# PROVINCIAL GEOTECHNICAL PTY. LTD.

CONSULTING GEOLOGISTS

A.B.N. 88 090 400 114



## SITE INSPECTION AND REVIEW OF LAND CAPABILITY ASSESSMENT

| | |
|---|---|
| Site Address: | Bacchus Marsh Grammar<br>155 Staughton Vale Road<br>STAUGHTON VALE, VICTORIA |
| Client: | BACCHUS MARSH GRAMMAR<br>PO BOX 214<br>BACCHUS MARSH VIC 3340 |
| Date: | v1. 17th November 2025<br>v2. 2nd December 2025<br>v3. 17th December 2025 |
| File No: | 24320I |
| Author: | Andrew P Redman |
| Contact: | admin@pgvic.com.au |



**Re: Bacchus Marsh Grammar, 155 Staughton Vale Road, Staughton Vale.**

As requested, I have visited the above site to inspect the existing septic system infrastructure in respect to a potential increase in the sites hydraulic load.

I have also reviewed the supplied documentation from the installers which includes a report from Taylex Tanks dated: 22nd November 2016 and an installation plan by the contracted plumber (copies attached).

I have also reviewed our original LCA report that we prepared for the existing site (Reference No: 6997G dated: 16th August 2016) and a subsequent report for additions to the system in May 2022 (Ref: 19444D Dated: 18th May 2022).

I understand the current hydraulic load results from the following: - 150 students plus 15 staff at any one time apart from 16 days per year where up to 450 students and 35 staff are on site. At 20L/person that equates to a daily hydraulic load of 3300L/day and up to 9,400L/day on peak days (470 students and staff).

I am advised that the new proposed loading is to potentially be as follows:-

Regular day: Maximum 450 students & 35 staff = 485 x 20L/day = 9,700L/day

Event day (16 per year): 750 students & 40 staff = 790 x 20L/day = 15,800L/day

Having reviewed all of the available documentation and also having inspected the existing land application area and investigated additional adjacent available LAA land I am satisfied that the proposed increase in site patronage which will naturally increase the hydraulic load on the septic system will not adversely impact the ability of the site to safely dispose of the excess wastewater.

I note the LAA installed measures approximately 5,000m$^2$. This field is substantially larger than what was originally computed in our original LCA and I understand the reasoning for the oversizing was related to a combination of a permit condition and consideration for future growth by the client.

Either way the current LAA sizing is such that it technically could cope with disposal of well over the E.P.A. threshold limit of 5,000 L/day. In fact, the sizing of 5,000m$^2$ equates to a daily capacity of 15,000L/day of wastewater which is marginally less than event day maximum usage.

As such, I am satisfied that the proposed increased hydraulic loading is going to be easily accommodated by the septic infrastructure in place.

I note the balance tank installed is 10,000 litres and this accommodates the expected peak load of 9,800 litres.

**Re: Bacchus Marsh Grammar, 155 Staughton Vale Road, Staughton Vale.**

I hope this information meets with your requirements and assists with your application to the E.P.A. Please find enclosed relevant documentation that has been reviewed and assessed as well as site data photographs taken during my site visit to demonstrate current context and conditions.

Enclosed:

i. Supplied Documentation
ii. Proposed New Loadings
iii. Proposed Site Plans
iv. Aerial & Site Photographs
v. Test Site Location Plan
vi. Laboratory Analysis Results
vii. Previous Reports (separate PDF's)
   a. Land Capability Assessment Ref: 6997G Dated: 16th August 2016
   b. Site Inspection & Review of Land Capability Assessment Ref: 19444D Dated: 18th May 2022

ANDREW REDMAN BSc.
BSc. PRINCIPAL GEOLOGIST.
AR: hs

ADVERTISED PLAN

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**Taylex Commercial Pty Ltd**
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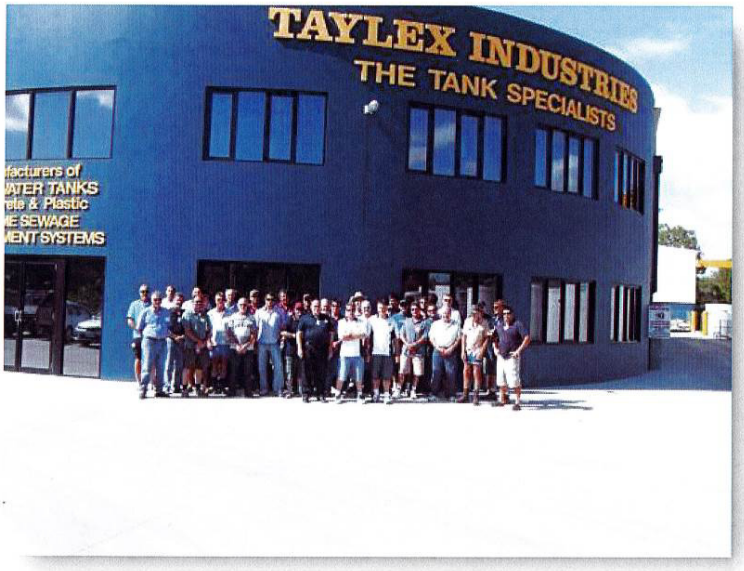
Phone 07 3441 5200
Fax 07 3287 4199
www.taylex.com.au

T A Y L E X C O M M E R

# COMMERCIAL SEWAGE TREATMENT SOLUTIONS



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**QUOTE NO.:** 4410

**PROJECT:** Staughton Vale State School

**CLIENT:** Sepserve

**CONTACT:** Peter Fowler





**Quote No: 4410**

22nd November 2016

Sepserve
18 Matchett Drive
Bendigo East 3550

Attn: Peter Fowler.

Dear Peter,

**TAYLEX ADVANCED BLOWER SYSTEM. (ABS) FOR STAUGHTONVALE STATE SCHOOL**

Thank you for the opportunity to price a Taylex Industries Advanced Blower System (ABS) to treat the wastewater from your site at Staughton Vale, Victoria.
We have looked at the information supplied and have put together the following solution for your site.

**Taylex Advanced Blower System (ABS)**
The preliminary designs are based on the flow and load detailed below. The treatment plant's performance is not guaranteed if the flow and/or load through the plant are over these design parameters. Please ensure that this design flow and load is accurate.

## 1. Proposed Wastewater System Design

Design Flow from site has not been based on 250 students and 15 teachers. Based on our experience the daily usage per student and teacher at state schools is a maximum of 10 litres per person per day. Therefore the total daily flow expected from this site is 2,650 Litres per day.

