



FT Laboratories Ltd
科達測檢試驗所有限公司



*CPS - GPRS report for Issue
Book 1.
1 Dec. 2009.*

Ground Penetration Radar Scan Report

Reference no.: H13K1101

Job No.: 68047120

Underground Condition


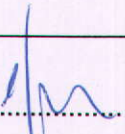
At

Central Police Station Conservation and Revitalisation Project

On 13th Aug 2009



Report Certification

Ref No.	H13K1101	Job No.	68047120
Reported By			
C. T. Wong	Sr. Technical Engineer	Signature..... 	Date.....20/10/09
Report Certified By			
W. C. Yue	General Manager	Signature..... 	Date.....20/10/09

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Introduction

To investigate the underground condition of the Central Police Station Conservation and Revitalisation Project. The main contractor, Alliance Professional Surveyors, have appointed the FT Laboratories Limited to conduct Ground Penetration Radar Survey (GPR) on 13th, 15th, 17th, 26th, 27th Aug 2009 in this project.

The GSSI GPR system produces a cross-sectional image of subsurface features. The system design allows for concrete scanning to locate rebar, pipes, tension bars, conduits, and voids within and behind/beneath concrete slabs. GPR is a remote sensing technique that uses microwave electromagnetic energy. An antenna, or transducer, transmits brief pulses of energy into the ground or concrete structure. The antenna is housed in a protective box that is pulled along the surface of the structure being scanned. When the trigger button is pressed, the unit begins the microwave transmission scan. Scanning is stopped by holding the button down for one to two seconds. The GPR antenna radiates signals into the structure, where they are reflected from the subsurface objects or voids. The radar antenna then receives the reflected signals. The GPR data unit processes the received data, records the information, and displays the GPR profiles in real-time on the control unit screen.

Equipment

GSSI GPR with 400 MHz antenna - Scanning

GSSI TerraSIRch SIR System-3000 – Data processing

Summary of Ground Penetrating Radar Scanning result

The Ground Penetrating Radar (GPR) Survey was carried out on 13th Aug 2009.

The area for the GPR survey has been divided in Central Police & Victoria Prison

For each of the defined zones the GPR equipment was used for scanning, for the orientation of the scanning, please refer to the scanning plan of the respective zone as presented in the Appendix A

Graph with interpretation of soft material, possible existing of delamination and other utilities attached in Appendix B

833940E

833920E

833900E

815860N

815840N

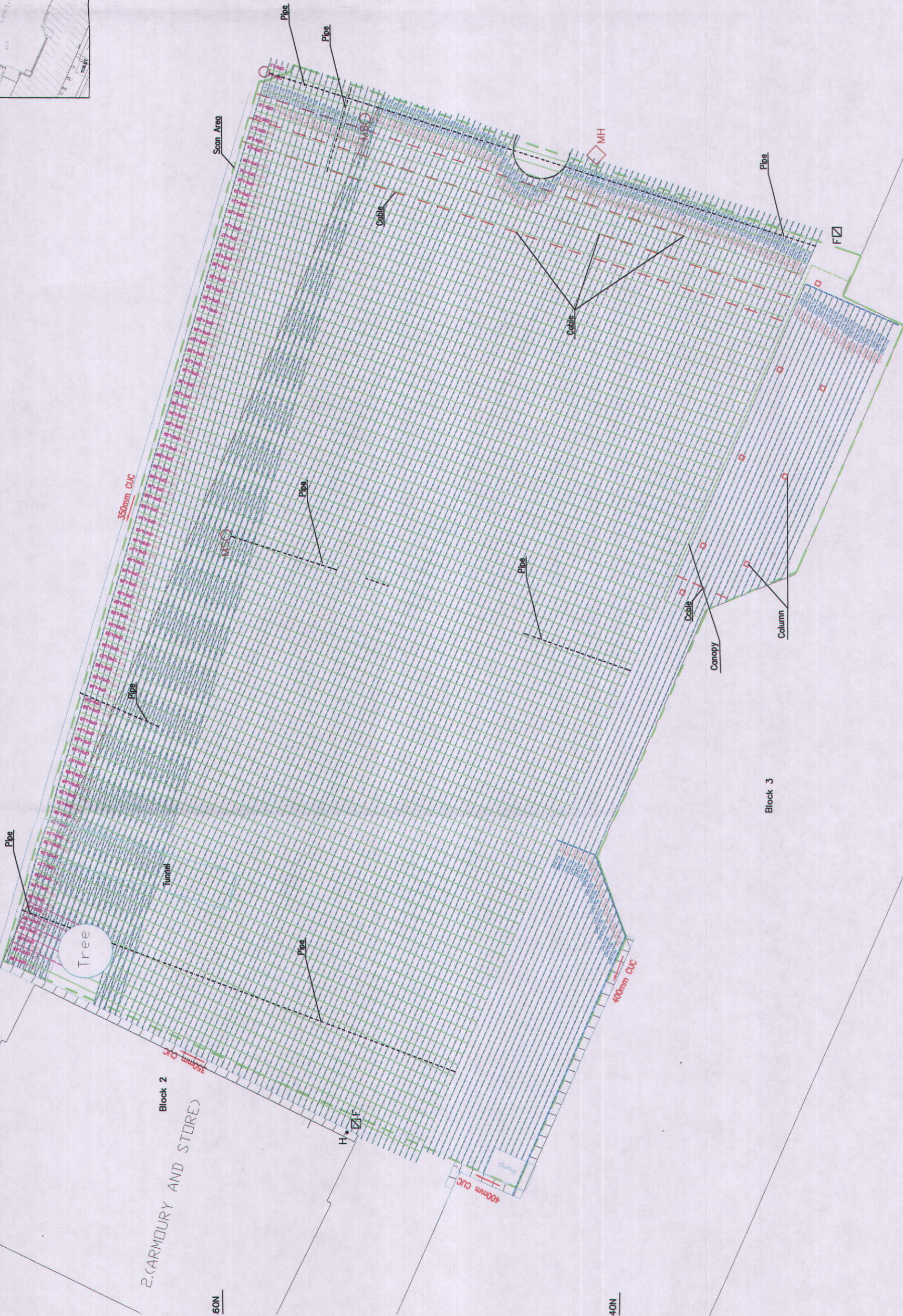
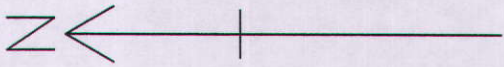
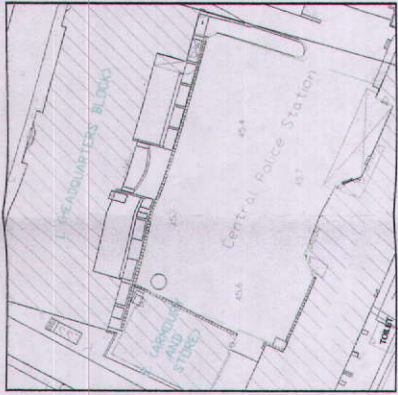
833940E

833920E

833900E

60N

40N



Notes :
Co-ordinates are relative to Hong Kong Metric Grid (1980).
All Levels are in Metres relative to Principal Datum (P.D.).
Elevations of kerb are referred to bottom of kerb.
Dimensions are in Metres unless otherwise shown.

Legends:

350mm CUC Covered U-Channel

+42.76 Spot Level

H• Fire Hydrant

Grating

Valve Water

F Valve (Fire)

MH Manhole (Unknown)

MS Manhole (Storm Water)

Scan Area

Area cannot be scanned

Pipe

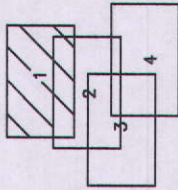
Cable

Note:

This indication plan is based on the Ground Penetration Radar Scan Report, Reference No. H13K

This Indication Plan is for identification purpose only. The actual features, their dimensions & their depths are subject to dig out the ground for determination.

Feature at approx 0.5m to 1.5m below ground



Sheet 1 of 4

Client:

The Hong Kong Jockey Club Charities Trust

Project Title:

CENTRAL POLICE STATION CONSERVATION AND REVITALISATION PROJECT

BUILDING MEASURED SURVEY CONSULTANCY SERVICES

Ref.: NT/P/1044/08

Location:

Central Police Station, Hong Kong

Date of Survey:

AUGUST 2009

Scale:

1:200(A2)

Revision:

0

Drawn by:

Plan for Pipe, Cable & Tunnel

Based on the Ground Penetration Radar Report of FT Laboratories Ltd. (Ref No. H13K1101/H13K1102) At Central Police Station Based

Drawing No.: CFS_020_Scan Feature Plan

FT Laboratories Ltd

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Date: 13th October 2009

Appendix A

Summary



Summary of Ground Penetrating Radar Survey Report

Project : Central Police Station Conservation and Revitalisation Project

Location : Central Police Station

Grid No.	Description	Scanning Direction	Assessment
CPS-T1a	Detection of Underground Utilities & Voids	Transverse	6 loose material 3 utility cables and 2 pipes at approx 0.5m to 1.5m below ground
CPS-T2a	Detection of Underground Utilities & Voids	Transverse	1 loose material 3 utility cables and 4 pipes at approx 0.5m to 1.5m below ground
CPS-T3a	Detection of Underground Utilities & Voids	Transverse	2 loose material 3 utility cables and 3 pipes at approx 0.5m to 1.5m below ground
CPS-T4a	Detection of Underground Utilities & Voids	Transverse	2 loose material 3 utility cables and 3 pipes at approx 0.5m to 1.5m below ground
CPS-T5a	Detection of Underground Utilities & Voids	Transverse	2 loose material 3 utility cables and 3 pipes at approx 0.5m to 1.5m below ground
CPS-T6a	Detection of Underground Utilities & Voids	Transverse	2 loose material 3 utility cables and 3 pipes at approx 0.5m to 1.5m below ground
CPS-T7a	Detection of Underground Utilities & Voids	Transverse	2 loose material 3 utility cables and 3 pipes at approx 0.5m to 1.5m below ground
CPS-T8a	Detection of Underground Utilities & Voids	Transverse	2 loose material 3 utility cables and 3 pipes at approx 0.5m to 1.5m below ground
CPS-T9a	Detection of Underground Utilities & Voids	Transverse	2 loose material 3 utility cables and 3 pipes at approx 0.5m to 1.5m below ground
CPS-T10a	Detection of Underground Utilities & Voids	Transverse	2 loose material 3 utility cables and 3 pipes at approx 0.5m to 1.5m below ground
CPS-T11a	Detection of Underground Utilities & Voids	Transverse	2 loose material 3 utility cables and 3 pipes at approx 0.5m to 1.5m below ground
CPS-T12a	Detection of Underground Utilities & Voids	Transverse	2 loose material 3 utility cables and 3 pipes at approx 0.5m to 1.5m below ground



