

## **ONE AGENCY**

## Disclaimer

The information in this pack has been provided by or on behalf of our client. It is made available by us in good faith. One Agency cannot warrant the content or completeness of this document. We have used our best endeavours to provide complete documentation and correct information.

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Please be aware that this LIM report is from **10 October 2023** and there may be some differences between this report and a current LIM report.

## Dunedin City Council Land Information Memorandum

95539

Issued in accordance with Section 44A of the Local Government Official Information and Meetings Act 1987

Should you require further clarification of any of the information listed in this report, please phone our Customer Services Agency on 03 477 4000.

This Land Information Memoranda (LIM) has been prepared in accordance with Section 44A of the Local Government Official Information and Meetings Act 1987. It contains only information obtained from the records held by the Dunedin City Council as at **10 October 2023** 

The Dunedin City Council has not carried out an inspection of the land and/or buildings for the purposes of preparing this LIM. The Dunedin City Council records may not show illegal or unauthorised buildings or works on the land. Accordingly this report may not necessarily reflect the current status of the property. Examples of situations which affect the property but are not recorded in this report include: unauthorised work not known to Council and breaches of Consents or Licences that are not the subject of a formal Requisition or Notice.

The applicant is solely responsible for ensuring that the land or any building or works on the land is suitable for a particular purpose. The applicant should check the Records of Title as this report may not include information that is registered on the Records of Title. The Records of Title may record further information or obligations relating to the land.

Further information about this property may be available from other agencies such as the Otago Regional Council, Nova Gas, Telecom New Zealand (Chorus) or Delta Utility Services Limited.

#### PROPERTY ADDRESS

#### 151 Victoria Road St Kilda

LIM Applicant Print Date Hamish Douglas Graeme McCaul 10-Oct-2023

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#### PROPERTY DETAILS

Property ID **Address** 

5061359

Parcels

151 Victoria Road St Kilda

LOT 5 DP 1772

**Rubbish Day** 

Wednesday

#### **Parks and Reserves**

Description

This property has been identified as being next to a park or reserve.

Details

Please be aware that Council encourages appropriate public usage of the park/reserve and may develop the park/reserve in the future to facilitate use. You also need to be aware that there are many unapproved encroachments into parks/reserves, as well as many unapproved vehicle accesses into private property across parks/reserves land. In such situations it cannot be taken for granted that Council will automatically approve such an encroachment or access-way, and the owner may be asked to remove it. Because of this you should clarify where the boundary of this property is and your means of vehicle access into it.

#### RATES DETAILS

Rate Account

2061359

Address

151 Victoria Road St Kilda

Valuation Number

27520-62000

**Latest Valuation Details** 

Capital Value Land Value Value of Improvements

\$1,040,000 \$550,000 \$490,000 0.0766HA

Area (Hectares)

1

Units of Use

**Current Rates** 

Current Rating Year Starting **Dunedin City Council Rates** 

01-Jul-2023 \$4,086.24

Rates Outstanding for Year

\$2,969.82

For further explanation on the rate account, or to enquire about information referred to on this page, please contact Rates Staff between 8:30am and 5:00pm weekdays at the enquiries counter on the Ground floor of the Civic Centre, 50 The Octagon, Dunedin, or by phoning 477 4000.

#### BUILDING, PLUMBING AND DRAINAGE

#### Minimum Floor Levels

Clause E1.3.2 of the New Zealand Building Code requires that surface water, resulting from an event having a 2% probably of occurring annually, shall not enter buildings. This requirement applies to Housing, Communal Housing, Communal Residential and Communal non-residential buildings. For guidance when establishing minimum floor levels please refer to: <a href="https://www.dunedin.govt.nz/services/building-services/minimum-floor-levels">https://www.dunedin.govt.nz/services/building-services/minimum-floor-levels/mfl-quidance</a>

#### Public Sewer sheets.

WARNING. Please note that public sewer reticulation sheets are scaled in either Imperial feet or Metric metres. Please check with the Duty Drainage Inspector if in doubt.

#### **Dunedin City Council Private Drainage plans incomplete.**

WARNING. The Dunedin City Council's private drainage records (plans) prior to 1 January 1993 may be incomplete or not clearly recorded. Owners therefore are advised to carry out work with due care to avoid damage to any private drain not detailed because of the lack of information filed in the Council's records.

#### **Building and Drainage Information**

#### Council Storm Water & Foul Sewer Connections available.

There is Council Storm Water outfalls and Foul Sewer Connections adjacent to this land, to which buildings within this land may connect. A plan of these is attached.

#### **Private Stormwater Drains servicing existing buildings**

There are Private Stormwater drains servicing existing buildings on this land.

Private Stormwater Drain goes to Street Channel.

#### Private Foul Drains servicing existing buildings

There are Private Foul drains servicing existing buildings on this land.

Private Foul Drain goes to Private Foul Drain in Common and Connects to Council Foul Sewer in Street.

#### **Drain In Common**

A drain serving more than one lot/certificate of title will be considered drains in common, as will the section of 100mm diameter drain within the road reserve between the lots served by it and the pipeline to which it connects.

Plans indicate Foul Drain in Common.

#### Form 5 (building consent) copy

This property contains building consent application/s where a copy of the building consent (Form 5) is not able to be provided.

This may be due to the age of the consent and/or processes that were in place at the time.

#### **Notice To Fix**

The following is a list of Notices To Fix for this property.

**Notice Number** NTF-2019-95 Status Resolved

Description Non-compliance of the New Zealand Building Code G13 - Foul

drains shall convey foul water to an appropriate outfall avoiding

the likelihood of blockage or leakage.

Private foul drain is currently leaking onto a public footpath.

#### **Building and Drainage Consents**

The following consents are recorded for this property:

Status Key: BC - Building Consent Issued

CCC - Code Compliance Certificate Issued

Archived - In accordance with section 93(2)(b) of the Building Act, the consent was reviewed for code compliance after two years. Compliance with the Building Code could not be established and therefore the Code

Compliance Certificate has been refused.

Lapsed - Work has not commenced and no extension of time applied for within

12 months of date of consent issue. Consent is of no further effect

NOTE: This is not a comprehensive list of all building consent statuses

ABA-2005-309285 Building Consent Only Lodgement - Add to and Alter Kitchen

Lodgement Date 17-Aug-2005
Decision Granted
Decision Date 15-Sep-2005
Current Status CCC Issued
Previous Number ABA52702

(Applications before 2007)

ABA-1993-321462 Building Consent Only Lodgement - Heater - Castmaster Trojan

Lodgement Date 10-Jun-1993
Decision Granted
Decision Date 30-Jun-1993
Current Status CCC Issued
Previous Number ABA932466

(Applications before 2007)

<u>ABA-1995-331856</u> Building Consent Only Lodgement - Plumbing & Drainage Alts(151

Victoria Rd, Plan Shows Drain in Common)
Lodgement Date 29-Jun-1995
Decision Granted
Decision Date 08-Jul-1995
Current Status CCC Issued
Previous Number ABA953224

(Applications before 2007)

ABA-2008-2744 Building Consent Only Lodgement - Alter Layout and Renovate

Bathroom, Toilet and Laundry. Move Bathroom Windows

Lodgement Date11-Dec-2008DecisionGrantedDecision Date21-Jan-2009Current StatusCCC Issued

Previous Number (Applications before 2007)

#### **Building and Drainage Permits**

Building Permits were issued prior to the introduction of the Building Act 1992. Code Compliance Certificates were not required or issued for permits.

<u>H-1913-127726</u> AAD19132289

(DWX) A2503 - Plumbing and Drn, (Anderson). The permit was lodged on 01-Jan-1913.

H-1918-134681 AAD19180470

A12916 - Plb Repairs. The permit was lodged on 01-Jan-1918.

H-1927-144444 AAD19271156

(DWX) B9633 - Plumbing and Drainage, (Moody). The permit was lodged on 01-Jan-1927.

H-1930-147991 AAD19301115

(DWX) C5355 - Plumbing and Drainage, (Pritchard). The permit was lodged on 08-Nov-1930.

H-1972-247675 AAK19720157

(DWX) 52306 - Erect Garage, (Reid). The permit was lodged on 19-Apr-1972.

#### **Additional Building Information**

EXB-2023-40 Exempt building work notification - Demolish Chimney & Non-load bearing internal wall, 40m2 Timber Deck less than 1.5m above the ground

Lodgement Date10-Sep-2023DecisionCompletedDecision Date12-Sep-2023Current StatusCompleted

For further explanation on the current status of any consent, or to enquire about information referred to on this page, please contact Building Control Staff between 8:30am and 5:00pm weekdays at the enquiries counter on the Ground floor of the Civic Centre, 50 The Octagon, Dunedin, or by phoning 477 4000.

#### HAZARDS

#### SITE HAZARDS

## Assessment of Options for Protecting Harbourside and South City from Direct Impacts of Sea Level Rise

This property is within the study area considered by a report commissioned by the Dunedin City Council entitled 'Assessment of Options for Protecting Harbourside and South City from Direct Impacts of Sea Level Rise'. The report is available on the Council's website at <a href="http://www.dunedin.govt.nz/climatechange">http://www.dunedin.govt.nz/climatechange</a> or by contacting Customer Services Agency on 03 477 4000.

#### **Dunedin Groundwater Monitoring and Spatial Observations**

The property is identified in the "Dunedin Groundwater Monitoring and Spatial Observations" report published by GNS Science 2020 (doi: 10.21420/AVAJ-EE81), which describes characteristics of groundwater (either observed or interpolated) within the land concerned.

The Institute of Geological and Nuclear Sciences Limited (GNS Science) and its funders give no warranties of any kind concerning the accuracy, completeness, timeliness or fitness for purpose of the data. GNS Science accepts no responsibility for any actions taken based on, or reliance placed on the data and GNS Science and its funders exclude to the full extent permitted by law liability for any loss, damage or expense, direct or indirect, and however caused, whether through negligence or otherwise, resulting from any person's or organisation's use of, or reliance on, the data. Although the report is known to the Dunedin City Council, the council has also not assessed the report for correctness. The applicant is solely responsible for ensuring that the land is suitable for a particular purpose including development.

Please refer to the report for detail <a href="http://shop.gns.cri.nz/sr\_2020-11-pdf/">http://shop.gns.cri.nz/sr\_2020-11-pdf/</a>

The property is identified within the report "The Natural Hazards of South Dunedin" which may describe special features or characteristics of the land concerned, including but not limited to potential erosion, avulsion, falling debris, subsidence, slippage, alluvion or inundation. Although the report is known to the Dunedin City Council the council has not assessed the report for correctness. The applicant is solely responsible for ensuring that the land is suitable for a particular purpose including development. Please read the report here <a href="https://www.orc.govt.nz/media/2217/the-natural-hazards-of-south-dunedin-report-july-2016.pdf">https://www.orc.govt.nz/media/2217/the-natural-hazards-of-south-dunedin-report-july-2016.pdf</a>

This area has been identified as lying within a zone susceptible to amplified shaking in an earthquake and potential liquefaction during a severe earthquake event. The Dunedin City Council may require a site-specific design unless site investigation confirms this requirement is not necessary.

The general vicinity of this property is identified as a 'liquefaction awareness area'. It is classified as liquefaction-susceptibility Domain C. This means that the ground is predominantly underlain by poorly consolidated marine or estuarine sediments with a shallow groundwater table. There is considered to be a moderate to high likelihood of liquefaction-susceptible materials being present in some parts of the areas classified as Domain C. Put another way, there is a low to moderate likelihood that there are no liquefaction-susceptible materials present in some parts of the areas mapped as Domain C. 'Liquefaction awareness areas' do not represent specific hazard zones, but rather highlight areas where there may potentially be a liquefaction hazard that may need further evaluation, in regard to existing or future infrastructure or development. This information has been sourced from *GNS Science Consultancy Report 2014/068: Assessment of Liquefaction hazards in the Dunedin City district.* Further information, including a copy of the report is available from Dunedin City Council.

#### Minimum Floor Levels - South Dunedin

"Dunedin City Council has commissioned a report 'Methodology for Determining Minimum Floor Levels 2011' (MWH 2011) and the Council is undertaking further work to enable appropriate minimum floor levels to be determined in different parts of Dunedin.

Local adjustment factors have been applied to the methodology described in the report and have identified that land in South Dunedin below 102.85m Otago Metric Datum may be subject to increasing risk over the next 50 years as a result of increasing hazards resulting from elevated sea-level rise associated with climate change.

All or part of the land (subject to this LIM) has been identified as being below 102.85m Otago Metric Datum.

The land in this area is afforded some degree of protection to coastal hazards, therefore minimum floor levels for new, or extensions to, residential or communal buildings will continue to be based on the Acceptable Solution E1/AS1 using a level that is 150mm above the crown of road.

The <u>Otago Regional Council</u> has produced a number of reports for the Dunedin City District which outline areas affected by natural hazards including slippage, flooding, subsidence and inundation. These reports are publicly available and can be accessed here: <a href="https://www.orc.govt.nz/plans-policies-reports/reports-and-publications/natural-hazards">https://www.orc.govt.nz/plans-policies-reports/reports-and-publications/natural-hazards</a>

These reports do not provide property specific information, and may not describe all natural hazards that affect the land that is the subject of this LIM report. We recommend that in addition to reading these reports, that you seek independent advice about how this property may be affected by natural hazards including natural hazards that are not described in the reports produced by the Otago Regional Council.

#### Otago Regional Council - Natural Hazards Database

The characteristics of general natural hazards in the vicinity of this property are also available on the Otago Regional Council's Natural Hazards Database.

https://www.orc.govt.nz/managing-our-environment/natural-hazards/otago-natural-hazards-database

#### HAZARDOUS SUBSTANCES

WARNING – Change in legislation and management of hazardous substances On 1 April 2004, all Dunedin City Council Dangerous Goods Licences expired. From this date they became the responsibility of the Environmental Protection Authority (EPA) under the Hazardous Substances and New Organisms Act 1996. All new licences for hazardous substances were issued by independent Test Certifiers approved by the EPA. The Council no longer holds current information on the use of hazardous substances at these premises and hazardous substances may be present without the Council's knowledge. The Council was advised by the EPA in 2016 that Worksafe had taken over responsibility for managing Location Test certificates under the Hazardous Substances and New Organisms Act 1996. The EPA no longer hold any information in relation to Location Test Certificates If you have any questions, please contact Worksafe.

Contaminated Site, Hazardous Substances and Dangerous Goods Information

No information

#### **ENVIRONMENTAL HEALTH**

No records were found of Environmental Health involvement with this property.

#### LICENSING

#### Health Licensing

There are no records of any Health Licences for this property.

#### **Liquor Licensing**

There are no records of any Liquor Licences for this property.

#### CITY PLANNING

The information provided with this LIM on District Plan requirements and resource consents has been verified by City Planning in relation to the subject property only. All information included in relation to other land surrounding the site is indicative.

#### **Accuracy of Boundaries**

Knowing the true location of the property boundaries on the ground is important in determining what can be carried out on the land under the District Plan and in determining whether the current activity complies with the District Plan or any resource consent. Please note that the Council's aerial photographs may not accurately depict the extent of the property. The Record of Title for the site should be checked in the first instance. A surveyor may need to be consulted to establish the true location of the title boundaries on the ground.

#### Access to Site

The legality of any access to the site is important in determining what can be carried out on the land under the District Plan and in determining whether the current activity complies with the District Plan or any resource consent. It is recommended that the Record of Title and/or a lawyer be consulted regarding the legality of any legal and/or physical access to the site (and the maintenance thereof).

#### Heritage New Zealand Pouhere Taonga Act 2014

The Heritage New Zealand Pouhere Taonga Act 2014 applies in addition to any protection provided to a building or site by the District Plan. The Heritage New Zealand Pouhere Taonga Act 2014 makes it unlawful for any person to destroy, or modify the whole or any part of an archaeological site, whether or not the land on which the site is located is designated, or a resource or building consent has been issued, without the prior authority of Heritage New Zealand. The Heritage New Zealand Pouhere Taonga Act 2014 defines an archaeological site as a place associated with pre-1900 activity, where there may be evidence relating to the history of New Zealand. Pre-1900 buildings are considered archaeological sites under the Heritage New Zealand Pouhere Taonga Act 2014 and are also often associated with subsurface archaeological remains that provide evidence of pre-existing use of the site. Council records may not necessarily identify the precise date upon which an existing building was constructed. Contact the Dunedin office of Heritage New Zealand for further information: <a href="mailto:infodeepsouth@heritage.org.nz">infodeepsouth@heritage.org.nz</a>; 03 477 9871.

## Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011

The Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 came into force on 1 January 2012. The National Environmental Standard applies to any piece of land on which an activity or industry described in the current edition of the Hazardous Activities and Industries List (HAIL) is being undertaken, has been undertaken or is more likely than not to have been undertaken. (The current edition of the HAIL is available on the Ministry for the Environment website at <a href="www.mfe.govt.nz">www.mfe.govt.nz</a>.) Activities on HAIL sites may need to comply with permitted activity conditions specified in the National Environmental Standard and/or might require resource consent. (The Otago Regional Council should also be consulted for any rules in might have in regards to the use or development of contaminated sites.)

If a person wishes to establish whether a piece of land has had hazardous activities or industries conducted on it, and thus whether activities on that land are controlled by the National Environmental Standard, then the person must pay for a review of the information about the land held by the Council, or pay for a suitably qualified and experienced practitioner to undertake a preliminary site inspection. Formal confirmation from the Council that resource consent is not required under the National Environmental Standard can only be given through a certificate of compliance application.

#### **Consent Notices**

There are no Consent Notices recorded for this property. It is recommended that the applicant check the Record of Title for any notices or covenants that may affect the property.

#### **District Plan Information**

Dunedin currently has an Operative Dunedin City District Plan, and the Proposed Second Generation Dunedin City District Plan (2GP). Accordingly, both of these plans may affect the development potential of this site and surrounding properties.

As a general principle, rules in the 2GP must be considered along with the rules of the Operative District Plan until such time as the rules of the 2GP become operative, or are treated as operative. The policies and objectives of both plans should also be considered.

The 2GP was publicly notified on Saturday 26 September 2015. The submission period closed on Tuesday 24 November 2015. Decisions on the 2GP were released on Wednesday 7 November 2018. The appeal period closed on Wednesday 19 December 2018. The schedule of appeals can be viewed at <a href="https://www.dunedin.govt.nz/council/district-plan/2nd-generation-district-plan/appeals-received-on-the-2gp">https://www.dunedin.govt.nz/council/district-plan/2nd-generation-district-plan/appeals-received-on-the-2gp</a>.

You are advised to refer to our website to determine which rules in the 2GP have legal effect or are fully operative, and to determine which rules in the Operative District Plan are now inoperative.

The 2GP is subject to change at any time. Variation 2 (Additional Housing Capacity) to the 2GP was notified on Wednesday 3 February 2021. No rule changes proposed in Variation 2 had legal effect from the date of notification. Rules that did not have submissions in opposition to them are deemed operative.

Please refer to our website for more information on Variation 2 at <a href="https://www.dunedin.govt.nz/council/district-plan/2nd-generation-district-plan/plan-change-dis-2021-1-variation-2">https://www.dunedin.govt.nz/council/district-plan/2nd-generation-district-plan/plan-change-dis-2021-1-variation-2</a>

Further rules will come into legal effect and/or become fully operative at the release of decisions and the resolution of appeals.

You should check with the Council whether any changes have occurred since the date this LIM report was issued. The information provided with this LIM on district plan requirements is applicable as at the date this LIM is issued: there may be changes to the district plan rules following the release of this LIM that may affect this site and surrounding properties.

You should ensure that you consult the information and relevant planning maps in the Operative District Plan which can be found on our website at <a href="https://www.dunedin.govt.nz/council/district-plan/district-plan-2006">https://www.dunedin.govt.nz/council/district-plan/2006</a> and the 2GP which can be found on our website at <a href="https://www.dunedin.govt.nz/council/district-plan/2nd-generation-district-plan">https://www.dunedin.govt.nz/council/district-plan/2nd-generation-district-plan</a> as well as at all Dunedin City Council service centres and libraries.

#### OPERATIVE DISTRICT PLAN INFORMATION

#### Zoning

This property is zoned as follows in the District Plan.

Zone

**RESIDENTIAL 1** 

#### Noise

This property is located in a Noise Area where the noise limits outlined below apply. Rule 21.5.1(i)(b) also specifies a maximum noise limit of 75 dBA Lmax between 9.00 pm on any night and 7.00 am the following day measured at the boundary of the site or within any other site. Note that some activities have a resource consent or existing use rights that allow these limits to be exceeded. Some activities are also exempted from noise limits. Furthermore, the actual limits that apply will also depend on whether this site adjoins a Noise Area Boundary and whether there are Special Audible Characteristics. Refer to Section 21.5 of the District Plan for further details. Every occupier of land is also under a general duty to adopt the best practicable option to ensure that the emission of noise from land does not exceed a reasonable level.

Noise Zone

50Dt/40Nt dBA, 45SP dBA

#### Road Hierarchy

The roads listed below adjoining this property are classified as either Collector, District Regional or National Roads in the District Plan Roading Hierarchy. All other roads adjoining this property but not listed here are classified as Local Roads. Refer to Section 20 of the District Plan for more information.

Type NZTA Control

DISTRICT Victoria Rd

#### SECOND GENERATION PLAN INFORMATION

#### Zoning

General Residential 1 (refer Section 15, Residential)

#### Scheduled Items

• Nil

#### **Overlay Zones**

Hazard 3 (coastal) Overlay Zone (part)

#### Mapped Areas

- Archaeological Alert Layer
- Road Classification Hierarchy (main roads within 30m of site)
  - Victoria Rd is a Collector road
- Wahi Tupuna (part)
  - Name: Rakiatea
  - ID: 45

[Please note that some of the items above may only extend over part of the property. If there are multiple designations over the property, these may overlap.]

#### **Resource Consents**

There are no resource consents for this property.

## RESOURCE CONSENTS WITHIN 50 METRES OF 151 VICTORIA ROAD ST KILDA 5038155 1 Second Beach Road Dunedin

RMA-2005-369369 Resource Management Act (Historical Data) TO ERECT SIGNAGE TO PROVIDE INFORMATION ABOUT USING THE DUNES (Non-Notified - Restricted Discretionary). The outcome was Granted on 19/04/2006.

#### 5061323 152 Victoria Road St Kilda

<u>LUC-1991-371153</u> Land Use Consent erect a conservatory. The outcome was Granted on 20/05/1991

RMA-1993-356087 Resource Management Act (Historical Data) ADD SPA POOL ROOM TO DWG Ownr: PHILLIP TROUNSON / App: PHILIP TROUNSON 152 VICTORIA RD (Non-Notified - Non Complying). The outcome was Granted on 16/06/1993.

#### 5061325 156 Victoria Road St Kilda

<u>SUB-2019-51</u> Subdivision Consent subdivision consent for a two lot subdivision. The outcome was Granted on 01/07/2019.

#### 5061328 160 Victoria Road St Kilda

<u>LUC-2017-3</u> Land Use Consent the erection of a relocatable out-building with bulk and location breaches. The outcome was Granted on 01/02/2017.

<u>LUC-2013-123</u> Land Use Consent construct a garage. The outcome was Granted on 23/04/2013.

#### 5061342 148 Victoria Road St Kilda

<u>BACT-2018-20</u> Boundary Activity Notice deemed permitted boundary activity notice for establishment of a new deck and authorisation of an existing garage. The outcome was Issued on 16/05/2018.

#### 5061361 155 Victoria Road St Kilda

<u>LUC-2010-431</u> Land Use Consent construct a new garage and deck. The outcome was Granted on 05/11/2010.

#### 5101542 11 John Wilson Ocean Drive Dunedin

RMA-2001-364739 Resource Management Act (Historical Data) Earthworks in Urban Landscape Conservation Area (Non-Notified - Restricted Discretionary). The outcome was Granted on 01/05/2001.

RMA-2003-366935 Resource Management Act (Historical Data) Signage on Marlow Park (Non-Notified - Non Complying). The outcome was Granted on 21/08/2003.

RMA-1996-359788 Resource Management Act (Historical Data) ERECT SIGNS ON CAFE (Non-Notified - Unrestricted Discretionary). The outcome was Granted on 11/12/1996.

#### 5101557 105 Victoria Road St Kilda

<u>POL-2022-26</u> Planning Other Legislation Planning certificate for the sale of liquor. The outcome was Granted on 25/05/2022.

<u>LUC-2021-335</u> Land Use Consent an ancillary licenced premises being the Otago Indoor Bowls Association. The outcome was Granted on 08/07/2021.

<u>LUC-2011-259</u> Land Use Consent fixing temporary pvc banners to the Dunedin Ice Stadium for the winter games. The outcome was Granted on 01/07/2011.

RMA-2004-368527 Resource Management Act (Historical Data) ADDITIONAL SIGNAGE FOR ICE STADIUM (Notified - Non Complying). The outcome was Declined on 07/04/2005.

#### 5101875 41 Victoria Road St Kilda

RMA-2001-365021 Resource Management Act (Historical Data) ADDITIONAL MANAGERS RESIDENCE (Non-Notified - Unrestricted Discretionary). The outcome was Granted on 11/09/2001.

#### 5101877 41A Victoria Road St Kilda

<u>LUC-2018-70/B</u> Land Use Consent late s357 objection to decision on LUC-2018-70 for land use consent for the establishment of permanent hoardings (posters within timber frames and associated livery signage). The outcome was S357 Upheld on 01/07/2020.

<u>LUC-2018-70/A</u> Land Use Consent s357 objection to fees for LUC-2018-70. The outcome was S357 Upheld on 03/07/2020.

<u>LUC-2018-70</u> Land Use Consent the establishment of permanent hoardings (posters within timber frames and associated livery signage) at various locations. The outcome was Granted on 06/11/2018.

#### 5101881 25 John Wilson Ocean Drive Dunedin

RMA-1997-361413 Resource Management Act (Historical Data) DECK ADDITION TO CLUBHOUSE CONTRARY TO DESIGNATION AND IN URBAN LANDSCAPE CONSERVATION AREA CHQ ST KILDA SURF CLUB (Non-Notified - Restricted Discretionary). The outcome was Granted on 08/12/1997.

#### 5101885 59 Victoria Road St Kilda

<u>LUC-2010-593</u> Land Use Consent directional sign on Scout Hall advertising the Dunedin Holiday Park. The outcome was Granted on 16/02/2011.

#### 5101887 63 Victoria Road St Kilda

RMA-1999-363343 Resource Management Act (Historical Data) TO ALTER AND EXTEND AN EXISTING SCOUT HALL COMPLEX (Non-Notified - Unrestricted Discretionary). The outcome was Granted on 15/10/1999.

#### 5101888 105 Victoria Road St Kilda

RMA-2004-368103 Resource Management Act (Historical Data) SIGN ON DUNEDIN STADIUM FOR ICE SKATING (Non-Notified - Restricted Discretionary). The outcome was Granted on 21/10/2004.

RMA-1991-353222 Resource Management Act (Historical Data) NOT NOW REQUIRED (Non-Notified - Non Complying).

#### 5101890 16 Moana Rua Road St Kilda

<u>LUC-2023-213</u> Land Use Consent Temporary occupation in the Coastal Marine Area and maintenance of existing beach access ramp at St Clair Beach. The outcome was Granted on 16/08/2023.

<u>POL-2019-39</u> Planning Other Legislation planning certificate for sale of alcohol. The outcome was Granted on 04/07/2019.

RMA-1991-353189 Resource Management Act (Historical Data) RUGBY CLUB FOR LICENSED PREM. Ownr: DN FOOTBAL / App: CAUDWELLS (Non-Notified - Non Complying). The outcome was Granted on 22/07/1991.

#### 5101891 121 Victoria Road St Kilda

<u>RMA-2001-364517</u> Resource Management Act (Historical Data) To Erect a Conservatory with an Urban Landscape Conservation Area (Non-Notified - Restricted Discretionary). The outcome was Granted on 04/01/2001.

RMA-1991-353188 Resource Management Act (Historical Data) BOWLING CLUB LICENSED PREMISES Ownr: FORB.PK.BO / App: CAUDWELLS (Non-Notified - Non Complying).

#### 5101894 133 Victoria Road St Kilda

<u>RMA-1996-359295</u> Resource Management Act (Historical Data) Existing use rights (Converted - Ended). The outcome was Granted on 25/01/1996.

#### 5104783 7 John Wilson Ocean Drive Dunedin

<u>POL-2022-26</u> Planning Other Legislation Planning certificate for the sale of liquor. The outcome was Granted on 25/05/2022.

<u>LUC-2014-170/A</u> Land Use Consent coastal Erosion Maintenance Works. The outcome was s127 Upheld on 18/08/2021.

<u>LUC-2018-632</u> Land Use Consent the continued occupation, usage and maintenance of the existing surf lifesaving ramp at the eastern end of the St Clair Esplanade. The outcome was Granted on 06/12/2018.

<u>LUC-2014-170</u> Land Use Consent earthworks, NES and land use to continue from LUC-2008-9. The outcome was Granted on 20/12/2014.

<u>LUC-2013-415</u> Land Use Consent construct temporary beach access ramp in OLCA. The outcome was Granted on 04/11/2013.

<u>LUC-2012-510</u> Land Use Consent establish murals on the Marlow Park toilet block. The outcome was Granted on 07/12/2012.

<u>LUC-2011-417/A</u> Land Use Consent s127 variation to paint a mural. The outcome was s127 Upheld on 16/08/2012.

<u>LÚC-2011-417</u> Land Use Consent paint a mural on the St. Kilda building on 3 walls. The outcome was Granted on 04/10/2011.

<u>LUC-2008-9</u> Land Use Consent retrospective land use consent for emergency works and short term consent for maintenance works associated with coastal protection work at Ocean Beach. The outcome was Granted on 31/07/2009.

RMA-2004-368103 Resource Management Act (Historical Data) SIGN ON DUNEDIN STADIUM FOR ICE SKATING (Non-Notified - Restricted Discretionary). The outcome was Granted on 21/10/2004.

<u>LUC-2007-13</u> Land Use Consent Access & beach platform for the sewerage outfall pipe. The outcome was Granted on 08/02/2007.

RMA-2006-370577 Resource Management Act (Historical Data) SIGN FOR ACCESS ONTO BEACH ORDER NO 7823245 (Non-Notified - Restricted Discretionary). The outcome was Granted on 11/09/2006.

RMA-2006-369926 Resource Management Act (Historical Data) SEPARATE SPECIAL ALLOTMENT UNDER SEC 226 RMA (Other). The outcome was Granted on 24/03/2006. RMA-2003-366534 Resource Management Act (Historical Data) Construction of Grass Mounds in Association with Bicycle Skills Area (Non-Notified - Restricted Discretionary). The outcome was Granted on 22/04/2003.

RMA-2001-364739 Resource Management Act (Historical Data) Earthworks in Urban Landscape Conservation Area (Non-Notified - Restricted Discretionary). The outcome was Granted on 01/05/2001.

RMA-2002-366142 Resource Management Act (Historical Data) WATER QUALITY SIGNS ON 4 LOCATIONS ALONG ST KILDA - ST CLAIR BEACH (Non-Notified - Restricted Discretionary). The outcome was Granted on 11/12/2002.

RMA-2002-365889 Resource Management Act (Historical Data) EXTEND AND CONSTRUCT NEW WALL ALONG ST CLAIR ESPLANADE; BACK FILLING AND USE OF LAND AT WEST END FOR PARKING, PEDESTRIAN ACCESS AND LANDSCAPING (Notified - Non Complying). The outcome was Granted on 07/04/2003.

RMA-1999-363343 Resource Management Act (Historical Data) TO ALTER AND EXTEND AN EXISTING SCOUT HALL COMPLEX (Non-Notified - Unrestricted Discretionary). The outcome was Granted on 15/10/1999.

RMA-2003-366935 Resource Management Act (Historical Data) Signage on Marlow Park (Non-Notified - Non Complying). The outcome was Granted on 21/08/2003.

RMA-2001-364517 Resource Management Act (Historical Data) To Erect a Conservatory with an Urban Landscape Conservation Area (Non-Notified - Restricted Discretionary). The outcome was Granted on 04/01/2001.

RMA-1997-361413 Resource Management Act (Historical Data) DECK ADDITION TO CLUBHOUSE CONTRARY TO DESIGNATION AND IN URBAN LANDSCAPE CONSERVATION AREA CHQ ST KILDA SURF CLUB (Non-Notified - Restricted Discretionary). The outcome was Granted on 08/12/1997.

RMA-1996-359788 Resource Management Act (Historical Data) ERECT SIGNS ON CAFE (Non-Notified - Unrestricted Discretionary). The outcome was Granted on 11/12/1996. RMA-1996-359587 Resource Management Act (Historical Data) Planning Certificate for the Sale of Liquor (Other). The outcome was Granted on 09/05/1996.

RMA-1996-359295 Resource Management Act (Historical Data) Existing use rights (Converted - Ended). The outcome was Granted on 25/01/1996.

RMA-1991-353189 Resource Management Act (Historical Data) RUGBY CLUB FOR LICENSED PREM. Ownr: DN FOOTBAL / App: CAUDWELLS (Non-Notified - Non Complying). The outcome was Granted on 22/07/1991.

