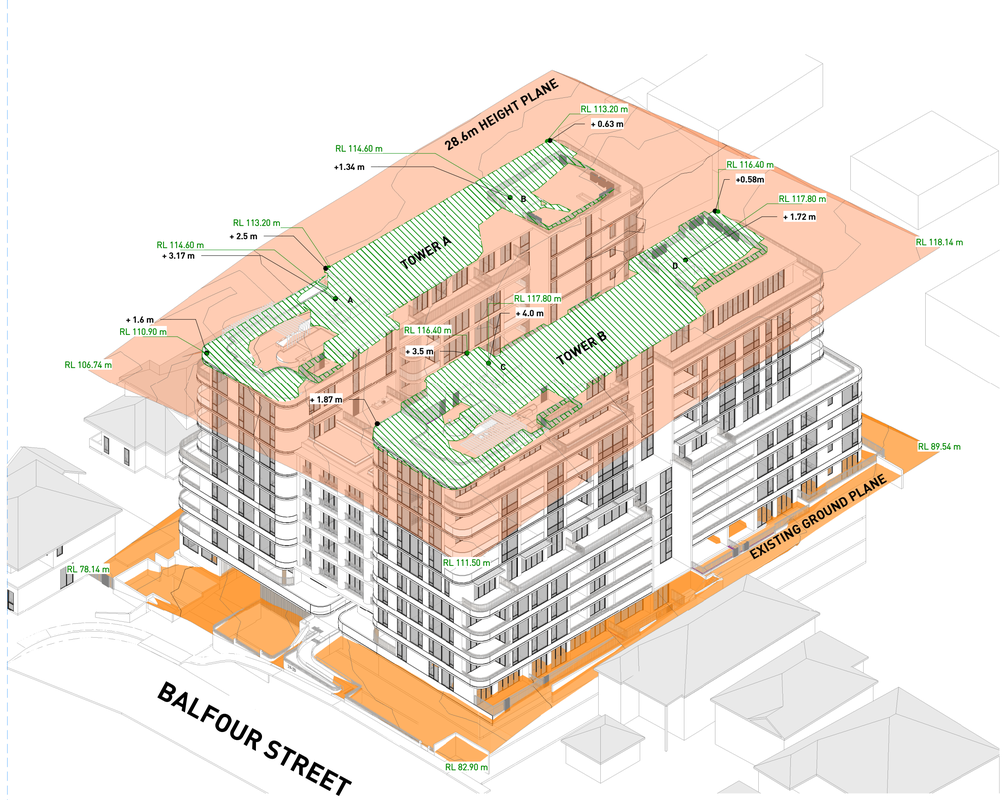
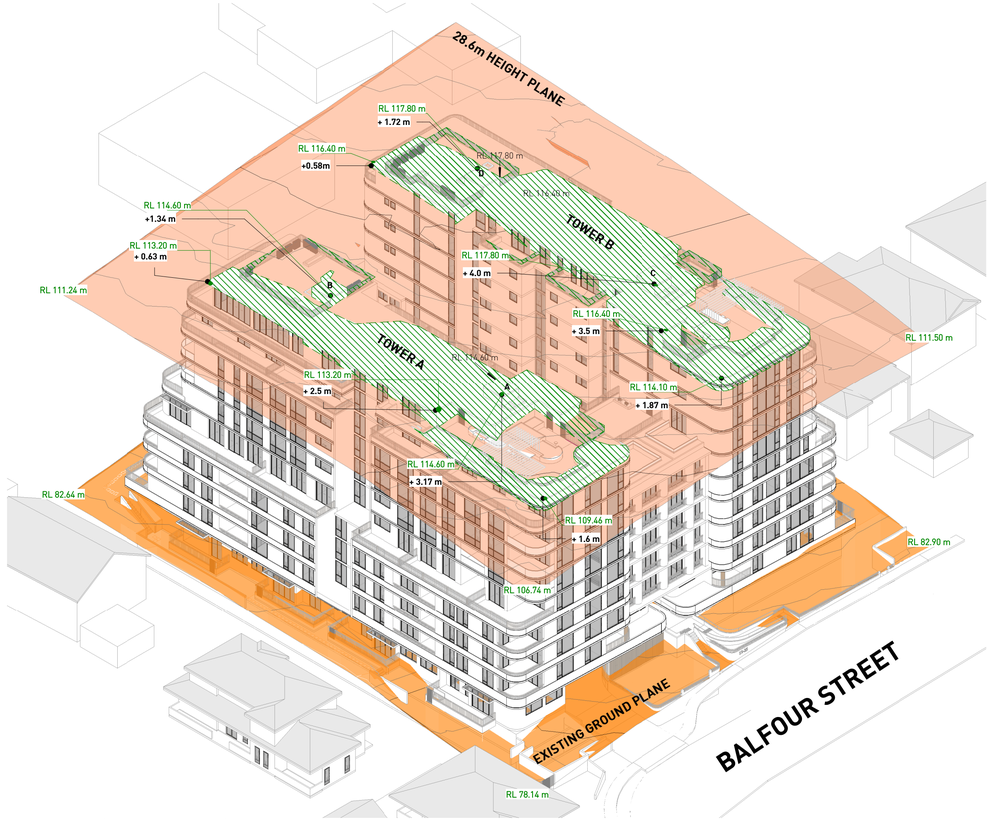
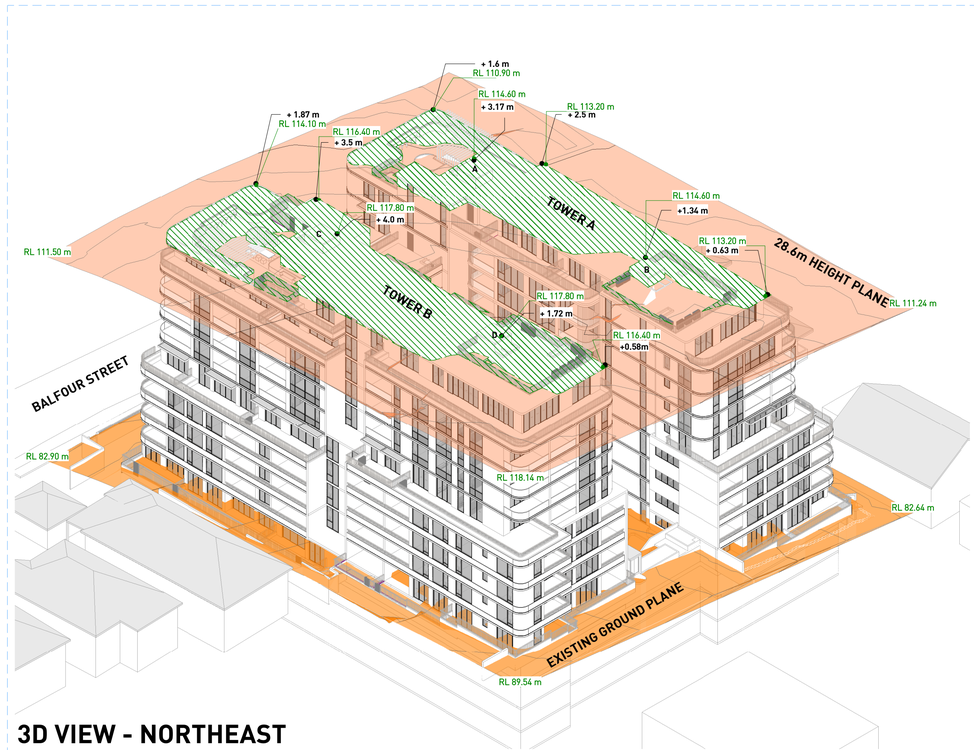


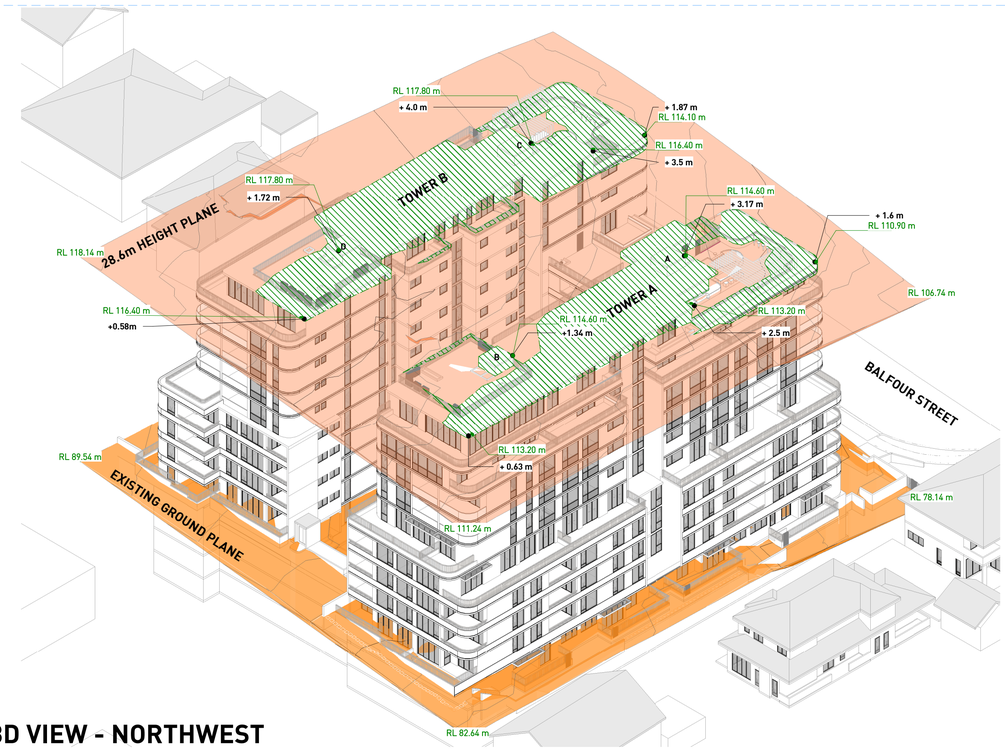
3D VIEW - SOUTHEAST



3D VIEW - SOUTHWEST



3D VIEW - NORTHEAST



3D VIEW - NORTHWEST

No.	Date	Description
F	15-05-2026	SSDA - FOR SUBMISSION
E	20-03-2026	SSDA - FOR SUBMISSION
D	16-02-2026	ISSUE FOR COORDINATION
C	30-05-2025	SSDA - FOR SUBMISSION
B	16-05-2025	SSDA - ISSUE FOR COORDINATION

Amendments

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Project:
RESIDENTIAL FLAT BUILDING
19-25 BALFOUR STREET

LINDFIELD

Drawing:
HEIGHT PLANE DIAGRAM

Status: FOR APPROVAL

Scale:		Job No.	Drawing No.	Rev.
Sheet Size:	A1	24062	DA600	F
Date:	09/04/2025			
Drawn:	RM	Reviewed:	DY	

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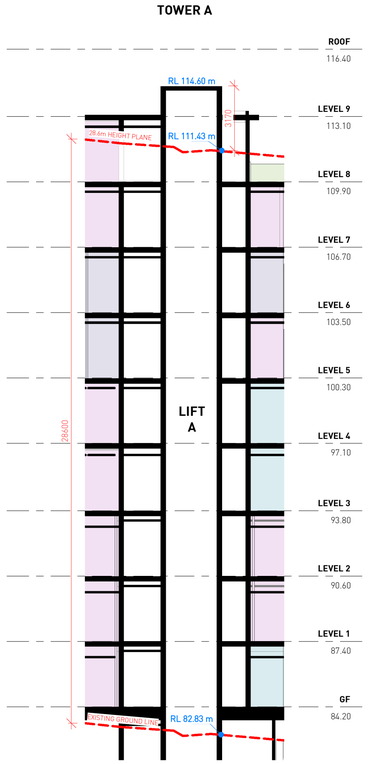
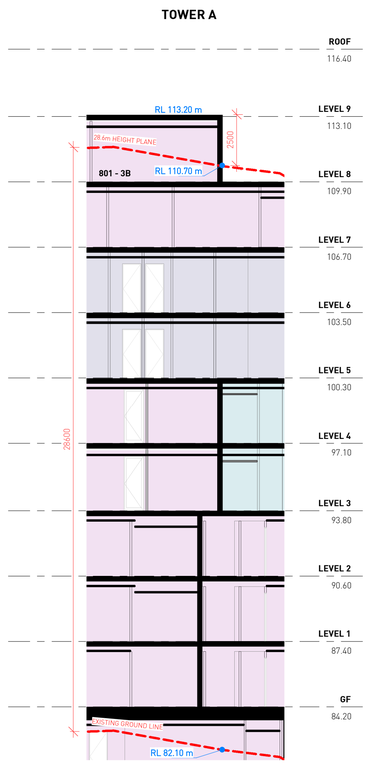


1 DA601 **TOWER A - LIFT A**
1 : 150



2 DA601 **TOWER A - UNIT 801**
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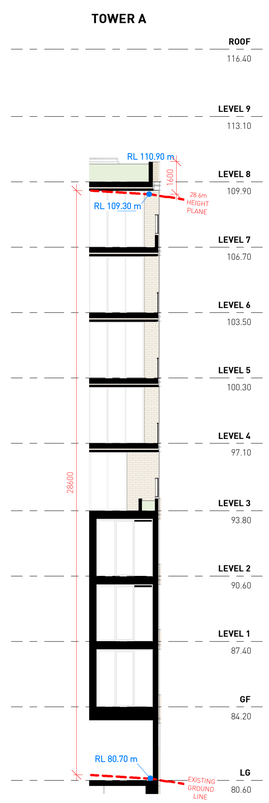
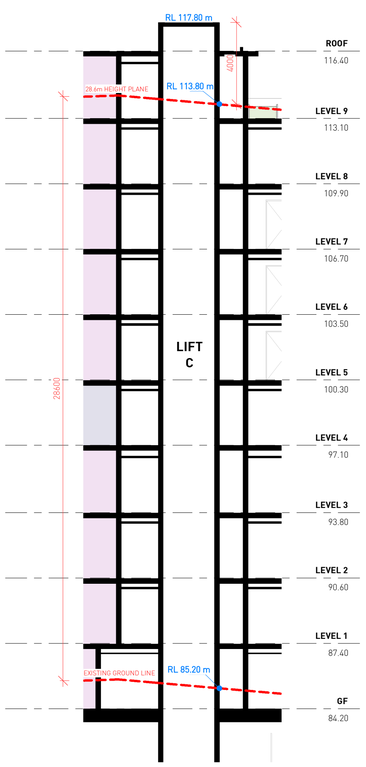


3 DA601 **TOWER A - COMMUNAL**
1 : 150



4 DA601 **TOWER B - LIFT C**
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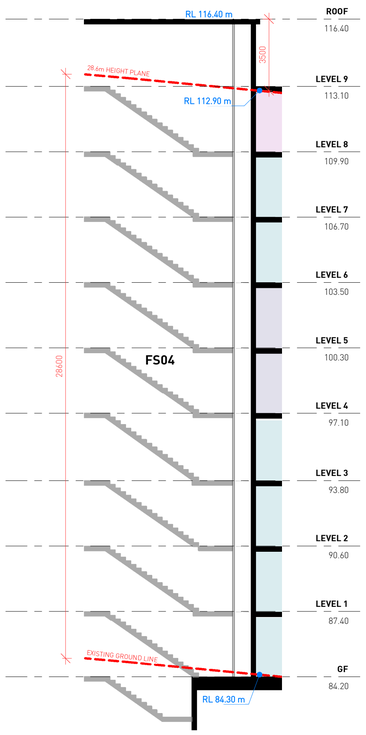

5 DA601 **TOWER B - FS04**
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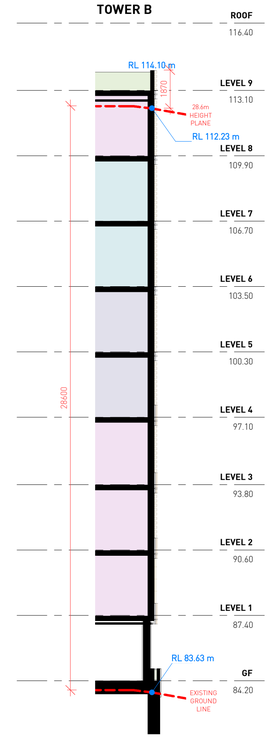

6 DA601 **TOWER B - COMMUNAL**
1 : 150

No.	Date	Description
A	20-03-2026	SSDA - FOR SUBMISSION

Amendments

GILES TRIBE
Level 1, 1 Chandos Street
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Project:
RESIDENTIAL FLAT BUILDING
19-25 BALFOUR STREET

LINDFIELD

Drawing:
HEIGHT PLANE SECTION DIAGRAMS

Status: FOR APPROVAL

Scale: 1 : 150	Job No. 24062	Drawing No. DA601	Rev. A
Sheet Size: A1			
Date: 09/04/2025			
Drawn: RM		Reviewed: DY	

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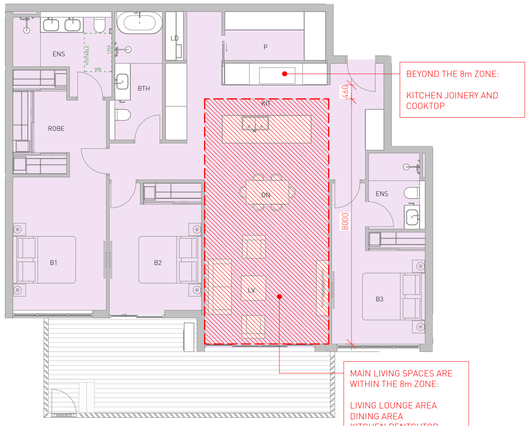
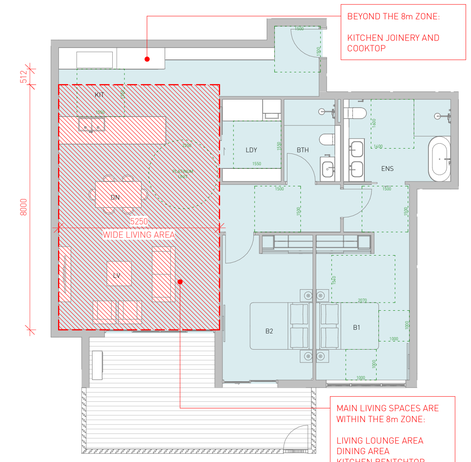


1 DA610 **Unit LG02, LG03**
1 : 100



2 DA610 **Unit LG04**
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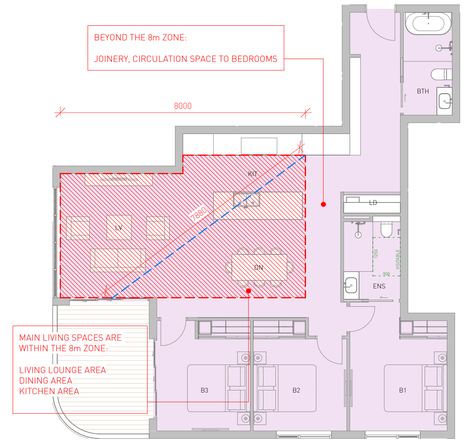


3 DA610 **Unit G07, 107, 207**
1 : 100

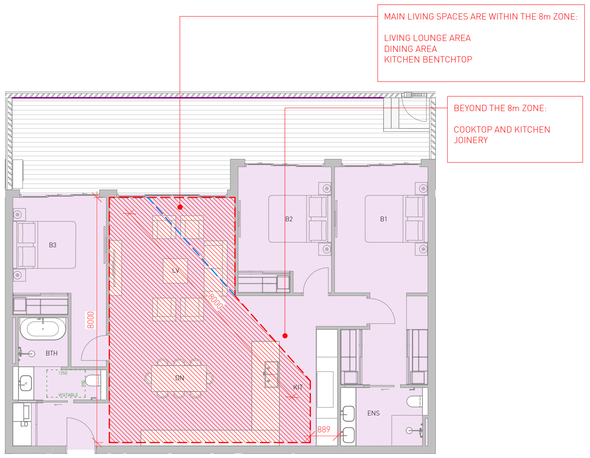
SINGLE ASPECT LIVING AREAS THAT EXCEED THE MAXIMUM 8M DEPTH REQUIREMENT BY ADG

WHILE THE APARTMENT DESIGN GUIDE RECOMMENDS A MAXIMUM HABITABLE ROOM DEPTH OF 8 M FOR SINGLE-ASPECT APARTMENTS, THE VARIATIONS IS CONSIDERED ACCEPTABLE AS THE DESIGN SATISFIES THE UNDERLYING PERFORMANCE OBJECTIVES OF DAYLIGHT ACCESS, NATURAL VENTILATION, AND RESIDENTIAL AMENITY. THIS CONDITION APPLIES TO 20 OUT OF 120 UNITS (APPROXIMATELY 16% OF THE TOTAL), REPRESENTING A LIMITED AND CONTROLLED VARIATION WITHIN THE DEVELOPMENT.

THE AFFECTED APARTMENTS ARE CAREFULLY PLANNED TO ENSURE THAT PRIMARY LIVING SPACES, INCLUDING THE LOUNGE AND DINING AREAS, ARE LOCATED CLOSEST TO THE EXTERNAL WINDOWS, WHERE ACCESS TO NATURAL LIGHT IS MAXIMISED. THE DEEPER PORTIONS OF THE LAYOUTS ARE ALLOCATED TO KITCHENS, CIRCULATION SPACES, AND ANCILLARY FUNCTIONS, THEREBY MINIMISING ANY POTENTIAL IMPACT ON AMENITY.

AS ILLUSTRATED IN THE DIAGRAMS, THE OPEN LIVING AREAS EXTEND ONLY MARGINALLY BEYOND THE 8-METRE MAXIMUM DEPTH PRESCRIBED BY THE ADG. THE PORTIONS BEYOND THIS LIMIT ARE PREDOMINANTLY OCCUPIED BY NON-HABITABLE ELEMENTS SUCH AS KITCHEN CABINETRY, FIXED APPLIANCES, AND CIRCULATION ZONES, MAINTAINING CONSISTENCY WITH THE INTENT OF THE GUIDELINE. IMPORTANTLY, THE PRINCIPAL KITCHEN WORK AREA, INCLUDING THE ISLAND BENCH, REMAINS WITHIN THE 8-METRE LIMIT, ENSURING ADEQUATE DAYLIGHT ACCESS TO THE MOST FREQUENTLY USED SPACES.

FURTHERMORE, THE UNITS INCORPORATE LARGE WINDOWS AND LIGHT-COLOURED INTERNAL FINISHES TO ENHANCE DAYLIGHT PENETRATION AND IMPROVE INTERNAL REFLECTIVITY. COLLECTIVELY, THESE DESIGN STRATEGIES ENSURE THAT A HIGH STANDARD OF AMENITY IS ACHIEVED DESPITE THE MINOR AND LIMITED EXCEEDANCE.



4 DA610 **Unit G11**
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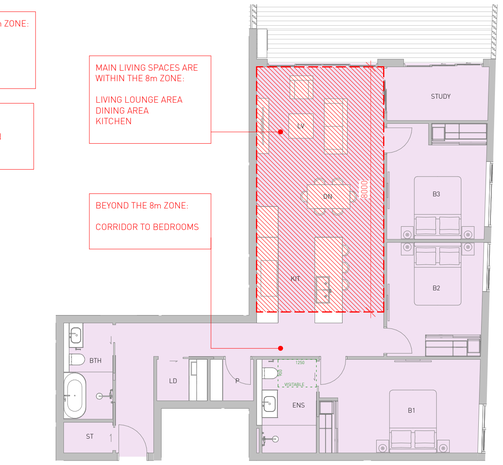

5 DA610 **Unit G12**
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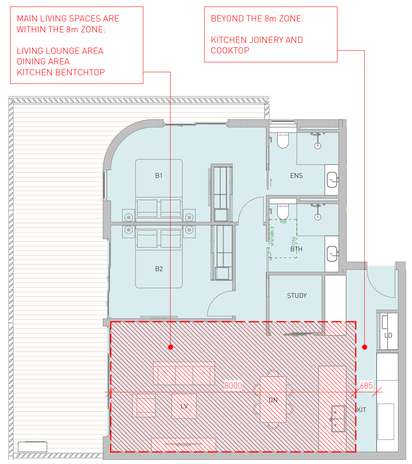


6 DA610 **Unit 407**
1 : 100

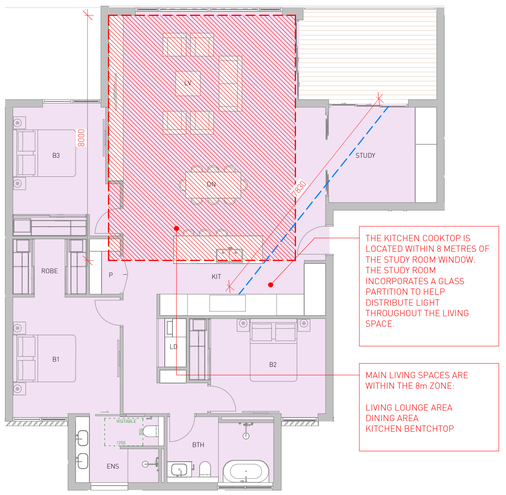
DOUBLE ASPECT LIVING AREAS THAT EXCEED THE MAXIMUM 8M DEPTH

SEVERAL UNITS WITH A DOUBLE-ASPECT CONFIGURATION EXTEND BEYOND THE 8 M MAXIMUM DEPTH; HOWEVER, THESE ARE CONSIDERED ACCEPTABLE AS THEY CONTINUE TO ACHIEVE THE INTENT OF THE ADG. THE DUAL ASPECT ENSURES THAT ALL PARTS OF THE LIVING AREAS REMAIN WITHIN CLOSE PROXIMITY TO A WINDOW, WITH NO POINT EXCEEDING 8 M FROM A SOURCE OF NATURAL LIGHT AND AIR.