Summary of Ground Penetrating Radar Survey Report

Project : Central Police Station Conservation and Revitalisation Project

Location : Central Police Station

Grid No.	Description	Scanning Direction	Assessment
CPS-T13a	Detection of Underground Utilities & Voids	Transverse	2 loose material 3 utility cables and 3 pipes at approx 0.5m to 1.5m below ground
CPS-T14a	Detection of Underground Utilities & Voids	Transverse	2 loose material 3 utility cables and 3 pipes at approx 0.5m to 1.5m below ground
CPS-T15a	Detection of Underground Utilities & Voids	Transverse	5 loose material 3 utility cables and 3 pipes at approx 0.5m to 1.5m below ground
CPS-T16a	Detection of Underground Utilities & Voids	Transverse	3 loose material 3 utility cables and 3 pipes at approx 0.5m to 1.5m below ground
CPS-T17a	Detection of Underground Utilities & Voids	Transverse	3 loose material 3 utility cables and 3 pipes at approx 0.5m to 1.5m below ground
CPS-T18a	Detection of Underground Utilities & Voids	Transverse	3 loose material 3 utility cables and 3 pipes at approx 0.5m to 1.5m below ground
CPS-T19a	Detection of Underground Utilities & Voids	Transverse	1 loose material 3 utility cables and 3 pipes at approx 0.5m to 1.5m below ground
CPS-T20a	Detection of Underground Utilities & Voids	Transverse	2 loose material 3 utility cables and 2 pipes at approx 0.5m to 1.5m below ground
CPS-T21a	Detection of Underground Utilities & Voids	Transverse	4 loose material 3 utility cables and 2 pipes at approx 0.5m to 1.5m below ground
CPS-T22a	Detection of Underground Utilities & Voids	Transverse	4 loose material 3 utility cables and 2 pipes at approx 0.5m to 1.5m below ground
CPS-T23a	Detection of Underground Utilities & Voids	Transverse	4 loose material 3 utility cables and 2 pipes at approx 0.5m to 1.5m below ground
CPS-T24a	Detection of Underground Utilities & Voids	Transverse	5 loose material 3 utility cables and 2 pipes at approx 0.5m to 1.5m below ground



Summary of Ground Penetrating Radar Survey Report

Project : Central Police Station Conservation and Revitalisation Project

Location : Central Police Station

Grid No.	Description	Scanning Direction	Assessment
CPS-T25a	Detection of Underground Utilities & Voids	Transverse	3 loose material 3 utility cables and 2 pipes at approx 0.5m to 1.5m below ground
CPS-T26a	Detection of Underground Utilities & Voids	Transverse	4 loose material 3 utility cables and 2 pipes at approx 0.5m to 1.5m below ground
CPS-T27a	Detection of Underground Utilities & Voids	Transverse	6 loose material 3 utility cables and 2 pipes at approx 0.5m to 1.5m below ground
CPS-T28a	Detection of Underground Utilities & Voids	Transverse	5 loose material 3 utility cables and 2 pipes at approx 0.5m to 1.5m below ground
CPS-T29a	Detection of Underground Utilities & Voids	Transverse	5 loose material 3 utility cables and 2 pipes at approx 0.5m to 1.5m below ground
CPS-T30a	Detection of Underground Utilities & Voids	Transverse	5 loose material 3 utility cables and 2 pipes at approx 0.5m to 1.5m below ground
CPS-T31a	Detection of Underground Utilities & Voids	Transverse	3 loose material 3 utility cables and 2 pipes at approx 0.5m to 1.5m below ground
CPS-T32a	Detection of Underground Utilities & Voids	Transverse	3 loose material 3 utility cables and 2 pipes at approx 0.5m to 1.5m below ground
CPS-T33a	Detection of Underground Utilities & Voids	Transverse	5 loose material 3 utility cables and 2 pipes at approx 0.5m to 1.5m below ground
CPS-T34a	Detection of Underground Utilities & Voids	Transverse	2 loose material 3 utility cables and 2 pipes at approx 0.5m to 1.5m below ground
CPS-T35a	Detection of Underground Utilities & Voids	Transverse	2 loose material 3 utility cables and 2 pipes at approx 0.5m to 1.5m below ground
CPS-T36a	Detection of Underground Utilities & Voids	Transverse	3 loose material 3 utility cables and 3 pipes at approx 0.5m to 1.5m below ground



Summary of Ground Penetrating Radar Survey Report

Project : Central Police Station Conservation and Revitalisation Project

Location : Central Police Station

Grid No.	Description	Scanning Direction	Assessment
CPS-T37a	Detection of Underground Utilities & Voids	Transverse	2 loose material 3 utility cables and 4 pipes at approx 0.5m to 1.5m below ground
CPS-T38a	Detection of Underground Utilities & Voids	Transverse	2 loose material 3 utility cables and 3 pipes at approx 0.5m to 1.5m below ground
CPS-T39a	Detection of Underground Utilities & Voids	Transverse	3 loose material 3 utility cables and 2 pipes at approx 0.5m to 1.5m below ground
CPS-T40a	Detection of Underground Utilities & Voids	Transverse	3 loose material 3 utility cables and 2 pipes at approx 0.5m to 1.5m below ground
CPS-T41a	Detection of Underground Utilities & Voids	Transverse	3 loose material 3 utility cables and 2 pipes at approx 0.5m to 1.5m below ground
CPS-T42a	Detection of Underground Utilities & Voids	Transverse	3 loose material 3 utility cables and 2 pipes at approx 0.5m to 1.5m below ground
CPS-T43a	Detection of Underground Utilities & Voids	Transverse	3 loose material 3 utility cables and 2 pipes at approx 0.5m to 1.5m below ground
CPS-T44a	Detection of Underground Utilities & Voids	Transverse	1 loose material 3 utility cables and 4 pipes at approx 0.5m to 1.5m below ground
CPS-T45a	Detection of Underground Utilities & Voids	Transverse	1 loose material 3 utility cables and 4 pipes at approx 0.5m to 1.5m below ground
CPS-T46a	Detection of Underground Utilities & Voids	Transverse	1 loose material 3 utility cables and 4 pipes at approx 0.5m to 1.5m below ground
CPS-T47a	Detection of Underground Utilities & Voids	Transverse	1 loose material 3 utility cables and 4 pipes at approx 0.5m to 1.5m below ground
CPS-T48a	Detection of Underground Utilities & Voids	Transverse	1 loose material 3 utility cables and 4 pipes at approx 0.5m to 1.5m below ground, 1 underground tunnel at 1.8m



Summary of Ground Penetrating Radar Survey Report

Project : Central Police Station Conservation and Revitalisation Project

Location : Central Police Station

Grid No.	Description	Scanning Direction	Assessment
CPS-T49a	Detection of Underground Utilities & Voids	Transverse	3 loose material 3 utility cables and 3 pipes at approx 0.5m to 1.5m below ground, 1 underground tunnel at 1.8m
CPS-T50a	Detection of Underground Utilities & Voids	Transverse	3 loose material 3 utility cables and 3 pipes at approx 0.5m to 1.5m below ground, 1 underground tunnel at 1.8m
CPS-T51a	Detection of Underground Utilities & Voids	Transverse	3 loose material 3 utility cables and 3 pipes at approx 0.5m to 1.5m below ground, 1 underground tunnel at 1.8m
CPS-T52a	Detection of Underground Utilities & Voids	Transverse	3 loose material 3 utility cables and 3 pipes at approx 0.5m to 1.5m below ground, 1 underground tunnel at 1.8m
CPS-T53a	Detection of Underground Utilities & Voids	Transverse	3 loose material 3 utility cables and 3 pipes at approx 0.5m to 1.5m below ground, 1 underground tunnel at 1.8m
CPS-T54a	Detection of Underground Utilities & Voids	Transverse	1 loose material 3 utility cables and 4 pipes at approx 0.5m to 1.5m below ground, 1 underground tunnel at 1.8m
CPS-T55a	Detection of Underground Utilities & Voids	Transverse	3 utility cables and 4 pipes at approx 0.5m to 1.5m below ground, 1 underground tunnel at 1.8m
CPS-T56a	Detection of Underground Utilities & Voids	Transverse	1 loose material 3 utility cables and 4 pipes at approx 0.5m to 1.5m below ground, 1 underground tunnel at 1.8m
CPS-T57a	Detection of Underground Utilities & Voids	Transverse	1 loose material 3 utility cables and 3 pipes at approx 0.5m to 1.5m below ground, 1 underground tunnel at 1.8m
CPS-T58a	Detection of Underground Utilities & Voids	Transverse	1 loose material 3 utility cables and 3 pipes at approx 0.5m to 1.5m below ground, 1 underground tunnel at 1.8m
CPS-T59a	Detection of Underground Utilities & Voids	Transverse	1 loose material 3 utility cables and 3 pipes at approx 0.5m to 1.5m below ground, 1 underground tunnel at 1.8m
CPS-T60a	Detection of Underground Utilities & Voids	Transverse	1 loose material 3 utility cables and 3 pipes at approx 0.5m to 1.5m below ground, 1 underground tunnel at 1.8m



Summary of Ground Penetrating Radar Survey Report

Project : Central Police Station Conservation and Revitalisation Project

Location : Central Police Station

Grid No.	Description	Scanning Direction	Assessment
CPS-T61a	Detection of Underground Utilities & Voids	Transverse	1 loose material 3 utility cables and 2 pipes at approx 0.5m to 1.5m below ground, 1 underground tunnel at 1.8m
CPS-T62a	Detection of Underground Utilities & Voids	Transverse	1 loose material 3 utility cables and 2 pipes at approx 0.5m to 1.5m below ground, 1 underground tunnel at 1.8m
CPS-T63a	Detection of Underground Utilities & Voids	Transverse	2 loose material 3 utility cables and 2 pipes at approx 0.5m to 1.5m below ground, 1 underground tunnel at 1.8m
CPS-T64a	Detection of Underground Utilities & Voids	Transverse	2 loose material 3 utility cables and 2 pipes at approx 0.5m to 1.5m below ground, 1 underground tunnel at 1.8m
CPS-T65a	Detection of Underground Utilities & Voids	Transverse	2 loose material 3 utility cables and 2 pipes at approx 0.5m to 1.5m below ground, 1 underground tunnel at 1.8m
CPS-T66a	Detection of Underground Utilities & Voids	Transverse	1 loose material 3 utility cables and 2 pipes at approx 0.5m to 1.5m below ground, 1 underground tunnel at 1.8m
CPS-T67a	Detection of Underground Utilities & Voids	Transverse	1 loose material 3 utility cables and 2 pipes at approx 0.5m to 1.5m below ground, 1 underground tunnel at 1.8m
CPS-T68a	Detection of Underground Utilities & Voids	Transverse	1 loose material 3 utility cables and 2 pipes at approx 0.5m to 1.5m below ground, 1 underground tunnel at 1.8m
CPS-T69a	Detection of Underground Utilities & Voids	Transverse	2 loose material 3 utility cables and 2 pipes at approx 0.5m to 1.5m below ground, 1 underground tunnel at 1.8m
CPS-T70a	Detection of Underground Utilities & Voids	Transverse	3 loose material 3 utility cables and 4 pipes at approx 0.5m to 1.5m below ground, 1 underground tunnel at 1.8m
CPS-T71a	Detection of Underground Utilities & Voids	Transverse	3 loose material 3 utility cables and 2 pipes at approx 0.5m to 1.5m below ground, 1 underground tunnel at 1.8m
CPS-T72a	Detection of Underground Utilities & Voids	Transverse	4 loose material 3 utility cables and 3 pipes at approx 0.5m to 1.5m below ground, 1 underground tunnel at 1.8m



