

Site Investigation Report

Auger Ref:

144286.1.USI**Job Information**

Client	Crawford & Co
Client ref	SU2204240
Visit date	02/02/2023
Report date	10/03/2023

Job Summary

- ! Drainage repairs required. [Read more.](#)
- ✓ 1 trial hole undertaken. [Read more.](#)
- ⚠ No CCTV survey undertaken. [Read more.](#)
- ! Trial Hole depth not reached. [Read more.](#)



Job Information

Overview

Brief

Auger were commissioned by Crawford & Co to undertake a site investigation and CCTV inspection of the underground drainage within the area of concern (AOC) at the property.

Findings

Trial Hole Findings

Within Trial hole 1 we revealed the footing but were unable to auger to the required depth (3m) in the proposed location. This was due to desiccated hard ground at 2.1m that prevented our engineer being able to auger any further. We took soil and root samples. These measurements are shown in Trial hole log 1 below.

Visual Inspection

We attempted a Remote Bore Hole in the rear garden but only reached a depth of 1.9m below ground level.

Drain Survey

A visual inspection of the site revealed WG, which was noted to serve foul water, and RWG have sunken/ are displaced and both are leading to water escaping to the surrounding ground.

The visible defects identified are affecting the function of the system.

Recommendations

Refer Back to Client	<p>It is recommended that the following repairs are carried out to prevent an escape of water from the system:</p> <p>Line 1 Excavate and replace RWG and 1m of 100mm pipework at a depth no greater than 1.0m through concrete. We will then need to conduct a further CCTV investigation downstream on this line.</p> <p>Line 2 Excavate and replace WG and 1m of 100mm pipework at a depth no greater than 1.0m through concrete and crazy paving. The surface will be temporarily reinstated with stone to ground level to leave the area safe and tidy. A specialist contractor will be required to reinstate the crazy paving which would incur additional costs. We will then need to conduct a further CCTV investigation downstream on this line.</p> <p>Please note that the further CCTV investigation may reveal additional defects to the drainage system. This will be reported whilst on-site and could potentially cause an increase in repair costs and provide further inconvenience to the customer/occupants.</p> <p>Auger have not allowed or will not be held responsible for any alteration or modification to the above ground drainage following the removal of the existing gully and reinstatement of a new gully. The customer must ensure that the above ground drainage correctly expels into the gully pot and avoids overcrowding the gully with numerous downpipes which could lead to the gully overflowing.</p> <p>During the clean-up/reinstatement process we will endeavour to leave the area we are working in clean and tidy and as close to how we found it as possible. There will always be an element of general debris/mud/waste that will build up in the area which cannot be prevented. There may however be elements of this process that are outside our remit i.e., Repainting or cleaning. If this is the case, then we will need to speak to the customer's insuree to help in this regard.</p> <p>We will now refer the claim back to the client in order to progress the claim.</p>
Repair Caveats	<p><i>Once repairs have been undertaken the customer should ensure the drainage system is periodically inspected in the future for any deterioration and kept free flowing / free of blockages. Any damage noted during future inspections should be repaired immediately in accordance with current Building Regulations.</i></p> <p><i>With any repair process, complications and unforeseen circumstances can arise. These scenarios will be reported whilst on-site and could potentially cause an increase in repair costs and inconvenience.</i></p> <p><i>Where any excavation/reinstatement of the surface is required, the reinstatement will always attempt to match the previous surface patterns and colouring, however we cannot guarantee an exact match.</i></p> <p><i>The above recommendations allow for the replacement of gullies & connected underground drainage only. The insured should be made aware that the aesthetic appearance of this gully may be different from what is currently in place.</i></p>

