



# ENGEO

— Expect Excellence —

## Preliminary Environmental Site Investigation

90 Hanson Street

Newtown

Wellington

Submitted to:

Southern Cross Hospitals Limited

Level 10, AMP Centre29 Customs Street West

Auckland 1010

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25.06.2018

15101.000.000\_01



## Contents

1	Introduction.....	3
1.1	Objectives of the Assessment.....	3
1.2	Approach.....	3
1.2.1	Site Inspection.....	3
1.3	Investigation Scope.....	3
2	Site Description and Setting.....	4
2.1	Previous Reports.....	5
2.1.1	Tonkin & Taylor Geotechnical and Environmental Assessment (2008) .....	5
2.1.2	Geoscience Consulting Soil Contamination Assessment.....	6
3	Site History.....	6
3.1	Wellington Council Property File Review .....	6
3.2	Historical Aerial Photograph Review.....	8
4	Current Site Conditions .....	9
5	Potential HAIL activities .....	10
6	Conceptual Site Model.....	11
7	Conclusions and Recommendations .....	13
8	References.....	14
9	Limitations .....	15

## Tables

Table 1:	Site Information
Table 2:	Site Setting
Table 3:	Review of Wellington City Council Property Files
Table 4:	Aerial Photographs
Table 5:	Current Site Conditions
Table 6:	Conceptual Site Model Summary

## Figures

Figure 1:	Vacinity Map and Site Plan
Figure 2	Site Plan with Previous Sample Location

## Appendices

Appendix 1:	Historical Aerials
Appendix 2:	Site Photographs

### ENGEO Document Control:

Report Title	Preliminary Environmental Site Investigation - 90 Hanson Street, Newtown			
Project No.	15101.000.000	Doc ID	01	
Client	Southern Cross Hospitals Limited	Client Contact	Courtney Bennett	
Distribution (PDF)	1 copy, Southern Cross Hospitals Limited, 1 copy, Urban Perspectives Ltd			
Date	Revision Details/Status	WP	Author	Reviewer
25/06/2018	Draft	DF	BS	KJ

## 1 Introduction

ENGEO Ltd was requested by Southern Cross Hospitals Limited to undertake a Preliminary Environmental Site Investigation of part of the property to be redeveloped (herein referred to as 'the site') at 90 Hanson Street, Newtown, Wellington. This work has been carried out in accordance with our signed agreement ref. P2018.000.906\_01. The purpose of the assessment was to support the application for Wellington City Council Resource Consent application.

The proposed development consists of an addition to the eastern portion of the property that will include two levels of carparks (including a basement car park) and a third level purposed for consulting. Additions will further include associated lobby areas on each floor and a plant room.

### 1.1 Objectives of the Assessment

The objective of this PSI was to evaluate and identify conditions indicative of releases and threatened releases of hazardous substances on, at, in or to the site and report on the potential risk posed to future site users.

### 1.2 Approach

To satisfy the objectives, ENGEO sought to gather information regarding the following:

- Current and past property uses and occupancies;
- Current and past uses of hazardous substances;
- Waste management and disposal activities that could have caused a release or threatened release of hazardous substances;
- Current and past corrective actions and response activities to address past and on-going releases of hazardous substances at the subject property; and
- Properties adjoining or located near the subject property that have environmental conditions that could have resulted in conditions indicative of releases or threatened releases of hazardous substances to the subject property.

#### 1.2.1 Site Inspection

A site walkover was completed on 18 June 2018 by Vaughan O'Brien of ENGEO. Observations of activities and conditions present at the site during the time of the site walkover were documented. ENGEO did not conduct an interview with current site owners during the walkover. ENGEO did not perform a walkover through the interior of the building as we understand that this is not being redeveloped.

### 1.3 Investigation Scope

This PSI is limited to the development area shown on Figure 1 (i.e. the east of the hospital building on 90 Hanson Street).

The investigation included the following historical and current site information review:

- A walkover and historical aerial photograph review for the entire site;
- Review of building and resource consent files from Wellington City Council; and

- Review of the Greater Wellington Regional Council Selected Land Use Register (SLUR)

## 2 Site Description and Setting

Site information is summarised in Table 1.

**Table 1: Site Information**

Item	Description
Location	90 Hanson Street, Newtown, Wellington
Legal Description	Lot 1 DP 75743
Current Land Use	Southern Cross Hospital. The development site is currently primarily used as asphalt parking. A building entrance canopy with a designated drop-off depot is located adjacent to the building.
Proposed Land Use	Commercial
Site Area	10,002 m <sup>2</sup> . Development area approximately 1,060 m <sup>2</sup>
Territorial Authority	Wellington City Council

The site setting is summarised in Table 2.

**Table 2: Site Setting**

Item	Description
Topography	The site is sloping from approximately 38 m above sea level in the north-western portion of the site to approximately 27 m above sea level in the central portion of the site. The site slopes up to approximately 35 m above sea level on the south-eastern portion of the site.
Local Setting	The surrounding area is a mixed-use residential / commercial area of Newtown. Hall Street and residential homes border the site to the south, Hanson Street and residential homes to the east, commercial development, including sports warehouses and parking, to the west, and commercial buildings to the north.
Nearest Surface Water and Use	The nearest surface water is Evans Bay, approximately 1.8 km to the east.
Geology	The site is mapped by the Institute of Geological and Nuclear Sciences (GNS, 2005) as being underlain partially by alluvium consisting of undifferentiated weather; poorly sorted loess-covered alluvial gravel deposits on the eastern portion of the site. The western portion of the site is underlain by basement sandstone and mudstone of the Rakaia terrane.

