

15th June, 2017

Job No: SGS/17/E016I

KN GROUP PTY LTD
LEVEL 2, 71 GREY STREET
SOUTH BRISBANE QLD 4101

Attention: Mr Robert Mander

PLANS AND DOCUMENTS
referred to in the PDA
DEVELOPMENT APPROVAL

Approval no: DEV2023/1441

Date: 29 February 2024



Dear Sir,

RE: YARRABILBA, PRECINCT 5 – GEOTECHNICAL DESKTOP REVIEW

INTRODUCTION AND BACKGROUND

At the request of Mr Robert Mander of KN Group, SGS Australia has undertaken a desktop assessment in support of the Development Application for Yarrabilba Precinct 5 to provide comment on the anticipated geotechnical conditions across the development area.

The following information, pertaining to the geotechnical aspects associated with Yarrabilba Precinct 5, was provided by KN Group:

- Bowler Geotechnical Pty Ltd, "Broadscale Geotechnical Report for the Yarrabilba Development" dated May, 2004;
- RPS Australia East Pty Ltd, "Yarrabilba - Precinct 5 Constraints" Plan Ref. 106127-140G dated 24 March, 2017;
- RPS Australia East Pty Ltd, "Yarrabilba - Precinct 5, Aerial with Original Parcels" Plan Ref. 106127-138D dated 26 April, 2017; and
- Lend Lease Pty Ltd, "Precinct 5, Indicative Context Plan" Drg No. P05-ICP-170428, dated 28 April, 2017 (showing Precinct 5A, B, C, D, E, F, G, H and I).

ASSESSMENT AND COMMENTS

Based on a review of the above documentation and consideration of the geological profiles of the area, the following comments are provided for the proposed Yarrabilba Precinct 5.

- Seven (7) test locations undertaken by Bowler Geotechnical are relevant to Precinct 5. Two (2) boreholes (BH 6 & 7), three (3) test pits (TP 4, 6 & 7) and two (2) waterbores (WB1 & 2) are located within or near Precinct 5 boundary.
- The subsurface conditions are summarised below:
 - BH6 comprised surface sands overlying silty clay to 3.4m, overlying deep sands extending to beyond 6m.
 - BH7 comprised surface sands overlying silty clay to 1.2m, overlying deep sands extending to beyond 6m.
 - TP4 comprised surface sand (topsoil) overlying sandy gravel with trace of cobbles to a depth of 0.5m, overlying sand extending to 1.1m, where weathered sandstone was observed. Refusal was reached at 1.9m depth in XW sandstone, using ripper attachment.
 - TP6 comprised topsoil to 0.1m depth and clayey sand overlying weathered sandstone at a shallow depth of 0.8m and refusing at 1.0m depth.

- TP7 comprised topsoil to 0.1m depth overlying and sandy silty clay extending to 0.6m depth overlying sands to 1.6m depth, where weathered sandstone was observed. Refusal was reached at 2.4m depth in XW sandstone, using ripper attachment.
- WB1 comprised topsoil to 0.45m depth overlying sandy clay extending to 7.0m depth, where weathered sandstone was observed. Sandstone and shale layers were noted to termination depth of 33.0m.
- WB2 comprised topsoil to 0.3m depth overlying sandy clay extending to 7.6m depth, where weathered sandstone was observed. Sandstone and shale layers were noted to termination depth of 33.0m.
- Geological mapping indicates Precinct 5 is located across two geological units; (R-Jo) Woogaroo Sub-group and Ri Ipswich Coal Measures (Figure 2 in Bowler, 2004)
 - All previous testing were located within the Woogaroo Sub-group only. No testing has been carried out within Ipswich Coal Measures located to the eastern portion of Precinct 5. For this reason, there is a risk that geotechnical conditions could be different to the geotechnical findings of the broadscale investigation. Although, it appears only minimal development is proposed within the eastern portion of Precinct 5.