Summary of Ground Penetrating Radar Survey Report

Project : Central Police Station Conservation and Revitalisation Project

Location : Central Police Station

Grid No.	Description	Scanning Direction	Assessment
CPS-T73a	Detection of Underground Utilities & Voids	Transverse	2 loose material 3 utility cables and 2 pipes at approx 0.5m to 1.5m below ground 1 underground tunnel at 1.8m
CPS-T74a	Detection of Underground Utilities & Voids	Transverse	1 loose material 3 utility cables and 3 pipes at approx 0.5m to 1.5m below ground 1 underground tunnel at 1.8m
CPS-T75a	Detection of Underground Utilities & Voids	Transverse	1 loose material 3 utility cables and 3 pipes at approx 0.5m to 1.5m below ground, 1 underground tunnel at 1.8m
CPS-T76a	Detection of Underground Utilities & Voids	Transverse	1 loose material 3 utility cables and 3 pipes at approx 0.5m to 1.5m below ground, 1 underground tunnel at 1.8m
CPS-T77a	Detection of Underground Utilities & Voids	Transverse	2 loose material 3 utility cables and 2 pipes at approx 0.5m to 1.5m below ground, 1 underground tunnel at 1.8m
CPS-T1b	Detection of Underground Utilities & Voids	Transverse	1 loose material 3 utility cables and 2 pipes at approx 0.5m to 1.5m below ground, 1 underground tunnel at 1.8m
CPS-T2b	Detection of Underground Utilities & Voids	Transverse	1 loose material 3 utility cables and 2 pipes at approx 0.5m to 1.5m below ground, 1 underground tunnel at 1.8m
CPS-T3b	Detection of Underground Utilities & Voids	Transverse	3 loose material 3 utility cables and 3 pipes at approx 0.5m to 1.5m below ground, 1 underground tunnel at 1.8m
CPS-T4b	Detection of Underground Utilities & Voids	Transverse	2 loose material 3 utility cables and 1 pipe at approx 0.5m to 1.5m below ground, 1 underground tunnel at 1.8m
CPS-T5b	Detection of Underground Utilities & Voids	Transverse	2 loose material 3 utility cables and 1 pipe at approx 0.5m to 1.5m below ground, 1 underground tunnel at 1.8m
CPS-T6b	Detection of Underground Utilities & Voids	Transverse	2 loose material 3 utility cables and 1 pipe at approx 0.5m to 1.5m below ground, 1 underground tunnel at 1.8m
CPS-T7b	Detection of Underground Utilities & Voids	Transverse	2 loose material 3 utility cables and 1 pipe at approx 0.5m to 1.5m below ground, 1 underground tunnel at 1.8m



Summary of Ground Penetrating Radar Survey Report

Project : Central Police Station Conservation and Revitalisation Project

Location : Central Police Station

Grid No.	Description	Scanning Direction	Assessment
CPS-T8b	Detection of Underground Utilities & Voids	Transverse	2 loose material 3 utility cables and 1 pipe at approx 0.5m to 1.5m below ground, 1 underground tunnel at 1.8m
CPS-T9b	Detection of Underground Utilities & Voids	Transverse	2 loose material 3 utility cables and 1 pipe at approx 0.5m to 1.5m below ground, 1 underground tunnel at 1.8m
CPS-T10b	Detection of Underground Utilities & Voids	Transverse	2 loose material 3 utility cables and 1 pipe at approx 0.5m to 1.5m below ground, 1 underground tunnel at 1.8m
CPS-T11b	Detection of Underground Utilities & Voids	Transverse	2 loose material 3 utility cables and 1 pipe at approx 0.5m to 1.5m below ground, 1 underground tunnel at 1.8m
CPS-T12b	Detection of Underground Utilities & Voids	Transverse	3 loose material 3 utility cables and 1 pipe at approx 0.5m to 1.5m below ground, 1 underground tunnel at 1.8m
CPS-T13b	Detection of Underground Utilities & Voids	Transverse	3 loose material 3 utility cables and 1 pipe at approx 0.5m to 1.5m below ground, 1 underground tunnel at 1.8m
CPS-T14b	Detection of Underground Utilities & Voids	Transverse	3 loose material 3 utility cables and 1 pipe at approx 0.5m to 1.5m below ground, 1 underground tunnel at 1.8m
CPS-T15b	Detection of Underground Utilities & Voids	Transverse	3 loose material 3 utility cables and 1 pipe at approx 0.5m to 1.5m below ground, 1 underground tunnel at 1.8m
CPS-T16b	Detection of Underground Utilities & Voids	Transverse	3 loose material 3 utility cables and 1 pipe at approx 0.5m to 1.5m below ground, 1 underground tunnel at 1.8m
CPS-T17b	Detection of Underground Utilities & Voids	Transverse	3 loose material 3 utility cables and 1 pipe at approx 0.5m to 1.5m below ground, 1 underground tunnel at 1.8m
CPS-T18b	Detection of Underground Utilities & Voids	Transverse	2 loose material 3 utility cables and 1 pipe at approx 0.5m to 1.5m below ground, 1 underground tunnel at 1.8m
CPS-T19b	Detection of Underground Utilities & Voids	Transverse	2 loose material 3 utility cables and 1 pipe at approx 0.5m to 1.5m below ground, 1 underground tunnel at 1.8m



Summary of Ground Penetrating Radar Survey Report

Project : Central Police Station Conservation and Revitalisation Project

Location : Central Police Station

Grid No.	Description	Scanning Direction	Assessment
CPS-T20b	Detection of Underground Utilities & Voids	Transverse	1 loose material 3 utility cables and 2 pipe at approx 0.5m to 1.5m below ground, 1 underground tunnel at 1.8m
CPS-T1c	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
CPS-T2c	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
CPS-T3c	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
CPS-T4c	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
CPS-T5c	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
CPS-T6c	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
CPS-T7c	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
CPS-T8c	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
CPS-T9c	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
CPS-T10c	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
CPS-T11c	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground



Summary of Ground Penetrating Radar Survey Report

Project : Central Police Station Conservation and Revitalisation Project

Location : Central Police Station

Grid No.	Description	Scanning Direction	Assessment
CPS-T12c	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
CPS-T13c	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
CPS-T14c	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
CPS-T15c	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
CPS-T16c	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
CPS-T1d	Detection of Underground Utilities & Voids	Transverse	2 loose material at approx 0.5m to 1.5m below ground
CPS-T2d	Detection of Underground Utilities & Voids	Transverse	2 loose material at approx 0.5m to 1.5m below ground
CPS-T3d	Detection of Underground Utilities & Voids	Transverse	2 loose material at approx 0.5m to 1.5m below ground
CPS-T4d	Detection of Underground Utilities & Voids	Transverse	2 loose material at approx 0.5m to 1.5m below ground
CPS-T5d	Detection of Underground Utilities & Voids	Transverse	2 loose material at approx 0.5m to 1.5m below ground
CPS-T6d	Detection of Underground Utilities & Voids	Transverse	2 loose material at approx 0.5m to 1.5m below ground
CPS-T7d	Detection of Underground Utilities & Voids	Transverse	2 loose material at approx 0.5m to 1.5m below ground



Summary of Ground Penetrating Radar Survey Report

Project : Central Police Station Conservation and Revitalisation Project

Location : Central Police Station

Grid No.	Description	Scanning Direction	Assessment
CPS-T8d	Detection of Underground Utilities & Voids	Transverse	2 loose material at approx 0.5m to 1.5m below ground
CPS-T9d	Detection of Underground Utilities & Voids	Transverse	GPR Signal were interrupted
CPS-T10d	Detection of Underground Utilities & Voids	Transverse	3 loose material at approx 0.5m to 1.5m below ground
CPS-T11d	Detection of Underground Utilities & Voids	Transverse	3 loose material at approx 0.5m to 1.5m below ground
CPS-T12d	Detection of Underground Utilities & Voids	Transverse	3 loose material at approx 0.5m to 1.5m below ground
CPS-T13d	Detection of Underground Utilities & Voids	Transverse	3 loose material at approx 0.5m to 1.5m below ground
CPS-T14d	Detection of Underground Utilities & Voids	Transverse	3 loose material at approx 0.5m to 1.5m below ground
CPS-T15d	Detection of Underground Utilities & Voids	Transverse	3 loose material at approx 0.5m to 1.5m below ground
CPS-T16d	Detection of Underground Utilities & Voids	Transverse	3 loose material at approx 0.5m to 1.5m below ground
CPS-L1	Detection of Underground Utilities & Voids	Longitudinal	1 pipe at approx 0.8m below ground
CPS-L2	Detection of Underground Utilities & Voids	Longitudinal	1 loose material and 1 pipe at approx 0.8m below ground
CPS-L3	Detection of Underground Utilities & Voids	Longitudinal	1 loose material and 1 pipe at approx 0.8m below ground



Summary of Ground Penetrating Radar Survey Report

Project : Central Police Station Conservation and Revitalisation Project

Location : Central Police Station

Grid No.	Description	Scanning Direction	Assessment
CPS-L4	Detection of Underground Utilities & Voids	Longitudinal	2 loose material and 1 pipe at approx 0.5m to 1.5m below ground
CPS-L5	Detection of Underground Utilities & Voids	Longitudinal	1 loose material and 1 pipe at approx 0.8m below ground
CPS-L6	Detection of Underground Utilities & Voids	Longitudinal	1 pipe at approx 0.8m below ground
CPS-L7	Detection of Underground Utilities & Voids	Longitudinal	1 pipe at approx 0.8m below ground
CPS-L8	Detection of Underground Utilities & Voids	Longitudinal	2 loose material and 1 pipe at approx 0.8m below ground
CPS-L9	Detection of Underground Utilities & Voids	Longitudinal	3 loose material at approx 0.6m below ground
CPS-L10	Detection of Underground Utilities & Voids	Longitudinal	No observable void or loose material or detectable pipe or utility
CPS-L11	Detection of Underground Utilities & Voids	Longitudinal	No observable void or loose material or detectable pipe or utility
CPS-L12	Detection of Underground Utilities & Voids	Longitudinal	No observable void or loose material or detectable pipe or utility
CPS-L13	Detection of Underground Utilities & Voids	Longitudinal	2 loose material at approx 0.6m below ground
CPS-L14	Detection of Underground Utilities & Voids	Longitudinal	3 loose material at approx 0.6m below ground
CPS-L15	Detection of Underground Utilities & Voids	Longitudinal	4 loose material at approx 0.6m below ground