**Groundwater**

A 2008 study performed by Tonkin & Taylor (Tonkin & Taylor, 2008) identified groundwater at depths between 1.10 m and 1.15 m bgs. It is likely that groundwater flows towards Evans Bay, east of the site.

## 2.1 Previous Reports

### 2.1.1 Tonkin & Taylor Geotechnical and Environmental Assessment (2008)

Tonkin & Taylor performed a geotechnical and environmental assessment for the western portion of the property in 2008 (Tonkin & Taylor, 2008), for the proposed extension of the Southern Cross Hospital. The report found that the site has been occupied since the late 1800's and redeveloped on many occasions and as such, the natural ground surface has been highly modified. A number of significant structures were demolished across the greater property, identified as 90 Hanson Street, as part of construction of the hospital building in 1990/91. Certificates of title for the property included an ownership record for Victoria Laundry Company from 1911 to 1949. Numerous additional commercial businesses operated on the site between the years of 1949 and present, including Macduffs Storage Ltd., Hanson Storage Ltd., Britt Ryan, Holdingham Investments Ltd., Rotowax Ltd., and Southern Cross Medical Society. Items of potential concern noted in the file review included the 1937 installation of a 750-gallon diesel underground storage tank (UST) at 114 Hanson Street (formerly associated with the property), located on the southeast portion of the site, outside of the development area. The UST was to be used in associated with carrier goods on the property. Dangerous good stores were constructed at 90-100 Hanson Street for Rotowax Ltd. In 1974. Files indicated Rotowax specialized in printing, cellophane printing, and cardboard manufacturing. The Rotowax buildings were demolished in the early 1990s. A 1988 council plan showed major drains running under the old Rotowax complex. Demolition of the building at 90 Hanson street occurred in 1991. In summary, the site was used by Victoria Laundry Company until 1949, later by Macduffs and Hanson Storage Ltd. Until 1966, and Rotowax between 1966 and 1981. Southern Cross Health Trust has owned the site since 1989.

Tonkin & Taylor identified two potentially contaminating activities, including Macduffs and later Hanson Storage Ltd. (freezer rooms and stores), with potential asbestos in roofing materials, and Rotowax Ltd. (printing) with potential contaminants being hydrocarbons and metals.

One soil sample was obtained from the western portion of the site (see Figure 2) and analysed for heavy metals and polyaromatic hydrocarbons (PAHs). Metal concentrations were below guidelines for commercial land use and excavation worker protection. All of the metal concentrations exceeded background levels for typical Wellington soils. Concentrations of lead and zinc exceeded landfill acceptance criteria. PAHs were present in low concentrations and were below the guideline for commercial land use. The presence of PAHs indicated the soil exceeded normal background levels for typical Wellington soils and therefore soil could not be regarded as cleanfill. Construction debris was noted at shallow depths in test pits performed for the geotechnical investigation.

Based on the findings of the report, Tonkin & Taylor did not rule out the possibility that higher levels of contamination could potentially be present elsewhere on the site. The desktop study did identify the potential for ground contamination as a result of the greater property's history and therefore contamination of the natural ground could not be ruled out without further sampling beneath the demolition waste. Based on the proposed development plans, Tonkin & Taylor concluded there was minimal opportunity for exposure of site users to potential contamination. Tonkin & Taylor advised that further testing should be undertaken to rule out the possibility of contaminants that may conflict with the proposed development.

### 2.1.2 Geoscience Consulting Soil Contamination Assessment

ENGEO, formally Geoscience Consulting, performed a Soil Contamination Assessment (in addition to a geotechnical report) for the northern portion of the site in 2012 (Geoscience Consulting, 2012) that area was at the time, and is still currently, an asphalt parking lot. An environmental and geotechnical investigation was performed for a proposed car parking building to the north of the existing hospital building.

The soil contamination investigation consisted of the collection of seventeen discrete samples from depths between the ground surface and 1.5 m below ground surface (bgs) in the area of the existing car park area as shown in Figure 2. The following findings were observed during the geotechnical intrusive investigation. Fill was observed across the site from ground surface to between 0.4 m and 3.0 m; Alluvium / colluvium / residual soil, comprising predominantly sand and gravel was observed between 2 m to 3 m and 6 m to 7 m; and Greywacke rock was observed from 0.4 m to 7 m to the end of boreholes for a total thickness of at least 5.15 m.

The following descriptions were obtained from Tonkin & Taylor's prior geotechnical investigation in 2008 on the western part of the property for the previous extension of the hospital (see Section 2.1.1). In the western bank area, the geotechnical profile consisted of Fill (0 to 0.7 m and 3.0 m), alluvium / colluvium / residual soil (0 to 3 m and 4 to 6 m), and greywacke (from 4m and 6 m to the end of borehole for a total thickness of at least 4.1 m). Groundwater was recorded at depths between 1.10 m and 1.15 m bgs.