RMA-1991-353188 Resource Management Act (Historical Data) BOWLING CLUB LICENSED PREMISES Ownr: FORB.PK.BO / App: CAUDWELLS (Non-Notified - Non Complying). RMA-1991-353222 Resource Management Act (Historical Data) NOT NOW REQUIRED (Non-Notified - Non Complying).

If you would like a copy of any Resource Consent decision or advice on the current status and relevance of any planning matter referred to in the LIM, enquiries may be made at the Planning Enquiries desk on the Ground Floor of the Civic Centre, 50 The Octagon, or by phoning 477 4000 and asking for the Duty Planner. Planners are available at the Planning Enquiries desk to answer your enquiries between 8:30am and 5:00pm weekdays.

#### **TRANSPORT**

No Transport information was found for this property

As of the 24th April 2015, the Transport Group no longer inspects the site as part of a LIM. Only the electronic records since 2002 have been examined for Transport information in relation to the property.

For further explanations on property owner obligations in regard to local road encroachments, vehicle entrances, vegetation management or retaining structures please refer to the Dunedin City Council website at <a href="http://www.dunedin.govt.nz/services/roads-and-footpaths">http://www.dunedin.govt.nz/services/roads-and-footpaths</a> or contact Transport on 477 4000.

For properties abutting the state highway, Waka Kotahi NZ Transport Agency is the Road Controlling Authority.

#### 3 WATERS

#### **WATER**

#### Urban water supply area - Connected

This property is connected to the Dunedin City Council's urban (on-demand) water supply. Indicative water pressures are available to view at <a href="www.dunedin.govt.nz/water-pressure">www.dunedin.govt.nz/water-pressure</a>, and flows available to the property can be provided on request. Any change in water use (e.g. for a new commercial activity) requires a new application to be made to the Council. It is recommended that the applicant check the property for the location and suitability of the water service.

#### Terms and conditions of supply

All new and existing connections to the Dunedin City Council's water supply network are subject to the terms and conditions of the Dunedin City Council Water Bylaw 2011. The bylaw is available to view at <a href="https://www.dunedin.govt.nz/water-bylaw">www.dunedin.govt.nz/water-bylaw</a>.

#### Water pressure

Indicative network water pressure to the property is shown on maps available at <a href="https://www.dunedin.govt.nz/water-pressure">www.dunedin.govt.nz/water-pressure</a>. Specific detail is available on request.

#### Water reticulation maps

A copy of the water reticulation map of Dunedin City Council infrastructure in the vicinity of the subject property is attached. These show the location of the water main in the road. It may or may not show the water service to the property. It is recommended that the applicant check the property

#### FOUL SEWER AND WASTE WATER

#### Stormwater/Sewer Separation - Compliant

The Dunedin City Council requires the foul sewer and storm water being discharged from a property to be directed to the separate foul sewer and storm water networks, respectively. This property is in an area where inspections have been undertaken to ensure compliance with this requirement. This property was certified as complying with Council's requirements for storm water separation at the time of inspection on **18**<sup>th</sup> **January 2001**.

No comment is made with regard to this property's compliance with the requirement for storm water separation after the date of inspection.

#### **Urban Stormwater Catchment**

This property is located within an urban stormwater catchment that has been modelled in a study to determine the potential effects of land use and climate change that may occur over the next 50 years. This indicates that some areas of the catchment might be subject to a potential flooding risk or surface water ponding during particular rainfall events.

These effects are outlined in the Integrated Catchment Management Plans (ICMPs) that are available on the Council website. The ICMPs show the areas in the catchment that have been modelled which might be susceptible to a higher risk of flooding. The ICMPs contain maps that indicate a potential worst case scenario for a 1 in 100 year rainfall event. However, there are a series of maps also available that show modelling results from a range of other scenarios.

While the maps have been produced to help Council manage the reticulation networks, they are not sufficiently detailed to specifically account for individual properties which may be affected by local factors not included in the models.

For further information please contact 3 Waters Services at Dunedin City Council.

#### **Drainage Reticulation Plans**

A copy of the Dunedin City Council's drainage infrastructure in the vicinity of the subject property is attached. Public foul sewers are show in red and stormwater sewers in green. All public drainage services are available to receive connections from the property and limited flows of stormwater may also be discharged to the street channel or an approved outfall.

#### **Information Regarding Watercourses**

The controlling authority for all water and waterbodies in Dunedin City is the Otago Regional Council. The Regional Plan: Water addresses water take and use, diversions, damming, discharges and bed alteration under the Resource Management Act 1991. They are also responsible for the Flood Protection Management Bylaw 2012.

The controlling authority for watercourses in relation to stormwater drainage, and removal of obstructions in accordance with Local Government Act 1974 is the Dunedin City Council. The Council also issues building and resource consents for certain works around watercourses.

Not all watercourses within Dunedin City are recorded or known to the Council, therefore it is recommended that the applicant inspect the property for watercourses.

For further information on watercourses it is recommended the applicant read the Watercourse Information Sheet. A copy of this document is available on request or for download from the Dunedin City Council website <a href="https://www.dunedin.govt.nz">www.dunedin.govt.nz</a>

#### **APPENDIX**

#### Glossary of terms and abbreviations

The following are abbreviations and terms that may appear as a part of a LIM.

#### Consent, Permit, Licence & Complaint types

- AAB DCC Building permit
- AAD DCC Drainage permit
- AAG Green Island drainage permit
- AAH Hyde permit
- AAK St Kilda permit
- AAM Mosgiel permit
- AAP Port Chalmers permit
- AAS Silverpeaks permit
- AAT Maniototo permit
- ABA Application Building Act 1991
- AMD Amendment to a Building Consent
- BC Building Consent
- BCC Building Compliance Certificate Sale of Liquor Act
- BCM Building Complaint
- CER Certifier
- COA Certificate of Acceptance
- DGL Dangerous Goods Licensing
- ENV Health complaint
- HTH Health licence
- LIQ Liquor licence
- NTF Notice to Fix
- NTR Notice to Rectify
- PIM Project Information Memorandum
- POL Planning Other Legislation
- RMA Resource Management Act Resource consent
- RMC Resource consent complaint
- WOF Building Warrant of Fitness

#### Terms used in Permits & Consents

- ALT Alteration
- ADD Addition
- BD D/C Board drain in common
- BLD Building
- BLDNG Building
- BT Boundary trap
- B/T Boiler tube
- CCC Code Compliance Certificate
- DAP Drainage from adjacent property
- DGE Drainage
- DIC Drain in common
- DR Drainage
- DWG Dwelling
- FS Foul sewer
- HEA Heater
- ICC Interim Code Compliance
- MH Manhole
- PL Plumbing
- PLB Plumbing
- PTE Private
- SIS Sewer in section
- WC Water course
- WT Water table
- SW Stormwater

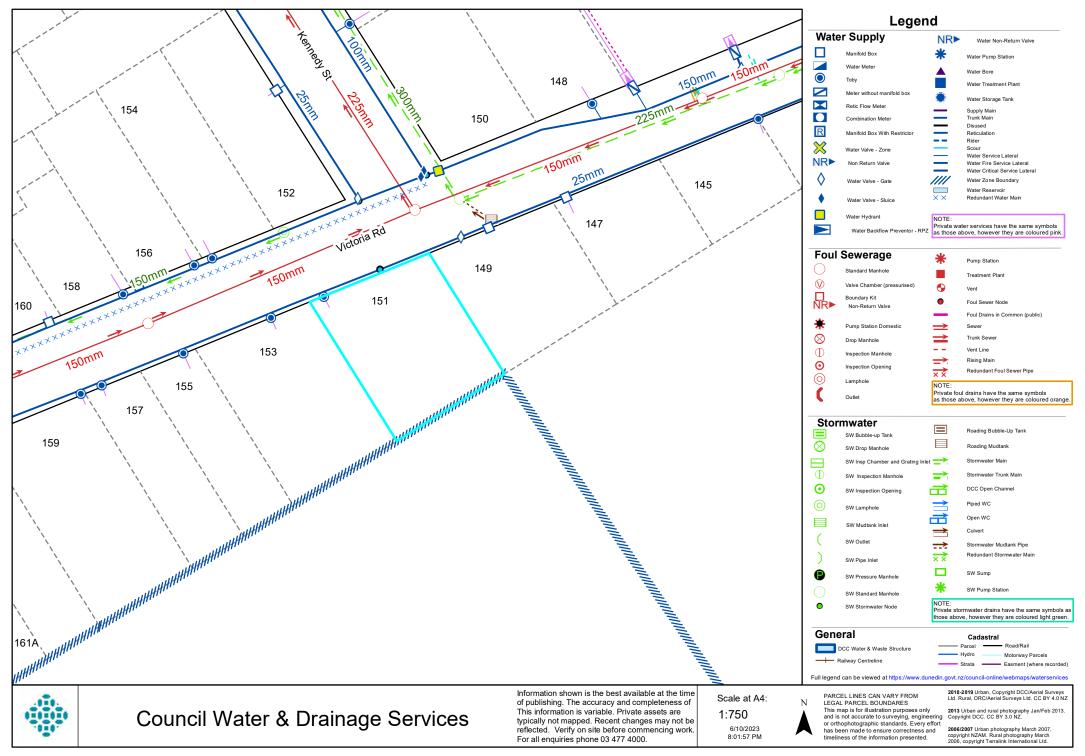
#### General terms

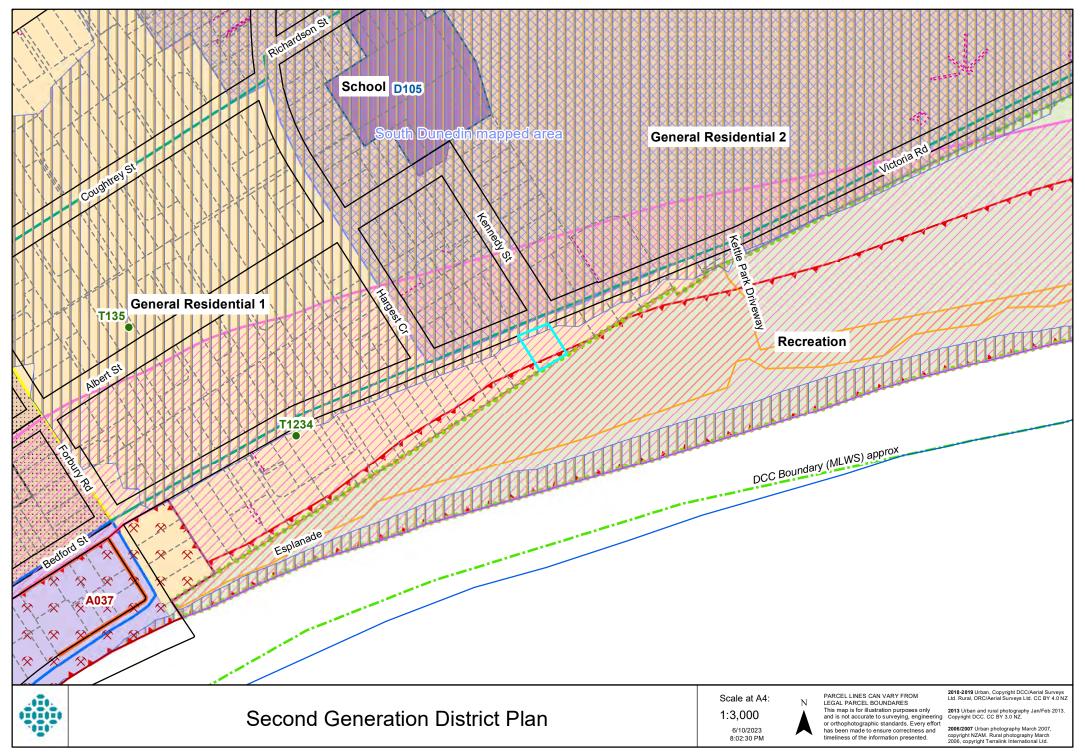
RDMS Records and Document Management System

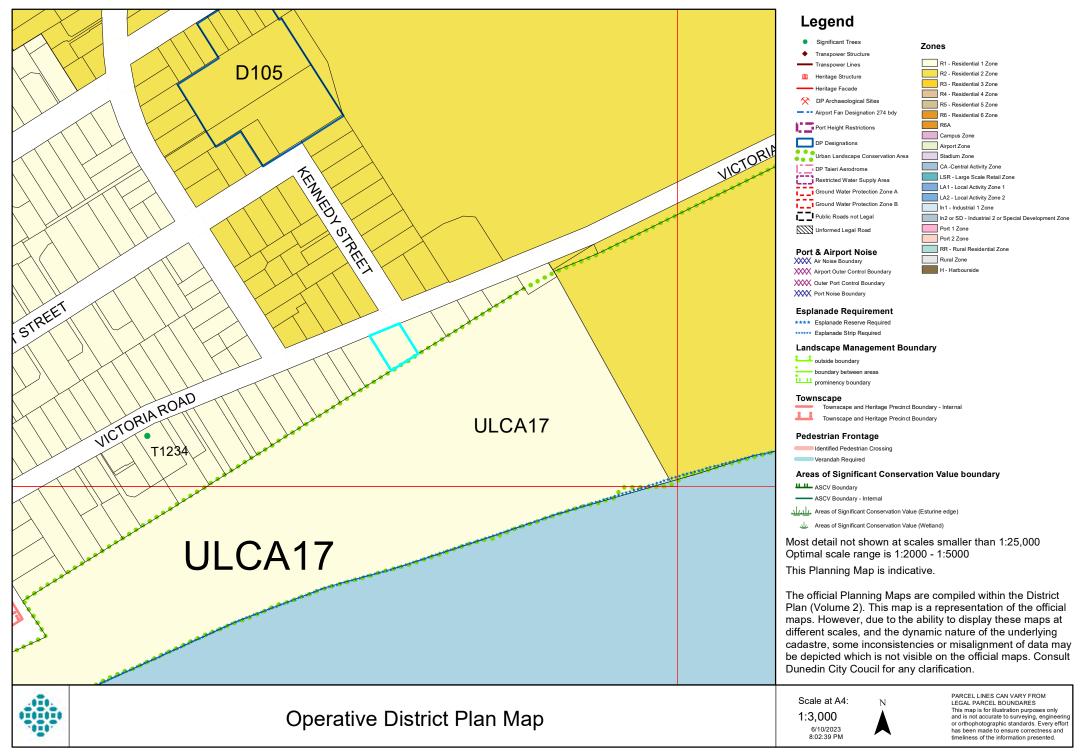


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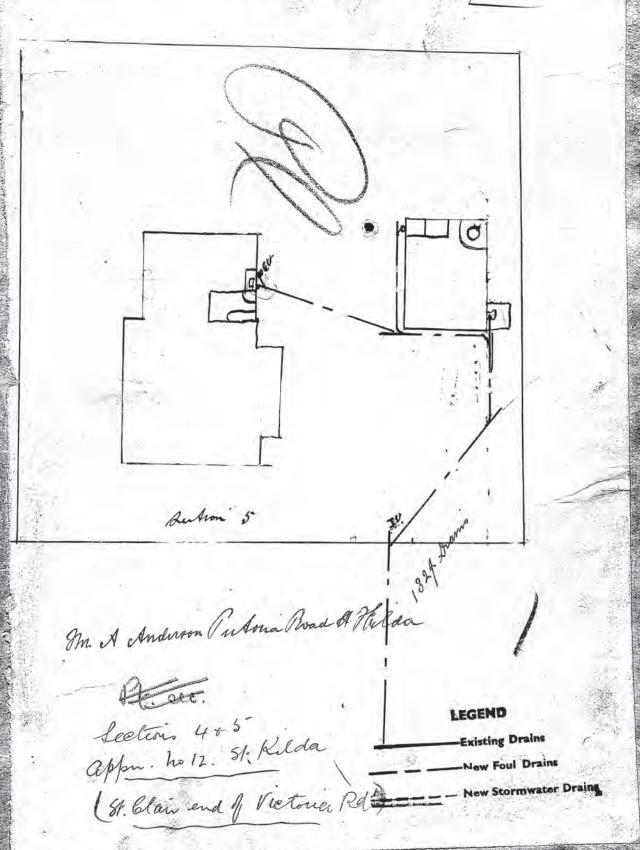
2006/2007 Urban photography March 2007, copyright NZAM. Rural photography March 2006, copyright Terralink International Ltd.







A/2503



DUNEDIN CITY COUNCIL





DUNEDIN DRAINAGE AND SEWERAGE BOARD

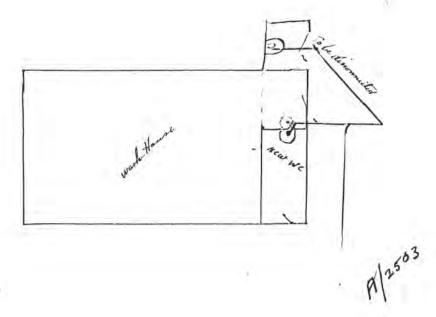
# HOUSE CONNECTION PLAN.