SUMMARY

Based on the findings of the broadscale geotechnical investigation by Bowler Geotechnical and available geological mapping, the geotechnical conditions encountered in Precinct 5, are likely to be consistent / similar to those experienced in the previous Precincts 1, 2 and 3 at Yarrabilba.

However, due to the different geological unit (Ipswich Coal Measures) located in the eastern portion, areas of higher strength rock, saturated subgrade material and wet sands, deep topsoil and sand profiles, particularly within the gully lines and creek beds, may be encountered.

The above statements are based on the current available information and are subject to an additional detail geotechnical investigation being undertaken prior to the detailed design lodgement. Please note, that regardless of the frequency of the test pitting there remains an inherent risk that geotechnical conditions may differ than those of the investigation findings and conclusions.

We trust this is acceptable. Please do not hesitate to contact the undersigned if you require any further details or elaboration.

Yours faithfully,

SGS Australia Pty Ltd

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Encl. Yarrabilba Precinct 5 Plans

- LEGEND**
- YARRABILBA SITE BOUNDARY
 - PRECINCT FIVE BOUNDARY
 - PRECINCT FIVE SUB-PRECINCT BOUNDARY
 - RESIDENTIAL
 - URBAN RESIDENTIAL (min 20sq/ha)
 - EDUCATIONAL ESTABLISHMENT - 7.0ha min
 - INFRASTRUCTURE & EMPLOYMENT
 - POTENTIAL COMMUNITY FACILITY
 - FALUNA CORRIDOR (ENVIRONMENTAL PROTECTION)
 - CONSERVATION PARK
 - CONSERVATION OPEN SPACE
 - INFRASTRUCTURE EASEMENT BUFFER
 - NEIGHBOURHOOD PARK (0.5ha min)
 - SOUTH ROCK LOCAL PARK
 - DISTRICT SPORTS PARK - 7.5ha min
 - DISTRICT RECREATION PARK - 5.0ha min
 - INFRASTRUCTURE EASEMENT
 - PRIMARY MOVEMENT NETWORK
 - SECONDARY MOVEMENT NETWORK
 - PROPOSED GREEN LINK
 - PROPOSED BUS ROUTE
 - FORMER ROAD RESERVE
 - BALANCE LAND IN SEPARATE STORMWATER CATCHMENT
 - RESIDENTIAL WITH POSSIBLE INVESTIGATION AREA FOR HIGHER DENSITIES (min 15sq/ha)

TOTAL PRECINCT AREA	246.76 ha
RESIDENTIAL (INCLUDES SPORT AND RECREATION PARKS AND SCHOOL)	145.92 ha
ELECTRICITY EASEMENT BUFFER	3.51 ha
ENVIRONMENTAL ROAD	37.95 ha
INFRASTRUCTURE EASEMENT	12.50 ha
	46.90 ha

DISCLAIMER
This plan is intended to guide development within the Yarrabilba Precinct Five area and show the preferred land use designations and structural elements. The context plan is a conceptual representation of the precinct and is not intended to be used for detailed design and development applications. The final location will be determined through further detailed design and development applications.

NOTES
The precincts of this plan are conceptual only. All areas are approximate only and subject to relevant studies, survey, engineering and relevant authority approvals.