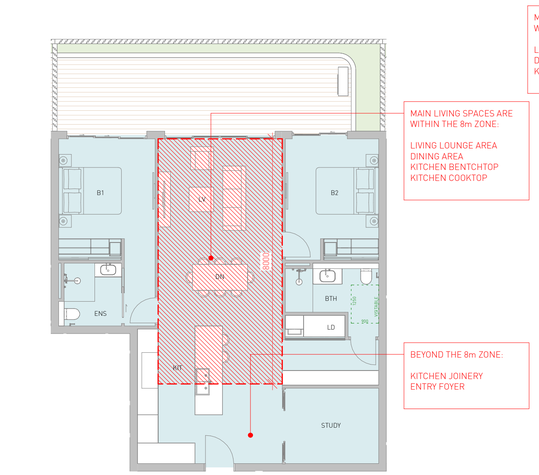
THIS CONFIGURATION SIGNIFICANTLY IMPROVES DAYLIGHT PENETRATION AND ENABLES EFFECTIVE CROSS-VENTILATION, THEREBY ENHANCING INDOOR ENVIRONMENTAL QUALITY AND REDUCING RELIANCE ON ARTIFICIAL LIGHTING AND MECHANICAL VENTILATION. IN ADDITION, THE INCREASED SIZE OF THESE UNITS ALLOWS FOR MORE GENEROUS SPATIAL PLANNING AND BETTER DISTRIBUTION OF LIGHT ACROSS THE INTERIOR.

AS A RESULT, DESPITE THE MEASURED DEPTH EXCEEDANCE, THESE DOUBLE-ASPECT APARTMENTS PROVIDE A HIGH LEVEL OF RESIDENTIAL AMENITY AND PERFORM EQUAL TO OR BETTER THAN A COMPLIANT 8M SINGLE-ASPECT LAYOUT.

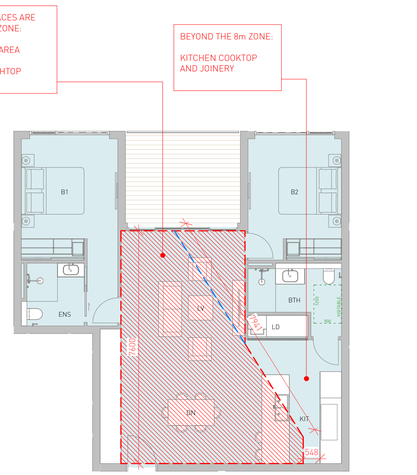
UNITS : G04, G05, 104, 105, 112, 113, 204, 205, 212, 213, 304, 305, 311, 312, 404, 405, 406, 414, 503, 504, 512, 601, 602, 603, 701, 702, 703, 704, 801, 802, 807, 901, 902



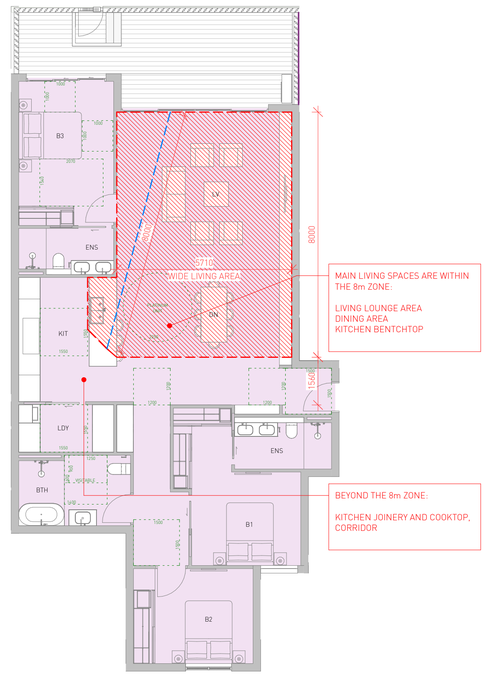
7 DA610 **Unit 411, 412, 509, 510, 609, 708**
1 : 100



8 DA610 **Unit 413**
1 : 100



9 DA610 **Unit 511, 610, 709**
1 : 100



10 DA610 **Unit G10**
1 : 100

No.	Date	Description
A	15-05-2026	SSDA - FOR SUBMISSION

Amendments

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Project:
RESIDENTIAL FLAT BUILDING
19-25 BALFOUR STREET

LINDFIELD

Drawing:
INTERNAL UNIT DEPTH DIAGRAMS

Status: **FOR APPROVAL**

Scale:	1 : 100	Job No.	Drawing No. Rev.
Sheet Size:	A1	24062	DA610 A
Date:	09/04/2025		
Drawn:	RM	Reviewed:	DY

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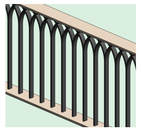
MATERIALS & FINISHES

SCHEDULE OF EXTERNAL FINISHES AND MATERIALS

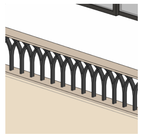
BAL1

BALUSTRADE TYPE 1
SEMI FRAMELESS GLASS

BAL2

BALUSTRADE TYPE 2
METAL BALUSTRADE

BAL3

BALUSTRADE TYPE 3
SEMI FRAMELESS GLASS FIXED
TO LOW WALL

BAL4

BALUSTRADE TYPE 4
METAL BALUSTRADE FIXED TO
LOW WALL

WC1

WALL CLADDING TYPE 1
SANDSTONE CLADDING
OR SIMILAR

WC2

WALL CLADDING TYPE2
LIGHT BEIGE COLOUR BRICKWORK
OR SIMILAR

WC3

WALL CLADDING TYPE 3
TIMBER LOOK ALUMINUM CLADDING
OR SIMILAR

WC4

WALL CLADDING TYPE 4
ROCKFACE SANDSTONE CLADDING
OR SIMILAR

PF1
PAINT FINISH TYPE 4
DULUX "APPLIANCE WHITE"
OR SIMILAR

PF2
PAINT FINISH TYPE 2
DULUX "BREADCRUMB"
OR SIMILAR

PF3
PAINT FINISH TYPE 3
DULUX "HOG BRISTLE QUARTER"
OR TO COLOUR MATCH WC2

PF4
PAINT FINISH TYPE 3
DULUX "CAMEL HIDE"
OR TO MATCH WC3

AL1

ALUM FRAME OF WINDOWS/DOORS
POWDERCOAT FINISH TO MATCH
COLORBOND MONUMENT

SC1

PRIVACY SCREEN TYPE 1
POWDERCOAT FINISH TO MATCH
WC3/PF4

BT1

BATTENS TYPE 1
TIMBER LOOK ALUMINUM BATTENS
TO MATCH WC3/PF4

No.	Date	Description
E	20-03-2026	SSDA - FOR SUBMISSION
D	16-02-2026	ISSUE FOR COORDINATION
C	30-05-2025	SSDA - FOR SUBMISSION
B	16-05-2025	SSDA - ISSUE FOR COORDINATION
A	07-05-2025	ISSUE FOR DA SUBMISSION

Amendments

GILES TRIBE
Level 1, 1 Chandos Street
St Leonards 2065 NSW AUSTRALIA
t: 61 2 9264 5005
e: gta@gilestribe.com.au
Giles Tribe Pty Ltd ABN 50 001259 507
Nominated Architects: Mark G Broadley [5823] Victor Schneider [11157]

Verify all dimensions on site prior to commencement of work.
Refer all discrepancies to the Architect for determination.
Use figured dimensions in preference to scaling.
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or used without the written consent of Giles Tribe Architects.

Project:
RESIDENTIAL FLAT BUILDING
19-25 BALFOUR STREET

LINDFIELD

Drawing:
MATERIAL SAMPLE BOARD

Status:
FOR APPROVAL

Scale:	1 : 100	Job No.	Drawing No.	Rev.
Sheet Size:	A1	24062	DA702	E
Date:	24/07/15			
Drawn:	RM	Reviewed	DY	

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No.	Date	Description
F	15-05-2026	SSDA - FOR SUBMISSION
E	20-03-2026	SSDA - FOR SUBMISSION
D	16-02-2026	ISSUE FOR COORDINATION
C	30-05-2025	SSDA - FOR SUBMISSION
B	16-05-2025	SSDA - ISSUE FOR COORDINATION

Amendments

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Refer all discrepancies to the Architect for determination.
Use figured dimensions in preference to scaling.
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Project:

RESIDENTIAL FLAT BUILDING
19-25 BALFOUR STREET

LINDFIELD

Drawing:

PERSPECTIVES

Status:

FOR APPROVAL

Scale:		Job No.	Drawing No.	Rev.
Sheet Size:	A1	24062	DA703	F
Date:	24/07/15			
Drawn:	JL	Reviewed	SH	

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Appendix B – Geotechnical Information

GREEN GEOTECHNICS

Borehole No.
BH1
Page 1 of 5

Engineering Log - Borehole

Project No.: GG11934.001

Client:	Balfour Group Pty Limited	Commenced:	26/3/2025
Project Name:	Geotechnical Investigation: 19-25 Balfour Street, Lindfield	Completed:	26/3/2025
Hole Location:	19-25 Balfour Street, Lindfield	Logged By:	MG/JK
Hole Position:	See Plan	Checked By:	MG

Drill Model and Mounting:	Hanjin DB8	Inclination:	-90°	RL Surface:	89.00 m		
Hole Diameter:	110 mm	Bearing:		Datum:	AHD	Operator:	LP

Drilling Information							***Soil Description***			***Observations***
Method	Support	Penetration	Groundwater Levels	Samples & Field Tests	Recovery	RL (m) / Depth (m)	Graphic Log / Group Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency Relative Density	Structure and Additional Observations
AD/T						88.0 / 1	CL /Cl	TOPSOIL Sandy Silty CLAY: low to medium plasticity, brown to grey brown, with organics. 0.30m	D / M		TOPSOIL
							Cl /CH	Silty CLAY: medium to high plasticity, red brown, mottled grey. 1.00m	M	F / St St	RESIDUAL SOIL
				1.50m SPT 4,10,19 N=29 1.95m			Cl	Gravelly Silty CLAY: medium plasticity, pale grey, mottled red and orange, with ironstone and shale gravel. 1.90m	M	VSt / H	
						87.0 / 2		SHALE: orange brown to grey, estimate extremely weathered, very low strength (class V). 2.30m	D		ROCK
								SHALE: dark grey, estimate moderately weathered, low strength (class IV). 2.50m	D		
								Continued on cored borehole sheet			
						86.0 / 3					
						85.0 / 4					
						84.0 / 5					

Method
AS - Auger Screwing
ADV Auger V Bit
ADT Auger Tungsten Carbide Bit
RR - Rock Roller
WB- Washbore

Support
C - Casing

Penetration
No resistance ranging to refusal

Water
Level (Date)
Inflow
Partial Loss
Complete Loss

Graphic Log/Core Loss
Core recovered (hatching indicates material)
Core loss

Samples and Tests
U - Undisturbed Sample
D - Disturbed Sample
SPT - Standard Penetration Test
PP - Pocket Penetrometer

Classification Symbols and Soil Descriptions
Based on Unified Soil Classification System

Moisture Condition
D - Dry
M - Moist
W - Wet
w - Moisture Content
PL - Plastic Limit
LL - Liquid Limit

Consistency/Relative Density
VS - Very Soft
S - Soft
F - Firm
VSt - Very Stiff
H - Hard
Fr - Friable
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

GREEN GEO 1.01.5 LIB.GLB Log GREEN GEO BOREHOLE GG11934.001.GPJ <<DrawingFile>> 7/4/2025 16:17 10.03.00.09 Datgel Lab and In Situ Tool - DGD | Lib: Green Geo 1.01.5 2023-07-05 Prj: Green Geo 1.01.5 2023-07-05

Engineering Log - Cored Borehole

Project No.: GG11934.001

Client:	Balfour Group Pty Limited	Commenced:	26/3/2025
Project Name:	Geotechnical Investigation: 19-25 Balfour Street, Lindfield	Completed:	26/3/2025
Hole Location:	19-25 Balfour Street, Lindfield	Logged By:	MG/JK
Hole Position:	See Plan	Checked By:	MG

Drill Model and Mounting:	Hanjin DB8	Inclination:	-90°	RL Surface:	89.00 m		
Barrel Type and Length:	IMPREG 3 m	Bearing:		Datum:	AHD	Operator:	LP

Drilling Information							Rock Substance				Rock Mass Defects	
Method	Support	Water	TCR (%)	RQD (%)	RL (m)	Depth (m)	Graphic Log	Material Description rock type: grain characteristics, colour, structure, minor components	Weathering	Strength UCS=$I_{(50)}$ ● - Axial ○ - Diametral ■ - UCS (VL L M H VH EH)	Average Defect Spacing (mm) (10 30 100 300 1000)	Defect Description thickness, type, inclination, planarity, roughness, coating/infilling
					88.0	1						
					87.0	2						
						2.50m		Continued from non-cored borehole sheet				
NMLC		95% Water Return	72	0	86.0	3		NO CORE 0.55m (2.50-3.05)				
						3.05m		SANDSTONE: fine grained, orange brown with pale grey and dark grey, with occasional shale lenses.	MW / HW			CS, clay P, 0°, PR, SM P, 0°, VN, PR, RF, ironstone CS P, 0°, clay VN, PR, RF J, 90°, clay, IR, RF, infill J, 85°, clay, IR, RF, infill J, 90°, clay, IR, RF, infill J, 90°, clay, IR, RF, infill P, 0°, PR, RF P, 0°, PR, RF P, 0°, PR, RF clay, SM J, 90°, IR, RF P, 0°, PR, RF P, 0°, clay VN, PR, SM J, 90°, clay, IR, RF P, 0°, PR, SM P, 0°, PR, SM
					85.0	4						
						4.50m		NO CORE 0.27m (4.50-4.77)				
		95% Water Return	93	33	84.0	5		SANDSTONE: fine grained, orange brown with pale grey and dark grey, with occasional shale lenses.	MW / HW			CS, clay DB P, 0°, clay, PR, RF clay, SM P, 0°, VN, PR, RF, ironstone P, 0°, PR, SM P, 0°, PR, RF, ironstone P, 0°, PR, RF P, 0°, PR, RF P, 0°, PR, RF P, 0°, PR, RF P, 0°, PR, RF
						5.35m		SANDSTONE: fine grained, pale grey with dark grey and orange brown, with sahle interbeds.	SW			
						5.88m			SW			

Method
AS - Auger Screwing
WB - Washbore
HQ3 - HQ3 Core Barrel
NQ3 - NQ3 Core Barrel
NMLC - NMLC Core Barrel

Water
Level (Date)
Inflow
Partial Loss
Complete Loss

Support
T - Timbering

Graphic Log/Core Loss
Core recovered (hatching indicates material)
Core loss

Weathering
FR - Fresh
SW - Slightly Weathered
MW - Moderately Weathered
DW - Distinctly Weathered
HW - Highly Weathered
XW - Extremely Weathered
RS - Residual Soil

Strength
VL - Very Low
L - Low
M - Medium
H - High
VH - Very High
EH - Extremely High

GREEN GEO 1.01.5 LIB.GLB Log GREEN GEO CORED BOREHOLE GG11934.001.GPJ <<DrawingFile>> 7/4/2025 16:18 10.03.00.09 Datgel Lab and In Situ Tool - DGD | Lib: Green Geo 1.01.5 2023-07-05 Prj: Green Geo 1.01.5 2023-07-05

Engineering Log - Cored Borehole

Project No.: GG11934.001

Client:	Balfour Group Pty Limited	Commenced:	26/3/2025
Project Name:	Geotechnical Investigation: 19-25 Balfour Street, Lindfield	Completed:	26/3/2025
Hole Location:	19-25 Balfour Street, Lindfield	Logged By:	MG/JK
Hole Position:	See Plan	Checked By:	MG

Drill Model and Mounting:	Hanjin DB8	Inclination:	-90°	RL Surface:	89.00 m		
Barrel Type and Length:	IMPREG 3 m	Bearing:		Datum:	AHD	Operator:	LP

Drilling Information							***Rock Substance***			***Rock Mass Defects***	
Method	Support	Water	TCR (%)	RQD (%)	RL (m)	Depth (m)	Graphic Log	Material Description rock type: grain characteristics, colour, structure, minor components	Weathering	Strength UCS=$I_{(50)}$ ● - Axial ○ - Diametral ■ - UCS (VL L M H VH EH)	Average Defect Spacing (mm) (10 30 100 300 1000)	Defect Description thickness, type, inclination, planarity, roughness, coating/infilling
NMLC		95% Water Return	93	33	82.0	7		6.08m SANDSTONE: fine to medium grained, mottled orange brown, red brown and pale grey.*(continued)*	FR / SW			P, 0°, PR, RF P, 0°, PR, RF P, 0°, PR, SM P, 0°, PR, RF P, 0°, PR, RF P, 0°, PR, SM P, 0°, PR, SM P, 0°, PR, SM P, 0°, PR, RF P, 0°, PR, SM
								SHALE: dark grey with pale grey. 6.57m				
								SANDSTONE: fine to medium grained, pale grey with orange brown, with occasional shale lenses.	SW			J, 90°, clay, IR, RF, infill P, 0°, PR, RF P, 0°, PR, SM P, 0°, PR, SM P, 0°, clay VN, PR, RF P, 0°, PR, RF J, 90°, clay, IR, RF P, 0°, SM P, 0°, RF P, 0°, RF P, 0°, RF P, 0°, RF P, 0°, SM
								7.24m SHALE: dark grey with pale grey. 7.50m	FR / SW			
		100% Water Return	100	66	81.0	8		SANDSTONE: fine to medium grained, pale grey with dark grey, with shale lenses.	FR			J, 90°, clay, IR, RF clay, SM P, 0°, PR, RF P, 0°, PR, SM clay, SM P, 0°, PR, SM P, 0°, PR, SM P, 0°, PR, SM J, 85°, clay, IR, RF clay, SM clay, SM P, 0°, clay, PR, RF clay, SM DB P, 0°, PR, RF P, 0°, PR, RF P, 0°, PR, RF clay, SM P, 0°, PR, SM P, 0°, PR, SM P, 0°, PR, SM J, 90°, clay VN, IR, RF J, 90°, clay, IR, RF, open-tight P, 0°, PR, RF P, 0°, PR, RF clay, SM clay, SM clay, SM P, 0°, clay, PR, SM J, 90°, IR, RF P, 0°, PR, RF P, 0°, PR, SM HB HB DB P, 2°, PR, SM P, 3°, PR, RF
					80.0	9						
					79.0	10						
		100% Water Return	100	99	78.0	11						HB

Method
AS - Auger Screwing
WB - Washbore
HQ3 - HQ3 Core Barrel
NQ3 - NQ3 Core Barrel
NMLC - NMLC Core Barrel

Water
Level (Date)
Inflow
Partial Loss
Complete Loss

Support
T - Timbering

Graphic Log/Core Loss
Core recovered (hatching indicates material)
Core loss

Weathering
FR - Fresh
SW - Slightly Weathered
MW - Moderately Weathered
DW - Distinctly Weathered
HW - Highly Weathered
XW - Extremely Weathered
RS - Residual Soil

Strength
VL - Very Low
L - Low
M - Medium
H - High
VH - Very High
EH - Extremely High

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GREEN GEOTECHNICS

Cored Borehole No.

BH1

Engineering Log - Cored Borehole

Project No.: GG11934.001

Client:	Balfour Group Pty Limited	Commenced:	26/3/2025
Project Name:	Geotechnical Investigation: 19-25 Balfour Street, Lindfield	Completed:	26/3/2025
Hole Location:	19-25 Balfour Street, Lindfield	Logged By:	MG/JK
Hole Position:	See Plan	Checked By:	MG

Drill Model and Mounting:	Hanjin DB8	Inclination:	-90°	RL Surface:	89.00 m		
Barrel Type and Length:	IMPREG 3 m	Bearing:		Datum:	AHD	Operator:	LP

Drilling Information							Rock Substance			Rock Mass Defects	
Method	Support	Water	TCR (%)	RQD (%)	RL (m)	Depth (m)	Graphic Log	Material Description rock type: grain characteristics, colour, structure, minor components	Weathering	Strength UCS=$I_{s(50)}$ ● - Axial ○ - Diametral ■ - UCS (VL L M H VH EH)	Average Defect Spacing (mm) (10 30 100 300 1000)	Defect Description thickness, type, inclination, planarity, roughness, coating/infilling
NMLC		100% Water Return	100	99	76.0	13		SANDSTONE: fine to medium grained, pale grey with dark grey, with shale lenses *(continued)*	FR			HB P, 0°, PR, RF P, 0°, PR, SM P, 0°, PR, SM DB P, 0°, PR, RF
		100% Water Return	100	92	75.0	14		14.50m SANDSTONE: fine to medium grained, orange brown with pale grey and red brown.				P, 0°, PR, RF P, 0°, PR, RF P, 0°, PR, RF P, 2°, clay VN, PR, RF P, 0°, PR, SM clay, SM P, 0°, PR, RF P, 0°, PR, RF P, 0°, PR, RF HB
					74.0	15						
					73.0	16			MW			P, 0°, PR, SM P, 5°, IR, RF
		100% Water Return	100	88	72.0	17						P, 0°, PR, RF P, 0°, PR, RF P, 0°, PR, RF J, 85°, IR, RF

Method
- AS - Auger Screwing
- WB - Washbore
- HQ3 - HQ3 Core Barrel
- NQ3 - NQ3 Core Barrel
- NMLC - NMLC Core Barrel

Water
- Level (Date)
- Inflow
- Partial Loss
- Complete Loss

Support
- T - Timbering

Graphic Log/Core Loss
- Core recovered (hatching indicates material)
- Core loss

Weathering
- FR - Fresh
- SW - Slightly Weathered
- MW - Moderately Weathered
- DW - Distinctly Weathered
- HW - Highly Weathered
- XW - Extremely Weathered
- RS - Residual Soil

Strength
- VL - Very Low
- L - Low
- M - Medium
- H - High
- VH - Very High
- EH - Extremely High

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Engineering Log - Cored Borehole

Project No.: GG11934.001

Client:	Balfour Group Pty Limited	Commenced:	26/3/2025
Project Name:	Geotechnical Investigation: 19-25 Balfour Street, Lindfield	Completed:	26/3/2025
Hole Location:	19-25 Balfour Street, Lindfield	Logged By:	MG/JK
Hole Position:	See Plan	Checked By:	MG

Drill Model and Mounting:	Hanjin DB8	Inclination:	-90°	RL Surface:	89.00 m		
Barrel Type and Length:	IMPREG 3 m	Bearing:		Datum:	AHD	Operator:	LP

Drilling Information							Rock Substance				Rock Mass Defects	
Method	Support	Water	TCR (%)	RQD (%)	RL (m)	Depth (m)	Graphic Log	Material Description rock type: grain characteristics, colour, structure, minor components	Weathering	Strength UCS=$L_{(50)}$ ● - Axial ○ - Diametral ■ - UCS (VL L M H VH EH)	Average Defect Spacing (mm) (10 30 100 300 1000)	Defect Description thickness, type, inclination, planarity, roughness, coating/infilling
NMLC		100% Water Return	100	88	70.0	19		SANDSTONE: fine to medium grained, orange brown with pale grey and red brown *(continued)*	MW	M H		P, 0°, PR, RF P, 3°, PR, RF P, 0°, PR, SM P, 0°, PR, RF P, 0°, PR, RF P, 5°, PR, SM
							19.20m	Hole Terminated at 19.20 m End - Target Depth				
					69.0	20						
					68.0	21						
					67.0	22						
					66.0	23						

Method
AS - Auger Screwing
WB - Washbore
HQ3 - HQ3 Core Barrel
NQ3 - NQ3 Core Barrel
NMLC - NMLC Core Barrel

Water
Level (Date)
Inflow
Partial Loss
Complete Loss

Support
T - Timbering

Graphic Log/Core Loss
Core recovered (hatching indicates material)
Core loss

Weathering
FR - Fresh
SW - Slightly Weathered
MW - Moderately Weathered
DW - Distinctly Weathered
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VL - Very Low
L - Low
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GREEN GEOTECHNICS	Project No: GG11934.001	Geotechnical Investigation 19-25 Balfour Street, Lindfield	Box : 1 of 1
	Client: Balfour Group Pty Limited		
	Date Cored: 26 March 2025	**CORE PHOTO - BH1**	