Summary of Ground Penetrating Radar Survey Report

Project : Central Police Station Conservation and Revitalisation Project

Location : Central Police Station

Grid No.	Description	Scanning Direction	Assessment
CPS-L16	Detection of Underground Utilities & Voids	Longitudinal	3 loose material at approx 0.6m below ground
CPS-L17	Detection of Underground Utilities & Voids	Longitudinal	6 loose material at approx 0.6m to 1m below ground
CPS-L18	Detection of Underground Utilities & Voids	Longitudinal	3 loose material at approx 0.6m to 1m below ground
CPS-L19	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.6m to 1m below ground
CPS-L20	Detection of Underground Utilities & Voids	Longitudinal	No observable void or loose material or detectable pipe or utility
CPS-L21	Detection of Underground Utilities & Voids	Longitudinal	No observable void or loose material or detectable pipe or utility
CPS-L22	Detection of Underground Utilities & Voids	Longitudinal	No observable void or loose material or detectable pipe or utility
CPS-L23	Detection of Underground Utilities & Voids	Longitudinal	No observable void or loose material or detectable pipe or utility
CPS-L24	Detection of Underground Utilities & Voids	Longitudinal	No observable void or loose material or detectable pipe or utility
CPS-L25	Detection of Underground Utilities & Voids	Longitudinal	No observable void or loose material or detectable pipe or utility
CPS-L26	Detection of Underground Utilities & Voids	Longitudinal	No observable void or loose material or detectable pipe or utility
CPS-L27	Detection of Underground Utilities & Voids	Longitudinal	No observable void or loose material or detectable pipe or utility



Summary of Ground Penetrating Radar Survey Report

Project : Central Police Station Conservation and Revitalisation Project

Location : Central Police Station

Grid No.	Description	Scanning Direction	Assessment
CPS-L28	Detection of Underground Utilities & Voids	Longitudinal	No observable void or loose material or detectable pipe or utility
CPS-L29	Detection of Underground Utilities & Voids	Longitudinal	No observable void or loose material or detectable pipe or utility
CPS-L30	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.6m below ground
CPS-L31	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.6m below ground
CPS-L32	Detection of Underground Utilities & Voids	Longitudinal	2 loose material at approx 0.6m below ground
CPS-L33	Detection of Underground Utilities & Voids	Longitudinal	2 loose material at approx 0.6m below ground
CPS-L34	Detection of Underground Utilities & Voids	Longitudinal	2 loose material at approx 0.6m below ground
CPS-L35	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.6m below ground
CPS-L36	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.6m below ground
CPS-L37	Detection of Underground Utilities & Voids	Longitudinal	No observable void or loose material or detectable pipe or utility
CPS-L38	Detection of Underground Utilities & Voids	Longitudinal	2 loose material at approx 0.6m below ground
CPS-L39	Detection of Underground Utilities & Voids	Longitudinal	2 loose material at approx 0.6m below ground



Summary of Ground Penetrating Radar Survey Report

Project : Central Police Station Conservation and Revitalisation Project

Location : Central Police Station

Grid No.	Description	Scanning Direction	Assessment
CPS-L40	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.6m below ground
CPS-L41	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.6m below ground
CPS-L42	Detection of Underground Utilities & Voids	Longitudinal	1 possible loose material at approx 0.6m below ground
CPS-L43	Detection of Underground Utilities & Voids	Longitudinal	2 loose material at approx 0.6m below ground
CPS-L44	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.6m below ground
CPS-L45	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.6m below ground
CPS-L46	Detection of Underground Utilities & Voids	Longitudinal	No observable void or loose material or detectable pipe or utility
CPS-L47	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.6m below ground
CPS-L48	Detection of Underground Utilities & Voids	Longitudinal	No observable void or loose material or detectable pipe or utility
CPS-L49	Detection of Underground Utilities & Voids	Longitudinal	No observable void or loose material or detectable pipe or utility
CPS-L50	Detection of Underground Utilities & Voids	Longitudinal	No observable void or loose material or detectable pipe or utility
CPS-L51	Detection of Underground Utilities & Voids	Longitudinal	No observable void or loose material or detectable pipe or utility



Summary of Ground Penetrating Radar Survey Report

Project : Central Police Station Conservation and Revitalisation Project

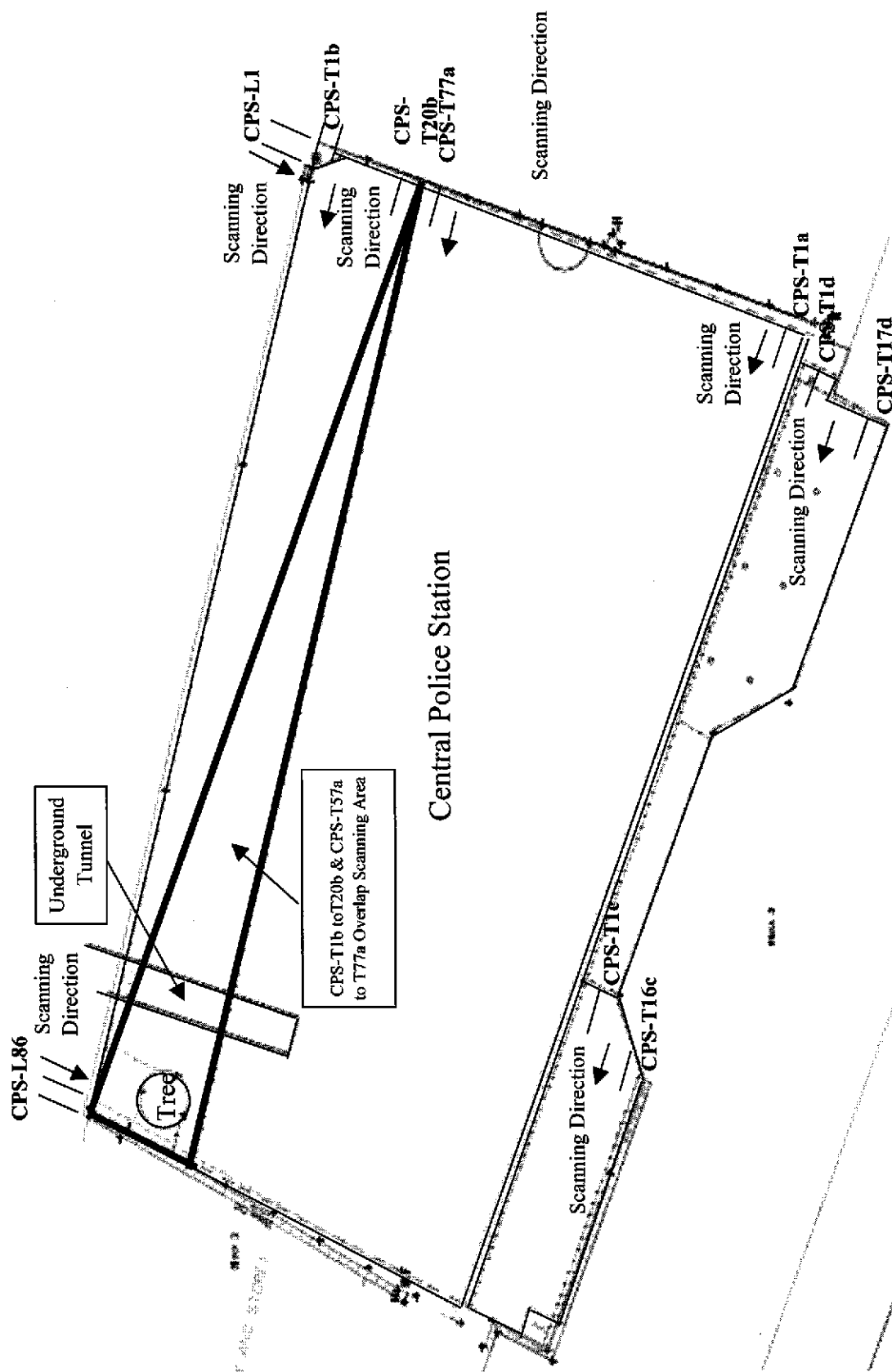
Location : Central Police Station

Grid No.	Description	Scanning Direction	Assessment
CPS-L52	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.6m below ground
CPS-L53	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.6m below ground
CPS-L54	Detection of Underground Utilities & Voids	Longitudinal	No observable void or loose material or detectable pipe or utility
CPS-L55	Detection of Underground Utilities & Voids	Longitudinal	No observable void or loose material or detectable pipe or utility
CPS-L56	Detection of Underground Utilities & Voids	Longitudinal	No observable void or loose material and 1 underground Tunnel at 1.8m
CPS-L57	Detection of Underground Utilities & Voids	Longitudinal	No observable void or loose material and 1 underground Tunnel at 1.8m
CPS-L58	Detection of Underground Utilities & Voids	Longitudinal	No observable void or loose material and 1 underground Tunnel at 1.8m
CPS-L59	Detection of Underground Utilities & Voids	Longitudinal	No observable void or loose material and 1 underground Tunnel at 1.8m
CPS-L60	Detection of Underground Utilities & Voids	Longitudinal	No observable void or loose material and 1 underground Tunnel at 1.8m
CPS-L61	Detection of Underground Utilities & Voids	Longitudinal	No observable void or loose material or detectable pipe or utility
CPS-L62	Detection of Underground Utilities & Voids	Longitudinal	No observable void or loose material or detectable pipe or utility
CPS-L63	Detection of Underground Utilities & Voids	Longitudinal	No observable void or loose material or detectable pipe or utility

