

TOWN PLANNING ASSESSMENT REPORT

25-27 Hope Street, South Brisbane, Qld 4101

This application is for an Impact assessable development
For a Mixed Use development in South Brisbane Commercial
Precinct of the South Brisbane Local Plan.

FOR:
Castlewhite Group



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1. SUMMARY OF THE REPORT

The purpose of the report is to outline the issues that have been addressed in the design of a mixed use building including shops and multi-unit dwellings at 25 -27 Hope Street, South Brisbane.

The report will deal with the issues relating to

South Brisbane Local Plan Code

Centre Design Code

Centre Amenity and Design Code

Residential Design – High Density Code

Transport Access Parking and Servicing Code

Services Works and Infrastructure Code

Landscaping Code

Filling and Excavation Code

Acid Sulphate Code

Non-Discriminatory Access and Use Code

Home Business Code



2. LOCALITY

South Brisbane is located within easy walking distance of the CBD across either the William Jolly or the Victoria Bridge. Melbourne Street is one of the main roads running through South Brisbane and leads from West End to the City. The site is located on Hope Street, close to the intersection with Peel Street, which leads onto the William Jolly Bridge. The rear of the site has a frontage onto Fleet Lane, which connects through from Peel Street via an easement onto Montague Road. The local area contains a mix of commercial and residential uses. This area of South Brisbane also acts as a centre for the arts, culture and entertainment serving the whole of Brisbane and further afield. The area is closely aligned with West End, a thriving inner city community and is within walking distance of the shopping precinct of Boundary Street and the Newly refurbished West End Markets. This locality is also in close proximity to the river.

The Site is currently zoned SP13 Office Park Precinct under the City Plan. A Local plan is also in place which addresses this site in which it is in the South Brisbane Commercial Precinct. A new Local Area Plan has been prepared for the West End – Woolloongabba District in which the site falls within the zone denoted as 10B. This is the South Brisbane Mixed Use (Peel Street) Precinct which allow for a number of uses including allowing retail, commercial and residential activities to take place.

All the adjoining sites are also zoned SP13. The buildings in the immediate vicinity range in height from single storey to 4/5 storeys.

The area is well served by public transport services including the 194, 190 & 191 bus services.

The site currently contains a single storey shed like buildings, which is used for commercial purposes.

The South Brisbane Commercial Precinct is intended to be developed to take advantage of its proximity to the City and to achieve a building of good quality.

The 2 adjoining sites are similarly zoned.

3. SITE DETAILS

Site address

25-27 Hope Street, South Brisbane Real Property Description

Lot 2 on RP 44397 and Lot 2 on RP 96245

Parish of South Brisbane.

County: Stanley

Site Areas

Lot 2 on RP 44397 area is 455 m².

Lot 2 on RP 96245 area is 448 m².

The total site area is 903m².

Site Dimensions

The site has 2 street frontages

The street frontage to Hope Street is 19.99 metres.

The street frontage to Fleet Lane is 19.88 metres.

The site is 45.6 metres long

Site Orientation

The long axis of the site runs from North East to South West. The site is fairly level.



4. PROPOSAL

The site is currently made up of two parcels of land containing commercial premises. It is proposed that this building be removed to make way for a new 6-storey building containing 2 ground floor commercial premises, 4 offices and 20 apartments. The building is designed to be generally in accordance with the intention of the Draft- West End / Woolloongabba District Local Area Plan and an attractive addition to this area. The building to contribute to future development of South Brisbane and as such will act as a forerunner to similar future developments.

Under the current Local Plan the site falls under the South Brisbane Commercial Precinct, which allows for a plot ratio of 2.0 times the site area and a building height of no more than 5 storeys where the upper level is residential and the site lies to the East of the railway line.

A new Local Plan covering this area is currently being advertised. In the new plan the subject site falls into the precinct 10B South Brisbane Mixed Use (Peel Street) Precinct. In this precinct a plot ratio of 2.5 times the site area is permitted and a building height of no more than 6 storeys and 20 metres above the ground.

This application is lodged anticipating the future local plan but it is lodged under the current Local Plan. Once plans are advertised they are generally treated as policy and need to be addressed as part of a planning application.

It is proposed that the proportion of the residential component be in accordance with the Centre Design Code which requires that in a mixed residential / non-residential development, the gross floor area of the residential component is a minimum of 30% of the total gross floor area.

The design of the building takes into account the streetscape and incorporates the elements as described in the Centre detail design manual and the intent of the New Local Plan.

The building is organised with commercial premises addressing Hope Street and an entry foyer at the ground floor level. Offices are located on the first floor level and the apartments are located on the upper levels. It is proposed that there are 20 apartments in total. There are 5 apartments per level on 4 levels. Each floor contains two 3-bedroom apartments per floor and three 2-bedroom apartments per floor. Each apartment is designed to act with a dual key arrangement, thereby allowing each apartment to have separation between the residential use and the home/business use of the Unit.

Vehicle and servicing access to the site is from Fleet Lane. Car parking is located at the rear and under the proposed new building. 35 Car parking spaces have been provided. The refuse collection arrangements have been discussed with Brisbane City Waste's representative to his satisfaction.

The amenity and privacy of the dwellings has been addressed in the design allowing for good ventilation and solar control. The sun screening elements have been handled in a sensitive and effective manner. It is proposed that on the roof level of the building a communal recreation area be provided. The building is serviced by a lift.

It is proposed to develop the site in accordance with the designation as set out within the New West End – Woolloongabba District Local Plan's South Brisbane Mixed Use Precinct 10B:

"This precinct is to develop as a medium rise, mixed use area.....Residential development may be appropriate where in accordance with the sub-precinct provisions....."

and in sub-precinct 10B Peel Street : *"This sub precinct is to contain a mix of commercial/residential/community uses. Retail uses are not appropriate in this sub-precinct".*

5. IMPACT ASSESSABLE DEVELOPMENT

As the proposed development will be assessed as impact assessable, the following points are made in relation to the general assessment process as outlined in Chapter 3 Section 2.5.2 of the City Plan 2000;

The character, siting, bulk, shape, height, density and external appearance accords with the expectations of the local area plan for this area including all the surrounding properties.

The proposed development will have a positive impact on streetscape, and enhance the local scenic qualities as envisioned in the Mixed-Use designation in the local area plan.

The residential nature of the proposal and its subsequent residential usage is in accordance with the intent of the local area plan, the proportion of residential is higher than anticipated in the proposed new local plan but in accordance with the city design code.

The car accommodation and subsequent vehicle usage in the area is in accordance with the High-density code as designated in the local area plan.

The local road system is adequate for the proposed development for this site.

The site is well served by public transport. There are two nearby bus services; the 194, 190 & the 191. The site also provides an ideal location for pedestrian and bicycle access to the City, and West End.

The current South Brisbane Local Plan allows for a plot ratio of 2.0 in this precinct, however under the Draft West End – Woolloongabba District Local Area Plan suggests that a plot ratio of 2.5 is available for the proposed 10B precinct.

The proposed residential usage of this site and subsequent noise and usage of the site is generally in accordance with the desired intent of both the current and proposed local area plans.

6. BRISBANE CITY PLAN CODES

SOUTH BRISBANE LOCAL PLAN CODE

1. General - Urban Design

PERFORMANCE CRITERIA		ACCEPTABLE SOLUTION	
P1	<p><i>Common urban design elements must be introduced and a cohesive streetscape result from integrating the civic works of the street with the built form and landscape treatment of the properties fronting the street</i></p> <p><i>The design of buildings must respect their context and provide visually interesting variety in character and surface texture for passers by</i></p>	A1	<p>Complies, refer drawings.</p> <p>The design of the façade has taken into account figures o & n in the draft West End – Woolloongabba LAP. This incorporates an awning as part of the facade treatment. The elevation addressing the street contributes visual interest to the streetscape as can be seen on the streetscape and photo montage.</p> <p><i>The façade treatment type is as specified on Map B – Urban Design Framework and described below.</i></p> <p>Hard edge façade with planting</p> <p><i>Similar to hard edge, except a significant component of planting is contained within the building framework in the forms of roof gardens, balcony planters, window boxes and pergolas. This specifically complements the South Bank development style know as "The Park in the Building"</i></p>
P2	<p><i>Proposals on important corner sites as listed on Map B – Urban Design Framework give definition to, and form a strong visual boundary with the street</i></p>	A2.1	<p>N/A.</p> <p>The site is not a corner site nor is it listed</p>
P3	<p><i>The footpath cover treatment type must maintain a common design element to the streetscape, integrating the civic works of the street with the built form and landscape treatment of the properties fronting the street as specified on Map C – Footpath Cover Framework</i></p>	A3	<p>Complies, refer drawings.</p> <p>The design incorporates <i>Caesalpinia Ferrea</i> (Leopard Trees) along the street front as proposed in the draft West End – Woolloongabba LAP. This design also incorporates a street awning.</p> <p><i>The types of footpath cover treatment is as follows:</i></p> <p>Formal tree planting</p> <p><i>Trees are shade trees, planted at regular centres and spaced closely enough for continuity of canopies</i></p>

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTION
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2. South Brisbane Commercial Precinct

PERFORMANCE CRITERIA		ACCEPTABLE SOLUTION	
P1	<i>Commercial activities complementary to activities in adjoining areas or providing a support function to the City Centre must be provided</i>	A1	<p>Complies, refer drawings.</p> <p>The proposed development provides for commercial activities at ground and first levels with residences (with home offices) above. It is proposed that the second bedroom in the two bedroom apartments and the third bedroom in the three bedroom apartments can operate as an office. Refer Home business code.</p>
P2	<i>Buildings and structures must not overshadow or physically dominate surrounding land uses and structures</i>	A2.1	<p>The proposal does not comply with the current South Brisbane LAP but complies with the draft West End – Woolloongabba District LAP, refer drawings.</p> <p>The design is 6 storeys in height above the ground and does not exceed 20 metres in height. The proposed building provides for a mixed use and a medium density urban form, which we consider complements character of the locality as expected of new buildings in this precinct. It also gives an indication of the future development of the character in this area.</p> <ul style="list-style-type: none"> • <i>The design provides for a structure that in the future will be consistent with the height of other structures in the precinct.</i> • <i>The Design does not overlook or overshadow nearby residential buildings</i> • <i>The Design does not reduce the visual prominence of the Culture Centre buildings</i>

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTION
<p>P3 <i>Community services and facilities in the precinct must be located and orientated within the site for ease of access to nearby residential areas</i></p>	<p>A3.1 <i>The proposal does not comply with the current South Brisbane LAP but complies with the draft West End – Woolloongabba LAP, refer drawings.</i></p> <p>The design Gross floor area (GFA) is no more than 2.5 times the site area based on the Precinct 10B of the South Brisbane Commercial Area</p> <p>The GFA is 2257 m².</p> <p>The development incorporates a predominance of wall surface over glass surface with less than 40% of the façade being glass on the streetscape elevation.</p> <p>The vehicle parking, refuse collection manoeuvring and refuse storage areas are not located in the front boundary setback.</p> <p>Mechanical plant is located within the overall roof shape and screened from view.</p> <p>Side elevations not fronting a street are articulated with colour texture and architectural features as noted and shown on the drawings.</p> <p>The development provides legible entrances for each type of use. The ground floor commercial spaces directly open to the street. The residential entry is set back from the street and incorporates landscape features.</p> <p>The development is predominantly built on or close to the front boundary. Where it is set back it is for architectural clarity of the forms.</p> <p>The development incorporates extensive solar screening in particular to the Eastern, Western and Northern facing verandahs and openings.</p> <p>The proposed building includes ventilation lightwells adjoining neighbouring properties that allow breezes to flow through the apartments.</p> <p>An area greater than 30% of the site area is provided for landscaping and recreation areas. Due to parking and servicing requirements much of the landscaping is located on the roof, at the courtyard level of the lower level apartments and on the various terraces.</p> <p>The proposed residential component of the development is in excess of 30% of the Gross Floor Area. It is felt that a combination of commercial premises with the opportunity of home offices as part of an apartment allows greater flexibility in the use of the building and as such is more likely to encourage the development of small home based enterprises with access to the City.</p>
<p>Kevin Hayes Architects Pty Ltd 17/12/01</p>	<p>Town Planning Assessment Report 25-27 Hope Street, South Brisbane</p> <p>REF:1617hop Page 9</p>

PERFORMANCE CRITERIA		ACCEPTABLE SOLUTION	
			The development is consistent with a medium rise, mixed-use precinct and presents a pedestrian scale building from the street frontage.
		A3.2	<i>Development provides open space such as open forecourts, small plazas and perimeter landscaping. The development site is not of a scale nor have more than one street frontage to allow pedestrian links on and through the site.</i>
		A3.3	<i>The site is not a large-scale redevelopment however there is the possibility to provide through block pedestrian links, linked parking areas and service substructure.</i>

3. Cultural Centre Precinct

PERFORMANCE CRITERIA		ACCEPTABLE SOLUTION	
P1	<i>Cultural activities must be complementary to activities in the adjoining Cultural Centre and riverside, or provide a support function to the cultural activities in the area</i>	A1	N/A. The site falls in the South Brisbane Commercial Precinct

4. Education Precinct

PERFORMANCE CRITERIA		ACCEPTABLE SOLUTION	
P1	<i>Building design and density must not dominate, overshadow or obscure existing buildings and the visual prominence of the South Bank area</i>	A1	N/A. The site falls in the South Brisbane Commercial Precinct

5. Mater Hill Precinct

PERFORMANCE CRITERIA		ACCEPTABLE SOLUTION	
P1	<i>Buildings and structures must not overshadow or physically dominate surrounding land uses and structures</i>	A1	N/A. The site falls in the South Brisbane Commercial Precinct

6. West Woolloongabba Centre Precinct

PERFORMANCE CRITERIA		ACCEPTABLE SOLUTION	
P1	<i>Building design and density must be in the form of the main commercial centre for South Brisbane and West Woolloongabba, and must retain and enhance the historical character of this area.</i>	A1.1	N/A. The site falls in the South Brisbane Commercial Precinct

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTION
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7. Low Rise Residential Precinct

PERFORMANCE CRITERIA		ACCEPTABLE SOLUTION	
P1	<i>The existing form, scale of buildings and architectural treatments of buildings must be preserved so that the precinct remains as an example of a "turn of the century" residential area</i>	A1	<i>N/A. The site falls in the South Brisbane Commercial Precinct</i>

8. Low-Medium Rise Residential Precinct and Medium Rise Residential Precinct

PERFORMANCE CRITERIA		ACCEPTABLE SOLUTION	
P1	<i>Buildings and structures must not overshadow or physically dominate surrounding land uses and structures</i>	A1	<ul style="list-style-type: none"> <i>N/A. The site falls in the South Brisbane Commercial Precinct</i>

9. High Rise Residential Precinct

PERFORMANCE CRITERIA		ACCEPTABLE SOLUTION	
P1	<i>Building sites must be large enough to accommodate a building form of an appropriate size and bulk</i>	A1.1	<i>N/A. The site falls in the South Brisbane Commercial Precinct</i>

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CENTRE DESIGN CODE

PERFORMANCE CRITERIA		ACCEPTABLE SOLUTION	
Gross Floor area, building height and building form			
P1	<p>The scale and bulk of buildings must be consistent with buildings in the locality or planned for the site through a Centre Concept Plan or Local Plan</p>	A1	<p>Refer South Brisbane Local Area Plan Section.</p> <p>The maximum gross floor area is in accordance with limits set in the Draft West End - Woolloongabba District Local Area Plan which allows a plot ratio of 2.5 times the site area</p> <p>The site area is 903m².</p> <p>The proposed gross floor area is 2257m².</p> <ul style="list-style-type: none">in a mixed residential/non-residential development, the gross floor area of the residential component is a minimum of 30% of the total gross floor area. It is proposed here that the apartment combine residential and commercial uses.
P2	<p>The growth of the Centre must be successfully managed over time to ameliorate significant economic and social impacts</p> <p>Note: P2/A2 does not apply to Multi-purpose Centre 1 (City Plan)</p>	A2.1	<p>Complies.</p> <p>Non-residential development approved on any site over the preceding 3 year period does not result in an increase in floor space of more than 20% of GFA or 6,000m² (whichever is the greater)</p>
P3	<p>The height of buildings must be consistent with buildings in the locality or planned for the site through a Centre Concept Plan or Local Plan</p>	A3	<p>Refer to South Brisbane Local Area Plan Section .</p> <p>The maximum building height is in accordance with limits set in the Draft West End – Woolloongabba District Local Area Plan. It exceeds the provisions of the current LAP. Refer to South Brisbane LAP Section of this report.</p>
P4	<p>The buildings must present a continuous pedestrian friendly façade at a human scale</p> <p>Note: P4/A4 does not apply to Multi-purpose Centre 3 (Suburban) or Multi-purpose Centre 4 (convenience)</p>	A4	<p>Complies.</p> <p>The design is in accordance with the requirements of the LAP. Refer to South Brisbane LAP Section of this report.</p>
P5	<p>The form of buildings in a Centre must be appropriate to the scale and function of the Centre</p>	A5	<p>Refer to South Brisbane Local Area Plan Section.</p> <p>The building form is in accordance with limits set in the Draft West End - Woolloongabba District Local Area Plan. It exceeds the provisions of the current LAP.</p>

PERFORMANCE CRITERIA		ACCEPTABLE SOLUTION	
P6	<p><i>The Planning and design of the proposal must assist in enhancing the integration of the Centre</i></p> <p>Note: P6/A6 only applies to:</p> <ul style="list-style-type: none"> Sites identified in Maps A and B – Land Holdings at the end of this Code Development proposals involving more than 6,000 m² of additional gross floor area in a Multi-purpose Centre 	A6	<p>N/A.</p> <p><i>The scale of the development is such that a Centre Concept Plan is not required.</i></p>
P7	<p><i>Building design and continuity and connectivity of streetscape, pedestrian paths and street front spaces must promote integration with the surrounding area and the rest of the Centre</i></p>	A71.	<p>Complies.</p> <p><i>Buildings address the street with main entrances fronting the street or outdoor squares or plazas that constitute the focal point of the Centre, rather than to internal spaces or parking areas.</i></p>

Table 1 Maximum Gross Floor Area –where no Local Plan or Centre Concept Plan specifies a maximum gross floor area. Refer To South Brisbane LAP Section and Draft West End - Woolloongabba District LAP

Type of Centre	Use	Maximum gross floor area
Major Centre (MP2)	N/A	N/A
Suburban Centre (MP3)	N/A	N/A
Convenience Centre (MP4)	N/A	N/A
Special Purpose Centre	N/A	N/A

(1) Mixed residential/non-residential means a minimum of 30% of the total gross floor area is used for residential purposes.

Table 2 Maximum Building Height –where no Local Plan or Centre Concept Plan specifies a maximum building height Refer To South Brisbane LAP Section and Draft West End - Woolloongabba District LAP

Type of Centre	Use	Maximum gross floor area
Major Centre (MP2) N/A	Non-residential only Residential only Mixed residential/non-residential ⁽¹⁾	10 storeys 10 storeys 10 storeys
Suburban Centre (MP3) N/A	Non-residential only Residential only Mixed residential/non-residential ⁽¹⁾	2 storeys 3 storeys 3 storeys
Convenience Centre (MP4) N/A	Non-residential only Residential only Mixed residential/non-residential ⁽¹⁾	1 storey 2 storeys 2 storeys
Special Purpose Centre N/A	All	2 storeys

PERFORMANCE CRITERIA		ACCEPTABLE SOLUTION	
Building setbacks and pedestrian shelter			
P8	<p>Podium building setbacks must be consistent with the desired streetscape for that part of the Centre</p> <p>Note: P8/A8 does not apply to Multi-purpose Centre 3 (Suburban) or Multi-purpose Centre 4 (Convenience)</p>	A8	<p>N/A. Refer to South Brisbane Local Area Plan Section of this report.</p> <ul style="list-style-type: none">Podium building setbacks on the site frontages comply with the requirements in the Local Plan or Centre Concept Plan for that Centre.
P9	<p>Building setbacks must help to ameliorate the impacts of Centres on adjacent Residential Areas</p>	<p>A9.1</p> <p>A9.2</p> <p>A9.3</p>	<p>Complies - Refer to South Brisbane Local Area Plan Section. The site is currently surrounded by non-residential uses.</p> <p>For proposals with a rear and/or side boundary to a Residential Area:</p> <p>The building setback from the boundary is a minimum of 3m or half the height of the building at that point, whichever is the greater.</p> <p>This boundary is landscaped with mature trees of a type consistent with the locality, planted at intervals that will ensure a significant level of screening between the Centre and residential uses</p> <p>An acoustic and visual screen fence of at least 1.8m high is erected and maintained along the entire length of the boundary where residential uses already exist on the adjoining land.</p> <p>For proposals backing on to a Residential Area across a street: N/A</p>
P10	<p>Setbacks at ground level must provide for:</p> <ul style="list-style-type: none">Connection between footpaths and public spacesSpace for convenient and comfortable movement of pedestrians.Standing areas at bus stops, taxi ranks and display windows.The queuing of patrons at entertainment venues.The gradient of the street	<p>A10.1</p> <p>A10.2</p>	<p>Complies.</p> <p>The design of the setbacks at street level is in accordance with the requirements of the LAP. The shops directly address the street as required in the LAP</p> <p>A 3m wide setback is not therefore provided at ground level for pedestrians.</p>

PERFORMANCE CRITERIA		ACCEPTABLE SOLUTION	
P11	<p><i>Pedestrian, footpaths and pathways must be protected from rain and sun by shelter that:</i></p> <ul style="list-style-type: none"> <i>Is continuous and compatible with existing pedestrian shelter</i> <i>Allows for street trees and other landscaping</i> <p><i>Any pedestrian way covered by an awning must be adequately lit to ensure pedestrian safety and amenity while not causing nuisance to surrounding residents.</i></p>	A11.1	<p>Complies.</p> <p><i>Pedestrian shelter is by awning, consistent with the character of the Centre and:</i></p> <ul style="list-style-type: none"> <i>Abuts footpaths</i> <i>Is provided and maintained by the building owner on their premises</i> <i>Includes under awning lighting</i> <i>Protects the normal flow of pedestrians</i> <i>Is continuous across the frontage/s of a site</i> <i>In the future will align to provide continuity with shelter on adjoining sites</i> <i>Is a minimum 3.2m and generally not more than 4.2m above pavement height</i> <i>Extends from the face of the building or the property line</i> <i>Does not extend past a vertical plane 1.5m inside the kerbline to enable street trees to be planted and grow or 0.6m inside the kerbline where trees are established.</i> <i>Has 0.5m clearance to any tree trunk and main branches</i> <i>Aligns with existing awnings where the footpath has been widened</i>
			<ul style="list-style-type: none"> <i>Is cantilevered from the main building with any posts within the footpath being non-load-bearing</i> <p><i>Refer to Figure a</i></p> <ul style="list-style-type: none"> <p><i>Location, design and provision of awnings and umbrellas is in accordance with the Centres Detail Design Manual</i></p> <p><i>Where construction an awning over a footpath, a lighting system is provided according to AS4282 – Control of Obtrusive Effects of Outdoor Lighting, while still being a minimum of 20 lux at footpath level</i></p>

PERFORMANCE CRITERIA		ACCEPTABLE SOLUTION	
P12	<p><i>Automatic teller machines must be located to:</i></p> <ul style="list-style-type: none"> <i>Maintain visibility and good sight lines and be well lit</i> <i>Avoid loitering queues, through location of automatic teller machines away from drinking fountains, seating or public telephones</i> 	A12	N/A.
Detailed building design			
P13	<p><i>Roofscapes must be attractive and not marred by cluttered display of plant and equipment</i></p>	A13.1	<p>Complies.</p> <p><i>Service structures, lift motor rooms and mechanical plant are designed as an architectural feature of the building or screened effectively</i></p>
		<p>A13.2</p> <p><i>The rooftop is designed to enable future inclusion of satellite dishes/telecommunication facilities in an unobtrusive manner</i></p> <p>A13.3</p> <p><i>Building caps and rooftops contribute to the architectural distinction of the building and create a coherent roofscape for the Centre.</i></p>	

PERFORMANCE CRITERIA		ACCEPTABLE SOLUTION	
P14	Building design must contribute to the desired theme and atmosphere of the Centre	A14.1	<p>Complies. Refer drawings</p> <p>The building elevation visually balances the height of the building through the introduction of a number of the following design elements:</p> <ul style="list-style-type: none"> Variations in plan shape, such as curves, steps, recesses, projections or splays Variations in vertical profile, with steps or slopes at different levels Variations in the treatment and patterning of windows, sun protection devices, or other elements of a façade. Elements of a finer scale than the main structural framing Integrating major landscape elements to maximise their aesthetic value and use including planting at any or all levels, particularly on podiums or low level roof decks. <p>Architectural features such as balconies, terraces, ramps and stairs, pergolas, terraces, ramps and stairs, pergolas, retaining walls, screens and fences are incorporated beyond the façade to soften the edges of buildings and ensure they integrate with the Centre.</p> <p>Recessed forms and openings around the building perimeter are maximised to allow external space to merge with the interior of the building, except where they would compromise safety and security.</p>
P15	Fenestration and sun control must be used	A15	<p>Complies. Refer drawings</p> <p>Sun shading devices are provided to:</p> <ul style="list-style-type: none"> Shade buildings Reduce glare Assist in maintaining comfortable indoor temperatures Minimise heating loads Conserve energy Enrich the subtropical character Provide texture to building facades.
P16	Buildings must be finished with high quality materials, selected for their durability and the contribution they make to the character of the Centre	A16	<p>Complies. Refer drawings</p> <p>All materials and finishes are easily maintained and do not readily stain, discolour or deteriorate</p>

PERFORMANCE CRITERIA		ACCEPTABLE SOLUTION	
P17	Building must not incorporate any type of glass or other surface likely to reflect specular rays that could create undue nuisance, discomfort or hazard to any part of the Centre or surrounding locality	A17	<p>Complies. Refer drawings</p> <p>Any reflective glass material has:</p> <ul style="list-style-type: none"> • A level of light reflectivity of not greater than 20% • A level of heat transmission of not less than 20%
P18	The architectural treatment of facades and elevations must avoid large blank walls, and openings and setbacks must be used to articulate vertical building surfaces and contribute positively to the Centre's streetscape	A18.1 A18.2 A18.3	<p>Complies. Refer drawings</p> <p>The length of a uniform elevational treatment above ground level without variation, articulation or openings is no more than 30m.</p> <p>Semi-enclosed spaces and colonnades are provided at ground level of buildings abutting pedestrian routes, through the use of awnings, pergolas or other devices that may be suspended, freestanding, supported on columns or cantilevered</p> <p>The proposal complies with any requirement of a Local Plan or a Centre Concept Plan for a continuous line of building on either side of a street</p>
P19	Development must be designed, constructed and maintained to attenuate noise from external sources and to minimise the emission of noise, and to mitigate environmental harm and maintain environmental values for the end uses	A19	<p>Complies. Refer acoustic report</p> <p>The proposed building will not act as a noise source. Nor are there excessively noisy sources in the immediate vicinity of the site.</p> <p>Design takes into account the noise impacts from existing uses and from existing and proposed road and rail corridors allowing for a 10 year traffic growth such that internal noise levels and noise emissions from the proposal comply with the Noise Impact Assessment Planning Scheme Policy.</p>
Detailed building design – applies to Multi-purpose Centres only			

PERFORMANCE CRITERIA		ACCEPTABLE SOLUTION	
P20	<i>Infill development or alterations in a Centre must respect the form, scale and massing of existing traditional buildings to create a coherent streetscape except where a Local Plan or Centre Concept Plan applying to the Centre specifies otherwise</i>	A20	<p>Complies. Refer drawings</p> <p>Where traditional frontages and facades set the architectural theme for parts of a Centre, infill buildings or alterations respect and reflect the architectural qualities of those buildings but do not necessarily imitate historical architectural styles.</p>
P21	<i>At levels abutting pedestrian places, design must develop a strong relationship between internal and external spaces appropriate to a subtropical climate and outdoor lifestyle with frontage treatment that integrates footpath awnings, shopfronts, outdoor dining areas and other activities that add to the attractiveness of the street for pedestrians</i>	A21	<p>Complies. Refer drawings</p> <p>Floor levels abutting pedestrian places are devoted to people oriented activities that maintain visual interconnection between indoor and outdoor spaces.</p>
P22	<i>Along the retail heart or spine, all new or infill proposals must involve retailing or activities that complement and support retailing function</i>	A22.1 A22.2	<p>Complies. Refer drawings</p> <p>Rentable ground floor space in the retail heart or on the retail spine is designed and promoted for leasing by retail uses, personal services, cafes, restaurants, cinemas or hotels.</p> <p>Except for minimal interruptions necessary for structural framing and to provide access to foyers, arcades, tenancies, parking or servicing, there is a continuous retail frontage along the retail heart or spine:</p> <ul style="list-style-type: none"> • Built continuously to an alignment, a setback to an alignment or a pedestrian place • Comprising display windows and showcases • Providing continuous pedestrian interconnection at the same level as adjoining buildings.
Parking structures			

PERFORMANCE CRITERIA		ACCEPTABLE SOLUTION	
P23	<p><i>Parking structures and access must be designed and located:</i></p> <ul style="list-style-type: none"> • <i>So they do not undermine the character and visual attraction of the Centre</i> • <i>To ensure no parking area is a dominant visual element of the Centre, the site on which it is developed, or the streetscape</i> 	<p>A23.1</p> <p>A23.2</p> <p>A23.3</p>	<p>Complies. Refer drawings</p> <p><i>Parking is located behind or underneath buildings</i></p> <p><i>The façade of above ground parking avoids expressing sloping ramps, strong horizontal banding of spandrel beams, or features with an excessive vertical emphasis</i></p> <p><i>Openings in parking structure facades are screened to hide the parking operation as much as possible</i></p>
P24	<p><i>Parking structures must be designed and located to help integrate different components of the Centre and must not quarantine any elements in the Center</i></p>	A24	<p>Complies. Refer drawings</p> <p><i>Common access driveways and parking areas are created and/or used</i></p>
P25	<p><i>Parking structures must be designed and located</i></p> <ul style="list-style-type: none"> • <i>With uses at ground level that promote casual surveillance</i> • <i>To minimise or eradicate potential entrapment areas and maximise continuous sight lines</i> 	A25	<p>Complies. Refer drawings</p> <p><i>All stairs and elevators in the parking structure are clearly visible.</i></p>
Vistas and sun and wind impacts			
P26	<p><i>Important vistas to, from and through the Centre that have Citywide significance must be maintained and enhanced</i></p>	A26	<p>Complies. Refer drawings</p> <p><i>The proposal maintains and enhances vistas identified in a Local Plan or Centre Concept Plan</i></p>
P27	<p><i>The proposal must have regard to its shadowing impacts on public spaces around midday during the winter months</i></p>	A27	<p>Complies. Refer drawings</p> <p><i>Proposals do not shadow major public spaces</i></p>
P28	<p><i>The proposal must have regard to any wind generation or wind tunnel effects it may cause</i></p>	<p>A28.1</p> <p>A28.2</p>	<p>Complies. Refer drawings</p> <p><i>Outdoor pedestrian spaces are protected from adverse wind impacts</i></p> <p><i>Ventilation in and around buildings is promoted through appropriate building forms, breezeways, open courtyards and landscaped areas.</i></p>
Design of pedestrian places			
P29	<p><i>Landscaped pedestrian scale spaces must be provided for public use, particularly at ground level, and must extend the landscape character into the building</i></p>	A29	<p>Complies. Refer drawings</p> <p><i>Large public spaces include subtropical vegetation and water features as extensions of architectural detailing</i></p>