GREEN GEOTECHNICS

Borehole No.
BH2
Page 1 of 3

Engineering Log - Borehole

Project No.: GG11934.001

Client:	Balfour Group Pty Limited	Commenced:	27/3/2025
Project Name:	Geotechnical Investigation: 19-25 Balfour Street, Lindfield	Completed:	27/3/2025
Hole Location:	19-25 Balfour Street, Lindfield	Logged By:	JK
Hole Position:	See Plan	Checked By:	MG

Drill Model and Mounting:	Hanjin DB8	Inclination:	-90°	RL Surface:	78.60 m		
Hole Diameter:	110 mm	Bearing:		Datum:	AHD	Operator:	LP

Drilling Information							***Soil Description***				***Observations***
Method	Support	Penetration	Groundwater Levels	Samples & Field Tests	Recovery	RL (m)	Depth (m)	Graphic Log	Group Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency Relative Density	Structure and Additional Observations
										0.18m CONCRETE: 180mm thick.			
									GW	0.30m FILL Sandy GRAVEL: pale grey with dark grey, sand is fine grained.	M / D		FILL
									CL	Gravelly Silty CLAY: low plasticity, pale grey with red brown, with some ironstone/ sandstone gravel; (completely weathered sandstone).			RESIDUAL SOIL
AD/T						77.6	1			1.50m	M / D	VSt	
						76.6	2			SANDSTONE: fine to medium grained, orange brown with pale grey and red brown, with clay seams.Estimate very low strength (Class 5). 2.50m	D		ROCK
						75.6	3			Continued on cored borehole sheet			
						74.6	4						
						73.6	5						

Method
AS - Auger Screwing
ADV Auger V Bit
ADT Auger Tungsten Carbide Bit
RR - Rock Roller
WB- Washbore

Support
C - Casing

Penetration
No resistance ranging to refusal

Water
Level (Date)
Inflow
Partial Loss
Complete Loss

Graphic Log/Core Loss
Core recovered (hatching indicates material)
Core loss

Samples and Tests
U - Undisturbed Sample
D - Disturbed Sample
SPT - Standard Penetration Test
PP - Pocket Penetrometer

Classification Symbols and Soil Descriptions
Based on Unified Soil Classification System

Moisture Condition
D - Dry
M - Moist
W - Wet
w - Moisture Content
PL - Plastic Limit
LL - Liquid Limit

Consistency/Relative Density
VS - Very Soft
S - Soft
F - Firm
VSt - Very Stiff
H - Hard
Fr - Friable
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

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Engineering Log - Cored Borehole

Project No.: GG11934.001

Client:	Balfour Group Pty Limited	Commenced:	27/3/2025
Project Name:	Geotechnical Investigation: 19-25 Balfour Street, Lindfield	Completed:	27/3/2025
Hole Location:	19-25 Balfour Street, Lindfield	Logged By:	JK
Hole Position:	See Plan	Checked By:	MG

Drill Model and Mounting:	Hanjin DB8	Inclination:	-90°	RL Surface:	78.60 m		
Barrel Type and Length:	IMPREG 3 m	Bearing:		Datum:	AHD	Operator:	LP

Drilling Information							Rock Substance			Rock Mass Defects	
Method	Support	Water	TCR (%)	RQD (%)	RL (m)	Depth (m)	Graphic Log	Material Description rock type: grain characteristics, colour, structure, minor components	Weathering	Strength UCS=$I_{(50)}$ ● - Axial ○ - Diametral ■ - UCS VL L M H VH EH	Average Defect Spacing (mm) 10 30 100 300 1000	Defect Description thickness, type, inclination, planarity, roughness, coating/infilling
					77.6	1						
					76.6	2		2.50m Continued from non-cored borehole sheet				
NMLC		100% Water Return	70	20	75.6	3		SANDSTONE: fine to medium grained, orange brown with pale grey and red brown. 2.90m	MW			P, 0°, PR, SM J, 90°, IR, RF P, 0°, PR, SM HB
								NO CORE 0.45m (2.90-3.35) 3.35m				
								SANDSTONE: fine to medium grained, orange brown with pale grey and red brown. 4.00m	MW			clay, SM P, 0°, PR, SM clay, SM P, 0°, PR, SM
					74.6	4		SANDSTONE: fine to medium grained, orange brown with pale grey (dark brown and grey bands).				P, 3°, PR, RF P, 0°, PR, RF P, 0°, PR, SM P, 0°, PR, SM P, 0°, PR, SM P, 0°, PR, SM P, 0°, PR, SM P, 0°, PR, SM P, 0°, PR, RF P, 0°, PR, RF P, 0°, PR, SM P, 0°, PR, RF P, 0°, IR, RF P, 5°, PR, SM HB
		100% Water Return	100	62	73.6	5			MW			P, 10°, PR, RF DB P, 0°, PR, SM
			100	80								

Method
AS - Auger Screwing
WB - Washbore
HQ3 - HQ3 Core Barrel
NQ3 - NQ3 Core Barrel
NMLC - NMLC Core Barrel

Water
Level (Date)
Inflow
Partial Loss
Complete Loss

Support
T - Timbering

Graphic Log/Core Loss
Core recovered (hatching indicates material)
Core loss

Weathering
FR - Fresh
SW - Slightly Weathered
MW - Moderately Weathered
DW - Distinctly Weathered
HW - Highly Weathered
XW - Extremely Weathered
RS - Residual Soil

Strength
VL - Very Low
L - Low
M - Medium
H - High
VH - Very High
EH - Extremely High

GREEN GEO 1.01.5 LIB.GLB Log GREEN GEO CORED BOREHOLE GG11934.001.GPJ <<DrawingFile>> 7/4/2025 16:18 10.03.00.09 Datgel Lab and In Situ Tool - DGD | Lib: Green Geo 1.01.5 2023-07-05 Prj: Green Geo 1.01.5 2023-07-05

Engineering Log - Cored Borehole

Project No.: GG11934.001

Client:	Balfour Group Pty Limited	Commenced:	27/3/2025
Project Name:	Geotechnical Investigation: 19-25 Balfour Street, Lindfield	Completed:	27/3/2025
Hole Location:	19-25 Balfour Street, Lindfield	Logged By:	JK
Hole Position:	See Plan	Checked By:	MG

Drill Model and Mounting:	Hanjin DB8	Inclination:	-90°	RL Surface:	78.60 m		
Barrel Type and Length:	IMPREG 3 m	Bearing:		Datum:	AHD	Operator:	LP

Drilling Information							***Rock Substance***			***Rock Mass Defects***	
Method	Support	Water	TCR (%)	RQD (%)	RL (m)	Depth (m)	Graphic Log	Material Description rock type: grain characteristics, colour, structure, minor components	Weathering	Strength UCS=$I_{(50)}$ ● - Axial ○ - Diametral ■ - UCS VL L M H VH EH	Average Defect Spacing (mm) 10 30 100 300 1000	Defect Description thickness, type, inclination, planarity, roughness, coating/infilling
NMLC		100% Water Return	100	80	71.6	7		SANDSTONE: fine to medium grained, orange brown with pale grey (dark brown and grey bands).*(continued)*	MW			P, 2°, PR, RF P, 0°, PR, RF P, 0°, PR, RF P, 0°, PR, RF P, 0°, PR, SM P, 0°, PR, SM P, 0°, PR, RF HB P, 0°, PR, SM HB P, 0°, PR, SM P, 0°, PR, SM P, 0°, PR, SM HB DB HB HB P, 0°, PR, SM
					70.6	8						
					69.6	9		9.52m				
		100% Water Return	10	85	68.6	10		SANDSTONE: fine to medium grained, pale grey with orange brown.	SW			P, 2°, PR, SM P, 0°, PR, SM HB P, 0°, PR, SM P, 0°, PR, RF P, 0°, PR, RF P, 0°, PR, RF P, 0°, PR, SM
								10.72m				
					67.6	11		SANDSTONE: fine grained, pale grey with dark grey bands.	FR			HB P, 0°, PR, SM P, 0°, PR, SM
								11.34m				
								SANDSTONE: fine to medium grained, pale grey with dark grey bands.	FR			P, 0°, PR, SM P, 0°, PR, SM
								11.90m				

Hole Terminated at 11.90 m
End - Target Depth

Method
AS - Auger Screwing
WB - Washbore
HQ3 - HQ3 Core Barrel
NQ3 - NQ3 Core Barrel
NMLC - NMLC Core Barrel

Water
Level (Date)
Inflow
Partial Loss
Complete Loss

Support
T - Timbering

Graphic Log/Core Loss
Core recovered (hatching indicates material)
Core loss

Weathering
FR - Fresh
SW - Slightly Weathered
MW - Moderately Weathered
DW - Distinctly Weathered
HW - Highly Weathered
XW - Extremely Weathered
RS - Residual Soil

Strength
VL - Very Low
L - Low
M - Medium
H - High
VH - Very High
EH - Extremely High

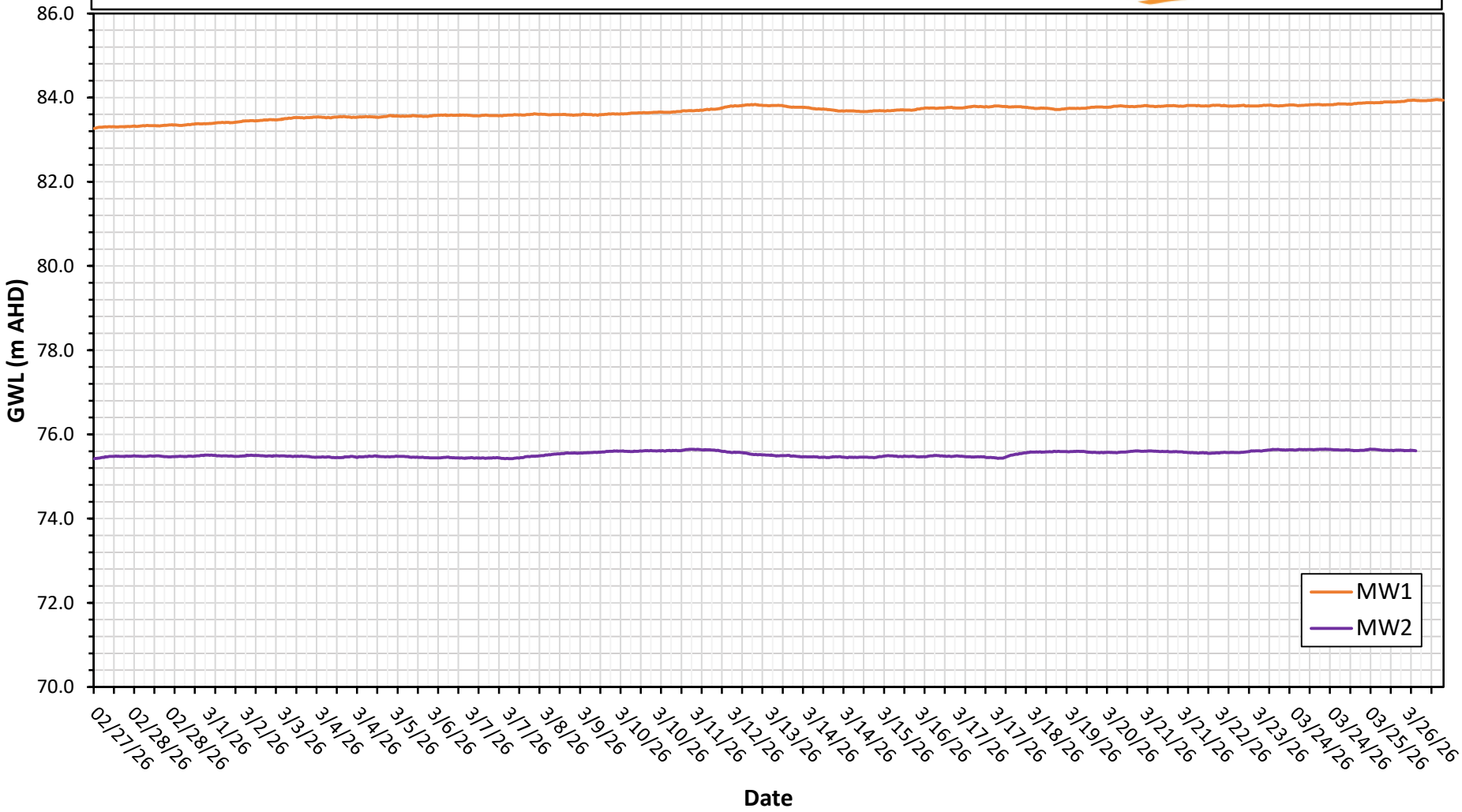
GREEN GEO 1.01.5 LIB.GLB Log GREEN GEO CORED BOREHOLE GG11934.001.GPJ <<DrawingFile>> 7/4/2025 16:18 10.03.00.09 Datgel Lab and In Situ Tool - DGD | Lib: Green Geo 1.01.5 2023-07-05 Prj: Green Geo 1.01.5 2023-07-05

GREEN GEOTECHNICS	Project No: GG11934.001	Geotechnical Investigation 19-25 Balfour Street, Lindfield	Box : 1 of 1
	Client: Balfour Group Pty Limited		
	Date Cored: 27 March 2025	**CORE PHOTO - BH2**	

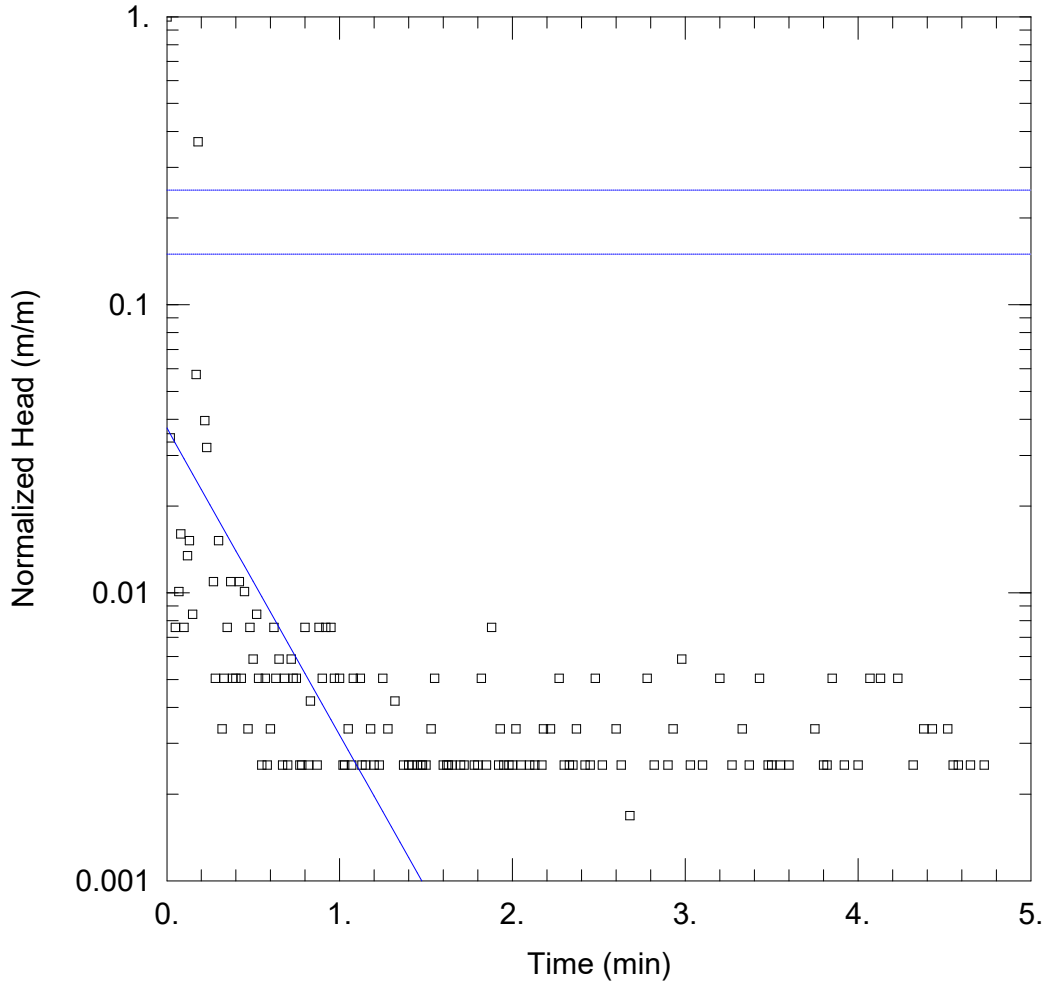
Appendix C – Groundwater Monitoring Data

Client: Green Geotechnics Pty Ltd
Job No: S-0359.00
Project: 19-25 Balfour Street, Lindfield NSW

D&N Geotechnical



Appendix D – AQTESOLV Outputs



WELL TEST ANALYSIS

Data Set: C:\...\S-0359.00_MW1_20260409_F-HOBO.aqt
Date: 04/23/26 Time: 11:52:22

PROJECT INFORMATION

Company: D&N
Project: S-0359.00
Location: Balfour St
Test Well: MW1
Test Date: 09/04/2026

AQUIFER DATA

Saturated Thickness: 15.23 m Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW1)

Initial Displacement: 1.188 m
Total Well Penetration Depth: 19.18 m
Casing Radius: 0.025 m
Static Water Column Height: 15.23 m
Screen Length: 16.2 m
Well Radius: 0.025 m

SOLUTION

Aquifer Model: Confined
Solution Method: Hvorslev
K = 0.384 m/day
y0 = 0.04435 m

Data Set: C:\Users\Nick Davison\D&N Geotechnical Dropbox\7. SYD Projects\0300 Series\S-0359.00 19-25 Balfo
Date: 04/23/26
Time: 11:53:03

PROJECT INFORMATION

Company: D&N
Project: S-0359.00
Location: Balfour St
Test Date: 09/04/2026
Test Well: MW1

AQUIFER DATA

Saturated Thickness: 15.23 m
Anisotropy Ratio (Kz/Kr): 1.

SLUG TEST WELL DATA

Test Well: MW1

X Location: 0. m
Y Location: 0. m

Initial Displacement: 1.188 m
Static Water Column Height: 15.23 m
Casing Radius: 0.025 m
Well Radius: 0.025 m
Well Skin Radius: 0.5 m
Screen Length: 16.2 m
Total Well Penetration Depth: 19.18 m

No. of Observations: 285

Observation Data

Time (min)	Displacement (m)	Time (min)	Displacement (m)
0.02	0.041	2.4	-0.003
0.03	-0.003	2.42	0.003
0.05	0.009	2.43	0.
0.07	0.012	2.45	0.003
0.08	0.019	2.47	-0.003
0.1	0.009	2.48	0.006
0.12	0.016	2.5	-0.003
0.13	0.018	2.52	0.003
0.15	0.01	2.53	0.
0.17	0.068	2.55	0.
0.18	0.437	2.57	0.
0.2	-0.05	2.58	0.
0.22	0.047	2.6	0.004
0.23	0.038	2.62	0.
0.25	-0.031	2.63	0.003
0.27	0.013	2.65	0.
0.28	0.006	2.67	-0.003
0.3	0.018	2.68	0.002

Time (min)	Displacement (m)	Time (min)	Displacement (m)
0.32	0.004	2.7	0.001
0.33	0.006	2.72	0.
0.35	0.009	2.73	0.
0.37	0.013	2.75	0.
0.38	0.006	2.77	0.
0.4	0.006	2.78	0.006
0.42	0.013	2.8	0.
0.43	0.006	2.82	0.003
0.45	0.012	2.83	0.001
0.47	0.004	2.85	0.
0.48	0.009	2.87	0.
0.5	0.007	2.88	0.
0.52	0.01	2.9	0.003
0.53	0.006	2.92	0.
0.55	0.003	2.93	0.004
0.57	0.006	2.95	-0.004
0.58	0.003	2.97	0.
0.6	0.004	2.98	0.007
0.62	0.009	3.	-0.003
0.63	0.006	3.02	0.
0.65	0.007	3.03	0.003
0.67	0.003	3.05	0.
0.68	0.006	3.07	0.
0.7	0.003	3.08	0.
0.72	0.007	3.1	0.003
0.73	0.006	3.12	0.
0.75	0.006	3.13	0.
0.77	0.003	3.15	0.
0.78	0.003	3.17	0.
0.8	0.009	3.18	-0.003
0.82	0.003	3.2	0.006
0.83	0.005	3.22	0.
0.85	-0.006	3.23	0.
0.87	0.003	3.25	0.
0.88	0.009	3.27	0.003
0.9	0.006	3.28	0.
0.92	0.009	3.3	0.
0.93	0.001	3.32	0.
0.95	0.009	3.33	0.004
0.97	0.006	3.35	-0.005
0.98	-0.003	3.37	0.003
1.	0.006	3.38	0.
1.02	0.003	3.4	0.
1.03	0.003	3.42	0.
1.05	0.004	3.43	0.006
1.07	0.003	3.45	-0.003
1.08	0.006	3.47	0.
1.1	0.	3.48	0.003
1.12	0.006	3.5	0.003
1.13	0.003	3.52	-0.003
1.15	0.003	3.53	-0.003
1.17	0.001	3.55	0.003
1.18	0.004	3.57	0.

Time (min)	Displacement (m)	Time (min)	Displacement (m)
1.2	0.003	3.58	0.
1.22	0.	3.6	0.003
1.23	0.003	3.62	0.
1.25	0.006	3.63	0.
1.27	0.	3.65	0.
1.28	0.004	3.67	0.
1.3	0.	3.68	0.
1.32	0.005	3.7	0.
1.33	0.001	3.72	0.
1.35	0.	3.73	0.
1.37	0.003	3.75	0.004
1.38	0.	3.77	0.
1.4	0.003	3.78	-0.003
1.42	0.003	3.8	0.003
1.43	0.	3.82	0.003
1.45	0.003	3.83	-0.003
1.47	0.003	3.85	0.006
1.48	0.003	3.87	0.
1.5	0.003	3.88	-0.003
1.52	0.001	3.9	0.001
1.53	0.004	3.92	0.003
1.55	0.006	3.93	0.
1.57	-0.003	3.95	0.
1.58	0.	3.97	0.
1.6	0.003	3.98	0.
1.62	0.003	4.	0.003
1.63	0.003	4.02	0.
1.65	0.003	4.03	-0.003
1.67	0.	4.05	0.
1.68	0.	4.07	0.006
1.7	0.003	4.08	-0.003
1.72	0.003	4.1	0.
1.73	0.001	4.12	0.
1.75	0.	4.13	0.006
1.77	0.	4.15	0.
1.78	0.003	4.17	0.
1.8	0.003	4.18	0.
1.82	0.006	4.2	0.
1.83	-0.003	4.22	-0.003
1.85	0.003	4.23	0.006
1.87	0.	4.25	-0.003
1.88	0.009	4.27	0.
1.9	-0.006	4.28	0.
1.92	0.003	4.3	0.
1.93	0.004	4.32	0.003
1.95	0.003	4.33	-0.003
1.97	-0.003	4.35	0.
1.98	0.003	4.37	0.
2.	0.003	4.38	0.004
2.02	0.004	4.4	0.
2.03	0.	4.42	-0.004
2.05	0.003	4.43	0.004
2.07	-0.003	4.45	0.

Time (min)	Displacement (m)	Time (min)	Displacement (m)
2.08	0.	4.47	0.
2.1	0.003	4.48	0.
2.12	0.	4.5	0.
2.13	0.003	4.52	0.004
2.15	0.	4.53	-0.003
2.17	0.003	4.55	0.003
2.18	0.004	4.57	0.
2.2	-0.004	4.58	0.003
2.22	0.004	4.6	-0.006
2.23	0.	4.62	0.
2.25	0.	4.63	0.
2.27	0.006	4.65	0.003
2.28	-0.003	4.67	0.
2.3	0.003	4.68	0.
2.32	-0.003	4.7	0.
2.33	0.003	4.72	0.
2.35	0.003	4.73	0.003
2.37	0.004	4.75	0.
2.38	0.		