In the Geoscience report, samples were analysed for heavy metals and PAHs and compared against commercial / industrial land use and maintenance / excavation activities in accordance with the National Environmental Standards (NES, 2012). Further, concentrations were compared against applicable disposal criteria. With the exception of arsenic at one surface location (220 milligrams per kilogram (mg / kg)), concentrations of all contaminants measured in the samples were suitable for commercial / industrial land use and the protection of worker health during excavation / subsurface maintenance activities. The elevated concentration was considered an isolated hotspot and the risk from this material was considered low if left on-site below hardstanding. This elevated sample was obtained to the northwest of the existing building on-site. Heavy metals and PAHs were present in concentrations which exceeded background concentrations in the surface fill material and the alluvium. The soil was deemed as unsuitable for cleanfill. Concentrations measured in the Greywacke were consistent with Wellington background levels and could be considered cleanfill.

## 3 Site History

ENGEO obtained and reviewed available environmental and geological information relevant to the site, including geological maps, historical aerial photographs, and the Wellington Council property files for 90 Hanson Street. The findings of the site history investigation are summarised in this section.

### 3.1 Wellington Council Property File Review

The property files for 90 Hanson Street held by Wellington Council were reviewed on 11 June 2018. The relevant and applicable findings, in relation to our environmental assessment are summarised in Table 3.

**Table 3: Review of Wellington City Council Property Files**

Date	Description
1922-1925	Building permit for warehouse (100 Hanson Street).
1925-1956	Alterations permit (114 Hanson Street). Building permits for garage and alterations to Victoria Laundry (90-100 Hanson Street).
1939	A building permit / consent was issued for an addition to Victoria Laundry.
1946	A building permit / consent for staff conveniences was issued for dwelling operations to Victoria Laundry.
1949	A building permit / consent was issued for a roof and a lunch room.
1956-1985	Building additions and alteration permits for 90-100 Hanson Street, 114 Hanson Street for Rotowax Ltd. Renovations included toilets, mezzanine, building alterations, freezing room and offices, and a store building.
1974	A dangerous good store building permit was issued for Rotowax Ltd.
1975	A building permit was issued for a store for Rotowax Ltd. A demolition building permit was issued for Rotowax Ltd.
1977	A retaining wall permit was issued for Rotowax Ltd.
1980	A crib wall building permit was issued for Rotowax Ltd.
1989	A building permit / consent was issued for the demolition of a dwelling.
1990	Plans for drainage connection applications.
1991	A building permit / consent was issued for the demolition of an unspecified structure.
1998	A building permit / consent was issued for a retaining wall as well as for internal alterations to create a new consulting room. A sign permit was granted as well as a permit for a retaining wall.
1989	Business additions and alterations permit for Ginty's Cables Ltd. (114 Hanson Street).
2000	A building permit / consent was issued for a fire protection upgrade.
2004	A building permit / consent was issued for a theatre fit-out and alterations to the upper level.
2005	A building permit / consent was issued for renovation of a bathroom and lounge.
2007	A building permit / consent was issued for a carpark and hospital additions and alterations.

Date	Description
2008	A building permit / consent for internal alterations and a new 2-storey addition to the existing hospital.
2011	A building permit / consent for internal alterations to the basement and ground floor as well as the construction of a new operating theatre.
2013	Internal fit out of an existing room to create an operating theatre. A small extension to an internal fit out of the Day surgery unit facility.
2015	Internal fit outs to Southern Cross Hospital.

### 3.2 Historical Aerial Photograph Review

Aerial photographs dating from 1939 to 2017 have been reviewed and are included in Appendix 1 for reference. The aerials were sourced from Retrolens and Google Earth. Relevant visible features on the site and surrounding area are summarised in Table 4.

**Table 4: Aerial Photographs**

Date	Description – wider site	Description – development site
1939 and 1941 Retrolens	The site is predominantly used for commercial development. Numerous buildings are shown on the property. Surrounding parcels to the east appear to be primarily used for residential development. The western adjacent parcels appear to be vacant and used for commercial purposes. A large warehouse is shown to the west. Residential land is shown to the south and vacant land to the north.	The development site includes one large commercial / industrial building, to the south, and three smaller residential buildings located on the northern portion of the site.
1945, 1954, and 1959 Retrolens	The property appears to have similar uses to the previous photographs. A few additional buildings are now visible on the northern adjacent parcel. The area to the west has become developed for commercial parking.	The development site still includes the larger commercial / industrial building on the southern end of the site. Two of the houses on the northern portion of the site appear to have been redeveloped.
1980 and 1988 Retrolens	The property appears mostly unchanged from the previous photographs. It is more evident in the 1988 photograph that the southern portion of the property is used as a storage lot or car park for the commercial buildings on-site. Surrounding development has expanded. The parcels to the north include additional commercial structures.	The development site appears unchanged from the previous photographs.