APPLICATION No. B

DATE

SCALE: 1 in. to a Foot.

NEW SEWERAGE DRAINS: RED STORMWATER: DOTTED BLACK OLD DRAINS: FULL BLACK



Binding Margin to be left blank

LEGEND Existing Drains

New Foul Drains

Owner In Moody

Street 229 Victoria Anad

A Milda Locality

Block Bundm & Bark Ju

Section 12

Allotment.

Signature of Drainer



C 1500.

DUNEDIN DRAINAGE AND SEWERAGE BOARD

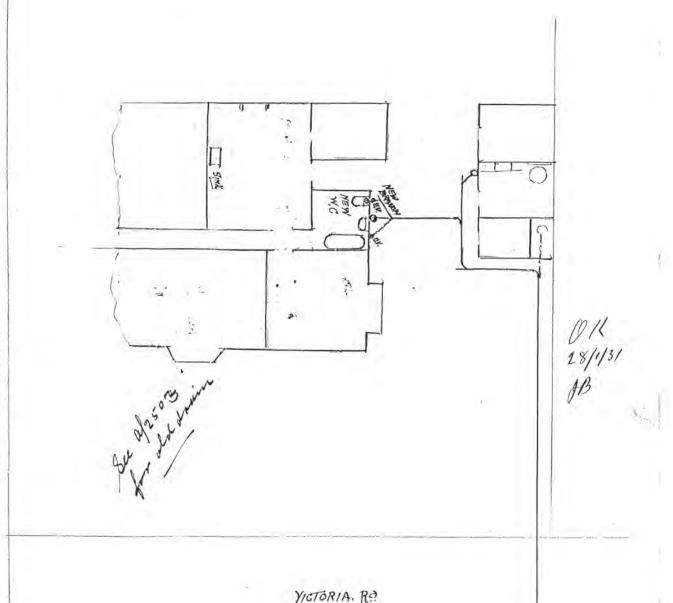
## HOUSE CONNECTION PLAN.

APPLICATION NO. \$ 6/5355

DATE-

SCALE: 1/8 in. to a Foot.

NEW SEWERAGE DRAINS: RED STORMWATER: DOTTED BLACK OLD DRAINS: FULL BLACK



Owner W. Patcland
Streets Victoria Rd
Locality & Clair

Binains

Block

Bek - 10

Section 12

Allotment

DUNEDIN CITY COUNCIL

Signature of Drainer Thomson Brown



CODE COMPLIANCE CERTIFICATE No.: 93/2466

ection 43(3), Building Act 1991

ISSUED BY

DUNEDIN CITY COUNCIL

BUILDING CONSENT No.: 93/2466

(Insert a cross in each applicable box. Attach relevant documents.)

Street Number: 151 VICTORIA RD
DUNEDIN
LEGAL DESCRIPTION
Property Number: 613595  Valuation Roll Number: 2752062000
Valuation Roll Number: 2752062000  Lot: 5 DP: 1772
Section: Block:
Survey District: ST KILDA
s specified in the attached page(s) headed "Condi" (being this certificate).
e compliance certificate, in accordance with the attached det
Receipt No.:
(entro)

BUILDING CONSENT No :

93/2486

Project Information Memorandum No.:

ISSUET BY

Section 35, Building Act 1991

DUNEDIN CITY COUNCIL

(Insert a cross in each applicable box. Attach relevant dictiments

CONTRACTOR OF THE PERSON OF TH	ook, yaasa renyan, uncasiensi Maanaan maanaa Soo aanaa ya saasaa saasaa
Name: MR 8 MRS S STEDNAN Mailing Address:  151 VICTORIA RD DUNEDIN	All Stage No. of an intended stages of:  New Building  Alteration  Intended Use(s) (in detail):
Street Address: 151 VICTOVIA RD DUNEDIX	HEATER
	Intended Life;
Property Number: 613595  Valuation Roll Number: 2752062000	Indefinite, but not less than 50 years  Specified as 1 years
Lot: 5 DP: 1772	Demolition
Section: Block: Survey District: ST KILDA	Estimated Value: \$ 2,600.00
The balance of Council's charges payable on uplifting of this building consent, in accordance with the tax invoice are:	Signed for and on behalf of the Council:
Total: \$ 0.00	Position:
ALL FEES ARE G.S.T. INCLUSIVE	Date: /3/107/93
APPROXIMATE OF THE PROPERTY OF	

This building consent is a consent under the Building Act 1991 to undertake building work in accordance with the attached plans and specifications on as to comply with the provisions of the building code. It does not affect any duty or responsibility under any other Act nor permit any breach of any other Act...

FOR CITY ENGINEER -Oursal Copy of Approved Plan TO BE RETAINED ON WORKS AND PRODUCED ON REQUEST DATE 25-06-43 and/or Specification DUNEDIN CHY COUNCIL OF BUILDING INSPECTOR. Harth 100" Deep Cashwaster 1 rozan Standord 7421 - 1990 Mr+Nrs Steadman Ph 4558840 151 Unchora Road Ak mr 4555016 Hall way To be ushalled to NZS 1421:1990. 3/20m

# CODE COMPLIANCE CERTIFICATE

Section 43(3), Building Act 1991

Position: AUTHORISED OFFICER

ISSUED BY:



50 THE OCTAGON. BOX 5045, DUNEDIN, NEW ZEALAND, TELEPHONE: (03) 477-4000. FACSIMILE: (03) 474-3594

(Insert a cross in each a	pplicable box	Attach relevant documents).
PROJECT		PROJECT LOCATION
Stage Noof an intendedstages  New Building  Alteration		Name: LEHMANN, COLIN JEFFREY  Street Address: 151 VICTORIA ROAD, ST KILDA  Mailing Address: 151 VICTORIA RD, DUNEDIN
ntended Use(s) in detail:	E.	LEGAL DESCRIPTION
RENEW FOUL DRAIN & INSTALL S/W Intended Life: Indefinite, not less than 50 years	Ø	Property Number: 2061359  Valuation Roll No: 27520 62000
Specified as years  Demolition		Lot 5 DP 1772
An interim code compliance certificate building work under the above building.  This certificate is issued subject to "Conditions of Code Compliance Certifications"	in respectonsent. the conditionate No:	the building work under the above building consent.  It of part only, as specified in the attached particulars, of the specified in the attached details are: \$

Date:

14/08/1995

## BUILDING CONSENT

Section 35, Building Act 1991

ISSUED BY:



50 THE OCTAGON. BOX 5045. DUNEDIN, NEW ZEALAND, TELEPHONE: (03) 477-4000. FACSIMILE: (03) 474-3594

Telephone No: 474-3525 Consent No: ABA 953224 Reference No: 5061359

(Insert a cross in each applicable box. Attach relevant documents).

APPLICANT	PROJECT
Name: LEHMANN, COLIN JEFFREY  Mailing Address: 151 VICTORIA RD, DUNEDIN	Stage No of an intendedstages
PROJECT LOCATION  Street Address:  151 VICTORIA ROAD, ST KILDA  LEGAL DESCRIPTION  Properly Number: 50€1359  Valuation Roll No: 27520 62000  Legal Description: LOT 5 DP 1772	New Building  Alteration  Intended Use(s) in detail:  RENEW FOUL DRAIN & INSTALL S/W  Intended Life:  Indefinite, not less than 50 years  Specified as 0 years  Demolition  Estimated Value: \$4000
COUNCIL CHARGES  The balance of Council's charges payable on uplifting of this building consent, in accordance with the tax invoice are:  Total: \$  ALL FEES ARE GST INCLUSIVE	Signed for and on behalf of the Council:  Name: Authorised Officer  Date: 08/07/1995

This building consent is a consent under the Fuilding Act 1991 to undertake building work in accordance with the attached plans and specifications so as to comply with the provisions of the building code. It does not affect any duty or responsibility under any other Act nor permit any breach of any other Act.

This building consent is issued subject to the conditions specified in the attached ...... pages headed "Conditions of Building Consent No......."

3 Ko and	is one of the state of the stat
D.F.	DA. BARTON D.P
Plans and Specifications Approved in accordance with The New Zealand Building Code and Approved Documents.	38 38 1 1 2 8 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Signed	DIP O - I I I I I I I I I I I I I I I I I I
5/W	Enception of a X go eniforce.  To eniote of A 37m &
CLEPINING &	
NOTE. ALL STORMWATER LAYED WITH 90MM P.V.C.	FRIKE RETAINING PARKE CHONNES . S. S
MR. C. LAYMANN. ISI VICTORIA ROAD	
OUNEDIN.	95/3224



50 The Octagon, PO Box 5045, Moray Place Dunedin 9058, New Zealand Telephone: 03 477 4000, Fax: 03 474 3594 Email: dcc@dcc.govt.nz

## **CODE COMPLIANCE CERTIFICATE**

Section 95, Building Act 2004

CCC NO:	ABA-2008-2744	Telephone No:	03 477 4000
APPLICANT		PRO	JECT
G W Bugler and V J Cocks 151 Victoria Road Dunedin 9012		Work Type: Alterations/Repairs  Intended Use/Description of Work: Alter Layout and Renovate Bathroom, Toilet and	
PROJECT  151 Victoria Road St Kild	LOCATION	Laundry. Move Bathroon	n Windows
LEGAL DESCRIPTION		Intended Life: Indefinite, not less than	50 years
Legal Description: LOT Valuation Roll No: 275	*****	1	ू
Building Name: N/A		This CCC also applies Amended Consents:	to the following

The Building Consent Authority named above is satisfied, on reasonable grounds, that:

(a) The building work complles with the Building Consent, and

(b) The specified systems in the building are capable of performing to the performance standards set out in the Building Consent.

Date: 15 February 2010

Compliance Schedule attached

Signed for and on behalf of the Council:

**TEAM LEADER INSPECTIONS** 

#### **BUILDING CONSENT**

DCCBCA-F4-05-v1.0

Section 51, Building Act 2004

Consent No:	ABA-2008-2744	Telephone No:	03 477 4000
APPI	APPLICANT		OJECT
G W Bugler and V J Cocks 151 Victoria Road Dunedin 9012		Work Type: Alterations/Repairs Intended Use/Desci Alter Layout and Reno Laundry. Move Bathro	vate Bathroom, Toilet and
PROJECT	PROJECT LOCATION  Intended Life: Indefinite, not less than 50 years.		an 50 years.
151 Victoria Road St Kild	da		
LEGAL DESCRIPTION		Number of Units:	
Legal Description: LOT 5 DP 1772  Valuation Roll No: 27520-62000		Number of Levels:	
Building Name: N/A		Estimated Value: \$19,000.00	

The building consent is consent under the Building Act 2004 to undertake building work in accordance with the attached plans and specifications so as to comply with the provisions of the building code. It does not affect any duty or responsibility under any other Act nor permit any breach of any other Act.

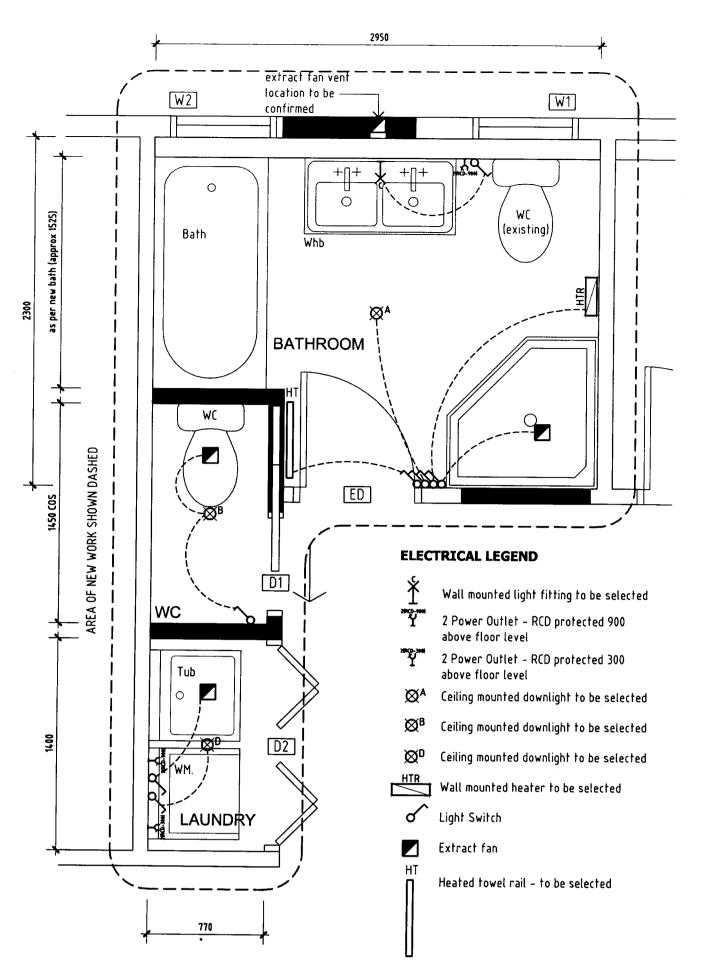
This building consent is issued subject to the conditions specified in the attached pages headed "Conditions of Building Consent".

Signed for and on behalf of the Council:

OM Pancy

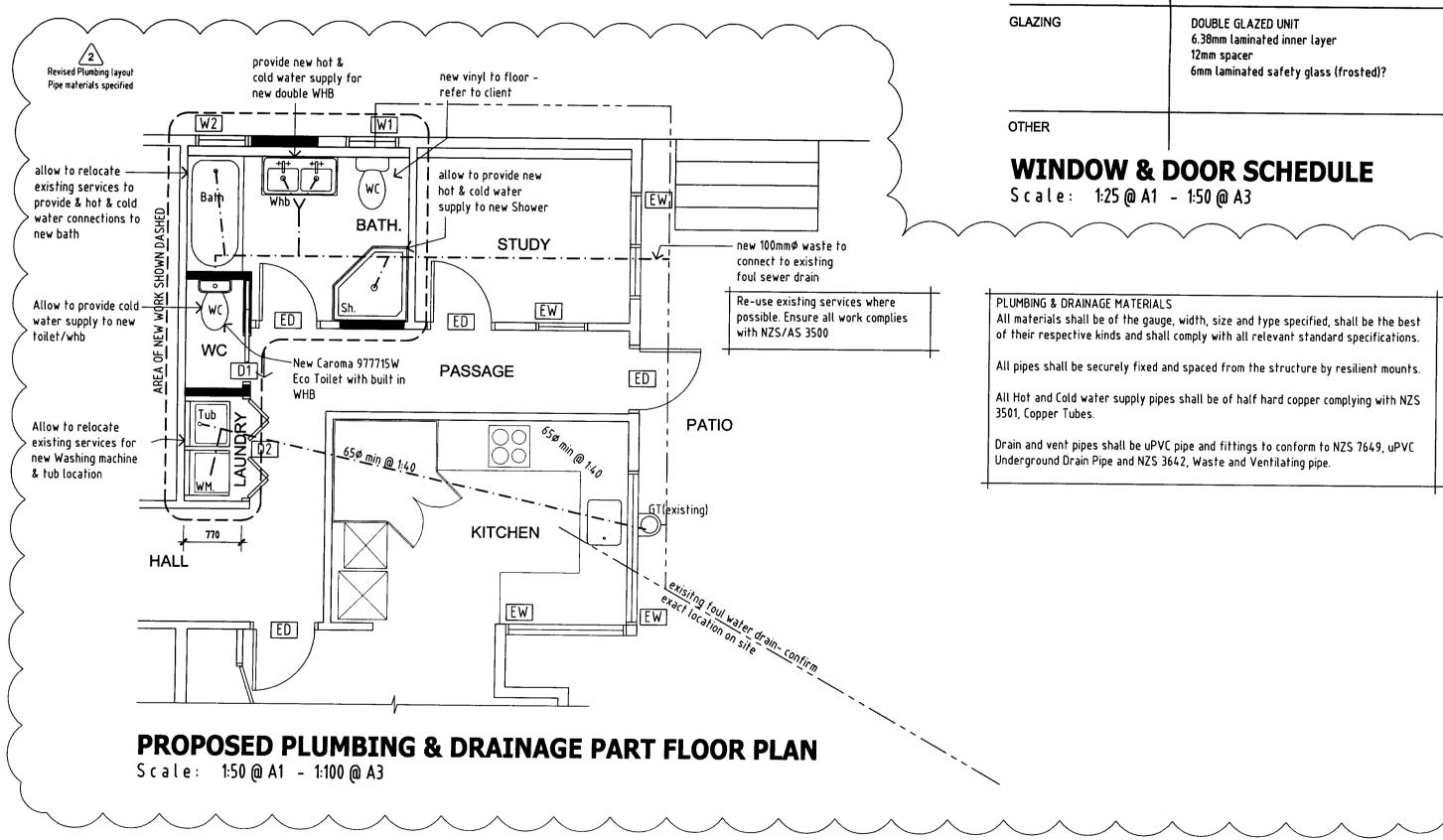
Name:

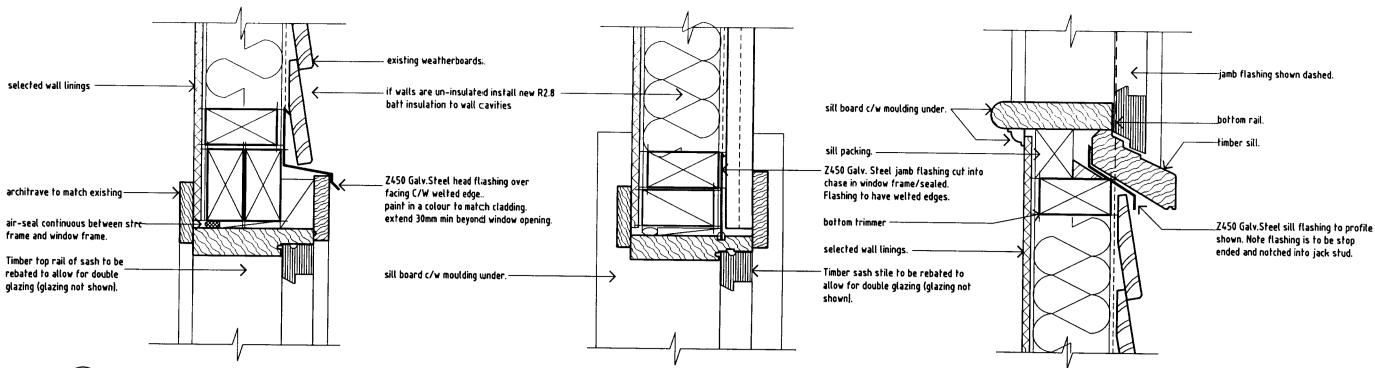
Position: AUTHORISED OFFICER Date: 21 January 2009



# PROPOSED PART FLOOR PLAN

Scale: 1:25 @ A1 - 1:50 @ A3





Detail 01 Scale 1:5 -

BEVELBACK WEATHERBOARDS: timber window - head.

