

**BLUE BARN**  
CONSULTING ENGINEERS

**3094 – 3096 Great  
North Road**

*Infrastructure Investigation and  
Report*

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Prepared for:  
**Cambridge Clothing Company Limited (Client)**

# DOCUMENT CONTROL & QUALITY STATEMENT

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## REVISION HISTORY

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Authorised for issue: Michael Gordon - Principal

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# 1 GENERAL

## 1.1 SCOPE OF REPORT

Blue Barn Consulting Engineers (Blue Barn) is engaged by Cambridge Clothing Company Limited (Client) to undertake an Investigation and Report on the redevelopment potential of 3094 – 3096, Great North Road, New Lynn, Auckland

The purpose of the Investigation and Report is to determine the requirements for potential infrastructure enhancement to adequately service the redeveloped site.

This is a Desk Study Assessment of the existing infrastructure of the subject site to inform potential redevelopment of the site. The Assessment is based on publically available information, including; the Site Property File, Auckland Council's GIS, beforeUdig and NZ Geological Maps.

The Report will be used to inform the Vendor's Due Diligence Package and has not been prepared based on any specific redevelopment proposal and is intended as an initial investigation into the existing site infrastructure.

Based on the above information, the Report provides comment on the existing infrastructure within and adjacent to, the site and identifies any potential issues that may need to be addressed during the further stages of investigation, design and planning of any redevelopment, specifically:

- Topography;
- Geology;
- Flooding;
- Storm Water;
- Waste Water;
- Water Supply; and
- Traffic.

Additional testing that may be required to confirm whether the existing infrastructure has adequate capacity and is in suitable condition, depending on the type of redevelopment, is outlined.

## 1.2 DESCRIPTION OF EXISTING SITE

The site is located at 3094-3096 Great North Road, New Lynn. It has the Western Train Line directly to the south, the new Clark Street Extension to the east and Great North Road to the north. A number of small tributary streams (Scroggy Stream, Manawa Stream and Rewarewa Creek) join together at the south-western corner of the site to form the Manawa Stream, which then flows along the western boundary of the site towards the north. The total site area is approximately 1.8Ha, of which, approximately 65% is currently building or car parking (impervious) areas.

The Client's current land-use is as offices and a factory, with car parking adjacent to the train line in the southern section of the site. Access is from the Clark Street Extension (which is not yet shown on aerial photographs).