## 2. Effluent Criteria

Our system design is based on a raw Influent loading of

- $BOD_5$ _____ ≤ 350 mg/l
- Total Suspended Solids _____ ≤ 350 mg/l
- Oil and Grease _____ ≤ 50 mg/l

To achieve the treatment requirements of the local Authority the influent entering the system must fall between these limits. The process design assumes that there are no inhibitory or toxic substances within the wastewater that will impair the biological performance of the system. This could include harsh chemicals, excessive quantities of cleaning detergents or FOGs (fats, oils and greases), or inorganic wastes or Hydrocarbons. Stormwater ingress must also not be allowed to flow into the treatment plant as it will have a significant negative effect on both the performance of the treated effluent and the disposal area.

| The expected treatment quality of the Taylex ABS under these conditions is | | The Requirements for the site are expected to be | |
|---|---|---|---|
| $BOD_5$ | <10 mg/l | $BOD_5$ | <10 mg/l |
| Total Suspended Solids | <10 mg/l | Total Suspended Solids | <10mg/l |
| pH | 6.5 – 8.5 | pH | 6.5 – 8.5 |
| E.coli | <10cfu/100 ml | E.coli | 10 cfu/100 ml |

## 3. Our Proposed Treatment System Solution

The Taylex Advanced Blower System (ABS) is designed to treat the wastewater from a site with a hydraulic influent loading up to 2,000 litres per day.
The system for this site will consist of one Taylex 10,000 litre slimline balance and two Taylex ABS units.

**Taylex 10,000 Litre Slimline Balance Tank**
The Taylex balance tank is designed to suit commercial and domestic applications where wastewater is required to be contained retained or collected, prior to transferal to an onsite treatment system. The Taylex balance tank is a vertical axis type concrete collection well with a design capacity of 10,000 litres. It has a sloping floor for better transfer of the wastewater to the pumps and to prevent build-up of solids at the inlet. The balance tank stores peak flows and allows emergency storage.

The balance tank is fitted with two Davey D75GA grinder pumps complete with guide rails and stainless steel chains for ease of maintenance, the internal surface of the chamber are coated in a chemical and gas resistant two pack epoxy coating to protect the chamber from gases and acidic compounds. The chamber comes with all internal pipework and a 50mm female treaded outlet. The pumps are connected to two Taylex Duty Cycle Timers that are situated in a stainless steel control box bolted to the top of the tank. The timers are factory set to deliver 74 litres every two hours to each ABS unit and are set so as to not exceed 880 litres per day to the each of the treatment plants. However these timers can be reset at any time by the operator.

*(Due to variances in flows from pumps and friction loss in pipe work it is recommended that a flow meter be fitted to the irrigation line of the treatment plant so the flows can be monitored and the daily flow adjusted to meet the discharge permit.)*

**The Balance Tank**

| | |
|---|---|
| Material | 32 MPa Steel Reinforced Precast Concrete |
| Height | 3040mm |
| Diameter | 2400mm |
| Invert Level | to Suit |

| | |
|---|---|
| Inlet Size | to Suit |
| Total Volume | 10,850 Litres |
| Weight | 8 Tonne |

**Taylex ABS**
The Taylex ABS units consist of a monolithic constructed multi chambered tank with a total capacity of 9,320 litres and an operational capacity of 5,880 litres.

The Taylex Industries ABS system is a 5 chambered monolithic tank that uses Submerged Aeration Filtration (SAF) technology. This is an advanced treatment solution where treated water is suitable for disposal to ground through land application. The treatment plant process is described below.

**Each Taylex ABS unit consists of;**

- 1 x Primary pre- treatment chamber with a capacity of 1,684 litres
- 1 x Secondary pre-treatment chamber with a working capacity of 842 litres
- 1 x Aeration chamber with a capacity of 2,071 litres containing Bio-Blok® media panels with a surface area of 800m$^2$
- 1 x Sedimentation / clarifier chamber with a capacity of 662 litres  1 x Irrigation pump chamber with a capacity of 621 litres

A chlorine disinfection, mixing and contact unit is installed on the outlet pipe of the clarifier.

**The Taylex ABS Unit**

| | |
|---|---|
| Material | 32 MPa Steel Reinforced Precast Concrete |
| Height | 2300mm |
| Diameter | 2450mm |
| Invert Level | 1830mm or 1530mm |
| Inlet Size | 100mm |
| Weight | 6.25 Tonne |



**Description of an ABS Process Train**

**Balance Tank**
Raw wastewater from the site enters a 10,000 litre precast concrete balance tank. The effluent is then pumped via two Davey D75 Grinder pumps to the primary chambers of the ABS units, at a controlled rate so as to not exceed a total daily flow of 2,650 litres per day in total to the two units.

**ABS Unit**
**Primary Chamber**
Inside the primary Chamber, anaerobic breakdown occurs. The primary chamber allows sufficient residence time to ensure sufficient BOD reduction has occurred in this process.

**Secondary Chamber**
The wastewater is gravity fed from the primary chamber to the secondary chamber, where further anaerobic breakdown occurs. The conditioned effluent is then gravity fed to the aeration chamber.

**Aeration Chamber**
The aeration chamber of the Taylex ABS contains sufficient fixed film growth media to ensure there is a large surface area per unit volume for micro-organisms to grow on. Fine bubble diffusers are fitted at the base of the chambers to ensure efficient oxygen distribution and thus providing a high rate of biomass production on the filter media. The placement of the diffusers is designed to ensure uniform aeration.

**Clarifier Chamber**
From the aeration chamber, the effluent is gravity fed to a clarifier (settling chamber) where it is further polished. The collected solids (activated sludge) are pumped back to the primary tank at a ratio to influent flow so that sufficient nitrified waste is recycled to the oxygen starved anaerobic stage for de-nitrification to occur.

**Irrigation Chamber**
The treated effluent is gravity fed from the clarifier trough a Taylex TFG filter before flowing into the chlorine disinfection contact unit and into the irrigation chamber. The irrigation pump in this chamber is controlled by a float switch which. When sufficient effluent has entered the chamber the float will activate the irrigation pump. The treated effluent is then discharged to the effluent management area for dispersal.

**Servicing**
Routine maintenance servicing of the Taylex ABS is to be scheduled a 4 times per year or as per the site specific approval.

## 4. Scope of Works

Supply only a new Taylex Commercial treatment system as per inclusions below in section 5.

## 5. Inclusions

- Supply only 1 x 10,000 Litre Slimline precast balance tank
- Supply only 2 x Davey D75GA Grinder pumps (Supplied loose to be fitted onsite)
- Supply only 2 x Davey SR50 Rail kits fitted inside balance tank
- Supply only 2 x Taylex Duty Cycle timer
- Supply only 1 x Taylex Maxi strobe alarm
- Supply only 1 x Stainless steel Control box fitted to top of tank
- Supply only 2 x 2,000 Litre per day turn-key ABS unit complete with cast iron access covers and 50mm treaded inlet fitting.
- Supply only 2 x Water meters
- This unit is only supplied as a complete package

## 6. Exclusions

- Freight to site of system
- Excavation of tanks
- Extra Cost associated with doing any council reports if required
- Necessary permits from Council
- Any Council costs

- Any Soil or effluent tests
- Effluent irrigation area preparation
- Pipe work for irrigation area

## 7. Pricing

## 8. Conditions of Quotation

This quotation is subject to the system being approved for the site by the local authority. This proposal is conditional on Taylex Commercial terms and conditions of supply.