PERFORMANCE CRITERIA		ACCEPTABLE SOLUTION	
P30	All pedestrian spaces must be designed and constructed to reinforce the character of the Centre and to promote usability	<p>A30.1 External functional pedestrian scale spaces offer a variety of passive recreational opportunities and experiences ranging from intimate seating to large open spaces, including water features to enhance their use and enjoyment, such as food outlets, tables and chairs, seating, ledges, shade structures and artwork</p> <p>A30.2 Street furniture, including seats, bollards, grates, grills, screens and fences, bicycle racks, flag poles, banners, litter bins, telephone booths and drinking fountains are coordinated with other elements of the streetscape</p>	Complies. Refer drawings
		<p>A30.3 Location, design and provision of pedestrian facilities in and around buildings is in accordance with Council's Centre Detail Design Manual, and includes boulevard projects to widen the footpaths into or along road carriageways as appropriate</p> <p>A30.4 Finishes comply with Council's Centre Detail Design Manual The footpath finishes are to be exposed aggregate and flagstone banding in accordance with the Draft West End - Woolloongabba District LAP</p> <p>A30.5 Tactile surface treatments are used to promote interest and variety in the Centre and to aid people with sensory disabilities</p>	Complies. Refer drawings
Design of pedestrian movement			
P31	Proposals must provide facilities for convenient, safe and comfortable movement of pedestrians within and connecting to the proposal. The finished levels must allow easy pedestrian, bicycle, vehicular and carparking interconnection between properties and buildings within the Centre	<p>A31.1 The design and location of vehicle access ramps in footpaths or streets minimises disruption and inconvenience to pedestrians</p> <p>A31.2 The pedestrian movement system in a Centre is at street level, avoiding pedestrian overhead bridges</p> <p>A321.3 No arcades are provided as this is not an area of high pedestrian and retail activity and:</p>	Complies. Refer drawings

PERFORMANCE CRITERIA		ACCEPTABLE SOLUTION
P32	<p>The design of buildings and spaces must promote legibility to help users find their way</p>	<p>Complies. Refer drawings</p> <p>A32.1 Street numbers and building names are prominently displayed</p> <p>A32.2 Public signage is provided at public transport interchanges and stops and at entries to the Centre. The signage details the services available within the Centre and where they are located.</p> <p>Note: Signage will need to be in accordance with the Control of Advertisements local law.</p>
P33	<p>Proposals must maintain or establish continuous, accessible, attractive, direct, convenient and effectively signed routes through sites for pedestrians and cyclists, providing for:</p> <ul style="list-style-type: none"> • Access to public transport facilities • Links to carparking areas • Access to and along the River and Brisbane waterways • Improved accessibility to and from facilities and services within the Centre 	<p>N/A.</p> <ul style="list-style-type: none"> • There is no availability of providing a route through the site.
Design for safety (safety issues are also addressed through other design criteria)		
P34	<p>The design and building of spaces must safeguard and promote personal and property security for all users of the Centre</p>	<p>Complies. Refer drawings</p> <p>A34.1 Casual surveillance of public and communal areas including public transport facilities is optimised through minimising concealed areas and maximising continuous sight lines</p> <p>A34.2 Access from publicly accessible non-residential areas to residential components of the Centre is restricted</p> <p>A34.3 Public toilets are located sensitively so that their use is promoted and public surveillance is maximised, while not being visually intrusive</p>
P35	<p>Natural and artificial lighting must be used to reduce poorly lit or dark areas and deter crime and vandalism</p>	<p>Complies. Refer drawings</p> <p>All publicly accessible areas will be well lit at all times</p>

PERFORMANCE CRITERIA		ACCEPTABLE SOLUTION	
Residential uses in a Centre - does not apply to Multi-purpose Centre 1 (City Centre)			
Note: Multi-unit dwelling or mixed use development involving a residential component in Centres will also be assessed against the relevant Residential Design Code, based on the height of the proposal as follows:			
<ul style="list-style-type: none">1 to 3 storeys – Residential Design – Low Density, Character and Low-medium Density Code4 to 5 storeys – Residential Design – Medium Density Codeover 5 storeys – Residential Design – High Density Code			
P36	Access to outdoor living areas must be provided for residential uses Note: These outdoor living areas may include podium level spaces and balconies	A36	Complies. Refer drawings Outdoor living areas are accessible to the residential component of the proposal
Landscaping			
P38	Landscaping must be used to promote the City's subtropical climate and atmosphere	A38	Complies. Refer drawings Vegetation is provided on top of podium levels, on tops of carpark, and on balconies and verandahs fronting the street below podium level
P39	Street trees and landscaping treatment must contribute to the character, amenity, utility and safety of public places	A39.1 A39.2 A39.3	Complies. Refer drawings Shade trees are provided throughout the proposal to cast shade onto pedestrian pathways, activity areas and open carparking Landscaping and fencing does not reduce the safety of people in the Centre and promotes safe access to residential components of the Centre Location and species selection of street trees and planting beds is in accordance with Council's Centres Detail Design Manual Planter boxes are provided and: <ul style="list-style-type: none">are maintained by the building ownerprotect the normal flow of pedestriansare not located past a vertical plan 0.6m inside the kerbline do not exceed 0.6m in height

PERFORMANCE CRITERIA		ACCEPTABLE SOLUTION	
P40	Planting must be utilised to provide shade, soften the built form of the proposal and enhance its appearance from public viewpoints	A40	Complies. Refer drawings Planting comprising significant trees and shrubs is provided adjacent to large, featureless areas of walls. In Multi-purpose Centre 3 (Suburban) and Multi-purpose Centre 4 (Convenience) such as planting is to, at maturity, screen a minimum of 30% of the building elevation
Landscaping of vacant sites			
P41	Vacant sites must present as attractive temporary parkland	A41	N/A
Airports operational safety			
P42	Proposals must not constitute a safety hazard to aviation operations Note: For guidance on assessing potential hazards to aviation operations refer to the Airports Planning Scheme Policy	A42.1 A42.2	Complies. Proposals do not emit high electromagnetic signal transmissions in the vicinity of airports or airport navigational systems No building, structure, object or activity exceeds 110m in height outside of prescribed airspace for Brisbane or Archerfield Airports
Where involving material change of use for a Service Station (in addition to compliance with service station requirements in the Centre Amenity and Performance Code)			
P43	Service stations must be designed, constructed and operated to ensure safety, minimise pollution and maintain visual amenity	A43	N/A
P44	Buildings must be reasonably compatible in appearance and scale with nearby residential buildings	A44.1	N/A

CENTRE AMENITY AND PERFORMANCE CODE

PERFORMANCE CRITERIA		ACCEPTABLE SOLUTION	
P1	The proposal must enhance the amenity, character and identity of the centre	A1	<p>Complies.</p> <p>Land owners and operators of premises:</p> <ul style="list-style-type: none"> • Locate air conditioning units and/or refrigeration units so they are not visually obtrusive and do not cause adverse visual or noise impacts on adjoining premises • Ensure rubbish bin storage areas are unobtrusive, in terms of location and appearance
P2	Non-discriminatory access must be provided from the site to adjoining sites and areas within the centre	A2	<p>Complies. Though no future developments are apparent at this point</p> <p>Changes of level at the site boundary allow access to the proposal from the road and to adjoining sites within the Centre to comply with AS1428 – Design for Access and mobility</p>
P3	<p>The layout of the proposal must achieve adequate provision for servicing on-site that is clearly defined, safe and easily accessible and must be designed to contain potential adverse impacts of servicing within the site.</p> <p>Serviceing must be located to discourage on-street loading and must not detract from the aesthetics or amenity of an Area.</p>	A3	<p>Complies.</p> <p>The servicing and refuse collection arrangements as proposed have been discussed with John Hutchinson a representative of Brisbane City Waste.</p> <p>Loading/unloading facilities and associated vehicle manoeuvring areas on site are designed in accordance with the servicing layout design guidelines in Section 4 of the Transport, Access, Parking and Servicing Planning Scheme Policy.</p>
Where involving a material change in use from non-residential to residential:			

PERFORMANCE CRITERIA		ACCEPTABLE SOLUTION	
P4	All residential uses within a Centre must be designed, constructed and maintained to attenuate noise from external sources	A4	<p>Complies. Refer Bob Thorne Acoustic Report</p> <p>AS3671 Acoustics – Road Traffic Noise Intrusion – Building Siting and Construction and AS2107 Acoustics – Recommended Design Sound Levels and Reverberation Times for Times for Building Interiors are complied with</p>
Where involving a material change in use from residential or mixed use to non-residential:			
P5	Any change of use from residential to non-residential must not result in an infringement of height or plot ration standards	A5	<p>Complies.</p> <p>Where a development or component of development was approved under this or any superseded planning scheme for residential use, any change of use of that development or component of development from residential to non-residential complies with the non-residential only gross floor area and building height Acceptable Solutions for the relevant type of Centre in Tables 1 and 2 of the Centre Design Code</p>
Where involving a material change of use to a shop or office with a GFA of over 2500 m²::			
P6	<p>The proposal must provide adequately for bicycle access to the site and movement within the site, and for secure and convenient bicycle parking or storage, that:</p> <ul style="list-style-type: none"> Is located close to the building's pedestrian entrance Is obvious, and easily and safely accessible from outside the site Does not impact adversely on visual amenity Does not impede the movement of pedestrian or other vehicles 	A6	N/A

PERFORMANCE CRITERIA		ACCEPTABLE SOLUTION	
P7	Adequate bicycle parking, shower cubicles and lockers must be provided to meet the needs of users and to encourage bicycle use by the users of an office or shop	A7.1	N/A.
<p>Where involving a material change in use to an Amusement Arcade:</p> <p>Note: Although not considered as part of the development application, an amusement arcade will also need to comply with the requirements of the Theatres and Places of Amusement Local Law</p>			
P8	Internal shape and design of the premises must provide for user safety and accessibility	A8.1 A8.2	N/A.
P9	Appearance must present a frontage similar to adjoining commercial premises	A9	N/A.
P10	Premises must be well lit internally and externally	A10.1 A10.2	N/A.
P11	Façade lighting must not impact adversely on amenity of surrounding uses	A11	N/A.
P12	Adequate bike access and bike parking must be provided	A12	N/A.
P13	Hours of operation must be controlled so that the use does not impact detrimentally on the amenity of surrounding areas	A13	N/A.
P14	Hours of operation must be controlled so that the use does not impact detrimentally on the amenity of surrounding uses. Note: For guidance on assessing potential impacts refer to the Noise Impact Assessment Planning Scheme Policy	A14	N/A.
<p>Where involving a material change of use to Short Term Accommodation:</p>			
P15	The building, including orientation of windows, must be designed to ensure the se does not intrude on the privacy of residential neighbours	A15	N/A.
P16	Outdoor recreation areas must not create a nuisance or intrude on the privacy of residential neighbours	A16	N/A.
P17	The proposal must provide for on-site mini-bus set down and turning bay	A17	N/A.

PERFORMANCE CRITERIA		ACCEPTABLE SOLUTION	
P18	Noise generated by the proposal must be within acceptable limits	A18	N/A.
<p>Where involving a material change of use to a Service Station:</p> <p>Note: Although not considered as part of the development application, the design and layout of the service station will need to comply with the Building (Flammable and Combustible Liquids) Regulations 1994 and other relevant State Legislation and Council ordinances.</p> <p>If the service station sells LP gas for automotive or other purposes, the siting, design and layout will need to comply with the Gas Act 1965 and the Gas Regulations 1989 and other relevant State legislation</p> <p>The design, layout and operational management of the service station will also need to comply with the Environmental Protection Act 1994</p>			
P19	Service stations must be located in a manner that does not disrupt the ongoing operation, cohesiveness, amenity and vitality of the Centre	A19	N/A.
P20	Service Stations must be designed and operated to ensure safety, minimise pollution and maintain visual amenity	A20.1	N/A.
P21	Service stations must be a sufficient distance from residences to ensure the amenity of these residences is maintained	A21	N/A.
P22	Noise emissions and vibrations from the site must not cause a nuisance to nearby residents	A22.1 OR A22.2	N/A.
<p>Where involving a material change of use to a Child Care Centre: N/A.</p> <p>Note: Although not considered as part of the development application, a child care facility will also need to comply with the relevant State Government legislation including the Child Care Act 1991 and the Child Care (Child Care Centres) Regulation 1991</p>			
P23	<p>The site must be located to minimise</p> <ul style="list-style-type: none"> • The hazards of heavy traffic • Introduction of non-local traffic into minor residential streets • Flood damage or hazard 	A23.1	N/A.
P24	Users of the facility must not be exposed to soil contamination	A24.1	N/A.
P25	The facility must be located to ensure that users are not exposed to harmful air pollutants	A25	N/A.

PERFORMANCE CRITERIA		ACCEPTABLE SOLUTION	
P26	<i>Users of the facility must not be subject to harmful noise levels</i>	A26	N/A.
P27	<i>Impacts on the amenity of adjoining uses must be eliminated or mitigated.</i>	A27	N/A.
P28	<i>The site must accommodate activity needs, minimum space requirements and provide protection to children against the elements</i>	A28	N/A.
P29	<i>Play areas must be protected from external hazards</i>	A29	N/A.
P30	<i>Parking conflicts must be minimised, on-site and off-site</i>	A30.1	N/A.

RTI DL RELEASE - EHP

RESIDENTIAL DESIGN – MEDIUM DENSITY CODE

As the proposed building is 6 storeys in height the high-density code has been addressed.

RESIDENTIAL DESIGN – HIGH DENSITY CODE

PERFORMANCE CRITERIA		ACCEPTABLE SOLUTION	
Building size and orientation			
P1.	Buildings built prior to 1900 must be retained (whether in a Demolition Control Precinct or not)	A1	N/A. There are no buildings built prior to 1900 on the site
P2	Building size must be consistent with the intentions for the Area		Refer To Local Plan Code – The proposal is generally in accordance with the Draft West End /Woolloongabba District local area plan A2.1 Refer To Local Plan regarding gross floor area. A2.2 The site area is a minimum of 800m ² and has a minimum frontage of 20m A2.3 Refer to South Brisbane Local Area Plan Section regarding building height.
P3	The appearance of building bulk must be reduced by design elements Refer to Figures a and b	A3.1	Complies. Refer Drawings, also Refer To South Brisbane Local Area Plan section of this report. The building bulk is reduced by a combination of <ul style="list-style-type: none">• balconies and recesses• variations in material and building form Setback from a road alignment is as required in LAP. Elevations show variation in materials, colours and/or textures between levels Roofs include parapets, skillions and other features ie. Roof garden Services structures and mechanical plant are screened or designed as part of the building

PERFORMANCE CRITERIA		ACCEPTABLE SOLUTION	
P4	<p>The development must be orientated to the street</p> <p>Refer to Figures c and d</p> <p>NOTE:</p> <p>North or north-east facing windows, balconies or decks may be permitted to provide lesser levels of privacy than would otherwise be allowed by this Code where this will significantly improve passive solar design</p>	<p>A4.1 Building front elevation is parallel or nearly parallel to the road frontage</p> <p>A4.2 Building is not set back more than 10m from a road alignment</p> <p>A4.3 Building has living area windows or balconies that face the street or are on the front of the building</p> <p>A.4 Basement parking structures between a street frontage and the main front elevation are no more than 1m above ground level at any point</p>	<p>Complies. Refer Drawings, also Refer To South Brisbane Local Area Plan section of this report.</p>
P5	<p>Building elevations must visually balance the height of the building</p>	<p>A5</p>	<p>Complies. Refer Drawings.</p> <p>A number of the following design elements are introduced:</p> <ul style="list-style-type: none"> • variations in plan shape, such as curves, steps, recesses, projections or splays • variations in vertical profile, with steps or slopes at different levels • variations in the treatment and patterning of windows, sun protection devices, or other elements of a façade. • elements of a finer scale than the main structural framing • a layered façade effect, where the planes containing most windows are recessed behind penetrated planes, structural framing, balustrades, friezes, grilles or sun shading devices • balconies, verandahs, terraces • light coloured materials
P6	<p>Roofscapes must be attractive and not marred by a cluttered display of plant and equipment</p>	<p>A6.1</p> <p>A6.2</p>	<p>Complies. Refer Drawings.</p> <p>Services structures and mechanical plant are designed as part of the building or screened effectively</p> <p>Building caps and rooftops contribute to the architectural distinction of the building</p>
Building appearance and setting			
P7	<p>Landscaping must be consistent with the established landscape character of the area and accommodates the retention of existing vegetation, including street trees</p>	<p>A7</p>	<p>Complies. Refer Drawings.</p> <p>There are no established trees to be retained. New Street trees are proposed along the street frontage.</p>

PERFORMANCE CRITERIA		ACCEPTABLE SOLUTION	
P8	The development must include landscaping that contributes to a pleasant and safe environment and integrates well with the neighbourhood	A8.1 A8.2	Complies. Refer Drawings. Landscape design allows the overlooking of the street and pedestrian entry areas Landscape design emphasises a clear pedestrian entry point
P9	Fencing and walls must: <ul style="list-style-type: none"> assist safety and surveillance of the street and entry areas enable use of private open space abutting the street assist in highlighting entrances 	A9.1	Complies. No fences are proposed along the street frontage. Very good casual surveillance of the street by residents is provided, contributing to the safety of the area.
P10	The location height, extent, and materials of retaining walls must be designed to minimise visual impact	A10.1 A10.2	Complies. Refer Drawings, also Refer To South Brisbane Local Area Plan section of this report. Combined height of retaining wall and fence does not exceed 2m Retaining walls are set back from any boundary and are stepped or terraced, so that landscaping can soften visual impact
P11	Development must provide sufficient communal and private open space for residents' needs	A11.1	Refer Drawings, also Refer To South Brisbane Local Area Plan section of this report. Every apartment is provided with at least one balcony, verandah or terrace with minimum dimension of 3m.
P12	Communal open space for clothes drying and common recreation facilities must be provided where a significant proportion of dwellings do not have access to ground floor private open space	A12	Refer Drawings. Each apartment is provided with a clothes drier. It is proposed that the provision for communal drying areas be relaxed. It is felt that adequate outdoor space has been provided for each apartment in the form of balconies, terraces and roof terraces. It is considered that communal clothes drying areas are not favoured in these situations by the residents due to privacy and possible theft.
P13	Screening and partial enclosure of balconies is limited to provide privacy for neighbours and comfort for residents without resulting in unattractive buildings or an appearance of excessive bulk or restricting opportunities for passive surveillance of the street	A13.1 A13.2	Complies. Refer Drawings, also Refer To South Brisbane Local Area Plan section of this report. Screening of balconies is predominantly provided for solar screening purposes. Street frontages of balconies are screened having adjustable sun screening & shutters as required in the local area plan.
Privacy and access to sunlight			

PERFORMANCE CRITERIA		ACCEPTABLE SOLUTION	
P14	<p><i>Habitable spaces must not directly overlook dwellings on adjacent land</i></p> <p><i>Energy efficiency and solar access to the proposed dwellings must be maintained</i></p> <p>NOTE:</p> <p><i>North or north-east facing windows, balconies or decks may be permitted to provide lesser levels of privacy than would otherwise be allowed by this Code where this will significantly improve passive solar design</i></p>	A14	<p>Complies.</p> <p><i>Habitable room windows do not look directly at habitable room windows in any adjacent dwellings.</i></p>
P15	<p><i>Relevant development must maintain adequate levels of natural ventilation and light penetration to neighbouring habitable rooms, balconies and private open space</i></p>	A15.1	<p>Refer Drawings, also Refer To South Brisbane Local Area Plan section of this report.</p> <p><i>The building is built to boundary as it is permitted and encouraged in this location (see Figure k in the draft West End – Woolloongabba district Local Area Plan).</i></p> <p><i>The building is set back 1.5 metres from the Fleet Lane frontage as required.</i></p> <p><i>No boundary walls exceed 15 metres in length.</i></p> <p><i>The building has been design to allow all apartments appropriate levels of ventilation.</i></p>
P16	<p><i>Development must achieve a pleasant, attractive and manageable living environment</i></p> <p><i>Dwellings must receive daylight and allow passage of cooling breezes through habitable rooms</i></p> <p>NOTE:</p> <p><i>North or north-east facing windows, balconies or decks may be permitted to provide lesser levels of privacy than would otherwise be allowed by this Code where this will significantly improve passive solar design</i></p>	A16.4	<p>Complies. Refer Drawings.</p> <p><i>The optimal number of units are orientated to within 20° either side of north</i></p> <p><i>Orientation of main living area windows to within 20° either side of north is maximised</i></p> <p><i>The majority of private open space has good access to sunlight</i></p> <p><i>Window placement and internal layout allows cross-ventilation</i></p> <p><i>Where north facing spaces not possible solar screening devices are introduced.</i></p>
P17	<p><i>Fenestration and sun control devices must be used effectively to:</i></p> <ul style="list-style-type: none"> <i>shade buildings</i> <i>reduce glare</i> <i>assist in maintaining comfortable indoor temperatures</i> 	A17	<p>Complies. Refer Drawings.</p> <p><i>Effective sun shading devices are provided to windows and balconies.</i></p>
Specular reflectivity			

PERFORMANCE CRITERIA		ACCEPTABLE SOLUTION					
P18	Buildings must not incorporate any type of glass or other surface likely to reflect specular rays that could create undue nuisance, discomfort or hazard to any part of the surrounding locality	A18	Complies. It is not proposed that any reflective glass be used in the development. If in the future used then: <ul style="list-style-type: none">a level of light reflectivity of not greater than 20%a level of heat transmission of not less than 20%				
Car accommodation and vehicle access							
P19	Pedestrian spaces, courts, landscaping or recreation areas must be more prominent than vehicle movement areas and utility spaces	A19.1 A19.2	Complies. Refer Drawings. The proposal has at least one prominent pedestrian entry that connects a foyer directly with a footpath Any parking structures are contained underground or within a building and are no more than 1m above natural ground level at any one point				
P20	Vehicle access and parking must be safe and convenient for residents, visitors and service providers Resident and visitor parking must be provided according to: <ul style="list-style-type: none">the number, size and type of dwellings proposedthe availability and acceptability of kerbside parking adjacent to the sitelocal traffic or parking managementthe likely preference of the occupier or target market NOTE: Resident parking provision may be reduced from the rate specified in the Acceptable Solution where public transport is available within a reasonable walking distance or where low demand is indicated.	A20	Complies. Refer drawings. 35 Off-street car-parking spaces are provided as indicated on the drawings. <ul style="list-style-type: none">otherwise, as in Table 1, the total rounded up to the nearest whole number. Table 1 Vehicle spaces for different dwelling sizes <table><tr><td>Dwelling unit size (gross floor area)/ number of bedrooms</td><td>Average vehicle spaces per dwelling</td></tr><tr><td></td><td></td></tr></table>	Dwelling unit size (gross floor area)/ number of bedrooms	Average vehicle spaces per dwelling		
Dwelling unit size (gross floor area)/ number of bedrooms	Average vehicle spaces per dwelling						
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PERFORMANCE CRITERIA		ACCEPTABLE SOLUTION		
			Location A(1) B(2)	
			Small (<75m ²) or 1 bedroom 0.75 1 Medium (75m ² -100m ²) 1 1.25 Large (>100m ²) or bedroom 1.25 1.5 Plus per dwelling 0.25 0.25 for visitors Note: Tandem parking may be used where 2 spaces are provided for 1 dwelling (1) A means any part of the site is within 200m of a pedestrian entry to a railway station, busway station, or ferry terminal, or within 100m of a major road except where the site has its only access to a road where on-street parking restrictions apply (2) B means any other circumstances	
P21	Vehicle access, parking design and location and screening treatment must minimise noise and visual impacts on neighbouring dwellings	A21.1	Complies. Refer Drawings. Vehicle parking is: <ul style="list-style-type: none"> Screened to minimise reflection of car headlights onto dwelling windows and attenuate noise. Lit at night. Separated from habitable windows to minimise noise and fumes disturbance. Vehicle parking structures are designed and located: <ul style="list-style-type: none"> Behind the building setback, or Behind or below the building so they are not visually dominant from a public street. To be compatible with overall building design in terms of height, roof form, detail, material and colours. As close as possible to the dwelling to be served. The location of visitor parking is discernible from the street.	A21.2
P22	Vehicle access to neighbouring sites must not impede the traffic flow on arterial routes The development must have safe and convenient vehicle access to dwellings and the street network	A22	Complies. The proposal does not use an arterial route for vehicle access to the site.	

PERFORMANCE CRITERIA		ACCEPTABLE SOLUTION	
Managing light and noise impact			
P23	Light nuisance must be minimised	A23	Complies. Outdoor lighting complies with the requirements of AS4282 – Control of the Obtrusive Effects of Outdoor Lighting
P24	Noise from the development must not adversely affect existing or likely future dwellings on adjacent land.	A24.1 A24.2 A24.3 A24.4	Complies. Refer Acoustic report. Vehicle movement areas are located a minimum of 3m from any adjoining dwellings, or are provided with acoustic screening to the boundary. Any air conditioning plant is located toward the centre of the site. Communal open space is located a minimum of 3m from adjoining dwellings provided with acoustic screening. The development complies with the Noise Impact Assessment Planning Scheme Policy.
P25	Exposure of dwellings to noise must be minimised	A25	Complies. Refer Acoustic report Noise impacts on dwellings located within 150m of a Centre, Industrial Area, rail corridor, road corridor (suburban routes, motorways and arterial routes) or within a noise exposure contour of 20 ANEF or greater are mitigated to comply with the requirements of the Noise Impact Assessment Planning Scheme Policy.
Utilities and services			
P26	Waster disposal and collection areas must be unobtrusive, and adverse impacts on neighbouring properties must be mitigated	A26.1 A26.2	Complies. Refer Drawings. Garbage bin storage and collection areas are located on site and are screened from view as discussed with John Hutchinson of Brisbane City Council City Waste. Complies. For buildings or ten or more units, on-site bin storage: <ul style="list-style-type: none">Is not located within 5m of a property boundary.Is located within the main building.Is located where it can be accessed by refuse collection services
Affordable housing outcomes			
P27	Low cost housing is encouraged through development bonuses but only if it does not comprise local amenity	A27	N/A

TRANSPORT, ACCESS, PARKING AND SERVICING CODE

PERFORMANCE CRITERIA		ACCEPTABLE SOLUTION	
Transport system			
P1	Development with high traffic generating potential must give suitable consideration to transport/land use issues	A1	N/A
P2	The development must be designed to encourage customers and employees to walk, cycle or use public transport to and from the development instead of using a car	A2	Complies. Refer Drawings. The proposal provides convenient and safe pedestrian and cyclist facilities for access from existing and proposed public transport facilities for access from existing and proposed public transport facilities and public areas.
P3	The development must be located in the City's Road Hierarchy as appropriate for that type and size of development and/or must be located appropriately in relation to public transport facilities to encourage their use	A3	Complies. Refer Drawings. The proposal is self or code assessable in the Area in which the site is located. Land uses that are consistent with walk-up access will be favoured
P4	Relevant development must not compromise the functions of particular roads as indicated in the City's Road Hierarchy	A4.1 A4.2	Complies. There is no direct access to motorways or arterial routes The proposal is not a major traffic generator.
P5	Development must not impact adversely on the safety or operations of the road system	A5.1 A5.2	Complies. Refer Drawings. One vehicle footpath crossing is provided in accordance with the design vehicle table and site access design guidelines in the Transport, Access, Parking and Servicing Planning Scheme Policy The vehicle access is from the rear of the site via Fleet Lane. A vehicle manoeuvring area is provided on site in accordance with the design vehicle table and servicing layout design guidelines in the Transport, Access, Parking and Servicing Planning Scheme Policy so that the design vehicle can enter and leave the site in a forward gear

PERFORMANCE CRITERIA		ACCEPTABLE SOLUTION	
P6	<p>Access, parking and servicing must not reduce the amenity of lands in the vicinity of the site</p>	A6.1	<p>Complies. Refer Drawings.</p> <p>Vehicular site access is located on Fleet Lane in accordance with the site access design guidelines in the Transport, Access, Parking and Servicing Scheme Policy</p> <p>Vehicle site access is provided in accordance with Figure d Standard Non-residential Vehicle Crossing, in Section 3.5.2 of the Transport, Access, Parking and Servicing Scheme Policy.</p>
Vehicle parking			
P7	<p>The layout of development must achieve adequate provision for on-site vehicle parking that is clearly defined, safe and easily accessible and must be designed to contain potential adverse impacts within the site</p> <p>Vehicle parking:</p> <ul style="list-style-type: none"> • must not detract from the aesthetics or amenity of an Area • must discourage on-street parking where parking has adverse traffic management, safety or amenity impacts • must be consistent with convenient pedestrian and cyclist access 	A7.1	<p>Complies. Refer Drawings.</p> <p>Parking bays, manoeuvring areas and driveway are indicated on the drawings.</p> <p>For development for any of the uses listed in column 1 of the carparking table, on-site carparking complies with column 2 of that table in the Transport, Access, Parking and Servicing Scheme Policy, except for non-residential development in the City Centre or City Frame.</p> <p>On-site carparking numbers for development in the City Centre or City Frame as indicated on Map A – City Centre and City Frame Areas do not exceed 1 car space for every 200 m² of gross floor area for any development other than multi-unit dwellings.</p> <p>1 motorcycle parking space is provided.</p>
P8	<p>Vehicle parking must have no adverse impact on the residents of adjoining sites in terms of noise, odour or run-off</p>	A8	<p>Complies.</p> <p>Carparks are screened from any nearby sensitive receiving environment and stormwater from the carpark does not flow directly into that sensitive receiving environment.</p>
Vehicle parking			
P9	<p>The layout of development must achieve adequate provision for servicing on site that is clearly defined, safe and easily accessible and must be designed to contain potential adverse impacts of servicing within the site</p> <p>Servicing must be located to discourage on-street loading and must not detract from the aesthetics or amenity of an Area.</p>	A9.1	<p>Complies. Refer Drawings.</p> <p>The design of the servicing areas takes into account the location of the site the width of the site and the appearance of the building. The servicing of the building has been discussed with representatives of City Waste. The manoeuvring of the vehicles is denoted on the drawings. Servicing takes place from the Fleet Lane frontage.</p>

SERVICES WORKS AND INFRASTRUCTURE CODE

PERFORMANCE CRITERIA		ACCEPTABLE SOLUTION	
P1	Land used for urban purposes must be serviced adequately with regard to water, waste disposal, drainage, telecommunication and energy	A1	<p>Complies. Refer Bligh Tanner report</p> <p>The land is provided with :</p> <ul style="list-style-type: none"> reticulated water, sewerage, drainage, electricity and telephone services gas service where reasonable
P2	<p>Frontage to the site must provide the following to an appropriate urban standard:</p> <ul style="list-style-type: none"> an effective, high quality paved roadway an effective, high quality roadway kerb and channel safe, high quality crossings over channels and walkways safe, accessible high quality bikeways a safe, accessible, high quality public walkway compatible and integrated with the surrounding environment provision of and alteration to required public utilities effective drainage appropriate conduits to facilitate the provision of required street lighting systems and traffic signals 	A2	<p>Complies.</p> <p>The following are provided or already exist at the frontage of the site, to the standard that would have applied if the development formed part of a new subdivision:</p> <ul style="list-style-type: none"> concrete kerb and channel forming and grading to walkways crossings over channels and walkways a constructed bikeway a constructed walkway, minimum 1.2m wide and full width from the property line to the kerb in Multi-purpose Centres reconstruction of any damaged public walkway in concrete construction of the carriageway payment of costs for required alterations to public utility mains, services or installations construction of and required alterations to public utility mains, services or installations construction of and required alterations to public utility mains, services or installations drainage works installation of electrical conduits

