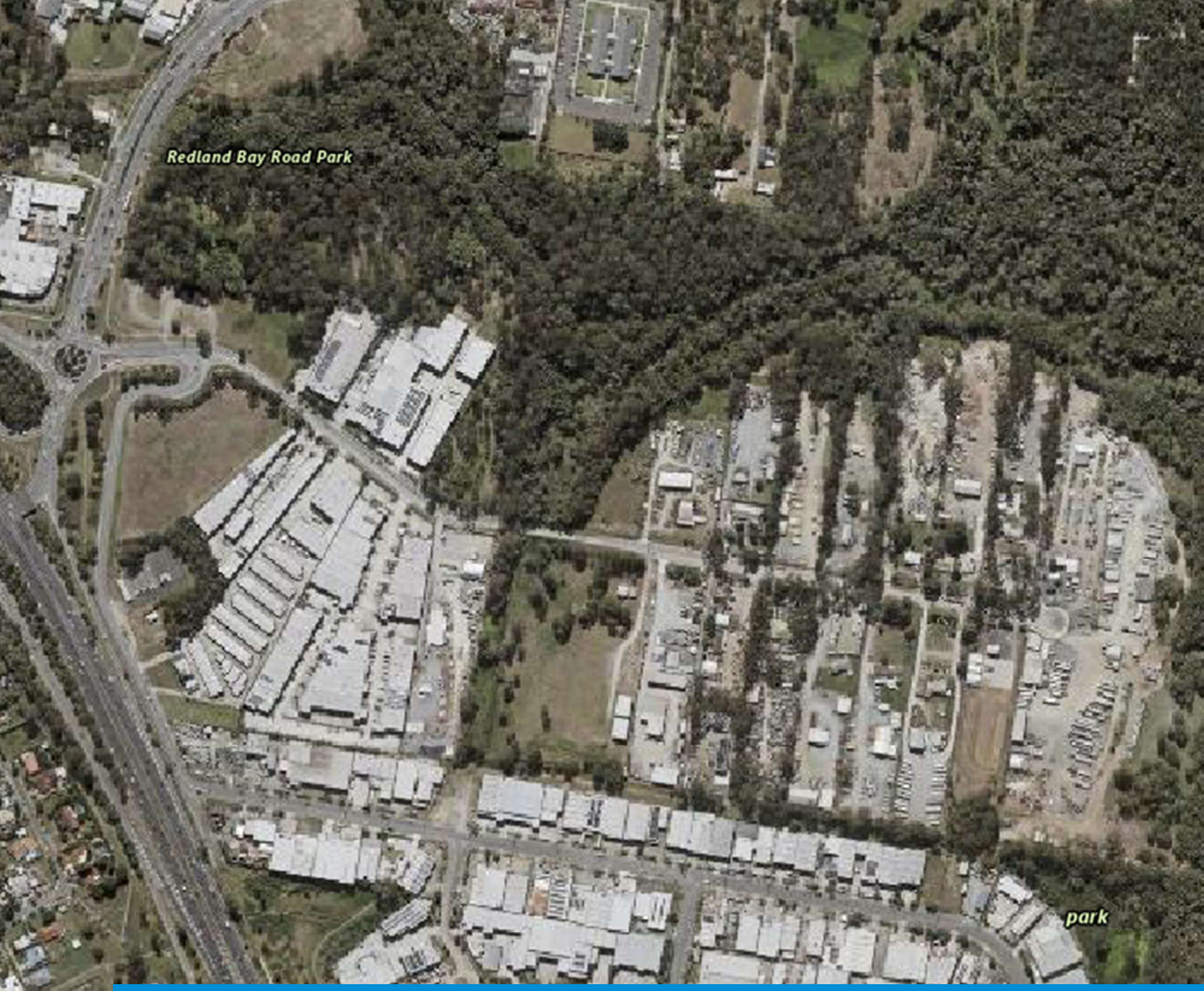


CIVIL ENGINEERING SERVICES REPORT

PROPOSED WAREHOUSE DEVELOPMENT
24-28 CAIRNS STREET, LOGANHOLME

Prepared for Mr Ansar Ahmed
C23032AR001

HURLEY
CONSULTING ENGINEERS

TABLE OF CONTENTS

1 INTRODUCTION 1

2 SITE DESCRIPTION 2

3 FILLING & EXCAVATION 3

4 ROADWORKS 4

5 STORMWATER DRAINAGE 6

6 SEWERAGE & WATER RETICULATION 7

7 CONCLUSION 8

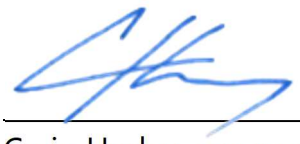
Appendix A – Concept Architectural Plans