The client is asked to organise the following prior to construction:

- Necessary permits from Council
- Suitable electricity supply to treatment plant (specifications available)
- Irrigation area preparation for lying of irrigation (if required)
- Any landscaping required after the system has been installed

**This Quotation is subject to a full site inspection with all interested parties present, to ensure that we have not missed out on anything. This quotation may alter if additions are required.**

I trust the attached is to your satisfaction; however, if you have any further questions please contact the undersigned.

Yours Sincerely,

Paul Siggs
Commercial Sales Manager
Taylex Commercial Pty Ltd



## 9. Acceptance

Payment is required prior to despatch of tanks unless other arrangements have been made. Quotation is valid for 60 days.

In order for this work to commence Taylex Commercial PTY LTD requires either an official purchase order or this acceptance to be signed and returned.

*I* ..... hereby state that I have read and understand all of this quotation Number 4410 its terms and conditions and accept the costs and conditions of the quotation of *$..... and wish to proceed.*

*I understand and agree to the terms and conditions as detailed.*

*Signed* ..... *Dated* ..... / ..... / .....

**Lead Time**
Please allow 28 days from time of placement of order, to assemble and test the systems.





## 10. Terms and Conditions of Sale

1. **General**
In consideration of Taylex Industries Pty Ltd ACN 109 629 398 and Taylex Commercial Pty Ltd ACN 120 847 707 and Clearwater Services Pty Ltd ACN 109 629 423 (the Supplier) agreeing to supply goods and/or services to the Customer, the Customer agrees and accepts that these terms and conditions apply to all sale of goods by the Supplier to the Customer, to the exclusion of any conditions of sale appearing on any document of the Customer. The Customer further acknowledges that these terms and Conditions of Sale constitute the entire agreement of the parties as to the supply of goods by the Supplier, and may not be varied without the prior written agreement of the Supplier. The Supplier reserves the right to suspend/close credit facilities in breach of these Conditions.

2. **Ownership of Goods**
   (a) (i) Property in any goods delivered to the Customer will not pass to the Customer until the later of (a) payment in full for the goods, (b) payment in full of all moneys owing or unpaid by the Customer to the Supplier including moneys in respect of goods previously or subsequently supplied to the Customer by the Supplier.
   (ii) The Customer shall store the goods in such a manner as to show clearly that they are the property of the Supplier and the Customer shall keep records of all use and sales of such goods.
   (iii) The Customer shall keep the goods free from and will indemnify the Supplier against any charge, lien or other claim thereon. The Customer has no title or right to charge or encumber the goods before payment to the Supplier under this clause.
   (iv) If the Customer fails to pay the purchase price or any other debts to the Supplier when due, or commits any act of bankruptcy, the Supplier may without notice and without prejudice to any of its rights and remedies recover and/or resell the goods or any of them and may by its servants or agents enter upon the Customer's premises or any premises occupied by the Customer for that purpose. The Customer hereby grants the Supplier express permission for that purpose.
   (b) Goods not delivered to the Customer shall be at the Customer's risk on delivery to the Customer.
   (c) Notwithstanding paragraph (a), the Customer may on-sell the goods on commercial terms in the ordinary course of its business before the purchase price for the goods and other debts to the Supplier have been paid to the Supplier, but in this case the Customer shall hold the proceeds of such sale on trust for the Supplier in a separate account and account to the Supplier for such proceeds on demand.
   (d) The Supplier will be given full ownership of any new goods or objects formed if you transform our goods into other products or affix those goods to other objects.
   (e) The Customer is not entitled to return the goods and refuel or delay payment on the grounds that the property in the goods has not yet passed.

3. **Delivery, Claims and Returns**
   (a) The Customer is solely responsible for acceptance of orders and shall raise no claims for loss or damage to orders where same are, by arrangement, delivered to and left at unattended sites.
   (b) The Customer shall notify the Supplier of any defects in goods or wrongly supplied goods within seven (7) days of delivery of the goods. The Supplier shall only be liable for correction of such defects or error as are notified and agreed within the stipulated time.
   (c) Specially procured items cannot be returned. Stock line items delivered to order may be returned within fourteen (14) days of delivery if approved by the Supplier and must be accompanied by the corresponding invoice/delivery docket. The Supplier reserves the right to charge a handling fee of 10% on all returns.

4. **Price**
   Unless otherwise agreed in writing the price for the goods shall be that price listed by the Supplier at the date of order. The Supplier's price list is GST inclusive. GST will be charged at the appropriate rate of ruling at the date of invoice.

5. **Terms of Payment**
   (a) Payment for material, goods and services pursuant to this agreement including GST is due on the last day of the month following the month in which the goods were delivered or services provided unless other stated in writing by the Supplier.
   (b) After the due date of payment, the Supplier may charge interest on outstanding amounts payable, calculated on a daily balance, at the reference rate of our nominated Banking Corporation +2%.
   (c) The Customer agrees to pay and reimburse the Supplier on demand for all legal costs, stamp duty or other costs or expenses suffered or incurred by the Supplier in respect of the preparation of any agreements, personal guarantees, securities or other documentation required by the Supplier or to document or secure the provision of credit to the Customer together with all collection and enforcement costs and expenses which the Supplier may suffer or incur in connection with the sale of goods or supply of services or provisions of credit to the Customer (without limitation) legal costs on a full indemnity basis.

6. **Change of Ownership**
   In the event of the Customer, being an individual or partnership, incorporates his/her business and Company continues to use the existing account, or the account is used by a Company of which he/she is a director, he/she hereby agrees to personally guarantee all due debts. If ownership of the Customer's business changes, the Customer will remain liable for all debt incurred on this account until such time as the Supplier is notified in writing of such change.