LANDSCAPING CODE

PERFORMANCE CRITERIA		ACCEPTABLE SOLUTION	
Streetscape, character and planting			
P1	Landscaping work must create a sense of place or specific character, ensure functionality and provide long term visual interest	A1.1 A1.2	<p>Complies. Refer Drawings, also Refer To South Brisbane Local Area Plan section of this report.</p> <p>Selected plants provide visual interest through form, texture and variations in seasonal colour</p> <p>Prior to construction a landscaped plan will be prepared by a landscape architect.</p> <p>Where a street or a locality has a specific character derived from existing vegetation, similar species are planted on site and on the street, except where the existing species are undesirable species listed in the Planting Species Planning Scheme Policy and based on the Centres Detail Design Manual 1999</p> <p>A minimum of 80% of proposed landscape area is open to the sky</p>
P2	Landscaping must be consistent with the established landscape character of the area and accommodate the retention of existing vegetation, including street trees	A2.2	<p>N/A</p> <p>There is little or no existing vegetation on the site to be retained.</p>
P3	Landscaping along residential site boundaries must maintain privacy between the adjoining residences and enhance the visual appearance of the development	A3.1	<p>Complies. Refer Drawings, also Refer To South Brisbane Local Area Plan section of this report.</p> <p>Landscaped area along the frontage of the site enhances the local character of the area and is based on the requirements set out in the draft West End - Woolloongabba District Local Area Plan.</p> <p>Leopard trees are located so as to cast shade to the frontage of the site.</p> <p>The building is treated as a green building with planting located on balconies and terraces throughout the building as indicated on the plans.</p> <p>Landscaped area along the rear boundary of the site consists of trees and shrubs as indicated on the plans.</p> <p>The proposed building is largely built to boundary along the side boundaries as indicated on the drawings.</p>

PERFORMANCE CRITERIA		ACCEPTABLE SOLUTION	
P4	Landscaping along non-residential site boundaries must screen incompatible activities and enhance the visual appearance of the development	A4.1 A4.2 A4.3	Refer Drawings, also Refer To South Brisbane Local Area Plan section of this report. Landscaped areas along the frontage of the site include large trees that achieve a canopy spread over a minimum of 50% of the site frontage length within 10 years of planting Spreading trees and shrubs are provided in all landscape areas.
P5	Landscaping within landscape and recreation areas must be usable and well designed	A5.1 A5.2 A5.3 A5.4	Refer Drawings, also Refer To South Brisbane Local Area Plan section of this report. Soft landscaping is provided in the recreation area. Plants in landscape and recreation areas are located to: <ul style="list-style-type: none"> • maximise the exposure to the prevailing north-east to south summer breezes and the north-east winter morning sun • minimise the exposure to the prevailing west to south-west winter winds
P6	Adequate shading must be provided for carparking areas, driveways and internal roadways through landscaping	A6	Complies. Refer Drawings. Parking areas are under cover
P7	Plant selection must address the functional issues of the development including: <ul style="list-style-type: none"> • screening and buffering • street presentation • shading 	A7	Complies. Species will be selected in accordance with the Planting Species Planning Scheme Policy
Screening and buffering			
P8	Overlooking into private courtyards and neighbouring residential dwellings must be minimised	A8	Complies. Refer Drawings. There is no over looking of neighbouring residential dwellings.
P9	Acoustic barriers and long fences along road frontages and within the development must be screened	A9	N/A
P10	The amenity of a development must be enhanced through the screening of undesirable features	A10	Complies. Refer Drawings. Landscaped areas along and/or near retaining walls, long unbroken walls, service areas, carparking areas and recreational uses consist of an appropriate combination of trees, shrubs and ground covers
P11	The ecological values of a site or adjoining land must be enhanced	A11	N/A

PERFORMANCE CRITERIA		ACCEPTABLE SOLUTION	
Maintenance and drainage			
P12	Stormwater harvesting must be maximised and any adverse impacts of stormwater minimised	A12.1	Complies. Refer Drawings & Bligh Tanner Report There are limited areas of pavement, turf and mulched garden beds, these will be adequately drained. Landscape works on site do not restrict the flow of water along overland flow paths
P13	Landscaping works must be capable of efficient and effective maintenance	A13.1 A13.2 A13.3	Complies. Refer Drawings. A reticulated irrigation system will be provided to common landscape and recreation areas and podium planters One hose cock will be provided within each private landscape and recreation area Drainage of podium planters will be connected to the stormwater drain and allows for flush out in future.
Safety			
P14	Tree location and species selection must accommodate vehicle and pedestrian sight lines	A14	Complies. Refer Drawings. Leopard Trees with a minimum 1.8m of clear trunk are located near pathways, entries, parking areas and driveways.
P15	The landscape design must enhance personal safety and reduce the potential for and fear of crime and vandalism	A15.1 A15.2 A15.3 A15.4	Complies. Refer Drawings. Landscaping enables visibility along pathways to restrict opportunities for concealment The use of extensive lengths of dense shrubby vegetation over 1.5m in height is minimised along street frontages and adjacent to open space areas Surfaces are stable and useable in all weathers Security and foot lighting is provided to site entries, driveways, parking areas, building entries and pedestrian ways
Utilities and services			
P16	The location and type of planting must not compromise the function and accessibility of services and facilities	A16.1 A16.2 A16.3	Complies. Refer Drawings. Plants are located to enable tradespersons to access and view meters within the site Plant species are selected and sited taking into consideration the location of overhead and underground services An irrigation control device will be provided and located in common landscape and recreation areas

FILLING AND EXCAVATION CODE

PERFORMANCE CRITERIA		ACCEPTABLE SOLUTION	
P1	<p>Filling or excavation must not impact adversely on visual amenity or the stability of land</p> <p>Note:</p> <p>Retaining wall construction will also need to comply with Section 4 of Schedule 5 or the Standard Building Regulations 1993 and embankment gradients will need to comply with Section 5 of Schedule 5 of the Standard Building Regulations 1993</p>	A1.1	Complies - Refer Drawings & Bligh Tanner Report
		A1.2	A retaining wall is set back at least half the height of the wall from any boundary of the site
		A1.3	Retaining walls over 1.5m are stepped 0.75m for every 1.5m in height, terraced and landscaped
P2	<p>Filling or excavation must not result in any contamination of land or waters</p>	Complies. Refer Bligh Tanner Report	
		A2.1	For filling, only clean fill will be used
		A2.2	For excavation, no contaminated material is excavated, or acid sulfate soil or contaminant disturbed
		A2.3	For excavation or filling acid sulfate soils are not affected by changes to the site's hydrology
P3	<p>Filling or excavation must not cause any increase in flooding or drainage problems</p>	A2.4	The site is not on the contaminated land register
		Complies. Refer Bligh Tanner Report	
		A3.1	No filling or excavation located <ul style="list-style-type: none"> • within the flood regulation lines or, if there are no flood regulation lines within the 100 year ARI extent • in any waterway corridor as shown on the Planning Scheme Maps or • in any wetland as shown on the Planning Scheme Maps and defined in the definitions
		A3.2	Filling or excavation does not cause ponding on the site or on nearby land
		A3.3	Any increase in flooding will not adversely affect the safety or use of any adjoining site and land upstream and downstream
		A3.4	Any changes to run-off characteristics resulting from filling for storm events, up to at least the 2 year ARI design storm, are minimised in an ecologically sensitive manner
		A3.5	Filling or excavation does not adversely affect the flow of water in any overland flow path

PERFORMANCE CRITERIA		ACCEPTABLE SOLUTION	
P4	Filling or excavation must not adversely affect environmental values in receiving waterways or wetlands	A4	Complies. Refer Bligh Tanner Report Filling or excavation complies with the Stormwater Management Code and Council's Erosion and Sediment Control Standard
P5	Emissions of air pollutants from filling or excavation, particularly dust, must not have a significant environmental harm or nuisance impacts	A5.1 A5.2	Complies. A5.1 No dust emissions extend beyond the boundary of the site A5.2 No other air emission, including odours, are detectable at the boundary of the site
P6	Emissions of noise must not cause significant environmental harm or nuisance impacts	A6.1 A6.2	Complies. A6.1 Depending on the soil type the total duration of filling or excavation operations should not exceed 4 weeks A6.2 Filling or excavation operations occur only between 7am to 6pm Monday to Saturday
P7	Traffic generated by filling or excavation must not impact on the amenity of the surrounding area	P7.1 P7.2 P7.3	Complies. P7.1 Haul routes used for transportation of fill to or from the site only use Major Roads P7.2 Truck movements generated by filling or excavation do not exceed 20 truck movements per day P7.3 Truck movements generated by filling or excavation do not occur for longer than 4 weeks – see above

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTION
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ACID SULFATE SOIL CODE

PERFORMANCE CRITERIA		ACCEPTABLE SOLUTION	
P1	<p><i>Environmental values and ecological health of receiving waters must be protected</i></p> <p><i>Assets must not be subject to accelerated corrosion</i></p>	A1	<p>Complies. Refer Bligh Tanner Report.</p> <p><i>No potential or actual acid sulfate soils are disturbed by the proposal</i></p> <p>Note: This can be demonstrated through the submission of an Acid Sulfate Soil Investigation Report with reference to the Acid Sulfate Soil Planning Scheme Policy</p>

NON-DISCRIMINATORY ACCESS AND USE CODE

PERFORMANCE CRITERIA		ACCEPTABLE SOLUTION	
P1	<p>Non-Discriminatory access must be provided from the site to adjoining sites and areas where an integrated outcome is desirable e.g within a centre</p>	A1	<p>Complies. Refer Drawings.</p> <p>Changes of level at the site boundary will allow access to the proposal from the road and to adjoining sites to comply with AS 1428 – <i>Design for Access and Mobility</i>. However no adjoining site are at this stage available for access.</p>

HOME BUSINESS CODE

PERFORMANCE CRITERIA		ACCEPTABLE SOLUTIONS FOR SELF ASSESSMENT		ACCEPTABLE SOLUTIONS FOR IMPACT ASSESSMENT	
P1	<i>Home business must be part of a lot used primarily for residential purposes by the operators of the home business</i>	A1.1	<i>The home business is conducted within a house or within another enclosed structure such as a shed or garage (except if a child care facility or dog day care facility do not have to be in an enclosed space), on the site of a house primarily used for residential purposes.</i>	A1.1	Complies. <i>The home business is conducted within a residential dwelling, or within another enclosed structure such as a shed or a garage (except if a child care facility or dog day care facility do not have to be in an enclosed space), on the site of a house primarily used for residential purposes</i>
		A1.2	<i>The home business is carried out by one or more of the permanent residents of the house</i>	A1.2	<i>The home business is carried out by one or more of the permanent residents of the residential dwelling</i>

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PERFORMANCE CRITERIA		ACCEPTABLE SOLUTIONS FOR SELF ASSESSMENT		ACCEPTABLE SOLUTIONS FOR IMPACT ASSESSMENT	
P2	Home business must be low key in its nature, size and employment	A2.1	The home business involves no more than 1 non-resident employee on site at any one time	A2.1	Complies. The home business involves no more than 2 non-resident employees on site at any one time The home business does not use more than a total of 100m ² of floor area (except if a commercial guest accommodation, child care facility of dog day care facility) The home business does not involve display of goods visible from outside the dwelling The home business does not involve hiring out materials, goods, appliances or vehicles stored outside of the 100m ² floor area The home business does not involve display of any signs except where within the residential lot and no larger than 0.6m ² in area
		A2.2	The home business does not use more than a total of 50m ² of floor area (except if a commercial guest accommodation, child care facility of dog day care facility)		
		A2.3	The home business does not involve display of goods visible from outside the house		
		A2.4	The home business does not involve hiring out materials, goods, appliances or vehicles stored outside of the 50m ² floor area		
		A2.5	The home business does not involve display of any signs except where required by law to identify a registered business and the size of the sign is no greater than the minimum required by that law, the sign must be no larger than 0.6m ² in area		

PERFORMANCE CRITERIA		ACCEPTABLE SOLUTIONS FOR SELF ASSESSMENT		ACCEPTABLE SOLUTIONS FOR IMPACT ASSESSMENT	
P3	<i>Home business must not impact adversely on residential amenity or services</i>	A3.1	<i>The home business does not impose greater requirements on any public utility than would be reasonable from the residential use in the same premises</i>	A3.1	Complies. <i>The home business does not impose greater requirements on any public utility than would be reasonable from the residential use in the same premises</i>
		A3.2	<i>The home business does not interfere with the amenity of the residential neighbourhood by the emission of noise, vibration, smell fumes, smoke, vapor steam, soot, ash, dust grit, oil, waste water, waste products or radio or electrical interference</i> Note: The Environmental Protection Act regulates amenity and environmental impacts such as noise, air and other emissions. Compliance with standards for residential areas will be required under the Environmental Protection Act.	A3.2	<i>The home business does not interfere with the amenity of the residential neighbourhood by the emission of noise, vibration, smell fumes, smoke, vapor steam, soot, ash, dust grit, oil, waste water, waste products or radio or electrical interference</i> Note: The Environmental Protection Act regulates amenity and environmental impacts such as noise, air and other emissions. Compliance with standards for residential areas will be required under the Environmental Protection Act.
P4	<i>Home business must not generate traffic greater than reasonably expected in the surrounding residential area</i>	P4.1	<i>The home business does not involve more than 1 person waiting at or near the premises at any time (excluding the permanent resident's and one non-resident employee</i>	A3.3	<i>The noise levels from the home business comply with the Noise Impact Assessment Planning Scheme Policy</i>

PERFORMANCE CRITERIA		ACCEPTABLE SOLUTIONS FOR SELF ASSESSMENT		ACCEPTABLE SOLUTIONS FOR IMPACT ASSESSMENT	
		A4.2	<i>The home business does not involve more than 1 business related motor vehicle being parked on the site or in the street/s the site has a frontage to, at any time (excluding business related vehicle/s of the permanent resident/s and one non-resident employee's vehicle)</i>		Complies. <i>The home business does not involve more than 1 business related motor vehicle being parked on the site or in the street/s the site has a frontage to, at any time (excluding business related vehicle/s of the permanent resident/s and two non-resident employee's vehicle/s)</i>
		A4.3	<i>The home business involves no more than 1 visit per day of a delivery vehicle with a capacity of less than 2.5 tonnes</i>		<i>The home business involves no more than 2 visits per day of delivery vehicles with a capacity of less than 2.5 tonnes</i>
P5	<i>Use of motor vehicles associated with the home business must not impact adversely on residential amenity</i>	A5.1	<i>The home business does not involve use of or visits by vehicles with a capacity of 2.5 tonnes or greater</i>	A5.1	Complies. <i>The home business does not involve use of or visits by vehicles with a capacity of 2.5 tonnes or greater</i>
		A5.2	<i>Business related motor vehicles for home business are not repaired, serviced cleaned on site</i>	A5.2	<i>Business related motor vehicles for home business are not repaired, serviced cleaned on site</i>
P6	<i>Hours of operation must be suited to a residential environment</i>	A6	<i>Hours of operation are limited to 8am to 6pm Monday to Saturday except for commercial guest accommodation business</i>	A6	Complies. <i>Hours of operation are limited to 8am to 6pm Monday to Saturday except for commercial guest accommodation business</i>

PERFORMANCE CRITERIA		ACCEPTABLE SOLUTIONS FOR SELF ASSESSMENT		ACCEPTABLE SOLUTIONS FOR IMPACT ASSESSMENT	
P7	A home business providing commercial guest accommodation must not impact adversely on residential amenity	A7	<p>If the home business provides commercial guest accommodation:</p> <ul style="list-style-type: none"> It involves only accommodation for travellers for a short term paid stay No more than 4 paying guests area accommodated at any time The total number of residents and paying guests does not exceed 6 at any time The paying guests do not occupy more than 2 bedrooms 	A7	<p>Complies.</p> <p>If the home business provides commercial guest accommodation:</p> <ul style="list-style-type: none"> No more than 4 paying guests area accommodated at any time The total number of residents and paying guests does not exceed 10 at any time The paying guests do not occupy more than 3 bedrooms and these bedrooms take up no more than 50m² gross floor area of the residential dwelling Any signs displayed have a maximum area of 0.15m², mounted no higher than pedestrian level
P8	A home business for a child care facility must not impact adversely on residential amenity	A8	If the home business is a child care facility, the maximum number of children being provided with child care and resident children does not exceed 7 at any time	A8	N/A.
P9	A home business for a dog day care facility must not impact adversely on residential amenity	A9	If the home business is a dog day care facility, the maximum number of dogs does not exceed 4 at any time	A9	N/A

7. CONCLUSION

As can be seen by the arguments outlined in this report, an appropriate design solution has been carefully developed with due consideration for both the end users and the surrounding neighbours. The proposal is considered to be in accordance with the intent of the new City Plan.

The arguments put forward for the proposed development endeavours to maintain and contribute to the general amenity of the area. We are of the opinion that proposal is an appropriate way in which to develop this property.

The proposed development offers an example of climatically appropriate contemporary urban design. It is intended to contribute a simple but attractive aesthetic to the Hope Street streetscape.

We trust that this development will meet with the approval of the Brisbane City Council and the community at large.

Kevin Hayes Architects Pty Ltd

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8. APPENDICES

1. Bimap
2. Pre-lodgement notes
3. Photographs
4. Copy of Survey
5. Attachments
 - Acoustic Report
 - Storm Water / Drainage Report

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APPLICANT

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 Fax: (07)3358-1897
 Company: Kevin Hayes Architects P/L
 Po Box 28
 NEW FARM QLD 4005

SITE

Address: 25 -27 Hope St, South Brisbane Qld 4101
 RPD: Lot 2 on RP44397 and Lot 2 on RP96245, Parish of Sth Brisbane
 Ward: Dutton Park

REFERENCE NUMBER: DRS/USE-789179

PROPOSAL:

Date: 11 October 2001 Time: 3.00pm
 Location: Bac Level 10 Development Assessment Team South
 Attendance: Brett Lentz, Matthew Stafford, Suzie Thomson, Rory Kelly, Kevin Matthews

Kevin Hayes
 Gerard Lynch

ISSUES/ADVICE/ACTION

- Existing *
- Building adjacent to Gambaro's
 - Existing South Brisbane Plan SP 13
 - New Draft Plan 10B - directs to move commercial 30% max residential
 - could home office be considered for home business
 - query whether design should focus on current Plan or West End
 - Under current Sth Bns Local Plan level of assessment for SP13 is Code
 - Overriding Codes: Medium Density, Centre Design Code, Local Plan Code
 - rail noise would need to be addressed
 - road noise " " " "
 - existing industry noise
 - > Under draft Local Plan level of assessment Code
 - footpath widening along Fleet Lane - 1 1/2 metres dedication, ~~MAINT~~
 - awning requirement over Hope Street
 - level of lower carpark needs to be addressed by hydraulic consultant
 - sewer combined
 - water supply OK

Access - Service trucks off Fleet Lane

- easement for access Fleet Lane to Montague
- suggest seek information from Titles office

Car parking - max 1 in 200 for commercial & retail

- would be approx. 30 spaces req'd - to be confirmed by Kev Matthews.

- Residential 1.25/unit

Easement treatment of street trees to requirements of Draft Local Plan.

Smell & Noise impacts from
Garbasso's:

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Signed

sch 4 - signature

Date 11 / 10 / 2001

Disclaimer

The aim of a prelodgement meeting is to provide initial advice on likely major issues relevant to a development proposal to assist in the timely processing of applications. It can not replace the in-depth interviews normally associated with the formal assessment of an application and consideration of any public submissions. While the advice is given in good faith, it in no way binds a decision by the Council.

CODE AND PLANNING SCHEME POLICY LIST- SOUTH REGION

Currently - SP13

Classification

Code Assessment

Circle applicable codes	City Plan Codes
	S: denotes Secondary Code P: denotes Primary Codes
P	Acid Sulphate Soils Code
S	Amusement Arcade Code
S	Awning Lighting Code
S	Bicycle & Cyclist On-site Facilities Code
S	Biodiversity Code
P	Caravan Park & Relocatable Home Park
P	Centre Amenity and Performance Code
P	Centre Design Code
P	Child Care Facility Code
P	Commercial Character Building Code
P	Community Use Code
P	Demolition Code
Self assess	Energy Efficiency Code
P	Extractive Industry Code
P	Farm Code
P	Filling and Excavation Code
S	Gas Pipeline Code
P	Heritage Place Code
P	Home Business Code
P	House Code
P	Industrial Amenity & Performance Code
P	Industrial Areas- Adj Development Code
P	Industrial Design Code
P	Landing Code
Certif / S	Landscaping Code
Self assess	Light Nuisance Code
P	Local Plan Code
S	Non-Discriminatory Access Code
S	Operational Works Code
P	Outdoor Sport & Recreation Code
P	Park Code
P	Particular Development Code
P	Residential Design - Character Code
P	Residential Design - Small Lot Code
P	Residential Design - Low Density, Character & Low Medium Density
P	Residential Design - Medium Density

P	Residential Design - High Density Code
S	Residential Design - Special Needs Code
P	Satellite Dish Code
P	Service Station Code
S	Services, Works and Infrastructure Code
P	Short Term Accommodation Code
S	Stable Code
S	Stormwater Management Code
P	Structure Planning Code
P	Subdivision Code
P	Telecommunication Tower Code
S	Transport, Access, Parking & Servicing
S	Waste Water Mgmt (on-site effluent)
S	Waterway Code
S	Wetland Code

Planning Scheme Policies applicable	Contributions Policies
✓	1. parks and recreation
✓	2. water supply and sewerage headworks
	4. Algester Rd South Catchment
	5. Infrastructure in LAP's

Tick if applicable	Impact inappropriate Development
✓	Refer Page 6 Chapter 3 - dot points

Planning Scheme Policies applicable	Planning Scheme Policies
	Acid Sulphate Soils
	Air Quality
	Airports
	Centre Concept Plans
	Commercial Character Building Area
	Commercial Impact Assessment
	Community Impact Assessment
	Consultation
	Energy Efficiency
	Environmental Impact Assessment
	Hazard and Risk Assessment
	Heritage Register
	Impact Assessable Uses
	Management of Urban Stormwater Quality
✓	Natural Assets
✓	Noise Impact Assessment
	Planting Species
✓	Telecommunication Towers
	Transport, Access, Parking and Servicing
	Transport and Traffic Facilities
	Urban Design Advisory Panel

Local Plans applicable	Local Plans
✓	Algester/Calamvale/Parkinson/Stretton
	Forest Lake
	Kuraby
✓	Moorooka District
	South Brisbane
	Stephens District
	Western Gateway
	Willawong

Centre Design Manual

(exception South Brisbane Local Plan Code overrides)



Brisbane City Council
ABN: 72 002 765 795
69 Ann Street
Brisbane QLD 4000

Brisbane's Integrated Development System

Remittance Document

COPY

Enquiries
☎ (07) 3403-8888

Remittance Number
6000 0000 3554 307

TOTAL

\$ 350.00

GERARD LYNCH
KEVIN HAYES ARCHITECTS P/L
PO BOX 28
NEW FARM QLD 4005

Primary Parcel ID: RP96245/L2

Application Number: 789179

Primary Site Address:

25 HOPE ST
SOUTH BRISBANE 4101 QLD

Application Type: PRELODGE

COPY

1** PRELODGE MEETING - \$ 350.00
STANDARD

Total

\$ 350.00

COPY

Present this entire document with your payment to any
Brisbane City Council business centre or customer service
centre. Until payment is made services shall not be provided
nor deemed.

(1) Bids - Drs \$350.00
0000003554307
Receipt Total \$350.00
EFTPOS CREDIT \$350.00
Payment Total \$350.00
Change: \$0.00

Receipt Date: 11-Oct-2001
Cashier: Julie-Ann
Drs Central

---End of Receipt---

Receipt #: R5009593 Page #: 1
Issued: 11-Oct-2001 3:15 PM



439060000003554307000035000



Office: 1st. Floor
Cnr. Merthyr Road &
Samuel Street
New Farm
Postal: P.O.Box 628
New Farm 4005

Tel: (07) 3254 1500

Fax: (07) 3254 1500

Mobile: sch 4 - mobile phone

Email: fultoncons@powerup.com.au

Kevin Hayes Architects
Attention: Carly

Ref. TF 01074
December 13, 2001

Principal
Rex A Fulton
Lic Surv, MIS Aust

Survey services for 25-27 Hope Street SOUTH BRISBANE

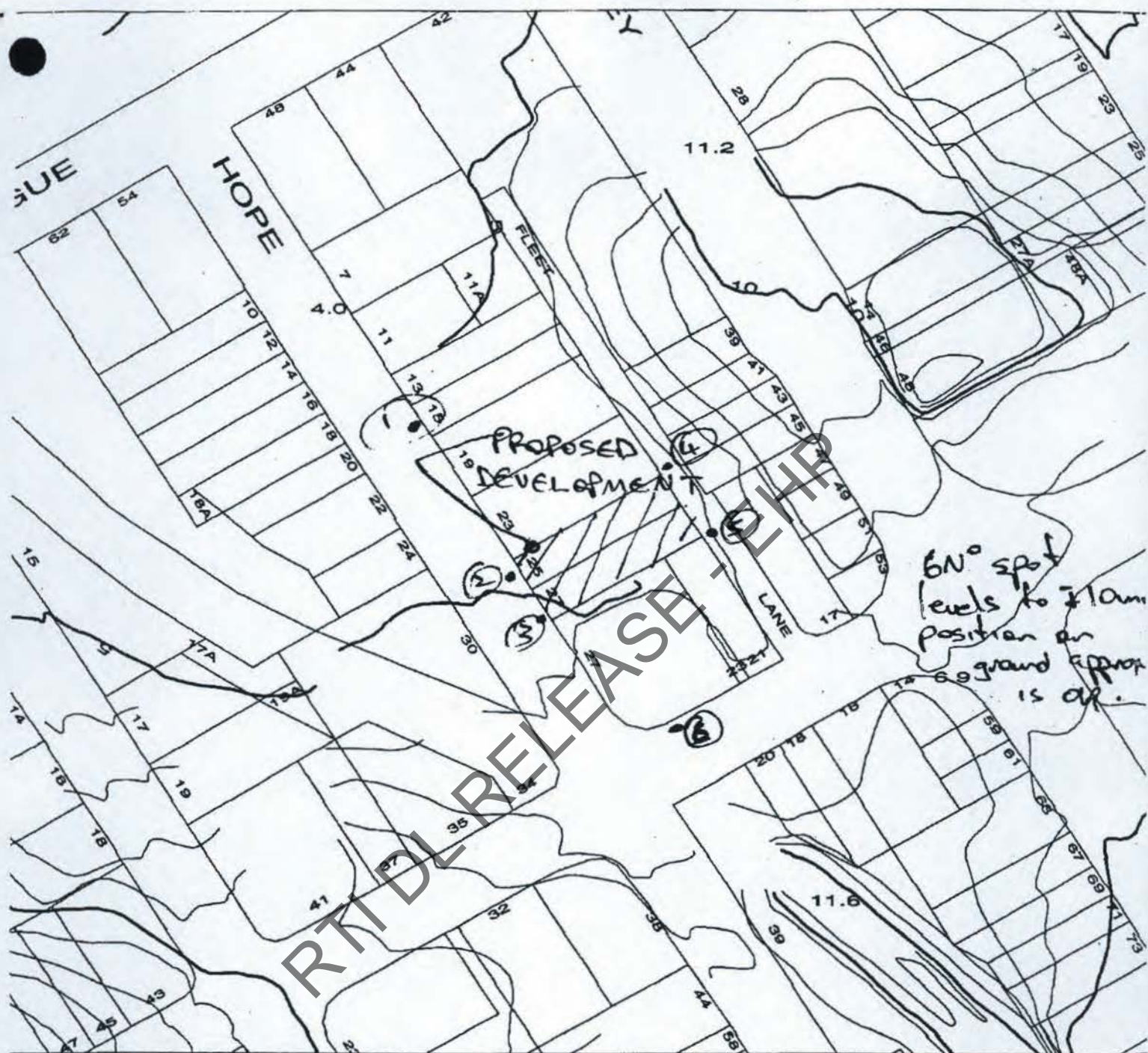
AHD levels for lip of channel at the 6 locations marked on the plan supplied are:

Point. no.	RL
1	4.04
2	4.97
3	5.38
4	5.78
5	5.84
6	6.65

The origin of these levels was BCC sewer manhole no.171274.
with a surface level of 5.505.

sch 4 - signature

Rex Fulton
Licensed Surveyor



Date: 12/12/2001
Time: 10:39:38

Scale: 1:1500

Location:
501495 E, 8961082 N

Themes:

Cadastral
Contours
Investigation Areas
30m Buffers Waterway Corridors
Flood Regulation Lines
Local Plan Waterway Corridors
Brisbane River Corridors
Land Subject to Wetlands
Local Plan Boundaries



Copyright Brisbane City Council, 2000

Karl
Survey
input needs
Steven Boyd

ROBIN TREMLETT FRANKS, Brisbane
 Authorised Surveyor, do hereby solemnly and legally declare that I have carefully and truly surveyed, measured, and marked on the ground the parcels of land herein contained, and that the measurements and boundaries shown in this plan are correct, and do not to the best of my belief in any way interfere with the rights or property of any person, owner, or occupier of land adjoining the above land, and directed in the said plan; and I make this solemn declaration notwithstanding that the owner is to take, and by virtue of the provisions of the "Land" Act, 1962.