Appendix B – Concept Civil Engineering Plans

Appendix C – Code Responses

Revision	Date	Author	Verifier	Approver
A	29/06/2023	CH	SH	CH
B	04/07/2023	CH	SH	CH

Approved for issue for and on behalf of Hurley Consulting Engineers Pty Ltd



Craig Hurley BE(Civil) MIEAust CPEng RPEQ 15957
Director & Principal Civil Engineer

This report has been prepared for the exclusive use of our client under the terms and conditions of our engagement. No responsibility is taken for any third party that uses or relies upon any information contained within this document.

1 INTRODUCTION

Hurley Consulting Engineers has been commissioned by Mr Ansar Ahmed to prepare a Civil Engineering Services Report for a proposed industrial warehouse development at 24-28 Cairns Street, Loganholme. The development will involve the construction of two new warehouses, industrial hardstand and associated filling & excavation as shown on the preliminary architectural plans prepared by Quantum Drafting Solutions and enclosed in Appendix A.

The intent of this report is to review existing infrastructure in the vicinity of the site and to demonstrate how the proposed development can be serviced in general accordance with the local planning scheme requirements.

2 SITE DESCRIPTION

The subject site is located at 24-28 Cairns Street, Loganholme, on land described as Lot 31 on RP88336. The site has a total area of approximately 27,110m^2 and is located within the Logan City Council local government area.