7. **Limitation of Liability**
   The Customer acknowledges that no warranty, condition, description or representation in relation to goods supplied is given by the Supplier, expressly or implied. All warranties, terms and conditions in relation to the state, quality of fitness of the goods and or every other kind whether implied by use, statute or otherwise be hereby excluded. The Supplier shall not be liable for physical or financial injury, loss or damage or for consequential loss or damage of any kind rising out of the supply of the goods arising out of the Supplier's negligence or in any way whatsoever. The Supplier's liability for breach of a condition or warranty implied by Div 2 of Pt V of the Trade Practices Act 1974 (other than s.69) is hereby limited to:
   (a) In the case of goods, any one or more of the following:
      (i) the replacement of the goods or the supply of equivalent goods;
      (ii) the repair of the goods;
      (iii) the payment of the cost of replacing the goods or of acquiring equivalent goods; (iv) the payment of the cost of having the goods repaired. Or
   (b) In the case of services:
      (i) the supplying of the services again; or
      (ii) the payment of the cost of having the services supplied again.
   The Supplier's liability under s.74H of the Trade Practices Act 1974 is expressly limited to a liability to pay the Customer an amount equal to: (a) the cost of replacing the goods; or the cost of obtaining equivalent goods; or (b) the cost of having the goods repaired, whichever is the lowest amount.

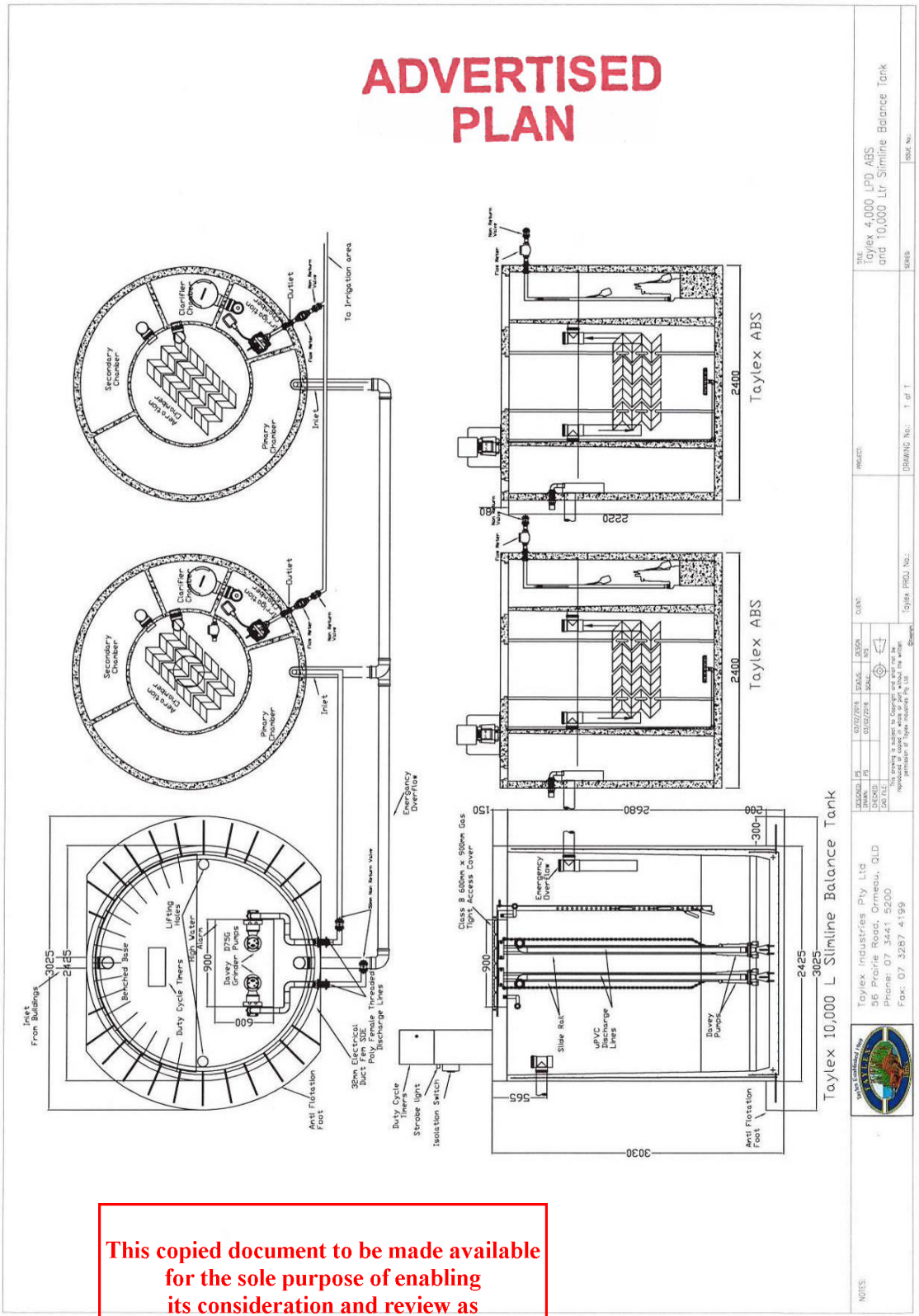
8. **Exercise of Legal Rights**
   The failure, delay, relaxation or indulgence on the part of the Supplier in exercising any power or right conferred upon the Supplier by these Terms and Conditions of Sale does not operate as a waiver of that power or right, nor does any single exercise of any power or right preclude any other or further exercise of it or the exercise of any other power or right under these Terms and Conditions of Sale.