SOLUTION

Slug Test
Aquifer Model: Confined
Solution Method: Hvorslev
Log Factor: 0.1887

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	0.3938	m/day
y0	0.04435	m

K = 0.0004557 cm/sec
T = K*b = 5.998 m²/day (0.6942 sq. cm/sec)

AUTOMATIC ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	Std. Error	Approx. C.I.	t-Ratio	
K	0.384	0.1314	+/- 0.2585	2.923	m/day
y0	0.04435	0.01087	+/- 0.0214	4.08	m

C.I. is approximate 95% confidence interval for parameter
t-ratio = estimate/std. error
No estimation window

K = 0.0004445 cm/sec
T = K*b = 5.849 m²/day (0.677 sq. cm/sec)

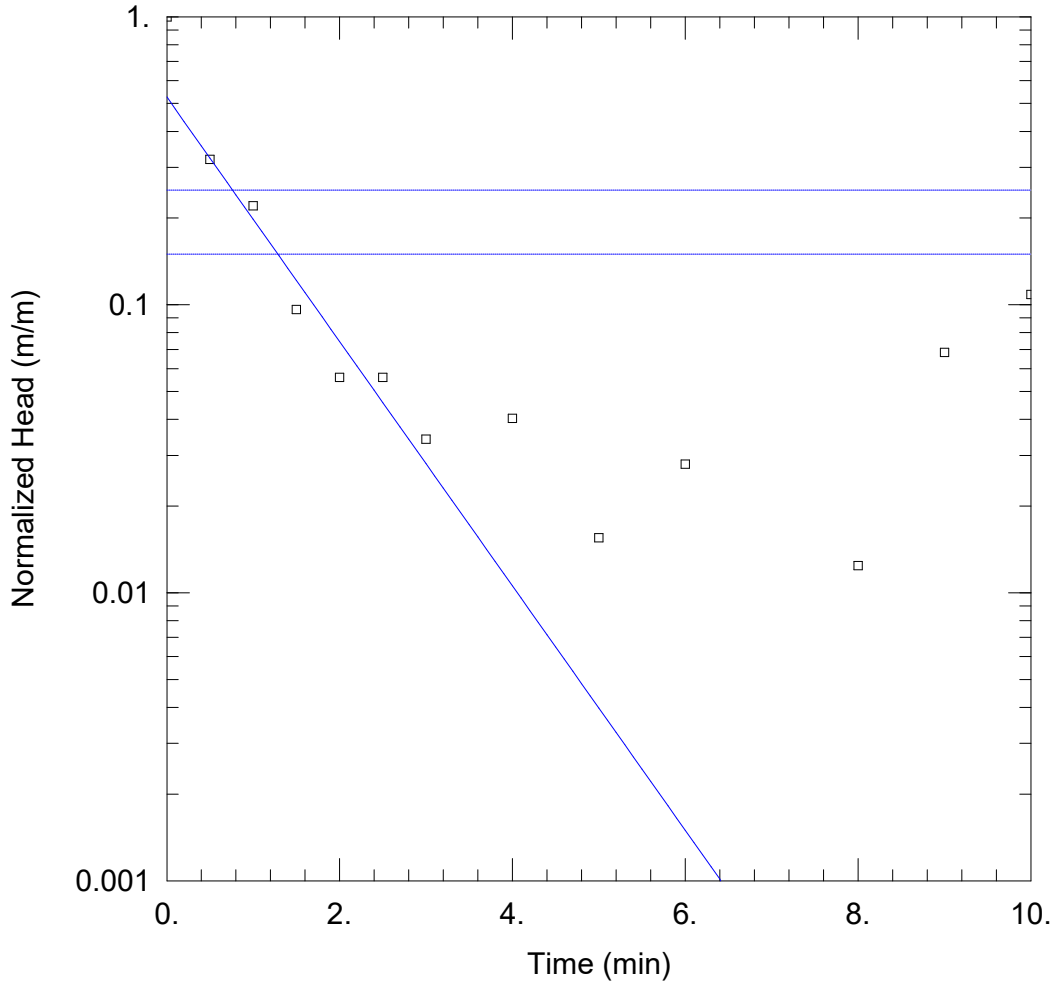
Parameter Correlations

	K	y0
K	1.00	0.72
y0	0.72	1.00

Residual Statistics

for weighted residuals

Sum of Squares . . 0.187 m^2
Variance . . . . . 0.0006606 m^2
Std. Deviation. . . . . 0.0257 m
Mean. . . . . 0.0003697 m
No. of Residuals . . 285
No. of Estimates . . 2



WELL TEST ANALYSIS

Data Set: C:\...\S-0359.00_MW1_20260409_F-MANU.aqt
Date: 04/23/26 Time: 12:00:45

PROJECT INFORMATION

Company: D&N
Project: S-0359.00
Location: Balfour St
Test Well: MW1
Test Date: 09/04/2026

AQUIFER DATA

Saturated Thickness: 15.34 m Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW1)

Initial Displacement: 0.322 m
Total Well Penetration Depth: 19.18 m
Casing Radius: 0.025 m
Static Water Column Height: 15.34 m
Screen Length: 16.2 m
Well Radius: 0.025 m

SOLUTION

Aquifer Model: Confined
Solution Method: Hvorslev
K = 0.1519 m/day
y0 = 0.1695 m

Data Set: C:\Users\Nick Davison\D&N Geotechnical Dropbox\7. SYD Projects\0300 Series\S-0359.00 19-25 Balfo
Date: 04/23/26
Time: 12:01:05

PROJECT INFORMATION

Company: D&N
Project: S-0359.00
Location: Balfour St
Test Date: 09/04/2026
Test Well: MW1

AQUIFER DATA

Saturated Thickness: 15.34 m
Anisotropy Ratio (Kz/Kr): 1.

SLUG TEST WELL DATA

Test Well: MW1

X Location: 0. m
Y Location: 0. m

Initial Displacement: 0.322 m
Static Water Column Height: 15.34 m
Casing Radius: 0.025 m
Well Radius: 0.025 m
Well Skin Radius: 0.5 m
Screen Length: 16.2 m
Total Well Penetration Depth: 19.18 m

No. of Observations: 13

Observation Data

Time (min)	Displacement (m)	Time (min)	Displacement (m)
0.5	0.103	5.	0.005
1.	0.071	6.	0.009
1.5	0.031	7.	0.
2.	0.018	8.	0.004
2.5	0.018	9.	0.022
3.	0.011	10.	0.035
4.	0.013		

SOLUTION

Slug Test
Aquifer Model: Confined
Solution Method: Hvorslev
Log Factor: 0.1887

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	0.1557	m/day
y0	0.1694	m

K = 0.0001803 cm/sec
T = K*b = 2.389 m²/day (0.2765 sq. cm/sec)

AUTOMATIC ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	Std. Error	Approx. C.I.	t-Ratio	
K	0.1519	0.0346	+/- 0.07616	4.389	m/day
y0	0.1695	0.03471	+/- 0.0764	4.883	m

C.I. is approximate 95% confidence interval for parameter
t-ratio = estimate/std. error
No estimation window

K = 0.0001758 cm/sec
T = K*b = 2.329 m²/day (0.2696 sq. cm/sec)

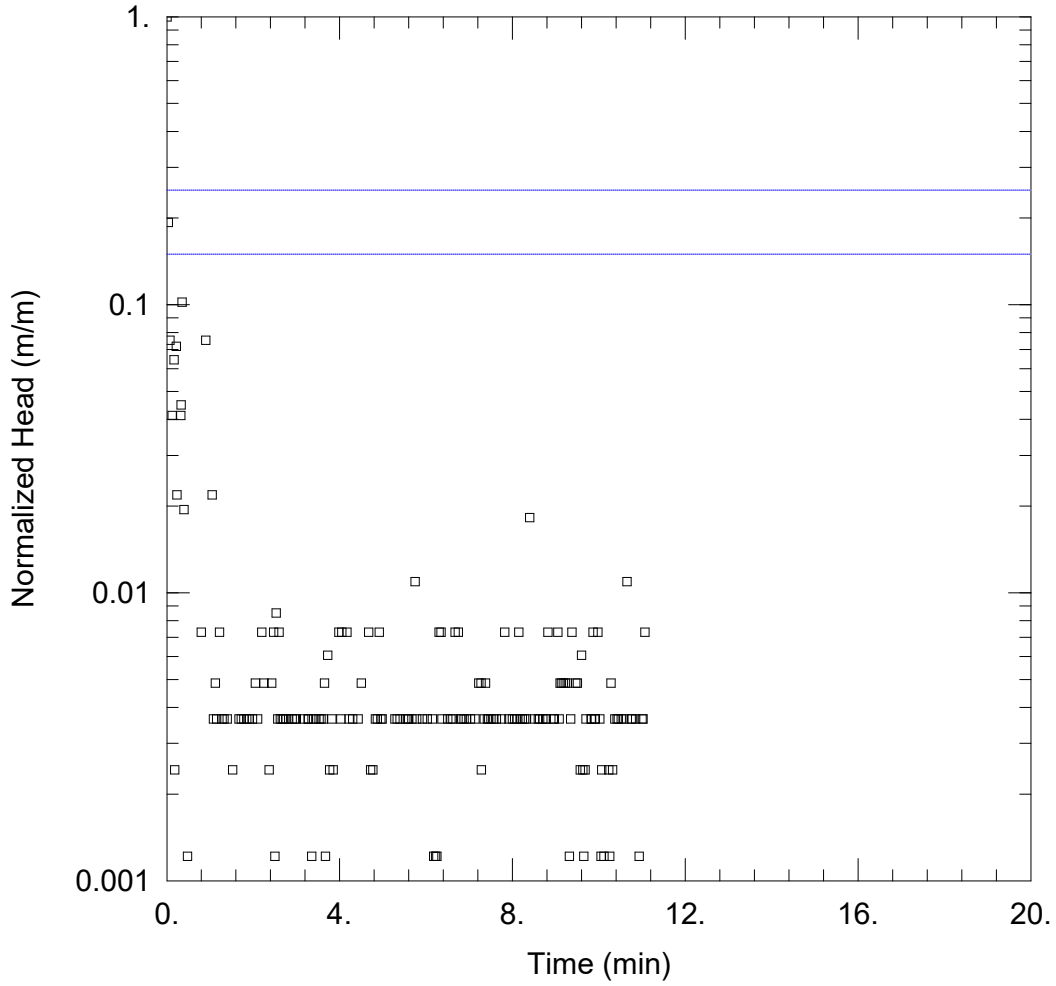
Parameter Correlations

	K	y0
K	1.00	0.86
y0	0.86	1.00

Residual Statistics

for weighted residuals

Sum of Squares . . 0.002071 m^2
Variance . . . . . 0.0001883 m^2
Std. Deviation. . . . . 0.01372 m
Mean. . . . . 0.006138 m
No. of Residuals . . 13
No. of Estimates . . 2



WELL TEST ANALYSIS

Data Set: C:\...\S-0359.00_MW1_20260409_R-HOBO.aqt
Date: 04/16/26 Time: 15:49:31

PROJECT INFORMATION

Company: D&N
Project: S-0359.00
Location: Balfour St
Test Well: MW1
Test Date: 09/04/2026

AQUIFER DATA

Saturated Thickness: 15.25 m Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW1)

Initial Displacement: 0.823 m
Total Well Penetration Depth: 19.18 m
Casing Radius: 0.025 m
Static Water Column Height: 15.25 m
Screen Length: 5.717 m
Well Radius: 0.025 m

SOLUTION

Aquifer Model: Confined
Solution Method: Hvorslev
K = 5.13 m/day
y0 = 0.0003229 m

Data Set: C:\Users\Nick Davison\D&N Geotechnical Dropbox\7. SYD Projects\0300 Series\S-0359.00 19-25 Balfo
Date: 04/16/26
Time: 15:49:47

PROJECT INFORMATION

Company: D&N
Project: S-0359.00
Location: Balfour St
Test Date: 09/04/2026
Test Well: MW1

AQUIFER DATA

Saturated Thickness: 15.25 m
Anisotropy Ratio (Kz/Kr): 1.

SLUG TEST WELL DATA

Test Well: MW1

X Location: 0. m
Y Location: 0. m

Initial Displacement: 0.823 m
Static Water Column Height: 15.25 m
Casing Radius: 0.025 m
Well Radius: 0.025 m
Well Skin Radius: 0.5 m
Screen Length: 5.717 m
Total Well Penetration Depth: 19.18 m

No. of Observations: 665

Observation Data

Time (min)	Displacement (m)	Time (min)	Displacement (m)
0.02	-0.009	5.57	0.003
0.03	0.159	5.58	-0.003
0.05	-0.171	5.6	0.003
0.07	0.062	5.62	0.
0.08	-0.153	5.63	-0.006
0.1	-0.031	5.65	0.
0.12	0.034	5.67	0.003
0.13	-0.028	5.68	0.
0.15	-0.015	5.7	0.
0.17	0.053	5.72	0.
0.18	0.002	5.73	-0.003
0.2	-0.005	5.75	0.009
0.22	0.059	5.77	-0.006
0.23	0.018	5.78	0.003
0.25	-0.028	5.8	-0.003
0.27	-0.025	5.82	0.
0.28	-0.05	5.83	0.
0.3	-0.027	5.85	0.

Time (min)	Displacement (m)	Time (min)	Displacement (m)
0.32	0.034	5.87	0.
0.33	0.037	5.88	0.
0.35	0.084	5.9	-0.003
0.37	-0.078	5.92	0.003
0.38	-0.012	5.93	0.
0.4	0.016	5.95	0.
0.42	-0.013	5.97	0.
0.43	-0.003	5.98	-0.003
0.45	-0.012	6.	0.
0.47	-0.007	6.02	0.
0.48	0.001	6.03	0.003
0.5	-0.006	6.05	0.
0.52	-0.003	6.07	0.
0.53	-0.006	6.08	0.
0.55	-0.006	6.1	0.
0.57	-0.004	6.12	0.
0.58	-0.006	6.13	0.
0.6	-0.016	6.15	0.003
0.62	-0.043	6.17	-0.003
0.63	-0.047	6.18	0.001
0.65	-0.012	6.2	-0.001
0.67	-0.084	6.22	0.001
0.68	-0.028	6.23	-0.001
0.7	-0.025	6.25	0.001
0.72	-0.003	6.27	-0.001
0.73	-0.007	6.28	-0.002
0.75	-0.018	6.3	0.006
0.77	-0.035	6.32	0.
0.78	-0.208	6.33	-0.009
0.8	0.006	6.35	0.006
0.82	-0.022	6.37	0.003
0.83	0.	6.38	0.
0.85	0.	6.4	0.
0.87	-0.003	6.42	0.
0.88	0.	6.43	0.
0.9	0.062	6.45	0.
0.92	-0.009	6.47	-0.003
0.93	-0.006	6.48	0.
0.95	-0.028	6.5	0.003
0.97	-0.025	6.52	0.
0.98	-0.016	6.53	0.
1.	-0.003	6.55	0.
1.02	-0.003	6.57	-0.003
1.03	-0.015	6.58	0.003
1.05	0.018	6.6	0.
1.07	-0.006	6.62	0.003
1.08	0.003	6.63	-0.003
1.1	-0.003	6.65	0.
1.12	0.004	6.67	0.006
1.13	-0.006	6.68	-0.003
1.15	0.003	6.7	0.
1.17	-0.003	6.72	0.
1.18	-0.006	6.73	-0.003

Time (min)	Displacement (m)	Time (min)	Displacement (m)
1.2	0.	6.75	0.006
1.22	0.006	6.77	-0.003
1.23	-0.006	6.78	0.
1.25	0.	6.8	0.003
1.27	0.	6.82	-0.003
1.28	0.003	6.83	0.003
1.3	-0.006	6.85	-0.003
1.32	0.003	6.87	0.
1.33	0.	6.88	0.003
1.35	-0.003	6.9	-0.003
1.37	0.	6.92	0.
1.38	-0.006	6.93	0.003
1.4	0.003	6.95	0.
1.42	0.	6.97	-0.003
1.43	-0.004	6.98	0.
1.45	0.	7.	0.
1.47	0.	7.02	0.
1.48	-0.002	7.03	0.003
1.5	0.	7.05	0.
1.52	0.002	7.07	0.
1.53	0.	7.08	-0.003
1.55	0.	7.1	0.
1.57	0.	7.12	0.
1.58	0.	7.13	0.003
1.6	0.	7.15	-0.003
1.62	0.	7.17	0.
1.63	-0.003	7.18	0.
1.65	0.	7.2	0.
1.67	0.003	7.22	0.004
1.68	-0.003	7.23	0.
1.7	0.	7.25	-0.004
1.72	0.003	7.27	0.004
1.73	-0.003	7.28	0.002
1.75	0.	7.3	0.
1.77	-0.003	7.32	0.
1.78	0.003	7.33	-0.006
1.8	-0.003	7.35	0.003
1.82	0.	7.37	-0.003
1.83	0.	7.38	0.004
1.85	0.003	7.4	0.
1.87	-0.003	7.42	0.003
1.88	0.	7.43	0.
1.9	0.003	7.45	0.003
1.92	0.	7.47	-0.003
1.93	-0.003	7.48	0.
1.95	-0.003	7.5	0.003
1.97	0.	7.52	0.
1.98	0.003	7.53	-0.003
2.	0.	7.55	0.
2.02	0.	7.57	0.003
2.03	0.	7.58	0.
2.05	0.004	7.6	-0.003
2.07	-0.006	7.62	0.

Time (min)	Displacement (m)	Time (min)	Displacement (m)
2.08	0.	7.63	0.003
2.1	0.003	7.65	0.
2.12	-0.003	7.67	-0.003
2.13	0.	7.68	0.
2.15	0.	7.7	0.
2.17	0.	7.72	0.
2.18	-0.006	7.73	0.
2.2	0.006	7.75	0.003
2.22	-0.002	7.77	-0.003
2.23	-0.001	7.78	0.
2.25	0.004	7.8	0.
2.27	0.	7.82	0.006
2.28	0.	7.83	-0.006
2.3	-0.004	7.85	0.
2.32	0.	7.87	0.
2.33	-0.002	7.88	0.
2.35	0.	7.9	0.
2.37	0.002	7.92	0.003
2.38	0.	7.93	0.
2.4	-0.002	7.95	0.
2.42	-0.004	7.97	0.
2.43	0.004	7.98	0.
2.45	-0.004	8.	0.003
2.47	0.006	8.02	0.
2.48	-0.003	8.03	-0.006
2.5	0.001	8.05	0.003
2.52	-0.007	8.07	-0.003
2.53	0.007	8.08	0.
2.55	-0.004	8.1	0.003
2.57	0.003	8.12	0.
2.58	-0.003	8.13	-0.003
2.6	0.006	8.15	0.006
2.62	-0.003	8.17	-0.006
2.63	0.003	8.18	0.003
2.65	0.	8.2	0.
2.67	0.003	8.22	0.
2.68	-0.003	8.23	0.003
2.7	0.003	8.25	-0.003
2.72	-0.006	8.27	0.
2.73	-0.003	8.28	0.003
2.75	0.003	8.3	-0.006
2.77	0.	8.32	0.003
2.78	0.	8.33	-0.006
2.8	-0.003	8.35	-0.003
2.82	0.003	8.37	-0.003
2.83	0.	8.38	0.
2.85	0.	8.4	0.015
2.87	0.	8.42	0.
2.88	-0.003	8.43	0.
2.9	0.003	8.45	0.
2.92	0.	8.47	0.
2.93	-0.003	8.48	-0.003
2.95	0.003	8.5	0.

Time (min)	Displacement (m)	Time (min)	Displacement (m)
2.97	0.	8.52	0.003
2.98	0.	8.53	-0.003
3.	0.003	8.55	0.
3.02	-0.003	8.57	0.
3.03	-0.003	8.58	0.
3.05	0.	8.6	0.003
3.07	0.	8.62	-0.003
3.08	-0.003	8.63	0.003
3.1	0.	8.65	-0.003
3.12	0.	8.67	0.
3.13	0.	8.68	0.
3.15	0.	8.7	0.003
3.17	0.003	8.72	-0.003
3.18	0.	8.73	0.
3.2	0.	8.75	-0.003
3.22	0.	8.77	0.003
3.23	-0.003	8.78	0.003
3.25	0.	8.8	-0.006
3.27	0.003	8.82	0.006
3.28	0.003	8.83	-0.003
3.3	-0.002	8.85	0.
3.32	0.	8.87	0.
3.33	-0.001	8.88	0.
3.35	0.001	8.9	0.
3.37	0.	8.92	-0.003
3.38	-0.003	8.93	0.
3.4	0.003	8.95	0.003
3.42	0.	8.97	0.003
3.43	-0.003	8.98	-0.003
3.45	0.003	9.	0.
3.47	-0.003	9.02	0.
3.48	0.	9.03	-0.003
3.5	0.	9.05	0.006
3.52	0.003	9.07	-0.006
3.53	-0.003	9.08	0.003
3.55	0.	9.1	0.004
3.57	0.003	9.12	-0.004
3.58	-0.003	9.13	0.004
3.6	0.	9.15	0.
3.62	0.003	9.17	-0.004
3.63	-0.007	9.18	0.004
3.65	0.004	9.2	-0.004
3.67	0.001	9.22	0.004
3.68	-0.005	9.23	0.
3.7	0.	9.25	-0.004
3.72	0.005	9.27	0.004
3.73	-0.001	9.28	0.
3.75	-0.004	9.3	-0.001
3.77	0.002	9.32	0.001
3.78	0.	9.33	-0.001
3.8	0.	9.35	0.003
3.82	0.003	9.37	-0.006
3.83	-0.003	9.38	0.006

Time (min)	Displacement (m)	Time (min)	Displacement (m)
3.85	0.002	9.4	0.
3.87	-0.002	9.42	-0.003
3.88	0.	9.43	-0.003
3.9	0.	9.45	0.
3.92	-0.001	9.47	0.004
3.93	-0.003	9.48	-0.004
3.95	0.	9.5	0.004
3.97	0.	9.52	0.
3.98	0.006	9.53	0.
4.	-0.003	9.55	0.
4.02	-0.003	9.57	0.002
4.03	0.003	9.58	-0.002
4.05	0.006	9.6	0.005
4.07	-0.006	9.62	-0.005
4.08	0.	9.63	0.002
4.1	0.	9.65	0.001
4.12	0.	9.67	-0.003
4.13	0.	9.68	0.002
4.15	-0.003	9.7	0.003
4.17	0.006	9.72	0.
4.18	-0.006	9.73	0.
4.2	0.	9.75	-0.002
4.22	0.003	9.77	0.
4.23	-0.003	9.78	-0.001
4.25	0.	9.8	-0.002
4.27	0.	9.82	0.003
4.28	-0.003	9.83	0.003
4.3	0.003	9.85	-0.006
4.32	0.	9.87	0.006
4.33	0.	9.88	-0.006
4.35	0.	9.9	0.003
4.37	0.	9.92	0.003
4.38	0.	9.93	-0.003
4.4	0.	9.95	0.
4.42	-0.003	9.97	-0.003
4.43	0.003	9.98	0.006
4.45	0.	10.	-0.003
4.47	-0.003	10.02	0.003
4.48	0.	10.03	-0.006
4.5	0.004	10.05	0.001
4.52	0.	10.07	0.002
4.53	0.	10.08	0.
4.55	-0.003	10.1	0.
4.57	-0.001	10.12	0.001
4.58	0.	10.13	-0.001
4.6	0.	10.15	0.
4.62	0.	10.17	-0.002
4.63	0.	10.18	0.
4.65	-0.002	10.2	-0.001
4.67	0.006	10.22	-0.002
4.68	-0.006	10.23	0.002
4.7	0.	10.25	0.001
4.72	0.002	10.27	-0.001

Time (min)	Displacement (m)	Time (min)	Displacement (m)
4.73	0.	10.28	0.004
4.75	-0.002	10.3	-0.003
4.77	0.002	10.32	0.002
4.78	0.	10.33	-0.002
4.8	-0.006	10.35	0.
4.82	0.	10.37	0.003
4.83	0.003	10.38	0.
4.85	-0.003	10.4	-0.003
4.87	0.003	10.42	0.003
4.88	0.	10.43	-0.003
4.9	-0.003	10.45	0.003
4.92	0.006	10.47	-0.003
4.93	-0.006	10.48	0.
4.95	0.003	10.5	0.
4.97	-0.006	10.52	0.003
4.98	0.003	10.53	0.
5.	0.	10.55	0.
5.02	-0.003	10.57	0.003
5.03	0.	10.58	-0.003
5.05	0.	10.6	-0.003
5.07	-0.003	10.62	0.
5.08	0.	10.63	-0.003
5.1	0.	10.65	0.009
5.12	0.	10.67	-0.003
5.13	0.	10.68	0.
5.15	0.	10.7	0.
5.17	0.	10.72	-0.006
5.18	0.	10.73	0.
5.2	-0.003	10.75	0.003
5.22	0.	10.77	0.003
5.23	0.	10.78	-0.003
5.25	0.	10.8	0.
5.27	-0.003	10.82	0.
5.28	0.003	10.83	0.
5.3	-0.003	10.85	0.003
5.32	0.	10.87	0.
5.33	0.003	10.88	0.
5.35	-0.006	10.9	0.
5.37	0.	10.92	0.
5.38	0.	10.93	0.001
5.4	0.003	10.95	0.
5.42	0.	10.97	-0.003
5.43	0.	10.98	0.
5.45	0.	11.	0.003
5.47	0.	11.02	0.003
5.48	0.	11.03	-0.003
5.5	0.	11.05	-0.003
5.52	-0.003	11.07	0.006
5.53	0.003	11.08	-0.003
5.55	-0.003		