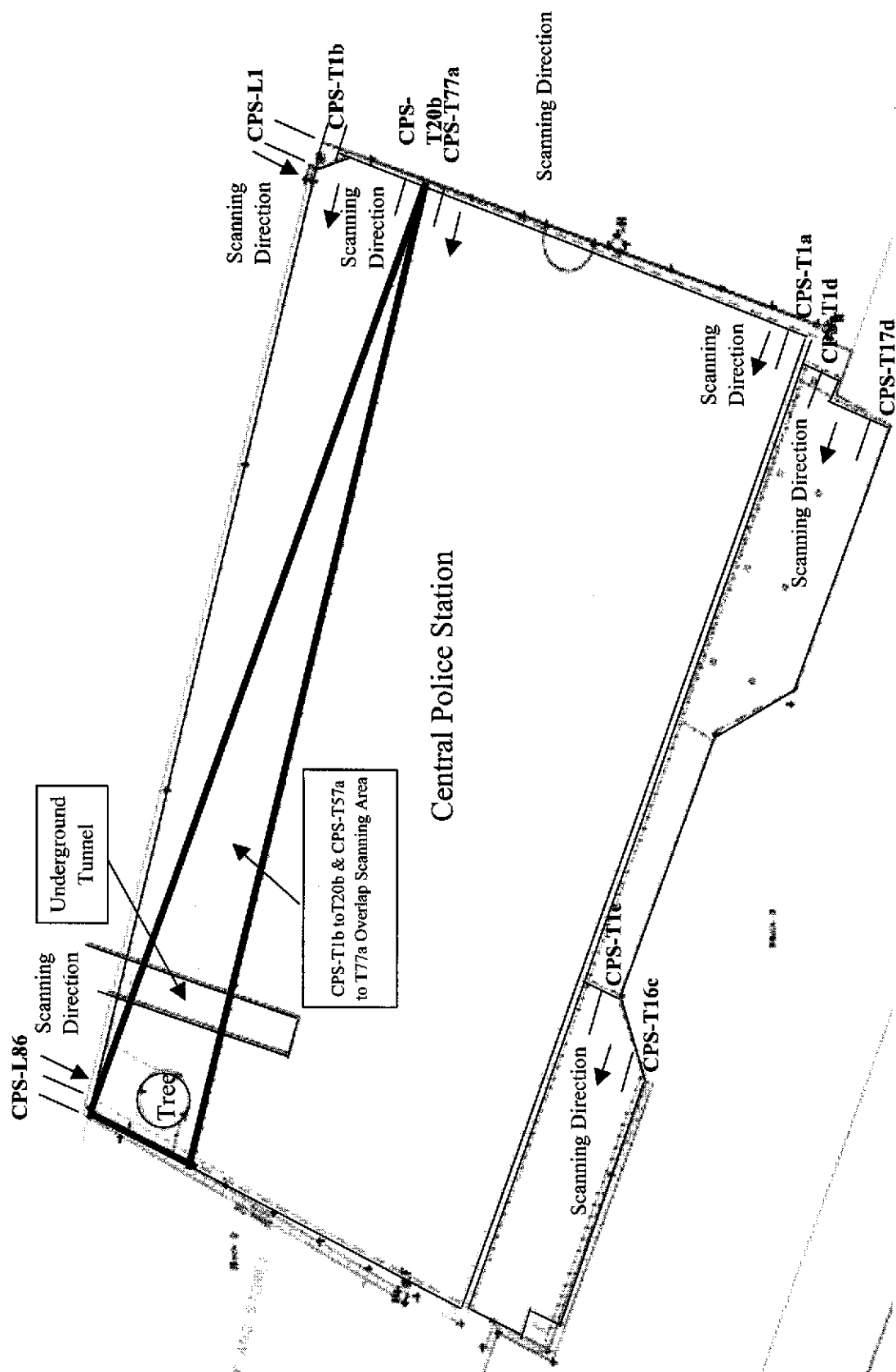
Appendix B

Scan location

Central Police Station Ground Penetrating Radar Scanning Location Plan



Central Police Station Ground Penetrating Radar Scanning Location Plan





FT Laboratories Ltd
科達測檢試驗所有限公司



CPS - GPRS report for Issue
1 Dec. 2009 *Book 2*

Ground Penetration Radar Scan Report

Reference no.: H13K1102

Job No.: 68047120

Underground Condition

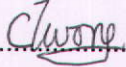
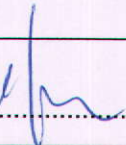
At

Central Police Station Conservation and Revitalisation Project

On 13th Aug 2009



Report Certification

Ref No.	H13K1102	Job No.	68047120
Reported By			
C. T. Wong	Sr. Technical Engineer	Signature..... 	Date.....20/10/09
Report Certified By			
W. C. Yue	General Manager	Signature..... 	Date.....20/10/09

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Introduction

To investigate the underground condition of the Central Police Station Conservation and Revitalisation Project. The main contractor, Alliance Professional Surveyors, have appointed the FT Laboratories Limited to conduct Ground Penetration Radar Survey (GPR) on 13th, 15th, 17th, 26th, 27th Aug 2009 in this project.

The GSSI GPR system produces a cross-sectional image of subsurface features. The system design allows for concrete scanning to locate rebar, pipes, tension bars, conduits, and voids within and behind/beneath concrete slabs. GPR is a remote sensing technique that uses microwave electromagnetic energy. An antenna, or transducer, transmits brief pulses of energy into the ground or concrete structure. The antenna is housed in a protective box that is pulled along the surface of the structure being scanned. When the trigger button is pressed, the unit begins the microwave transmission scan. Scanning is stopped by holding the button down for one to two seconds. The GPR antenna radiates signals into the structure, where they are reflected from the subsurface objects or voids. The radar antenna then receives the reflected signals. The GPR data unit processes the received data, records the information, and displays the GPR profiles in real-time on the control unit screen.

Equipment

GSSI GPR with 400 MHz antenna - Scanning

GSSI TerraSIRch SIR System-3000 – Data processing

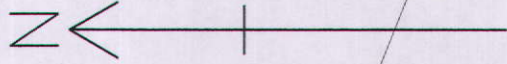
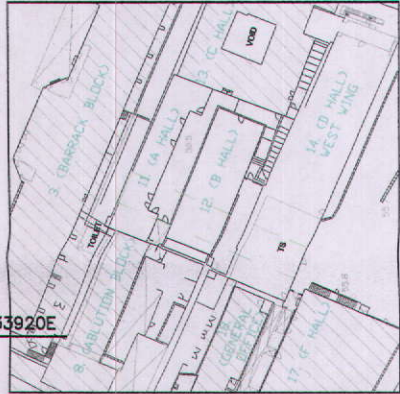
Summary of Ground Penetrating Radar Scanning result

The Ground Penetrating Radar (GPR) Survey was carried out on 13th Aug 2009.

The area for the GPR survey has been divided in Central Police & Victoria Prison

For each of the defined zones the GPR equipment was used for scanning, for the orientation of the scanning, please refer to the scanning plan of the respective zone as presented in the Appendix A

Graph with interpretation of soft material, possible existing of delamination and other utilities attached in Appendix B



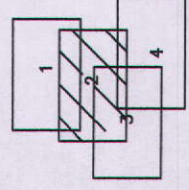
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Co-ordinates are relative to Hong Kong Metric Grid (1980).
All Levels are in Metres relative to Principal Datum (P.D.).
Elevations of kerb are referred to bottom of kerb.
Dimensions are in Metres unless otherwise shown.

- Legends:
- 300mm U-Channel
 - Spot Level
 - Fire Hydrant
 - Valve (Fire)
 - Manhole (Unknown)
 - Manhole (Storm Water)
 - Area cannot be scanned
 - Pipe
 - Cable

Note:
This indication plan is based on the Ground Penetration Radar Scan Report, Reference No. H13K

This Indication Plan is for identification purpose only. The actual features, their dimensions & their depths are subject to dig out the ground for determination.

Feature at approx 0.5m to 1.5m below ground



Sheet 2 of 4

Client: The Hong Kong Jockey Club Charities Trust
Project Title: CENTRAL POLICE STATION CONSERVATION AND REVITALISATION PROJECT
Building Measured Survey Consultancy Services

Ref: NT/P/044/08

Location: Central Police Station, Hong Kong

Date of Survey: AUGUST 2009

Scale: 1:200

Revised: 0

Drawings Title: Indication Plan for Pipes, Cable & Tunnel

Based on the Ground Penetration Radar Report of FT Laboratories Ltd (Ref No.:H13K110/H13K1102) at Central Police Station Based

Drawing No.: CPS_020_Scan Feature Plan

FT Laboratories Ltd

Lot No.D077 Section 1552 S. Ave 19P Jig Chow South Road/Ping Chau, Kowloon
P.O.Box890,Fairing Post Office/Fairing M.T.
Tel:(852)2758 4851 Fax:(852)2758 8862

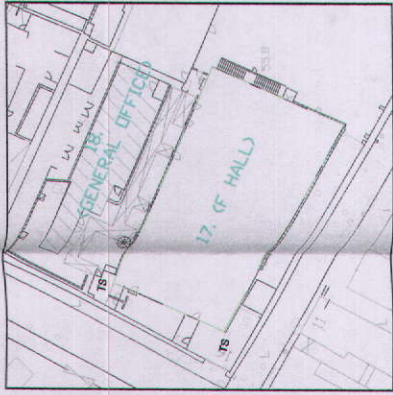
Date: 13th October 2009

833840E

833860E

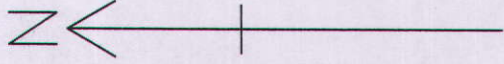
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833900E



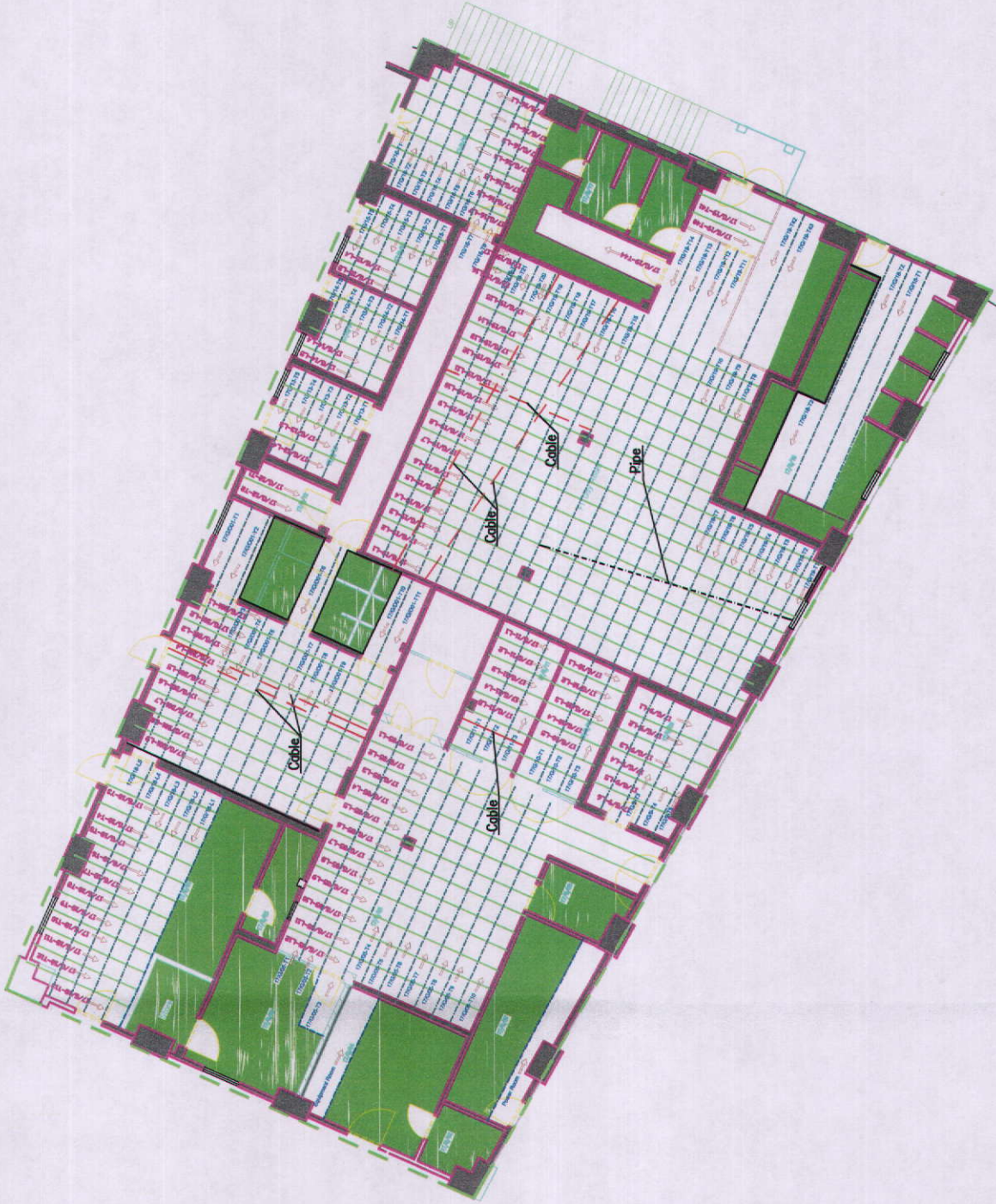
80N

815800N



80N

815780N



80N

815760N

833840E

833860E

833880E

833900E

Notes :
Co-ordinates are relative to Hong Kong Metric Grid (1980).
All Levels are in Metres relative to Principal Datum (P.D.).
Elevations of kerb are referred to bottom of kerb.
Dimensions are in Metres unless otherwise shown.