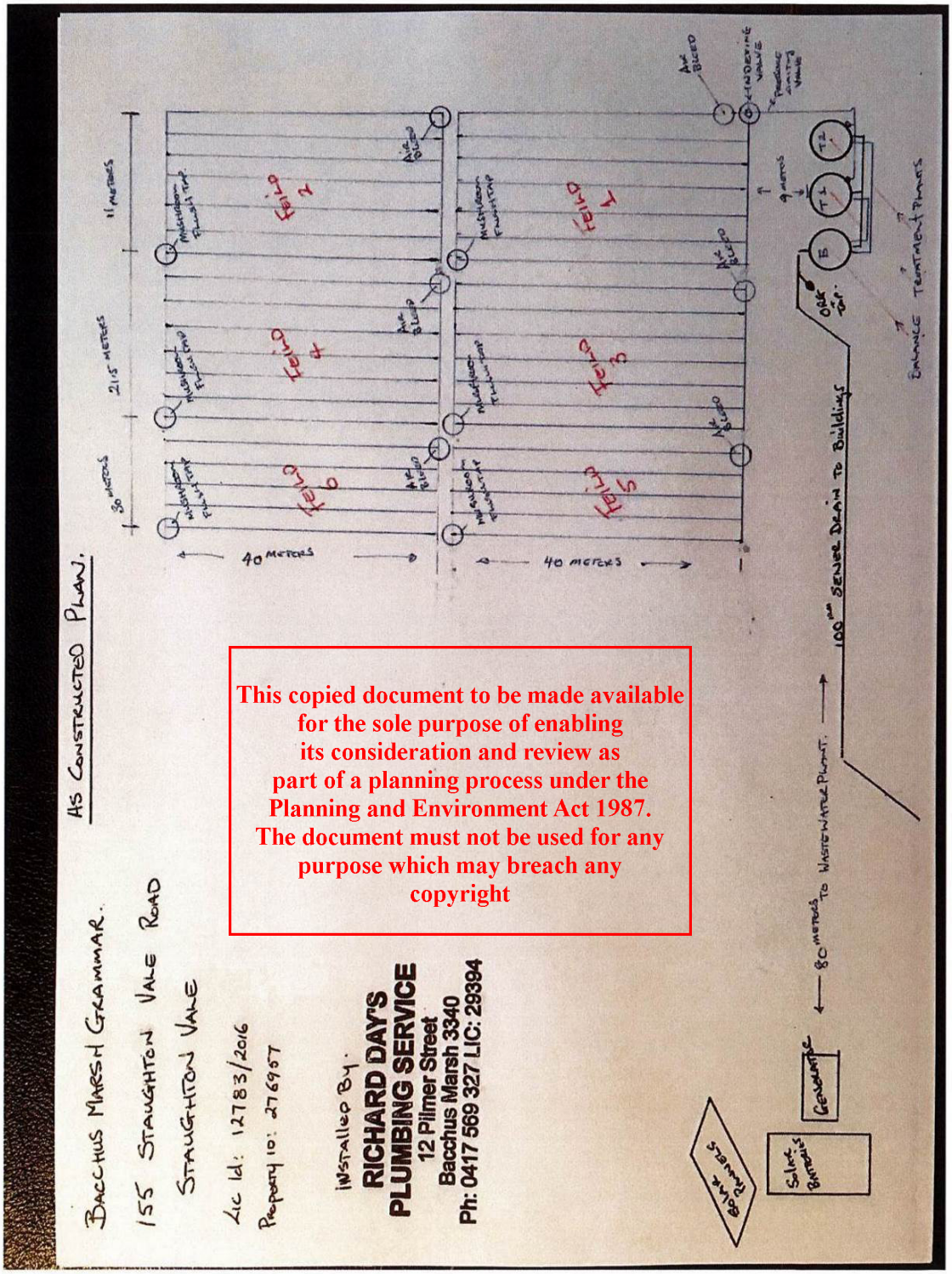
9. **Governing Law**
   These Terms and Conditions of Sale shall be construed in accordance with the law in force in Queensland, Australia and the parties agree to submit to the non-exclusive jurisdiction of the Courts of that state. It shall be competent for the Supplier to issue proceedings in Brisbane, Queensland in a Court of competent jurisdiction.

10. **Severability**
    Where these Terms and Conditions of Sale are qualified by any provision of law which applies and which cannot be excluded, where nay such provision in these Terms and Conditions of Sale is deemed to be unlawful or unenforceable, such provision shall be severed from these Terms and Conditions of Sale and all other provisions hereof shall remain in force to the fullest extent permitted by law.

I hereby acknowledge that I have read and understand the Terms & Conditions of Sale and agree to be bound by these conditions.

Name _____ Signature _____ Dated _____





**Provincial Geotechnical Admin**

**From:** Ewan Wymer <ewymer@urbis.com.au>
**Sent:** Tuesday, 7 October 2025 11:51 AM
**To:** Provincial Geotechnical Admin <admin@pgvic.com.au>; Jacob LAST <lastj@bmg.vic.edu.au>
**Cc:** Rachel Bartlett <rbartlett@urbis.com.au>
**Subject:** RE: Staughton Vale Primary School - Geotech visit

Morning Andrew and Jacob,

@Jacob Last Andrew has advised he would like to visit 155 Staughton Vale tomorrow – any issues with site access?

Jacob the main item Andrew needs for his modelling and report is the total number of staff and students on site. Could you please confirm this for us? I have started off the calculations for you, could you please review and update or add where I have highlighted?

**Existing approval:**
150 students and 15 staff on any school day.
Event days – 16 times per year up to 450 students and 20 staff may be present.

**New Primary school proposal:**
Maximum of 300 additional students and 20 staff (20?)
New total on a regular school day: 450 students and 35 staff
New total on event days: 16 times per year up to 750 students and 40 staff

@Provincial Geotechnical Admin Andrew could you please use Jacob for your primary contact with respect to accessing the site? Is there any other information we need to provide to you going on site?