Date	Description – wider site	Description – development site
2002 Google Earth	The property has been redeveloped into the Southern Cross Hospital. One large building is shown with surrounding asphalt parking. Landscaping is shown on the western portion of the Property. Surrounding properties are similar to the previous photographs.	The development site is representative of its current conditions, comprising of asphalt parking and a designated drop-off.
2009 and 2010 Google Earth	The western portion of the property is now under construction. Other portions of the property appear unchanged.	The development site is unchanged from the previous photographs.
2010 and 2017 Google Earth	An addition to the Southern Cross Hospital is now shown on the western portion of the property. The property appears consistent with current site conditions.	The development site is unchanged from the previous photographs.

### 3.3 Greater Wellington Regional Council (GWRC) SLUR

The site does not appear on the SLUR which means that GWRC have no knowledge of any activities on the Hazardous Activities and Industries List being undertaken on the site.

#### Current Site Conditions

A visual site assessment was undertaken on 18 June 2018 by Vaughan O'Brien of ENGEO. The information gathered is summarised in Table 5. Photographs taken during the site inspection are included in Appendix 2.

Table 5: Current Site Conditions

Site Conditions	Description
Visible signs of contamination	General household rubbish was noted on northern boundary of the property, adjacent to dwellings.
Presence of drums, wastes, and fill materials	Oxygen tanks were noted on hardstand in the northwest corner of the site. The tanks appeared to be in good condition.
Surface water appearance	No surface water observed during the site walkover.
Current surrounding land use	The surrounding area is a mixed-use residential / commercial area of Newtown. Hall Street and residential homes border the site to the south, Hanson Street and residential homes to the east, commercial development, including sports warehouses and parking, to the west, and commercial buildings to the north.
Local sensitive environments	No local sensitive environments observed.
Visible signs of plant stress	No visible signs of plant stress were noted during the walkover.
Ground Cover	Modern buildings and tar-seal roads cover the majority of the property.
Additional Comments	<ul style="list-style-type: none"> <li>A gas junction was observed on the northeast corner for utility use</li> <li>A substation was located adjacent to the eastern boundary. No staining was noted.</li> <li>Paint chips were noted in the southeast garden that may possibly be of lead-based origin.</li> <li>A painted retaining wall was noted on the eastern boundary of the property. There is the potential for lead-based paints to have been used.</li> </ul>

## 4 Potential HAIL activities

Activities included on the Ministry for the Environment's HAIL (MfE, 2011e) trigger the requirement for a contaminated land investigation prior to development. The following activities listed on the HAIL were either observed on-site or have the potential to have occurred on-site historically:

- HAIL ID A:5: *Dry-cleaning plants including dry-cleaning premises or the bulk storage of dry-cleaning solvents*. Victoria Laundry, operated on the site from at least 1911 to 1949 according to historical property files and previous reports.
- HAIL ID A:15: *Printing including commercial printing using metal type, inks, dyes, or solvents (excluding photocopy shops)*. Rotowax Ltd., a printing manufacturer operated on the southern portion of the site between 1966 and 1981. Further, dangerous good stores were constructed in 1974 for the Rotowax Ltd. Store. Previous reports indicated a 1988 council plan showed a major drain running under the old Rotowax Ltd. complex.

- HAIL ID A:17: *Storage tanks or drums for fuel, chemicals, or liquid waste.* A 750-gallon diesel UST was installed at 114 Hanson Street, located on the southeast portion of the site, outside of the hospital footprint. Removal or demolition documentation of this UST was not noted.
- HAIL ID E:1: *Asbestos products manufacture or disposal including sites with building containing asbestos products known to be in a deteriorated condition.* Given the former buildings on the site since at least the early 1900's in addition to the current building, constructed in 1990, there are the potential for asbestos based products. Further, there are the potential for lead-based paints within building products.
- HAIL ID I: *Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment.* Previous investigations by ENGEO (Geoscience Consulting, 2012) and Tonkin & Taylor (Tonkin & Taylor, 2008) indicated that fill is present through at least the northern and western portions of the site between depths of 0 and 3 m bgs. It is likely that fill is present throughout the site given these findings.

## 5 Conceptual Site Model

A conceptual site model consists of four primary components. For contaminants to present a risk to human health or an environmental receptor, all four components are required to be present and connected. The four components of a conceptual site model are:

- Source of contamination;
- Pathway(s) in which contamination could potentially mobilise along (e.g. vapour or groundwater migration);
- Sensitive receptor(s) which may be exposed to the contaminants; and
- An exposure route, where the sensitive receptor and contaminants come into contact (e.g. ingestion, inhalation, dermal contact).

The potential source, pathway, receptor linkages at this subject site are provided in Table 6.

**Table 6: Conceptual Site Model Summary**

Potential Sources	Contaminants of Concern	Exposure Route and Pathways	Receptors	Acceptable Risk?
Existing building material and shallow surrounding soils	Asbestos	Inhalation of dust	On-site redevelopment workers.  Future site users and on-site maintenance workers.	<b>Unlikely.</b>  Testing of shallow soils and building materials is required.
Lead-based paint – building material, retaining wall and shallow surrounding soils	Lead	<p>Dermal contact with impacted soil, inhalation of dust and incidental ingestion during earthworks and long term use of the site.</p> <p>Leaching of contaminants to surrounding environment.</p>		
Undocumented Fill	Heavy Metals and Polyaromatic Hydrocarbons, Asbestos	<p>Dermal contact with impacted soil, inhalation of dust and incidental ingestion during earthworks and long term use of the site.</p> <p>Leaching of contaminants to surrounding environment.</p>		
Former Drycleaner	Volatile Organic Compounds	<p>Dermal contact with impacted soil, inhalation of dust and incidental ingestion during earthworks and long term use of the site. Soil vapour impacts and a source of potential impact vapour intrusion</p>		
750-Gallon Diesel UST	Petroleum Hydrocarbons, Volatile Organic Compounds, Heavy Metals			
			<p><b>Unlikely.</b></p> <p>The tank was located south of the proposed development area. Groundwater flows cross-gradient from</p>	