Photographs

Trial Hole 1

Fig 1.1: Trial Hole 1 Location

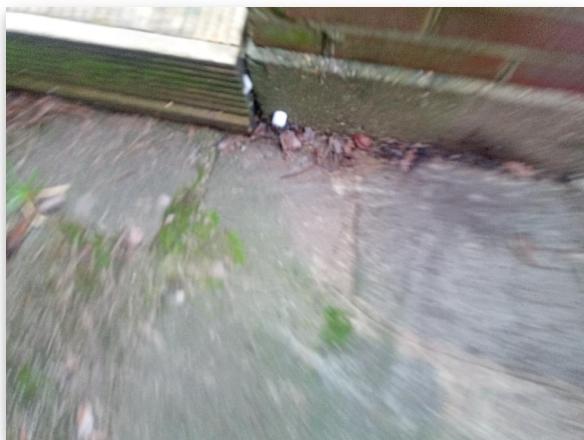


Fig 1.2: Trial Hole 1 Footing



Site Photos

Fig 2.1: RWG

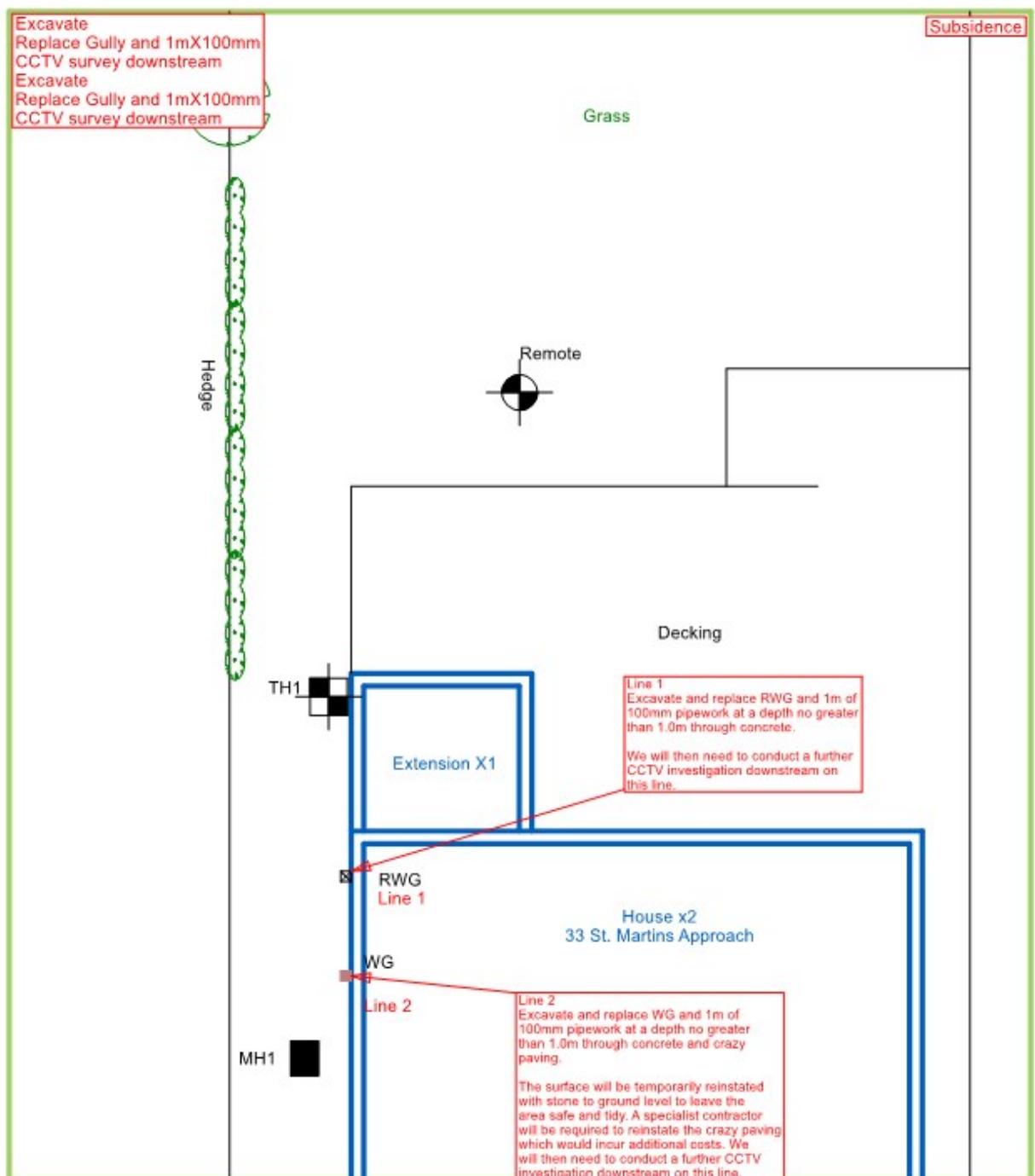


Fig 2.2: WG



Fig 2.3: MH1





This drawing should be used for diagrammatic purposes only. Auger are not responsible or liable for any 3rd party works undertaken using the details outlined in this drawing.
Confirmation of the drainage configuration can only be confirmed by excavation or detailed technical survey.

LEGEND

	= Manhole (MH)		= Blockage / Collapse		= Lines not to be repaired
	= Inspection Chamber (IC)		= Soil Vent Pipe (SVP) / WC		= Lines to be repaired
	= Inspection Point (IP)		= Combined Waste Gully (CWG) / Foul Waste Gully (FWG)		= Assumed water mains feed
			= Rainwater Gully (RWG)		= Walls
			= Rainwater Pipe (RWP)		= Fences
					= Building Outline
					= Trial hole
					= Borehole
					= Direction of flow
					= Gate / Door
					= Steps
					= Tree
					= Hedge



Trial Hole Log No.1

Location: Rear left corner of extension

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Depth (m)	Symbolic Log	Strata Description	Insitu Tests		Soil Sample	Root Sample
			SV(19)			
0.0		Ground Level Flagstones Brickwork Step Underpinned				
0.5		Moist stiff Brown fine to medium gravelly silty CLAY	74kpa		Soil @ 0.8m	Root @ 0.8m