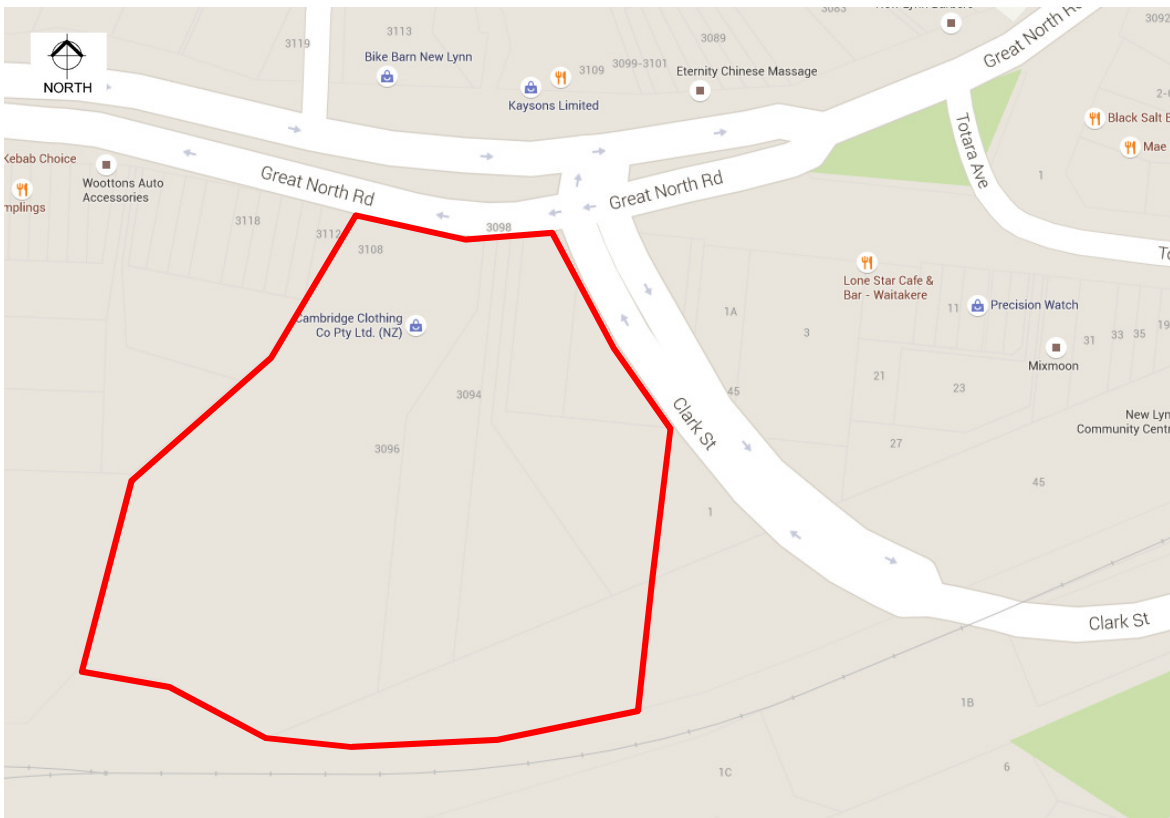


FIGURE 1 – APPROXIMATE SITE LOCATION SHOWING NEW CLARK STREET EXTENSION

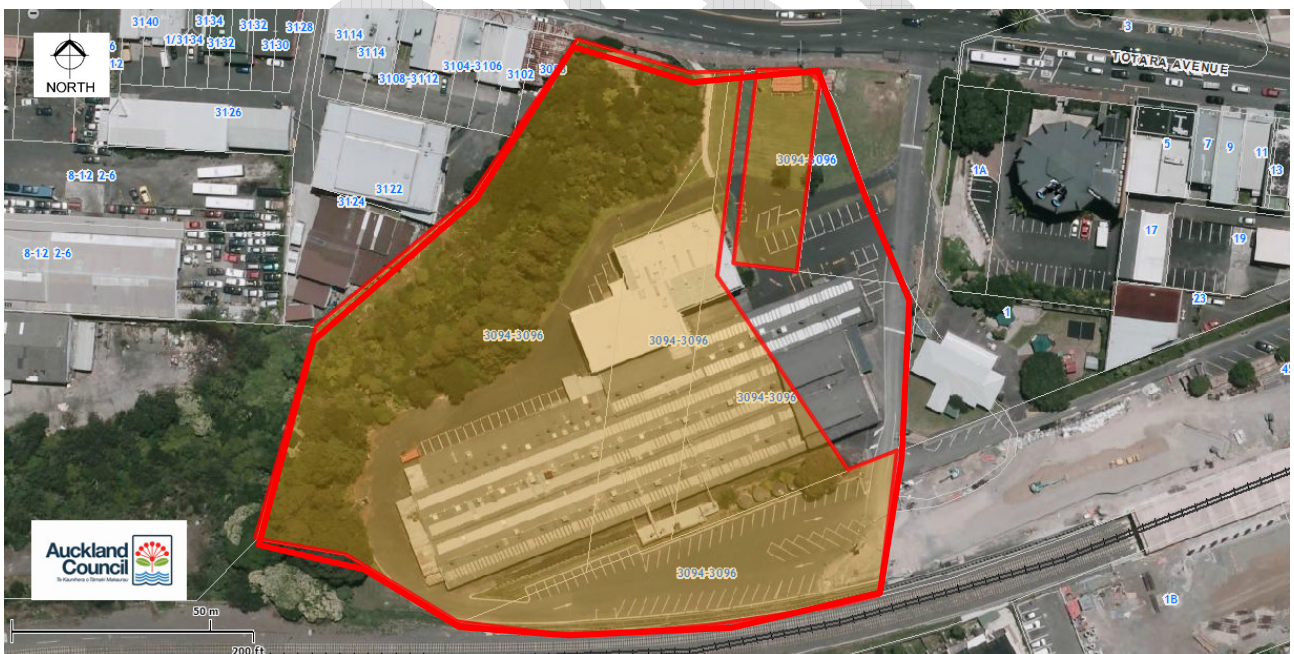


FIGURE 2 – EXISTING SITE PLAN (AERIAL PHOTO DOES NOT SHOW CLARK STREET EXTENSION)



FIGURE 3 – SITE LOCATION

### 1.2.1 ZONING

The site is located at 3094 – 3096 Great North Road, New Lynn, Auckland. It is bounded by the Auckland Rail Corridor to the south, Great North Road to the north, Clark Street Extension to the east and park \ industrial areas to the west.

The current site use is identified as “Industrial – textiles, leather” in Auckland Council’s GIS. The Proposed Auckland Unitary Plan shows the site zoned as “Business – Metropolitan Centre”.