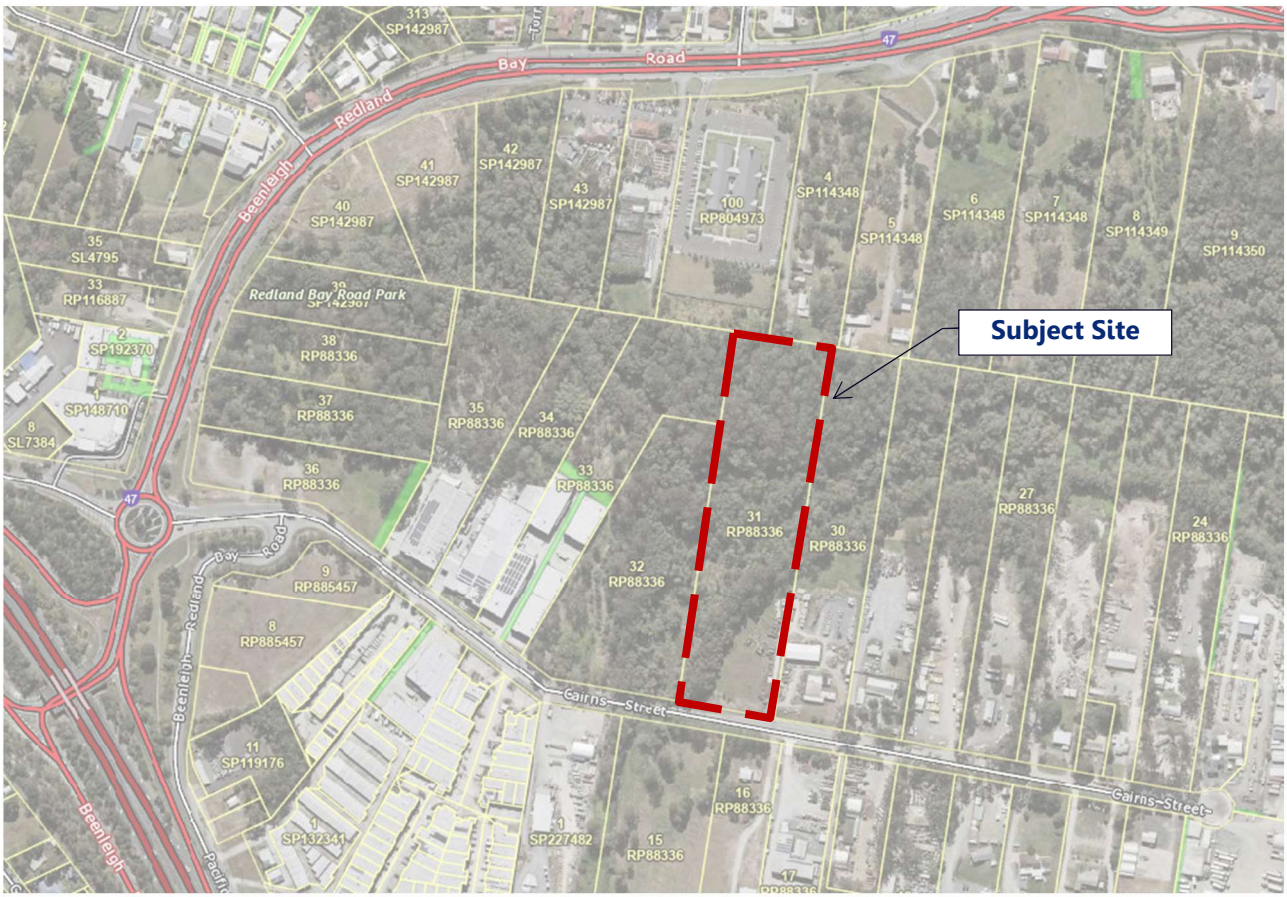


Figure 2.1 – Locality Plan
Image Source: QLD Globe 2023

The site is surrounded by residential and commercial land to the north, industrial uses to the east, Cairns Street to the south and a local tributary of the Logan River to the west, which also bisects the site. The site ranges in elevation from approximately RL 2.0m AHD in the gully at the eastern boundary to RL 6.4m AHD at the south-eastern corner and 9.6m AHD in the north-western corner of the site.

Access to the site is currently taken from Cairns Street via a driveway near the eastern boundary of the site, and that access is also shared with the industrial property immediately to the east. The site is currently vacant but appears to be used for storage.

3 FILLING & EXCAVATION

The site is affected by regional flooding from the Logan River. Modelled flood levels supplied by Logan City Council are summarised in Table 3.1, and these levels suggest that the site is largely affected by flooding in the modelled 1% AEP event with climate change.

Location	24-28 Cairns Street Loganholme
Flood Study	Logan Albert Rivers Flood Study 2021
0.5% AEP	6.78m AHD
1% AEP with Climate Change (DFE)	6.74m AHD
2% AEP	6.04m AHD
10% AEP	4.65m AHD

Table 3.1 – Peak Flood Levels
Image Source: Logan City Council 2023

Filling and excavation are proposed within the site to provide a hardstand area for vehicle manoeuvring and car parking. Excavation is also proposed within the site to obtain fill material and to avoid a net loss of floodplain storage at the site. The new warehouses are proposed to be constructed on piers to avoid excessive filling within the floodplain.

Concept earthworks plans are enclosed in Appendix B to show preliminary details for site earthworks, including the compensatory cut area. The plans show a slight excess of cut (meaning a slight increase in total flood plain storage) and an additional area in the southern portion of the site to generate additional cut if needed during detailed design.

The building floor levels are nominated at RL 6.8m AHD, which is elevated above the 1% AEP with Climate Change and 0.5% AEP flood levels. The hardstand area has been modelled at RL 6.5m AHD which will remain trafficable at roughly 240mm below the 1% AEP with Climate Change level.

Retaining walls are proposed in fill around the perimeter of the hardstand area. The maximum retaining wall height is currently 1.5m and most of the retaining walls will be obscured under the elevated buildings.

Due to elevation the site will need to be tested for acid sulphate soils. If actual or potential acid sulphate soils are found then an acid sulphate soils management plan will be required, which would likely require treatment of exposed soils with a neutralising agent such as aglime. This can be managed through conditions of the development approval.

The proposed extents of cutting and filling, and cut / fill volumes, are shown on the concept engineering plans enclosed in Appendix B. Responses to the Logan City Council Filling & Excavation Code are enclosed in Appendix C.

4 ROADWORKS

Access to the site is currently taken from Cairns Street via a gravel driveway near the eastern boundary of the site. It is proposed to formalise and use the existing driveway for the development of the site.