Legends:

350mm CUC Covered U-Channel

+42.76 Spot Level

H • Fire Hydrant

F □ Valve (Fire)

MH □ Manhole (Unknown)

MS ○ Manhole (Storm Water)

Area cannot be scanned

--- Pipe

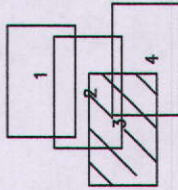
- - - Cable

Note:

This indication plan is based on the Ground Penetration Radar Scan Report, Reference No. H13K

This Indication Plan is for identification purpose only. The actual features their dimensions & their depths are subject to dig out the ground for determination.

Feature at approx 0.5m to 1.5m below ground



Sheet 3 of 4

CLIENT: The Hong Kong Jockey Club Charities Trust

PROJECT TITLE: CENTRAL POLICE STATION CONSERVATION AND REVITALISATION PROJECT
BUILDING MEASURED SURVEY CONSULTANCY SI

Ref.: NT/P1044/08

LOCATION: Central Police Station, Hong Kong

DATE OF SURVEY: AUGUST 2009 SCALE: 1:200 REVISION: 0

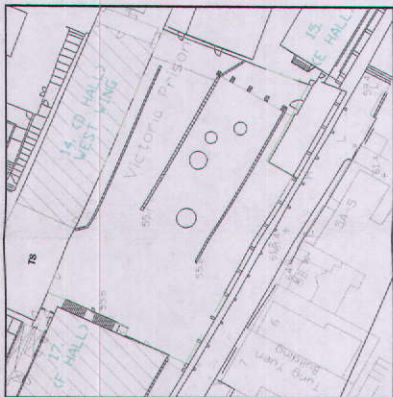
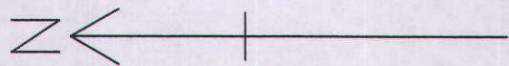
ISSUED FOR: Indication Plan for Pipe, Cable & Tunnel Based on the Ground Penetration Radar Report of FT Laboratories Ltd. (Ref No.: H13K1101/H13K1102) At Central Police Station Based

Drawing No.: CPS_020_Scan_Feature Plan

FT Laboratories Ltd

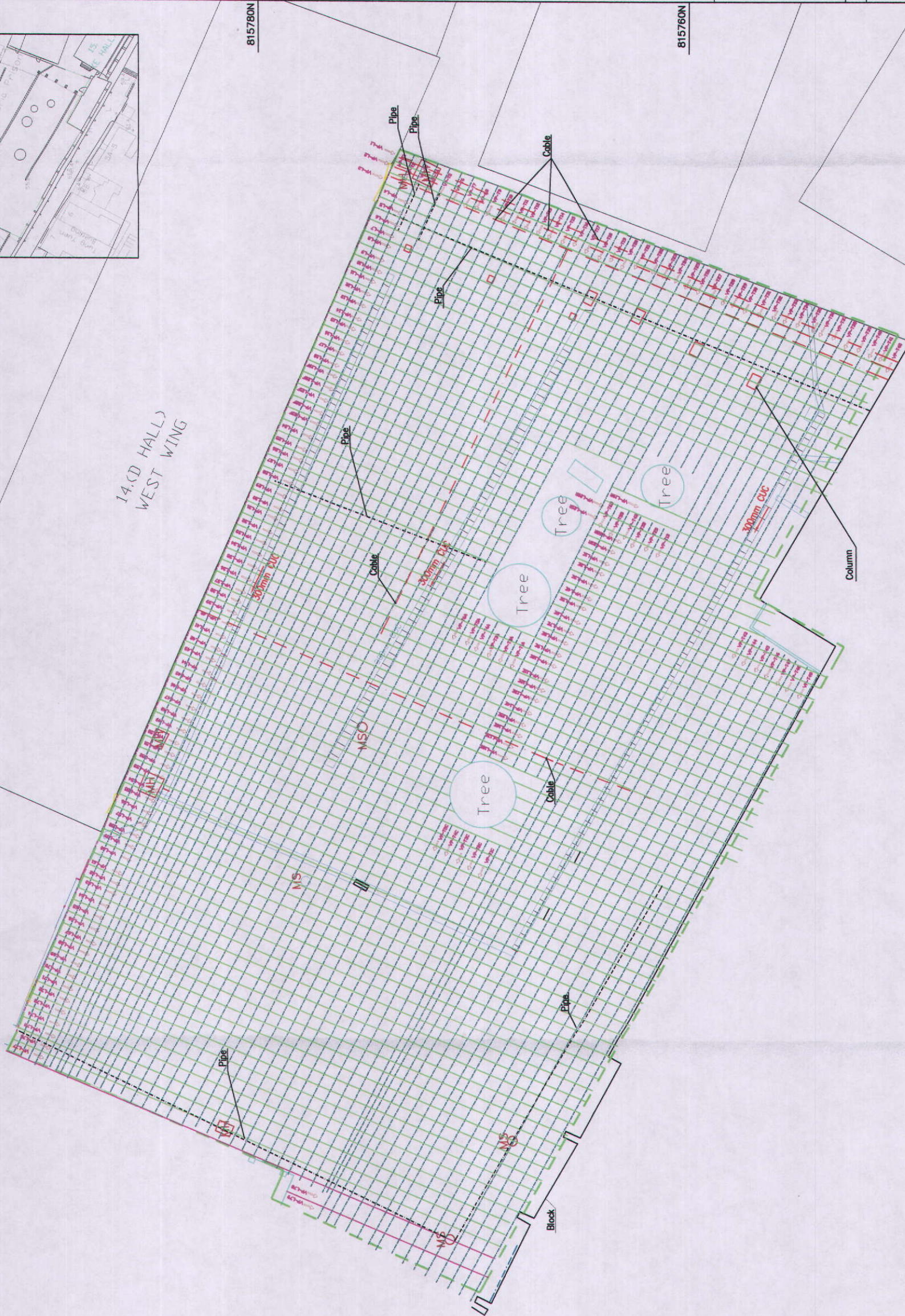
Lot No.D077 Section 1552 S.A.S. RRP Ng Chow South Road,Ping Che,Fa
P.O.Box830,Fairing Post Office,Fairing,N.T.
Tel:(852)2758 4861 Fax:(852)2758 8862

Date: 13th October 2



14.(D HALL)
WEST WING

15.(E HALL)



Notes :
Co-ordinates are relative to Hong Kong Metric Grid (1980).
All Levels are in Metres relative to Principal Datum (P.D.).
Elevations of kerb are referred to bottom of kerb.
Dimensions are in Metres unless otherwise shown.

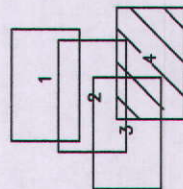
Legends:

- 350mm CUC Covered U-Channel
- +42.76 Spot Level
- H • Fire Hydrant
- F □ Valve (Fire)
- MH □ Manhole (Unknown)
- MS ○ Manhole (Storm Water)
- Area cannot be scanned
- Pipe
- - - Cable

Note:

This indication plan is based on the Ground Penetration Radar Scan Report, Reference No. H13K1101.
This Indication Plan is for identification purpose only. The actual features, their dimensions & their depths are subject to dig out the ground for determination.

Feature at approx 0.5m to 1.5m below ground



Sheet 4 of 4

Client: The Hong Kong Jockey Club Charities Trust

Project Title: CENTRAL POLICE STATION CONSERVATION AND REVITALISATION PROJECT

Building Measured Survey Consultancy Services

Ref.: NT/P1044/08

Location: Central Police Station, Hong Kong

Date of Survey: AUGUST 2009

Scale: 1:200

Revision: 0

Drawing Title: Indication Plan for Pipe, Cable & Tunnel

Based on the Ground Penetration Radar Report of FT Laboratories Ltd. (Ref No.:H13K1101/H13K1102) At Central Police Station Based

Drawing No.: CPS_020_Scan_Feature Plan

FT Laboratories Ltd

Lot No.0077 Section 1552 S. Area 18P Ng Chow South Road Ping Che Fungling N.T.

P.O.Box830/Fungling Post Office Fungling N.T.

Tel:(852)2758 4861 Fax:(852)2758 8862

Date: 13th October 2009

Appendix A

Summary



Summary of Ground Penetrating Radar Survey Report

Project : Central Police Station Conservation and Revitalisation Project

Location : Vectoria Prison

Grid No.	Description	Scanning Direction	Assessment
VP-T1	Detection of Underground Utilities & Voids	Transverse	4 loose material 4 utility cables and 3 pipes at approx 0.5m to 1.5m below ground
VP-T2	Detection of Underground Utilities & Voids	Transverse	1 loose material 4 utility cables and 3 pipes at approx 0.5m to 1.5m below ground
VP-T3	Detection of Underground Utilities & Voids	Transverse	2 loose material 4 utility cables and 3 pipes at approx 0.5m to 1.5m below ground
VP-T4	Detection of Underground Utilities & Voids	Transverse	3 loose material 4 utility cables and 3 pipes at approx 0.5m to 1.5m below ground
VP-T5	Detection of Underground Utilities & Voids	Transverse	6 loose material 4 utility cables and 3 pipes at approx 0.5m to 1.5m below ground
VP-T6	Detection of Underground Utilities & Voids	Transverse	3 loose material 4 utility cables and 2 pipes at approx 0.5m to 1.5m below ground
VP-T7	Detection of Underground Utilities & Voids	Transverse	4 loose material 4 utility cables and 2 pipes at approx 0.5m to 1.5m below ground
VP-T8	Detection of Underground Utilities & Voids	Transverse	5 loose material 4 utility cables and 2 pipes at approx 0.5m to 1.5m below ground
VP-T9	Detection of Underground Utilities & Voids	Transverse	2 loose material 4 utility cables and 2 pipes at approx 0.5m to 1.5m below ground
VP-T10	Detection of Underground Utilities & Voids	Transverse	4 loose material 4 utility cables and 2 pipes at approx 0.5m to 1.5m below ground
VP-T11	Detection of Underground Utilities & Voids	Transverse	4 loose material 4 utility cables and 2 pipes at approx 0.5m to 1.5m below ground
VP-T12	Detection of Underground Utilities & Voids	Transverse	4 loose material 4 utility cables and 2 pipes at approx 0.5m to 1.5m below ground