Thanks very much,
Ewan

**EWAN WYMER** he/him/his
SENIOR CONSULTANT

**D** +61 3 8663 4897
**M** +61 403 848 342
**E** ewymer@urbis.com.au
*My workdays are Mon, Tues, Wed & Fri*

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MELBOURNE, VIC 3000, AUSTRALIA
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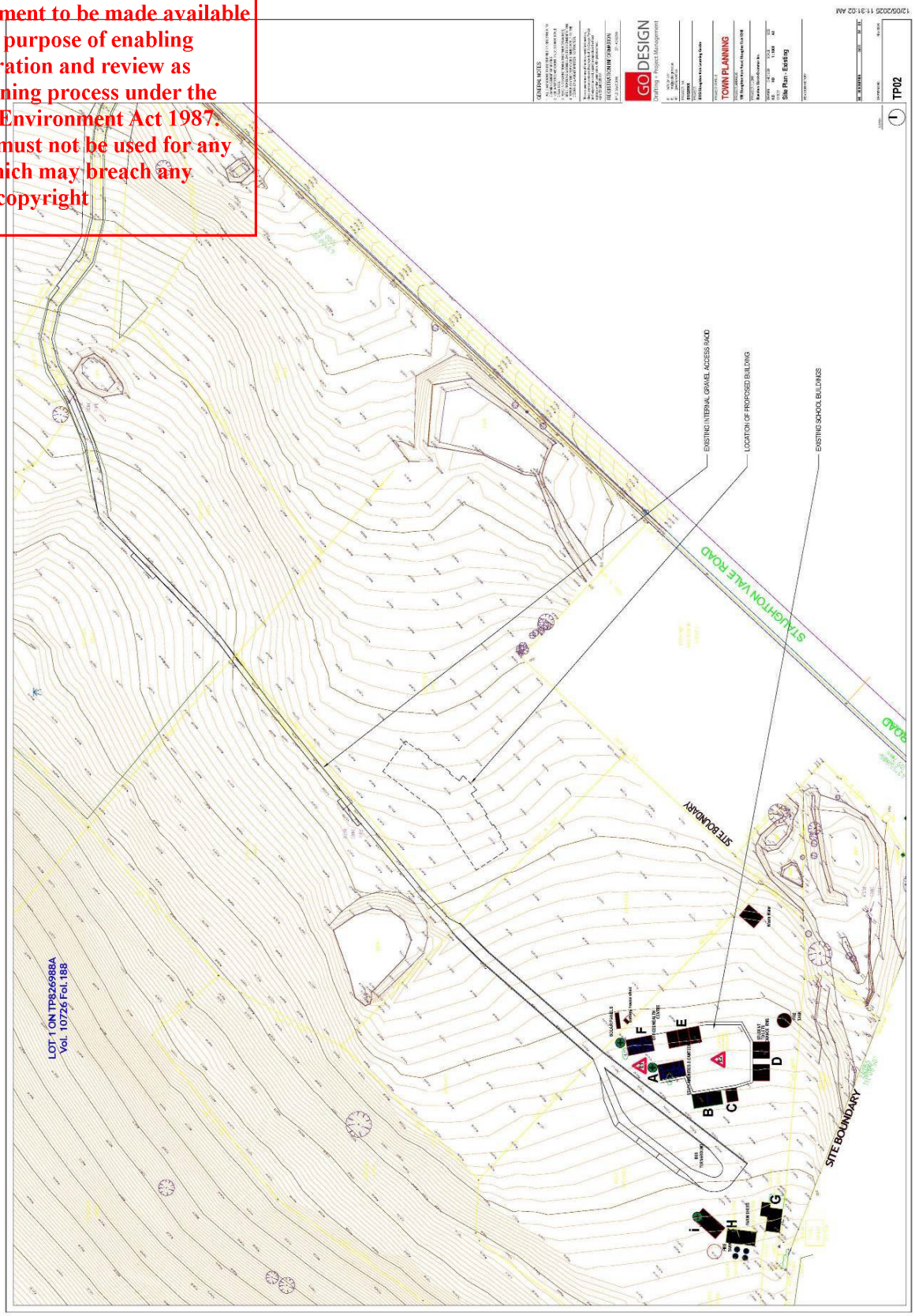
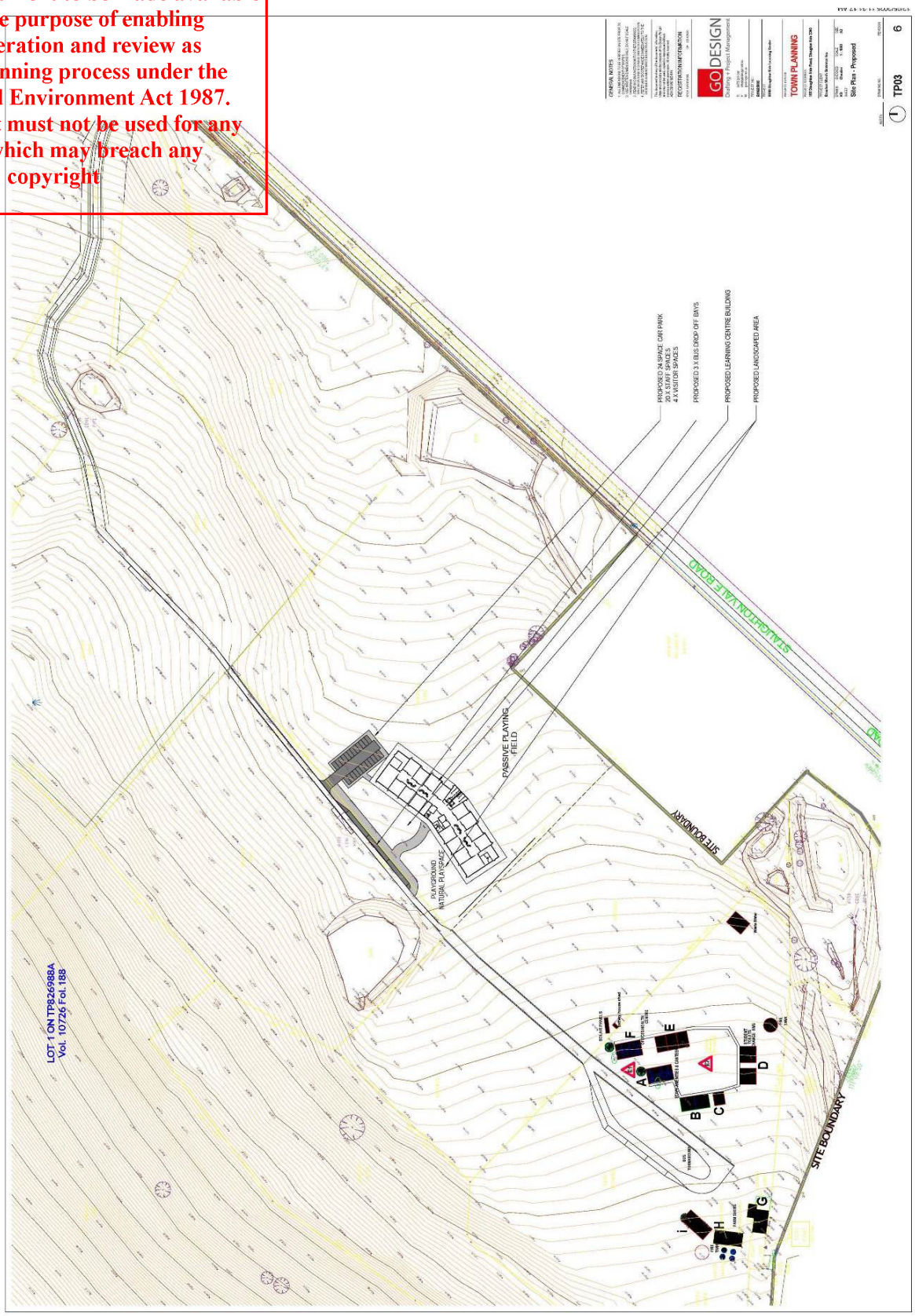
# PROPOSED SITE PLANS