Cairns Street is currently sealed with gravel shoulders and a grassed table drain along the frontage of the site. The verge is relatively level in the eastern portion of the frontage and then falls away towards the creek in western half of the frontage.

Kerb & channel works may be required along the site frontage. However, we would propose to limit any frontage works to the developed portion of the site. This will avoid filling of the road verge in the western part of the site closer to the waterway.

The development provides adequate space on site for car parking and for service vehicle manoeuvring. The hardstand area is large enough to enable a 19m Articulated Vehicle to enter and leave the site in a forward direction. This exceeds the requirement for HRV

The Logan City Council Servicing, Access and Parking Code nominates a parking rate of one space per 100m^2 GFA for Warehouse developments. The development has a total GFA of 1,800m^2, so the development requires 18 car parking spaces to comply with the standard parking rate.

The development can accommodate approximately 7 car parking spaces outside the AV turning circle as shown in Figure 4.1. The remaining car parking spaces can be provided inside the warehouses as required.

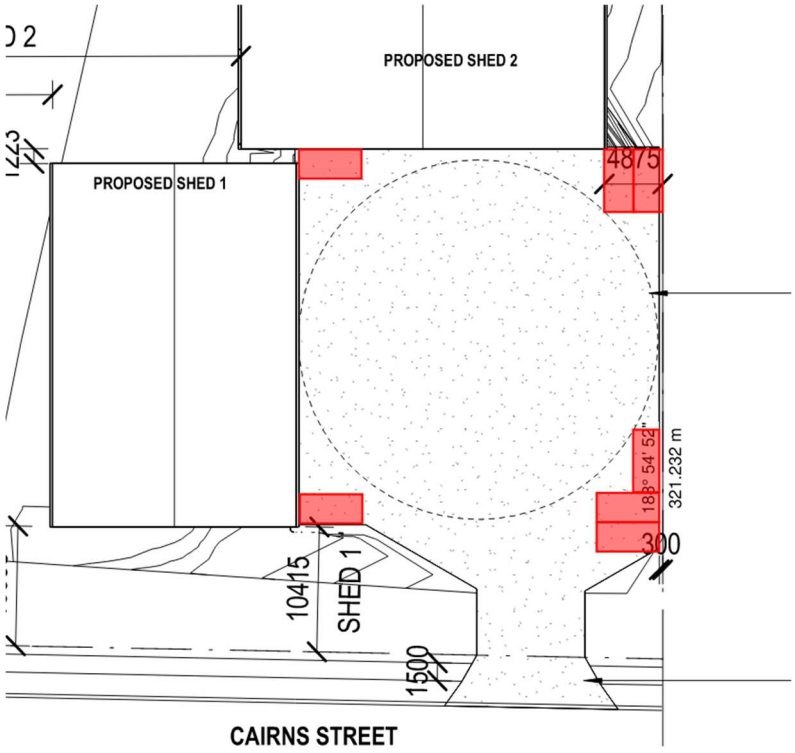


Figure 4.1 – Car Parking Spaces

Refuse collection is proposed to occur on site. Adequate space can be provided on site for refuse collection manoeuvring and for the storage, loading and unloading of bins.

The proposed access and driveway arrangements are shown on the concept architectural plans enclosed in Appendix A. Responses to the Logan City Council Infrastructure Code are enclosed in Appendix C.

5 STORMWATER DRAINAGE

The site currently drains towards a mapped waterway that drains to the north-east through the middle of the site. The waterway within the site has been identified as the lawful point of stormwater discharge for the proposed development.

Runoff from the proposed warehouse buildings and hardstand area will be captured and discharged to the lawful point of stormwater discharge. Flooding, stormwater quantity impacts and stormwater quality treatment measures are discussed in more detail in the separate Flood Impact Assessment report prepared by Water Technology.

The proposed development will result in a total site imperviousness of substantially lower than 25%. On that basis stormwater quality treatment is not proposed, however it could be provided with a proprietary filtration system (e.g. SPEL Sacks & SPEL Filters) in the proposed hardstand area.

Responses to the Logan City Council Infrastructure Code are enclosed in Appendix C.