Summary of Ground Penetrating Radar Survey Report

Project : Central Police Station Conservation and Revitalisation Project

Location : Vectoria Prison

Grid No.	Description	Scanning Direction	Assessment
VP-T13	Detection of Underground Utilities & Voids	Transverse	4 loose material 4 utility cables and 2 pipes at approx 0.5m to 1.5m below ground
VP-T14	Detection of Underground Utilities & Voids	Transverse	4 loose material 4 utility cables and 2 pipes at approx 0.5m to 1.5m below ground
VP-T15	Detection of Underground Utilities & Voids	Transverse	5 loose material 4 utility cables and 2 pipes at approx 0.5m to 1.5m below ground
VP-T16	Detection of Underground Utilities & Voids	Transverse	4 loose material 4 utility cables and 2 pipes at approx 0.5m to 1.5m below ground
VP-T18	Detection of Underground Utilities & Voids	Transverse	1 loose material 4 utility cables and 2 pipes at approx 0.5m to 1.5m below ground
VP-T19	Detection of Underground Utilities & Voids	Transverse	1 loose material 4 utility cables and 2 pipes at approx 0.5m to 1.5m below ground
VP-T20	Detection of Underground Utilities & Voids	Transverse	2 loose material 4 utility cables and 2 pipes at approx 0.5m to 1.5m below ground
VP-T21	Detection of Underground Utilities & Voids	Transverse	1 loose material 4 utility cables and 2 pipes at approx 0.5m to 1.5m below ground
VP-T22	Detection of Underground Utilities & Voids	Transverse	1+H38 loose material 3 utility cables and 1 pipe at approx 0.5m to 1.5m below ground
VP-T23	Detection of Underground Utilities & Voids	Transverse	3 utility cables and 1 pipe at approx 0.5m to 1.5m below ground
VP-T24	Detection of Underground Utilities & Voids	Transverse	3 utility cables and 1 pipe at approx 0.5m to 1.5m below ground
VP-T25	Detection of Underground Utilities & Voids	Transverse	3 utility cables and 1 pipe at approx 0.5m to 1.5m below ground
VP-T26	Detection of Underground Utilities & Voids	Transverse	3 utility cables and 1 pipe at approx 0.5m to 1.5m below ground



Summary of Ground Penetrating Radar Survey Report

Project : Central Police Station Conservation and Revitalisation Project

Location : Vectoria Prison

Grid No.	Description	Scanning Direction	Assessment
VP-T27	Detection of Underground Utilities & Voids	Transverse	3 utility cables and 1 pipe at approx 0.5m to 1.5m below ground
VP-T28	Detection of Underground Utilities & Voids	Transverse	3 utility cables and 1 pipe at approx 0.5m to 1.5m below ground
VP-T29	Detection of Underground Utilities & Voids	Transverse	3 utility cables and 1 pipe at approx 0.5m to 1.5m below ground
VP-T30	Detection of Underground Utilities & Voids	Transverse	3 utility cables and 1 pipe at approx 0.5m to 1.5m below ground
VP-T31	Detection of Underground Utilities & Voids	Transverse	3 utility cables and 1 pipe at approx 0.5m to 1.5m below ground
VP-T32	Detection of Underground Utilities & Voids	Transverse	3 utility cables and 1 pipe at approx 0.5m to 1.5m below ground
VP-T33	Detection of Underground Utilities & Voids	Transverse	3 utility cables and 1 pipe at approx 0.5m to 1.5m below ground
VP-T34	Detection of Underground Utilities & Voids	Transverse	1 loose material 4 utility cables and 3 pipes at approx 0.5m to 1.5m below ground
VP-T35	Detection of Underground Utilities & Voids	Transverse	1 loose material 4 utility cables and 3 pipes at approx 0.5m to 1.5m below ground
VP-T36	Detection of Underground Utilities & Voids	Transverse	1 loose material 4 utility cables and 3 pipes at approx 0.5m to 1.5m below ground
VP-T37	Detection of Underground Utilities & Voids	Transverse	1 loose material 4 utility cables and 3 pipes at approx 0.5m to 1.5m below ground
VP-T38	Detection of Underground Utilities & Voids	Transverse	2+H50 loose material 4 utility cables and 3 pipes at approx 0.5m to 1.5m below ground
VP-T39	Detection of Underground Utilities & Voids	Transverse	4 utility cables and 3 pipe at approx 0.5m to 1.5m below ground



Summary of Ground Penetrating Radar Survey Report

Project : Central Police Station Conservation and Revitalisation Project

Location : Vectoria Prison

Grid No.	Description	Scanning Direction	Assessment
VP-T40	Detection of Underground Utilities & Voids	Transverse	4 utility cables and 3 pipe at approx 0.5m to 1.5m below ground
VP-T41	Detection of Underground Utilities & Voids	Transverse	1 loose material 4 utility cables and 3 pipes at approx 0.5m to 1.5m below ground
VP-T43	Detection of Underground Utilities & Voids	Transverse	2 loose material and 1 pipe at approx 0.5m to 1.5m below ground
VP-T44	Detection of Underground Utilities & Voids	Transverse	1 loose material 4 utility cables and 3 pipes at approx 0.5m to 1.5m below ground
VP-T45	Detection of Underground Utilities & Voids	Transverse	2 loose material at approx 0.5m to 1.5m below ground
VP-T46	Detection of Underground Utilities & Voids	Transverse	2 loose material at approx 0.5m to 1.5m below ground
VP-T47	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
VP-T48	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
VP-T49	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
ZoneA-T1a	Detection of Underground Utilities & Voids	Transverse	No observable void or loose material or detectable pipe or utility
ZoneA-T2a	Detection of Underground Utilities & Voids	Transverse	No observable void or loose material or detectable pipe or utility
ZoneA-T3a	Detection of Underground Utilities & Voids	Transverse	No observable void or loose material or detectable pipe or utility
ZoneA-T4a	Detection of Underground Utilities & Voids	Transverse	No observable void or loose material or detectable pipe or utility



Summary of Ground Penetrating Radar Survey Report

Project : Central Police Station Conservation and Revitalisation Project

Location : Vectoria Prison

Grid No.	Description	Scanning Direction	Assessment
ZoneA-T5a	Detection of Underground Utilities & Voids	Transverse	No observable void or loose material or detectable pipe or utility
ZoneA-T6a	Detection of Underground Utilities & Voids	Transverse	No observable void or loose material or detectable pipe or utility
ZoneB-T1b	Detection of Underground Utilities & Voids	Transverse	No observable void or loose material or detectable pipe or utility
ZoneB-T2b	Detection of Underground Utilities & Voids	Transverse	No observable void or loose material or detectable pipe or utility
ZoneB-T3b	Detection of Underground Utilities & Voids	Transverse	No observable void or loose material or detectable pipe or utility
ZoneB-T4b	Detection of Underground Utilities & Voids	Transverse	No observable void or loose material or detectable pipe or utility
ZoneB-T5b	Detection of Underground Utilities & Voids	Transverse	No observable void or loose material or detectable pipe or utility
ZoneB-T6b	Detection of Underground Utilities & Voids	Transverse	No observable void or loose material or detectable pipe or utility
ZoneC-T1c	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
ZoneC-T2c	Detection of Underground Utilities & Voids	Transverse	No observable void or loose material or detectable pipe or utility
ZoneC-T3c	Detection of Underground Utilities & Voids	Transverse	No observable void or loose material or detectable pipe or utility
ZoneC-T4c	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
ZoneC-T5c	Detection of Underground Utilities & Voids	Transverse	No observable void or loose material or detectable pipe or utility



Summary of Ground Penetrating Radar Survey Report

Project : Central Police Station Conservation and Revitalisation Project

Location : Vectoria Prison

Grid No.	Description	Scanning Direction	Assessment
VP-L1	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.5m to 1.5m below ground
VP-L2	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.1m to 0.5m below ground
VP-L3	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.5m to 1.5m below ground
VP-L4	Detection of Underground Utilities & Voids	Longitudinal	1 loose material 1 utility cable and 2 pipes at approx 0.5m to 1.5m below ground
VP-L5	Detection of Underground Utilities & Voids	Longitudinal	1 utility cable and 2 pipes at approx 0.5m to 1.5m below ground
VP-L9	Detection of Underground Utilities & Voids	Longitudinal	1 utility cable at approx 0.3m below ground
VP-L10	Detection of Underground Utilities & Voids	Longitudinal	1 utility cable at approx 0.3m below ground
VP-L11	Detection of Underground Utilities & Voids	Longitudinal	1 utility cable at approx 0.3m below ground
VP-L12	Detection of Underground Utilities & Voids	Longitudinal	1 utility cable at approx 0.3m below ground
VP-L13	Detection of Underground Utilities & Voids	Longitudinal	1 utility cable at approx 0.3m below ground
VP-L14	Detection of Underground Utilities & Voids	Longitudinal	1 utility cable at approx 0.3m below ground
VP-L15	Detection of Underground Utilities & Voids	Longitudinal	1 utility cable at approx 0.3m below ground
VP-L16	Detection of Underground Utilities & Voids	Longitudinal	1 utility cable and 2 pipes at approx 0.3m to 0.8m below ground



Summary of Ground Penetrating Radar Survey Report

Project : Central Police Station Conservation and Revitalisation Project

Location : Vectoria Prison

Grid No.	Description	Scanning Direction	Assessment
VP-L17	Detection of Underground Utilities & Voids	Longitudinal	1 utility cable and 2 pipes at approx 0.3m to 0.8m below ground
VP-L18	Detection of Underground Utilities & Voids	Longitudinal	1 utility cable and 2 pipes at approx 0.3m to 0.8m below ground
VP-L19F	Detection of Underground Utilities & Voids	Longitudinal	1 loose material and 1 utility cables at approx 0.3m below ground
VP-L19R	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.3m to 0.5m below ground
VP-L20F	Detection of Underground Utilities & Voids	Longitudinal	1 loose material and 1 utility cable at approx 0.3m below ground
VP-L20R	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.3m to 0.5m below ground
VP-L21F	Detection of Underground Utilities & Voids	Longitudinal	1 loose material and 1 utility cable at approx 0.3m below ground
VP-L21R	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.3m to 0.5m below ground
VP-L22F	Detection of Underground Utilities & Voids	Longitudinal	1 loose material and 1 utility cable at approx 0.3m below ground
VP-L22R	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.3m to 0.5m below ground
VP-L23F	Detection of Underground Utilities & Voids	Longitudinal	1 loose material and 1 utility cable at approx 0.3m below ground
VP-L23R	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.3m to 0.5m below ground
VP-L24	Detection of Underground Utilities & Voids	Longitudinal	1 loose material and 1 utility cable at approx 0.3m below ground