### 1.2.2 TOPOGRAPHY

The topography of the site, refer to Figure 4, generally falls from a high point at the rail lines in the south (approximate RL 17m) towards a low point in the northwest at the stream gully alongside Great North Road (RL 5m). A large portion of the site is reasonably flat through the existing car parking and building footprint.

It is assumed that, depending on the redevelopment proposal, earthworks volumes could be minor as there is already a significant flat area that currently contains the building platform and car parking area.



FIGURE 4 – SITE TOPOGRAPHY AND CONTOURS FROM AUCKLAND COUNCIL GIS

### 1.2.3 GEOLOGY

Geological Mapping, refer to Figure 5, indicates that the site is primarily, underlain with Alluvial deposits and weathered soils of the Puketoka Formation. No intrusive Geotechnical Investigations have been undertaken by Blue Barn to confirm but according to geotechnical information included in the property file, the ground water table was not encountered in bore holes taken for the Clark Street Extension Project.

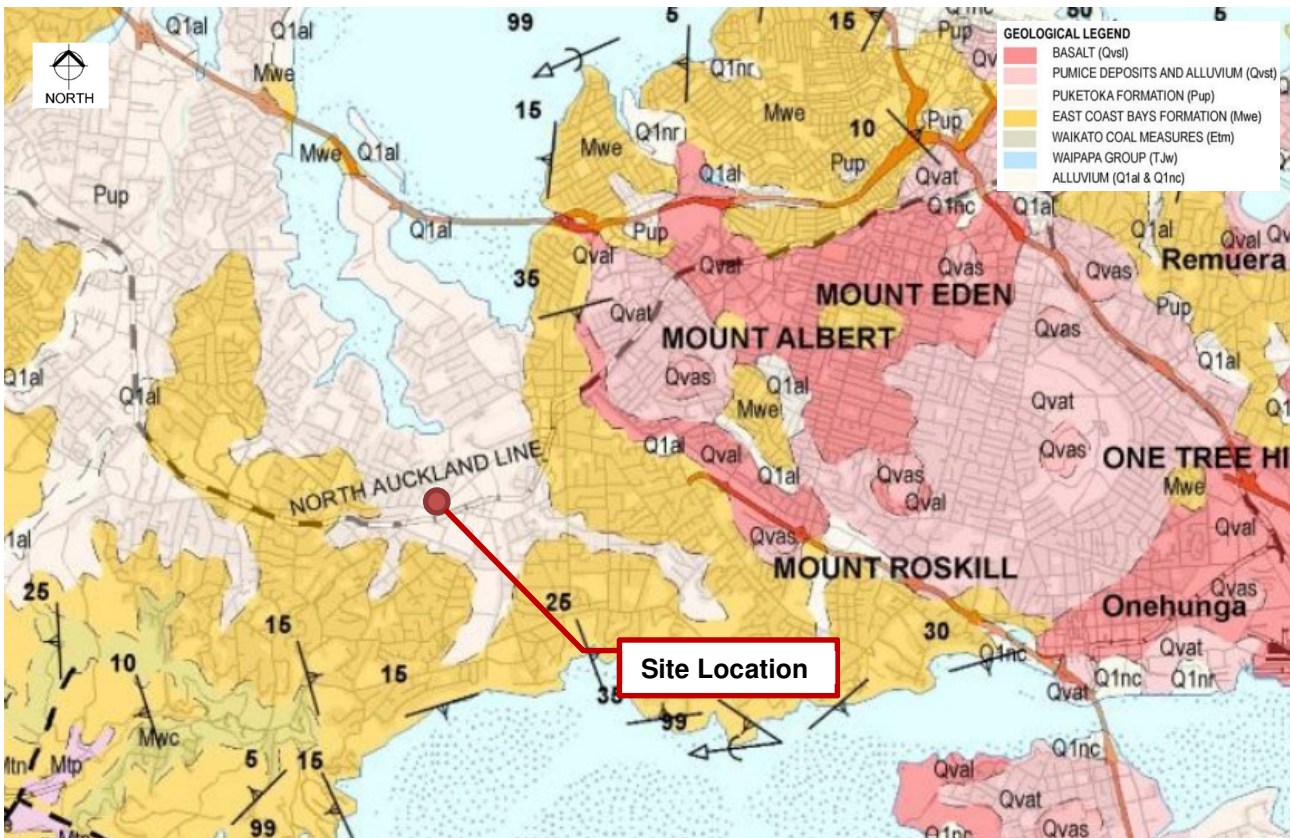


FIGURE 5 – GEOLOGY FROM INSTITUTE OF GEOLOGICAL & NUCLEAR SCIENCES 1:250,000 GEOLOGICAL MAP 3

### 1.2.4 CONTAMINATION

The Ministry for the Environment has created a compilation of Hazardous Activities and Industries List (HAIL), which includes item A. 16. “Skin or wool processing including a tannery or fellmongery, or any other commercial facility for hide curing, drying, scouring or finishing or storing wool or leather products”. Due to the past activities on the site, it is possible that contamination may be present.