Made and Signed at **Brisbane** this **20th** day of **Sept.** 1962 before me
 Signature of Registrar of Titles
 sch 4 - signature

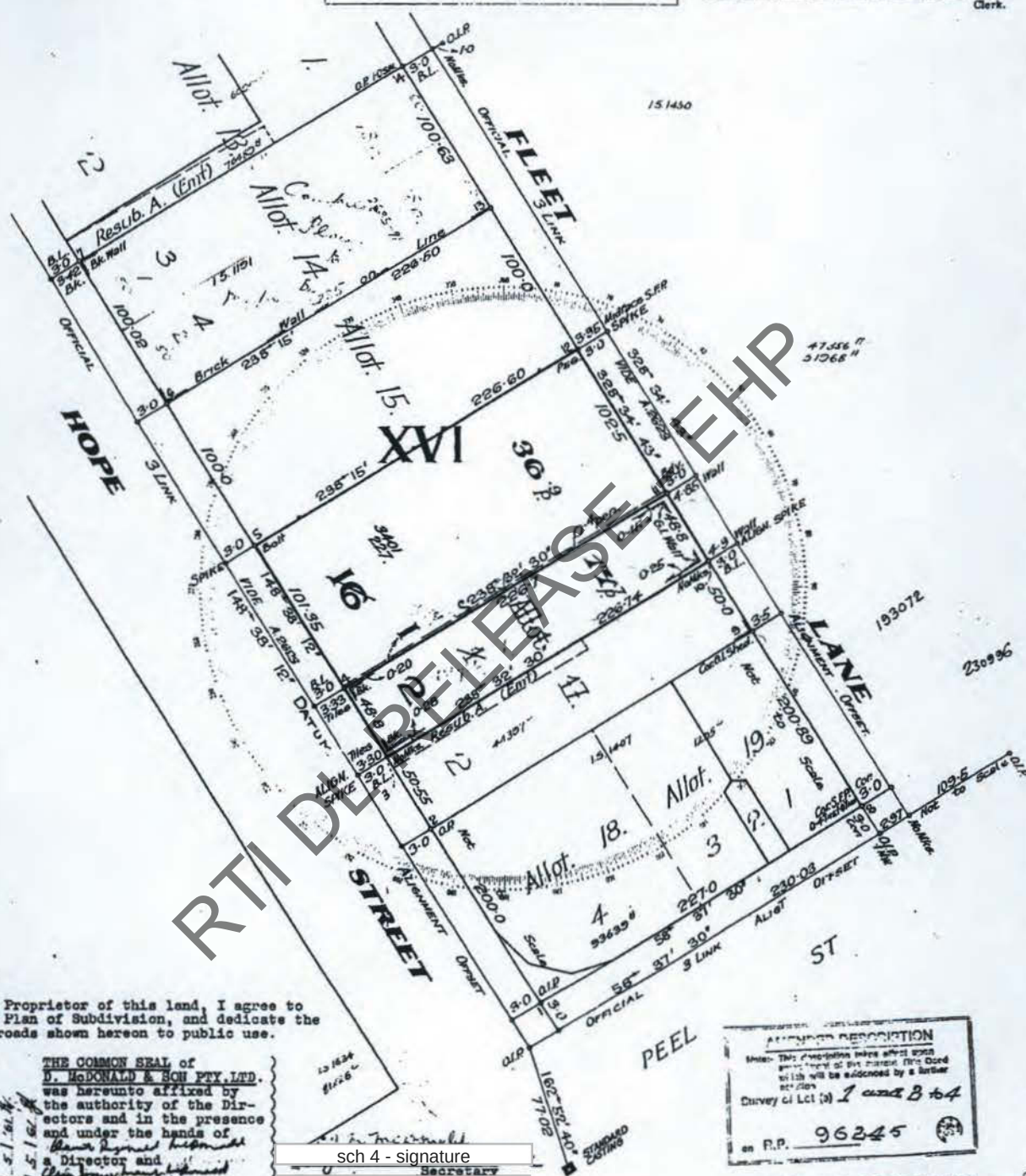
THIS PLAN should be ROLLED not folded.
 — FOR OFFICE USE ONLY —

CT 315154 1704-184 Sub 1 44307
 G F 177883 1872-182 16-18-18
 Allot 16 & Resub 1 See 15. 7195 (4-15)
 Allot. 16 & Resub 1 See Sub. of Allot. 2226 (2.2.1962)
 Allot 16 See Emt Plan No 179259

Dated this Twentieth day of **Sept.** 1962
 sch 4 - signature
 sch 4 - signature
 sch 4 - signature

The Council of the _____ of _____ certifies that all the requirements of this Council, the Local Government Acts, 1936 to 1962, and all By-laws have been complied with and approves this Plan of Subdivision subject to the following conditions:

Dated this Twentieth day of **Sept.** 1962
 sch 4 - signature
 sch 4 - signature
 sch 4 - signature



As Proprietor of this land, I agree to this Plan of Subdivision, and dedicate the new roads shown hereon to public use.

THE COMMON SEAL of D. McDONALD & SON PTY. LTD. was heretofore affixed by the authority of the Directors and in the presence and under the hands of **David James McDonald** a Director and **Alan James McDonald** the Secretary.

Calc. Bk. No. 126/120
 Exd. 5/1/51/24/4
 Passed 5/1/51/24/4

SCALE 50' = 1" (approx.)

As Proprietor of this land, I agree to this Plan of Subdivision, and dedicate the new roads shown hereon to public use.

Signature of Proprietor
 sch 4 - signature

Particulars entered in Register Book, Vol. 1872, 1704. Folio 120, 184 the **26** day of **May** 1962 at **1.13pm**

sch 4 - signature
 sch 4 - signature
 sch 4 - signature

REGISTRAR OF TITLES

CITY OF BRISBANE
SURVEY
 of **Allot. 16 & Resubs 1 & 2 of Sub 1 of Allot. 17**
 of **Section XVI**
 COUNTY OF **Stanley**
 PARISH OF **South Brisbane**
 Cat. No. **96245**

APPROVED RESOLUTION
 That the following be the effect of the survey of the above land which will be effected by a further survey of Lot (a) 1 and 2 to 4 on R.P. 96245

STANDARD CHAINS

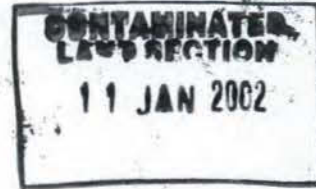


VIEW FROM HOPE ST.



VIEW FROM FLEET STREET.
(REAR OF SITE)

KEVIN
HAYES
ARCHITECTS PTY LTD



1617-I-01

8th January 2002

**Environmental Protection Agency
GPO BOX 2771
BRISBANE QLD 4001**

Attention: Louise Gilshenan

Re: 25-27 Hope Street, South Brisbane

APPLICATION NUMBER:	Bcc(1/02/03)
FILE NUMBER:	BNE9181
REFERRAL DATE:	11/1/2002
DATE INFO REQUEST DUE:	25/1/2002
RCU No.	
OFFICER:	

Dear Louise,

We recently received and acknowledgement notice from BCC under section 3.2.3 of the *Integrated Planning Act 1997*: Development Application for Office & Multi-Unit Dwelling on land at 25 Hope Street, South Brisbane Qld 4101. We have been advised to forward you a copy of the notice, along with the application as enclosed.

If you require any further information, please do not hesitate to contact us.

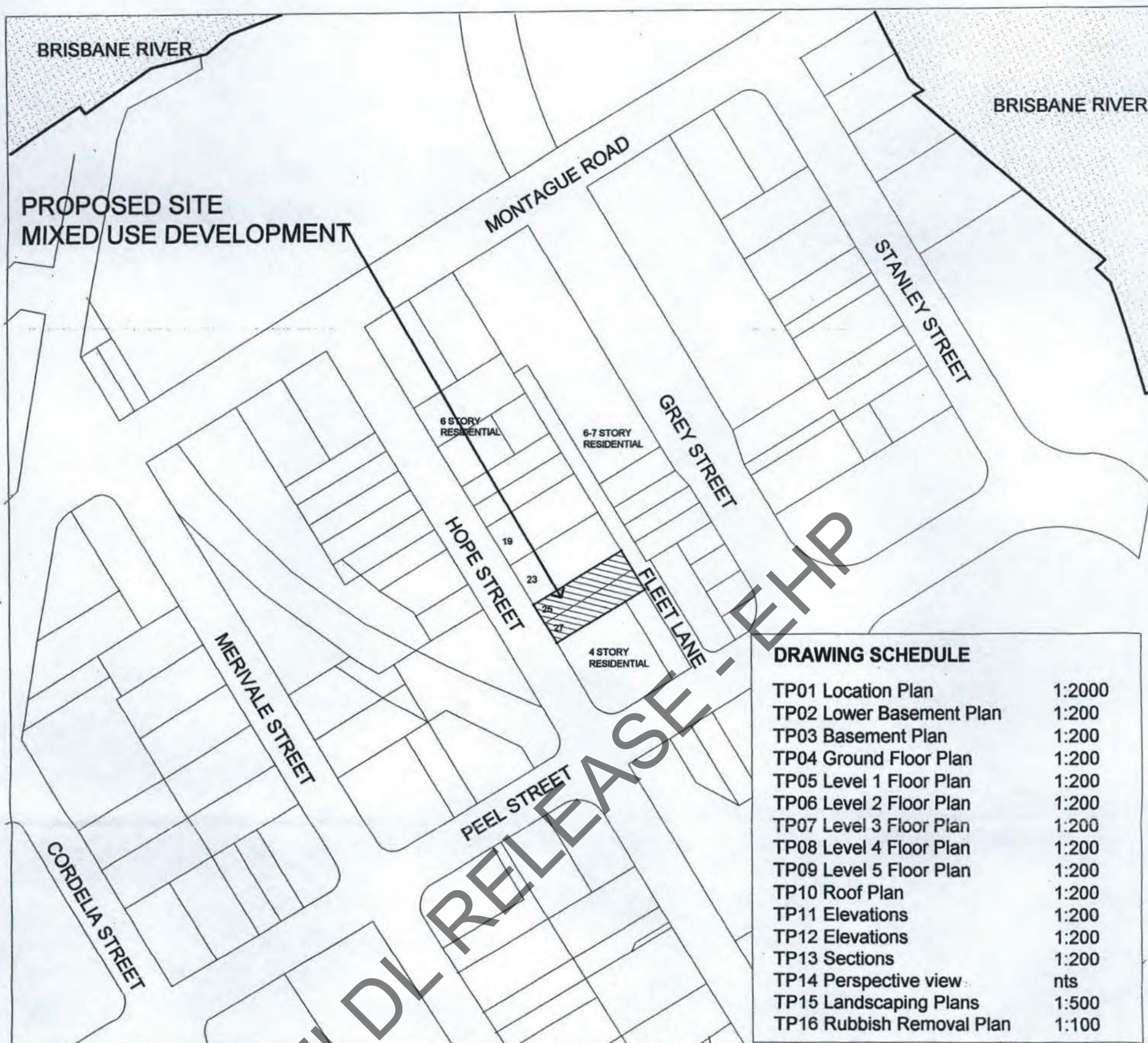
Yours sincerely,

sch 4 - signature

Karlie Andersen
B.Arch

Kevin Hayes Architects Pty. Ltd.





DRAWING SCHEDULE

TP01 Location Plan	1:2000
TP02 Lower Basement Plan	1:200
TP03 Basement Plan	1:200
TP04 Ground Floor Plan	1:200
TP05 Level 1 Floor Plan	1:200
TP06 Level 2 Floor Plan	1:200
TP07 Level 3 Floor Plan	1:200
TP08 Level 4 Floor Plan	1:200
TP09 Level 5 Floor Plan	1:200
TP10 Roof Plan	1:200
TP11 Elevations	1:200
TP12 Elevations	1:200
TP13 Sections	1:200
TP14 Perspective view	nts
TP15 Landscaping Plans	1:500
TP16 Rubbish Removal Plan	1:100

SITE PLAN 1:2000



25-27 HOPE STREET, SOUTH BRISBANE

PLOT RATIO: 2.5
AREA OF SITE : 903sq.m
GFA : 2257.5sq.m

GFA CALCULATIONS

Office/Commercial = 307 sq.m
Residential/home offices = 1764 sq.m
Circulation/services = 186 sq.m

TOTAL GFA = 2257 sq.m

RPD: LOT 2 ON RP 96245 & LOT 2 ON RP 44397
Parish of South Brisbane
County: Stanley

CARPARKING

1.25/UNIT = 25 CARPARKS
VISITORS = 5 CARPARKS
1/200sq.m OFFICE/COMMERCIAL = 2 CARPARKS
REQUIRED = 32
PROVIDED = 35 (including 1 accessible carpark)

Revisions & Copies

RTI 14-304			
12/12/01	A	ISSUE FOR DA	KA
Date	No.	Details	Signed

Confirm all dimensions on site.
Do not scale off drawings.
All workmanship, materials and construction to
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1975-1992 and The Building Code of Australia.

File B

**KEVIN
HAYES**

ARCHITECTS PTY LTD

CNR SAMUEL ST & MERTHYR RD.
NEW FARM QLD 4005
P.O. BOX 28 NEW FARM QLD 4005
PH: (07) 3254 1707 FAX: (07) 3358 1897
ACN 078-490-851

Client
CASTLEWHITE GROUP

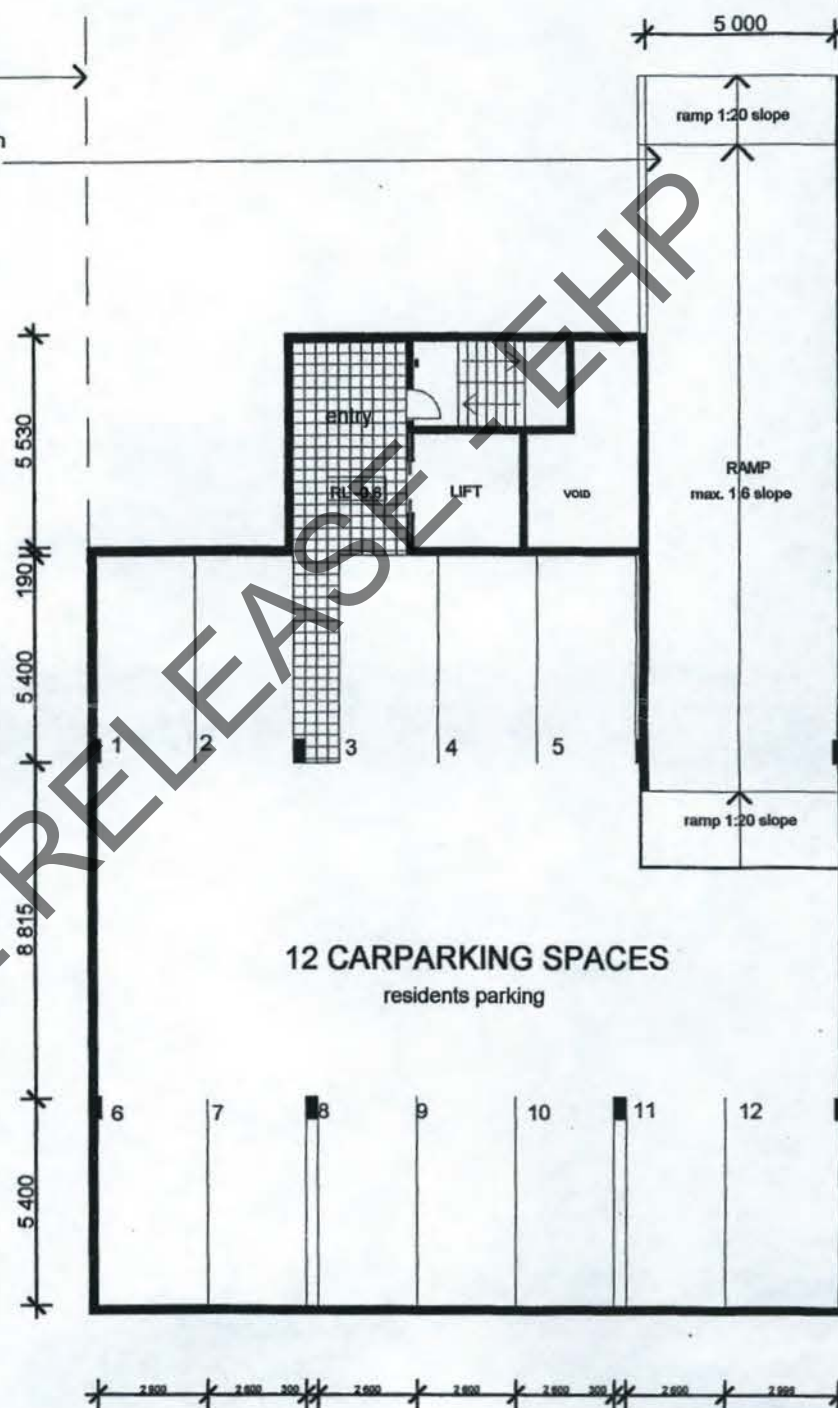
Project
25-27 HOPE STREET
SOUTH BRISBANE

Title
LOCATION PLAN

Scale:	Date:	Drawn:
1:2000	12/12/01	KA
Job No.	Drawing No.	Revision No.
1617HOP	TP01	A

dotted line indicates slab
above- basement floor

two-way one lane circulation
road min 5000mm width



CARPARKING

Total no. Provided = 35

(including one accessible park and
visitor parking)

2 x MOTORCYCLE PARKING

BICYCLE PARKING PROVISIONS

LOWER BASEMENT LEVEL PLAN

Revisions & Copies

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Date	No. Details	Signed	

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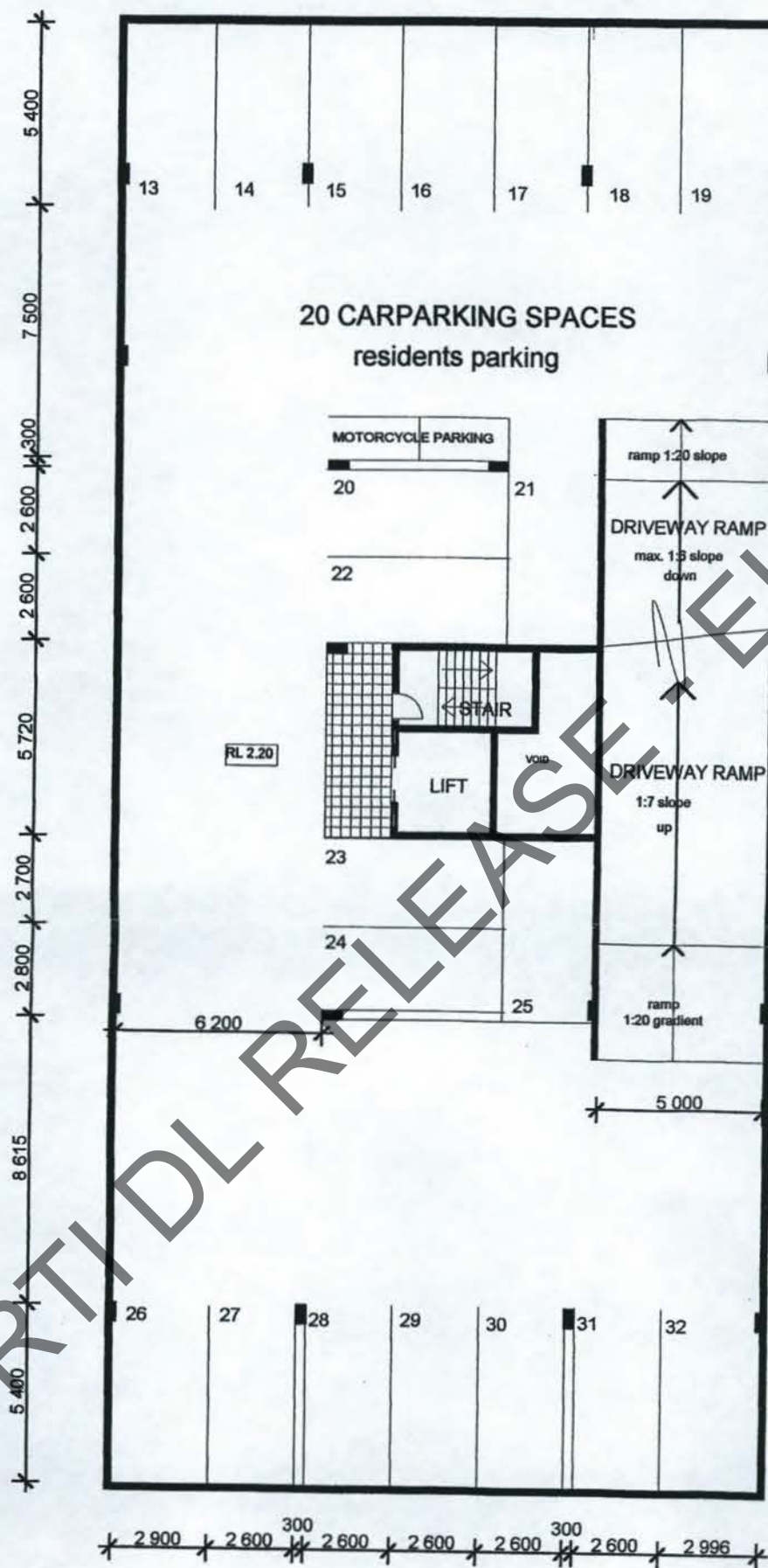
CNR. SAMUEL ST. & MERTHYR RD.
NEW FARM QLD 4005
P.O. BOX 28 NEW FARM QLD 4005
PH: (07) 3254 1707 FAX: (07) 3358 1897
ACN 078-490-851

Client
CASTLEWHITE GROUP

Project
**25-27 HOPE STREET
SOUTH BRISBANE**

Title
LOWER BASEMENT FLOOR PLAN

Scale: 1:200	Date: 12/12/01	Drawn: KA
Job No. 1617HOP	Drawing No. 64 of 133 TP02	Revision No. A



BASEMENT LEVEL PLAN

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Date	No.	Details	Signed
12/12/01	A	Issue for DA	KA

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PH: (07) 3254 1707 FAX: (07) 3358 1897
ACN 078-490-851

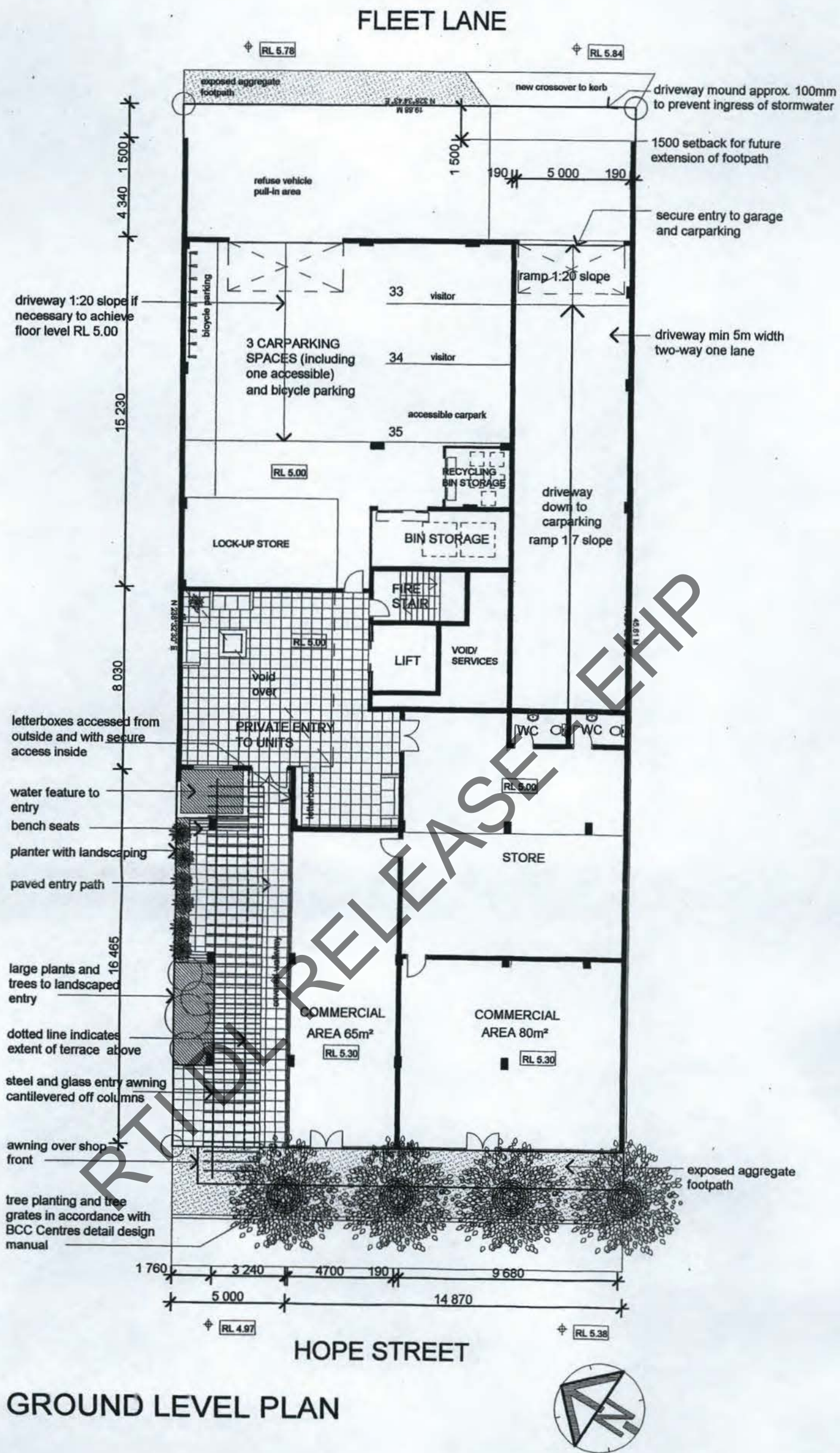
Client
CASTLEWHITE GROUP

Project
25-27 HOPE STREET
SOUTH BRISBANE

Title
BASEMENT FLOOR PLAN

Scale: 1:200 Date: 12/12/01 Drawn: KA

Job No. 1617HOP Drawing No. TP03 Revision No. A



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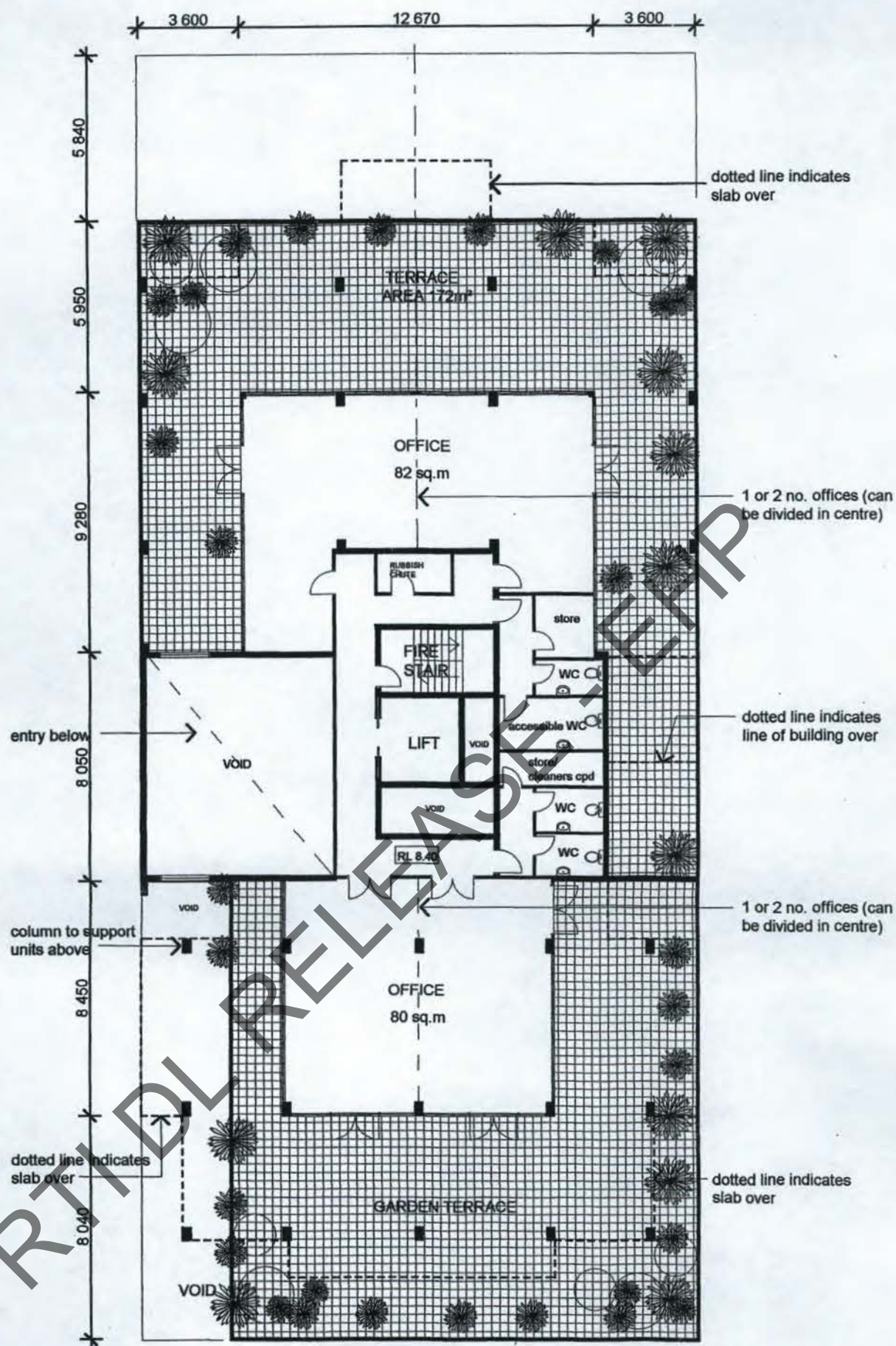
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PH: (07) 3254 1707 FAX: (07) 3358 1897
ACN 078-490-851

Client
CASTLEWHITE GROUP

Project
**25-27 HOPE STREET
SOUTH BRISBANE**

Title
GROUND FLOOR PLAN

Scale:	Date:	Drawn:
1:200	12/12/01	KA
Job No.	Drawing No.	Revision No.
1617HOP	TP 04	A



LEVEL 1 PLAN

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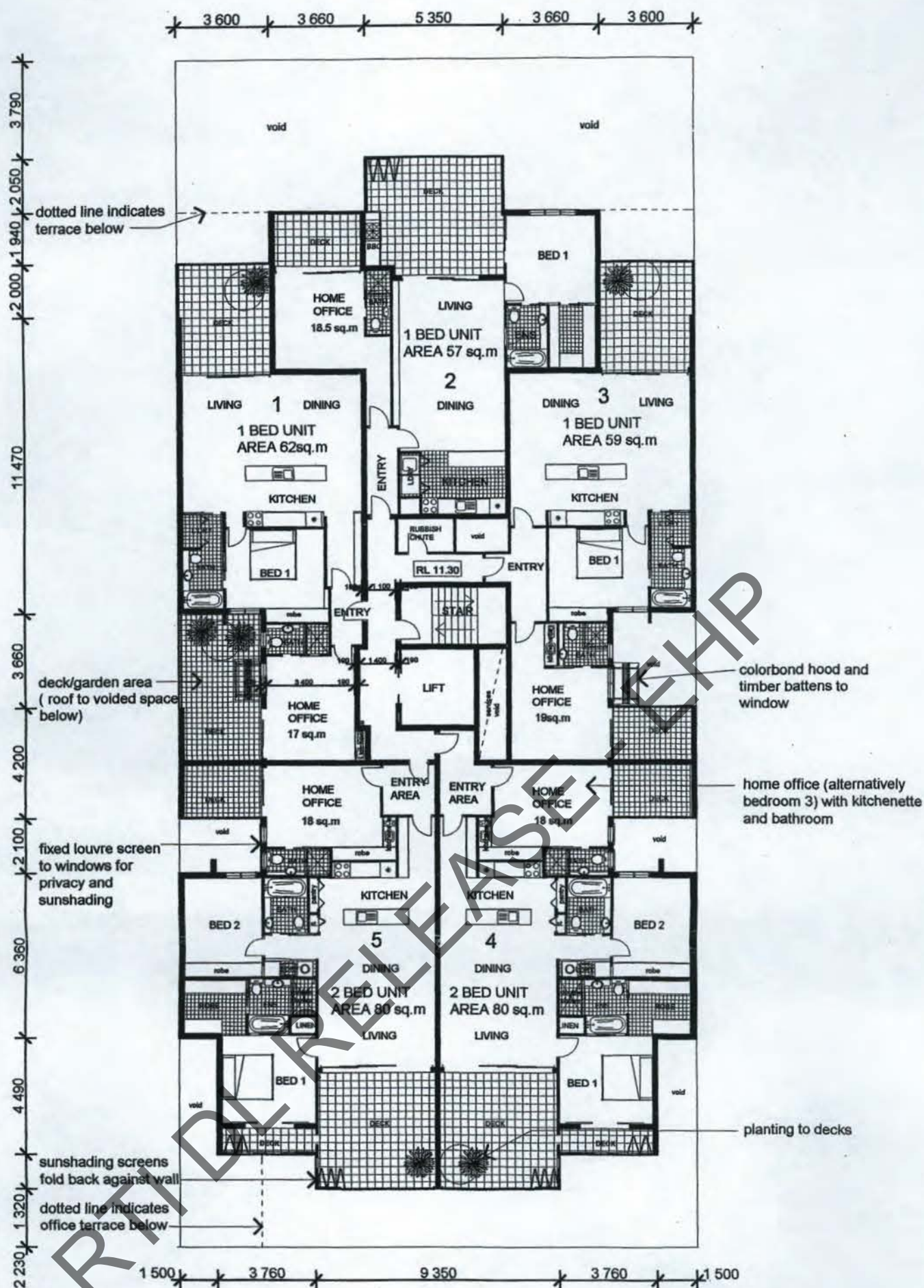
Client
CASTLEWHITE GROUP

Project
25-27 HOPE STREET
SOUTH BRISBANE

Title
LEVEL 1 FLOOR PLAN

Scale: 1:200 Date: 12/12/01 Drawn: KA

Job No. 1617HOP Drawing No. 67 of 133 TP 05 Revision No. A



LEVEL 2 PLAN

UNITS

3 X 1 BED with HOME OFFICE
2 X 2 BED with HOME OFFICE

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Date	No.	Details	Signed
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Confirm all dimensions on site.
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All workmanship, materials and construction to comply with the Queensland Building Act 1975-1992 and The Building Code of Australia.