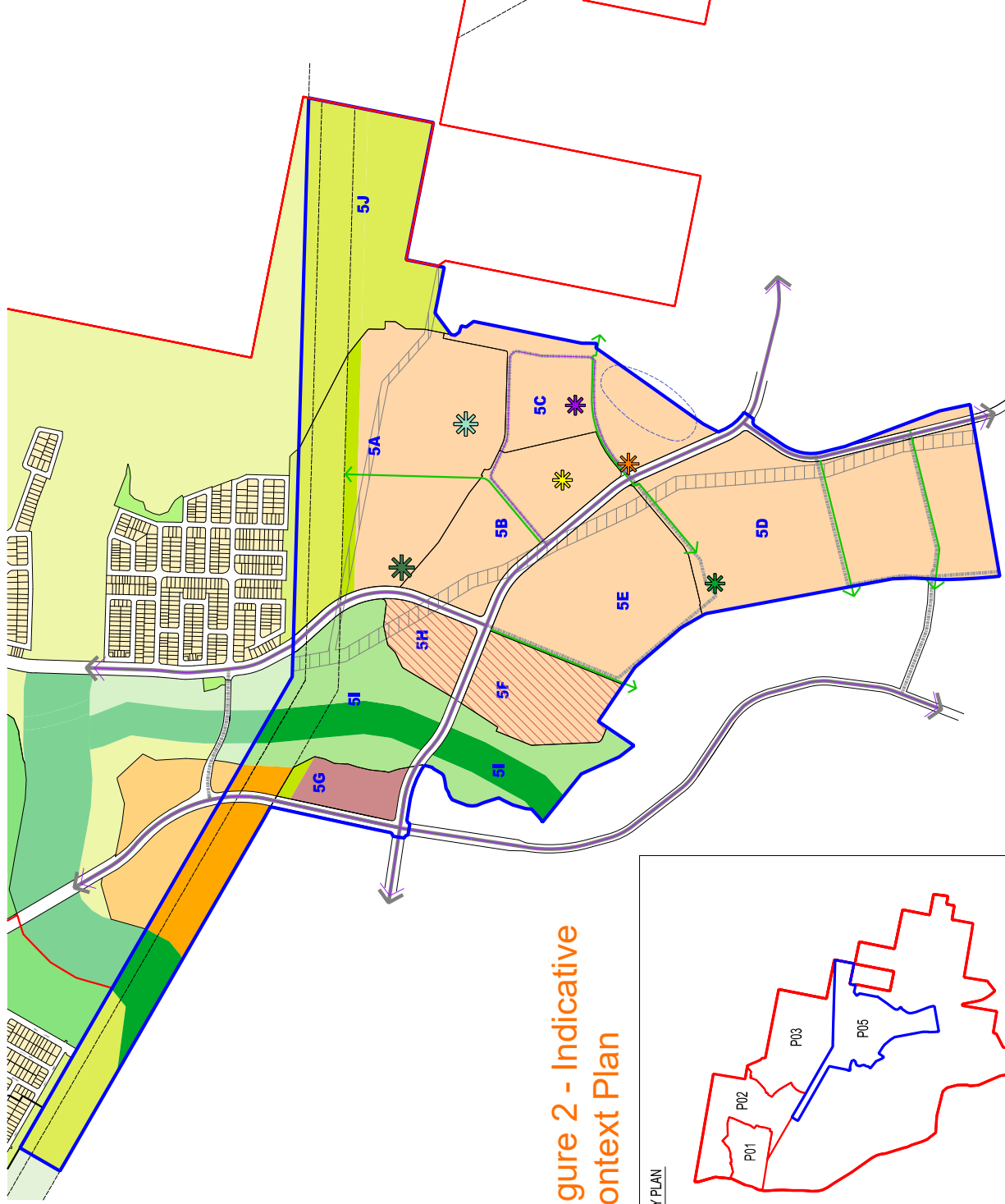
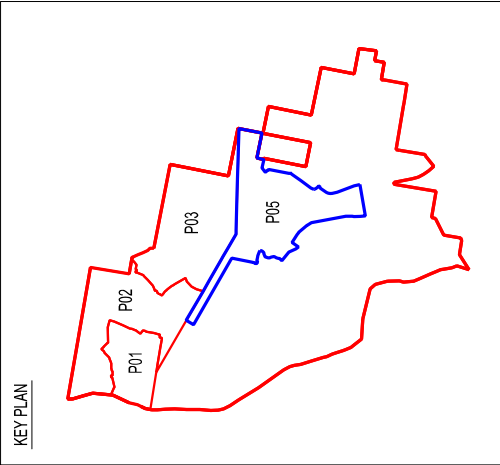


Figure 2 - Indicative Context Plan



PRECINCT FIVE INDICATIVE CONTEXT PLAN

NOTE: This plan is for information only and is not intended to be used for detailed design and development applications. The final location will be determined through further detailed design and development applications.