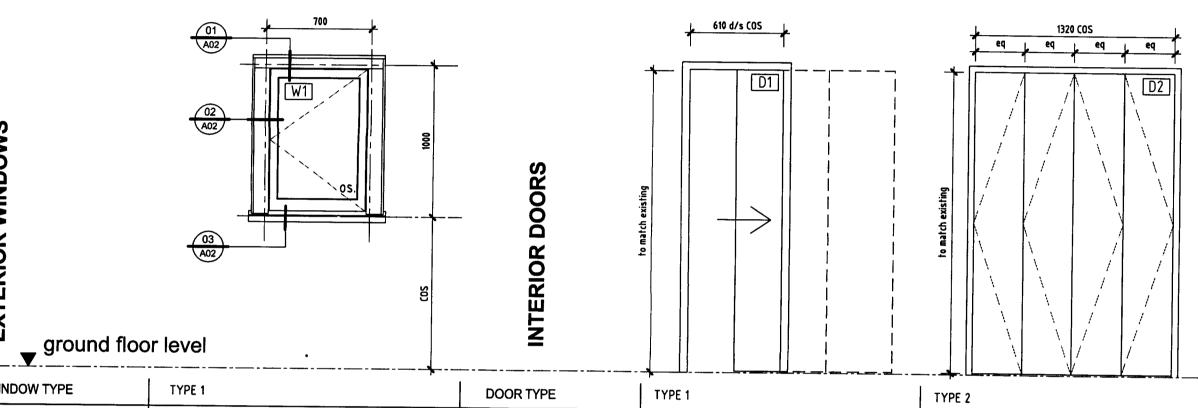
Detail 02 Scale 1:5 BEVELBACK WEATHERBOARDS: timber window - jamb.

Detail 03 Scale 1:5 -

BEVELBACK WEATHERBOARDS: timber window - sill.

NOTE CONFIRM FINAL DIMENSIONS OF FLASHINGS WITH

CONTRACTOR BEFORE COMMENCING MANUFACTURE. WINDOWS TO COMPLY TO WANZ INSTALLATIONS DETAILS



WINDOW TYPE	TYPE 1	DOOR TYPE	TYPE 1	TYPE 2
WINDOW NUMBER	W1 W2	DOOR NUMBER	D1	D2
FABRICATION	Timber framed window	FABRICATION	Hollow core Timber door & frame - paint finish	MDF timber joinery
GLAZING	DOUBLE GLAZED UNIT 6.38mm laminated inner layer 12mm spacer 6mm laminated safety glass (frosted)?	PLATES & LEVERS L.OCKS DOOR STOP COAT HOOK	Refer to client	Refer to client
OTHER		OTHER		

1. All work is to comply with the NZBC 1992, and any subsequent amendments, and to the satisfaction of the territorial authority. 2. Confirm all setout dimensions on site before commencing construction. 3. All trades shall visit site and make themselves fully conversant with all conditions concerning this scope of works and in in particular to ascertain the full extent and nature of the works 4. Trades are to allow for scaffolding and any other equipment or necessary to carry out the works

**GENERAL NOTES** 

AFFL = above finished floor level. FCL = finished ceiling level. FFL = finished floor level. FGL = finished ground level. COS = confirm this dimension on site.

C/W = complete with. Indicates timber framed walls (existing).

====== Indicates timber framed walls (existing) to be demolished Indicates timber framed walls (new). All new internal & external walls typically 90 x 45 H1.2 treated timber framed

#### Note check height of timber framed wall against table 8.4 NZS 3604:1999 & adjust accordingly.

wall, with studs at 400ctrs.

**PLUMBING & DRAINAGE** dp = downpipe Tub = laundry tub WC = toilet
Whb = wash hand basin hwc = hot water cylinde Sh = shower tv = terminal vent

New 110mm Ø foul water drain (FS Drain). Allow to connect to existing fs drain. New branch foul water drains (BFWD) connected to fixtures to diameter shown. New 110mm dia Surface water drain (SW Drain). Allow to

connect into existing surface water drain. **FIXTURE DISCHARGE UNITS** Min pipe Ø F.Unit rating. ratio (1:40) / pipe Ø 40Ø 1:40 (4) 40Ø max D.U (4) shower: 40-50Ø 1:40 (2) 50Ø max D.U (8)

80-100Ø 1:40 (6) 65Ø max D.U (21) 80Ø max D.U (27) 40-50Ø 1:40 (5) washing machine: 40Ø 1:40 100Ø max D.U (182) 40Ø 1:40 dishwasher: wash hand basin: 40Ø 1:40 Note drain layout shown on this plan is in diagrammatic form, and indicates only approximate positions of new drains. Confirm on site final layout. All Plumbing and Drainage Work is to comply with the NZBC: 1992,

approved documents E1/AS1, G12/AS1, G13/AS1 & AS2, including any

Glazing Shall comply with NZS 4223.1999 parts 1 to 3

DUNEDIN CITY COUNCIL APPROVED BUILDING CONSENT DOCUMENTS

2008 2744

CONSENT



301 Stuart Street T: (03)477 8585 M: 027 4609417

JOB TITLE:

151 Victoria Road **Bathroom Renovations** 

DRAWING TITLE:

Proposed Electrical Plan Proposed Plumbing & Drainage Plan Door & Window Schedule

Window Details

0	DESIGN:	
0	DRAWN:	MSB
0	JOB NO:	
0	SCALE:	As Shown
o	DRAWING STATUS:	ISSUE STATUS:

TENDER

WORK.

INFORMATION CONSENT

08-12-2008

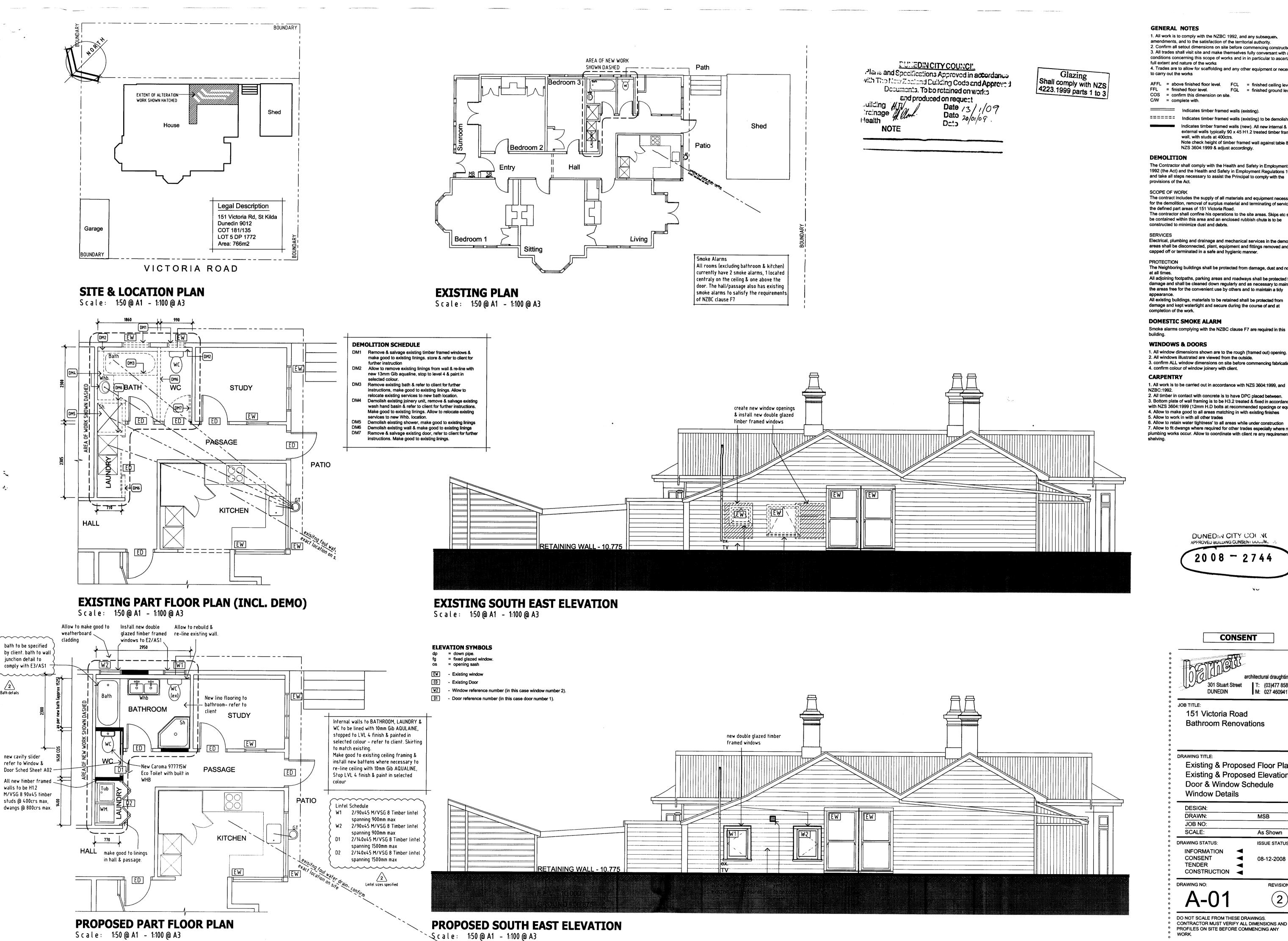
REVISION:

DRAWING NO:

CONSTRUCTION -



DO NOT SCALE FROM THESE DRAWINGS. CONTRACTOR MUST VERIFY ALL DIMENSIONS AND PROFILES ON SITE BEFORE COMMENCING ANY



· 🕶 🚅

bath to be specified

junction detail to

new cavity slider

walls to be H1.2

refer to Window &

2 Bath details

comply with E3/AS1

#### **GENERAL NOTES**

1. All work is to comply with the NZBC 1992, and any subsequen. amendments, and to the satisfaction of the territorial authority. 2. Confirm all setout dimensions on site before commencing constructs. 3. All trades shall visit site and make themselves fully conversant with all conditions concerning this scope of works and in in particular to ascertain the full extent and nature of the works 4. Trades are to allow for scaffolding and any other equipment or necessary

AFFL = above finished floor level. FCL = finished ceiling level. FFL = finished floor level. FGL = finished ground level. COS = confirm this dimension on site. C/W = complete with.

Indicates timber framed walls (existing).

Indicates timber framed walls (existing) to be demolished Indicates timber framed walls (new). All new internal & external walls typically 90 x 45 H1.2 treated timber framed wall, with studs at 400ctrs.

#### Note check height of timber framed wall against table 8.4 NZS 3604:1999 & adjust accordingly.

**DEMOLITION** The Contractor shall comply with the Health and Safety in Employment Act 1992 (the Act) and the Health and Safety in Employment Regulations 1995.

## provisions of the Act.

SCOPE OF WORK The contract includes the supply of all materials and equipment necessary for the demolition, removal of surplus material and terminating of services to the defined part areas of 151 Victoria Road.

The contractor shall confine his operations to the site areas. Skips etc shall be contained within this area and an enclosed rubbish chute is to be constructed to minimize dust and debris.

Electrical, plumbing and drainage and mechanical services in the demolition areas shall be disconnected, plant, equipment and fittings removed and left capped off or terminated in a safe and hygienic manner.

## The Neighboring buildings shall be protected from damage, dust and noise

All adjoining footpaths, parking areas and roadways shall be protected from damage and shall be cleaned down regularly and as necessary to maintain the areas free for the convenient use by others and to maintain a tidy

All existing buildings, materials to be retained shall be protected from damage and kept watertight and secure during the course of and at completion of the work.

#### DOMESTIC SMOKE ALARM

Smoke alarms complying with the NZBC clause F7 are required in this

## **WINDOWS & DOORS**

1. All window dimensions shown are to the rough (framed out) opening. 2. All windows illustrated are viewed from the outside. 3. confirm ALL window dimensions on site before commencing fabrication. 4. confirm colour of window joinery with client.

#### CARPENTRY

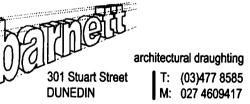
1. All work is to be carried out in accordance with NZS 3604:1999, and

2. All timber in contact with concrete is to have DPC placed between. 3. Bottom plate of wall framing is to be H3.2 treated & fixed in accordance with NZS 3604:1999 (12mm H.D bolts at recommended spacings or equal). 4. Allow to make good to all areas matching in with existing finishes 5. Allow to work in with all other trades

6. Allow to retain water tightness' to all areas while under construction 7. Allow to fit dwangs where required for other trades especially where new plumbing works occur. Allow to coordinate with client re any requirements for

> DUNED: N CITY COL. NC APPROVED BUILDING CONSENT DOCUME 2008 - 2744





151 Victoria Road Bathroom Renovations

Window Details

DRAWING TITLE: Existing & Proposed Floor Plans Existing & Proposed Elevations Door & Window Schedule

DESIGN:	
DRAWN:	MSB
JOB NO:	
SCALE:	As Shown
DRAWING STATUS:	ISSUE STATUS.