1.0			90kpa		Soil @ 1.3m	
1.5			140kpa		Soil @ 1.8m	
2.0		TRIAL HOLE TERMINATED				
2.5						



Geotechnical Testing Analysis Report



environmental +
claims mgmt +
subsidence +
drainage +

Unit 3 & 4,
Heol Aur,
Dafen Ind Estate,
Dafen
Llanelli,
Carmarthenshire,
SA14 8QN

***The testing results contained within this report have been performed by GSTL a UKAS accredited laboratory on behalf of Auger.**

Auger House,
Cross Lane,
Wallasey,
Wirral,
CH45 8RH

Summary Of Claim Details

Policy Holder	
GSTL Job Reference	64411
SI Date	02/02/2023
Issue Date	02/02/2023
Report Date	27/02/2023
Auger Reference	144286.1.4.RSS
Insurance Company	RSA
LA Claim Reference	SU2204240
LA Co. Reference	Crawford & Co

This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Checked and approved	27/02/2023	Wayne Honey	
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2788



GEOTECHNICAL SITE & TESTING LABORATORIES

**LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX
(BS 1377:1990 - Part 2 : 4.4 & 5.3)**

DESCRIPTIONS



- environmental +
- claims mgmt +
- subsidence +
- drainage +

GSTL Contract Number	64411	
Report Date	27/02/2023	
Auger Reference	144286.1.4.RSS	

Test Operator



LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX (BS 1377:1990 - Part 2 : 4.4 & 5.3)