Figure 5 - Constraints Plan

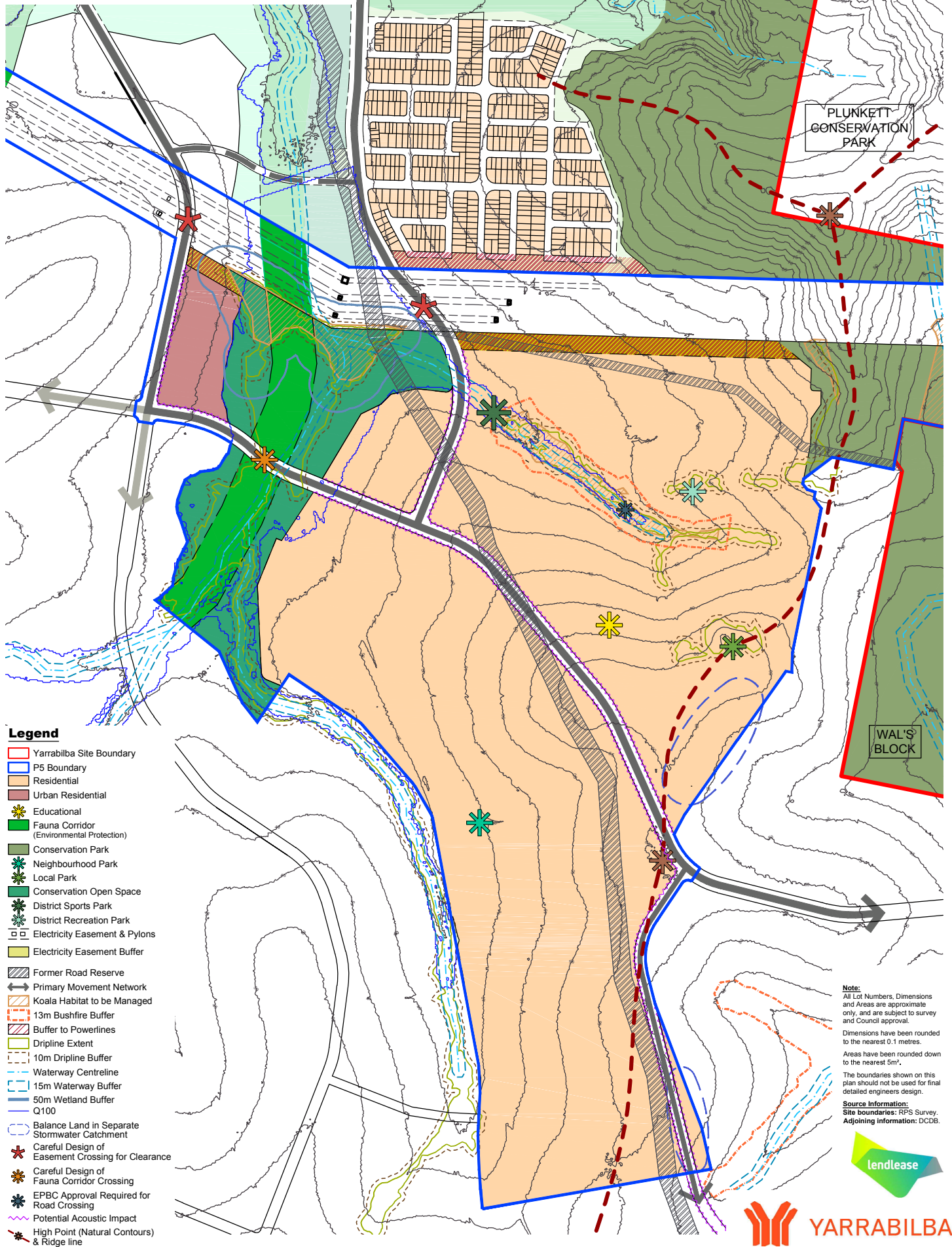


Figure 4 - Aerial Photo