As part of the Clark Street Extension road network enhancement, an Environmental Assessment by Soil & Rock Consultants was included in the site property file. This Report discussed the results from the boreholes on the property boundary with the subject site and noted that contamination of these results was within background levels, which indicated that excavated material does not require a permit to stay on site and that removal to a managed fill site is optional. No testing was available through the remainder (majority) of the site and therefore, no overall comment can be made about contamination on the site.

Contamination testing will be required throughout the site against current Auckland Council standards to confirm whether material can remain on site during redevelopment or to which type of landfill material must be removed.

### 1.2.5 SITE COVERAGE

The existing site consists of a series of buildings (offices, retail and factory) and a large area of asphalt car parking. The existing impervious area is approximately 1.2Ha out of the total site area of 1.8Ha, resulting in, approximately, 65% impervious site coverage.

The remainder of the site comprises an area of vegetation alongside the Manawa Stream and some grassed area on the frontage to Great North Road.



### 1.2.6 CURRENT ISSUES

No existing infrastructure issues have been communicated to Blue Barn by the Client.

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## 2 SITE INFRASTRUCTURE

### 2.1 GENERAL

The existing site infrastructure has been assessed based on the information available from Auckland Council’s GIS and a beforeUdig request. This section of the Report will comment on what existing services are shown within and adjacent to the site, including: stormwater, wastewater, water supply, power, gas and telecoms.

As the redevelopment land-use is not defined, future capacity / discharge requirements cannot be quantified. However, this assessment of existing services will identify any likely constraints or areas which may require additional investigation.

No physical capacity checks, service location or liaison with Service Providers has been undertaken at this stage.

All service plans received from service providers through the beforeUdig system have been included in Appendix A.