# AERIAL & SITE PHOTOGRAPHS


PROPOSED BUILDING SITE

# AERIAL & SITE PHOTOGRAPHS

ADDITIONAL LAND AVAILABLE FOR LAA EXTENSION IF REQUIRED


EXISTING LAA SITE

# AERIAL & SITE PHOTOGRAPHS



LOOKING NORTH FROM LAND APPLICATION AREA

LOOKING EAST FROM LAND APPLICATION AREA

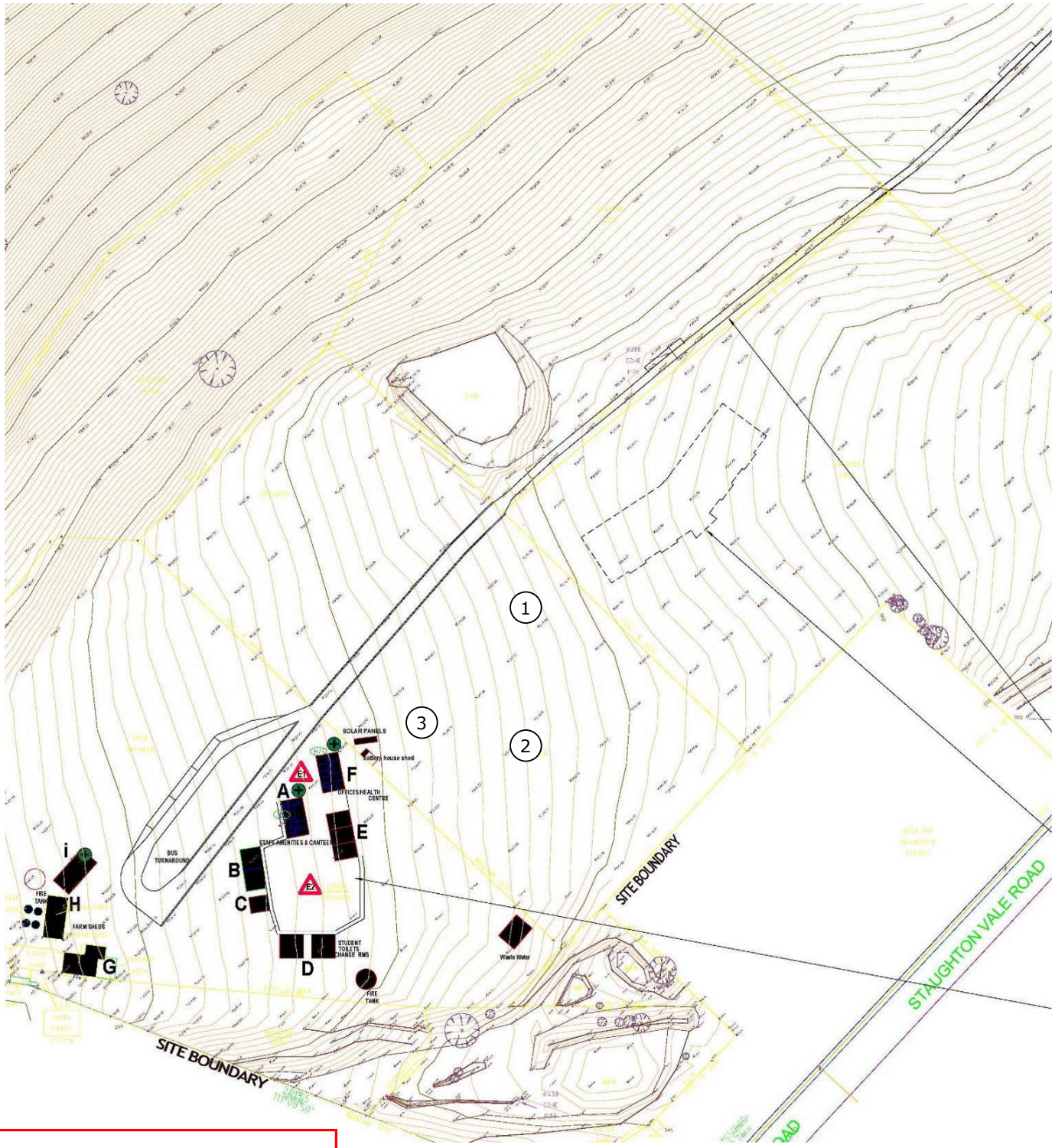
# AERIAL & SITE PHOTOGRAPHS



LOOKING SOUTH FROM LAND APPLICATION AREA

LOOKING WEST FROM LAND APPLICATION AREA

# TEST SITE LOCATION PLAN



# PROVINCIAL GEOTECHNICAL PTY. LTD.

## BORELOG DESCRIPTIONS

| | | | |
|---|---|---|---|
| ***CLIENT:*** | BACCHUS MARSH GRAMMAR | ***REFERENCE NUMBER:*** | 24320I ***DATE:*** 08/09/2025 |
| ***PROJECT ADDRESS:*** | 155 Staughton Vale Road, STAUGHTON VALE | ***GEOLOGIST:*** | Andrew Redman |
| | | ***DRILLING METHOD***: | 100mm diameter drill rig or hand auger |

| **TEST SITE 1 EXCAVATION METHOD: HYDRAULIC DRILLING RIG** | | | | **TEST SITE 2 EXCAVATION METHOD: HYDRAULIC DRILLING RIG** | | | | **TEST SITE 3 EXCAVATION METHOD: HYDRAULIC DRILLING RIG** | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth mm | SOIL PROFILE | Fill | CAT | Depth mm | SOIL PROFILE | Fill | CAT | Depth mm | SOIL PROFILE | Fill | CAT |
| 100 | **SANDY SILTY CLAY** | | **4b** | 100 | **SANDY SILTY CLAY** | | **4b** | 100 | **SANDY SILTY CLAY** | | **4b** |
| 200 | **(Clay Loam)** | | | 200 | **(Clay Loam)** | | | 200 | **(Clay Loam)** | | |
| 300 | **weakly structured** | | | 300 | **weakly structured** | | | 300 | **weakly structured** | | |
| 400 | **dark brown moist; firm** | | | 400 | **dark brown moist; firm** | | | 400 | **dark brown moist; firm** | | |
| 500 | | | | 500 | **light brown** | | | 500 | **light brown** | | |
| 600 | **light brown** | | | 600 | **CLAY (Light Clay)** | | **5b** | 600 | **CLAY (Light Clay)** | | **5b** |
| 700 | **CLAY (Light Clay)** | | **5b** | 700 | **moderately structured** | | | 700 | **moderately structured** | | |
| 800 | **moderately structured** | | | 800 | **minor silt & fine grained** | | | 800 | **minor silt & fine grained** | | |
| 900 | **minor silt & fine grained** | | | 900 | **sand** | | | 900 | **sand** | | |
| 1000 | **sand** | | | 1000 | **brown moist; stiff** | | | 1000 | **brown moist; stiff** | | |
| 1100 | **brown moist; stiff** | | | 1100 | | | | 1100 | | | |
| 1200 | | | | 1200 | | | | 1200 | | | |
| 1300 | | | | 1300 | | | | 1300 | | | |
| 1400 | | | | 1400 | | | | 1400 | | | |
| 1500 | | | | 1500 | | | | 1500 | | | |
| 1600 | **END BORE HOLE** | | | 1600 | **END BORE HOLE** | | | 1600 | **END BORE HOLE** | | |
| 1700 | | | | 1700 | | | | 1700 | | | |
| 1800 | | | | 1800 | | | | 1800 | | | |
| 1900 | | | | 1900 | | | | 1900 | | | |
| 2000 | | | | 2000 | | | | 2000 | | | |
| 2100 | | | | 2100 | | | | 2100 | | | |
| 2200 | | | | 2200 | | | | 2200 | | | |
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| 2400 | | | | 2400 | | | | 2400 | | | |
| 2500 | | | | 2500 | | | | 2500 | | | |