SOLUTION

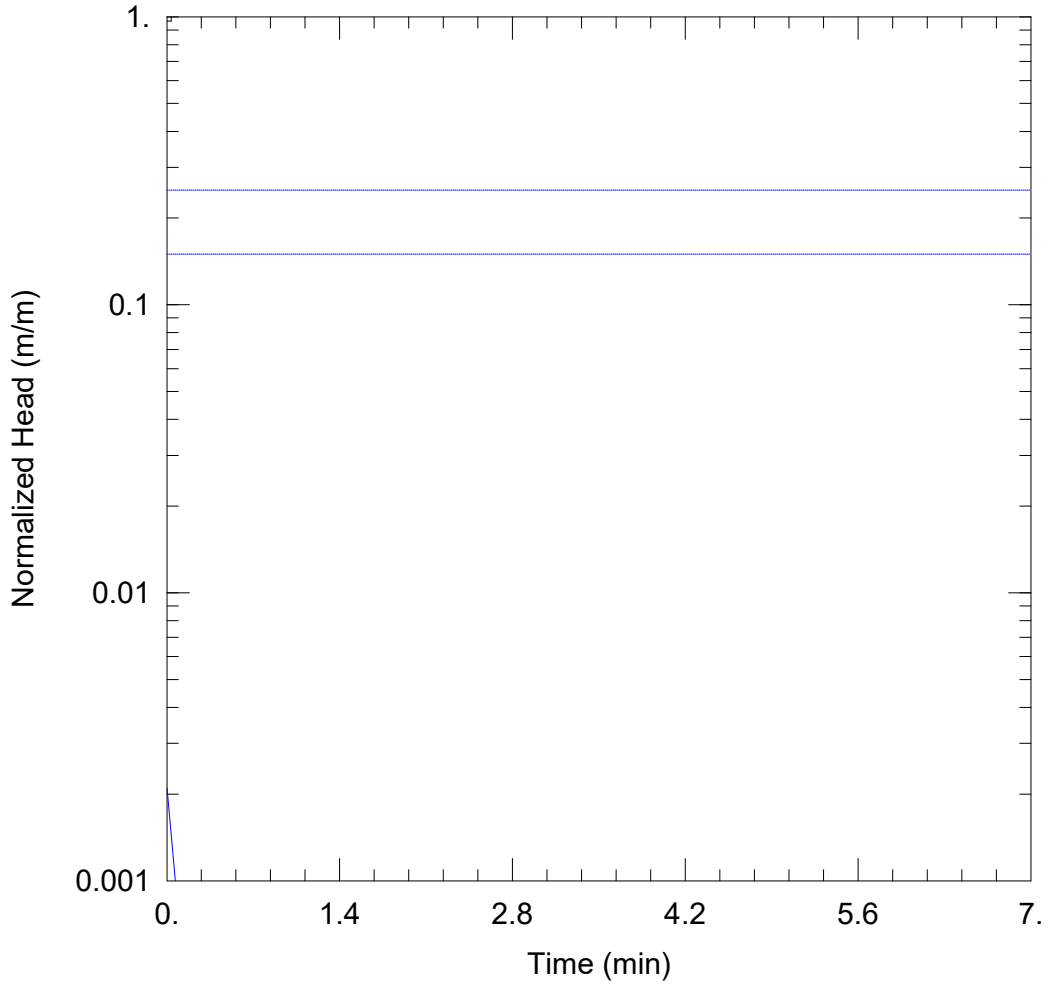
Slug Test
Aquifer Model: Confined
Solution Method: Hvorslev
Log Factor: 0.1633

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	5.13	m/day
y0	0.0003229	m

K = 0.005937 cm/sec
T = K*b = 78.24 m²/day (9.055 sq. cm/sec)



WELL TEST ANALYSIS

Data Set: C:\...\S-0359.00_MW1_20260409_F-HOBO.aqt
Date: 04/16/26 Time: 15:45:37

PROJECT INFORMATION

Company: D&N
Project: S-0359.00
Location: Balfour St
Test Well: MW1
Test Date: 09/04/2026

AQUIFER DATA

Saturated Thickness: 15.32 m Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW1)

Initial Displacement: 0.154 m
Total Well Penetration Depth: 19.18 m
Casing Radius: 0.025 m
Static Water Column Height: 15.32 m
Screen Length: 5.717 m
Well Radius: 0.025 m

SOLUTION

Aquifer Model: Confined
Solution Method: Hvorslev
K = 5.13 m/day
y0 = 0.0003229 m

Data Set: C:\Users\Nick Davison\D&N Geotechnical Dropbox\7. SYD Projects\0300 Series\S-0359.00 19-25 Balfo
Date: 04/16/26
Time: 15:46:09

PROJECT INFORMATION

Company: D&N
Project: S-0359.00
Location: Balfour St
Test Date: 09/04/2026
Test Well: MW1

AQUIFER DATA

Saturated Thickness: 15.32 m
Anisotropy Ratio (Kz/Kr): 1.

SLUG TEST WELL DATA

Test Well: MW1

X Location: 0. m
Y Location: 0. m

Initial Displacement: 0.154 m
Static Water Column Height: 15.32 m
Casing Radius: 0.025 m
Well Radius: 0.025 m
Well Skin Radius: 0.5 m
Screen Length: 5.717 m
Total Well Penetration Depth: 19.18 m

No. of Observations: 12

Observation Data

Time (min)	Displacement (m)	Time (min)	Displacement (m)
0.5	-0.059	3.5	-0.005
1.	-0.026	4.	-0.007
1.5	-0.011	4.5	-0.006
2.	-0.018	5.	-0.002
2.5	-0.009	6.	-0.009
3.	-0.011	7.	-0.001

SOLUTION

Slug Test
Aquifer Model: Confined
Solution Method: Hvorslev
Log Factor: 0.1633

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	5.13	m/day
y0	0.0003229	m

K = 0.005937 cm/sec
T = K*b = 78.6 m²/day (9.097 sq. cm/sec)

AUTOMATIC ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	Std. Error	Approx. C.I.	t-Ratio	
K	5.13	3.019E+6	+/- 6.725E+6	1.699E-6	m/day
y0	0.0003229	984.4	+/- 2193.2	3.28E-7	m

C.I. is approximate 95% confidence interval for parameter
t-ratio = estimate/std. error
No estimation window

K = 0.005937 cm/sec
T = K*b = 78.6 m²/day (9.097 sq. cm/sec)

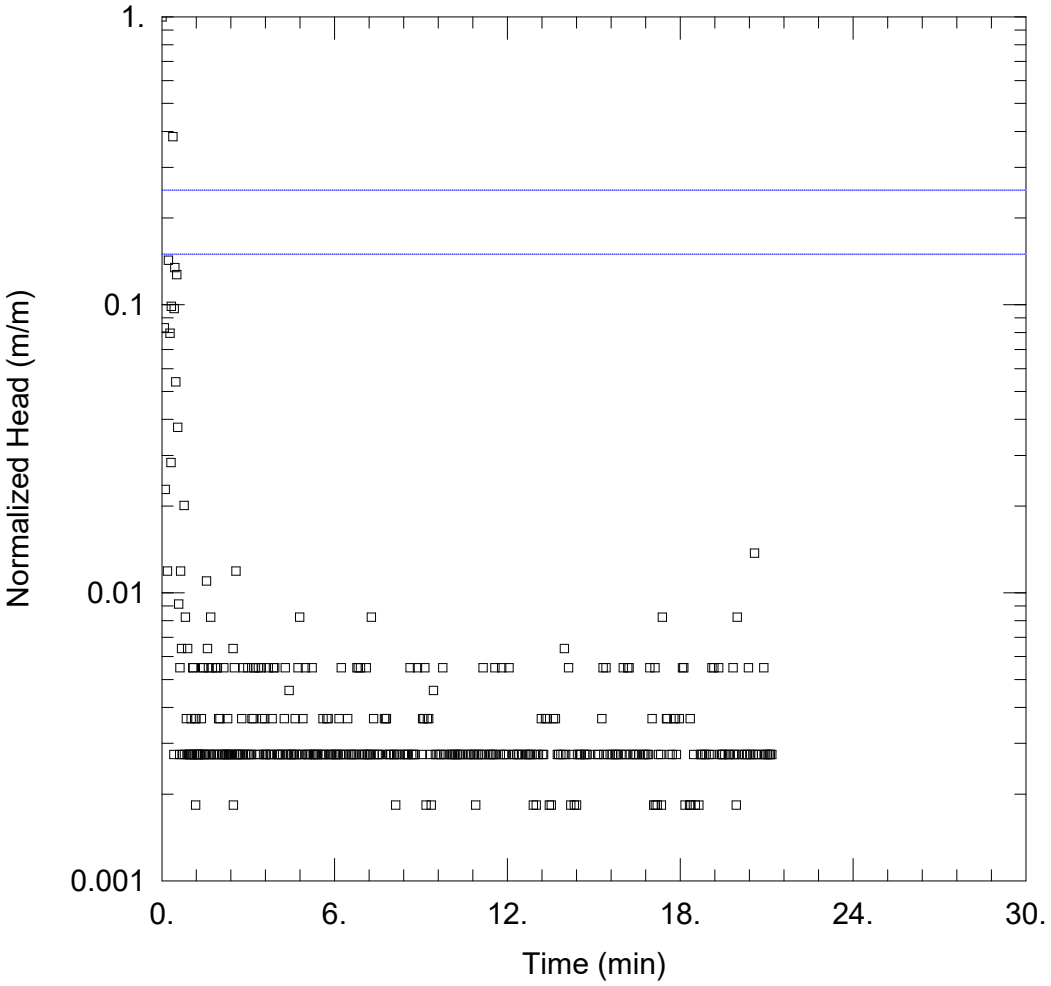
Parameter Correlations

	K	y0
K	1.00	1.00
y0	1.00	1.00

Residual Statistics

for weighted residuals

Sum of Squares .. 0.005 m^2
Variance ..... 0.0005 m^2
Std. Deviation..... 0.02236 m
Mean..... -0.01367 m
No. of Residuals .. 12
No. of Estimates .. 2



WELL TEST ANALYSIS

Data Set: C:\...\S-0359.00_MW2_20260409_F-HOBO.aqt
Date: 04/23/26 Time: 12:15:49

PROJECT INFORMATION

Company: D&N
Project: S-0359.00
Location: Balfour St
Test Well: MW2
Test Date: 09/04/2026

AQUIFER DATA

Saturated Thickness: 9.766 m Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW2)

Initial Displacement: 1.093 m
Total Well Penetration Depth: 12.52 m
Casing Radius: 0.025 m
Static Water Column Height: 9.766 m
Screen Length: 9.825 m
Well Radius: 0.025 m

SOLUTION

Aquifer Model: Confined
Solution Method: Hvorslev
K = 0.01515 m/day
y0 = 0.0007258 m

Data Set: C:\Users\Nick Davison\D&N Geotechnical Dropbox\7. SYD Projects\0300 Series\S-0359.00 19-25 Balfo
Date: 04/23/26
Time: 12:16:04

PROJECT INFORMATION

Company: D&N
Project: S-0359.00
Location: Balfour St
Test Date: 09/04/2026
Test Well: MW2

AQUIFER DATA

Saturated Thickness: 9.766 m
Anisotropy Ratio (Kz/Kr): 1.

SLUG TEST WELL DATA

Test Well: MW2

X Location: 0. m
Y Location: 0. m

Initial Displacement: 1.093 m
Static Water Column Height: 9.766 m
Casing Radius: 0.025 m
Well Radius: 0.025 m
Well Skin Radius: 0.5 m
Screen Length: 9.825 m
Total Well Penetration Depth: 12.52 m

No. of Observations: 1272

Observation Data

Time (min)	Displacement (m)	Time (min)	Displacement (m)
0.02	-0.412	10.62	0.003
0.03	-0.163	10.63	0.
0.05	-0.021	10.65	0.003
0.07	-0.069	10.67	0.
0.08	0.091	10.68	-0.003
0.1	-0.019	10.7	0.
0.12	0.025	10.72	0.003
0.13	-0.1	10.73	-0.003
0.15	-0.019	10.75	0.
0.17	-0.027	10.77	0.003
0.18	-0.069	10.78	0.
0.2	0.013	10.8	0.
0.22	-0.029	10.82	-0.003
0.23	0.156	10.83	0.003
0.25	-0.118	10.85	0.003
0.27	-0.003	10.87	0.
0.28	0.087	10.88	-0.002
0.3	-0.106	10.9	0.002

Time (min)	Displacement (m)	Time (min)	Displacement (m)
0.32	0.031	10.92	0.001
0.33	0.108	10.93	-0.003
0.35	-0.054	10.95	0.
0.37	-0.003	10.97	0.
0.38	0.419	10.98	0.003
0.4	-0.103	11.	0.003
0.42	0.003	11.02	-0.006
0.43	0.106	11.03	0.
0.45	0.147	11.05	0.
0.47	-0.334	11.07	0.
0.48	0.059	11.08	0.
0.5	-0.035	11.1	0.003
0.52	0.139	11.12	0.003
0.53	-0.053	11.13	-0.006
0.55	0.041	11.15	0.006
0.57	-0.032	11.17	-0.003
0.58	0.01	11.18	0.
0.6	0.	11.2	0.003
0.62	0.003	11.22	0.
0.63	0.006	11.23	-0.003
0.65	0.013	11.25	0.
0.67	-0.007	11.27	0.
0.68	0.007	11.28	0.
0.7	0.	11.3	0.
0.72	0.003	11.32	0.
0.73	0.001	11.33	0.
0.75	-0.013	11.35	0.003
0.77	0.022	11.37	0.
0.78	0.003	11.38	0.
0.8	0.	11.4	-0.003
0.82	0.009	11.42	0.003
0.83	0.	11.43	0.003
0.85	0.004	11.45	-0.003
0.87	0.003	11.47	0.
0.88	0.	11.48	-0.003
0.9	0.007	11.5	0.003
0.92	0.	11.52	-0.003
0.93	0.003	11.53	0.003
0.95	0.003	11.55	0.
0.97	0.003	11.57	0.006
0.98	0.003	11.58	-0.006
1.	0.003	11.6	0.003
1.02	0.004	11.62	0.
1.03	0.003	11.63	0.
1.05	0.	11.65	0.
1.07	0.006	11.67	0.
1.08	-0.002	11.68	0.
1.1	0.006	11.7	-0.003
1.12	0.003	11.72	0.
1.13	0.003	11.73	0.
1.15	0.004	11.75	0.003
1.17	0.002	11.77	0.
1.18	0.004	11.78	-0.003

Time (min)	Displacement (m)	Time (min)	Displacement (m)
1.2	0.	11.8	0.006
1.22	0.003	11.82	-0.003
1.23	0.003	11.83	0.
1.25	0.003	11.85	0.
1.27	0.003	11.87	0.003
1.28	0.003	11.88	-0.003
1.3	0.001	11.9	0.003
1.32	0.003	11.92	-0.003
1.33	0.003	11.93	0.
1.35	0.003	11.95	0.
1.37	0.004	11.97	0.003
1.38	0.	11.98	-0.003
1.4	0.	12.	-0.003
1.42	0.006	12.02	0.
1.43	-0.003	12.03	0.
1.45	0.006	12.05	0.006
1.47	0.003	12.07	0.
1.48	0.003	12.08	-0.002
1.5	0.003	12.1	-0.001
1.52	0.003	12.12	0.001
1.53	-0.005	12.13	0.
1.55	0.012	12.15	0.
1.57	-0.003	12.17	0.
1.58	0.007	12.18	-0.003
1.6	0.	12.2	0.003
1.62	0.006	12.22	0.
1.63	0.003	12.23	0.003
1.65	0.	12.25	0.
1.67	0.003	12.27	0.
1.68	-0.003	12.28	0.
1.7	0.009	12.3	-0.003
1.72	0.003	12.32	0.003
1.73	-0.002	12.33	0.
1.75	0.006	12.35	0.
1.77	0.	12.37	-0.003
1.78	0.	12.38	0.003
1.8	0.003	12.4	0.003
1.82	0.001	12.42	-0.003
1.83	0.003	12.43	0.
1.85	0.	12.45	0.
1.87	0.006	12.47	0.
1.88	0.003	12.48	0.
1.9	0.	12.5	0.003
1.92	0.	12.52	-0.003
1.93	0.006	12.53	0.
1.95	0.003	12.55	0.
1.97	0.004	12.57	0.
1.98	0.	12.58	0.
2.	0.	12.6	0.
2.02	0.004	12.62	-0.003
2.03	0.	12.63	0.003
2.05	0.	12.65	0.
2.07	0.003	12.67	-0.003

Time (min)	Displacement (m)	Time (min)	Displacement (m)
2.08	0.003	12.68	0.003
2.1	0.003	12.7	0.
2.12	0.	12.72	-0.003
2.13	0.	12.73	0.003
2.15	0.006	12.75	-0.003
2.17	0.003	12.77	0.003
2.18	0.	12.78	-0.003
2.2	0.003	12.8	0.003
2.22	0.	12.82	0.
2.23	0.003	12.83	0.
2.25	0.001	12.85	0.003
2.27	0.003	12.87	-0.003
2.28	0.004	12.88	0.001
2.3	0.	12.9	0.002
2.32	0.003	12.92	0.
2.33	0.003	12.93	0.
2.35	0.	12.95	0.
2.37	0.	12.97	0.
2.38	0.003	12.98	-0.002
2.4	0.	13.	0.002
2.42	0.003	13.02	0.003
2.43	0.003	13.03	-0.003
2.45	-0.003	13.05	0.
2.47	0.007	13.07	0.
2.48	0.002	13.08	0.003
2.5	-0.002	13.1	0.
2.52	0.006	13.12	0.
2.53	0.003	13.13	0.
2.55	-0.006	13.15	-0.003
2.57	0.013	13.17	0.
2.58	-0.003	13.18	0.004
2.6	0.003	13.2	-0.004
2.62	0.	13.22	0.003
2.63	0.003	13.23	-0.003
2.65	0.003	13.25	0.003
2.67	0.	13.27	0.
2.68	0.003	13.28	-0.003
2.7	0.	13.3	0.
2.72	0.003	13.32	0.004
2.73	0.003	13.33	-0.001
2.75	0.	13.35	-0.003
2.77	0.004	13.37	0.
2.78	0.	13.38	0.004
2.8	0.003	13.4	0.
2.82	0.	13.42	0.
2.83	0.006	13.43	0.
2.85	0.001	13.45	0.002
2.87	0.	13.47	-0.002
2.88	0.	13.48	0.
2.9	0.003	13.5	0.
2.92	0.	13.52	0.002
2.93	0.	13.53	-0.002
2.95	0.003	13.55	0.

Time (min)	Displacement (m)	Time (min)	Displacement (m)
2.97	0.	13.57	0.
2.98	0.006	13.58	0.
3.	-0.003	13.6	0.004
3.02	0.003	13.62	-0.004
3.03	0.003	13.63	0.
3.05	0.	13.65	0.
3.07	0.	13.67	0.004
3.08	0.003	13.68	-0.004
3.1	0.	13.7	0.
3.12	0.003	13.72	-0.003
3.13	0.004	13.73	0.003
3.15	-0.003	13.75	-0.003
3.17	0.004	13.77	0.
3.18	0.006	13.78	0.003
3.2	0.	13.8	0.
3.22	-0.003	13.82	0.
3.23	0.	13.83	-0.003
3.25	0.006	13.85	0.003
3.27	0.	13.87	0.
3.28	0.	13.88	0.
3.3	0.	13.9	0.
3.32	0.003	13.92	-0.003
3.33	0.	13.93	0.003
3.35	0.006	13.95	-0.003
3.37	-0.003	13.97	0.
3.38	0.003	13.98	0.007
3.4	0.	14.	-0.003
3.42	0.	14.02	0.003
3.43	0.	14.03	0.
3.45	0.006	14.05	0.
3.47	-0.003	14.07	0.
3.48	0.004	14.08	-0.003
3.5	0.	14.1	-0.001
3.52	0.	14.12	0.006
3.53	0.003	14.13	-0.002
3.55	0.	14.15	0.
3.57	0.004	14.17	0.
3.58	0.003	14.18	0.
3.6	-0.003	14.2	0.002
3.62	0.003	14.22	-0.002
3.63	0.003	14.23	-0.003
3.65	0.	14.25	0.003
3.67	0.	14.27	0.
3.68	0.	14.28	0.
3.7	0.006	14.3	-0.003
3.72	0.	14.32	0.002
3.73	0.003	14.33	0.
3.75	-0.003	14.35	0.
3.77	0.	14.37	0.
3.78	0.003	14.38	0.001
3.8	0.003	14.4	0.002
3.82	0.	14.42	-0.003
3.83	0.004	14.43	0.003

Time (min)	Displacement (m)	Time (min)	Displacement (m)
3.85	-0.003	14.45	-0.003
3.87	0.006	14.47	0.
3.88	0.	14.48	0.
3.9	-0.002	14.5	0.003
3.92	0.006	14.52	0.003
3.93	0.	14.53	-0.003
3.95	0.	14.55	0.003
3.97	0.	14.57	0.
3.98	0.	14.58	0.
4.	0.003	14.6	-0.003
4.02	0.003	14.62	0.
4.03	0.	14.63	0.
4.05	0.003	14.65	0.
4.07	0.	14.67	-0.003
4.08	0.	14.68	0.003
4.1	0.003	14.7	-0.003
4.12	0.	14.72	0.003
4.13	0.003	14.73	0.
4.15	0.	14.75	0.
4.17	0.	14.77	0.003
4.18	0.	14.78	0.
4.2	0.003	14.8	-0.003
4.22	0.	14.82	0.
4.23	0.	14.83	0.
4.25	0.004	14.85	0.003
4.27	0.	14.87	-0.003
4.28	0.006	14.88	0.
4.3	0.	14.9	0.
4.32	-0.003	14.92	0.
4.33	0.003	14.93	0.
4.35	0.003	14.95	0.
4.37	0.	14.97	0.
4.38	0.003	14.98	0.
4.4	-0.005	15.	0.
4.42	0.005	15.02	0.
4.43	-0.002	15.03	0.
4.45	0.	15.05	0.
4.47	0.003	15.07	0.
4.48	0.	15.08	0.
4.5	0.003	15.1	0.
4.52	0.003	15.12	0.
4.53	-0.003	15.13	0.003
4.55	0.	15.15	0.
4.57	0.	15.17	-0.003
4.58	0.003	15.18	0.003
4.6	0.003	15.2	0.
4.62	-0.003	15.22	0.
4.63	0.004	15.23	-0.003
4.65	0.	15.25	0.001
4.67	0.003	15.27	-0.001
4.68	0.	15.28	0.004
4.7	0.003	15.3	-0.003
4.72	-0.003	15.32	0.006

Time (min)	Displacement (m)	Time (min)	Displacement (m)
4.73	0.006	15.33	-0.006
4.75	0.	15.35	0.003
4.77	-0.003	15.37	0.
4.78	0.009	15.38	0.
4.8	-0.003	15.4	-0.003
4.82	0.	15.42	0.006
4.83	-0.003	15.43	-0.003
4.85	0.003	15.45	0.
4.87	-0.003	15.47	-0.003
4.88	0.003	15.48	0.003
4.9	0.004	15.5	0.
4.92	0.	15.52	0.
4.93	0.	15.53	0.
4.95	0.	15.55	-0.003
4.97	0.	15.57	0.003
4.98	0.006	15.58	-0.003
5.	-0.003	15.6	0.
5.02	0.003	15.62	0.
5.03	-0.003	15.63	0.
5.05	0.003	15.65	0.003
5.07	0.	15.67	-0.003
5.08	0.003	15.68	0.
5.1	0.	15.7	0.
5.12	0.001	15.72	0.
5.13	0.	15.73	0.003
5.15	0.	15.75	0.
5.17	0.003	15.77	0.003
5.18	-0.003	15.78	-0.006
5.2	0.	15.8	0.003
5.22	0.006	15.82	0.
5.23	-0.003	15.83	-0.003
5.25	0.003	15.85	0.003
5.27	0.003	15.87	0.
5.28	-0.003	15.88	0.
5.3	-0.003	15.9	0.
5.32	0.003	15.92	0.
5.33	0.003	15.93	0.
5.35	0.	15.95	0.003
5.37	0.	15.97	0.
5.38	0.	15.98	0.
5.4	0.003	16.	-0.006
5.42	0.003	16.02	0.006
5.43	0.	16.03	-0.003
5.45	0.	16.05	0.
5.47	0.	16.07	0.
5.48	0.	16.08	0.003
5.5	0.	16.1	-0.006
5.52	0.	16.12	0.003
5.53	0.003	16.13	0.
5.55	0.	16.15	0.
5.57	0.003	16.17	-0.003
5.58	-0.003	16.18	0.006
5.6	0.004	16.2	-0.006