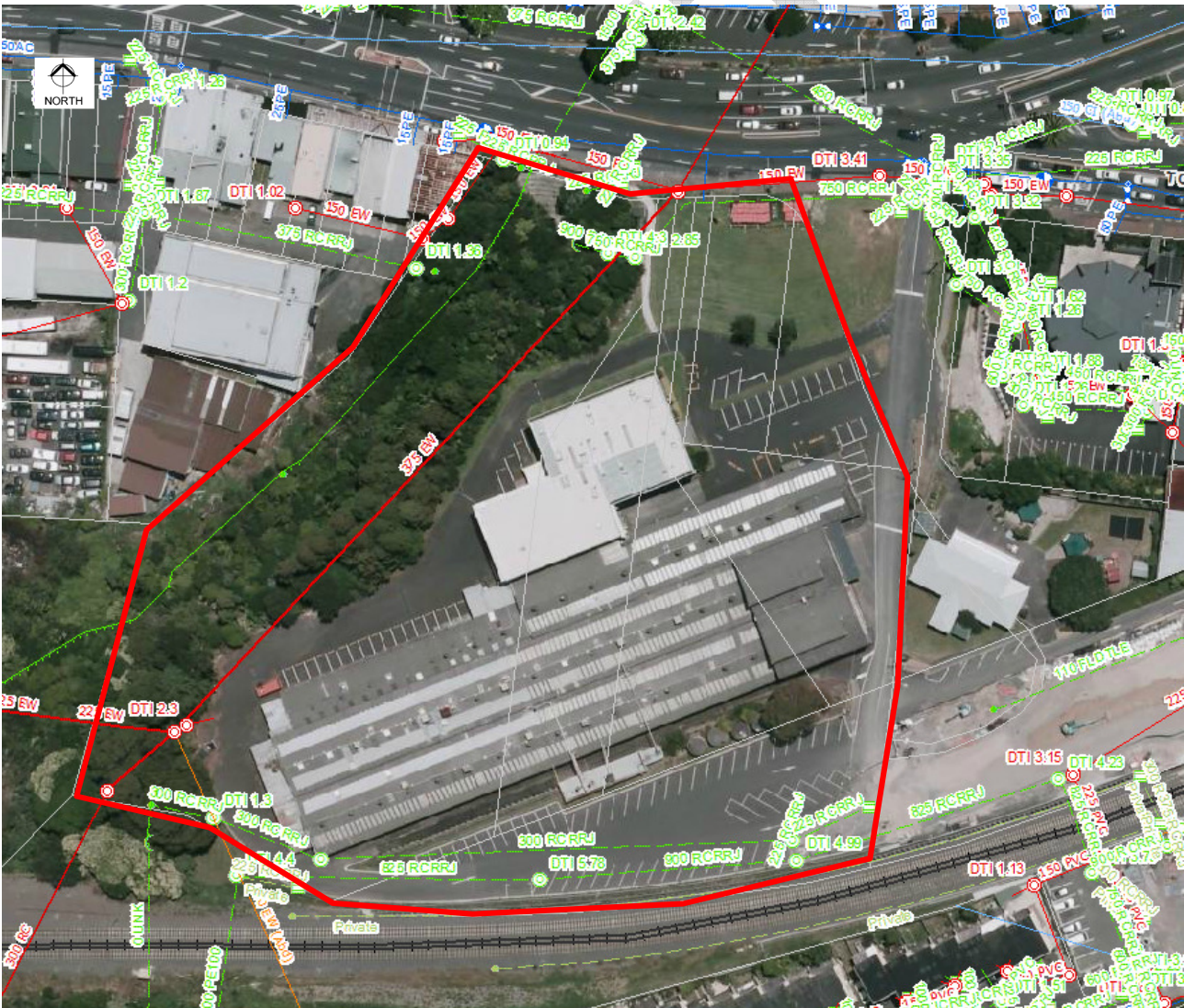


FIGURE 6 – EXISTING SERVICES FROM AUCKLAND COUNCIL’S GIS

## 2.2 FLOODING

Auckland Council's GIS shows overland flow paths and flooding as modelled by Auckland Council. Overland flow paths, shown as a darker blue lines in Figure 7, indicate where water will flow across the ground surface once the rainfall exceeds the piped stormwater system capacity. The areas in Figure 7 shown covered with light blue shading indicate ponded water during the design, 1 in 100-year, rainfall event.

The GIS maps indicate that overland flow through the Manawa Stream gully in the north west of the site is generally contained within the stream banks and does not reach the car park / external driveway level during the 1 in 100-year rainfall event. While it will have limited impact on the redevelopment site, there appears to be significant ponding across Great North Road as the stream enters a culvert (which may not have adequate capacity for the 1 in 100-year rainfall event) and another overland flow path from Totara Avenue converges at this point.

In the south of the site, ponding is shown to extend approximately half way across the car park area originating from the KiwiRail land in the south and east.

Ponding is also indicated within the building footprint, which is likely a result of the flatness of this area as it appears on the GIS topographic contours. No comment has been sought at this stage, from the Client with respect to any historic flooding around or within, the building.

It should be noted that the GIS indicates that the modelling was undertaken in 2009, which is contemporaneous with the construction of the New Lynn Rail Trench. These rail works, which included a large cut and cover rail trench, are likely to have changed the overland flow paths through the area and the flood modelling may not reflect these changes.

If buildings are likely to be located within any areas where flooding has been indicated on GIS or any critical infrastructure is likely to be located near these areas, it is recommended that additional flood investigations are undertaken to update the information currently available. This investigation should provide a minimum floor level for buildings and any recommendations for diverting overland flow paths (if any are now present) away from potential building sites.



FIGURE 7 – FLOODING AND OVERLAND FLOW PATHS FROM AUCKLAND COUNCIL GIS

## 2.3 TRAFFIC

With the change on the road network as part of the Clark Street Extension, the site is now accessed off the Clark Street Extension / Cambridge Lane signalised intersection, refer to Figures 8 and 9.

The 2009 Traffic Impact Assessment considers the Waitakere City Council (now Auckland Council) Transit Orientated Development and the overall impact of all of the local area changes including the Clark Street Extension and the Rail Corridor Works. There is no site land-use definition nor the basis on which traffic generation, distribution and assignment to and from the Clark Street Extension was determined. Similarly, there is no intersection analysis or confirmed theoretical reserve operational capacity at the signals.

It is likely the extant land-use was used in the Traffic Impact Assessment. Once the redevelopment land-use is determined, an analysis (SIDRA) should be undertaken to determine pre and post-redevelopment capacity.