environmental +
claims mgmt +
subsidence +
drainage +

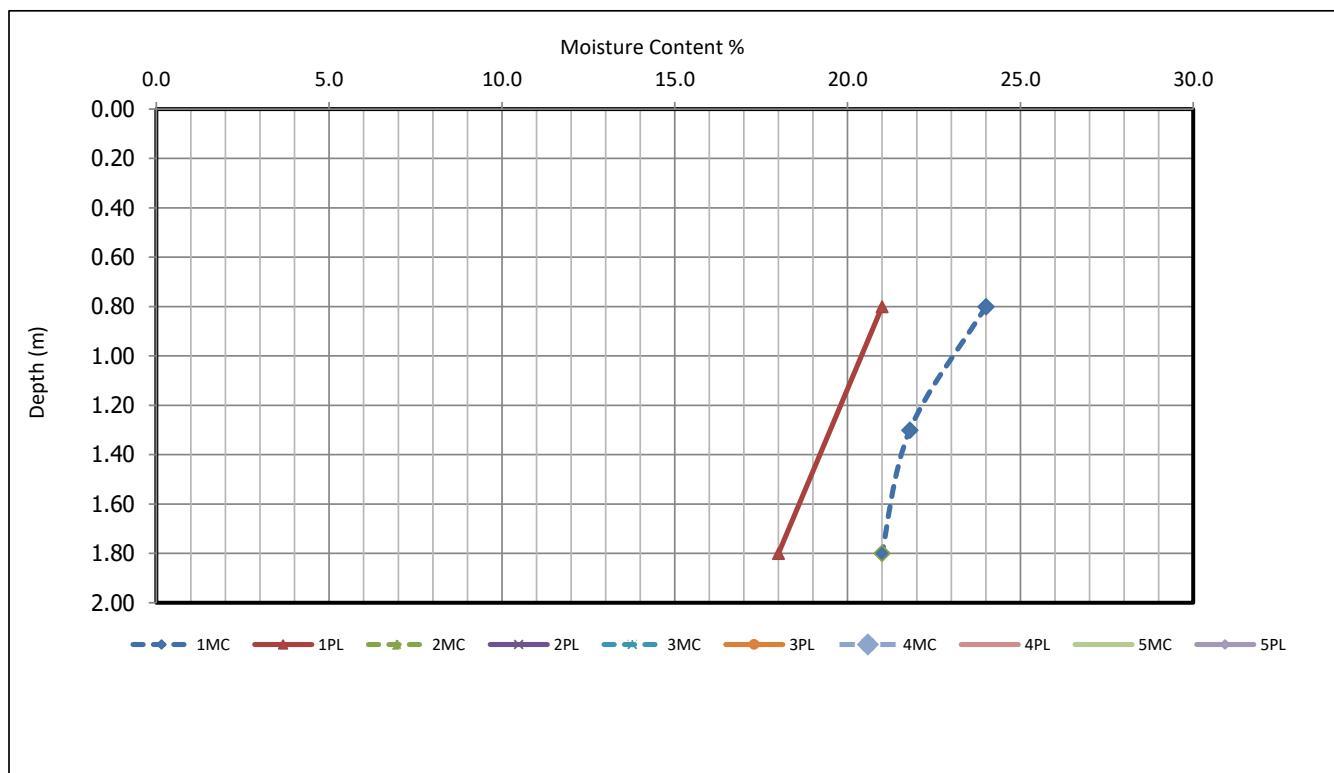
GSTL Contract Number	64411
Report Date	27/02/2023
Auger Reference	144286.1.4.RSS
Remarks	NP - (Non-Plastic), # - (Liquid Limit and Plastic Limit Wet Sieved)

Modified Plasticity Index (PI) <10	: Non Classified
Modified PI = 10 to <20	: Low volume change potential (LOW VCP)
Modified PI = 20 to <40	: Medium volume change potential (Med VCP)
Modified PI = 40 or greater	: High volume change potential (HIGH VCP)

The Atterberg Limits May also be used to classify the volume change potential of fine soils using the National House building system, as given in the NHBC's Standards Chapter 4.2 (2003) "Building Near Trees"