Time (min)	Displacement (m)	Time (min)	Displacement (m)
5.62	0.	16.22	0.006
5.63	0.003	16.23	-0.003
5.65	0.003	16.25	0.
5.67	0.	16.27	0.003
5.68	0.	16.28	0.
5.7	0.	16.3	-0.003
5.72	0.	16.32	0.
5.73	0.004	16.33	0.
5.75	-0.004	16.35	0.
5.77	0.004	16.37	0.003
5.78	0.	16.38	0.
5.8	0.003	16.4	0.
5.82	0.	16.42	0.
5.83	-0.003	16.43	0.003
5.85	0.003	16.45	-0.003
5.87	-0.003	16.47	0.003
5.88	0.003	16.48	-0.003
5.9	0.	16.5	0.
5.92	0.	16.52	0.
5.93	0.	16.53	0.
5.95	0.	16.55	0.
5.97	0.003	16.57	0.003
5.98	0.	16.58	-0.003
6.	0.	16.6	0.
6.02	0.003	16.62	0.
6.03	0.	16.63	0.
6.05	0.003	16.65	0.
6.07	-0.003	16.67	-0.003
6.08	0.003	16.68	0.
6.1	-0.003	16.7	0.003
6.12	0.003	16.72	-0.003
6.13	-0.003	16.73	0.
6.15	0.004	16.75	0.003
6.17	0.	16.77	0.
6.18	-0.003	16.78	-0.003
6.2	0.003	16.8	0.003
6.22	-0.003	16.82	0.
6.23	0.006	16.83	0.
6.25	0.	16.85	-0.003
6.27	0.	16.87	0.003
6.28	0.	16.88	-0.003
6.3	0.003	16.9	0.003
6.32	0.003	16.92	-0.003
6.33	-0.003	16.93	0.
6.35	0.	16.95	0.006
6.37	-0.003	16.97	-0.006
6.38	0.	16.98	0.
6.4	0.003	17.	0.
6.42	0.	17.02	0.004
6.43	0.	17.03	0.
6.45	0.004	17.05	0.
6.47	0.	17.07	-0.006
6.48	0.	17.08	0.002

Time (min)	Displacement (m)	Time (min)	Displacement (m)
6.5	0.	17.1	-0.002
6.52	0.	17.12	0.006
6.53	0.003	17.13	0.002
6.55	0.	17.15	-0.002
6.57	-0.003	17.17	0.
6.58	0.003	17.18	0.
6.6	0.003	17.2	0.002
6.62	-0.003	17.22	-0.002
6.63	0.	17.23	0.
6.65	0.003	17.25	0.003
6.67	0.	17.27	-0.003
6.68	0.	17.28	0.
6.7	0.003	17.3	-0.003
6.72	0.001	17.32	0.003
6.73	0.	17.33	0.
6.75	0.003	17.35	0.002
6.77	-0.006	17.37	-0.006
6.78	0.006	17.38	0.009
6.8	-0.003	17.4	-0.003
6.82	0.006	17.42	0.001
6.83	-0.006	17.43	-0.003
6.85	0.003	17.45	0.
6.87	0.	17.47	0.
6.88	-0.003	17.48	0.
6.9	0.006	17.5	0.
6.92	0.	17.52	0.004
6.93	0.	17.53	-0.004
6.95	0.003	17.55	0.004
6.97	-0.003	17.57	-0.004
6.98	0.	17.58	0.
7.	0.	17.6	0.
7.02	0.003	17.62	0.
7.03	-0.003	17.63	0.
7.05	0.003	17.65	0.003
7.07	-0.003	17.67	0.
7.08	0.	17.68	-0.003
7.1	0.006	17.7	-0.003
7.12	-0.006	17.72	0.003
7.13	0.003	17.73	0.
7.15	0.003	17.75	0.
7.17	-0.003	17.77	0.
7.18	0.	17.78	0.004
7.2	0.003	17.8	0.
7.22	0.003	17.82	-0.004
7.23	-0.003	17.83	0.004
7.25	0.003	17.85	-0.004
7.27	-0.006	17.87	0.003
7.28	0.009	17.88	0.001
7.3	0.	17.9	-0.001
7.32	-0.003	17.92	0.001
7.33	0.	17.93	-0.001
7.35	0.004	17.95	-0.003
7.37	0.003	17.97	0.004

Time (min)	Displacement (m)	Time (min)	Displacement (m)
7.38	-0.003	17.98	0.
7.4	0.	18.	0.
7.42	0.	18.02	0.
7.43	0.	18.03	0.
7.45	0.	18.05	-0.003
7.47	0.003	18.07	-0.001
7.48	-0.003	18.08	0.006
7.5	0.	18.1	-0.006
7.52	0.003	18.12	0.006
7.53	-0.003	18.13	0.
7.55	0.003	18.15	-0.002
7.57	0.	18.17	0.002
7.58	0.	18.18	0.
7.6	0.	18.2	0.
7.62	0.	18.22	-0.003
7.63	0.	18.23	0.001
7.65	0.003	18.25	0.
7.67	0.	18.27	0.
7.68	0.	18.28	0.
7.7	0.	18.3	0.
7.72	0.	18.32	0.002
7.73	0.004	18.33	-0.006
7.75	-0.004	18.35	0.004
7.77	0.004	18.37	0.002
7.78	-0.004	18.38	-0.003
7.8	0.004	18.4	0.001
7.82	-0.003	18.42	0.
7.83	0.	18.43	0.
7.85	0.	18.45	0.
7.87	0.003	18.47	0.003
7.88	-0.003	18.48	-0.003
7.9	0.003	18.5	0.
7.92	0.	18.52	0.002
7.93	0.	18.53	-0.002
7.95	0.003	18.55	0.
7.97	0.	18.57	0.
7.98	0.	18.58	0.
8.	0.	18.6	0.
8.02	0.	18.62	0.
8.03	0.	18.63	0.
8.05	0.003	18.65	0.002
8.07	-0.003	18.67	-0.002
8.08	0.003	18.68	-0.003
8.1	-0.002	18.7	0.003
8.12	0.002	18.72	0.003
8.13	0.001	18.73	-0.003
8.15	0.003	18.75	0.
8.17	-0.003	18.77	0.003
8.18	0.	18.78	0.
8.2	0.	18.8	0.
8.22	0.	18.82	0.
8.23	0.003	18.83	-0.003
8.25	-0.003	18.85	0.003

Time (min)	Displacement (m)	Time (min)	Displacement (m)
8.27	0.003	18.87	0.
8.28	0.	18.88	-0.003
8.3	0.	18.9	0.003
8.32	0.	18.92	0.
8.33	0.	18.93	0.
8.35	0.	18.95	0.
8.37	0.	18.97	0.
8.38	0.	18.98	0.
8.4	0.	19.	0.003
8.42	0.003	19.02	0.
8.43	0.	19.03	0.
8.45	-0.003	19.05	-0.003
8.47	0.003	19.07	0.003
8.48	0.	19.08	-0.006
8.5	0.	19.1	0.006
8.52	0.003	19.12	0.
8.53	-0.003	19.13	-0.003
8.55	0.003	19.15	-0.003
8.57	0.	19.17	0.006
8.58	-0.003	19.18	0.
8.6	-0.003	19.2	0.
8.62	0.006	19.22	0.
8.63	0.	19.23	0.
8.65	-0.003	19.25	0.
8.67	0.003	19.27	0.
8.68	0.	19.28	0.
8.7	0.	19.3	0.
8.72	0.	19.32	-0.003
8.73	0.003	19.33	0.006
8.75	0.003	19.35	-0.003
8.77	0.	19.37	-0.003
8.78	-0.003	19.38	0.003
8.8	0.003	19.4	-0.003
8.82	0.	19.42	0.
8.83	-0.003	19.43	0.003
8.85	0.	19.45	0.003
8.87	0.	19.47	-0.003
8.88	0.006	19.48	0.003
8.9	0.	19.5	0.
8.92	0.001	19.52	-0.003
8.93	-0.003	19.53	0.
8.95	0.	19.55	0.003
8.97	0.	19.57	-0.003
8.98	0.	19.58	0.
9.	-0.003	19.6	0.
9.02	0.003	19.62	0.
9.03	0.	19.63	0.
9.05	0.004	19.65	0.
9.07	-0.004	19.67	-0.006
9.08	0.	19.68	0.003
9.1	0.004	19.7	0.003
9.12	-0.004	19.72	0.003
9.13	0.006	19.73	-0.003

Time (min)	Displacement (m)	Time (min)	Displacement (m)
9.15	-0.002	19.75	0.
9.17	0.	19.77	0.
9.18	0.002	19.78	0.
9.2	-0.006	19.8	0.
9.22	0.004	19.82	-0.006
9.23	0.	19.83	0.006
9.25	-0.004	19.85	-0.003
9.27	0.004	19.87	0.003
9.28	0.	19.88	0.
9.3	0.	19.9	0.003
9.32	0.	19.92	-0.003
9.33	0.003	19.93	0.001
9.35	0.002	19.95	0.002
9.37	-0.002	19.97	-0.006
9.38	0.	19.98	0.009
9.4	-0.001	20.	-0.006
9.42	-0.002	20.02	0.003
9.43	0.005	20.03	0.
9.45	-0.002	20.05	0.001
9.47	0.	20.07	0.
9.48	0.	20.08	0.
9.5	0.003	20.1	-0.003
9.52	-0.003	20.12	0.
9.53	0.	20.13	0.003
9.55	0.003	20.15	0.
9.57	0.	20.17	0.
9.58	0.	20.18	-0.003
9.6	0.	20.2	0.
9.62	-0.003	20.22	0.
9.63	0.	20.23	0.003
9.65	0.003	20.25	0.
9.67	-0.003	20.27	-0.003
9.68	0.	20.28	0.
9.7	0.003	20.3	0.003
9.72	-0.003	20.32	-0.003
9.73	0.	20.33	0.003
9.75	0.006	20.35	-0.006
9.77	-0.003	20.37	0.006
9.78	0.001	20.38	-0.006
9.8	0.003	20.4	0.
9.82	-0.001	20.42	0.003
9.83	0.	20.43	0.
9.85	-0.002	20.45	0.003
9.87	0.003	20.47	0.
9.88	0.	20.48	-0.003
9.9	0.	20.5	0.
9.92	0.	20.52	0.
9.93	0.	20.53	0.003
9.95	0.	20.55	0.
9.97	0.	20.57	-0.003
9.98	0.	20.58	0.015
10.	-0.003	20.6	-0.012
10.02	0.003	20.62	0.003

Time (min)	Displacement (m)	Time (min)	Displacement (m)
10.03	0.	20.63	-0.006
10.05	0.003	20.65	0.
10.07	-0.003	20.67	0.
10.08	0.	20.68	0.003
10.1	0.003	20.7	0.
10.12	-0.003	20.72	0.
10.13	0.	20.73	0.
10.15	0.003	20.75	-0.003
10.17	0.	20.77	0.
10.18	-0.003	20.78	0.
10.2	0.003	20.8	0.
10.22	0.	20.82	0.003
10.23	0.	20.83	-0.003
10.25	0.003	20.85	0.
10.27	-0.003	20.87	0.
10.28	0.003	20.88	0.
10.3	-0.003	20.9	0.006
10.32	0.	20.92	-0.003
10.33	0.	20.93	0.003
10.35	-0.003	20.95	-0.003
10.37	0.003	20.97	0.003
10.38	0.003	20.98	-0.003
10.4	0.	21.	0.
10.42	0.	21.02	0.003
10.43	0.003	21.03	-0.003
10.45	0.	21.05	0.
10.47	0.	21.07	-0.003
10.48	0.	21.08	0.003
10.5	-0.003	21.1	-0.003
10.52	0.	21.12	0.003
10.53	0.	21.13	0.003
10.55	0.	21.15	-0.003
10.57	0.	21.17	0.
10.58	0.	21.18	0.003
10.6	0.	21.2	0.

SOLUTION

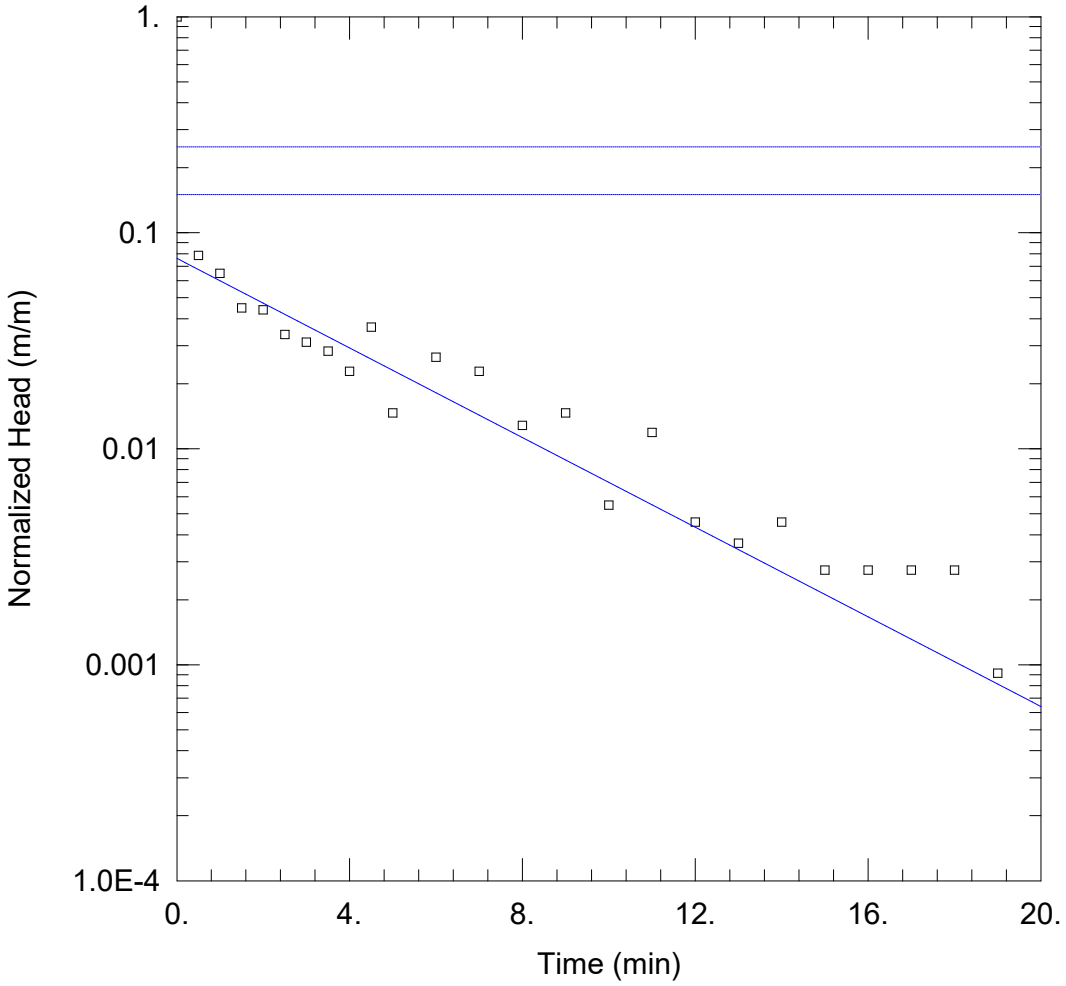
Slug Test
Aquifer Model: Confined
Solution Method: Hvorslev
Log Factor: 0.1887

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	0.01467	m/day
y0	0.0007258	m

K = 1.698E-5 cm/sec
T = K*b = 0.1432 m²/day (0.01658 sq. cm/sec)



WELL TEST ANALYSIS

Data Set: C:\...\S-0359.00_MW2_20260409_F-MANU.aqt
Date: 04/23/26 Time: 12:19:40

PROJECT INFORMATION

Company: D&N
Project: S-0359.00
Location: Balfour St
Test Well: MW2
Test Date: 09/04/2026

AQUIFER DATA

Saturated Thickness: 9.766 m Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW2)

Initial Displacement: 1.093 m
Total Well Penetration Depth: 12.52 m
Casing Radius: 0.025 m
Static Water Column Height: 9.766 m
Screen Length: 9.825 m
Well Radius: 0.025 m

SOLUTION

Aquifer Model: Confined
Solution Method: Hvorslev
K = 0.05832 m/day
y0 = 0.08325 m

Data Set: C:\Users\Nick Davison\D&N Geotechnical Dropbox\7. SYD Projects\0300 Series\S-0359.00 19-25 Balfo
Date: 04/23/26
Time: 12:19:48

PROJECT INFORMATION

Company: D&N
Project: S-0359.00
Location: Balfour St
Test Date: 09/04/2026
Test Well: MW2

AQUIFER DATA

Saturated Thickness: 9.766 m
Anisotropy Ratio (Kz/Kr): 1.

SLUG TEST WELL DATA

Test Well: MW2

X Location: 0. m
Y Location: 0. m

Initial Displacement: 1.093 m
Static Water Column Height: 9.766 m
Casing Radius: 0.025 m
Well Radius: 0.025 m
Well Skin Radius: 0.5 m
Screen Length: 9.825 m
Total Well Penetration Depth: 12.52 m

No. of Observations: 24

Observation Data

Time (min)	Displacement (m)	Time (min)	Displacement (m)
0.5	0.086	8.	0.014
1.	0.071	9.	0.016
1.5	0.049	10.	0.006
2.	0.048	11.	0.013
2.5	0.037	12.	0.005
3.	0.034	13.	0.004
3.5	0.031	14.	0.005
4.	0.025	15.	0.003
4.5	0.04	16.	0.003
5.	0.016	17.	0.003
6.	0.029	18.	0.003
7.	0.025	19.	0.001

SOLUTION

Slug Test
Aquifer Model: Confined
Solution Method: Hvorslev

Log Factor: 0.1887

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	0.05457	m/day
y0	0.08325	m

K = 6.316E-5 cm/sec
T = K*b = 0.5329 m²/day (0.06168 sq. cm/sec)

AUTOMATIC ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	Std. Error	Approx. C.I.	t-Ratio	
K	0.05832	0.006005	+/- 0.01245	9.712	m/day
y0	0.08325	0.005544	+/- 0.0115	15.02	m

C.I. is approximate 95% confidence interval for parameter
t-ratio = estimate/std. error
No estimation window

K = 6.75E-5 cm/sec
T = K*b = 0.5696 m²/day (0.06592 sq. cm/sec)

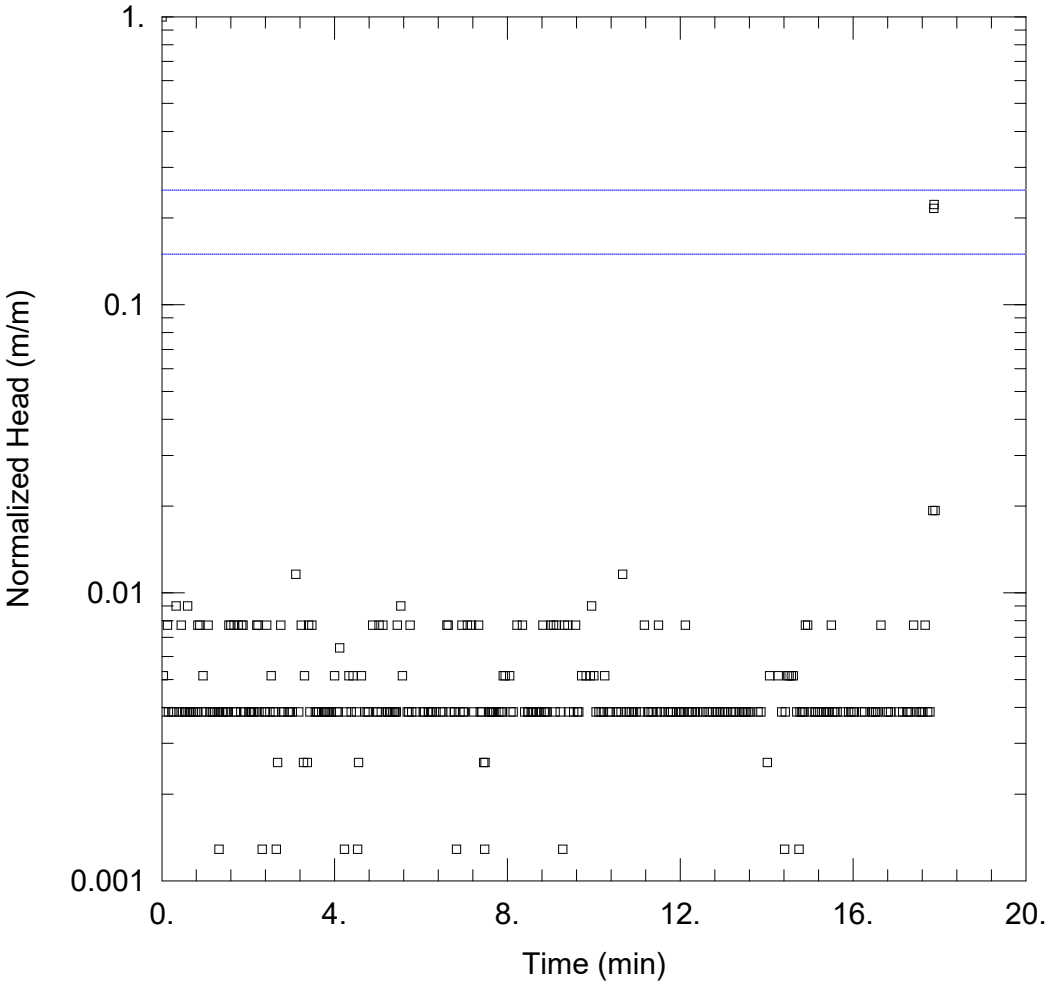
Parameter Correlations

	K	y0
K	1.00	0.77
y0	0.77	1.00

Residual Statistics

for weighted residuals

Sum of Squares . . 0.0009678 m^2
Variance . . . . . 4.399E-5 m^2
Std. Deviation. . . . . 0.006632 m
Mean. . . . . 0.0008083 m
No. of Residuals . . 24
No. of Estimates . . 2



WELL TEST ANALYSIS

Data Set: C:\...\S-0359.00_MW2_20260409_R-MANU.aqt
Date: 04/16/26 Time: 16:12:29

PROJECT INFORMATION

Company: D&N
Project: S-0359.00
Location: Balfour St
Test Well: MW2
Test Date: 09/04/2026

AQUIFER DATA

Saturated Thickness: 9.873 m Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW2)

Initial Displacement: 0.777 m
Total Well Penetration Depth: 11.59 m
Casing Radius: 0.025 m
Static Water Column Height: 9.873 m
Screen Length: 6.004 m
Well Radius: 0.025 m

SOLUTION

Aquifer Model: Confined
Solution Method: Hvorslev
K = 0.0008266 m/day
y0 = 0.0007258 m

Data Set: C:\Users\Nick Davison\D&N Geotechnical Dropbox\7. SYD Projects\0300 Series\S-0359.00 19-25 Balfo
Date: 04/16/26
Time: 16:12:53

PROJECT INFORMATION

Company: D&N
Project: S-0359.00
Location: Balfour St
Test Date: 09/04/2026
Test Well: MW2

AQUIFER DATA

Saturated Thickness: 9.873 m
Anisotropy Ratio (Kz/Kr): 1.

SLUG TEST WELL DATA

Test Well: MW2

X Location: 0. m
Y Location: 0. m

Initial Displacement: 0.777 m
Static Water Column Height: 9.873 m
Casing Radius: 0.025 m
Well Radius: 0.025 m
Well Skin Radius: 0.5 m
Screen Length: 6.004 m
Total Well Penetration Depth: 11.59 m

No. of Observations: 1075

Observation Data

Time (min)	Displacement (m)	Time (min)	Displacement (m)
0.02	0.	8.98	-0.003
0.03	0.004	9.	0.006
0.05	0.003	9.02	0.
0.07	0.	9.03	0.
0.08	0.	9.05	-0.003
0.1	0.	9.07	0.006
0.12	0.	9.08	-0.003
0.13	0.006	9.1	0.003
0.15	0.003	9.12	-0.006
0.17	0.	9.13	0.006
0.18	0.	9.15	0.
0.2	0.	9.17	-0.003
0.22	0.	9.18	0.
0.23	0.003	9.2	0.
0.25	0.	9.22	0.003
0.27	0.	9.23	0.
0.28	0.003	9.25	0.
0.3	0.	9.27	0.