FIGURE 8 – CLARK STREET EXTENSION

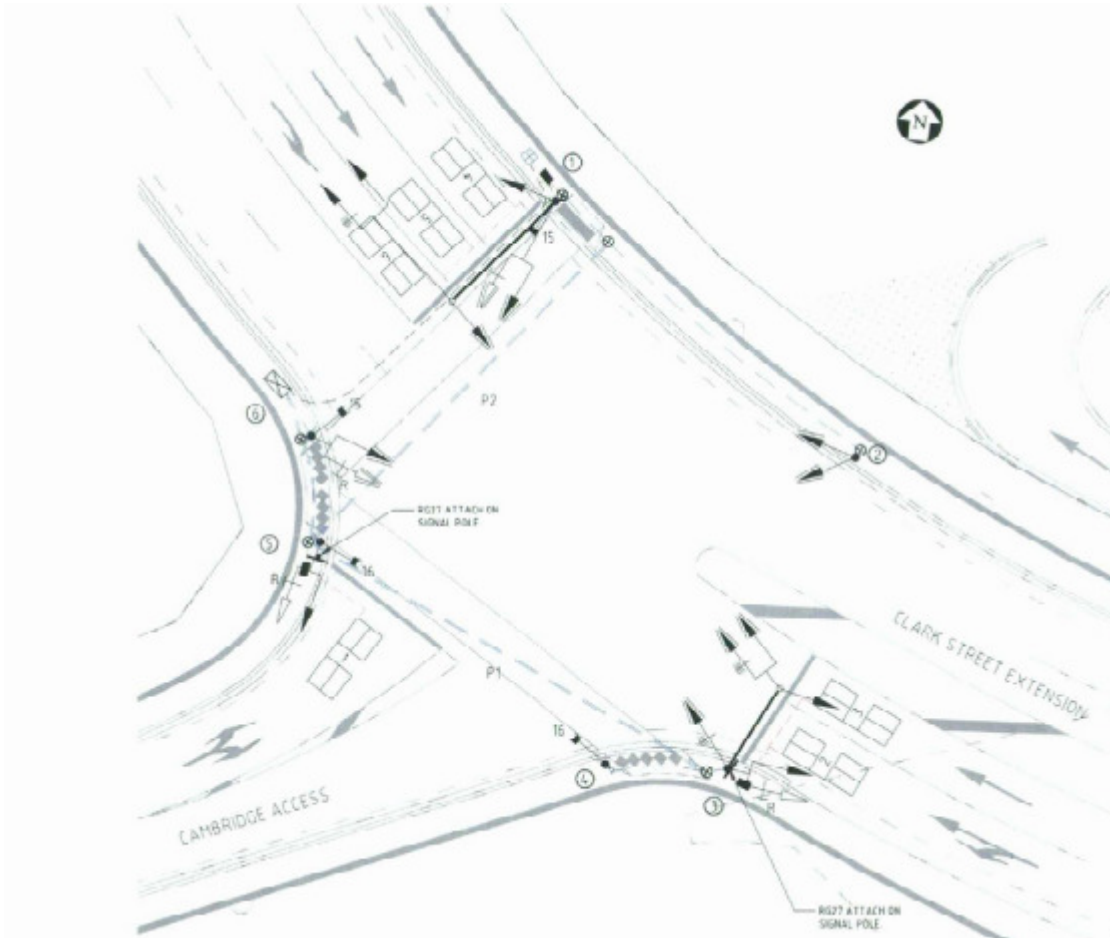


FIGURE 9 – CLARK STREET EXTENSION; TRAFFIC SIGNAL DETAIL

## 2.4 STORMWATER

### 2.4.1 EXISTING STORMWATER

All existing public stormwater infrastructure has been extracted from Auckland Council's GIS. Stormwater pipes and manholes are shown in Figure 6 in green.

Through the car park in the south of the site, there are two public stormwater lines heading from east to west. The smaller diameter of the two (225 – 300mm diameter) lines, appears to pick up stormwater from the carpark area within the site and discharge into the Manawa Stream just north of the rail corridor. The larger diameter pipe (800 – 900mm diameter), appears to originate east of the site, collect stormwater from the rail corridor and the Clark Street Extension and then pass under the rail corridor to a discharge location south-west of the site.

In the north of the site, there is a public 750 – 900mm diameter stormwater line which collects stormwater from Totara Road, Totara Triangle and the commercial catchment to the east of the site and follows the boundary of the site to a discharge location alongside Great North Road in the Manawa Stream.

It is not known from the information available whether stormwater from the building enters the public pipe in the south of the site, the public pipe and outfall in the north of the site or discharges directly into the stream at another location.

The Manawa Stream flows from the south to the north and is culverted under Great North Road by a 1,500mm wide brick arch culvert.

## 2.4.2 STORMWATER ISSUES / CONSTRAINTS / POTENTIAL

Quantity control (attenuation or retention of runoff from rainfall events) is generally required where there is an increase in runoff due to redevelopment of a site. The majority of the site likely to be redeveloped is already impervious (pavement and buildings). Therefore, assuming that impermeable areas are not increased by the future redevelopment, stormwater runoff is unlikely to increase and quantity control would not be required.