		to overlying buildings. Leaching of contaminants to surrounding environment.		the former UST area to the proposed development area.
Former Printing Processes / Manufacturing	Volatile Organic Compounds, Heavy Metals			<b>Unlikely.</b> Testing of soil, groundwater, and soil vapour is required.

## 6 Conclusions and Recommendations

ENGEO was engaged to complete a Preliminary Environmental Site Investigation (PSI) for the site in relation to future redevelopment and alterations of the Southern Cross Hospital. The site has been used for commercial and residential purposes from at least the early 1900's to present.

A review of historical files and previous reports indicated numerous commercial operations contributing to potential impacts to soil and groundwater on the site. Victoria Laundry operated as a drycleaner on the property from 1911 to 1949 and therefore there is the potential for chlorinated solvents to be present within the soil and / or groundwater on-site. Rotowax Ltd., which operated on the site from 1966 to 1990 as a printing, cellophane printing, and cardboard manufacturing facility, operated on the southern portion of the property. Such processes have the potential to have affected underlying soil and / or groundwater on-site.

A record for the installation of a 750-gallon UST was identified in a previous report by Tonkin & Taylor for 114 Hanson Street (previously associated with the southeast portion of the wider site). There have been no records of removal or demolition of this. This former UST was located adjacent to the south of the proposed development area. Groundwater is anticipated to flow in the easterly direction and therefore would flow cross-gradient from the former UST location to the proposed development. Given the proximity, there may be the potential for residual impacts to the underlying groundwater and soil.

Undocumented fill has been confirmed on the northern and western portions of the site to depths of at least 3 m. It is likely that fill is located throughout the site as a result of the numerous redevelopments that have occurred on site.

Tonkin & Taylor's previous investigation on the western portion of the site, identified building debris within shallow soils. Previous property files have identified asbestos products to be used within the historical buildings and given the age of the current building (1990) there is the potential for asbestos-containing products and lead-based paint to have been used which could potentially have affected adjacent surface soils.

Therefore, there is a potential risk to human health at the site to future redevelopment workers or site end users from the identified sources.

As the redevelopment of the site involves soil disturbance, it is possible that soils required to be disturbed have been impacted by the identified potential sources of contamination. It is recommended that further intrusive investigations are completed across the development site with respect to the potential sources of contamination mentioned above with respect to soil, groundwater, and soil vapour. It is likely that Wellington City Council will require a Detailed Site Investigation as part of the resource consent conditions prior to development.

## 7 References

NZGS (2005). "Guidelines for the Classification and Field Description of Soils and Rocks in Engineering". NZ Geotechnical Society Inc, Wellington, New Zealand

Geoscience Consulting. (2012). *Soil Contaminated Assessment*. Wellington: Geoscience Consulting.

Tonkin & Taylor. (2008). *Geotechnical Assessment Southern Cross Hospital Extension - Wellington*. Wellington: Tonkin & Taylor.

## Limitations

- i. We have prepared this report in accordance with the brief as provided. This report has been prepared for the use of our client, Southern Cross Hospitals Limited, their professional advisers and the relevant Territorial Authorities in relation to the specified project brief described in this report. No liability is accepted for the use of any part of the report for any other purpose or by any other person or entity.
- ii. The recommendations in this report are based on the ground conditions indicated from published sources, site assessments and subsurface investigations described in this report based on accepted normal methods of site investigations. Only a limited amount of information has been collected to meet the specific financial and technical requirements of the client's brief and this report does not purport to completely describe all the site characteristics and properties. The nature and continuity of the ground between test locations has been inferred using experience and judgement and it should be appreciated that actual conditions could vary from the assumed model.
- iii. Subsurface conditions relevant to construction works should be assessed by contractors who can make their own interpretation of the factual data provided. They should perform any additional tests as necessary for their own purposes.
- iv. This Limitation should be read in conjunction with the Engineers NZ/ACENZ Standard Terms of Engagement.
- v. This report is not to be reproduced either wholly or in part without our prior written permission.

We trust that this information meets your current requirements. Please do not hesitate to contact the undersigned on (04) 472 0820 if you require any further information.

Report prepared by



**Brooke Spruit**

Environmental Engineer

Report reviewed by



**Karen Jones, CEnvP**

Associate Engineering Geologist

## FIGURES



**KEY**

- Approximate Site Boundary.
- Approximate Area of Proposed Development.