Time (min)	Displacement (m)	Time (min)	Displacement (m)
0.32	0.	9.28	0.001
0.33	0.007	9.3	-0.004
0.35	0.	9.32	0.006
0.37	0.	9.33	0.
0.38	0.	9.35	0.
0.4	0.003	9.37	0.
0.42	-0.001	9.38	-0.003
0.43	0.	9.4	0.006
0.45	0.006	9.42	-0.003
0.47	-0.003	9.43	0.003
0.48	0.003	9.45	-0.003
0.5	0.	9.47	0.
0.52	0.	9.48	0.
0.53	0.003	9.5	0.
0.55	0.003	9.52	0.
0.57	0.	9.53	0.003
0.58	0.	9.55	-0.003
0.6	0.007	9.57	0.
0.62	-0.003	9.58	0.006
0.63	0.003	9.6	-0.006
0.65	0.003	9.62	0.003
0.67	-0.003	9.63	-0.003
0.68	0.003	9.65	0.003
0.7	0.	9.67	0.
0.72	0.003	9.68	0.
0.73	0.003	9.7	0.
0.75	0.	9.72	0.004
0.77	0.	9.73	-0.004
0.78	0.003	9.75	0.
0.8	-0.003	9.77	0.
0.82	0.003	9.78	0.
0.83	0.006	9.8	0.
0.85	0.	9.82	0.004
0.87	-0.003	9.83	-0.004
0.88	0.006	9.85	0.
0.9	0.	9.87	0.
0.92	0.003	9.88	0.
0.93	-0.003	9.9	0.
0.95	0.004	9.92	0.004
0.97	0.	9.93	-0.004
0.98	0.	9.95	0.007
1.	0.	9.97	-0.003
1.02	0.	9.98	-0.004
1.03	0.003	10.	0.004
1.05	0.	10.02	0.
1.07	0.006	10.03	-0.003
1.08	-0.003	10.05	0.003
1.1	0.	10.07	0.
1.12	0.003	10.08	0.
1.13	0.	10.1	0.
1.15	0.	10.12	0.003
1.17	0.003	10.13	-0.003
1.18	0.003	10.15	-0.003

Time (min)	Displacement (m)	Time (min)	Displacement (m)
1.2	-0.003	10.17	0.003
1.22	0.	10.18	0.
1.23	0.003	10.2	-0.003
1.25	0.	10.22	0.003
1.27	0.	10.23	-0.004
1.28	0.003	10.25	0.004
1.3	-0.001	10.27	0.
1.32	0.001	10.28	0.
1.33	0.003	10.3	0.
1.35	0.	10.32	0.
1.37	0.	10.33	0.
1.38	0.	10.35	0.003
1.4	0.003	10.37	0.
1.42	0.	10.38	0.003
1.43	0.003	10.4	-0.003
1.45	0.	10.42	0.
1.47	0.003	10.43	0.
1.48	0.	10.45	0.
1.5	0.003	10.47	0.
1.52	-0.003	10.48	0.
1.53	0.003	10.5	-0.003
1.55	0.006	10.52	0.003
1.57	0.	10.53	0.
1.58	-0.003	10.55	-0.003
1.6	0.006	10.57	0.003
1.62	0.	10.58	0.
1.63	0.	10.6	0.
1.65	-0.003	10.62	0.
1.67	0.006	10.63	0.003
1.68	0.	10.65	-0.009
1.7	0.003	10.67	0.009
1.72	-0.003	10.68	-0.003
1.73	0.003	10.7	0.
1.75	-0.002	10.72	0.
1.77	0.006	10.73	0.
1.78	-0.004	10.75	0.003
1.8	-0.002	10.77	-0.003
1.82	0.	10.78	0.
1.83	0.003	10.8	0.
1.85	0.006	10.82	0.003
1.87	-0.003	10.83	0.
1.88	0.006	10.85	-0.003
1.9	-0.003	10.87	0.003
1.92	0.003	10.88	-0.003
1.93	-0.003	10.9	0.
1.95	0.	10.92	0.003
1.97	0.	10.93	0.
1.98	0.	10.95	-0.003
2.	0.	10.97	0.
2.02	0.003	10.98	0.003
2.03	0.	11.	0.
2.05	0.003	11.02	0.
2.07	0.003	11.03	0.

Time (min)	Displacement (m)	Time (min)	Displacement (m)
2.08	0.003	11.05	0.
2.1	-0.003	11.07	-0.003
2.12	0.003	11.08	0.003
2.13	-0.003	11.1	0.
2.15	0.003	11.12	0.
2.17	0.	11.13	0.
2.18	-0.003	11.15	-0.006
2.2	0.006	11.17	0.006
2.22	-0.003	11.18	0.
2.23	0.006	11.2	0.
2.25	0.003	11.22	0.
2.27	0.	11.23	-0.003
2.28	0.	11.25	0.003
2.3	0.	11.27	0.003
2.32	0.001	11.28	-0.003
2.33	0.	11.3	0.
2.35	0.	11.32	0.
2.37	0.	11.33	0.003
2.38	0.003	11.35	-0.003
2.4	0.003	11.37	0.003
2.42	-0.003	11.38	0.
2.43	0.006	11.4	0.
2.45	0.	11.42	0.
2.47	0.	11.43	-0.003
2.48	0.	11.45	0.
2.5	0.003	11.47	0.003
2.52	-0.004	11.48	-0.006
2.53	0.004	11.5	0.006
2.55	-0.004	11.52	0.
2.57	0.	11.53	-0.003
2.58	0.003	11.55	0.003
2.6	0.	11.57	0.
2.62	0.	11.58	0.
2.63	0.003	11.6	0.
2.65	0.001	11.62	0.
2.67	0.	11.63	0.003
2.68	0.002	11.65	-0.003
2.7	-0.002	11.67	0.
2.72	0.	11.68	0.
2.73	0.	11.7	0.
2.75	0.006	11.72	0.003
2.77	-0.003	11.73	0.
2.78	0.003	11.75	-0.006
2.8	0.	11.77	0.003
2.82	0.	11.78	0.003
2.83	0.003	11.8	-0.003
2.85	0.	11.82	0.003
2.87	0.	11.83	-0.003
2.88	0.	11.85	0.
2.9	0.	11.87	0.
2.92	0.003	11.88	0.
2.93	-0.003	11.9	0.
2.95	0.003	11.92	0.003

Time (min)	Displacement (m)	Time (min)	Displacement (m)
2.97	0.	11.93	0.
2.98	-0.003	11.95	-0.003
3.	0.	11.97	0.003
3.02	0.003	11.98	-0.003
3.03	0.	12.	0.003
3.05	0.	12.02	-0.003
3.07	0.	12.03	0.003
3.08	-0.003	12.05	-0.003
3.1	0.009	12.07	0.
3.12	-0.003	12.08	0.003
3.13	0.	12.1	-0.003
3.15	0.	12.12	0.006
3.17	0.003	12.13	-0.003
3.18	0.	12.15	-0.003
3.2	0.	12.17	0.
3.22	-0.003	12.18	0.003
3.23	0.006	12.2	-0.003
3.25	0.	12.22	0.
3.27	-0.002	12.23	0.
3.28	0.002	12.25	0.003
3.3	0.004	12.27	0.
3.32	0.	12.28	0.003
3.33	0.	12.3	0.
3.35	0.	12.32	-0.003
3.37	0.002	12.33	-0.003
3.38	-0.002	12.35	0.003
3.4	0.006	12.37	-0.003
3.42	-0.003	12.38	0.
3.43	0.003	12.4	0.003
3.45	-0.003	12.42	0.
3.47	0.006	12.43	0.
3.48	0.	12.45	0.
3.5	0.	12.47	0.
3.52	0.	12.48	0.
3.53	-0.003	12.5	0.
3.55	0.003	12.52	0.003
3.57	0.	12.53	0.
3.58	0.003	12.55	0.
3.6	0.	12.57	-0.003
3.62	0.	12.58	0.
3.63	0.003	12.6	0.
3.65	0.	12.62	0.003
3.67	0.	12.63	0.
3.68	-0.003	12.65	-0.003
3.7	0.003	12.67	0.003
3.72	0.	12.68	0.
3.73	-0.003	12.7	0.
3.75	0.	12.72	0.
3.77	0.003	12.73	-0.003
3.78	0.003	12.75	0.003
3.8	0.003	12.77	0.
3.82	-0.003	12.78	0.
3.83	0.003	12.8	0.

Time (min)	Displacement (m)	Time (min)	Displacement (m)
3.85	-0.003	12.82	-0.003
3.87	0.003	12.83	0.003
3.88	0.	12.85	0.
3.9	-0.003	12.87	0.003
3.92	0.003	12.88	0.
3.93	0.	12.9	-0.003
3.95	0.	12.92	0.003
3.97	0.	12.93	0.
3.98	0.	12.95	-0.003
4.	0.004	12.97	-0.003
4.02	0.	12.98	0.003
4.03	-0.001	13.	0.
4.05	0.003	13.02	0.003
4.07	0.	13.03	0.
4.08	0.003	13.05	0.
4.1	-0.005	13.07	-0.003
4.12	0.005	13.08	0.
4.13	0.	13.1	0.003
4.15	0.	13.12	0.
4.17	0.	13.13	0.
4.18	0.	13.15	0.
4.2	0.	13.17	0.003
4.22	0.	13.18	-0.003
4.23	0.001	13.2	-0.003
4.25	0.	13.22	0.003
4.27	0.003	13.23	0.
4.28	0.	13.25	-0.003
4.3	0.	13.27	0.003
4.32	-0.001	13.28	0.
4.33	0.004	13.3	0.
4.35	-0.001	13.32	-0.003
4.37	-0.003	13.33	0.
4.38	0.003	13.35	0.
4.4	0.	13.37	0.003
4.42	0.	13.38	0.
4.43	0.004	13.4	0.
4.45	-0.001	13.42	-0.003
4.47	0.	13.43	0.003
4.48	0.	13.45	-0.003
4.5	0.003	13.47	0.003
4.52	-0.003	13.48	-0.003
4.53	0.001	13.5	0.003
4.55	0.002	13.52	-0.003
4.57	0.	13.53	0.003
4.58	0.	13.55	0.
4.6	0.	13.57	0.003
4.62	0.004	13.58	0.
4.63	0.	13.6	0.
4.65	0.	13.62	0.
4.67	0.	13.63	0.003
4.68	-0.003	13.65	0.
4.7	0.003	13.67	0.
4.72	0.	13.68	-0.003

Time (min)	Displacement (m)	Time (min)	Displacement (m)
4.73	-0.003	13.7	0.
4.75	0.003	13.72	0.
4.77	0.	13.73	0.
4.78	0.003	13.75	0.
4.8	0.	13.77	-0.003
4.82	0.	13.78	0.
4.83	0.	13.8	0.003
4.85	0.	13.82	0.
4.87	-0.003	13.83	0.
4.88	0.006	13.85	0.
4.9	0.	13.87	0.003
4.92	0.	13.88	-0.003
4.93	0.	13.9	0.
4.95	-0.003	13.92	0.
4.97	0.	13.93	0.
4.98	0.003	13.95	0.
5.	0.003	13.97	0.
5.02	-0.006	13.98	0.
5.03	0.006	14.	-0.002
5.05	-0.003	14.02	0.002
5.07	0.	14.03	0.
5.08	0.003	14.05	0.
5.1	-0.003	14.07	0.004
5.12	0.006	14.08	-0.004
5.13	0.	14.1	0.
5.15	0.	14.12	0.
5.17	0.	14.13	0.
5.18	0.	14.15	0.
5.2	-0.003	14.17	0.
5.22	0.003	14.18	0.
5.23	0.003	14.2	0.
5.25	-0.003	14.22	0.
5.27	0.003	14.23	0.
5.28	-0.003	14.25	0.
5.3	0.003	14.27	0.004
5.32	0.	14.28	0.
5.33	-0.003	14.3	0.
5.35	0.003	14.32	0.
5.37	-0.003	14.33	0.
5.38	0.003	14.35	0.003
5.4	0.003	14.37	-0.003
5.42	-0.006	14.38	-0.001
5.43	0.003	14.4	0.
5.45	0.006	14.42	0.001
5.47	-0.003	14.43	0.003
5.48	0.	14.45	-0.004
5.5	0.	14.47	-0.003
5.52	-0.003	14.48	0.004
5.53	0.007	14.5	-0.004
5.55	-0.004	14.52	0.004
5.57	0.004	14.53	0.
5.58	0.	14.55	-0.004
5.6	0.	14.57	0.004

Time (min)	Displacement (m)	Time (min)	Displacement (m)
5.62	0.	14.58	0.
5.63	0.	14.6	-0.004
5.65	-0.003	14.62	0.004
5.67	0.	14.63	0.
5.68	0.003	14.65	0.
5.7	0.	14.67	-0.004
5.72	0.003	14.68	0.
5.73	-0.003	14.7	0.003
5.75	0.006	14.72	-0.003
5.77	-0.006	14.73	0.
5.78	0.003	14.75	0.001
5.8	0.	14.77	0.003
5.82	0.	14.78	-0.003
5.83	0.	14.8	-0.003
5.85	0.	14.82	0.003
5.87	0.	14.83	0.003
5.88	0.003	14.85	-0.003
5.9	0.	14.87	0.003
5.92	0.	14.88	-0.006
5.93	0.	14.9	0.006
5.95	0.	14.92	0.
5.97	0.	14.93	-0.003
5.98	0.	14.95	0.006
6.	0.	14.97	-0.003
6.02	0.	14.98	-0.003
6.03	0.	15.	0.
6.05	0.003	15.02	0.
6.07	0.	15.03	0.003
6.08	0.003	15.05	0.
6.1	0.	15.07	-0.003
6.12	-0.003	15.08	0.
6.13	0.	15.1	0.
6.15	0.	15.12	0.003
6.17	0.003	15.13	0.003
6.18	0.003	15.15	-0.006
6.2	-0.006	15.17	0.
6.22	0.003	15.18	0.003
6.23	0.	15.2	-0.003
6.25	0.003	15.22	0.
6.27	-0.003	15.23	0.
6.28	0.	15.25	0.
6.3	0.	15.27	0.003
6.32	0.	15.28	0.
6.33	0.	15.3	0.
6.35	0.003	15.32	0.003
6.37	0.	15.33	0.
6.38	0.	15.35	-0.003
6.4	0.	15.37	0.003
6.42	0.	15.38	0.003
6.43	0.	15.4	-0.009
6.45	0.003	15.42	0.003
6.47	0.	15.43	0.
6.48	0.	15.45	0.003

Time (min)	Displacement (m)	Time (min)	Displacement (m)
6.5	0.003	15.47	0.
6.52	-0.003	15.48	-0.006
6.53	0.	15.5	0.006
6.55	0.	15.52	0.
6.57	0.	15.53	0.003
6.58	-0.003	15.55	-0.006
6.6	0.006	15.57	0.003
6.62	-0.006	15.58	-0.003
6.63	0.006	15.6	0.
6.65	-0.003	15.62	0.
6.67	0.003	15.63	0.003
6.68	-0.003	15.65	0.
6.7	0.	15.67	0.
6.72	0.	15.68	0.
6.73	-0.003	15.7	0.
6.75	0.	15.72	0.
6.77	0.003	15.73	0.
6.78	0.003	15.75	0.
6.8	0.	15.77	0.003
6.82	0.001	15.78	0.
6.83	0.	15.8	-0.003
6.85	0.	15.82	0.
6.87	0.	15.83	0.
6.88	0.	15.85	0.
6.9	0.003	15.87	0.
6.92	-0.003	15.88	0.
6.93	-0.003	15.9	0.003
6.95	0.006	15.92	-0.003
6.97	-0.006	15.93	0.
6.98	0.003	15.95	0.003
7.	0.003	15.97	-0.003
7.02	0.	15.98	0.
7.03	-0.003	16.	0.003
7.05	-0.003	16.02	-0.003
7.07	0.006	16.03	0.003
7.08	0.	16.05	0.
7.1	0.	16.07	0.
7.12	0.	16.08	0.
7.13	0.	16.1	-0.003
7.15	-0.003	16.12	0.
7.17	0.006	16.13	0.
7.18	-0.003	16.15	0.
7.2	0.	16.17	0.
7.22	0.003	16.18	0.
7.23	-0.003	16.2	0.003
7.25	0.	16.22	0.
7.27	0.	16.23	-0.003
7.28	0.	16.25	0.
7.3	0.	16.27	0.003
7.32	0.	16.28	0.
7.33	0.006	16.3	0.
7.35	-0.003	16.32	-0.003
7.37	0.003	16.33	0.

Time (min)	Displacement (m)	Time (min)	Displacement (m)
7.38	0.	16.35	0.
7.4	0.003	16.37	0.
7.42	-0.003	16.38	0.
7.43	-0.003	16.4	0.
7.45	0.002	16.42	0.
7.47	0.001	16.43	0.003
7.48	0.002	16.45	0.
7.5	-0.003	16.47	-0.003
7.52	0.	16.48	0.003
7.53	0.	16.5	-0.003
7.55	0.	16.52	0.003
7.57	-0.003	16.53	0.003
7.58	0.003	16.55	-0.006
7.6	0.003	16.57	0.003
7.62	-0.006	16.58	0.
7.63	0.003	16.6	0.
7.65	0.003	16.62	0.
7.67	0.	16.63	0.
7.68	0.003	16.65	0.006
7.7	-0.003	16.67	-0.006
7.72	0.	16.68	0.
7.73	0.003	16.7	0.
7.75	0.	16.72	0.
7.77	0.	16.73	-0.003
7.78	-0.003	16.75	0.
7.8	0.003	16.77	0.
7.82	-0.003	16.78	0.003
7.83	0.	16.8	-0.003
7.85	0.003	16.82	0.003
7.87	-0.003	16.83	0.
7.88	0.003	16.85	0.
7.9	0.004	16.87	0.003
7.92	-0.001	16.88	-0.003
7.93	-0.003	16.9	0.
7.95	0.004	16.92	0.
7.97	-0.004	16.93	0.
7.98	0.	16.95	0.
8.	0.	16.97	0.
8.02	0.	16.98	0.
8.03	-0.003	17.	0.
8.05	0.004	17.02	0.
8.07	0.	17.03	0.
8.08	0.003	17.05	0.
8.1	0.	17.07	0.003
8.12	-0.003	17.08	-0.003
8.13	0.003	17.1	0.
8.15	0.	17.12	0.
8.17	-0.003	17.13	0.
8.18	0.	17.15	0.003
8.2	0.	17.17	-0.003
8.22	0.006	17.18	0.
8.23	-0.003	17.2	0.
8.25	0.	17.22	0.

Time (min)	Displacement (m)	Time (min)	Displacement (m)
8.27	0.	17.23	-0.003
8.28	0.	17.25	0.003
8.3	0.	17.27	-0.003
8.32	-0.003	17.28	0.003
8.33	0.	17.3	-0.003
8.35	0.006	17.32	0.003
8.37	0.	17.33	0.
8.38	-0.003	17.35	0.
8.4	0.003	17.37	0.
8.42	0.	17.38	-0.003
8.43	0.	17.4	0.006
8.45	-0.003	17.42	-0.003
8.47	0.003	17.43	-0.003
8.48	0.003	17.45	0.
8.5	-0.006	17.47	0.003
8.52	0.	17.48	0.
8.53	0.	17.5	0.
8.55	0.003	17.52	0.
8.57	0.003	17.53	-0.003
8.58	-0.006	17.55	0.003
8.6	0.003	17.57	0.
8.62	0.	17.58	0.003
8.63	0.	17.6	-0.003
8.65	0.003	17.62	0.003
8.67	-0.003	17.63	-0.003
8.68	0.003	17.65	-0.003
8.7	0.	17.67	0.006
8.72	-0.003	17.68	-0.003
8.73	0.003	17.7	0.
8.75	0.	17.72	0.
8.77	-0.003	17.73	0.003
8.78	0.003	17.75	0.
8.8	-0.003	17.77	-0.003
8.82	0.006	17.78	0.003
8.83	-0.003	17.8	0.
8.85	0.003	17.82	0.
8.87	-0.003	17.83	-0.003
8.88	0.003	17.85	0.015
8.9	-0.003	17.87	0.168
8.92	0.003	17.88	0.173
8.93	0.	17.9	0.015
8.95	0.	17.92	-0.003
8.97	-0.003		

SOLUTION

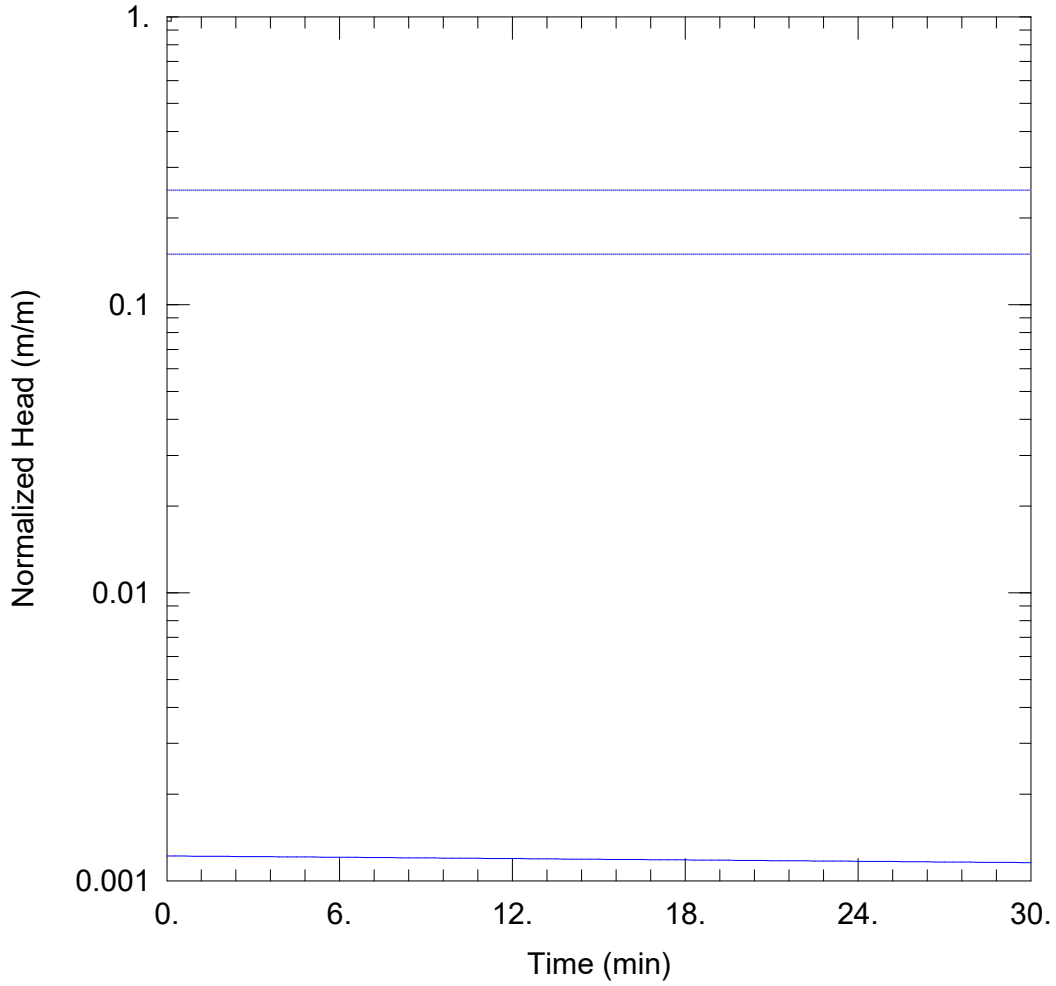
Slug Test
Aquifer Model: Confined
Solution Method: Hvorslev
Log Factor: 0.162

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	0.0008266	m/day
y0	0.0007258	m

K = 9.568E-7 cm/sec
T = K*b = 0.008161 m²/day (0.0009446 sq. cm/sec)



WELL TEST ANALYSIS

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PROJECT INFORMATION

Company: D&N
Project: S-0359.00
Location: Balfour St
Test Well: MW2
Test Date: 09/04/2026

AQUIFER DATA

Saturated Thickness: 9.948 m Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW2)

Initial Displacement: 0.595 m Static Water Column Height: 9.395 m
Total Well Penetration Depth: 11.59 m Screen Length: 6.004 m
Casing Radius: 0.025 m Well Radius: 0.025 m

SOLUTION

Aquifer Model: Confined Solution Method: Hvorslev
K = 0.0008266 m/day y0 = 0.0007258 m

Data Set: C:\Users\Nick Davison\D&N Geotechnical Dropbox\7. SYD Projects\0300 Series\S-0359.00 19-25 Balfo
Date: 04/16/26
Time: 16:21:09

PROJECT INFORMATION

Company: D&N
Project: S-0359.00
Location: Balfour St
Test Date: 09/04/2026
Test Well: MW2

AQUIFER DATA

Saturated Thickness: 9.948 m
Anisotropy Ratio (Kz/Kr): 1.