DRAWING STATUS: ISSUE STATUS INFORMATION CONSENT 08-12-2008 TENDER

DRAWING NO:

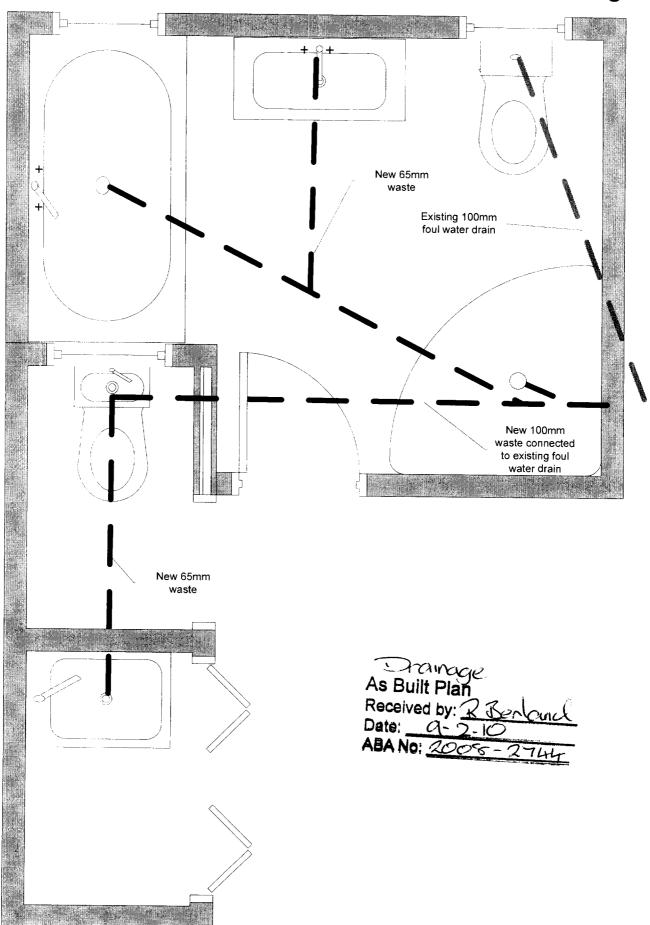
CONSTRUCTION

2

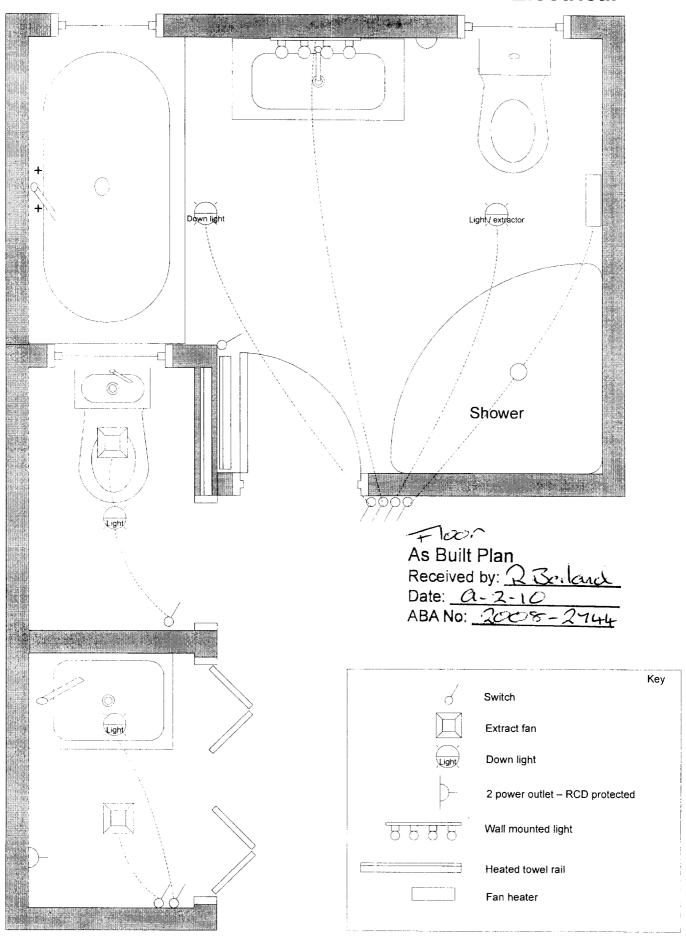
REVISION:

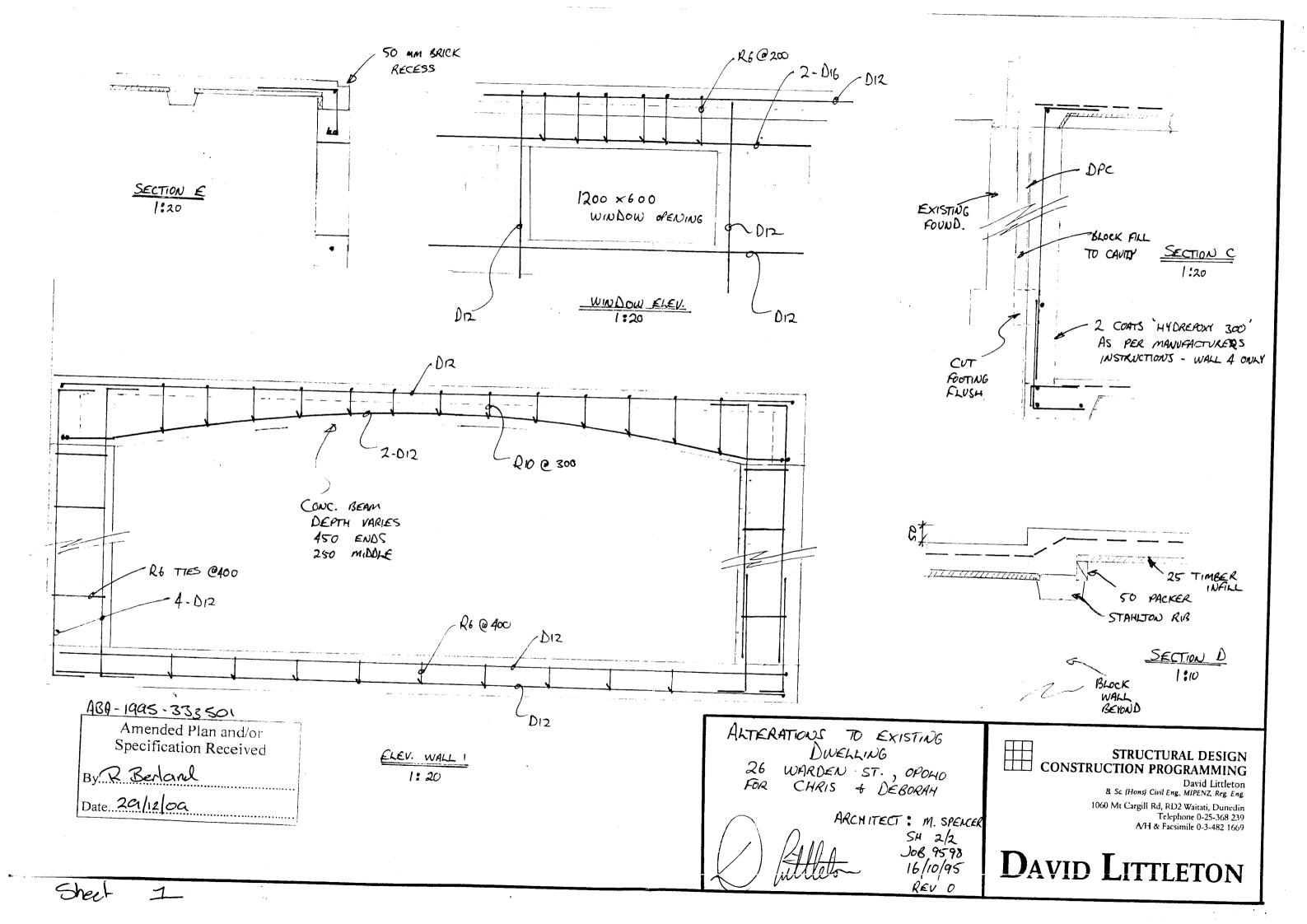
DO NOT SCALE FROM THESE DRAWINGS. CONTRACTOR MUST VERIFY ALL DIMENSIONS AND PROFILES ON SITE BEFORE COMMENCING ANY

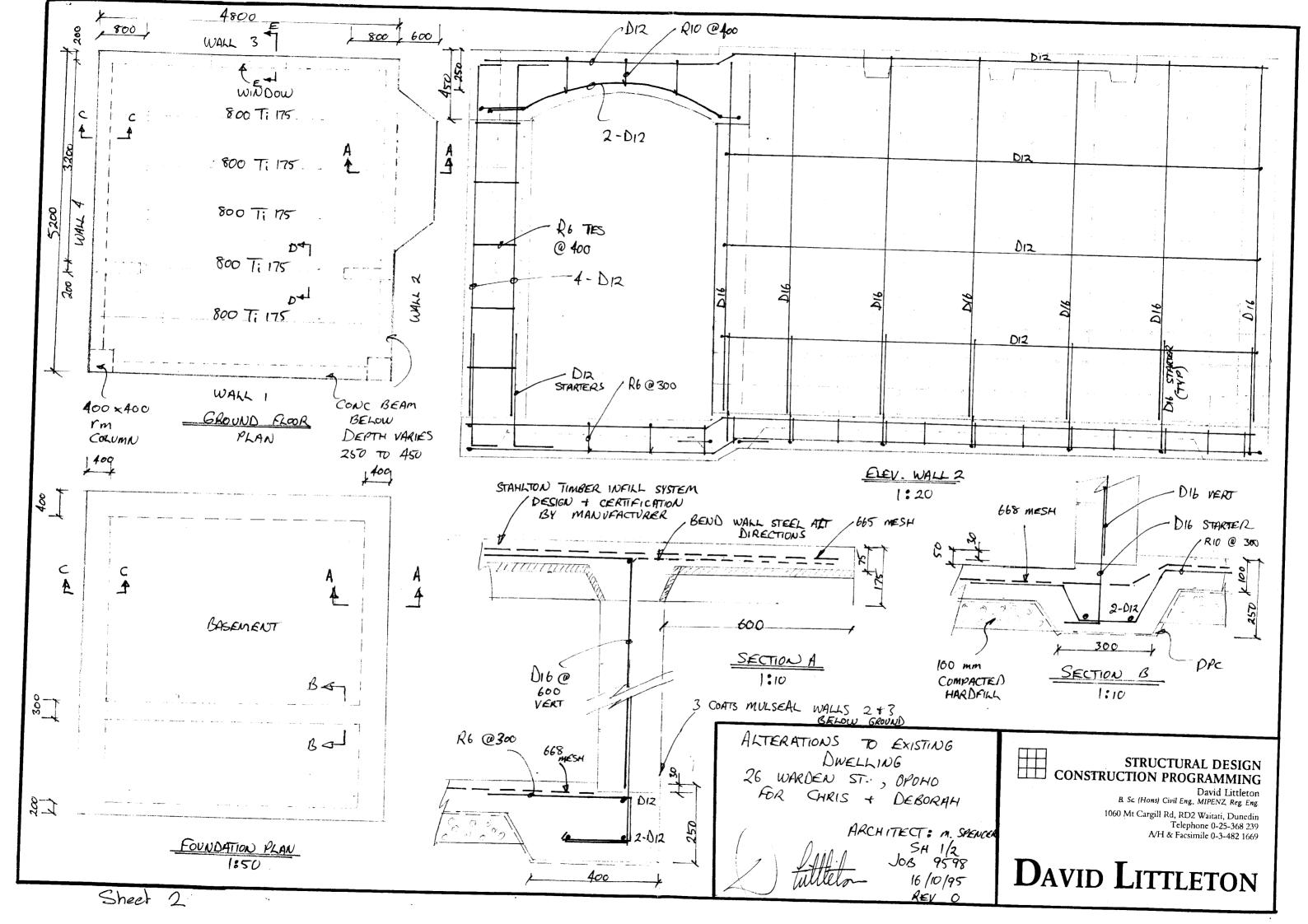
## **Drainage**



## **Electrical**









12 September 2023

Hamish Douglas Graeme McCaul 151 Victoria Road Dunedin 9012

Dear Sir/Madam

## RECEIPT OF NOTIFICATION OF EXEMPT BUILDING WORK CARRIED OUT UNDER SCHEDULE 1 OF THE BUILDING ACT 2004

**Property address:** 151 Victoria Road St Kilda

Property key: 5061359

**Description of exempt work** Demolish Chimney & Non-load bearing internal wall,

40m2 Timber Deck less than 1.5m above the ground

The Dunedin City Council (DCC) acknowledges receipt of the notification of the exempt building work and advises it will only be examined to ensure that it meets minimum documentation standards and the requirements of the Building Act 2004.

The DCC cannot make any representation or warrantee to the accuracy, completeness or reliability of the information contained in the documentation, nor determine whether the building work complies with the Building Act and Building Code.

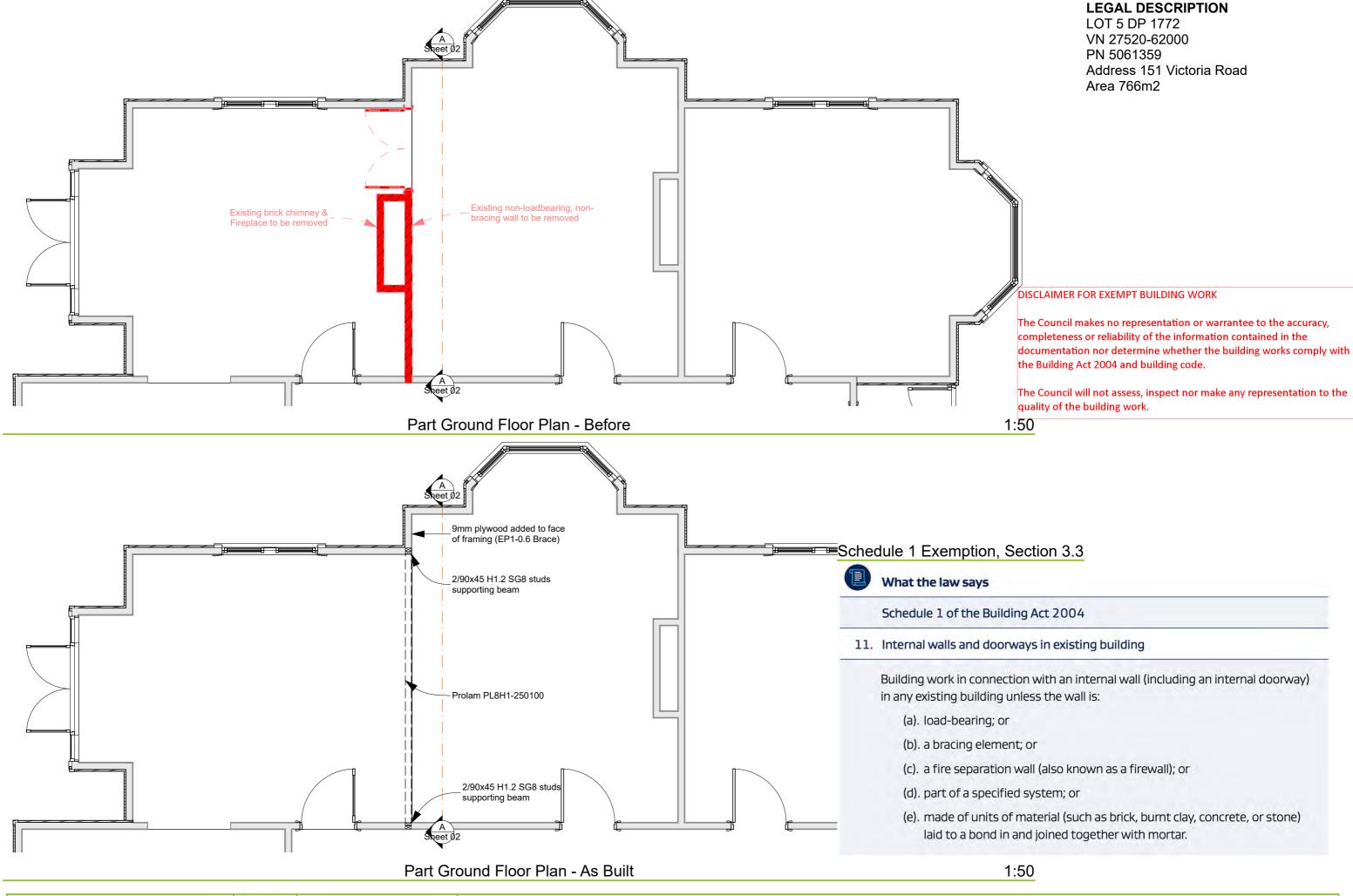
The DCC will not inspect the building work referred to nor make any representation to the quality of the building work.

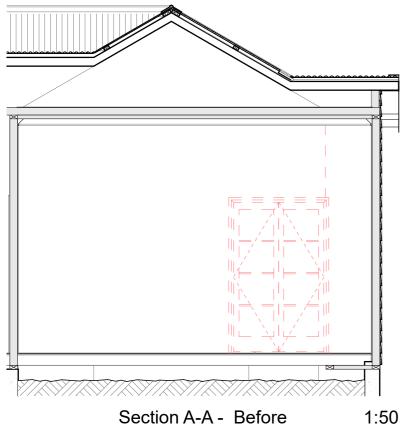
The DCC needs to collect personal information, such as name and contact details in order to contact you if required about your notification.

You have the right to ask for a copy of any personal information we hold about you, and to ask for it to be corrected if you think it is incorrect.

Building information, including plans, documents or reports, and the personal information you have provided, or that the DCC holds about you in respect of any application, notice, form or certificate under the Building Act, is held on a publicly available register. Under the Building Act this information can be made available on request.