File B

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P.O. BOX 28 NEW FARM QLD 4005
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ACN 078-490-851

Client
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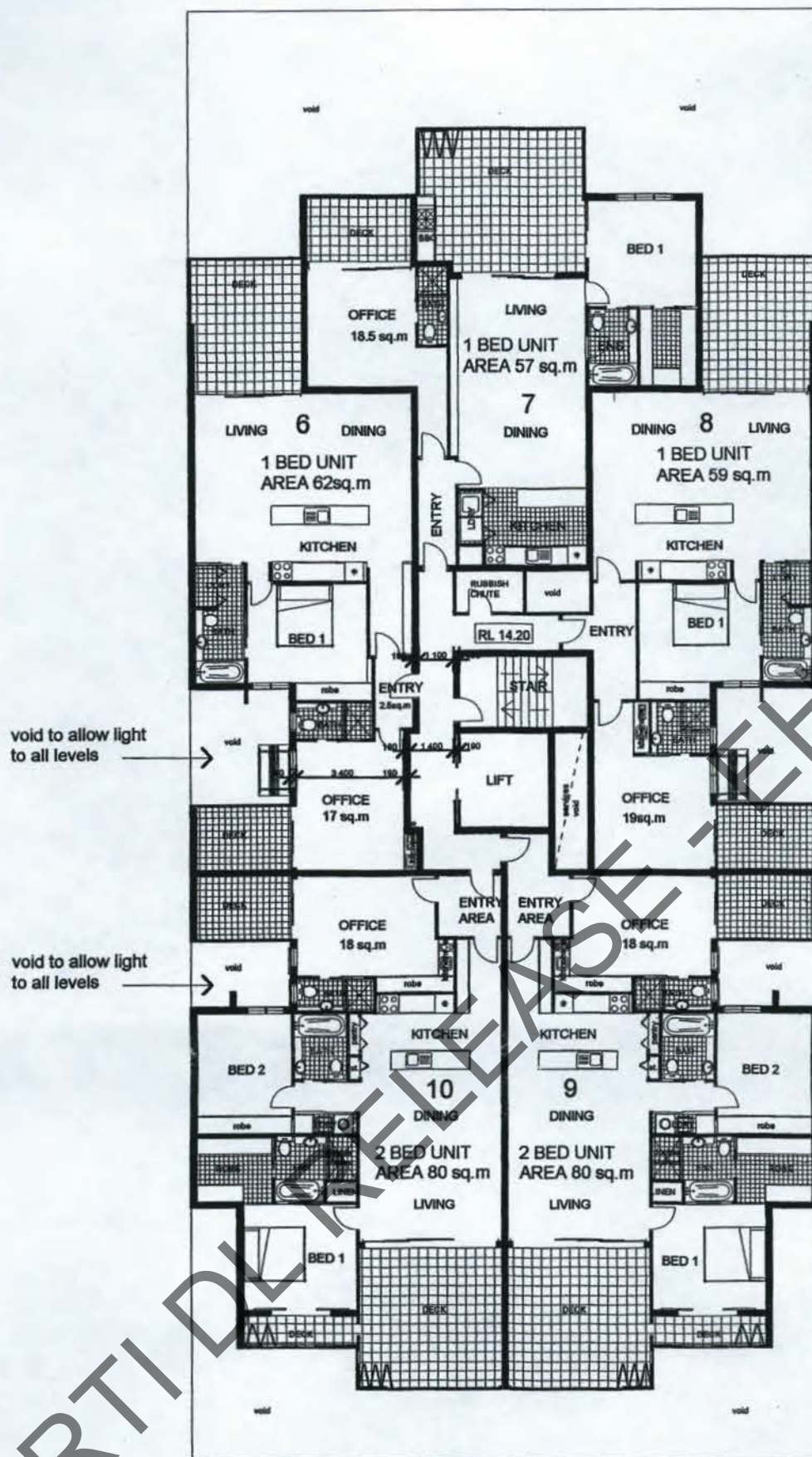
Project
25-27 HOPE STREET
SOUTH BRISBANE

Title
LEVEL 2 FLOOR PLAN

Scale: 1:200 Date: 12/12/01 Drawn: KA

Job No. 1617HOP Drawing No. TP 06 Revision No. A

68 of 133



LEVEL 3 PLAN



UNITS

3 X 1 BED with HOME OFFICE
2 X 2 BED with HOME OFFICE

Revisions & Copies

Date	No.	Details	Signed
12/12/01	A	ISSUE FOR DA	KA

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File B

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ARCHITECTS PTY LTD

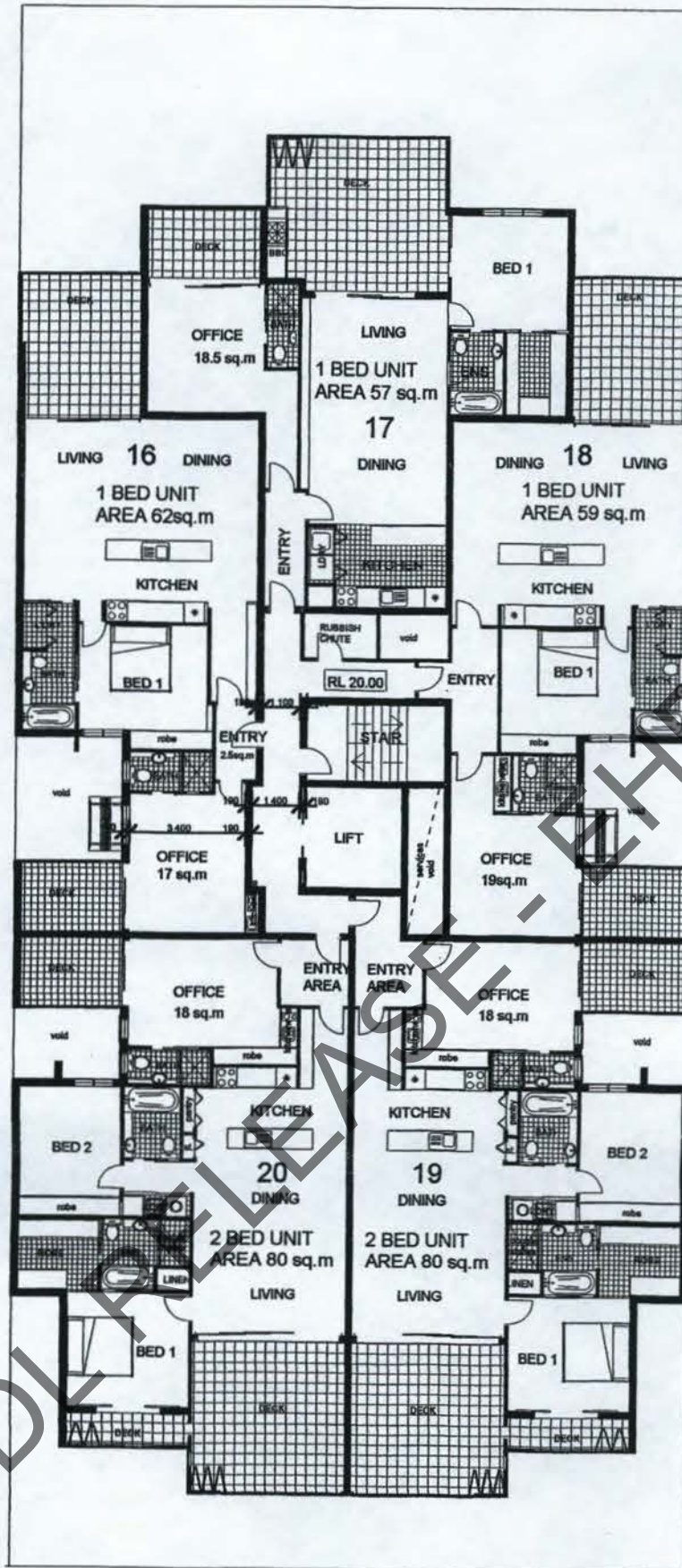
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NEW FARM QLD 4005
P.O. BOX 28 NEW FARM Q4005
PH: (07) 3254 1707 FAX: (07) 3358 1897
ACN 078-490-851

Client
CASTLEWHITE GROUP

Project
25-27 HOPE STREET
SOUTH BRISBANE

Title
LEVEL 3 FLOOR PLAN

Scale:	Date:	Drawn:
1:200	12/12/01	KA
Job No.	Drawing No.	Revision No.
1617HOP	69 of 133 TP 07	A



LEVEL 5 PLAN



UNITS

3 X 1 BED with HOME OFFICE
2 X 2 BED with HOME OFFICE

Revisions & Copies

Date	No.	Details	Signed
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Confirm all dimensions on site.
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File B

**KEVIN
HAYES**

ARCHITECTS PTY LTD

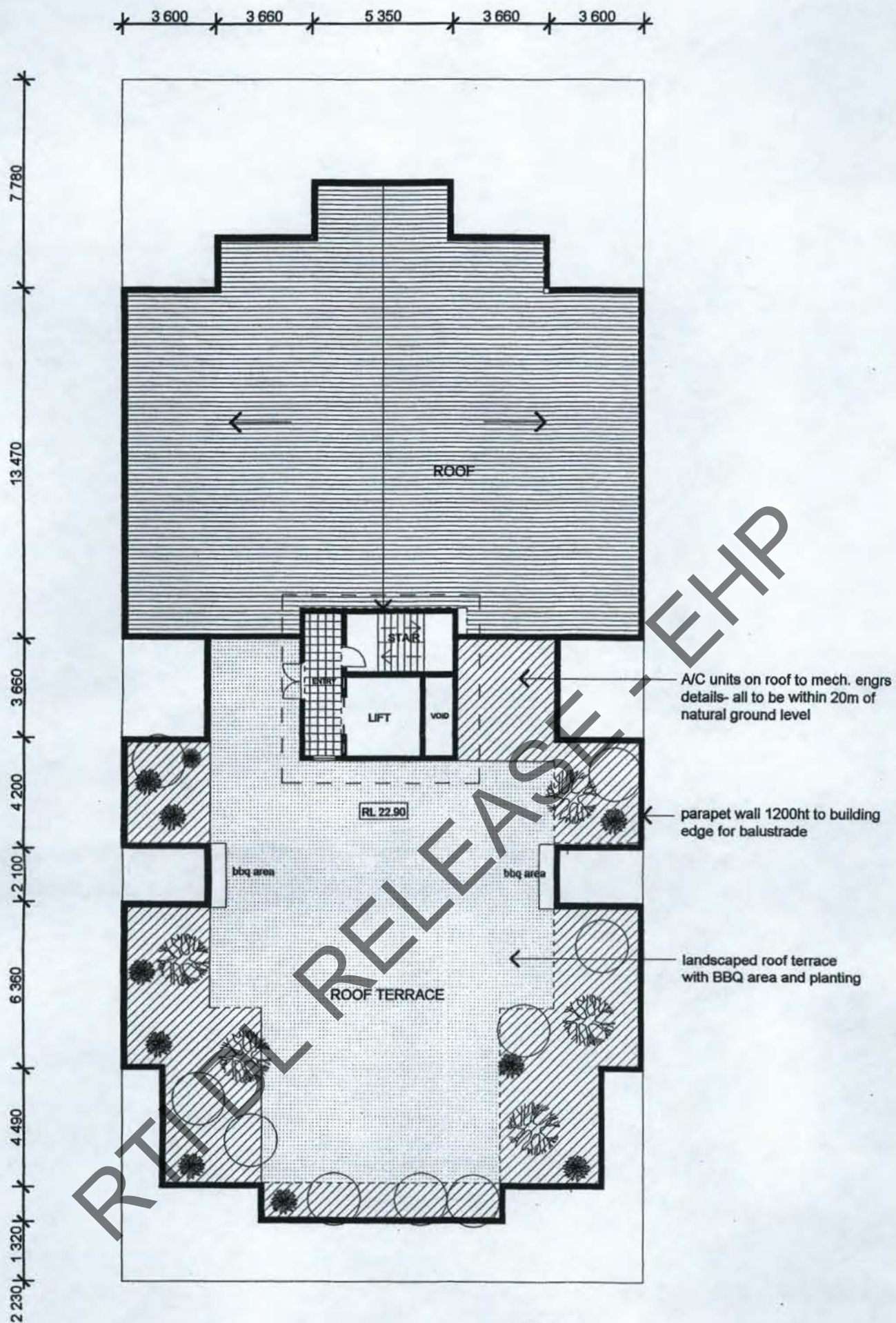
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NEW FARM QLD 4005
P.O. BOX 28 NEW FARM QLD 4005
PH: (07) 3254 1707 FAX: (07) 3358 1897
ACN 078-490-851

Client
CASTLEWHITE GROUP

Project
**25-27 HOPE STREET
SOUTH BRISBANE**

Title
LEVEL 5 FLOOR PLAN

Scale: 1:200	Date: 12/12/01	Drawn: KA
Job No. 1617HOP	Drawing No. 71 of 133 TP 09	Revision No. A



ROOF PLAN

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All workmanship, materials and construction to comply with the Queensland Building Act 1975-1992 and The Building Code of Australia.

File B

KEVIN HAYES

ARCHITECTS PTY LTD

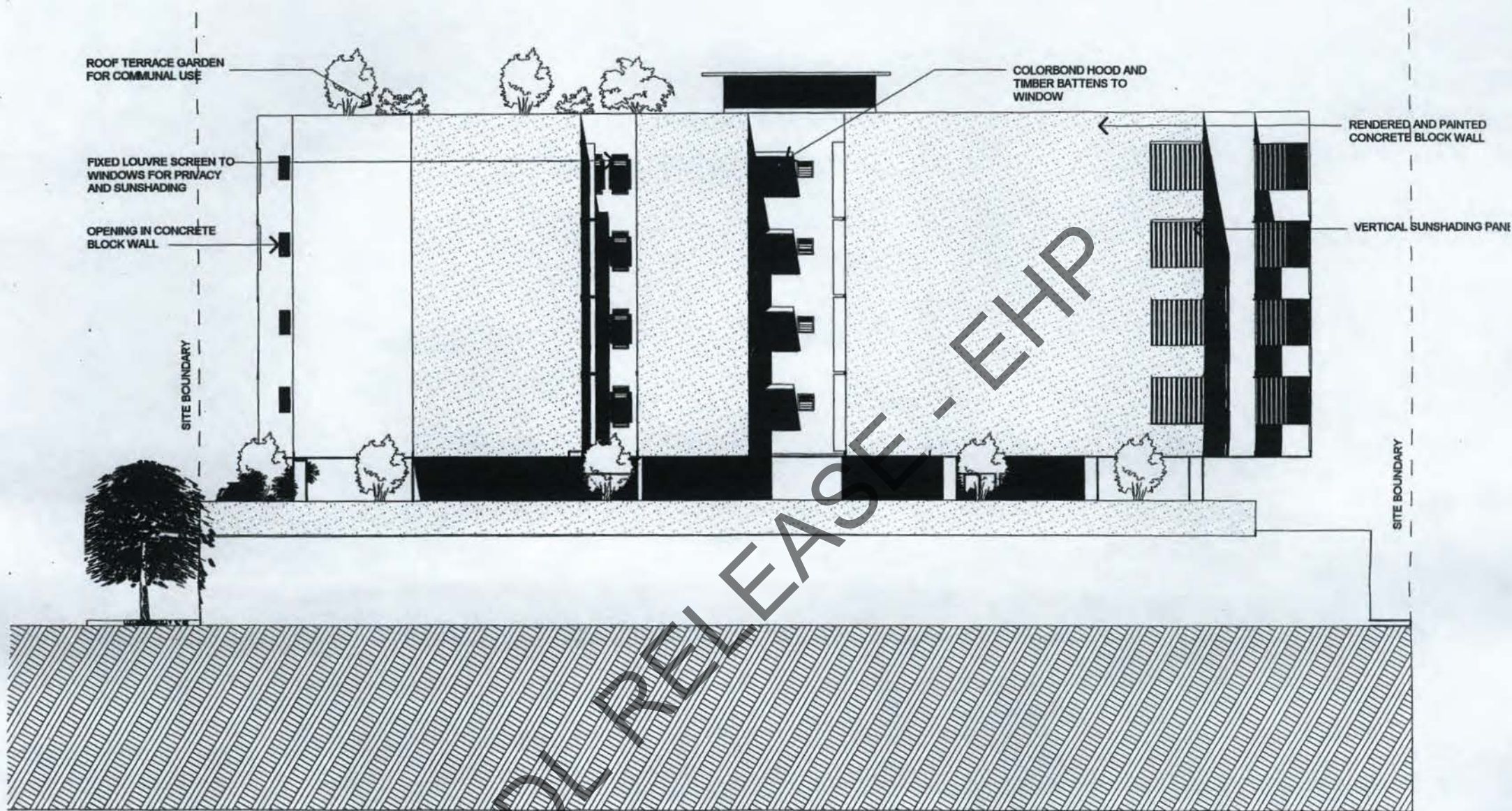
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NEW FARM QLD 4005
P.O. BOX 28 NEW FARM Q4005
PH: (07) 3254 1707 FAX: (07) 3358 1897
ACN 078-490-851

Client
CASTLEWHITE GROUP

Project
25-27 HOPE STREET
SOUTH BRISBANE

Title
ROOF PLAN

Scale: 1:200	Date: 12/12/01	Drawn: KA
Job No. 1617HOP	Drawing No. TP 10	Revision No. A



NW ELEVATION 1:200
THIS ELEVATION IS TYPICAL FOR
SW ELEVATION

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Date	No.	Details	Signed

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File B

**KEVIN
HAYES**

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P.O. BOX 28 NEW FARM Q4005
PH: (07) 3254 1707 FAX: (07) 3358 1897
ACN 078-490-851

Client
CASTLEWHITE GROUP

Project
**25-27 HOPE STREET
SOUTH BRISBANE**

Title
ELEVATIONS

Scale: 1:200	Date: 12/12/01	Drawn: KA
Job No. 1617HOP	Drawing No. TP11	Revision No. A

20M ABOVE NATURAL GROUND

RL 22.90

RL 20.00

RL 17.10

RL 14.20

RL 11.30

RL 8.40

RL 5.00

ROOF TERRACE GARDEN
FOR COMMUNAL USE

SUNSHADING SCREENS TO
BALCONIES, WHICH FOLD
BACK AGAINST WALL

RENDERED SECTION OF
BALUSTRADE TO
BALCONY

GLASS AND METAL FRAMED
BALUSTRADE

AWNING OVER COMMERCIAL
GROUND FLOOR SPACES

ENTRY

FRONT ELEVATION 1:200

ADJUSTABLE SUNSHADING
SCREENS

GARDEN TERRACE TO
OFFICE SPACES

DOORS TO GARAGE

REAR ELEVATION FROM FLEET LANE
1:200

Revisions & Copies

12/12/01	A	ISSUE FOR DA	KA
Date	No.	Details	Signed

Confirm all dimensions on site.
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File B

**KEVIN
HAYES**

ARCHITECTS PTY LTD

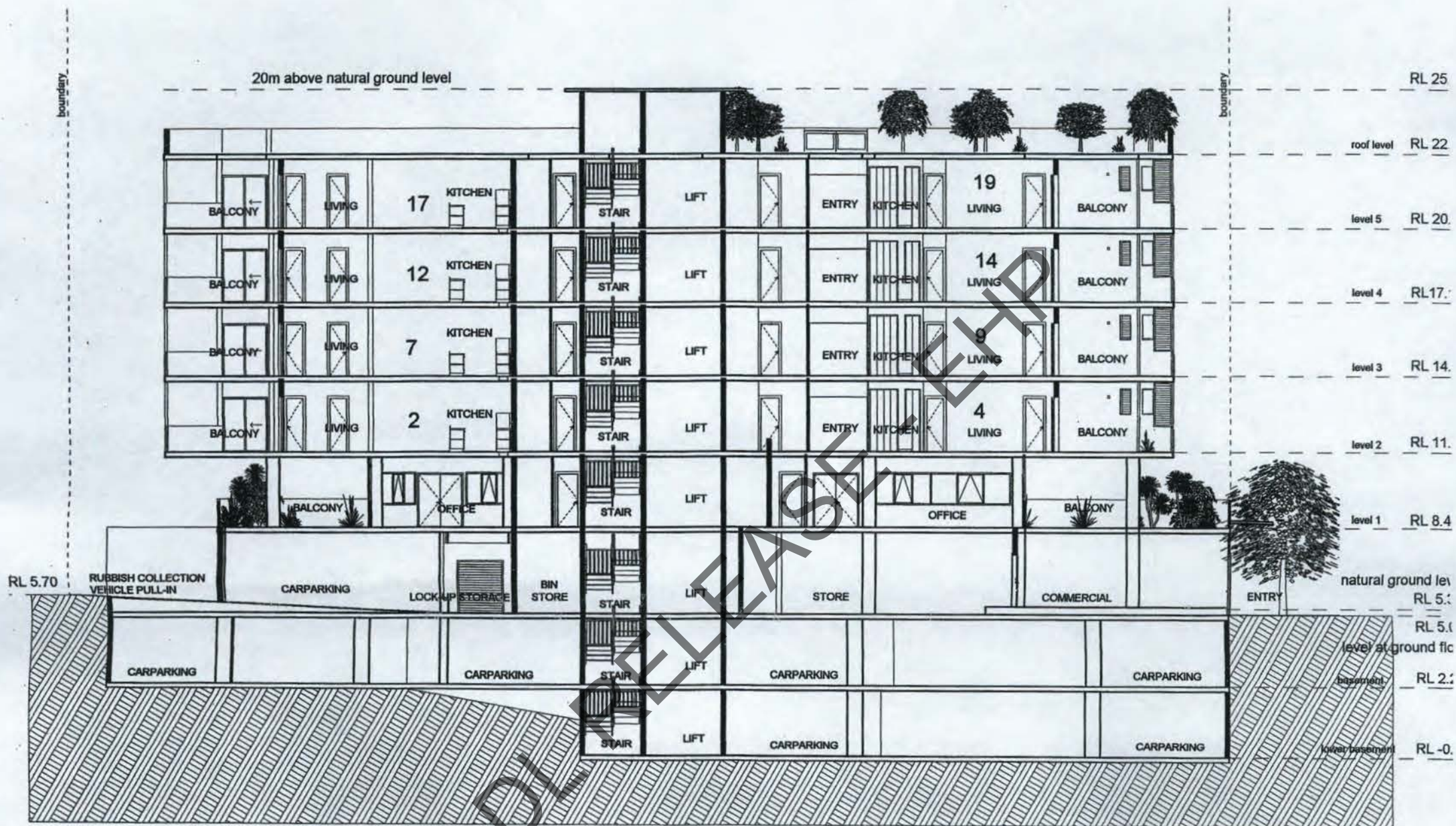
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ACN 078-490-851

Client
CASTLEWHITE GROUP

Project
**25-27 HOPE STREET
SOUTH BRISBANE**

Title
ELEVATIONS

Scale: 1:200	Date: 12/12/01	Drawn: KA
Job No. 1617HOP	Drawing No. TP12	Revision No. A



SECTION 1:200

Revisions & Copies

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Date	12/12/01	Signed	

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File B



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P.O. BOX 28 NEW FARM QLD 4005
PH: (07) 3254 1707 FAX: (07) 3358 1897
ACN 078-490-851

Client
CASTLEWHITE GROUP

Project
25-27 HOPE STREET
SOUTH BRISBANE

Title
SECTION

Scale: 1:200 Date: 12/12/01 Drawn: KA

Job No. 1617HOP Drawing No. TP13 Revision No. A

75 of 133



FRONT ELEVATION
HOPE STREET

Revisions & Copies

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Date	No.	Details	Signed

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File B

**KEVIN
HAYES**

ARCHITECTS PTY LTD

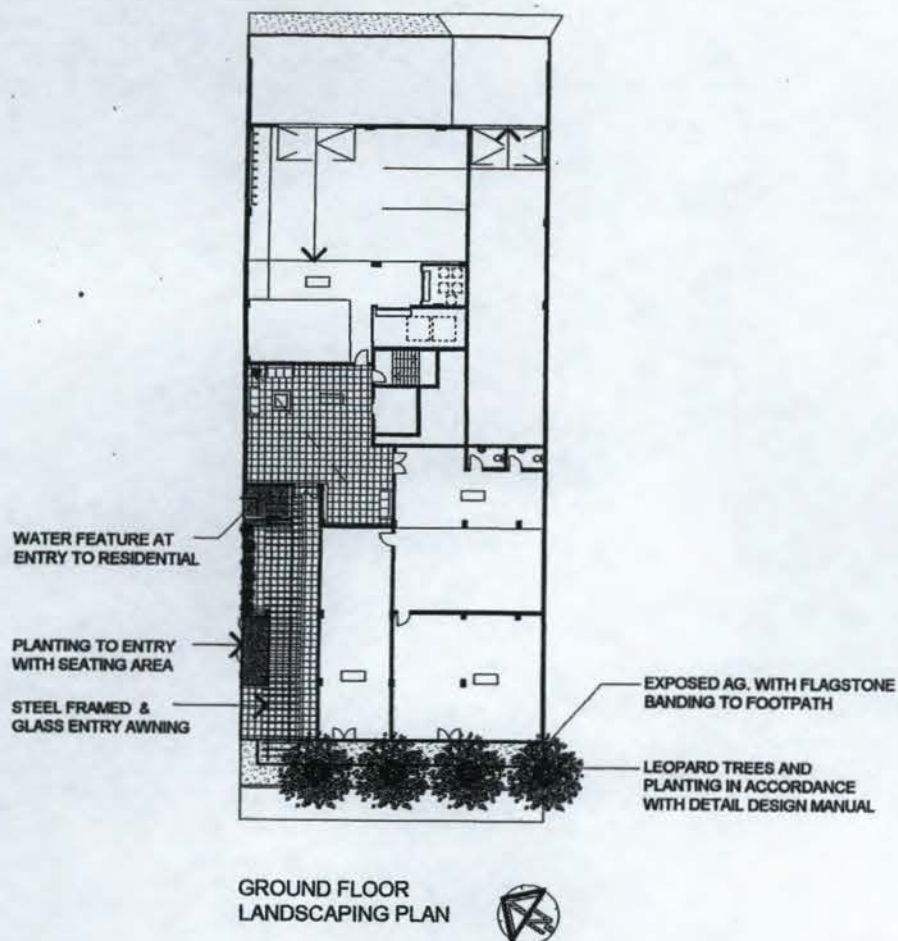
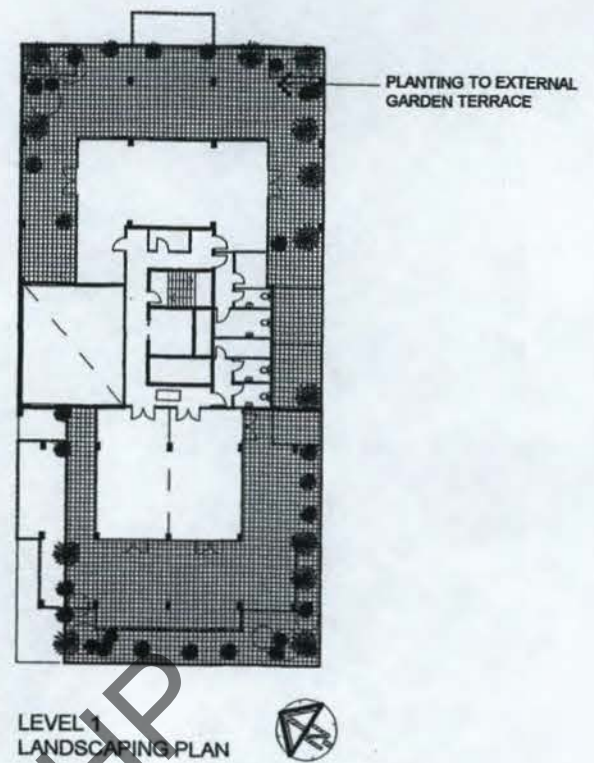
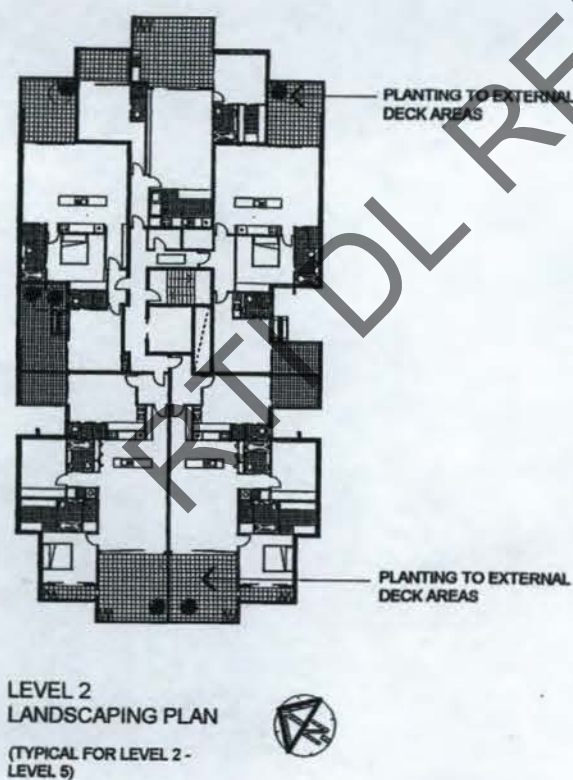
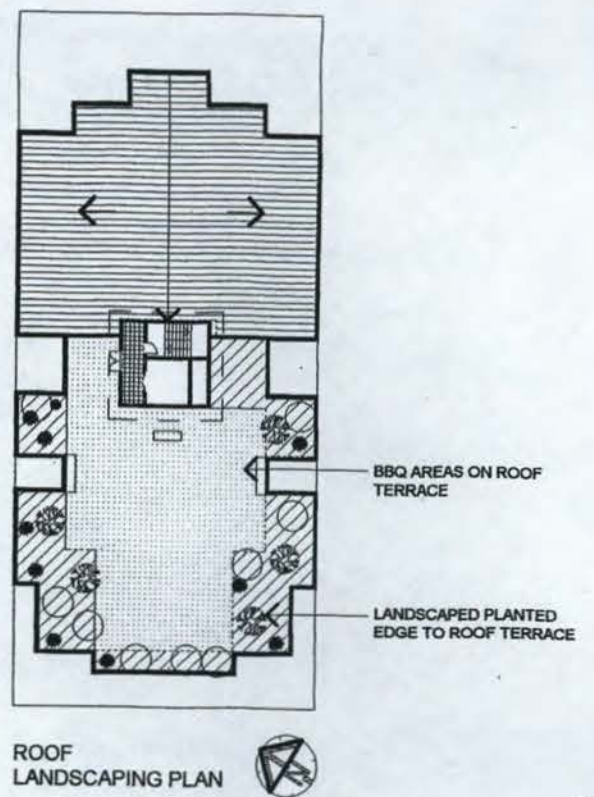
CNR. SAMUEL ST. & MERTHYR RD.
NEW FARM QLD 4005
P.O. BOX 28 NEW FARM QLD 4005
PH: (07) 3254 1707 FAX: (07) 3358 1897
ACN 078-490-851

Client
CASTLEWHITE GROUP

Project
**25-27 HOPE STREET
SOUTH BRISBANE**

Title
PERSPECTIVE VIEWS

Scale: 1:200	Date: 12/12/01	Drawn: KA
Job No. 1617HOP	Drawing No. TP 14	Revision No. A



Revisions & Copies

Date	No.	Details	Signed
12/12/01	A	ISSUE FOR DA	KA

Confirm all dimensions on site.
Do not scale off drawings.
All workmanship, materials and construction to comply with the Queensland Building Act 1975-1992 and The Building Code of Australia.