Note: Background images sourced from Google Earth (2018) and Wellington City Council (2018)



<b>Date</b>	June 2018	<b>Client</b>	Southern Cross Hospitals Ltd
<b>Drawn by</b>	BS	<b>Project</b>	Southern Cross – 90 Hanson Street
<b>Approved by</b>	KJ	<b>Description</b>	Vicinity Map and Site Plan
<b>Scale (approx.)</b>	NTS	<b>ENGEO Ref.</b>	15101.000.000



**KEY**

- Approximate Site Boundary.
- ENGEEO Enviro Sample Location (2012).
- ENGEEO Geotechnical Investigation Location (2012).
- Tonkin & Taylor Enviro Sample Location (2008).
- Tonkin & Taylor Geotechnical Investigation Location (2008).

Note: Background images sourced from Google Earth (2018) and Wellington City Council (2018)



<b>Date</b>	June 2018	<b>Client</b>	Southern Cross Hospitals Ltd
<b>Drawn by</b>	BS	<b>Project</b>	Southern Cross – 90 Hanson Street
<b>Approved by</b>	KJ	<b>Description</b>	Site Plan with Previous Sampling Locations
<b>Scale (approx.)</b>	NTS	<b>ENGEEO Ref.</b>	15101.000.000

**APPENDIX 1:**  
Historical Aerials



Image sourced from Retrolens New Zealand



- Approximate Property Boundary.
- Approximate Proposed Development Area.

<b>Date</b>	June 18	<b>Client</b>	Southern Cross Hospitals Ltd
<b>Drawn by</b>	BS	<b>Project</b>	Southern Cross
<b>Approved by</b>	KJ	<b>Description</b>	Aerial Photograph - 1939
<b>Scale (approx.)</b>	Not to scale	<b>ENGEO Ref.</b>	15101.000.000



Image sourced from Retrolens New Zealand



Approximate  
Property Boundary.



Approximate Proposed Development Area.

<b>Date</b>	June 18	<b>Client</b>	Southern Cross Hospitals Ltd
<b>Drawn by</b>	BS	<b>Project</b>	Southern Cross
<b>Approved by</b>	KJ	<b>Description</b>	Aerial Photograph - 1941
<b>Scale (approx.)</b>	Not to scale	<b>ENGEO Ref.</b>	15101.000.000