Groundswell Batch # : GS25656

**Groundswell Laboratories**
*" A New Force in Analytical Testing"*

## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| **Client Name :** | Provincial Geotechnical | **Groundswell Batch # :** | GS25656 |
| **Client Address :** | 91 Nicholas Street, Newtown, Victoria, 3220 | **Project Name :** | 155 Staughton Vale Road, Staughton Vale VIC |
| **Client Phone # :** | 03 5223 1566 | **Project # :** | 24320I |
| **Client Fax # :** | 03 5224 4560 | **Date Samples Received :** | 8/10/2025 |
| **Project Manager :** | Andrew Redman | **Sample Matrix :** | Soil |
| **E-mail :** | admin@pgvic.com.au | **Sample # Submitted :** | 1 |
| **Project Sample Manager :** | Andrew Redman | **Groundswell Quote # :** | Not Applicable |
| **E-mail :** | admin@pgvic.com.au | **Date CofA Issued :** | 16/10/2025 |

Paul Woodward
Managing Director
paul@groundswelllabs.com.au

Reference AF56.Rev4 Date Issued : 19/5/2014

**Groundswell Batch # : GS25656**

# Soil Analysis Results

| Client Sample ID | | | Sample 1 | | | | |
|---|---|---|---|---|---|---|---|
| Laboratory Sample Number | | | GS25656-1 | | | | |
| Date Sampled | | | 7/10/2025 | | | | |
| **Analytes** | **Units** | **LOR** | | | | | |
| pH | pH Units | 0.1 | 7.3 | | | | |
| Electrical Conductivity @ 25°C | dS/m | 0.005 | 0.014 | | | | |
| | | | | | | | |
| Exchangeable Calcium | mg/Kg | 1 | 728 | | | | |
| Exchangeable Magnesium | mg/Kg | 1 | 95 | | | | |
| Exchangeable Potassium | mg/Kg | 1 | 97 | | | | |
| Exchangeable Sodium | mg/Kg | 1 | 66 | | | | |
| CEC | MEQ% | 0.1 | 5.0 | | | | |
| ESP | % | 0.1 | 5.8 | | | | |
| Sodicity Rating | --- | --- | Non-sodic | | | | |
| SAR | | 0.01 | 0.14 | | | | |

Reference AF56.Rev4 Date Issued : 19/5/2014

**Comments :**

1- pH & electrical conductivity determined & reported on a 1:5 soil:water extraction

2- CEC determined by soil chemical method 15B1 'Exchangeable bases and cation exchange capacity - 1M amonium chloride at pH 7.0, no pre-treatment for soluble salts'

3- ESP, sodicity rating & SAR determined by calculation using the exchangeable cation results

4- Measurement Uncertainty available upon request



Groundswell Laboratories Pty Ltd ABN 24 133 248 923
Unit 33, 180 Fairbairn Road, Sunshine West, Victoria 3020 Ph (03) 8669 1450 E-mail : paul@groundswelllabs.com.au

**Groundswell Batch # : GS25656**

## Soil Analysis Results

| Client Sample ID | | | Sample 1 | Sample 1 | | | |
|---|---|---|---|---|---|---|---|
| Laboratory Sample Number | | | GS25656-1 | GS25656-1 | | | |
| Date Sampled | | | 7/10/2025 | 7/10/2025 | | | |
| **Analytes** | **Units** | **LOR** | | | | | |
| Sample Type | --- | --- | Air Dried Aggregates | Re-moulded Ped | | | |
| | | | | | | | |
| Emerson Aggregate Class - 2 Hours | --- | --- | Slaking / Some Dispersion | Slaking / Some Dispersion | | | |
| Emerson Class Number | --- | --- | Class 2 | Class 2 | | | |
| | | | | | | | |
| Emerson Aggregate Class - 20 Hours | --- | --- | Slaking / Some Dispersion | Slaking / Some Dispersion | | | |
| Emerson Class Number | --- | --- | Class 2 | Class 2 | | | |
| | | | | | | | |
| Addition of 1M HCl | --- | --- | --- | --- | | | |
| 1:5 Soil:Water 10 minute extraction | --- | --- | --- | --- | | | |
| Emerson Class Number | --- | --- | --- | --- | | | |

Reference AF56.Rev4 Date Issued : 19/5/2014

**Comments :**

1- Classification conducted in accordance with Emmerson 'A clasification of soil aggregates based on their coherence in water', 1967 & AS1289.C8.1-1980





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Groundswell Batch #: GS25656

# Inorganics Quality Control Report

| Client Sample ID | | | | | | | |
|---|---|---|---|---|---|---|---|
| Laboratory Sample Number | | | | | | | |
| QC Parameter | | | Method Blank | | Laboratory Control Standard (LCS) | | |
| | | | Method Blank | Within GSL Acceptance Criteria (<LOR) (Pass/Fail) | LCS (%R) | LCS (%R) Acceptance Criteria | Within GSL Acceptance Criteria (Pass/Fail) |
| Analyte | Units | LOR | | | | | |
| pH | pH units | 0.1 | NA | NA | 7.01 | 7.00 ± 0.1 pH Unit | Pass |
| Conductivity | dS/m | 0.005 | <1 | Pass | 95% | 80-120% | Pass |
| Exchangeable Calcium | mg/Kg | 1 | <1 | Pass | 93% | 70-130% | Pass |
| Exchangeable Magnesium | mg/Kg | 1 | <1 | Pass | 108% | 70-130% | Pass |
| Exchangeable Potassium | mg/Kg | 1 | <1 | Pass | 102% | 70-130% | Pass |
| Exchangeable Sodium | mg/Kg | 1 | <1 | Pass | 105% | 70-130% | Pass |
| CEC | MEQ% | 0.1 | NA | NA | NA | NA | NA |
| ESP | % | 0.1 | NA | NA | NA | NA | NA |
| SAR | --- | 0.01 | NA | NA | NA | NA | NA |

Reference AF56.Rev4 Date Issued : 3/11/2010

**Comments :**

1- Exchangeable cations LCS values based on independent water standards

2- NA = Not Applicable



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**E-MAIL: admin@pgvic.com.au**

9th October 2025

Our Reference: 24320I

Groundswell Laboratories
116 Moray Street
SOUTH MELBOURNE VIC 3205



Dear Sir/Madam,

**Re: 155 Staughton Vale Road, Staughton Vale, Victoria.**

Please perform the following soil tests:

i Emerson Aggregate Class
ii Cation Exchange Capacity
iii Electrical Conductivity (EC)
iv pH
v Sodicity – Exchangeable Sodium Percentage (ESP)
iv Sodium Absorption Ratio (SAR)

For the following One (1) sample from one (1) location:

| DATE | SAMPLE | TEST SITE | DEPTH (mm) | MATERIAL | LAB ID |
|---|---|---|---|---|---|
| 07/10/2025 | 1 | 1 | 300mm | SOIL | |

Yours sincerely,

ANDREW REDMAN BSc.
GEOLOGIST.
AR: hs