File B

KEVIN HAYES

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Client
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Project
25-27 HOPE STREET
SOUTH BRISBANE

Title
LANDSCAPING PLANS

Scale:	Date:	Drawn:
1:200/1:500	12/12/01	KA
Job No:	Drawing No.	Revision No.
1617HOP	TP 15	A

77 of 133

AREA FOR REFUSE VEHICLE
PULL-IN SHOWN HATCHED

approx. size of vehicle

refuse vehicle pull-in
area/collection point

ROLLER DOORS TO REFUSE
BIN ENCLOSURES FOR
EASY ACCESS

RECYCLE
BIN
ENCLOSURE

refuse collection- pull
bins out of enclosure
to refuse vehicle

REFUSE BIN ENCLOSURE

GROUND FLOOR PLAN
REFUSE COLLECTION 1:100

Revisions & Copies

12/12/01	A	ISSUE FOR DA	KA
Date		Signed	

Confirm all dimensions on site.
Do not scale off drawings.
All workmanship, materials and construction to
comply with the Queensland Building Act
1975-1992 and The Building Code of Australia.

File B

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HAYES**

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Client
CASTLEWHITE GROUP

Project
**25-27 HOPE STREET
SOUTH BRISBANE**

Title
PART PLAN SHOWING REFUSE
COLLECTION DETAILS

Scale: 1:200/1:100	Date: 12/12/01	Drawn: KA
Job No. 1617HOP	Drawing No. TP16	Revision No. A



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**WATER SUPPLY, STORMWATER AND SEWERAGE
INVESTIGATION**

25-27 Hope Street, SOUTH BRISBANE

FOR

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	1.2 Stormwater quality risk classification
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3	Water supply
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5	Stormwater drainage and water quality
	5.1 Local stormwater drainage conditions
	5.2 Drainage performance requirements
	5.3 Hydraulic assessment
	5.4 Water quality
6	References
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	Appendix B Site photographs

1 Introduction

1.1 Proposed development

The proposed development includes demolition of existing buildings and construction of a mixed use residential and commercial development as shown in the Architectural Drawings.

Existing and proposed land use

The existing land use includes various commercial activities as shown in the photographs in Appendix B.

The proposed development includes retail, office and residential unit development.

Assessment of hydraulic loading from the development is summarised in Table 1.1.

Table 1.1 Hydraulic loading summary

Function	Detail [per floor area]	Ground floor	Level 1	Level 2	Level 3	Level 4	Level 5	Total
Living area	Bedrooms			2No 2 BDR + 3No 1 BDR	2No 2 BDR + 3No 1 BDR	2No 2 BDR + 3No 1 BDR	2No 2 BDR + 3No 1 BDR	
	Kitchens			5	5	5	5	20
	Toilets [WC+sink]			7	7	7	7	28
	Laundry			5	5	5	5	20
Retail areas	2 separate areas	2 toilets						
Office			2 toilets	5No @ 1 toilet, bathroom & small kitchen				

1.2 Development stormwater risk classification

The development is classified as low risk as per BCC Development and Subdivision Guidelines, [ref1]. The key criteria used for this assessment are addressed below.

Table 1.2 Assessment of risk category[1]

Criteria	Limit for high risk development	Proposed development interpretation
Part of the development located in a waterway corridor etc	Within 30m of a waterway corridor	Relevant overland flow paths more than 30m away
Impermeable surfaces, excluding roof areas	Above 2500m ²	Less than 2500m ²
Subdivision	Above 6 lots	Not applicable
Uncovered car parks	Above 100 spaces	Less than 100 spaces

[1] based on ref 1, Part C, section 16

2 Site Characteristics

Location

The development is located at 25 to 27 Hope Street, South Brisbane, as shown in Fig 1.

Topography

The site building has an existing ground level ranging from approximately RL 5.4 to 5.8 as per Fig 1, in which various footpath spot levels are given.

A visual review of local levels and the BiMap topography indicate that there is a fall of over 1.0m from the site boundary to the downstream end of Hope Street.

Soils

Detailed information on site soils has not been obtained at this time.

The site is considered to have a high potential for erosion and environmental harm as per BCC erosion hazard assessment guidelines (refer to appendix A).

Vegetation

There is no significant existing vegetation within the site as the existing building covers the allotment, as shown in the photographs in Appendix B.

3 Water supply

Existing infrastructure

The existing BCC water supply network, based on BiMap data, is illustrated in Fig 3 and appears to include a 100ND main in Hope Street which connects to the main in the northern side of Peel Street.

There are no water mains shown in Fleet Lane.

Proposed infrastructure – external works

The preferred external works would include a new connection to the site from the main in Hope Street.

Nomination of the diameter of the site connection will be by BW, in accordance with BCC requirements, [ref 2].

4 Sewerage

Existing infrastructure

The existing BW sewerage system, based on BiMap data, is illustrated in Fig 3 and includes; a 150ND sewer in Hope Street. The 150ND sewer connects to a sewer in Montague Road.

There are no sewer mains shown in Fleet Lane.

Proposed infrastructure

The proposed external works, as shown in Fig 3, includes a connection from the site to the 150ND sewer in Hope Street.

Nomination of the diameter of the site connection and location will be undertaken during the design process.

5 Stormwater drainage and water quality

5.1 Local stormwater drainage conditions

Local drainage patterns

The general characteristics of overland flow are evident from the site survey drawing and from photographs in Appendix B.

The site has no constructed or natural watercourses. Surface flow would not occur on the site as the existing and proposed buildings fully cover the site.

The site drains to the north and east, via the BCC drainage system as shown in Fig 1 and 2. Discharge of surface and piped flow from Hope Street, adjacent to the site, would be to Montague Road. This local discharge would be to the Montague Road and Boundary Road drains and associated overland flow as per Fig 2.

Previous waterway related studies.

No specific background studies have been identified to date by BCC staff, based on meetings with City Design and Plan Custodian staff. The available BCC information is as follows;

BCC flood modelling indicates that Brisbane River flood levels, for the same recurrence interval storm event, are substantially higher than flood levels in the nearest modelled creek, ie Norman Creek.

Designated flood levels are given below for flood modelling cells BN51 and BN52 which are immediately upstream and downstream of the intersection of Montague Road and Boundary street, ie Brisbane River chainage 26300 and 26400.

Table 5.1 Flood levels [ref 5]

Storm event ARI (years)	Flood levels AHD [m]	
	Upstream	Downstream
20	2.7	2.6
55 (50)	4.0	3.9
100	5.0	4.5

Existing stormwater infrastructure

The existing site stormwater infrastructure and local catchment drainage is summarised below;

Table 5.2 Review of existing stormwater infrastructure

Aspect	Upstream catchment	Site drainage	Downstream catchment
Indicative catchment area	No directly connected upstream catchment	site area only	as per Figures 3 and 4
Overview of drainage infrastructure	Refer to Fig 3	☐ None shown on BiMap ☐ Typical minor site drains exist ☐ Probable site drain connection to drain in Montague Road	To Montague Road drains as discussed above

The local South Brisbane drainage infrastructure serves a catchment extending to Gladstone St. Review of BiMap and topographic information indicates that the 2700ND drain along Boundary Road would partly drain this larger catchment. However the overland flow from this catchment is isolated from the Hope St development and would drain primarily via Montague Road or Melbourne St to the Brisbane River.

5.2 Drainage performance requirements

The development will comply with all relevant BCC requirements including the following;

Flood immunity requirements:

Table 5.3 Minimum flood immunity levels- Residential developments [ref 1, table B2.2.1]

Flooding type	Habitable floor level	Non habitable area	Car parking[1]
Localised overland flow path	50yr ARI +500mm	50yr ARI	50yr ARI
Brisbane River	100yr ARI +500mm	100yr ARI + 300mm	20yr ARI

[1] Basement car parks can be constructed to below these levels if entry/exit ramps, air vents etc are above Q_{100} levels.

The above limits are the same as the requirements for commercial development, except for the Brisbane River non habitable level which is 100yr ARI.

Location of building footprint in a low flood hazard zone, for Q_{50} for overland flow and Q_{100} for River flooding

- ☐ Inundation depth < 500mm
- ☐ Flow velocity < 2m/s
- ☐ Velocity * depth < $0.4\text{m}^2/\text{s}$ for areas where pedestrian access would be required.
- ☐ Velocity * depth < $0.6\text{m}^2/\text{s}$ where safety requirements are not as stringent

The impact on flood afflux from the development would be confined to the site would ensure that there will be no worsening of flood inundation on site or on adjoining land.

There will not be any loss of flood plain storage.

Bligh Tanner Pty Ltd
Consulting Engineers

Approval may need to be sought from BCC for building over/near stormwater facilities as the closest BCC drain is relatively close to the site boundary. However this need for approval would be reviewed during the design phase.

5.3 Hydraulic assessment

The proposed stormwater drainage patterns and system will essentially be the same as currently occurs. The only difference would be improved internal site drainage and probable minor reduction in peak discharge resulting from limited pool stormwater detention and landscaped area infiltration.

In summary, the development will not cause any significant change to existing flooding conditions and will not have an adverse impact on BCC's drainage infrastructure.

The highest habitable floor level for domestic dwellings is on level 1, which has a finished floor level of over 2m above potential flood inundation levels.

The proposed ground floor level of may be marginally below part of the ground level in Hope Street. The required flood immunity to the basement level, if needed, would be provided by a minor mound located at the top of the driveway entrance. This would serve both as a speed hump and also to prevent ingress of overland flow. The height of the mound would be defined during the design process and would be say 100mm high. A mound may not be needed.

It is concluded that there is unlikely to be any significant overland flow ingress into the development site and hence loss of flood plain storage.

In terms of major storm overland flow in Melbourne Street or Montague road, the site is hydraulically remote from flood inundation due to ground levels.

A plan of the proposed stormwater drainage is attached as Figure 3. Detailed hydraulic assessment would be undertaken during detailed design phase to confirm details of the piped and overland flow drainage works. Design of the final piped drainage and overland flow systems would be as per BCC and QUDM requirements.

5.4 Water Quality

Pollutants of concern

The pollutants of potential concern, BCC reference 1, are summarised below.

Table 5.4 Pollutants requiring control (1)

Pollutant	Construction phase	Operations phase
Litter	Yes	Yes
Sediment	Yes	Yes -by trapping
Hydrocarbons	Yes	Possible
Toxic materials	Yes	No
pH altering substances	Yes	
Surfactants	No	Yes -by trapping
Heavy metals		Yes
Pathogens		Possible
Nutrients		Yes -by trapping

(1) other than source control

Receiving waters

The relevant BCC water quality management data includes;

- ☐ Brisbane River Catchment
- ☐ Planning Unit is BN/220 South Brisbane
- ☐ Waterway category is utility
- ☐ Waterway section is freshwater creeks and drains
- ☐ Adopted set of environmental values is Set A

Various site and development characteristics, related to water quality management, are summarised below;

Table 5.5 Site and development characteristics

Site characteristics	Development characteristics
Roof area which is to be directly connected to the BCC drainage system	The overall development's footprint includes the entire site. This area is not subject to most contamination sources. The main sources of contamination are wind blow material, birds and insects.
Garden areas	The new garden areas will be isolated from run-on and designed to promote infiltration and to control potential runoff.

Modelling of water quality impacts

Output from the BCC pollutant export spreadsheet follows and has been considered in assessing and modelling the potential impact on receiving waters quality.

In summary it is concluded that permanent stormwater quality control devices are not needed to achieve compliance with BCC requirements. Various construction phase storm water controls would be provided as per standard BCC requirements.

6 References

Documents used for the above assessment include;

- Ref 1 BCC Subdivision and development guidelines, 2000
- Ref 2 Soil erosion and sediment control, IE Aust 1996.
- Ref 3 AS 1726- Geotechnical site investigation
- Ref 4 AS1289- Determination of Emerson Class
- Ref 5 BCC BiMap Flood search output.
- Ref 6 Queensland Urban Drainage Manual.
- Ref 7 BCC Water and Sewerage Reticulation Standards, 2000

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Date: 12/12/2001
Time: 10:41:52

Scale: 1:1500

Location: 501515 E, 6961028 N

Themes:

Cadastre
Contours
Investigation Areas
30m Buffers Waterway Corridors
Flood Regulation Lines
Local Plan Waterway Corridors
Brisbane River Corridors
Land Subject to Wetlands
Local Plan Boundaries

① Spot level
⇒ Direction of surface flow

FIG 1

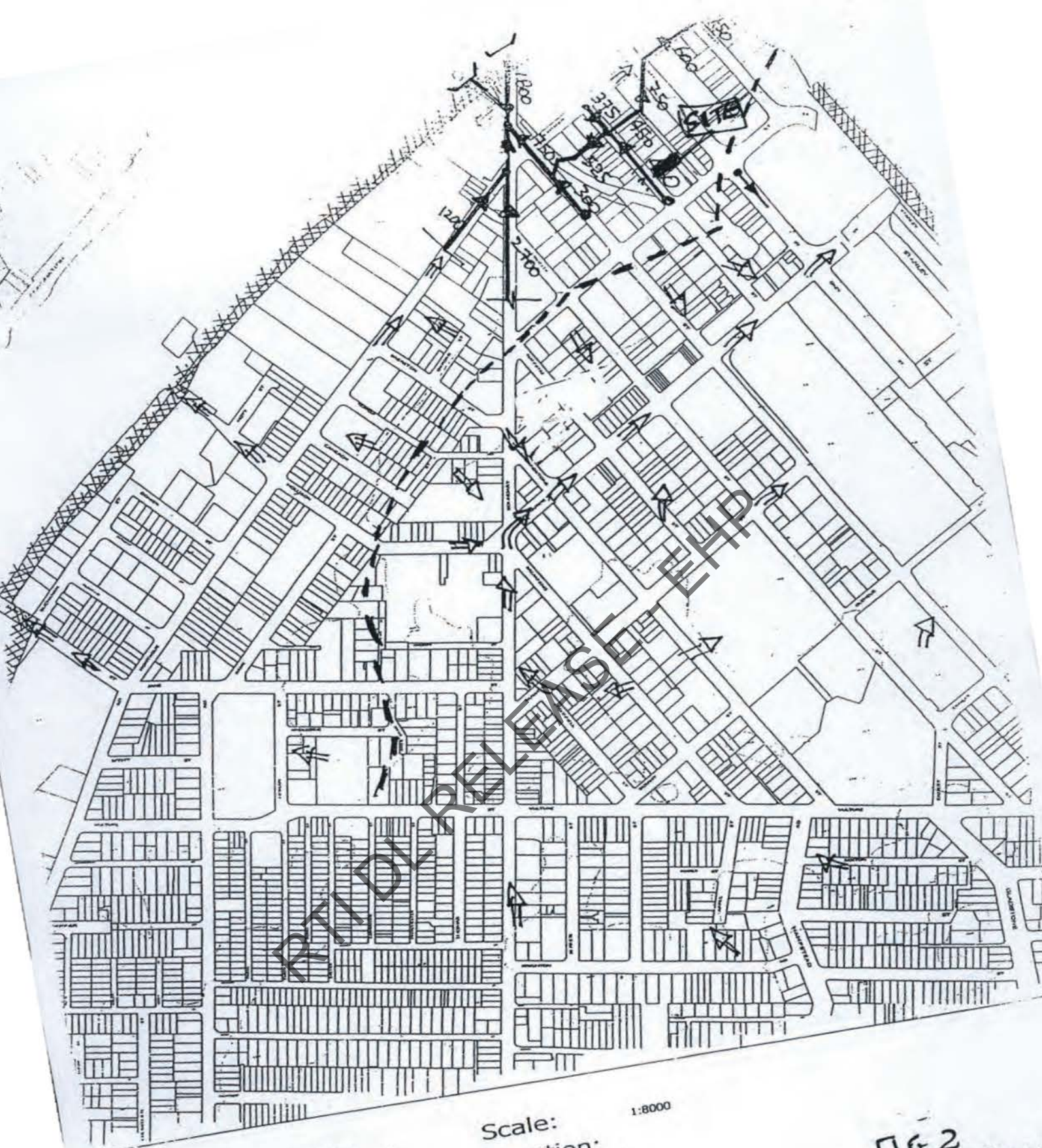
SURVEY & DRAINAGE ISSUES



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Survey reference:

- Fulton consulting, 13/12/01
- Levels to AHD from sewer accesshole 171274; i.e. GL = 5.505.



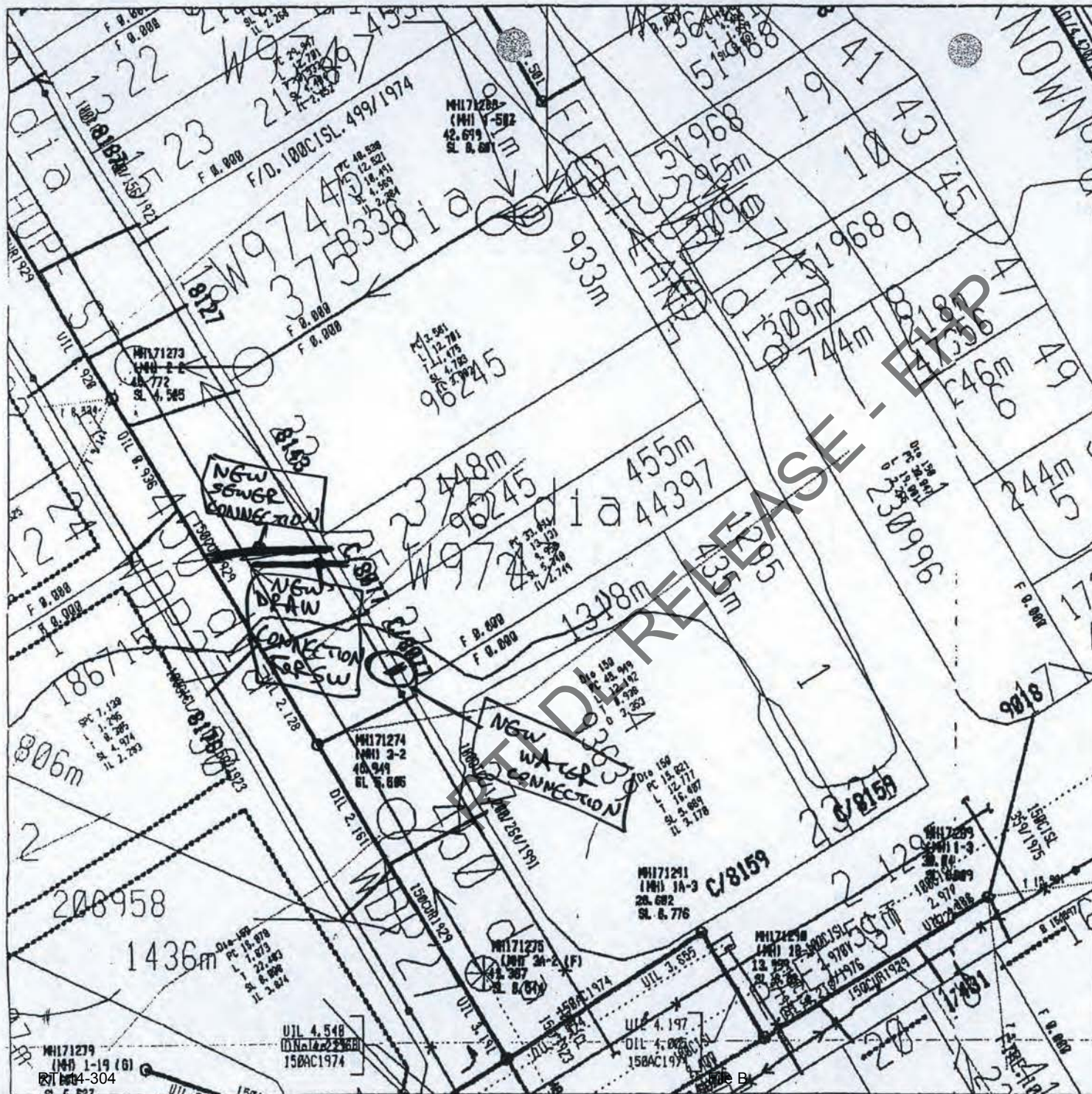
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Themes:
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Contours
Investigation Areas
30m Buffer Waterway Corridor
Flood Protection Lines
Local Plan Waterway Corridor
Bundage Water Corridor
Local Plan Waterway Corridor

FIG 2
LOCAL DRAIN
CATCHMENT



-- Catchment boundary
→ Overland flow direction
--- Stormwater drain + diameter



Date: 22-May-2001

Time: 15:18:55

Userid: xb0876

Username: KEVIN HAYES ARCHITECT

Job: Loan

Scale: 1:625

Location: 27 HOPE ST, SOUTH BRISBANE

Themes: CADASTRE
CONTOURS.BIM
SEW.EXT
STORMWATER
WATER_SUPPLY.EXT

Warnings:

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Appendix A

Erosion Hazard Assessment

RTI DL RELEASE - EHP

Bligh Tanner Pty Ltd
Consulting Engineers



Erosion Hazard Assessment

to be lodged with any development or operational works/detail design application requiring assessment against any Code/s requiring water quality management with respect to minimising soil erosion and the control of sediment.

What is an Erosion Hazard Assessment?

Generally, the most significant soil erosion and sediment pollution 'risk' applies during the construction stage of a development. In some cases however, the development may present a long term risk after completion.

The Erosion Hazard Assessment determines whether that risk is 'low' or 'high'. The assessment uses a point scoring system based on Council's requirements for stormwater management and Erosion and Sediment Control (ESC).

Explaining the Erosion Hazard Assessment form

Complete the table on the back of this form before you complete the certification below.

- **Site condition** – lists varying erosion-related factors to be assessed.
- **Points** – a range of values representing the significance of the erosion-related factors for each site condition. Note that the higher the points value, the more significant its potential erosion and/or pollution hazard.
- **Score** – your assessment. Allocate the appropriate point score for each site condition which best matches your development proposal. (Example: for the first site condition, you would write score 2 points if the average slope of disturbance area was 6%.)
- **Trigger score** – some site conditions have been allocated a trigger score. If your score for any of these site conditions is equal to or greater than the trigger score, the development proposal will usually be considered 'high risk'.
- **Certification** – only a person with suitable qualifications and experience in erosion and sediment control can certify that this form has been completed accurately and to Council's requirements. Refer to Council's *Applicants Guide to Managing Erosion and Sediment Control in the Development Application/Assessment Process* for the definition of a 'suitably qualified and experienced professional in erosion and sediment control'.
- **Additional information** – refer to the Erosion Hazard Assessment Technical Notes for more information about completing this assessment. Where you see a number in brackets like this [-] in the assessment table the number is referenced in the technical notes.

A 'low' risk score

Generally, if the *Erosion Hazard Assessment* produces a Total Score of **less than 17** and no individual score is equal to or greater than its Trigger Score, the development proposal is considered to be 'low risk'.

A 'high' risk score

If the *Erosion Hazard Assessment* produces a Total Score of **17 or greater** or any individual score is equal to or greater than its Trigger Score, the development proposal is considered to be 'high risk'. Applicants must lodge sufficient supporting information to demonstrate that the performance criteria of the relevant Code/s in the *City Plan 2000* can be achieved.

Certification – complete Assessment Table on back of this form first

Is Total Score equal to or greater than 17?

No ☒ Yes ☐ Refer to Council's *Applicants Guide to Managing Erosion and Sediment Control in the Development Application/Assessment Process*

Did you answer 'yes' to any Trigger Score question?

No ☐ Yes ☒ Refer to Council's *Applicants Guide to Managing Erosion and Sediment Control in the Development Application/Assessment Process*

Application number

Site address

25-27 HOPE ST
SOUTH BRISBANE

RTI 14-304

File B

Prepared by Print name

STEVEN BOND

Certified by Print name

STEVEN BOND

Business name

BLICH TANNER P/L

Certifier's signature and date

sch 4 - signature 12/12/01

Brisbane Assessor's name

City Council

Use Only Officer code Date

1 /

92 of 133

Assessment Table

Site Condition	Points	Score	Trigger Score	BCC Use Only
[1] AVERAGE SLOPE OF DISTURBANCE AREA <ul style="list-style-type: none"> less than 3% (3% = 33H:1V) 0 more than 3% but less than 5% (5% = 20H:1V) 1 more than 5% but less than 10% (10% = 10H:1V) 2 more than 10% but less than 15% (15% = 6.7H:1V) 4 more than 15% 6 	0	0	Score equal to or greater than 4? No ☒ Yes ☐	
[2] SOIL CLASSIFICATION GROUP (AS1726) <ul style="list-style-type: none"> GW, GP, GM, GC 0 SW, SP, SM, SC, Pt 1 MH, CH, OH 2 ML, CL, OL, if imported fill will be used, or if soils untested 3 	3	3		
[3] EMERSON (DISPERSION) CLASS NUMBER <ul style="list-style-type: none"> Class 4, 6, 7, or 8 0 Class 5 2 Class 3 4 Class 1 or 2 6 	6	6	Score equal to or greater than 4? No ☐ Yes ☒	
[4] DURATION OF SOIL DISTURBANCE <ul style="list-style-type: none"> less than 1 month 0 more than 1 month but less than 4 months 2 more than 4 months but less than 6 months 4 more than 6 months 6 	2	2	Score equal to or greater than 4? No ☒ Yes ☐	
[5] AREA OF DISTURBANCE <ul style="list-style-type: none"> less than 1000 m² 0 more than 1000 m² but less than 5000 m² 1 more than 5000 m² but less than 1 ha 2 more than 1 ha but less than 4 ha 4 more than 4 ha 6 	0	0	Score equal to or greater than 4? No ☒ Yes ☐	
[6] WATERWAY DISTURBANCE <ul style="list-style-type: none"> No disturbance to watercourse, open drain or channel 0 Involves disturbance of watercourse, open drain or channel 2 	0	0	Score equal to or greater than 2? No ☐ Yes ☐	
[7] REHABILITATION METHOD Percentage of area (relative to total disturbance) revegetated by seeding without mulching (ie. worst case revegetation method) <ul style="list-style-type: none"> less than 1% 0 more than 1% but less than 5% 1 more than 5% but less than 10% 2 more than 10% 4 	0	0		
[8] RECEIVING WATERS <ul style="list-style-type: none"> Open water body (eg. creek, river, bay) 0 Enclosed water body (eg. lake, boat harbour) 2 	0	0		
[9] SUBSOIL EXPOSURE <ul style="list-style-type: none"> No subsoil exposure except for service trenches 0 Subsoils are likely to be exposed 2 	2	2		
[10] EXTERNAL CATCHMENTS <ul style="list-style-type: none"> No external catchment 0 External catchment diverted around the soil disturbance 1 External catchment not diverted around the soil disturbance 2 	0	0		
[11] ROAD CONSTRUCTION <ul style="list-style-type: none"> No road construction 0 Involves road construction works 2 	0	0		
[12] pH OF SOILS TO BE REVEGETATED <ul style="list-style-type: none"> less than pH 5 1 more than pH 5 but less than pH 9 0 more than pH 9, or if pH testing not done at this stage 1 	1	1		

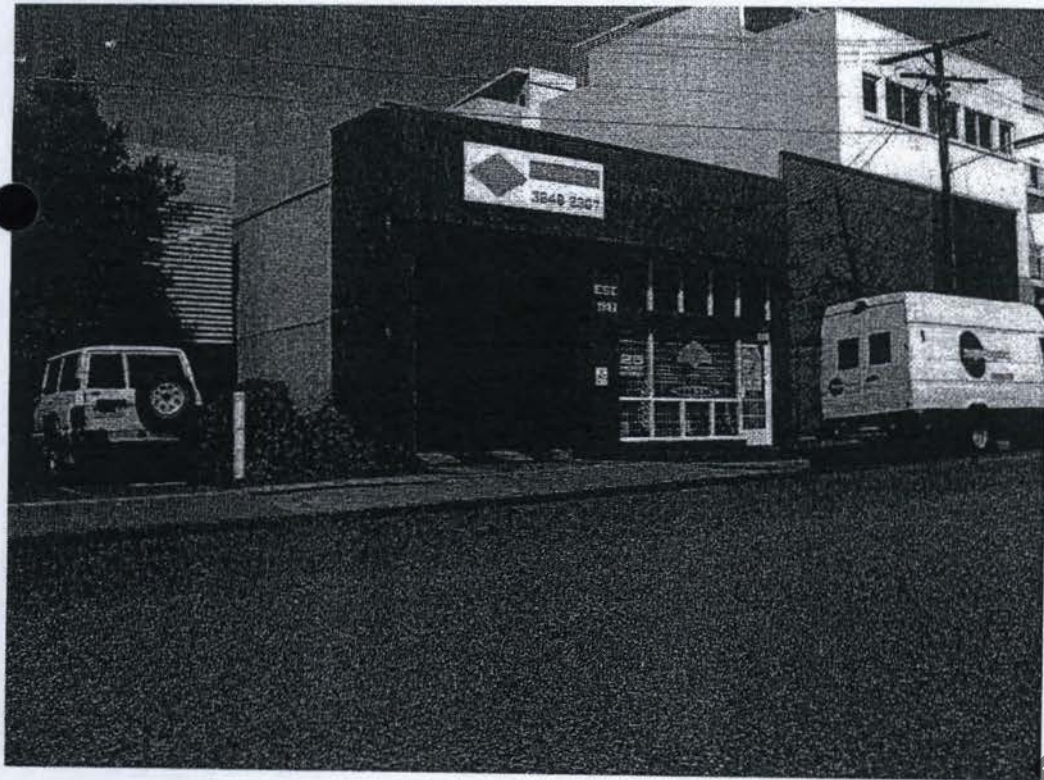
Appendix B

Site photographs

RTI DL RELEASE - EHP

Bligh Tanner Pty Ltd

hope-services



RTI DL RELEASE - EHP



RTI DL RELEASE - EHP

REPORT

NOISE IMPACT ASSESSMENT

**25-27 Hope Street
South Brisbane**

RTI DL RELEASE - EHP

Prepared by Noise Measurement Services Pty Ltd

DOCUMENT CONTROL PAGE

NOISE MEASUREMENT SERVICES PTY LTD

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South Brisbane BC Qld 4101

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Author: Bob Thorne

Copy No _____

REVISION HISTORY

Revision No	Issue Date	Revision Description	Checked By	Issued By
0	10/12/01	Impact assessment report		BT

DISTRIBUTION RECORD

Copy No(s)	Rev No	Destination
1,2,3	0	Karlie
4	0	Noise Measurement Services - file

REPORT FOR

Kevin Hayes, Architects
(Client: Castlewhite Group)

CONTACT

Karlie Andersen

DATE OF TEST

9 - 10 December 2001

LOCATION

25-27 Hope Street, South Brisbane 4101

ASSESSMENT BY

Robert Thorne MS, MAAS, MIOA

REPORT DATE

11 December 2001

Contents

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1. Introduction
2. Noise Level Criteria
3. Description of the development
4. Equipment and measurement procedures
5. Results
6. Noise impact assessment
7. Conclusions

Appendix A	BCC City Plan Requirements; Queensland Rail Code of Practice
Appendix B	AS1055, AS2107, AS3671 summary
Appendix C	Property Plans
Appendix D	Ambient noise time-history data
Appendix E	Prediction of Road Traffic Noise

Executive Summary

This report is in response to a request from Kevin Hayes Architects for a noise impact assessment for a proposed mixed use (commercial and residential) development at 25-27 Hope Street, South Brisbane.