Piped stormwater from any future redevelopment will inevitably discharge into the stream, either via the stormwater system and outfall structures or potentially through a new outfall structure somewhere along the stream depending on the proposed site layout or if any erosion or scour issues are currently occurring.

As noted above, runoff from the site discharges directly into the Manawa Stream. Quality treatment to remove contaminants from runoff of areas noted in the Proposed Auckland Unitary Plan (such as car parking) will be required prior to entering the stormwater system. Quality treatment could potentially be in the form of proprietary stormwater treatment devices, raingardens, swales or filter strips.

## 2.5 WASTEWATER

### 2.5.1 EXISTING WASTEWATER

All existing public wastewater infrastructure has been extracted from Auckland Council's GIS. Wastewater pipes and manholes are shown in Figure 6 in red.

A number of pipes (225mm, 300mm, and 300mm [abandoned] diameter) converge in the south-western corner of the site into an existing 375mm diameter earthenware wastewater line along the western side of the site between the buildings and stream gully. This connects to a large diameter 750mm wastewater trunk main approximately 160m north of the site boundary.

### 2.5.2 WASTEWATER ISSUES / CONSTRAINTS / POTENTIAL

Watercare Services Limited has been contacted, through its website portal, to confirm downstream capacity of the wastewater network, however, no response has been received.

Depending on the scale of the redevelopment, the large diameter 375mm wastewater pipe through the site and proximity to the 750mm diameter trunk main would indicate that capacity is likely available.

Once the expected wastewater flows from the redevelopment have been advanced further, Watercare should be approached to confirm whether the downstream system has capacity.

## 2.6 WATER SUPPLY

The site currently has a 50mm PE connection to the 150mm AC line in Great North Road. There is a 100/125mm PE main on the opposite side of Great North Road.

Due to the complex nature of water supply modelling, once the future demand has been established, Watercare should be contacted to undertake a network analysis and confirm capacity. Hydrant flow tests are recommended to test flow and pressure at the existing network during peak usage.

### 2.6.1 POTABLE WATER SUPPLY

The site has an existing 50mm PE connection from the 150mm AC line in Great North Road.

### 2.6.2 FIREFIGHTING SUPPLY

SNZ PAS 4509:2008 New Zealand Fire Service Firefighting Water Supplies Code of Practice outlines the requirements for firefighting water supply. Table 1 from this Standard, denotes the water supply classification for different structures.

Depending on the redeveloped site's land-use and the size of the largest fire cell within the building, the required flow rate can vary greatly between 12.5L/s and 100L/s required within 135m of the site and then the same flow rate from an additional source within 270m of the site. This flow rate is required in addition to any flow required for the sprinkler system.

There are existing hydrants within Great North Road on either side of the site, however, due to the size of the site, it is expected that hydrants would need to be provided within the site to service all areas of the building. Hydrant flow tests are recommended to confirm the capacity of the existing system during peak usage.

## 2.7 POWER, GAS AND TELECOMMUNICATIONS

Cambridge House has an existing Chorus connection from Great North Road, which is shown as entering the site approximately where the Clark Street Extension intersection is located. Chorus Broadband availability maps show fibre available at the site presently.

Vector Power has a Distribution Substation in the north of the site adjacent to Great North Road and near the Clark Street Extension intersection. This Substation appears to be fed from the nearby New Lynn 33/11kV Substation on Titirangi Road. The Distribution substation then distributes HV power further along Great North Road eastwards and also feeds HV and LV ducts along the boundary with the Clark Street Extension to a second distribution substation in the south of the site.

Vector Gas has services in Great North Road, which includes an IP20 6-inch steel gas main and MP4 50mm PE through 4 inch cast iron gas pipe. These each have an existing connection to the site approximately in the centre of the road frontage with Great North Road.

Vector Communications do not show any services near the site.

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## 3 TITLE AND EASEMENTS

### 3.1 BACKGROUND

The site is subject to an Agreement dated the 23<sup>rd</sup> of September 2010 between the Client and the former Waitakere City Council. This Agreement provides for various land swaps between the Parties in order to reconfigure the roads in the area to service the New Lynn Redevelopment Project. Access to the site would be provided at the rear of the site by a new road, known as Cambridge Lane.

### 3.2 EASEMENTS

Clause 17 of the Agreement provided for the surrendering of the existing Right of Way Easement in favour of Council as created by Transfer 5344824.2. This Easement would become redundant on the construction of the new road. To date, the entire Easement has not been formally surrendered although Auckland Transport has agreed that under the terms as the Agreement, it is its responsibility to attend to this. It is understood that the process to surrender the remaining portion of the Right of Way Easement is currently underway.