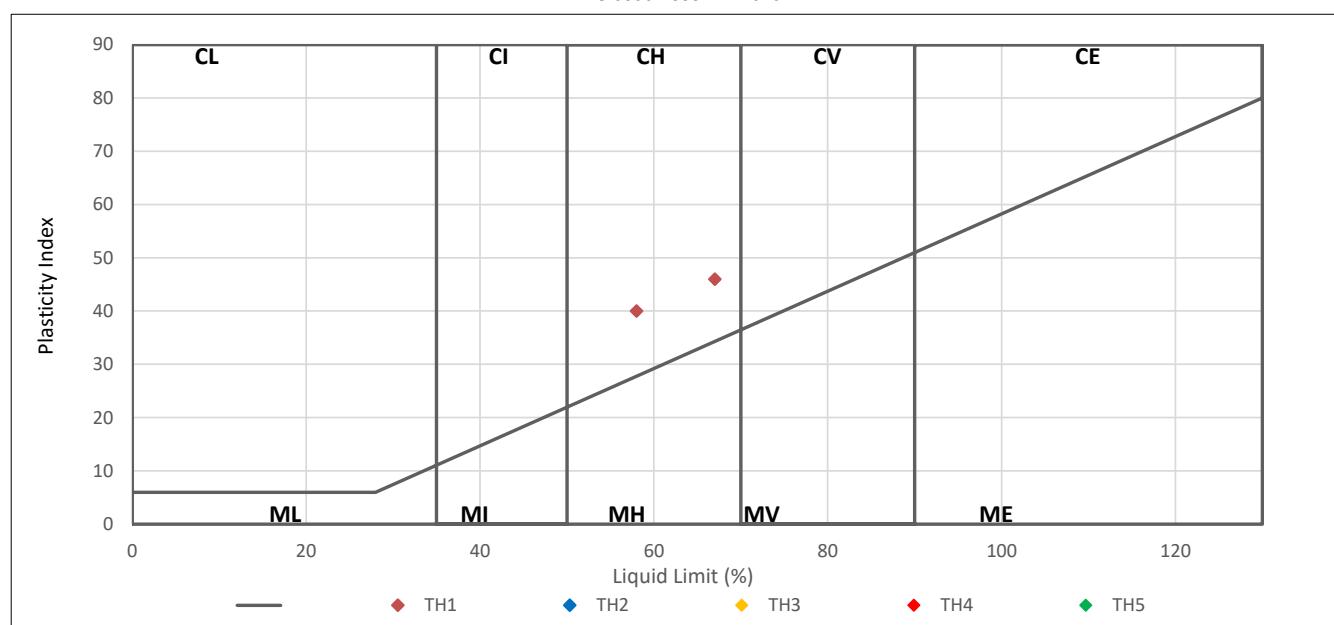
Test Operator

Jason Smith



PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION

BS 5930:1999+A2:2010



Modified Plasticity Index (PI) <10

: Non Classified

Modified PI = 10 to <20

: Low volume change potential (LOW VCP)

Modified PI = 20 to <40

: Medium volume change potential (Med VCP)

Modified PI = 40 or greater

: High volume change potential (HIGH VCP)

The Atterberg Limits May also be used to classify the volume change potential of fine soils using the National House building system, as given in the NHBC's Standards Chapter 4.2 (2003) "Building Near Trees"