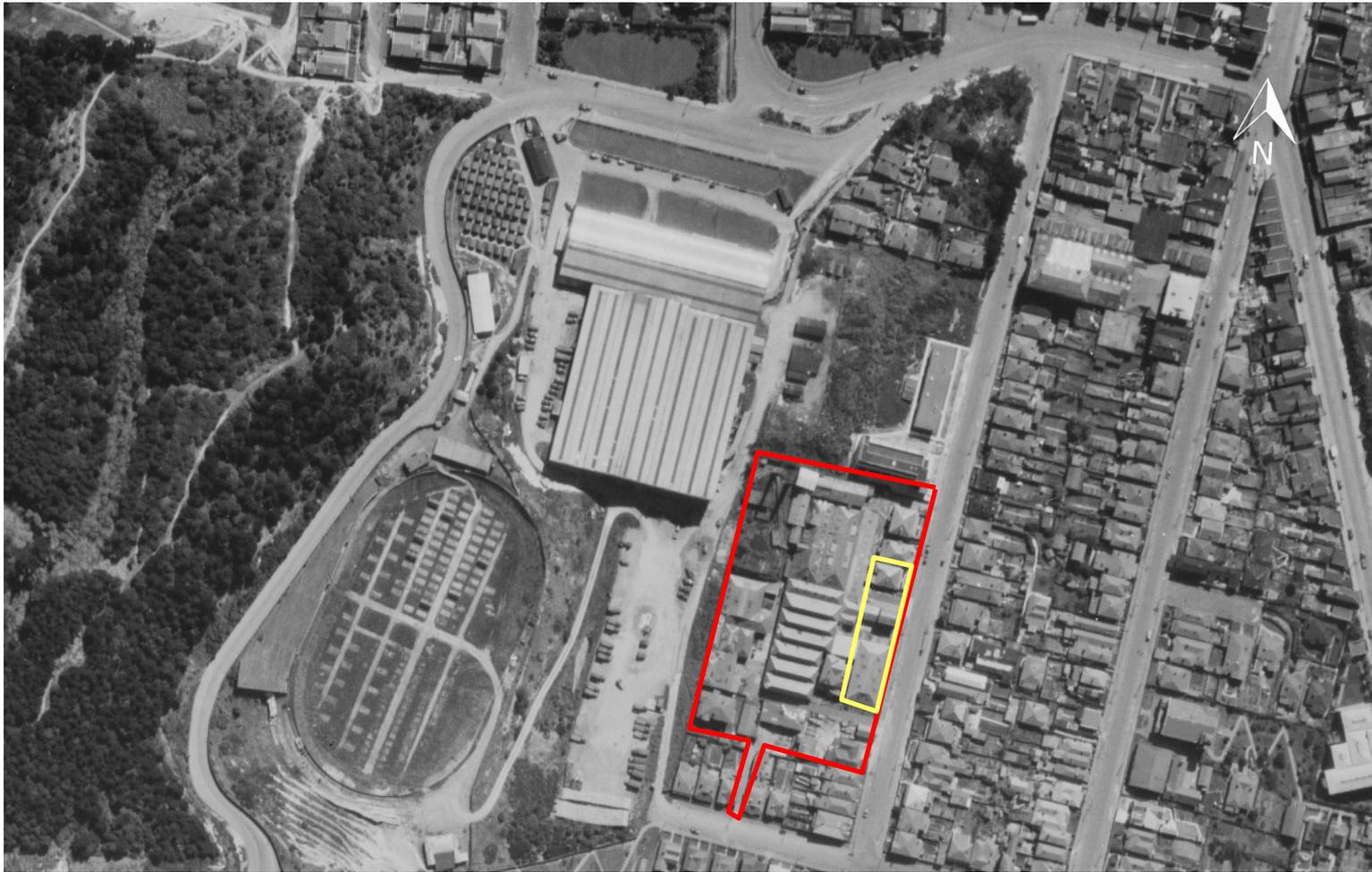


Image sourced from Retrolens New Zealand

- Approximate Property Boundary.
- Approximate Proposed Development Area.



<b>Date</b>	June 18	<b>Client</b>	Southern Cross Hospitals Ltd
<b>Drawn by</b>	BS	<b>Project</b>	Southern Cross
<b>Approved by</b>	KJ	<b>Description</b>	Aerial Photograph - 1945
<b>Scale (approx.)</b>	Not to scale	<b>ENGEO Ref.</b>	15101.000.000



Image sourced from Retrolens New Zealand

	Approximate Property Boundary.
	Approximate Proposed Development Area.



<b>Date</b>	June 18	<b>Client</b>	Southern Cross Hospitals Ltd
<b>Drawn by</b>	BS	<b>Project</b>	Southern Cross
<b>Approved by</b>	KJ	<b>Description</b>	Aerial Photograph - 1954
<b>Scale (approx.)</b>	Not to scale	<b>ENGEO Ref.</b>	15101.000.000

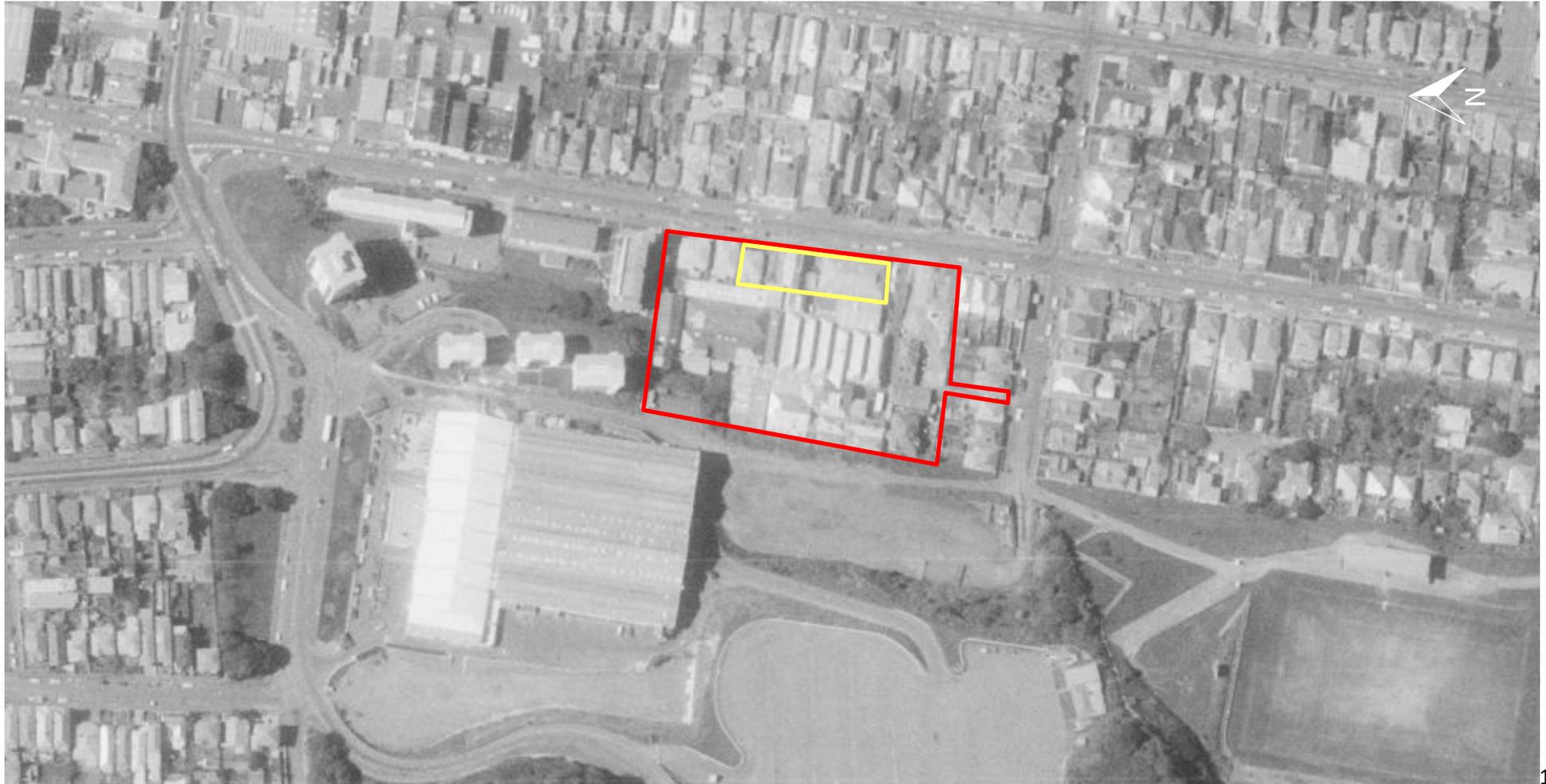


Image sourced from Retrolens New Zealand

- Approximate Property Boundary.
- Approximate Proposed Development Area.