Clause 16 of the Agreement also provided for the creation of Planting Easements along the boundary of the new Clark Street Extension. These Easements are shown as Sections 8, 16, 17, 19, 20 and 22 on SO Plan 429885. Whilst Council has only undertaken planting over the Easements in Sections 8, 20 and 22 in conjunction with the Clark Street Extension, the Easement documentation provides for the creation of the Easements over sections 16, 17 and 19 as well.

Auckland Transport has confirmed that the full Easements should be left in place at this stage even though Council has not implemented planting over the latter three Sections.

Under the provisions of Clause 16(e), if Cambridge Clothing Company Limited (the Grantor) applies for a Resource Consent for all or part of the land where the building fronts the Clark Street Extension, the Council (the Grantee) will, at the expense of the Grantor, surrender the Planting Easements when the Resource Consent is issued. This provision will allow for the Easements to be surrendered in entirety and therefore, should not be considered an ongoing impediment to the future redevelopment of the site.

### 3.3 ROAD LEGALISATION

The requisite processes have been instigated to formally legalise the Clark Street Extension and to create and surrender, the various Easements but have yet to be finalised, despite the physical survey plans being prepared several years ago pursuant to the Agreement between Cambridge Clothing and the Council.

SO Plan 429885 which was approved as to Survey on the 10<sup>th</sup> of January 2013, legalises the new road and formalises the various land swaps that were agreed to, pursuant to the 23<sup>rd</sup> of September 2010 Agreement.

### 3.4 KIWI RAIL LAND EXCHANGE

There is a 2007 Agreement between KiwiRail and Cambridge Clothing Company Limited consented to by the Client on the 6<sup>th</sup> of May 2008 that agreed to an alteration of the railway boundary as shown on designation NZR1, that is, to acquire an additional strip of land approximately 2.5m wide, in return for an equal area of land as depicted on the Ontrack Plan 111545-LP-503.

This land exchange has not been formalised by KiwiRail. KiwiRail has recently acknowledged that it is their responsibility to finalise the legalisation and will instruct a Surveyor to attend to the work. This work needs to be undertaken without delay in order to complete the land exchange and to make the necessary adjustments to the Cambridge Clothing Company Limited Title. All costs as per the 2007 Agreement are to be borne by KiwiRail.



## 4 SUMMARY AND RECOMMENDATIONS

It is considered likely that redevelopment can be fully serviced by the infrastructure discussed in this Report, subject to the defined land-use and responses from the Asset Owners.

As the developable area for the site is currently already almost entirely impermeable, only slight increases in stormwater flows from the site are predicted. Therefore, only minor quantity control measures may be required prior to discharge from the site, in conjunction with quality treatment for all car parking areas.

Predicted wastewater flows from the site are likely to increase as a result of redevelopment, however, it is assumed due to the size of pipes adjacent to the site that the downstream system will have adequate capacity. This requires confirmation from Watercare once flows are determined.

Water Supply, Power and Telecommunications Utilities will be provided to the redevelopment by way of connection to the existing network on Great North Road. Further capacity/flow testing is required for potable and fire-fighting water supply.

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## 5 LIMITATIONS

1. This Report will be used to inform the Vendor's Due Diligence Package being led by CBRE and Blue Barn agrees to its release to Third Parties within CBRE's Due Diligence Package.
2. This Report has been prepared solely for Cambridge Clothing Company Limited as a preliminary infrastructure assessment; it should not be relied upon in any other context or for any other purpose such as, overall Development Costings.
3. The Report is based on a Desktop Study of the site, based on publically available information only. No site visits or physical inspections were undertaken.
4. This Report does not cover the Geotechnical stability or the suitability of the site.
5. Blue Barn has not reviewed whether any structures or existing infrastructure within the site are legally built, Code Compliant and/or competently constructed.
6. Blue Barn will not be held liable to any Third Parties.

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## 6 REFERENCES

1. Auckland Council GIS (accessed 3/06/2016 – 10/06/2016)
2. The site Property File, as supplied by Client on 31/05/2016 “3094 – 3096 Great North Road, NEW LYNN”
3. Chorus as-built information from beforeUdig request – received 31/05/2016
4. Vector (power, gas and communications) as-built information from beforeUdig request – received 31/05/2016
5. Vodafone as-built information from beforeUdig request – received 03/06/2016
6. Watercare as-built information from beforeUdig request – received 31/05/2016
7. SNZ PAS 4509:2008 *New Zealand Fire Service Firefighting Water Supplies Code of Practice*

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## APPENDIX A – SERVICE PROVIDER DRAWINGS

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