SLUG TEST WELL DATA

Test Well: MW2

X Location: 0. m
Y Location: 0. m

Initial Displacement: 0.595 m
Static Water Column Height: 9.395 m
Casing Radius: 0.025 m
Well Radius: 0.025 m
Well Skin Radius: 0.5 m
Screen Length: 6.004 m
Total Well Penetration Depth: 11.59 m

No. of Observations: 21

Observation Data

Time (min)	Displacement (m)	Time (min)	Displacement (m)
0.5	-0.071	6.5	-0.029
1.	-0.06	7.5	-0.018
1.5	-0.045	8.5	-0.017
2.	-0.036	9.5	-0.013
2.5	-0.029	10.5	-0.013
3.	-0.026	11.5	-0.009
3.5	-0.033	12.5	-0.007
4.	-0.022	14.5	-0.011
4.5	-0.018	16.5	-0.008
5.	-0.019	21.5	-0.006
5.5	-0.017		

SOLUTION

Slug Test
Aquifer Model: Confined
Solution Method: Hvorslev
Log Factor: 0.162

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	0.0008266	m/day
y0	0.0007258	m

K = 9.568E-7 cm/sec
T = K*b = 0.008223 m²/day (0.0009518 sq. cm/sec)

AUTOMATIC ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	Std. Error	Approx. C.I.	t-Ratio	
K	0.0008266	0.8188	+/- 1.714	0.00101	m/day
y0	0.0007258	0.01151	+/- 0.02409	0.06306	m

C.I. is approximate 95% confidence interval for parameter
t-ratio = estimate/std. error
No estimation window

K = 9.568E-7 cm/sec
T = K*b = 0.008223 m²/day (0.0009518 sq. cm/sec)

Parameter Correlations

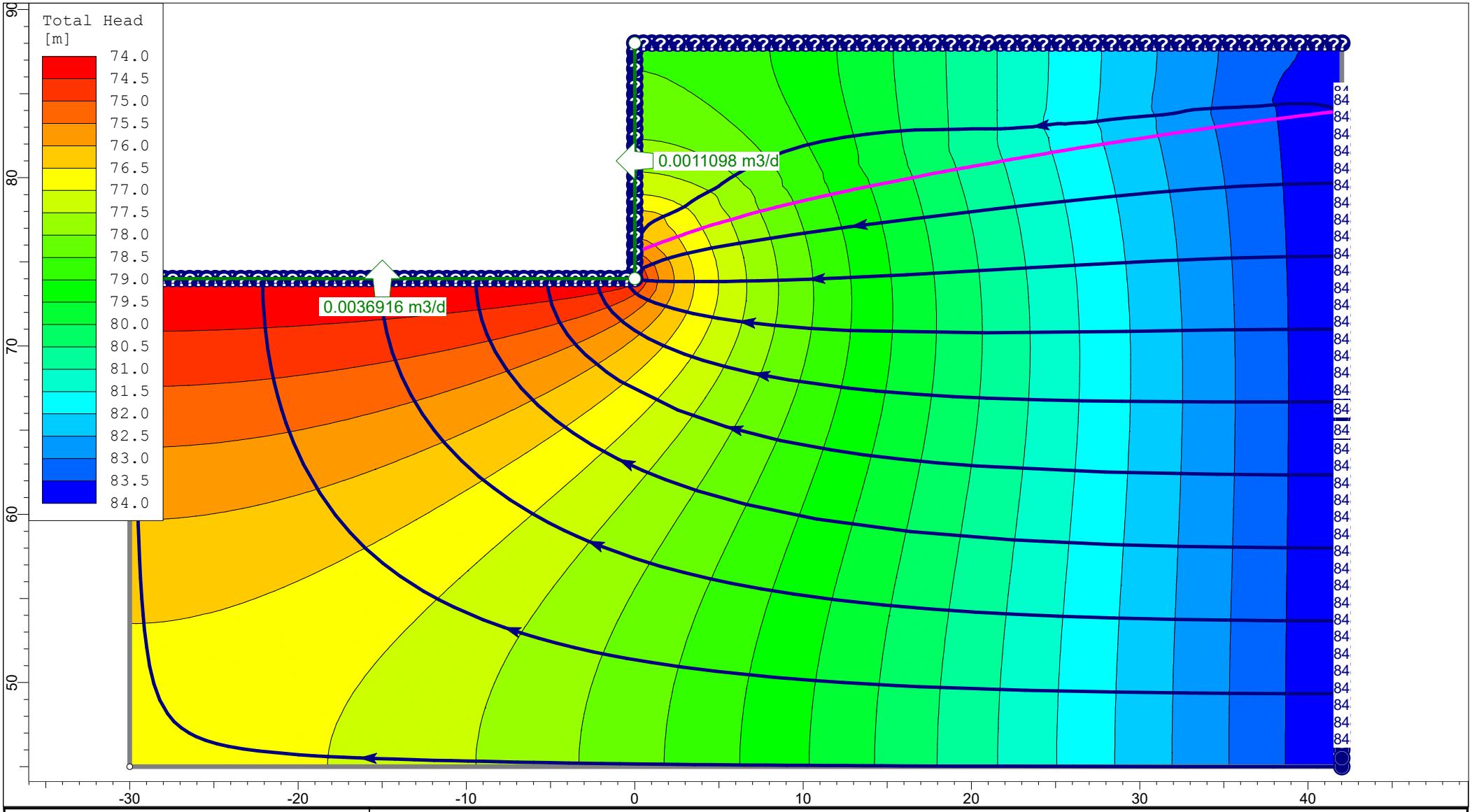
	K	y0
K	1.00	0.80
y0	0.80	1.00

Residual Statistics

for weighted residuals

Sum of Squares .. 0.01891 m^2
Variance ..... 0.0009953 m^2
Std. Deviation..... 0.03155 m
Mean..... -0.02486 m
No. of Residuals .. 21
No. of Estimates .. 2

Appendix E – Seepage Analysis: Graphical Outputs



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	Group	SLS (GWL = 84 m AHD) - LB	Scenario: Master Scenario
	Drawn By	SA	Company: D&N Geotechnical Pty Ltd
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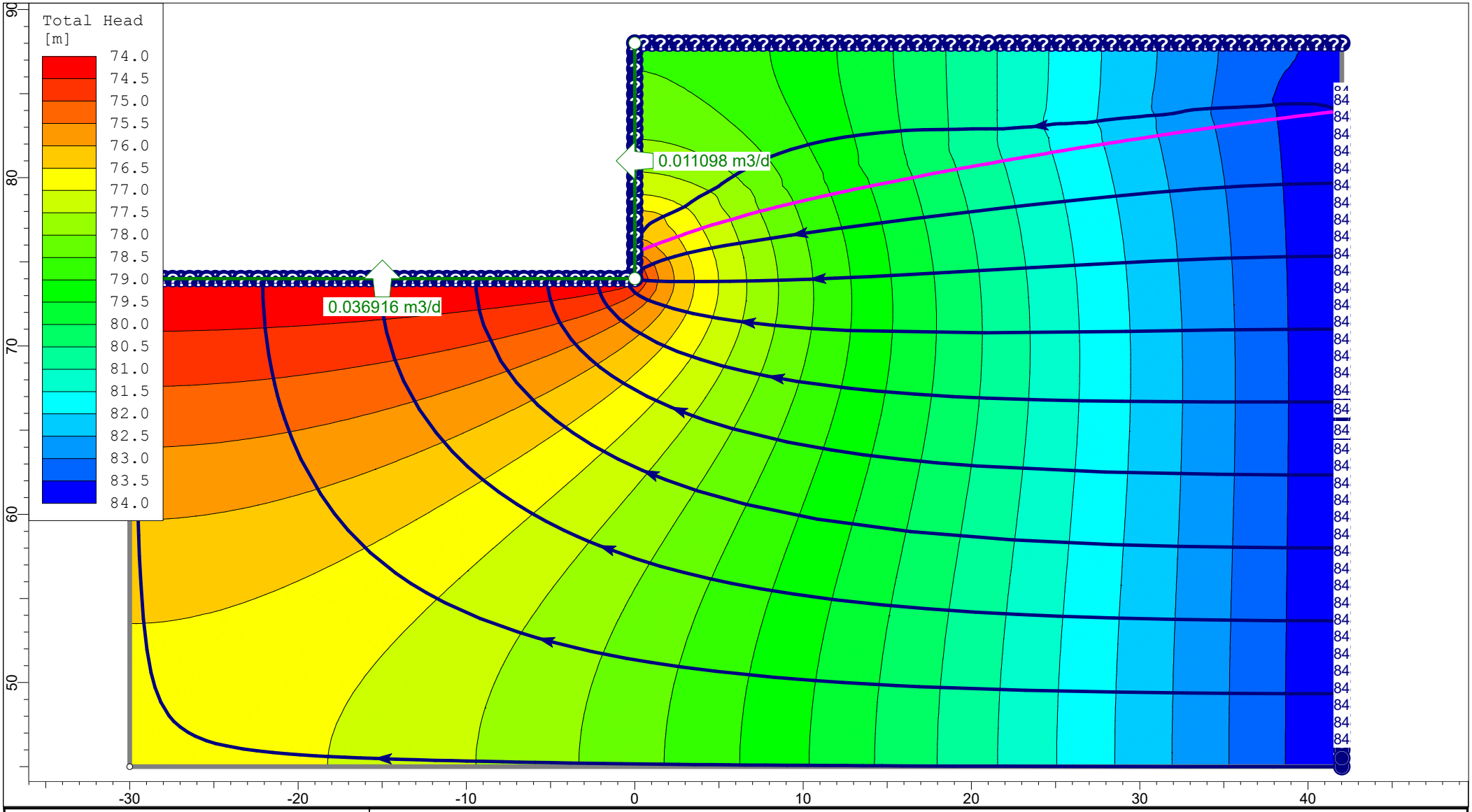
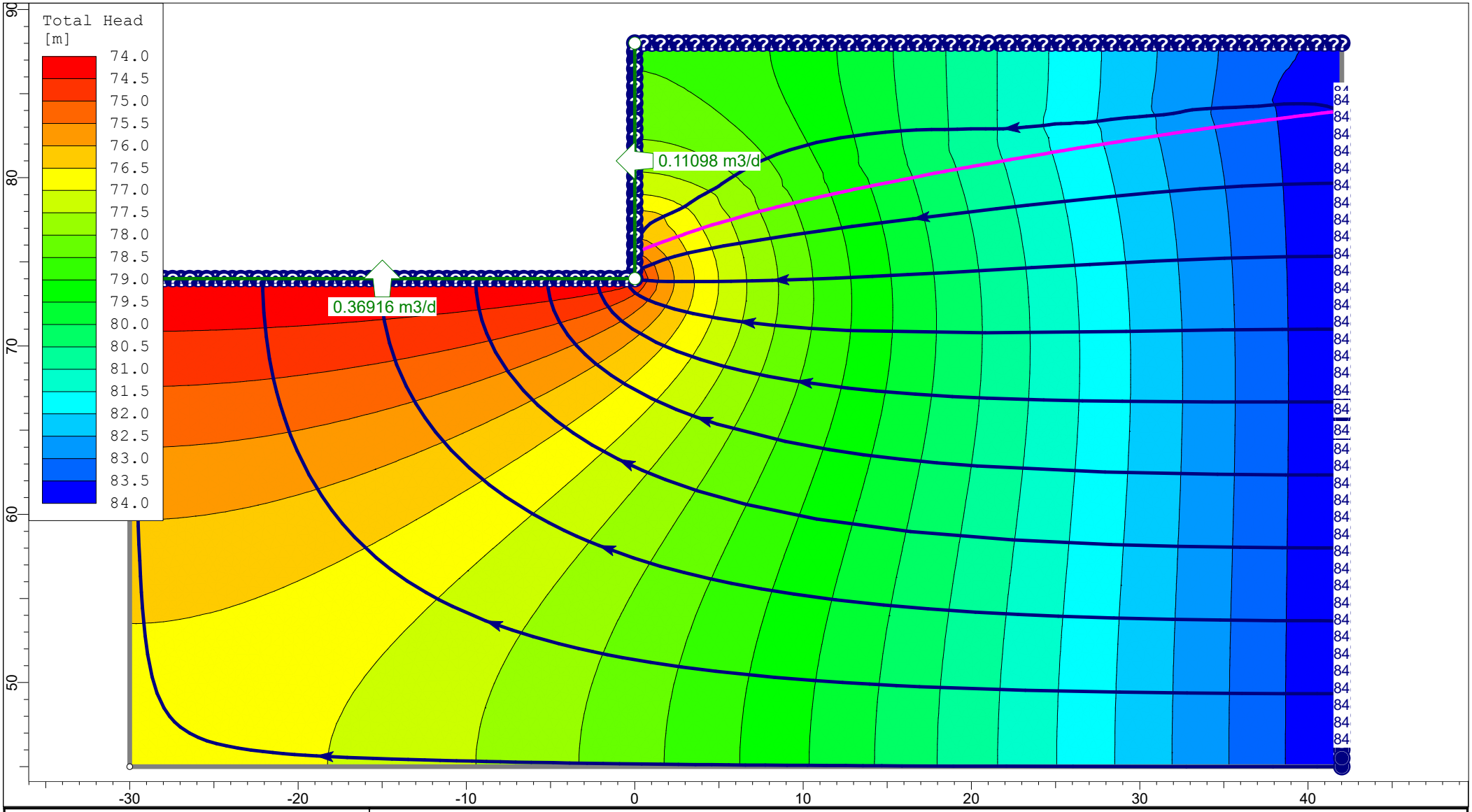


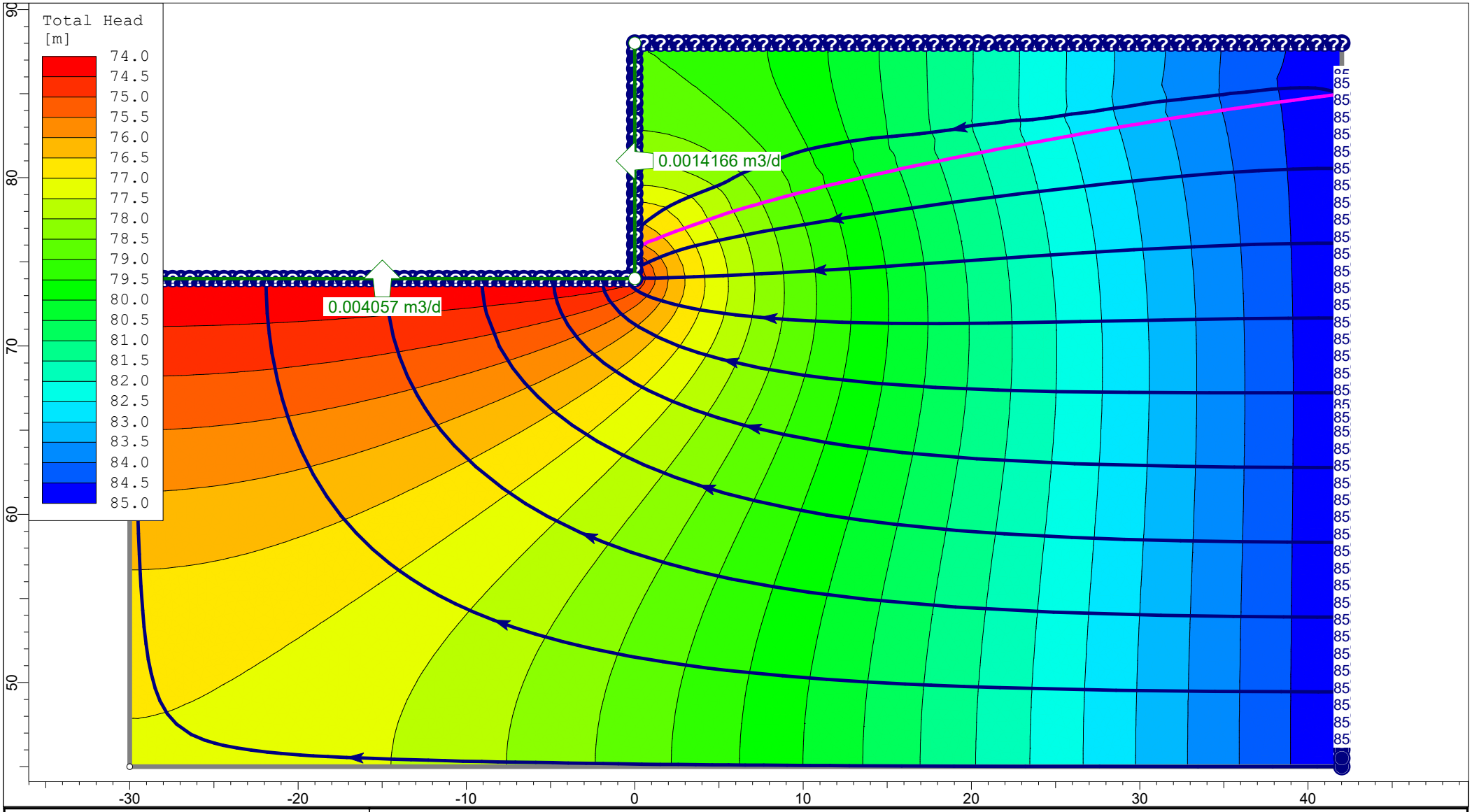
ROCSCIENCE

SLIDEINTERPRET 9.041

Project	S-0359.00		
Group	SLS (GWL = 84 m AHD) - LB	*Scenario*	BE
Drawn By	SA	*Company*	D&N Geotechnical Pty Ltd
Date	20/04/2026	*File Name*	No Cut-off model.slmd



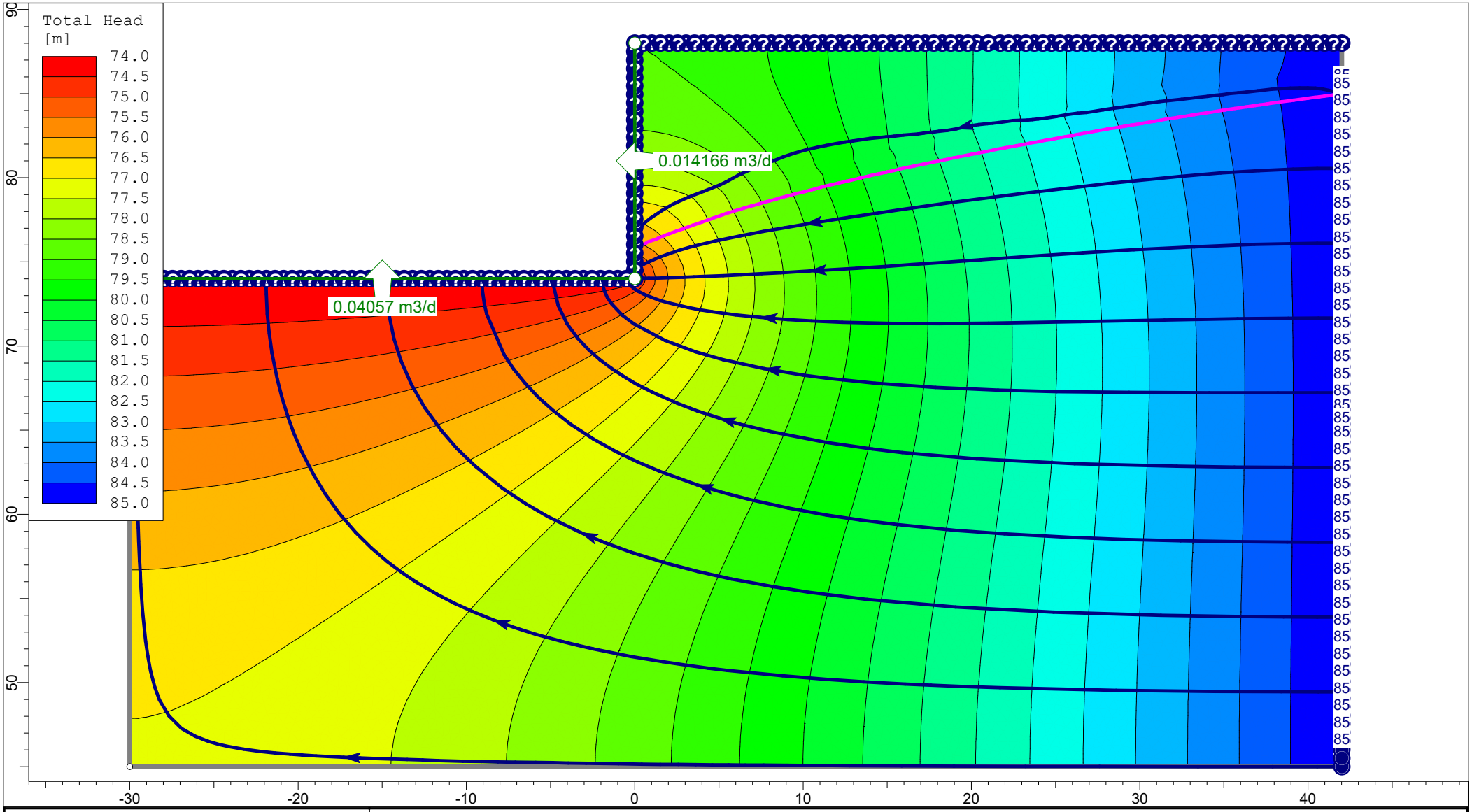
ROCSCIENCE	Project	S-0359.00	
	Group	SLS (GWL = 84 m AHD) - LB	Scenario: UB
	Drawn By	SA	Company: D&N Geotechnical Pty Ltd
SLIDEINTERPRET 9.041	Date	20/04/2026	File Name: No Cut-off model.slmd



ROCSCIENCE

SLIDEINTERPRET 9.041

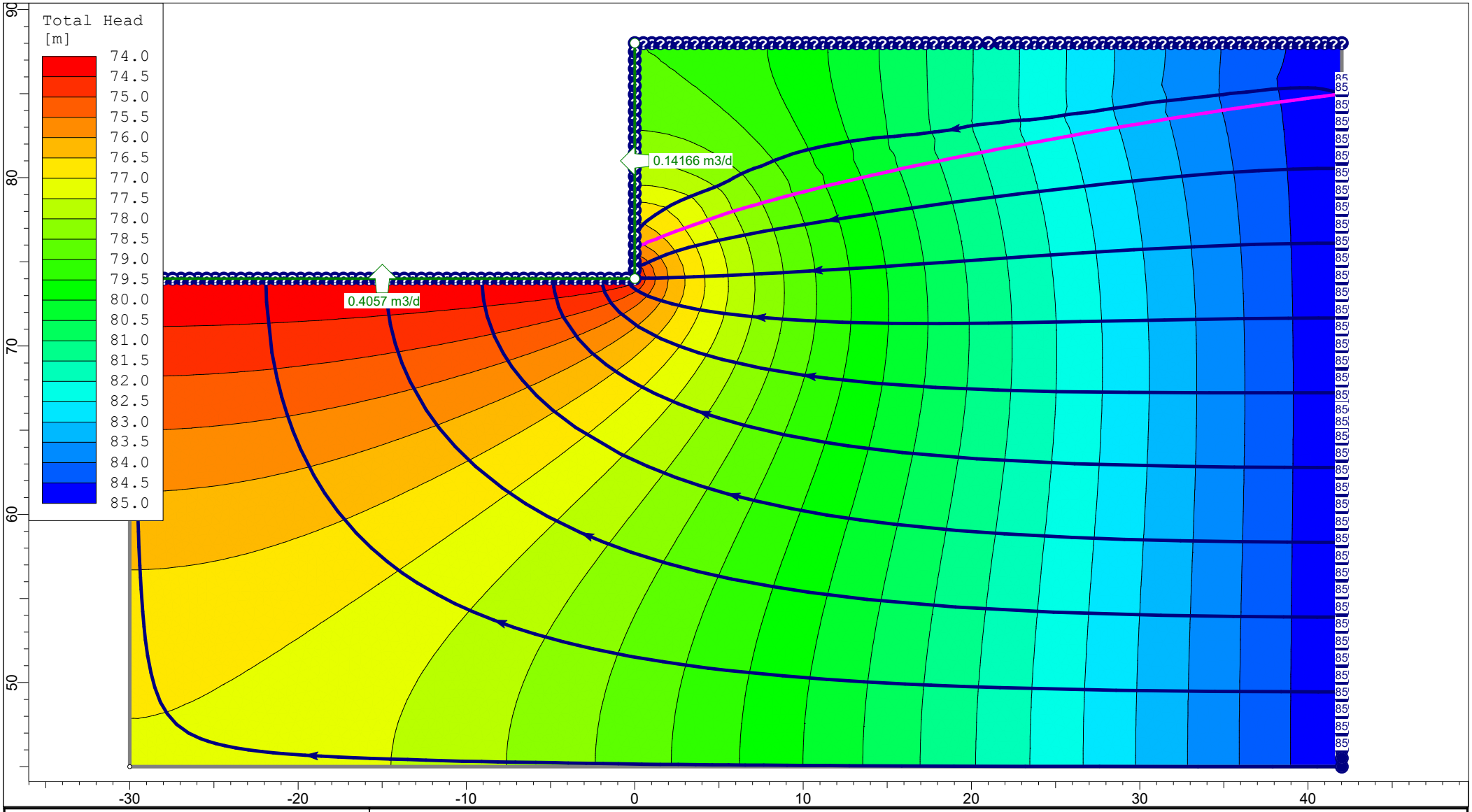
Project	S-0359.00		
Group	ULS (GWL=85 mAHD) - LB	*Scenario*	Master Scenario
Drawn By	SA	*Company*	D&N Geotechnical Pty Ltd
Date	20/04/2026	*File Name*	No Cut-off model.slmd



ROCSCIENCE

SLIDEINTERPRET 9.041

Project	S-0359.00		
Group	ULS (GWL=85 mAHD) - LB	*Scenario*	BE
Drawn By	SA	*Company*	D&N Geotechnical Pty Ltd
Date	20/04/2026	*File Name*	No Cut-off model.slmd



ROCSCIENCE

SLIDEINTERPRET 9.041

Project	S-0359.00		
Group	ULS (GWL=85 mAHD) - LB	*Scenario*	UB
Drawn By	SA	*Company*	D&N Geotechnical Pty Ltd
Date	20/04/2026	*File Name*	No Cut-off model.slmd