Thank you **Building Services** 









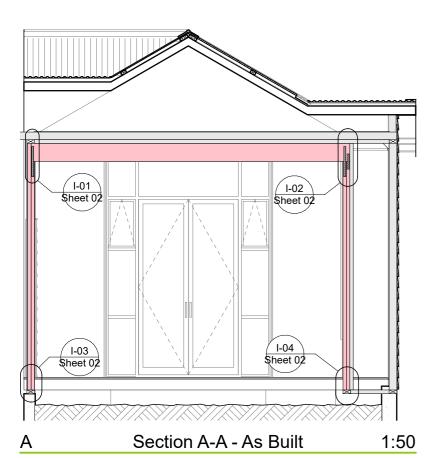


1:50

Stud to Beam Connection

I-02

Stud to Beam Connection





Stud to Foundation Connection



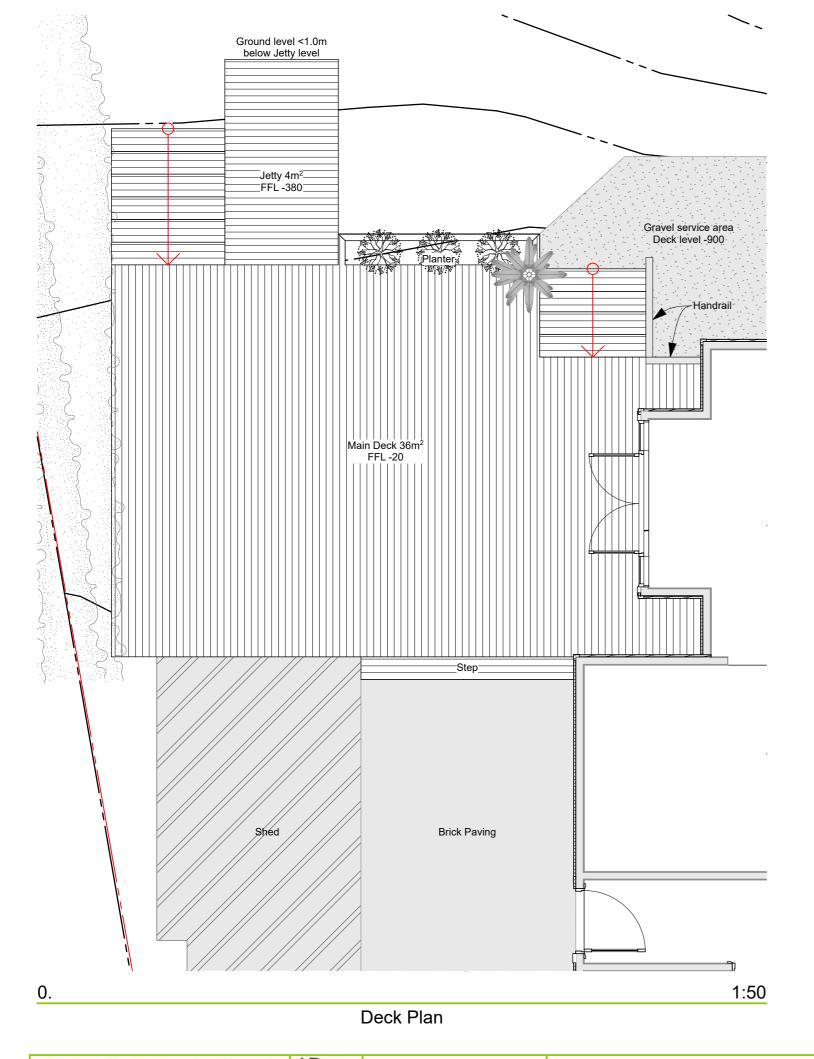
I-04 1:5 Stud to Foundation Connection

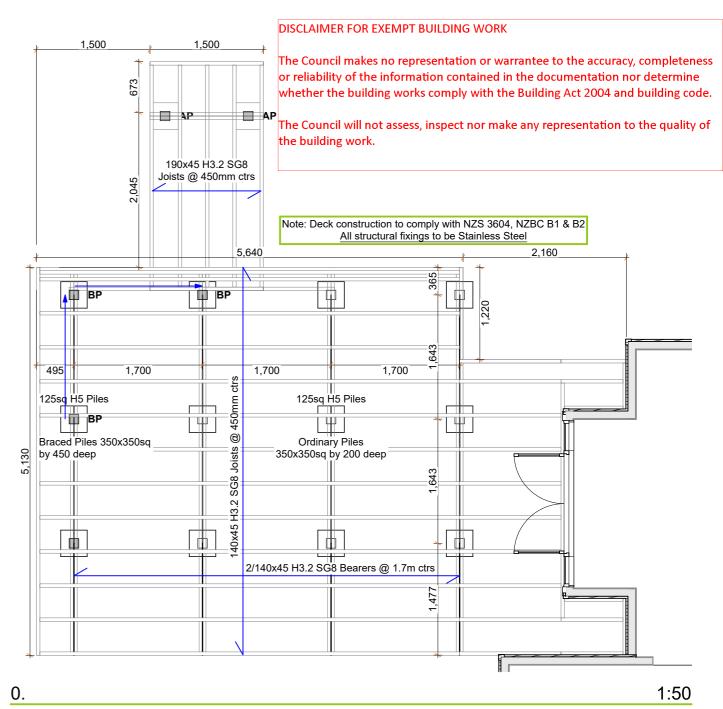
#### DISCLAIMER FOR EXEMPT BUILDING WORK

The Council makes no representation or warrantee to the accuracy, completeness or reliability of the information contained in the documentation nor determine whether the building works comply with the Building Act 2004 and building code.

The Council will not assess, inspect nor make any representation to the quality of the building work.







Deck Framing & Foundations

## Schedule 1 Exemption, Section 7.1



What the law says

Schedule 1 of the Building Act 2004

- 24. Decks, platforms, bridges, boardwalks, etc
  - 1. Building work in connection with a deck, platform, bridge, boardwalk, or the like from which it is not possible to fall more than 1.5 metres even if it collapses.

**EXEMPT WORK** 

Job Name: 151 Victoria Road Drawing: Deck Plan

Job No:2325 Sheet 03 of 3 Scale:1:50 @A3 Date:10/09/23

Do not scale Contractor to check all

Phone 03 474 2107 mail@archidesign.co.nz © ArchiDesign 2023

### Assessment of liquefaction hazards in the **Dunedin City district**

D. J. A. Barrell

P. J. Glassey B. Smith Lyttle

S. C. Cox

**GNS Science Consultancy Report 2014/068** 

May 2014



# Assessment of liquefaction hazards in the Dunedin City district

D. J. A. Barrell P. J. Glassey S. C. Cox B. Smith Lyttle

GNS Science Consultancy Report 2014/068 May 2014

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The data presented in this Report are available to GNS Science for other use from May 2014.

#### **BIBLIOGRAPHIC REFERENCE**

Barrell, D. J. A.; Glassey, P. J.; Cox, S.C.; Smith Lyttle, B. 2014. Assessment of liquefaction hazards in the Dunedin City district, *GNS Science Consultancy Report* 2014/068. 66 p.

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#### **EXECUTIVE SUMMARY**

The susceptibility of land to earthquake-induced liquefaction has been assessed for the Dunedin City territorial authority area (Dunedin district). Liquefaction is a process whereby earthquake shaking causes poorly consolidated, groundwater-saturated, geological materials to lose strength and stiffness, due to increased groundwater pore pressure in the material. Common effects of the liquefaction of near-surface sediments are the expulsion of water, sand and silt from the ground, and associated cracking and subsidence of the ground. Liquefaction can cause severe damage to the built environment, including the breakage of foundations, differential settlement of buildings, fracturing of pipes and the buoyant rise of light buried structures such as tanks. The closely allied phenomenon of lateral spreading involves fissuring and horizontal movement and relaxation of ground close to banks, such as the edge of a stream channel.

Drawing upon methodologies developed for liquefaction hazard evaluation in Canterbury following the 2010–2011 earthquakes, the liquefaction assessment reported here comprised an office-based assessment utilising existing available information. The information sources include geological maps, landform and soil maps, topographic information from maps and lidar surveys, geological information from bore hole records, and measurements of depths to groundwater.

There is insufficient information in the Dunedin district to undertake detailed liquefaction hazard classification analogous to the Technical Category zonation done for parts of the Christchurch urban area following the 2010–2011 Canterbury earthquakes. Instead, the approach used here is to differentiate areas underlain by rock or firm sediments that are too strong to experience liquefaction, from areas underlain by weak geological materials that may be susceptible to liquefaction if strong shaking were to occur. In order to liquefy, the materials need to be poorly consolidated, fine-grained (between coarse silt and fine sand) and water-saturated. Areas within the Dunedin district identified as being potentially susceptible to liquefaction are confined to low-lying places, such as valley floors or coastal plains that are likely, at least in part, to be underlain by soft fine-grained sediments where the groundwater table is less than about 6 m deep.

From the information that is available, a three-fold classification of liquefaction susceptibility has been developed:

- **Domain A**. The ground is predominantly underlain by rock or firm sediments. There is little or no likelihood of damaging liquefaction occurring;
- Domain B. The ground is predominantly underlain by poorly consolidated river or stream sediments with a shallow groundwater table. There is considered to be a low to moderate likelihood of liquefaction-susceptible materials being present in some parts of the areas classified as Domain B;
- **Domain C**. The ground is predominantly underlain by poorly consolidated marine or estuarine sediments with a shallow groundwater table. There is considered to be a moderate to high likelihood of liquefaction-susceptible materials being present in some parts of the areas classified as Domain C.

The liquefaction susceptibility map has been compiled in a Geographic Information System (GIS) and the GIS dataset accompanies the report. By area, more than 90% of the district is classified as Domain A. Domains B and C, represent 1.4% and 4.9% of the district respectively, Domains B and C are regarded as 'liquefaction awareness areas'. They do not represent specific hazard zones, but rather highlight areas where there may potentially be a liquefaction hazard that may need further evaluation, in regard to existing or future infrastructure or development. Areas of land classified as Domain B include parts of the Mosgiel-North Taieri and Strath Taieri areas, while land classified as Domain C includes the southwestern part of the Taieri Plain, low-lying land in South Dunedin and adjacent to Otago Harbour, and low-lying coastal areas. Information in this report is intended to provide a general indication of which areas of the district are potentially subject to liquefaction hazards. A desirable future goal would be to acquire more information on how much potentially liquefiable ground is actually present in areas mapped as Domains B and C.

#### 1.0 INTRODUCTION

#### 1.1 BACKGROUND

Earthquake-induced liquefaction is a potential hazard in some parts of New Zealand. Liquefaction results from the sudden loss of shear stiffness and strength of soils caused by development of excess pore pressure by cyclic shaking during an earthquake. Liquefaction causes ground settlement, lateral spreading, loss of bearing capacity, buoyant rise of buried structures and flow failures. Liquefaction damage occurred to unprecedented levels in Christchurch during the earthquakes of 2010–2011 (Brackley 2012). Media publicity and readily accessible images have resulted in most New Zealanders now having an awareness of the nature and effects of liquefaction.

The Otago Regional Council (ORC) contracted GNS Science to assess liquefaction hazards in the Dunedin City territorial authority area (Dunedin district), and delineate areas that may be susceptible to ground damage as a result of liquefaction, and the closely allied phenomenon of lateral spreading. This report presents the results of that assessment. The information in this report is intended to assist ORC in providing the Dunedin City Council (DCC) with advice on liquefaction and lateral spreading hazards, as part of the formulation of the DCC second generation district plan (2GP), which is expected to be released for public submission during 2014.

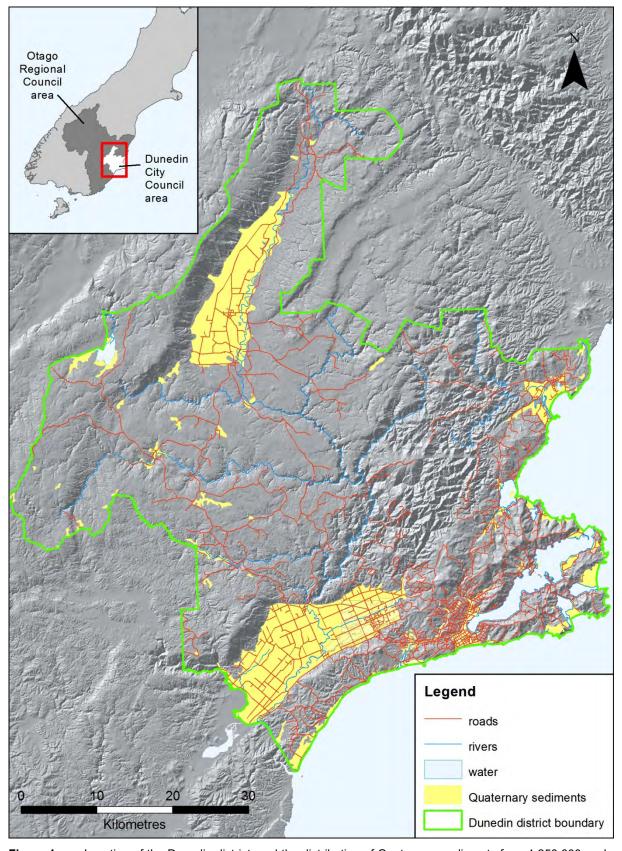
#### 1.2 Scope of work undertaken

The work upon which this report is based included:

- 1. Collating and reviewing information relevant to liquefaction and lateral spreading in the Dunedin district (Figure 1);
- Using this information to identify and map areas that may be susceptible to damaging effects of earthquake-induced liquefaction and related phenomena (e.g., lateral spreading) from land where little, if any, liquefaction damage is likely to occur, using methods similar to those applied in eastern Canterbury following the 2010–2011 earthquake sequence (Brackley 2012);
- 3. Producing maps and an explanatory report documenting the work that was undertaken.

The report presents a geologically-based assessment of information that is intended to create awareness of where in the district liquefaction-related hazards may be present. The mapping was office-based, drawing upon readily available existing information, and no new site investigations were undertaken.

The liquefaction susceptibility domains delineated in this report are intended to highlight areas where liquefaction hazard may warrant further scrutiny for future planning and development activities. The information is, for the most part, based on generalised assessments and broad-scale inferences, rather than detailed investigations, and should not be used in isolation for any purposes that require site-specific information.



**Figure 1** Location of the Dunedin district, and the distribution of Quaternary sediments from 1:250,000-scale geological maps (Bishop & Turnbull 1996; Forsyth 2001). Only those areas underlain by Quaternary sediments have any potential for the occurrence of liquefaction, and then only if the sediments are of a certain type and groundwater is close to the surface.

#### 1.3 DATA COLLATION AND REVIEW

Readily available information relevant to determining areas susceptible to liquefaction and lateral spreading have been collated and reviewed. Such information includes:

- Earthquake hazard in Dunedin (McCahon et al., 1993);
- Review of seismic risk in the Otago region (Murashev & Davey 2005);
- Otago Alluvial Fans Project (Grindley et al., 2009); Otago Alluvial Fans Project: supplementary information (Barrell et al., 2009); Alluvial fan hazards of the North Taieri Plain (Barrell 2014);
- ORC groundwater information for the Taieri Plain, Strath Taieri and South Dunedin, from sources including Irricon & Royds Consulting (1994), Irricon & ESR (1997), Hanson (1997), Irricon & MWH (2004); Irricon (2005), Rekker & Houlbrooke (2010), Rekker (2012) and Fordyce (2013) (Figure 2);
- Soil maps at 1:25,000 scale (growRuralDunedin);
- High-resolution digital elevation models generated from lidar ('laser radar') surveys.
   Lidar data for the Otago coastal zone and the Taieri Plain was supplied by ORC, and the main urban area of Dunedin City was supplied by DCC (Figure 2);
- Bore hole record datasets held by GNS Science and ORC (Figure 3);
- Geological maps at 1:250,000 scale for the Dunedin area (Bishop & Turnbull 1996) and Waitaki area (Forsyth 2001), comprising part of the GNS Science nation-wide 'QMAP' geological map series (Quarter-Million-scale mAP). One cm on these maps represents 2.5 km on the ground, and they are therefore highly generalised;
- Geological maps at more detailed scales (Figure 3), including the greater Dunedin area (Benson 1968; 1:50,000), southwest Dunedin urban area (McKellar 1990; 1:25,000), the Palmerston area (McMillan 1999) and the greater Dunedin urban area (GNS Science, unpublished; 1:50 000);
- Geomorphological maps of the coastal Otago area at 1:200,000 scale (Barrell et al., 1998) and the Taieri Plain at 1:100,000 scale (Barrell et al., 1999);
- The eastern Canterbury liquefaction assessment report (Brackley, 2012).

#### 1.4 REPORT LAYOUT

An outline of the geological setting of the Dunedin district is presented in Section 2. Section 3 describes the general nature of liquefaction and factors influencing its occurrence. The approach and methods used for assessing liquefaction susceptibility are set out in Section 4, while Section 5 presents a summary description of the mapped liquefaction awareness areas. Section 6 contains discussion of the findings of the assessment and uses of the information, while conclusions are set out in Section 7. Appendix 1 provides explanation of some of the technical terms used in the report. Selected diagrams from previous reports are collated in Appendix 2. Detailed descriptions of the criteria used for mapping liquefaction susceptibility domains at specific locations in the district, and detailed location maps, are contained in Appendix 3. The GIS dataset of the mapped liquefaction susceptibility domains is described in Appendix 4.