<b>Date</b>	June 18	<b>Client</b>	Southern Cross Hospitals Ltd
<b>Drawn by</b>	BS	<b>Project</b>	Southern Cross
<b>Approved by</b>	KJ	<b>Description</b>	Aerial Photograph - 1959
<b>Scale (approx.)</b>	Not to scale	<b>ENGEO Ref.</b>	15101.000.000



1

Image sourced from Retrolens New Zealand



Approximate Property Boundary.



Approximate Proposed Development Area.



<b>Date</b>	June 18	<b>Client</b>	Southern Cross Hospitals Ltd
<b>Drawn by</b>	BS	<b>Project</b>	Southern Cross
<b>Approved by</b>	KJ	<b>Description</b>	Aerial Photograph - 1980
<b>Scale (approx.)</b>	Not to scale	<b>ENGEO Ref.</b>	15101.000.000



Image sourced from Retrolens New Zealand

	Approximate Property Boundary.
	Approximate Proposed Development Area.



<b>Date</b>	June 18	<b>Client</b>	Southern Cross Hospitals Ltd
<b>Drawn by</b>	BS	<b>Project</b>	Southern Cross
<b>Approved by</b>	KJ	<b>Description</b>	Aerial Photograph - 1988
<b>Scale (approx.)</b>	Not to scale	<b>ENGEO Ref.</b>	15101.000.000



Image sourced from Google Earth

- Approximate Property Boundary.
- Approximate Proposed Development Area.



<b>Date</b>	June 18	<b>Client</b>	Southern Cross Hospitals Ltd
<b>Drawn by</b>	BS	<b>Project</b>	Southern Cross
<b>Approved by</b>	KJ	<b>Description</b>	Aerial Photograph - 2002
<b>Scale (approx.)</b>	Not to scale	<b>ENGEO Ref.</b>	15101.000.000



Image sourced from Google Earth

- Approximate Property Boundary.
- Approximate Proposed Development Area.



<b>Date</b>	June 18	<b>Client</b>	Southern Cross Hospitals Ltd
<b>Drawn by</b>	BS	<b>Project</b>	Southern Cross
<b>Approved by</b>	KJ	<b>Description</b>	Aerial Photograph - 2009
<b>Scale (approx.)</b>	Not to scale	<b>ENGEO Ref.</b>	15101.000.000



Image sourced from Google Earth

	Approximate Property Boundary.
	Approximate Proposed Development Area.



<b>Date</b>	June 18	<b>Client</b>	Southern Cross Hospitals Ltd
<b>Drawn by</b>	BS	<b>Project</b>	Southern Cross
<b>Approved by</b>	KJ	<b>Description</b>	Aerial Photograph - 2010
<b>Scale (approx.)</b>	Not to scale	<b>ENGEO Ref.</b>	15101.000.000



Image sourced from Google Earth

Approximate Property Boundary.
   
 Approximate Proposed Development Area.



<b>Date</b>	June 18	<b>Client</b>	Southern Cross Hospitals Ltd
<b>Drawn by</b>	BS	<b>Project</b>	Southern Cross
<b>Approved by</b>	KJ	<b>Description</b>	Aerial Photograph - 2017
<b>Scale (approx.)</b>	Not to scale	<b>ENGEO Ref.</b>	15101.000.000

**APPENDIX 2:**  
Site Photographs



Photograph 1: Oxygenate Tanks Located on Northwestern Corner of Property.



Photograph 2: View of Northern Carpark.



Photograph 3: Minor Paint Chips Noted within Central Garden Area.



Photograph 4: Utility Gas Junction Located Adjacent to the Northeast Portion of the Property.



<b>Date</b>	June 18	<b>Client</b>	Southern Cross Hospitals Ltd
<b>Drawn by</b>	BS	<b>Project</b>	Southern Cross
<b>Approved by</b>	KJ	<b>Description</b>	Site Walkover Photographs
<b>Scale (approx.)</b>	Not to scale	<b>ENGEO Ref.</b>	15101.000.000



Photograph 5: Transformer Located Adjacent to the Property.



Photograph 6: Retaining Wall and Temporary Storage Containers Along Eastern Boundary.



Photograph 7: Southern Carpark Facing East.



Photograph 8: Deteriorating Paint Along Base of Building.



<b>Date</b>	June 18	<b>Client</b>	Southern Cross Hospitals Ltd
<b>Drawn by</b>	BS	<b>Project</b>	Southern Cross
<b>Approved by</b>	KJ	<b>Description</b>	Site Walkover Photographs
<b>Scale (approx.)</b>	Not to scale	<b>ENGEO Ref.</b>	15101.000.000