The proposed development consists of 2 levels of shops and offices and 4 levels of residential units combined with individual office space within each unit.

It is concluded that, subject to the comments following, the development is designed and is to be constructed in such a manner that it achieves compliance with Council's noise impact assessment requirements under City Plan Centre Design Code, Centre Amenity and Performance Code, Multi-Unit Dwellings (Medium Density) Code and the Noise Impact Assessment Planning Scheme Policy.

It is concluded that without noise mitigation interior noise levels in some bedrooms will be higher than that recommended under AS2107. It is recommended that-

- Solid 1.2m high balcony parapet walls be provided to the balcony of Unit B and to the bedroom balconies of Units D & E; or alternatively,
- Mechanical ventilation or air conditioning is recommended for the bedrooms adjacent to balconies on Units B, D & E. If air conditioning is installed the condenser units should be at deck level and the quietest units available be provided.

1.0 Introduction

This report is in response to a request from Kevin Hayes Architects for a noise impact assessment for a proposed development at 25-27 Hope Street, South Brisbane. The development is within the South Brisbane Commercial Precinct and is a mixed-use consisting of a combination of residential and commercial uses. The development is assessed in this Report under the Centre Design Code, Centre Amenity and Performance Code and Multi-Unit Medium Density Residential Design Code.

A noise assessment was made at the site over the period 9 – 10 December 2001 to determine the ambient external noise levels from existing rail and traffic and adjacent commercial activities. The potential effects of rail and traffic noise for year 2011 are predicted.

2.0 Noise Level Criteria

2.1 City Plan - Noise Impact Assessment Planning Scheme Policy

The criteria applicable to this development are contained in the City Plan Centre Design Code, Centre Amenity and Performance Code, Multi-Unit Dwellings (Medium Density) Code and the Noise Impact Assessment Planning Scheme Policy. The criteria are summarised in Appendix A. The assessment methods refer to various Australian Standards including AS2107 and AS3671. The requirements of these standards are summarised in Appendix B.

2.2 AS2107

AS2107-2000 *Acoustics-Recommended design sound levels and reverberation times for building interiors* is intended to assist designers to provide a satisfactory acoustic environment within occupied spaces in new and existing buildings. Table 1 identifies the recommended design levels from AS2107 for different areas of occupancy applicable to the proposed development.

Table 1: Recommended design levels for different areas of occupancy in dwellings

Type of Occupancy/Activity	Recommended Design Sound Level dB(A) Leq	
	Satisfactory	Maximum
Houses and Apartments near minor roads		
Living areas	35 dB(A)	45 dB(A)
Sleeping areas	30 dB(A)	40 dB(A)
Work areas	35 dB(A)	45 dB(A)
Private offices (Section 5, Office Buildings)	35 dB(A)	40 dB(A)
General office areas	40 dB(A)	45 dB(A)
Undercover car-parks	55 dB(A)	65 dB(A)

2.3 AS3671

AS3671-1989 *Acoustics-Road traffic noise intrusion-Building siting and construction* applies to building construction and the reduction of road traffic noise intrusion in areas near new or upgraded freeways, tollways, major roads, and national routes or other roads carrying more than 2000 vehicles per day. It provides guidelines for determining the type of building construction necessary to achieve acceptable noise levels indoors, as recommended by AS2107.

3.0 Description of the development

The development is a mix of residential and commercial space with 2 basement levels for car-parking; 2 levels of commercial space and 4 levels of residential units. Each residential level has 5 units incorporating individual office spaces in each unit. Each floor is serviced by a lift. The building does not have installed air conditioning and a plant room is not provided. The location and design of the proposed development are illustrated in the Plans and aerial photograph contained in Appendix C.

The building has been located and designed to attenuate noise from external sources, including traffic noise and plant noise from the north-east and north-west. The design has also been made to reduce noise emissions from within the building, car-parking and waste disposal access areas. From the north-east to the north-west of the development across Fleet Lane is a 3 storey office building, a park, a 4 storey office building and then a 6 -7 storey residential building. (This building is not shown on the aerial photograph). To the immediate north-west is a 3-storey office building. To the west of Hope Street there is an industrial complex approximately 175 metres distant. Heavy vehicles form this complex transit through Hope Street. The Cleveland / Annerley rail-line is to the south of the development, as is a single 2-storey office building. Otherwise the area to the south is car-parking open space. To the immediate north-east is a 4 storey office building.

Some noise (ground level chiller units, roof level extraction systems) from the neighbouring office and commercial buildings will affect the development. The noise from these units is dispersed in nature and is audible at various locations.

The nearest entertainment area is licensed restaurant approximately 150 metres to the north-west at the corner of Montague Road and Hope Street. The development should not affect, nor be affected by, the restaurant. The entry to the basement car-parks is off Hope Street and will not affect any residential other premises. Car-parking is available off Fleet Lane for the ground level offices and will not affect any other residential premises.

4.0 Assessment of environmental conditions.

In order to assess the potential effect of noise from rail, road traffic and general ambient noise an ambient noise level survey was made on-site over the period 9-10 December 2001. Noise events were logged and observations made. All measurements were made in accordance with Australian Standard AS1055-1997 '*Acoustics-Description and measurement of environmental noise; Part 1: General procedures*' and AS2702-1984 '*Acoustics-Methods for the measurement of road traffic noise*'. The measurement location for the 24-hour unattended noise survey was taken at a point 1.5 metre from the front of the building on Hope Street. (This location represented the typical view from the residential units facing Hope Street and Peel Road.) Attended surveys were made at the property line in Hope Street and at the property line in Fleet Lane. The Fleet Lane measurement time was taken to coincide with peak traffic flow on a workday afternoon. The Hope Street measurement time was taken to coincide with a quiet Sunday afternoon.

4.1 Instrumentation:

- Rion NC-73 calibrator s/n 10697026, NATA calibrated (due 5/12/2001);
- Cirrus 704 type 2 sound level meter / electronic chart recorder s/n B11906 manufacturer calibrated (due 1/4/2002);
- Rion 29E type 1 real-time analyzer s/n 11110417, NATA calibrated (due 29/11/2001).

4.2 Calibration:

The sound level meters were calibrated and checked at 94.0 dB(A) before and after the noise measurements.

4.3 Equipment settings:

The Cirrus noise logger was set to record the Leq, Lmax, L10 and L90 levels every 15 minutes over a 24-hour period. (The meaning of these descriptors is explained in Appendix D). The Rion 29E real-time analyzer was used to observe the character of the area and the Cirrus electronic chart recorder used to capture the maximum noise levels from rail and road traffic.

4.4 Weather conditions:

The weather during the survey was generally fine and settled.

4.5 Attended Observations:

Two attended observations were made; one on 9/12 and the other on 10/12 for approximately 30 minutes per survey.

- On 9/12 the survey location was in Hope Street on a Sunday afternoon; nominally the quietest day of the week. The dominant noise sources were from road traffic in Hope Street with rail noise audible. Traffic movements along Peel Road were audible but not to the same extent as Hope Street. Some industrial noise from cooling plant on a neighbouring office building was noted.
- On 10/12 the survey location was in Fleet Lane and traffic noise along the Lane was the dominant noise source. Noise was also evident from traffic in Peel Street and Grey Street. Some chiller plant noise was also audible from a neighbouring commercial premises.

5.0 Results

5.1 Existing ambient levels

The existing ambient levels at the measurement location at the façade of the existing building are summarised in Table 2 and presented in Appendix D. The primary measurement location was at the front of the existing building in Hope Street. For this assessment the measurement interval times are taken as being-

- Day (6:00am - 6:00pm);
- Evening (6:00pm - 10:00pm);
- Night (10:00pm - 6:00am).

Table 2: Measured façade levels, Hope Street, December 2001

Noise Level Descriptor	dB(A)
L10 (18 hr)	67.1
Leq (24 hr) calculated	64.1
Leq (highest 1-hour night-time)	62.3
L90 day	54.4
L90 evening	52.2
L90 night	50.9
L10 day	68.8
L10 evening	64.5
L10 night	58.3
Average maximum level (Lmax) over period	81.1

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From the measured levels, and the predicted increase in traffic noise due to increased vehicles along Hope Street and Peel Road, the predicted levels at year 2011 for the development have been calculated and presented in Table 3. The levels are presented as the nearest whole number.

Table 3: Predicted facade levels Hope street, Year 2011

Noise Level Descriptor	dB(A)
L10 (18 hr) facade level	69
Leq (24 hr) predicted	66
Leq (1hr) predicted, highest level, 10pm to 6am	65
L90 day	55
L90 evening	52
L90 night	51
L10 day	71
L10 evening	67
L10 night	61
Average maximum level (Lmax) over 24 hours	81

Measured free-field levels in Hope Street at 3 pm on Sunday 9 December are presented in Table 4. The measurement period is 30 minutes. Train and vehicle pass-bys and noise from crows are included in the data.

Table 4: Measured free-field levels Hope Street

Noise Level Descriptor	dB(A)
L10 level	65.0
L90 level	50.5
Leq level	60.9
Lmax level	75.7

Measured facade-adjusted levels in Fleet Lane at 5 pm on Monday 10 December are presented in Table 5. The measurement period is 30 minutes. Vehicle pass-bys and noise from Grey Street traffic are the dominant noise sources.

Table 5: Measured facade levels Fleet Lane

Noise Level Descriptor	dB(A)
L10 level	66.0
L90 level	59.0
Leq level	63.5
Lmax level	77.0

5.2 Predicted traffic flows

Predicted traffic flow levels at the corner of Peel Street and Hope Street were obtained from a professional traffic engineering forecasting consultancy for the years 1999 and 2011. Traffic forecasts for Peel Street are-

- 1999 predicted traffic 16331 vehicles per day (24 hr)
- 2011 predicted traffic 19584 vehicles per day (24 hr)
- 2011 predicted commercial vehicles 2254 vehicles per day (24 hr)

Traffic forecasts for Hope Street are-

- 1999 predicted traffic 2000 vehicles per day (24 hr)
- 2011 predicted traffic 3000 vehicles per day (24 hr)
- 2011 predicted commercial vehicles 350 vehicles per day (24 hr)

5.3 Predicted year 2011 traffic noise levels

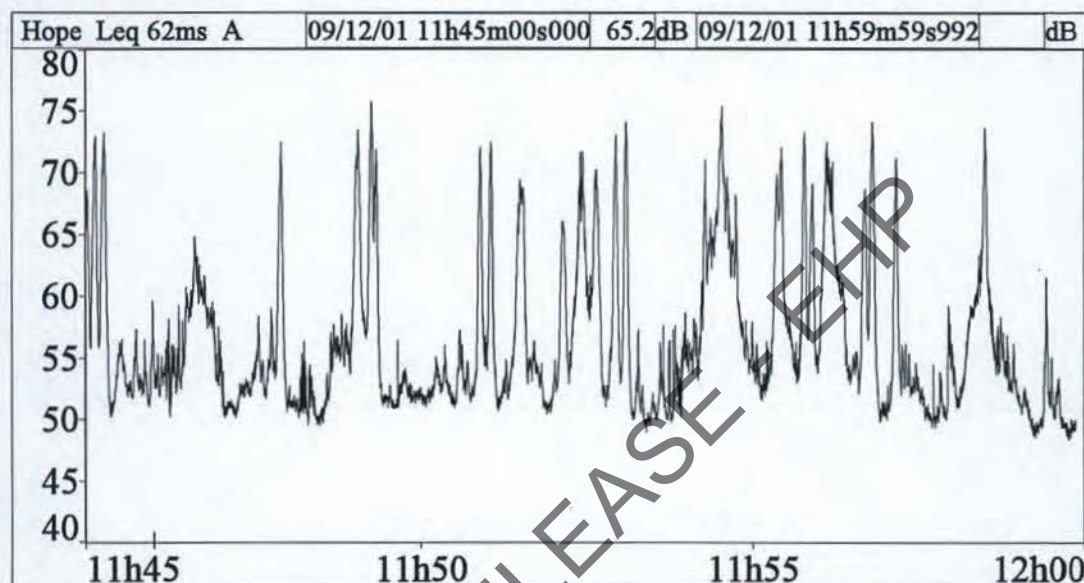
The detailed traffic noise assumptions are tabulated in Appendix E. For year 2011, the 24-hour time-average (Leq) predicted traffic / ambient noise level at both the Hope Street and Fleet Lane façades of the proposed development is 66 dB(A). This is the primary level taken for the purpose of noise reduction design calculations.

5.4 Railway traffic

The development is approximately 35 - 45 metres from the railway line and although individual railway movements could be heard on the day of observation they did not appear loud or intrusive. This may be because they were either slowing down to enter, or slowly picking up speed to depart, Southbank station. It is considered, therefore, that noise from the railway will not be an adverse effect at this location.

The typical effect of rail traffic and road traffic at the property boundary is illustrated in Figure 1. At 11:52 am a 6-carriage railcar slowly stopped at the station. At almost the same time 2 cars went past. At 11:54 a 6-carriage railcar slowly departed the station. Also at 11:54 a helicopter was transiting overhead. The railcars had average maximum levels in the range of 73 dB(A) and 76 dB(A) respectively. In comparison, vehicles passing by the measurement location in Hope Street and Fleet Lane had average maximum levels averaging 76 dB(A) and 77 dB(A) respectively.

Figure 1: Train and vehicle pass-by noise levels



5.4.1 Queensland Rail Code of Practice

The development is affected by rail noise at approximately 64 dB(A) Leq and 77 dB(A) for single event maximum passby levels. These levels are within (acceptable under) the requirements of the Queensland Rail code of practice.

5.5 Aircraft movements

Aircraft movements were not been noticed during the attended surveys although the area is broadly under a flight track. The development is not within the 20 ANEF contour. It is considered, therefore, that the building does not need to be specifically designed for aircraft noise reduction.

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6.0 Noise impact assessment

6.1 General

The appropriate noise impact assessment methodology for this assessment is NIAPSP Methodology 2 - Application of AS2107. This is because the dominant noise source is from road traffic and partly from railway noise and cooling plant noise from neighbouring buildings. It is anticipated that the development will not be adversely affected by aircraft noise. The design of the building is such that the habitable rooms potentially most affected by external noise are those facing Hope Street or Fleet Lane.

The overall time average level (L_{eq}) is predicted to be 66 dB(A) over 24 hours and close to 65 dB(A) over the night-time period. Based on previous investigations it is predicted that the design of the void to the external walls will provide an additional 6 dB(A) (interior) attenuation to the rooms adjacent to the void area. Previous investigations have also shown that an (interior) decrease of approximately 6 dB(A) can be achieved using a solid 1.2m high parapet 1.2m wall to enclose an "open" balcony.

With the windows fully closed the sound reduction through the fabric of a building design similar to those proposed has been measured as an average of 24 dB(A). With a window partly open (8000 sq.mm) for ventilation sound reduction is an average of 21 dB(A).

Under both cases the reduction is sufficient in the living rooms and general office areas of the units and the bedrooms adjacent to the void areas to achieve compliance with the recommendations of the AS2107 without the need for air conditioning or mechanical ventilation.

The noise criteria for Unit B, D & E bedroom areas, however, is exceeded by approximately 5 - 6 dB(A). Noise mitigation is required, either through relatively minor changes to the balcony design or by providing mechanical ventilation or air conditioning to the bedrooms.

- Noise mitigation using solid 1.2m high balcony parapet walls to the balcony of Unit B and the balconies of bedrooms of Units D & E is calculated to provide 6dB(A) noise reduction to meet the requirements of AS2107 and still provide ventilation.

The following issues are relevant to the acoustics of this development, to ensure good acoustic amenity within the development-

6.1.1 Acoustic Isolation Between Apartments - BCA

The requirements of the Building Code of Australia apply to this project with in general the code being intended

"to safeguard occupants from illness or loss of amenity as a result of undue noise being transmitted: -

- 1. between adjoining sole- occupancy units and*
- 2. from common spaces to sole-occupancy units."*

Under current Building Code requirements (BCA 1996) this project must meet the following minimum criteria for internal acoustic treatments:

- Inter tenancy walls and floors must have a minimum Rw 45 isolation rating (a minimum rating of Rw 50 is strongly recommended)
- Walls between bathroom and living room areas must be rated to Rw 50 with a specified degree of impact isolation.
- Hydraulic pipes from another tenancy in the ceiling void of a non-habitable area should be isolated from that non-habitable area with an Rw 30 rating. If the area adjacent to the pipes is a habitable area the rating must be Rw 45. For wet areas a higher level of isolation than that required by the BCA is recommended.
- Flexible couplings must be installed at the point of connection between the services pipes in a building and for any pumps.

6.1.2 Mechanical Plant Noise

At this stage there is no information on the mechanical plant to be installed, if any. However, general guidelines are:

- Room air conditioner units, if installed, should be selected to give maximum noise levels of no more than 40 dB(A) in occupied areas. Ideally these units should be 3 speed so that a slow speed setting can be used for night time operation.
- Toilet extract fans will need to be selected and installed to ensure that noise from these fans does not impact into the apartments.
- The basement car-park will need to be mechanically ventilated. Ideally the extraction systems should be selected to give maximum noise levels of no more than 40 dB(A) in occupied areas (including the office / retail area at street level).

6.1.3 Lift Shaft Noise

This has the potential to be an issue for the offices adjacent to the lift shaft. To ensure such noise impacts are minimized it is recommended that the lift guide rails not be supported off the lift back wall and that the lift rails be supported on resilient mounts at the rail support locations (this should be an option provided by the lift supplier). Acoustic problems from the motor room are not expected with the standard lift motor configuration with the motor supported on an inertia base and springs mounts.

6.2 Compliance with City Plan

The building layout and design complies with the requirements of City Plan, as summarised in Appendix A-

Medium Density Code

- Section 4, P21 - achieved; car-parking underground
- Section 4, P24 - achieved; no adjacent residences
- Section 4, P25 - achieved; building design and layout meets AS2107
- Section 4, A21.1, A21.4 and A24.1 - achieved; car-parking underground
- Section 4, A24.2 - air conditioning is not installed as part of the development



- Section 4, A24.3 - there are no adjacent dwellings
- Section 4, A24.4 - discussed within this report; achieved
- Section 4, A25 - discussed within this report; achieved.

Non-residential to residential Change in Use Code

- Section 4, P4 - discussed within this report; achieved.
- Section 4, A1 - air conditioning is not installed as part of the development; no amplified music is part of this proposal
- Section 4, A4 - this report is prepared with AS2107 and AS3671

City Plan Centre Design Code

- Section P19 - discussed within this report; achieved
- Section A19 - discussed within this report; achieved.



6.3 Compliance with AS2107

To achieve the recommended criteria for various rooms under AS2107 a reduction to an internal (maximum) levels of 40 dB(A) for bedrooms and 45 dB(A) for living rooms and office areas are required. The building design and construction calculations of AS3671 to achieve acceptable AS2107 noise levels indoors are summarised in Appendix B. The calculated weighted sound reduction index (Rw / STC values) of the various building elements is summarised in Table 6.

Table 6: Calculated Rw / STC values for glazing elements to various rooms

Residence	Rw / STC value			
	Bedroom 1	Bedroom 2	Living Room	Office
A	27W	-	23SD	19SD, 15W
B	29W	BR1, 31 SD	23SD	28SD
C	27W	-	23SD	18SD, 15W
D	30SD	27W	24SD	19SD
E	30SD	27W	24SD	19SD
All	Roof / Ceiling (based on Unit A) = 27			
All	External Wall (based on Unit A) = 31			

Notes:

- "SD" indicates sliding door; "W" indicates window
- The STC / Rw values in the above Table are minimum values.
- Provision of a solid 1.2m high parapet wall to the balcony areas will improve noise reduction and reduce the required STC value.
- Building elements (walls, windows, doors, ceiling / roof) can have higher values than those calculated. Sliding doors and opening windows in particular should be of acoustic construction incorporating good quality seals.

7.0 Conclusions and Recommendations

It is concluded that-

1. The appropriate noise impact assessment methodology for this assessment is *NIAPSP Methodology 2 - application of AS2107*. This is because the dominant noise source is from rail and road traffic and the development is not affected to any significant degree by aircraft or rail noise or industry.
2. The development can be achieved in compliance with Council's City Plan (Acceptable Solutions for Medium Density Dwellings), Noise Impact Assessment Planning Scheme Policy Section 6, AS2107 and AS3671.
3. The development will not increase background noise levels within the locality.
4. Subject to the comments following, the development is designed and is to be constructed in such a manner that the requirements of City Plan's Centre Design Code, Centre Amenity and Performance Code are achieved.
 - Noise reduction is sufficient in the living rooms and general office areas of the units and the bedrooms adjacent to the void areas to achieve compliance with the recommendations of the AS2107 without the need for air conditioning or mechanical ventilation.
 - The noise criteria for Unit B, D & E bedrooms adjacent to balcony areas, however, is exceeded by approximately 5 - 6 dB(A).
 - Noise mitigation using solid 1.2m high balcony parapet walls to the balcony of Unit B and the balconies of bedrooms of Units D & E is calculated to provide 6dB(A) noise reduction to meet the requirements of AS2107 and still provide ventilation.

It is recommended that-

- Solid 1.2m high balcony parapet walls be provided to the balcony of Unit B and to the bedroom balconies of Units D & E; or alternatively,
- Mechanical ventilation or air conditioning is provided for the bedrooms adjacent to balconies on Units B, D & E. If air conditioning is installed the condenser units should be at deck level and the quietest units available be provided.

signed

sch 4 - signature

R. Thorne
MS, MAAS, MIOA, FRSH



Appendices

Appendix A	BCC City Plan Requirements; Queensland Rail Code of Practice
Appendix B	AS1055, AS2107, AS3671 summary
Appendix C	Property Plans
Appendix D	Ambient noise time-history data
Appendix E	Prediction of Road Traffic Noise

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APPENDIX A:

**BRISBANE CITY PLAN NOISE INFORMATION
REQUIREMENTS FOR ASSESSMENT OF
DEVELOPMENT;**

QUEENSLAND RAIL CODE OF PRACTICE

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PERFORMANCE CRITERIA AND ACCEPTABLE SOLUTIONS

Table 1 summarises the Performance Criteria and Acceptable Solutions for Multi-Unit Dwellings (Medium Density) Code under the City Plan.

Table 1: Performance Criteria and Acceptable Solutions

Assessment	Medium Density
Performance Criteria	Section 4 P21
	<ul style="list-style-type: none"> Vehicle parking design and location must minimise impacts on neighbouring dwellings. Noise disturbance must be mitigated by parking area location and fencing.
	Section 4 P24
	Noise from the development must not adversely affect existing or likely future dwellings on adjacent land.
	Section 4 P25
Acceptable Solutions	Exposure of new dwellings to noise must be minimised.
	Section 4 A21.1
	Vehicle parking is:
	<ul style="list-style-type: none"> Screened to ...attenuate noise, Separated from habitable windows to minimise noise ... disturbance.
	Section 4 A21.4
	<ul style="list-style-type: none"> Vehicle movement areas are located a minimum of 3 m from adjoining dwellings and acoustic screening is provided next to any vehicle movement or parking areas along the side or near boundary; or A 2m wide vegetated buffer is provided next to any movement or parking areas along the side or near boundary.
	Section 4 A24.1
	Vehicle movement areas are located a minimum of 3m from any adjoining dwellings, or are provided with acoustic screening to the boundary.
	Section 4 A24.2
	Any air conditioning plant is located toward the centre of the site.
	Section 4 A24.3
	Communal open space is located a minimum of 3m from adjoining dwellings or provided with acoustic screening.
	Section 4 A24.4
	The development complies with the Noise Impact Assessment Planning Scheme Policy.
	Section 4 A25
	Noise impacts on dwellings located within 150m of a Centre, Industry Area, rail corridor, road corridor (suburban routes, motorways and arterial routes) or within a noise exposure of 20 ANEF or greater are mitigated to comply with the requirements of the Noise Impact Assessment Planning Scheme Policy.

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Table 2 summarises the Performance Criteria and Acceptable Solutions for Centre Amenity and Performance Code - Change in Use from Non-Residential to Residential under the City Plan.

Table 2: Performance Criteria and Acceptable Solutions

Assessment	
Purpose of Code	<ul style="list-style-type: none"> Achieve and maintain a high standard of amenity for surrounding land uses
Performance Criteria	Section 4 P1 <ul style="list-style-type: none"> The proposal and its operation and management must enhance the amenity, character and identity of the Centre.
	Section 4 P4 <ul style="list-style-type: none"> All residential uses within a Centre must be designed, constructed and maintained to attenuate noise from external sources.
Acceptable Solutions	Section 4 A1 <ul style="list-style-type: none"> Locate air conditioning units and/or refrigeration units so they do not cause adverse noise impacts on adjoining premises; Ensure no amplified or live music is played.
	Section 4 A4 <ul style="list-style-type: none"> AS3671 Acoustics – Road traffic noise intrusion – Building siting and construction; AS2107 Acoustics – Recommended design sound levels and reverberation times for building interiors are complied with.

Table 3 summarises the relevant Purpose, Performance Criteria and Acceptable Solutions for noise impact assessment under the City Plan Centre Design Code.

Table 3: Performance Criteria and Acceptable Solutions

Assessment	
Purpose of Code	<ul style="list-style-type: none"> Encourage Centres that integrate into their surroundings and incorporate sound urban design.
Performance Criteria	Section P19 <ul style="list-style-type: none"> Development must be designed, constructed and maintained to attenuate noise from external sources and to minimise the emission of noise, and to mitigate environmental harm and maintain environmental values for end users.
Acceptable Solutions	Section A19 <ul style="list-style-type: none"> Design takes into account the noise impacts from existing uses and from existing and proposed road and rail corridors allowing for a 10 year traffic growth such that internal noise levels and noise emissions from the proposal comply with the Noise Impact Assessment Planning Scheme Policy.

NOISE IMPACT ASSESSMENT PLANNING POLICY

Council has adopted a Noise Impact Assessment Planning Scheme Policy to assist in achieving the objectives of the City Plan. Table 2 outlines the main requirements for a development approval.

Item Planning Assessment Methodologies

One Comparison of like parameters or descriptors-

Comparison of the ambient sound character of the area with and without the development. *(This methodology is mostly applicable to assessment of noise emissions).*

Two Application of AS2107-

Comparison of predicted interior levels with the levels in AS2107. *(This methodology applies to assessment of emissions and immissions for steady state or quasi-steady state sound; eg. from continuous traffic).*

Three Sleep awakenings-

Comparison with sleep levels. *(This methodology applies particularly to the assessment of emissions and immissions from discrete noise events).*

Any one or a combination of these methodologies may be needed to assess the acceptability of a development.

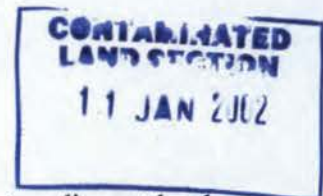
Information Requirements

1 The location of the development-

- 1.1 • Locality plan showing the development in relation to adjacent land uses.
- 1.2 • Development elevations and cross-sections to show the buildings and vehicle movement areas in context with the site and adjacent neighbours.
- 1.3 • Identification of potentially affected existing and future residential land uses.
- 1.4 • Proposed buffer areas (if available for noise reduction).

2 An assessment of the existing and future noise environment with and without the development-

- 2.1 • Existing ambient noise levels from an ambient noise survey at a location representative of the areas environment (preferred) or assessed (NIAPSP).
- 2.2 • Predicted ambient exterior noise levels for a specified design year.
- 2.3 • Noise emissions and background creep
- 2.4 • Identification of noise sources (by type, hours of operation, duration and characteristics) affecting the development or potentially caused by the development.
- 2.5 • Assessment of effect on residents in or adjacent to the development.



- 2.6 • Identification of noise reduction, mitigation or management measures.

3 **Calculation procedures:**

The effects of traffic (road, rail, air) on, or caused by, the development on residents-

- 3.1 • Prediction of future effects using recognised noise models (refer EPP Noise; eg. CRTN for traffic noise, CRN for rail noise).
- 3.2 • Calculation of road traffic noise (AS2702, AS3671).
- 3.3 • Calculation of rail noise (NIAPSP, maximum bypass level).
- 3.4 • Calculation of aircraft noise ANR and ANA_c (NIAPSP, AS2021).
- 3.5 • Statement of assumptions used in the modeling or calculation procedures.
- 3.6 • Existing road network (current traffic volumes and in 10 years').
- 3.7 • Proposed changes to the road network (if any) or road design.
- 3.8 • Changes in traffic volumes caused by the development.
- 3.9 • Trade vehicle movements on-site (such as delivery vehicles, waste removal, if applicable).
- 3.10 • Car-parking facilities and vehicle movements in car parks (if applicable) including 'people noise'.
- 3.11 • Noise reduction through the use of buffers, acoustic barriers, building design or site layout.
- 3.12 • Noise mitigation due to noise management, limitation on times of use.

4 **Building location, layout and design for noise reduction or mitigation depending on where and how noise sources affect the building-**

- 4.1 • Interior design noise criteria (AS2107, NIAPSP) identified;
- 4.2 • Distinctive noise sources (eg. planes overhead, rail noise) identified by level and time (day, night);
- 4.3 • Predicted ambient exterior noise levels for a specified design year (eg. traffic noise in year 2011), rail or aircraft noise identified;
- 4.4 • Building fabric transmission loss to achieve interior design criteria (NIAPSP clause 5) calculated using Australian standards (AS3671);
- 4.5 • Building design/layout/building fabric elements to achieve interior design noise criteria identified;
- 4.6 • Acoustic barriers and building layout to achieve outdoor amenity level ("adequate quiet"; NIAPSP clause 5.1.2) designed;
- 4.7 • Air conditioning plant fitted with acoustic enclosures and noise is contained within the building or development.

5 **Environmental values and outdoor criteria**

Environmental Protection (Noise) Policy 1997 (environmental values; acoustic quality objective)

AS2107 as an outdoor assessment procedure (NIAPSP)



QUEENSLAND RAIL CODE OF PRACTICE

Queensland Rail, through its Code of Practice issued in 1999 under the Environmental Protection Act, has guidelines for local governments assessing developments likely to be affected by noise from the operation of the railway or railway activities.

The Environmental Protection (Noise) Policy 1997 outlines the noise criteria ('planning levels') for acceptable levels of noise from railway activities. Any noise sensitive place development immediately adjacent to a railway corridor will be affected by railway noise emissions and it is the responsibility of the developer to provide the appropriate acoustic amenity inside and outside the noise sensitive place.

Noise mitigation measures to be considered by the developer include-

- An adequate buffer zone between the railway corridor and the proposed building;
- A suitable acoustic barrier between the railway corridor and the proposed building;
- Orientating the building on the site so that any sensitive rooms (bedrooms or living areas) do not face the railway corridor;
- Constructing the building so that the bedroom and living areas are not affected by noise emissions from the railway corridor; or
- A combination of all of the above.