Test Operator

Jason Smith

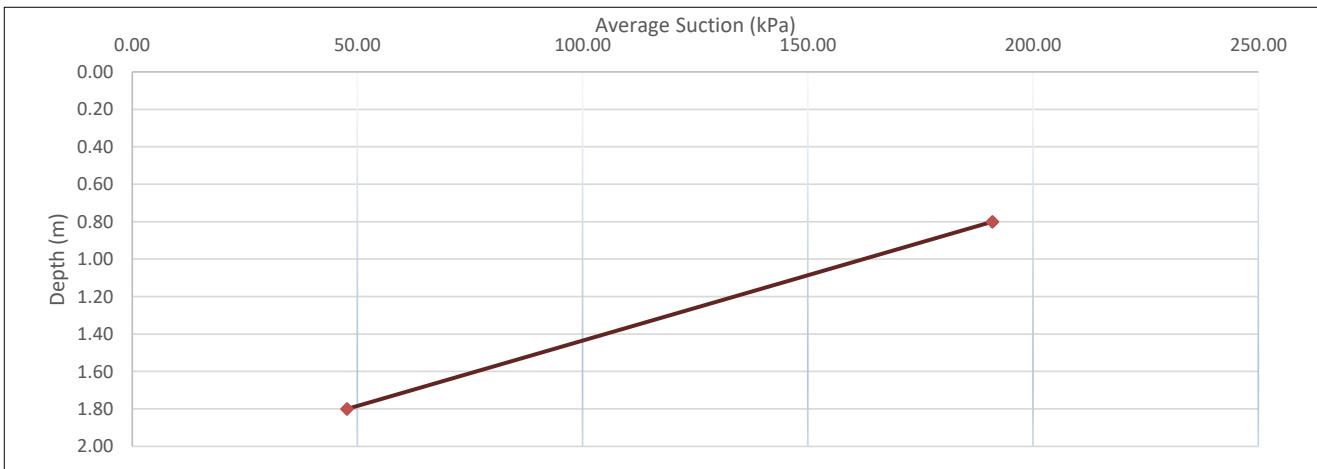
GSTL Contract Number	64411						
Report Date	27/02/2023						
Auger Reference	144286.1.4.RSS						
Remarks	D - Disturbed (Recompacted 2.5kg Rammer), U - Undisturbed Sample						

TH Trial Hole	Depth (m)	Filter Paper Location	Filter Paper	Sample Prep Method	Test Duration (Days)	Water Content (%)	Soil Suction Pk (kPa)	Average Soil Suction Pk (kPa)	Cumulative Heave Potential (mm) from bottom of the hole
TH1	0.80	Top	I	D	5	40.8	199	191	12
TH1		Middle	II	D	5	41.2	191		
TH1		Bottom	III	D	5	41.5	182		
TH1	1.30							48	0
TH1									
TH1									
TH1	1.80	Top	I	D	5	57.6	48	48	0
TH1		Middle	II	D	5	57.9	48		
TH1		Bottom	III	D	5	58.3	47		

Heave potential is calculated from the bottom of the hole and heaves above the bottom of the hole are reported as a cumulative value.

The values reported for heave above only apply to the strata the suction and plasticity have been performed on. The shallowest depth reported is assumed to be a strata thickness to GL and Heave is calculated based on that layer thickness, if the next sample is in 0.5m increments the heave is calculated based on the layer thickness of 0.5m and depths 1m from the sample above will include heave over 1m.

Consideration should be made for other stratas where values are not reported and when working out the heave potential over the entire trial hole.



Test Operator

Jason Smith



Richardson's Botanical Identifications

Root identification
Vegetation surveys
Tree/Building investigations
Plant taxonomy

Dr Ian B K Richardson
BSc, MSc, PhD, MRSB, FLS
James Richardson
BSc (Hons. Biology)

Auger Solutions

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WALLASEY

Wirral CH45 8RH

Enterprise House
49-51 Whiteknights Road
Reading
RG6 7BB

Tel: (0118) 986 9552 (Direct line)
E-mail: richardsons@botanical.net
Web: www.botanical.net

Your ref: 144286-1-3

09/03/2023

Our ref: 85/7407

Dear Sirs

Root ID

The samples you sent in relation to the above on 02/02/2023 have been examined. Their structures were referable as follows:

TH1, 0.8m		
1 no.	Examined root: QUERCUS (Oak).	Alive, recently*.
1 no.	Examined root: PRUNUS (Cherries, Plums and Damsons, Almonds, Peaches and Apricots, Blackthorn/Sloe, as well as the shrubby Cherry-laurel and Portugal-laurel).	Alive, recently*.

Click here for more information: [PRUNUS](#) [QUERCUS](#)

I trust this is of help. Please call us if you have any queries; our Invoice is enclosed.

Yours faithfully

Dr Ian B K Richardson

* Based mainly on the Iodine test for starch. Starch is present in some cells of a living woody root, but is more or less rapidly broken down by soil micro-organisms on death of the root, sometimes before decay is evident. This result need not reflect the state of the parent tree.

* * Try out our web site on www.botanical.net * *