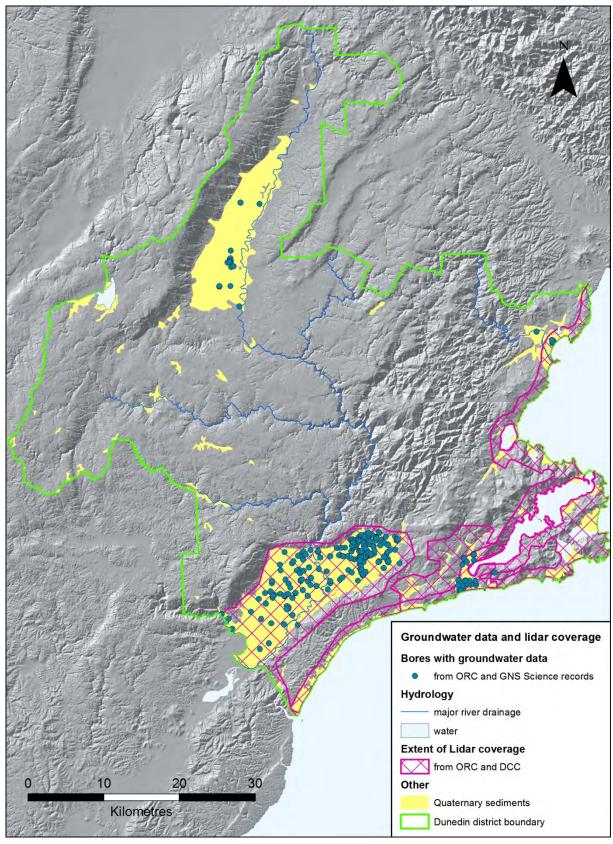


Figure 2 Extent of lidar coverage and the locations of bores for which there is groundwater level information.

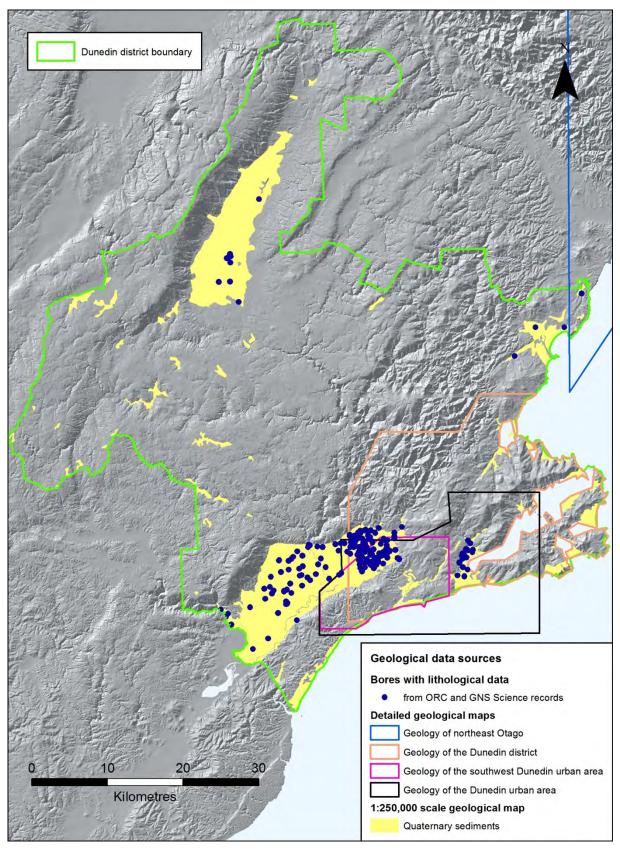


Figure 3 Extent of detailed geological maps and locations of bores for which there is lithological information

#### 2.0 GEOLOGICAL SETTING

#### 2.1 GEOLOGICAL HISTORY

The geological sequence of the Dunedin district comprises, from oldest to youngest, three main categories; basement rock, cover rocks and young poorly consolidated deposits.

The oldest underlying rock (basement rock) consists of schist. The schist is derived from sandstone and mudstone sedimentary rocks of Triassic age (between 250 and 200 million years old) that underwent metamorphism to schist between the Middle Jurassic to Early Cretaceous (between 175 and 100 million years ago).

Following an episode of uplift, faulting and erosion, which resulted in a flattish land surface developing on the schist rock, a blanket of younger sedimentary rocks (cover rocks) was deposited. The cover rock sequence typically has non-marine quartz sandstone and conglomerate in its lower part, overlain by marine mudstones and sandstones, ranging in age from Late Cretaceous to Middle Miocene (between 100 and about 15 million years old). The upper part of the cover rock sequence comprises volcanic rocks, typically of Middle Miocene age. The largest volcanic centre (Dunedin Volcano) was located in the general area that is now the Dunedin urban area, Otago Harbour and Otago Peninsula, but there were numerous other smaller eruptive centres scattered around the district. The volcanic activity took place between about 16 and 10 million years ago (Bishop & Turnbull 1996; Forsyth 2001).

Subsequent uplift and erosion has removed much of the cover rock sequence, and almost all of the original form of the volcanoes. As a result, extensive areas of the underlying schist rock are now exposed across much of the central to western parts of the district. Earth movements involving faulting and folding have helped to produce an array of ranges and basins. The Taieri Plain lies in one such basin, and the Strath Taieri Plain lies in another. The rivers have cut gorges across the up-faulted blocks as the landscape developed, the lower gorge of the Taieri River between Henley and Taieri Mouth being a good example. As a result of these and other processes, poorly consolidated sediments have accumulated in many of the valleys and basins. The general distribution of these sediments, of Quaternary age (less than 2.6 million years old) is shown in Figure 1. These sediments include river sands and gravels, beach and dune sands close to the coast, peats within swamps, as well as sands and muds beneath inlets and estuaries. Some of these sediments, in particular circumstances, are potentially susceptible to liquefaction.

#### 2.2 LANDSCAPE EVOLUTION PROCESSES AND LANDFORMS

A major feature of the Quaternary Period has been a cycle of large-scale natural global shifts in climate, with periods of generally cool conditions (glaciations, or 'ice ages') separated by periods of warmer climate ('interglaciations'), such as that existing today. On average, each cycle is about 100,000 years long. At the latitude of New Zealand during an ice age, ice was not everywhere, but rather the climate cooled enough to allow extensive glaciers to form in high mountain areas. Ice ages have, however, had a major impact on coastal Otago. Sea level is linked to glaciation/interglaciation cycles. During ice ages, so much water became locked up in ice sheets that formed on Europe and North America that the level of the sea dropped. At the peak of the most recent ice age, about 20,000 years ago, sea level was at least 120 m lower than it is now. As Northern Hemisphere ice sheets melted, sea level rose,

stabilizing at its present level about 7000 years ago. The last time the sea was as high as it is now was during the last interglacial period, about 125,000 years ago.

At ice age maxima, the Otago coast lay between 30 and 35 km seaward of where it is today, and an extensive plain would have existed on what is now the continental shelf. Today's estuaries, inlets and harbours were river valleys, and Otago Peninsula was a range of hills flanked by valleys and plains. Because the continental shelf off the modern Otago coast is narrower and steeper than in many other parts of New Zealand, coastal Otago's rivers and streams had relatively steep gradients during ice ages. The subsequent rise of sea level during the transition to interglacial conditions drowned the lower parts of the Otago river and stream valleys. That is why the Otago coast is indented by bays and estuaries. The important geological consequence of these processes is that over the past 7000 years or so since present sea level was attained, soft, saturated sands and silts have accumulated in these drowned river and stream valleys, and these sediments are particularly susceptible to liquefaction. The heavy sediment loads of the larger rivers have largely filled in the drowned lower reaches of their valleys, producing low-lying plains at close to sea level. A good example is the Taieri Plain, which 7000 years ago contained an extensive inlet of the sea, almost 30 m deep at Henley, and extending south past Waihola, out to Berwick and Outram, and north towards Mosgiel (Barrell et al., 1999; Litchfield et al., 2002). Lakes Waihola and Waipori are remnants of this inlet and the lower reaches of the Taieri and Waipori rivers remain tidal, with a twice-daily reversal of water flow on the rising tide. The coastal plain of the Waikouaiti River marks an extensively infilled former inlet of the sea, and the river remains tidal upstream to State Highway 1. In contrast, Kaikorai Lagoon is much less filled in, highlighting that Kaikorai Stream carries relatively little sediment compared to the larger rivers. The wide bays and inlets along the coast are enclosed by sand barriers or spits, inside of which extensive sand plains have accumulated. A good example of a barrier is the St Clair-St Kilda dune belt, inside of which an extensive sand/mud flat has accumulated at the head of Otago Harbour, forming the South Dunedin plain. All of these low-lying coastal landforms, as well as the beds of all the bays, estuaries and harbours, are underlain by soft, wet, sediments that may be susceptible to liquefaction.

Farther inland, the floors of most valleys and basins are underlain by river and stream sediments. These can be divided into river alluvium, laid down by the main rivers that occupy the valleys or basins, and fan alluvium, that is deposited, commonly in overlapping aprons, by the tributary streams that drain to the river. The alluvial fans built by the tributary streams tend to have relatively steep gradients, and fan alluvium generally consists of angular gravel in a silty matrix. In contrast, river alluvium generally consists of rounded gravel, with pockets of sand or silt. In particularly low-gradient river systems, such as the coastal reaches of the Waikouaiti and Taieri rivers, the alluvium may consist predominantly of sand or silt. Gravelly sediments are generally not liquefiable, but sand- or silt-dominated sediments are. There is therefore little liquefaction hazard associated with alluvial fans, but there may be potential liquefaction hazard in the valleys of low-gradient rivers.

There will be localised exceptions to these generalisations. Alluvial fan sediments may include sand-filled channels, though these are likely to be narrow and of localised extent. Another consideration is that the alluvial fan sediments reflect the materials in their source catchments. In some instances, where the catchments contain abundant sandy or silty material, the fans will consist of those materials.

#### 2.3 SEISMICITY

Seismicity is an essential consideration, because strong earthquake shaking is necessary for the occurrence of liquefaction. Historically, central to eastern Otago has had a very low level of nearby seismicity, with very few earthquakes centred beneath the area (Stirling et al., 2012). However, there are several known faults in the general area that show evidence for having moved in recent prehistoric times, and woud have generated large earthquakes.

A distinction may be made between 'distant' and 'nearby' seismicity. Distant seismicity relates to large earthquakes that occur on faults located as much as several hundred kilometres away from an observer, but whose shaking is felt over a wide area, with less intensity the farther one is from the fault. Nearby seismicity relates to earthquakes on faults located within a few tens of kilometres of an observer, and it is these earthquakes that, if sufficiently large, are the most damaging.

Recent examples of distant seismicity felt in the Dunedin district are the 2003 Fiordland Earthquake and the 2010 Darfield Earthquake, centred in Canterbury. These earthquakes produced ground shaking that was noticed by many people in the Dunedin area, but caused little if any damage.

The only significantly damaging nearby earthquake recorded in the Dunedin district was the magnitude (M) 4.9 1974 Dunedin Earthquake, which is reviewed in detail by Murashev & Davey (2005). As has been highlighted by the 2010–2011 Canterbury earthquake sequence, damaging earthquakes can occur on faults that lie nearby, but deep underground, and whose existence is not known prior to an earthquake being generated by them. The February 2011 Christchurch Earthquake was an example of this, as was the 1974 Dunedin Earthquake, which although a relatively small earthquake, had a hypocentre (Appendix 1) at shallow depth and epicentre close to the city, and consequently caused notable shaking damage.

There are several faults identified in the Dunedin district that are regarded as active (i.e., have moved within the past 125,000 years or so). These faults have been identified because their past movements have been large enough to break the ground surface, offsetting the near-surface rock layers or deposits. The best known of these faults is the Akatore Fault, southwest of Dunedin, which has generated at least two large, ground surface rupturing eathquakes in recent millennia, one about 3800 years ago, and another about 1100 years ago (Litchfield & Norris 2000). These earthquakes were likely to have been about magnitude 7, and an estimate of their likely shaking effects is presented in Map 13 of Murashev & Davey (2005), which is reproduced in Appendix 2 of this report.

Such an earthquake on the Akatore Fault or other nearby known or unknown faults would produce strong shaking in much of the Dunedin district, and would likely cause significant ground damge in liquefaction-susceptible areas. Moderate earthquakes on known or as yet unknown faults, could also produce sufficient shaking to cause localised liquefaction. Recent estimates of the future probability of different intensities of ground shaking relevant to the Dunedin district, from all earthquake sources, are provided by Murashev & Davey (2005) and Stirling et al. (2012).

#### 3.0 THE OCCURRENCE OF LIQUEFACTION

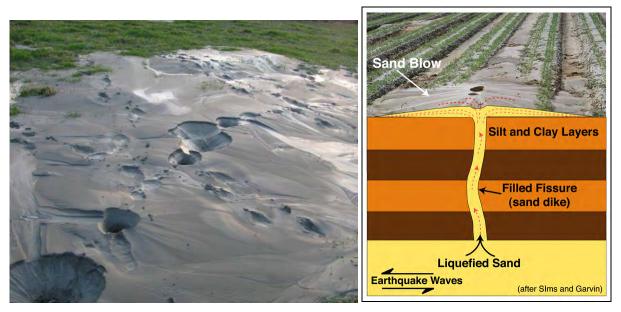
#### 3.1 THE NATURE OF LIQUEFACTION AND LATERAL SPREADING

The American Society of Civil Engineers (1978) defines liquefaction as "the act or process of transforming cohesionless soils from a solid state to a liquefied state as a result of increased pore pressure and reduced effective stress". Many people will have generated their own liquefaction when visiting sandy beaches at low tide – by standing on wet sand and wriggling one's feet, the sand becomes almost liquid and one sinks into it. But if one attempts this on a stony beach, nothing much happens. This illustrates a key requirement for the occurrence of liquefaction; that the material is capable of being liquefied. Generally, three criteria need to be met for sediment to be susceptible to liquefaction:

- Young (e.g., less than 10,000 years) and loose
- Fine-grained (between coarse silt and fine sand) and cohesionless
- Water-saturated.

Strong earthquake shaking is likely to induce liquefaction in susceptible sediments. A typical consequence of liquefaction is the ejection from the ground of liquefied sediment, usually along with copious amounts of groundwater. Moderate amounts of liquefaction may produce sand boils or sand 'blows', like little volcanoes (Figure 4). Severe liquefaction may result in the ejection of huge volumes of water and sediment, resulting in the ground surface being buried by vast sheets of sand and silt, sometimes as much as half a metre thick (Figure 5).

The ejection of material commonly results in differential sagging (subsidence) of the ground surface, and because liquefaction significantly reduces the strength of the soil and its supportive ability, it is likely to cause heavy structures to sink into the ground and any light or buoyant structures, particularly buried pipes or tanks, to 'float' (Figure 6).



**Figure 4** Illustrations of liquefaction processes. (a) Sand boils from the ejection of liquefied sediment following the Christchurch earthquake of 2011. Photo: R.D. Beetham, GNS Science. (b) Schematic illustration of how such liquefied materials may be generated and deposited.





**Figure 5** Extensive and severe liquefaction, Christchurch 2011. (a) Significant amounts (0.5 m thick) of sediment were ejected to the surface. (b) The liquefaction process also involved the ejection of large volumes of water which caused flooding. Photos: R.D. Beetham, GNS Science.



**Figure 6** Fuel tanks have buoyed up through the ground surface as a result of liquefaction of the enclosing sediment, .Christchurch area, February 2011. Photo: R.D. Beetham, GNS Science.

The 2010–2011 Canterbury earthquake sequence highlighted that places which are underlain by soft, young, sediments deposited across areas that were drowned by the post-glacial rise of sea level are particularly susceptible to liquefaction (Brackley 2012; Orense et al., 2012).

Lateral spreading is a phenomenon also resulting from liquefaction of underlying sediments. Lateral spreading commonly occurs on level or sloping ground close to the edge of a bank, such as the side of a stream channel, but can also affect human-made features such as embankments (Figure 7). Liquefaction-induced loss of strength in the subsurface causes the ground to move almost horizontally toward a free-face (such as a river bank or edge of an embankment). Hence its occurrence is usually associated with coastlines, lakeshores, river channels, and the margins of reclaimed ground or raised embankments (Figure 8).

Ground deformation associated with liquefaction can take various forms and can lead to excessive and non-uniform vertical displacements (settlement) and horizontal displacements (lateral spreading), commonly resulting in large cracks and fissures in the ground (Cubrinovski & McCahon, 2011) and can cause major damage to structures, pavements and buried services (Figure 9). Collectively, liquefaction-induced flooding, differential ground settlement, and the cracking and displacement of ground resulting from lateral spreading, can have severe adverse economic and societal impacts, and may take considerable time and resources to rectify, as illustrated in the 2010–2011 Canterbury earthquake sequence.