6 SEWERAGE & WATER RETICULATION

The subject site is intended to be serviced by a new connection to the existing gravity sewerage main within the site. Connection will be made at one of the three manholes within the site, most likely manhole 6/5, as shown in Figure 6.1. All building fixtures will then be connected to that sewer connection by private plumbing.

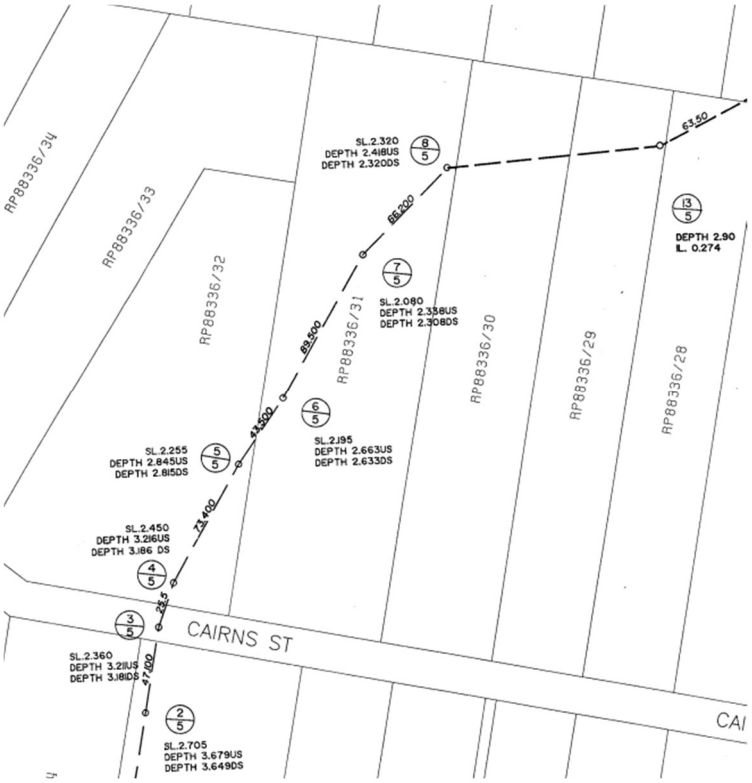


Figure 6.1 – External Sewerage Works by Logan City Council
Image Source: Logan City Council As-Constructed Records

Logan City Council records identify an existing 150mm diameter water main on the southern side of Cairns Street at the site frontage. It is proposed to provide a large new water service and meter to the new development from the existing water main in Cairns Street. The size and details for the new water service and meter are subject to hydraulic design.

Responses to the Logan City Council Infrastructure Code are enclosed in Appendix C.

7 CONCLUSION

Hurley Consulting Engineers has been commissioned by Mr Ansar Ahmed to prepare a Civil Engineering Services Report for a proposed industrial warehouse development at 24-28 Cairns Street, Loganholme. The development will involve the construction of two new warehouses, industrial hardstand and associated filling & excavation as shown on the preliminary architectural plans prepared by Quantum Drafting Solutions and enclosed in Appendix A.

Filling and excavation are proposed within the site to provide a hardstand area for vehicle manoeuvring and car parking. Excavation is also proposed within the site to obtain fill material and to avoid a net loss of floodplain storage at the site. The new warehouses are proposed to be constructed on piers to avoid excessive filling within the floodplain.

Concept earthworks plans are enclosed in Appendix B to show preliminary details for site earthworks, including the compensatory cut area. The plans show a slight excess of cut (meaning a slight increase in total flood plain storage) and an additional area in the southern portion of the site to generate additional cut if needed during detailed design.

Runoff from the proposed warehouse buildings and hardstand area will be captured and discharged to the lawful point of stormwater discharge, being the existing waterway within the site. Flooding, stormwater quantity impacts and stormwater quality treatment measures are discussed in more detail in the separate Flood Impact Assessment report prepared by Water Technology.

Responses to the Logan City Council Filling & Excavation Code and Infrastructure Code are enclosed in Appendix C.

This report has reviewed existing infrastructure in the vicinity of the site and demonstrated how the proposed development can be serviced in general accordance with the local planning scheme requirements. No civil engineering constraints have been identified that, in our opinion, would preclude approval of the proposed development with reasonable and relevant conditions.

Appendix A – Concept Architectural Plans