A noise impact assessment should apply the *Environmental Protection (Noise) Policy 1997* planning levels for railways to ensure that the planning levels are not exceeded at one metre in front of the most exposed part of the development.

- The noise criteria for railways under the *Environmental Protection (Noise) Policy 1997* and QR's Code of Practice are-
 - (a) 87 dB(A), assessed as a single event maximum sound pressure level from train pass-bys;
 - (b) 65 dB(A), assessed as the 24 hour average equivalent continuous A-weighted sound pressure level from train pass-bys.

The noise impact assessment should also apply appropriate noise criteria to the interior of the development (e.g. in accordance with AS2107).

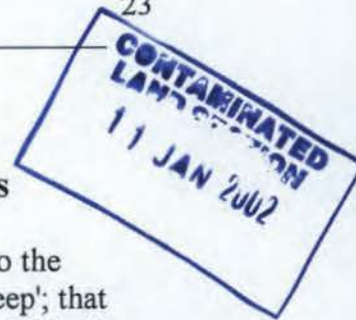


APPENDIX B:

AS1055, AS2107, AS3671 SUMMARY

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AS1055.2-1997 Acoustics-Description and measurement of environmental noise, Part 2: Application to specific situations

The Noise Impact Assessment Planning Scheme Policy of City Plan refers to the background noise levels in AS1055 and the management of 'background creep'; that is, the progressive increase in background noise from new noise emitting activities in a locale. AS1055.2-1997 provides estimates of background levels for areas containing residences, an extract from which is presented in Table B1. Table B1 may only be used as a guideline. Whenever possible values of $L_{90,T}$ shall be measured in accordance with the standard. The day/evening/night time periods of the standard differ from those of Queensland legislation (*Environmental Protection (Noise) Policy 1997*).

Table B1: Estimated Average Background A-weighted Sound Pressure Levels ($L_{A90,T}$) for Different Areas Containing Residences in Australia

Noise area category (Notes 1 and 2)	Description of neighbourhood	Average background A-weighted sound pressure Level, $L_{A90,T}$					
		Monday to Saturday			Sundays and public holidays		
		0700 to 1800	1800 to 2200	2200 to 0700	0900 to 1800	1800 to 2200	2200 to 0900
R1	Areas with negligible transportation	40	35	30	40	35	30
R2	Areas with low density transportation	45	40	35	45	40	35
R3	Areas with medium density transportation or some commerce or industry	50	45	40	50	45	40
R4	Areas with dense transportation or some commerce or industry	55	50	45	55	50	45
R5 (See Note 3)	Areas with very dense transportation or in commercial districts or bordering industrial districts	60	55	50	60	55	50
R6 (See Note 3)	Areas with extremely dense transportation or within predominantly industrial districts	65	60	55	65	60	55

NOTES:

1. The division into noise area categories is necessary in order to accommodate existing sound levels encountered at residential sites in predominantly commercial or industrial districts, or in areas located close to main transport routes, i.e. road and rail.
2. The noise area category most appropriate should be selected irrespective of metropolitan or rural zoning and will vary from location to location.
3. Some industrial and commercial sites are not predominant sources of high background sound levels.

In this Report measured background levels are referenced and the above Table is not relevant for this development. (The development is approximately R4 / R5).

AS2107:2000 - 'Acoustics - Recommended Design Levels and Reverberation Times for Building Interiors'

The recommended design sound levels for residential buildings are presented in Table 1 of AS2107 (Table B2 following). The standard states that the 'satisfactory design sound level' is the level of noise that has been found to be acceptable by most people for the environment in question and also to be not intrusive.

The maximum design sound level is the level of noise above which most people occupying the space start to become dissatisfied with the level of noise.

The design level is based on a time-average level (L_{eq}) measured over a sufficiently long period to characterise the effects of the sound source. In situations where traffic noise levels may vary widely over a 24-hour period, measurements to assess compliance with AS2107 should be taken at a relevant time and for an appropriate measurement period according to the area of occupancy or activity in the building.

For this report the assessment times are taken as being-

- Day (6:00am - 6:00pm);
- Evening (6:00pm - 10:00pm);
- Night (10:00pm - 6:00am).

Table B2: Recommended design levels for different areas of occupancy in dwellings

Type of Occupancy/Activity	Recommended Design Sound Level	
	Satisfactory	Maximum
Houses in areas with negligible transportation Sleeping areas	25 dB(A)	30 dB(A)
Houses and Apartments near minor roads		
Living areas	30 dB(A)	40 dB(A)
Sleeping areas	30 dB(A)	35 dB(A)
Work areas	35 dB(A)	40 dB(A)
Apartment common areas	45 dB(A)	55 dB(A)
Houses and Apartments near major roads		
Living areas	35 dB(A)	45 dB(A)
Sleeping areas	30 dB(A)	40 dB(A)
Work areas	35 dB(A)	45 dB(A)
Apartment common areas	45 dB(A)	55 dB(A)

AS3671-1989 Acoustics-Road traffic noise intrusion-Building siting and construction

Australian Standard AS3671-1989 *Acoustics-Road traffic noise intrusion-Building siting and construction* provides guidance on the location and construction of new buildings near major roads.

The scope of AS3671 states that it provides guidelines for determining the type of building construction necessary to achieve acceptable noise levels indoors, as recommended by AS2107. AS3671 notes that in most cases $L_{10,T}$ is approximately equal to 3dB above the Leq,T , measured over 24 hours. The traffic noise reduction (TNR) expected is calculated with windows, doors and other openings closed. Four categories of building construction are identified in the standard. The appropriate category is found by the calculation:

$$TNR = Leq \text{ (measured or predicted)} - Leq \text{ (AS2107 indoor level)}$$

The TNR value changes as the sound levels change across the site (location and height). The traffic noise attenuation required of each component to achieve the traffic noise reduction is determined from the equation:

$$TNAc = TNR + 10 \log_{10} [(Sc/Sf) * 3/h * 2T_{60} * C]$$

where:

TNAc is the traffic noise attenuation of the component in dB(A)

TNR is the traffic noise reduction

Sc/Sf is the area ratio of the component

h is the ceiling height of the room, in metres

T60 is the reverberation time of the room, in seconds

C is the number of components



The sound transmission class (STC) for each component is given by the approximation:

$$STC = TNAc + 6$$

The STC value is calculated as the 'worst-case' wall/window combination facing the road. Recent changes to the Australian Building Code has seen the adoption of the weighted sound reduction index (Rw). This is calculated in much the same way as the STC value and for the purposes of this report are considered the same. Both STC and Rw values are based upon laboratory performance of materials and construction. Typically, the field performance of systems can be 2 to 4 Rw units lower than laboratory performance.

The STC / Rw values of this report are the values calculated to AS3671 and do not include any allowance for loss of noise reduction due to field installation of components.

OTHER STC / RW CALCULATION METHODOLOGIES

Other STC and R_w calculation procedures such as AS1276 *Methods for determination of sound transmission class and noise isolation class of building partitions*, ISO 717 *Acoustics-Rating of sound insulation in buildings and of building elements*, and National Research Council Canada publication BNP 56 *Controlling sound transmission into buildings* are available for noise from road traffic and different sources.

Sound levels vary within a room; an average level (L_{eq} 24 hr) is used as the 'indoor level'. Individual components can have different STC values and only the combined performance of all the components must be fixed by the required noise reduction. (Appendix C of AS3671 has this flexibility). For each component, its STC indicates what fraction of the sound energy striking its surface is transmitted through the component. The sound energy flow depends on both its STC and its surface area. The larger the surface, the more sound energy is transmitted. Noise reduction by the exterior surface also depends on the energy flow into the room and the rate of energy absorption by room furnishings.

BUILDING CONSTRUCTION FOR SOUND REDUCTION

Appropriate building construction elements for ceiling/roof systems, external walls, windows and doors are described in Appendix B of AS3671. This Report does not recommend any specific choice as the various components must be fit for their purpose and can only be determined by discussion with the relevant manufacturer. Some manufacturers have independent NATA acoustic test reports of their products. Tables B3 to B6 present some of the more common elements from AS3671.

Table B3: Ceiling / Roof Systems

Item	R_w or STC range	Description of construction
1	33 to 35	Pitched roof clad with tiles, or 0.5 mm corrugated galvanized iron or 6 mm corrugated cellulose-cement over 10 mm gypsum plasterboard.
2	33 to 35	Flat 0.6 mm galvanized steel trough roofing, attached to the same timber framework and about 150 mm above, the same ceilings as in Item 1.
3	36 to 38	As for Items 1 and 2, but with ceiling of 2 layers of gypsum plasterboard
4	36 to 38	Pitched tile roof and ceiling as for Item 1, plus 2-sided aluminium foil over rafters
5	39 to 41	As for Item 1, plus 50 mm thick 12 kg/m ³ glass fibre blanket between ceiling joists
6	39 to 41	As for Item 2, plus 75 mm thick 85 kg/m ³ mineral wool batts, or 100 mm thick 45 kg/m ³ cellulose fibre fluff between ceiling joists



Table B4: External walls

Item	Rw or STC range	Description of construction
1	33 to 35	Conventional timber stud-framed walls, clad externally with 9 mm thick timber or hardboards or flat cellulose-cement sheets, and internally with 10 mm thick plasterboard or 6 mm thick hardboard.
2	36 to 38	As for Item 1, plus cavity filled with mineral wool, or weatherboards backed by 12 mm thick wood fibreboard.
3	36 to 38	Cellulose board on one side and 10 mm plasterboard on the other side of 100 mm x 50 mm timber studs, overall thickness 115 mm, surface density 39 kg/m ³
4	39 to 41	Conventional brick veneer construction, in which the wall space is ventilated by connection with sub-floor vents; upper part of internal wall sheeting is exposed to and penetrated by upper wall vents leading to the eaves space.

Table B5: Windows

Item	Rw or STC range	Description of construction
1	24 to 26	6 mm horizontal sliding - openable
2	27 to 29	3 mm single glazed - fixed
3	30 to 32	7.5 mm + 6 mm at 13 mm in horizontally pivoted aluminium sash - openable; 3 mm or 4 mm or 6 mm single glazed - fixed
4	33 to 35	6 mm + 5 mm at 70 mm in horizontally pivoted aluminium sash - openable; 10 mm single glazed - fixed
5	36 to 38	10 mm laminated with metallic film in aluminium frame - fixed
6	39 to 41	5 mm + 6 mm at 44 mm rollover aluminium sash - openable; 5 mm + 10 mm at 25 mm double glazed - fixed

Table B6: Doors

Item	Rw or STC range	Description of construction
1	15	Hollow core plywood door, no gasket
2	20	Hollow core plywood door, rubber gasket around sides and top
3	27 to 29	Solid core 35 mm thick plywood door, soft plastics gasket around sides and top and drop seal at base.
4	30 to 33	Solid core 42 mm thick plywood door, soft plastics gasket around sides and top and drop seal at base.



Table B7: STC / Rw calculations (minimum values)

Unit	Article	Room	Component	LAeq T	L _{Arec}	TNR	Sf	Sc	C	TNAc	STC
A	1	Living Room	Sliding Door	66	45	21	42	6.3	2	16.7	23
A	-	Office	Sliding Door	60	45	15	16	4.2	2	13.2	19
A	-	Office	Window	60	45	15	16	1.5	2	8.7	15
B	2	Living Room	Sliding Door	66	45	21	36	6.3	2	17.4	23
B	-	Office	Sliding Door	66	45	21	12	6.3	2	22.2	28
B	3A	Bedroom 1	Sliding Door	66	40	26	12	4.2	2	25.4	31
B	3B	Bedroom 1	Window	66	40	26	12	2.3	2	22.7	29
B	-	Office	Sliding Door	66	45	21	12	6.3	2	22.2	28
C	4	Living Room	Sliding Door	66	45	21	42	6.3	2	16.7	23
C	5	Bedroom 1	Window	60	40	20	12	1.5	2	14.9	21
C	-	Office	Sliding Door	60	45	15	20	4.2	2	12.2	18
C	-	Office	Window	60	45	15	20	2.3	2	9.5	15
D	6	Bedroom 2	Window	60	40	20	12	1.5	2	14.9	21
D	7	Bedroom 1	Sliding Door	66	40	26	16	4.2	2	24.2	30
D	8	Living Room	Sliding Door	66	45	21	40	8.4	2	18.2	24
D	-	Office	Sliding Door	60	45	15	15	4.2	2	13.5	19
E	9	Living Room	Sliding Door	66	45	21	40	8.4	2	18.2	24
E	10	Bedroom 1	Sliding Door	66	40	26	16	4.2	2	24.2	30
E	11	Bedroom 2	Window	60	40	20	12	1.5	2	14.9	21
E	-	Office	Sliding Door	60	45	15	15	4.2	2	13.5	19
A	12	Bedroom 1	Window	60	40	20	12	1.5	2	14.9	21
A	-	Living Room	Roof / Ceiling	66	40	26	12	1.5	2	20.9	27
A	-	Living Room	External Wall	66	40	26	42	14.4	2	25.3	31

Note:

The STC / Rw values in the above Table are minimum values. Building elements (walls, windows, doors, ceiling / roof) can have higher values than those calculated. Sliding doors and opening windows in particular should be of acoustic construction incorporating good quality seals.



APPENDIX C:

PROPERTY PLANS

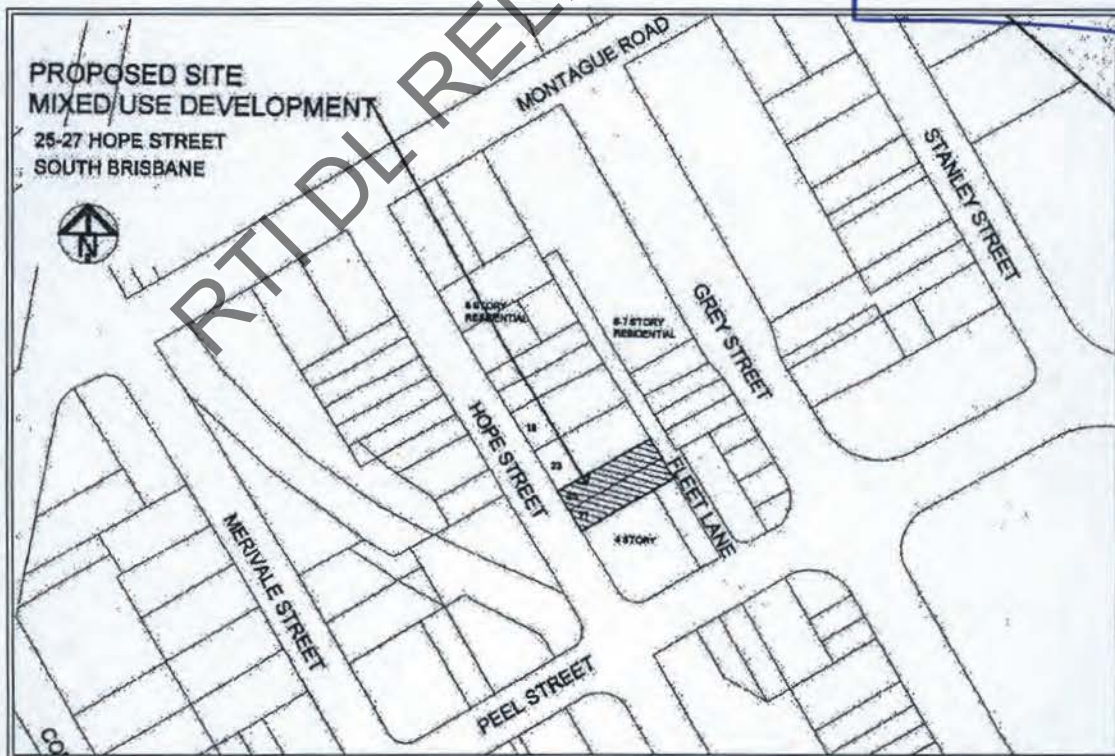
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Aerial Location Plan, 25-27 Hope Street



Site Location Plan



CONTAMINATED
LAND SECTION
11 JAN 2002

Figure 1: Residential Design and Layout; Levels 3 to 5

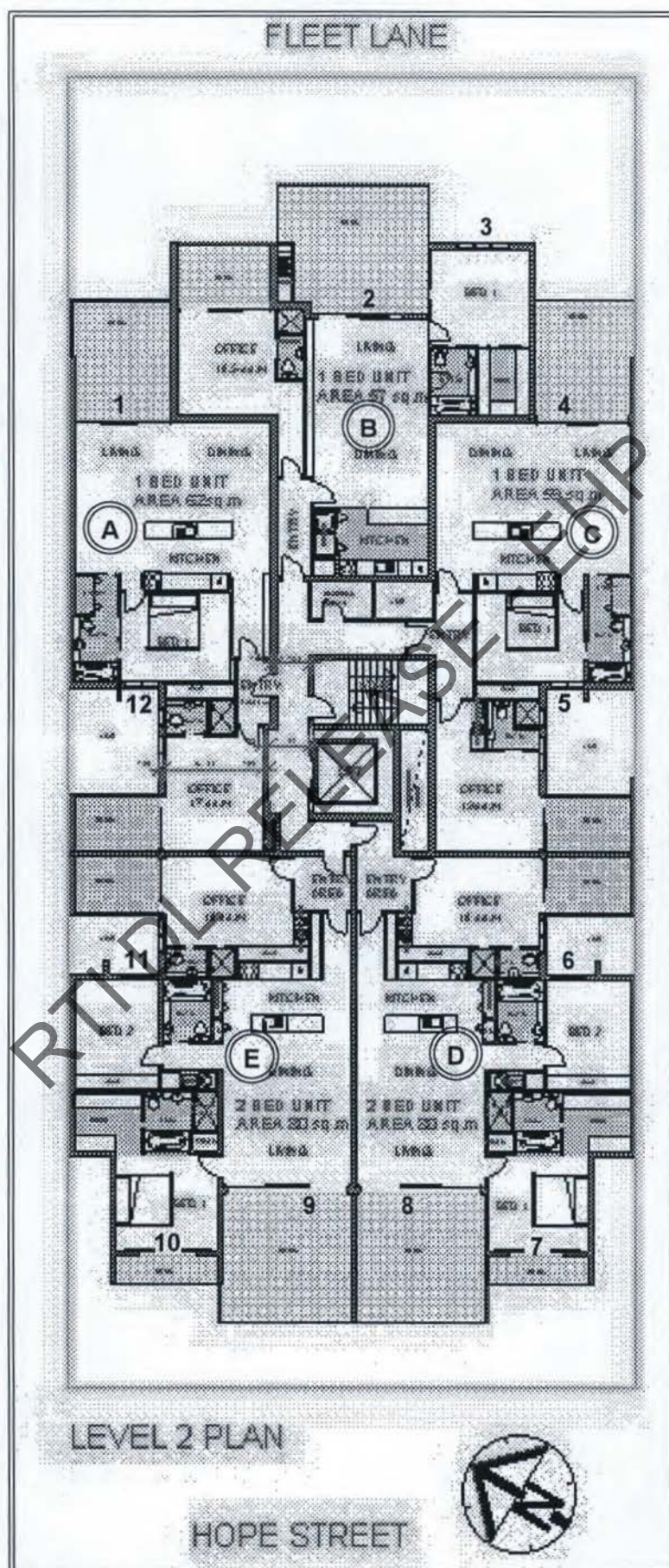
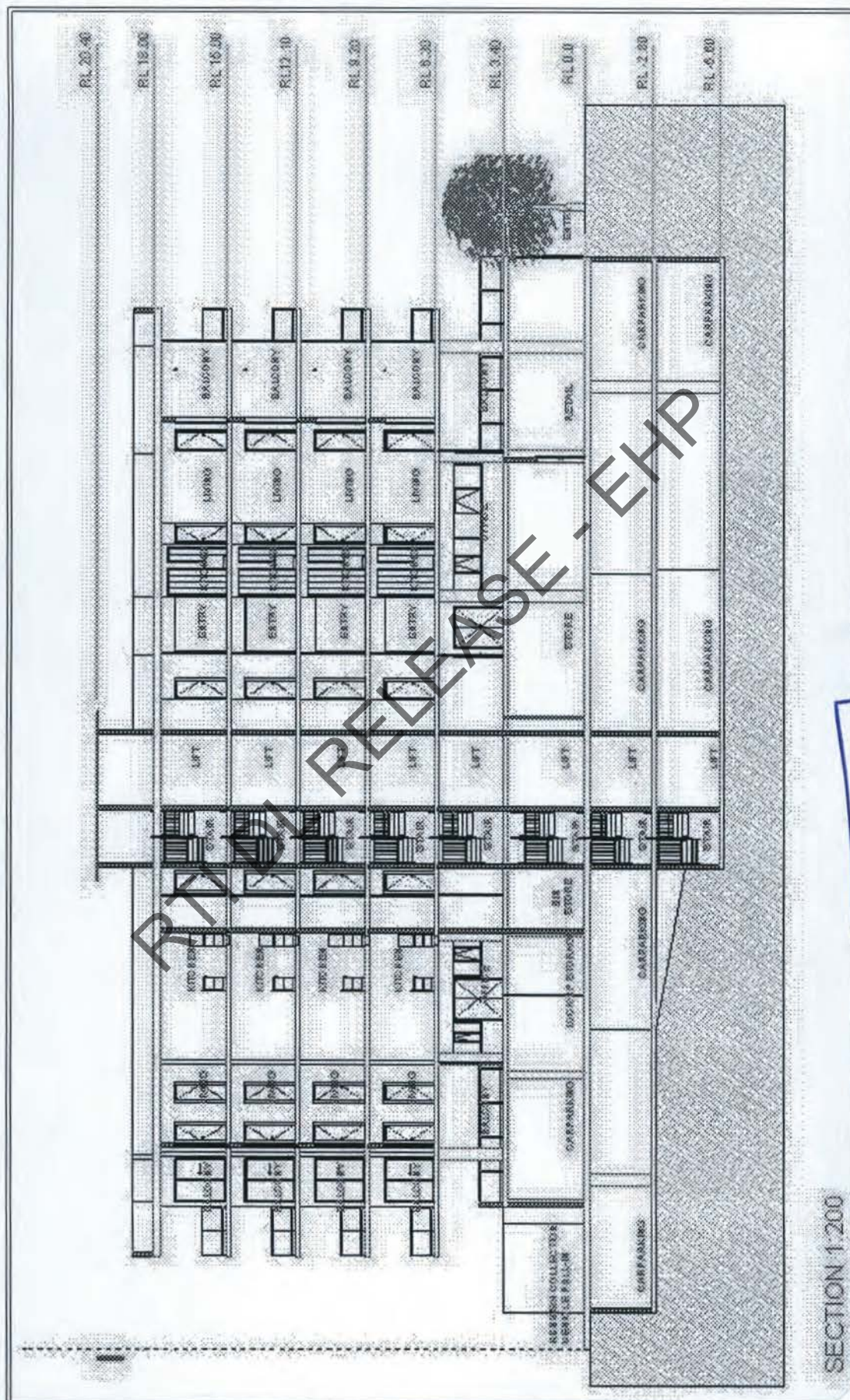


Figure 2: Cross-section of development



APPENDIX D:

AMBIENT NOISE TIME-HISTORY DATA

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Noise Measurement and Assessment Descriptors

The noise measurement and assessment descriptors (also sometimes called 'indicators') in AS1055.2 are defined in AS1055.1 are-

- **Time average A-weighted sound pressure level ($L_{Aeq,T}$)**

Commonly called the "Leq" level it is the average noise level from all noise sources far and near level obtained over a specified time period.

This level is commonly used to allow assessment of the total noise in an environment; for example, over 24 hours or during night-time.

- **Adjusted percent exceedance A-weighted sound pressure level ($L_{A\%,adj,T}$).**

Commonly called the "L10" level and is an indicator of nuisance noise or intrusive noise conditions from traffic, music and other relatively 'steady' noise sources.

The A-weighted sound pressure level using time-weighting 'F' that is exceeded for the percent exceedance under consideration for the time interval considered, plus specific adjustments for tonal character and impulsiveness of sound if such are significant. One-third octave spectra are recommended as the basic measurement for tonality; impulsiveness by using time-weighting 'F'. For steady noise sources the total ambient sound with the noise under investigation operative or inoperative is measured as $L_{A10,T}$. 'Steady sound' is sound with a variation less than or equal to 6dB(A).

- **Background A-weighted sound pressure level ($L_{A90,T}$).**

Commonly called the "L90" or "background" level and is an indicator of the quietest times of day or night.

The A-weighted sound pressure level obtained by using time-weighting 'F' that is equal to or exceeded for 90% of the time interval considered in the absence of the noise under investigation.

- **Adjusted maximum A-weighted sound pressure level ($L_{Amax,adj,T}$).**

Commonly called the "Lmax" level and is used to measure discrete, single event noise levels.

The adjusted maximum A-weighted sound pressure level is obtained by using time-weighting 'F' and arithmetically averaging the maximum levels of the noise under consideration, unaffected by extraneous noise, during the time interval T .

$L_{Amax,adj,T}$ is obtained by making adjustments for tonality and impulsiveness as specified in AS1055.1-1989.

- The provisions of AS2659 are used as a guide for the description and measurement of environmental noise and use of sound measuring instruments.

Figure D1: Ambient noise time history

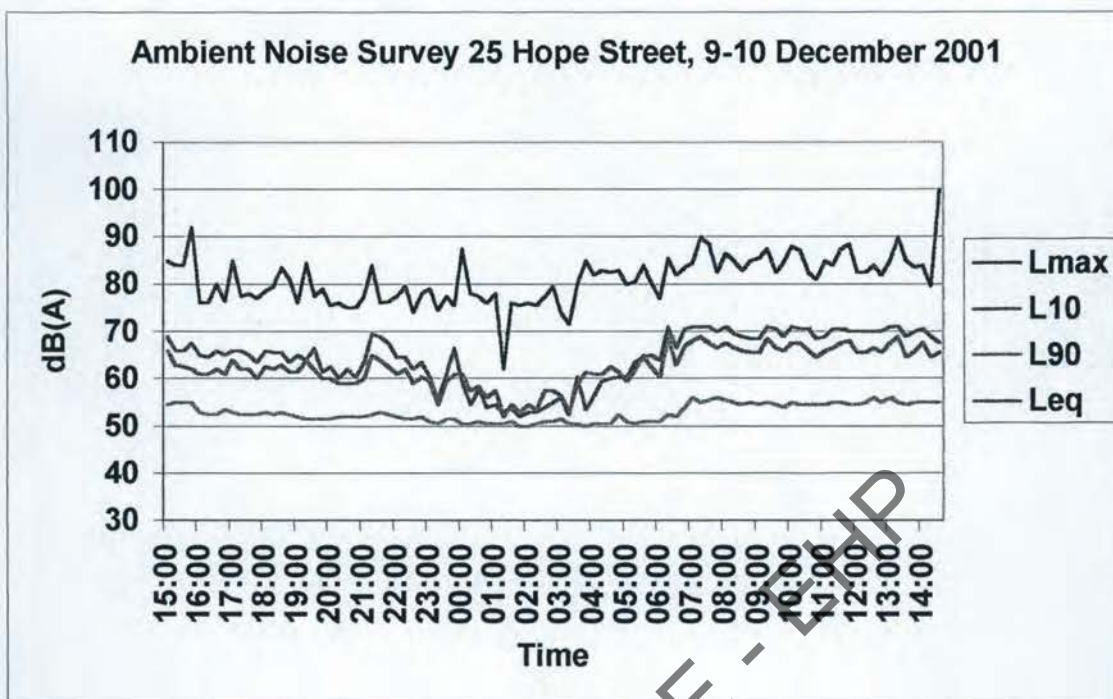


Table D1: Measured ambient levels, December 2001

Noise Level Descriptor	dB(A)
L10 (18 hr) measured façade level, Hope Street	67.1
Leq (24 hr) predicted	64.1
Leq (highest 1-hr night-time)	62.3
L90 day	54.4
L90 evening	52.2
L90 night	50.9
L10 day	68.8
L10 evening	64.5
L10 night	58.3
Average maximum level (Lmax) over period	81.1

Table D2: Predicted facade levels, year 2011

Noise Level Descriptor	dB(A)
L10 (18 hr) façade level, mid-site facing Annerley Rd	69
Leq (24 hr) predicted	66
Leq (highest 1-hr night-time)	65
L90 day	55
L90 evening	52
L90 night	51
L10 day	71
L10 evening	67
L10 night	61
Average maximum level (Lmax) over period	81

APPENDIX E:

PREDICTION OF ROAD TRAFFIC NOISE

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PREDICTION OF ROAD TRAFFIC NOISE

The potential effects of traffic noise are predicted for the proposed development are calculated in accordance with Australian Standard AS2702-1984 *Acoustics-Methods for the measurement of road traffic noise*. The standard refers to the prediction model, 'Calculation of Road Traffic Noise', 1975. A 1983 Australian Road Research Board Report (ARR No. 122; *An evaluation of the UK DoE traffic noise prediction method*) recommended a correction of -0.7 dB(A) for cases without façade correction in Queensland. This is referred to as the "ARR 122 factor" in this report. The ARRB Report noted that, having made this correction, the accuracy of the adjusted prediction (95% confidence limit) for cases without façade correction in Queensland is 1.8 dB(A). The façade correction is taken as +2.5 dB(A). The 1975 edition has been superseded by a 1988 edition. Predicted levels for this report have been calculated using 'TNoise', developed by the Western Australian Department of Main Roads, version 1.0, 1992. A factor of 0.95 is used to calculate the 18 hour traffic flow from the 24 hour predictions.

The model used the following calculation assumptions for Peel Street and Hope Street under year 2001 and year 2011 conditions:

- Peel Street traffic flow of 16300/18 hours (2001) and 18600/18 hours (2011)
- Hope Street traffic flow of 2000/18 hours (2001) and 2850/18 hours (2011)
- an average traffic speed of 60km/hr
- a road gradient of 0%
- 12% heavy vehicles
- 0% absorbing ground, source to receiver
- receiver height of 1.2m above ground level
- road level and ground level the same
- source height 0.5m
- a bitumen road surface with 3 mm texture depth
- 70 degrees angle of view (Peel Street); 180 degrees (Hope Street)
- 50 metres source to receiver (Peel Street); 4 metres (Hope Street)
- no acoustic barriers
- the model was run in "façade-adjusted" mode.



Notes:

1. In order to calculate traffic flows and confirm the assumptions and accuracy of the prediction methodology, the measured and predicted levels for the existing situation (base year) are compared. The difference between the measured facade level (67.1 dB(A) L10_(18 hour)) and predicted facade level (66.6 dB(A) L10_(18 hour)) at 50 / 4 metres from the road is calculated at 0.5 dB(A). The -0.7 dB(A) Queensland "ARR 122 factor" adjustment factor is not included in the prediction procedures. As the predicted results are within ± 1.8 dB(A) of the L10_(18 hour) measured level it is concluded that the assumptions for the prediction model are acceptable.
2. The predicted increase in traffic noise between the base year and the design year (the 10 year traffic planning horizon) is calculated as-

$$(\text{Predicted design year } L10_{(18 \text{ hour})} - \text{Predicted base year } L10_{(18 \text{ hour})})$$

The increase in noise level is taken as being constant over 24 hours and is the calculation factor 'dy' for predicting design year background (L90) and time average (Leq) levels.

Predicted design year L10 _(18 hour)	= 68.8 dB(A)
Predicted base year L10 _(18 hour)	= 66.6 dB(A)
Predicted increase(dy) in traffic noise	= 2.2 dB(A)