Summary of Ground Penetrating Radar Survey Report

Project : Central Police Station Conservation and Revitalisation Project

Location : Vectoria Prison

Grid No.	Description	Scanning Direction	Assessment
VP-L25	Detection of Underground Utilities & Voids	Longitudinal	1 loose material and 1 utility cable at approx 0.3m below ground
VP-L26	Detection of Underground Utilities & Voids	Longitudinal	1 loose material and 1 utility cable at approx 0.3m below ground
VP-L27	Detection of Underground Utilities & Voids	Longitudinal	1 loose material and 1 utility cable at approx 0.3m below ground
VP-L28	Detection of Underground Utilities & Voids	Longitudinal	1 loose material and 1 utility cable at approx 0.3m below ground
VP-L30	Detection of Underground Utilities & Voids	Longitudinal	1 utility cables at approx 0.3m below ground
VP-L31	Detection of Underground Utilities & Voids	Longitudinal	1 loose material and 1 utility cables at approx 0.3m below ground
VP-L32	Detection of Underground Utilities & Voids	Longitudinal	1 utility cable at approx 0.3m below ground
VP-L33	Detection of Underground Utilities & Voids	Longitudinal	1 utility cable at approx 0.3m below ground
VP-L34	Detection of Underground Utilities & Voids	Longitudinal	1 utility cables at approx 0.3m below ground
VP-L35	Detection of Underground Utilities & Voids	Longitudinal	1 utility cable at approx 0.3m below ground
VP-L36	Detection of Underground Utilities & Voids	Longitudinal	1 utility cable at approx 0.3m below ground
VP-L37	Detection of Underground Utilities & Voids	Longitudinal	2 loose material at approx 0.3m to 0.5m below ground
VP-L38	Detection of Underground Utilities & Voids	Longitudinal	2 loose material at approx 0.3m to 0.5m below ground



Summary of Ground Penetrating Radar Survey Report

Project : Central Police Station Conservation and Revitalisation Project

Location : Vectoria Prison

Grid No.	Description	Scanning Direction	Assessment
VP-L39	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.3m to 0.5m below ground
VP-L40	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.3m to 0.5m below ground
VP-L41	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.3m to 0.5m below ground
VP-L42	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.3m to 0.5m below ground
VP-L43	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.3m to 0.5m below ground
VP-L44	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.3m to 0.5m below ground
VP-L45	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.3m to 0.5m below ground
VP-L46	Detection of Underground Utilities & Voids	Longitudinal	1 loose material and 1 pipe at approx 0.5m to 1.5m below ground
VP-L47	Detection of Underground Utilities & Voids	Longitudinal	1 loose material and 1 pipe at approx 0.5m to 1.5m below ground
VP-L48	Detection of Underground Utilities & Voids	Longitudinal	1 loose material and 1 pipe at approx 0.5m to 1.5m below ground
VP-L49	Detection of Underground Utilities & Voids	Longitudinal	1 loose material and 1 pipe at approx 0.5m to 1.5m below ground
VP-L50	Detection of Underground Utilities & Voids	Longitudinal	1 loose material and 1 pipe at approx 0.5m to 1.5m below ground
VP-L51	Detection of Underground Utilities & Voids	Longitudinal	1 loose material and 1 pipe at approx 0.5m to 1.5m below ground



Summary of Ground Penetrating Radar Survey Report

Project : Central Police Station Conservation and Revitalisation Project

Location : Vectoria Prison

Grid No.	Description	Scanning Direction	Assessment
VP-L52	Detection of Underground Utilities & Voids	Longitudinal	1 loose material and 1 pipe at approx 0.5m to 1.5m below ground
VP-L53	Detection of Underground Utilities & Voids	Longitudinal	1 loose material and 1 pipe at approx 0.5m to 1.5m below ground
VP-L54	Detection of Underground Utilities & Voids	Longitudinal	1 loose material and 1 pipe at approx 0.5m to 1.5m below ground
VP-L55	Detection of Underground Utilities & Voids	Longitudinal	1 loose material and 1 pipe at approx 0.5m to 1.5m below ground
VP-L56	Detection of Underground Utilities & Voids	Longitudinal	1 loose material and 1 pipe at approx 0.5m to 1.5m below ground
VP-L57	Detection of Underground Utilities & Voids	Longitudinal	1 loose material and 1 pipe at approx 0.5m to 1.5m below ground
VP-L58	Detection of Underground Utilities & Voids	Longitudinal	1 loose material and 1 pipe at approx 0.5m to 1.5m below ground
VP-L59	Detection of Underground Utilities & Voids	Longitudinal	1 loose material and 1 pipe at approx 0.5m to 1.5m below ground
VP-L60	Detection of Underground Utilities & Voids	Longitudinal	1 loose material and 1 pipe at approx 0.5m to 1.5m below ground
VP-L61	Detection of Underground Utilities & Voids	Longitudinal	1 loose material and 1 pipe at approx 0.5m to 1.5m below ground
VP-L62	Detection of Underground Utilities & Voids	Longitudinal	1 loose material and 1 pipe at approx 0.5m to 1.5m below ground
VP-L63	Detection of Underground Utilities & Voids	Longitudinal	1 loose material and 1 pipe at approx 0.5m to 1.5m below ground
VP-L64	Detection of Underground Utilities & Voids	Longitudinal	1 loose material and 1 pipe at approx 0.5m to 1.5m below ground



Summary of Ground Penetrating Radar Survey Report

Project : Central Police Station Conservation and Revitalisation Project

Location : Vectoria Prison

Grid No.	Description	Scanning Direction	Assessment
VP-L65	Detection of Underground Utilities & Voids	Longitudinal	1 loose material and 1 pipe at approx 0.5m to 1.5m below ground
VP-L66	Detection of Underground Utilities & Voids	Longitudinal	1 loose material and 1 pipe at approx 0.5m to 1.5m below ground
VP-L67	Detection of Underground Utilities & Voids	Longitudinal	1 loose material and 1 pipe at approx 0.5m to 1.5m below ground
VP-L68	Detection of Underground Utilities & Voids	Longitudinal	2 loose material and 1 pipe at approx 0.5m to 1.5m below ground
VP-L69	Detection of Underground Utilities & Voids	Longitudinal	2 loose material and 1 pipe at approx 0.5m to 1.5m below ground
VP-L70	Detection of Underground Utilities & Voids	Longitudinal	2 loose material and 1 pipe at approx 0.5m to 1.5m below ground
VP-L71	Detection of Underground Utilities & Voids	Longitudinal	2 loose material and 1 pipe at approx 0.5m to 1.5m below ground
VP-L72	Detection of Underground Utilities & Voids	Longitudinal	2 loose material and 1 pipe at approx 0.5m to 1.5m below ground
VP-L73	Detection of Underground Utilities & Voids	Longitudinal	2 loose material and 1 pipe at approx 0.5m to 1.5m below ground
VP-L74	Detection of Underground Utilities & Voids	Longitudinal	2 loose material and 1 pipe at approx 0.5m to 1.5m below ground
VP-L75	Detection of Underground Utilities & Voids	Longitudinal	2 loose material and 1 pipe at approx 0.5m to 1.5m below ground
VP-L76	Detection of Underground Utilities & Voids	Longitudinal	2 loose material and 1 pipe at approx 0.5m to 1.5m below ground
VP-L77	Detection of Underground Utilities & Voids	Longitudinal	2 possible voids or loose material and 1 pipe at approx 0.5m to 1.5m below ground



Summary of Ground Penetrating Radar Survey Report

Project : Central Police Station Conservation and Revitalisation Project

Location : Vectoria Prison

Grid No.	Description	Scanning Direction	Assessment
VP-L78	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.5m to 1.5m below ground
VP-L79	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.5m to 1.5m below ground
Zone e-L1e	Detection of Underground Utilities & Voids	Longitudinal	No observable void or loose material or detectable pipe or utility
Zone e-L2e	Detection of Underground Utilities & Voids	Longitudinal	No observable void or loose material or detectable pipe or utility
Zone e-L3e	Detection of Underground Utilities & Voids	Longitudinal	No observable void or loose material or detectable pipe or utility
Zone e-L4e	Detection of Underground Utilities & Voids	Longitudinal	No observable void or loose material or detectable pipe or utility
Zone e-L5e	Detection of Underground Utilities & Voids	Longitudinal	No observable void or loose material or detectable pipe or utility
Zone e-L6e	Detection of Underground Utilities & Voids	Longitudinal	No observable void or loose material or detectable pipe or utility
Zone e-L7e	Detection of Underground Utilities & Voids	Longitudinal	No observable void or loose material or detectable pipe or utility
Zone e-L8e	Detection of Underground Utilities & Voids	Longitudinal	No observable void or loose material or detectable pipe or utility
Zone e-L9e	Detection of Underground Utilities & Voids	Longitudinal	No observable void or loose material or detectable pipe or utility
Zone e-L10e	Detection of Underground Utilities & Voids	Longitudinal	No observable void or loose material or detectable pipe or utility
Zone e-L11e	Detection of Underground Utilities & Voids	Longitudinal	No observable void or loose material or detectable pipe or utility



Summary of Ground Penetrating Radar Survey Report

Project : Central Police Station Conservation and Revitalisation Project

Location : Vectoria Prison

Grid No.	Description	Scanning Direction	Assessment
Zone e-L12e	Detection of Underground Utilities & Voids	Longitudinal	No observable void or loose material or detectable pipe or utility
Zone e-L13e	Detection of Underground Utilities & Voids	Longitudinal	No observable void or loose material or detectable pipe or utility
Zone e-L14e	Detection of Underground Utilities & Voids	Longitudinal	No observable void or loose material or detectable pipe or utility
Zone e-L15e	Detection of Underground Utilities & Voids	Longitudinal	No observable void or loose material or detectable pipe or utility
Zone e-L16e	Detection of Underground Utilities & Voids	Longitudinal	No observable void or loose material or detectable pipe or utility
Zone e-L17e	Detection of Underground Utilities & Voids	Longitudinal	No observable void or loose material or detectable pipe or utility
Zone e-L18e	Detection of Underground Utilities & Voids	Longitudinal	No observable void or loose material or detectable pipe or utility



Summary of Ground Penetrating Radar Survey Report

Project : Central Police Station Conservation and Revitalisation Project

Location : 17/G/14

Grid No.	Description	Scanning Direction	Assessment
11/G/14-T1	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
11/G/14-T2	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
11/G/14-T3	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
11/G/14-T4	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
11/G/14-T5	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
11/G/14-L1	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.5m to 1.5m below ground
11/G/14-L2	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.5m to 1.5m below ground
11/G/14L3	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.5m to 1.5m below ground
11/G/14-L4	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.5m to 1.5m below ground
11/G/14-L5	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.5m to 1.5m below ground



Summary of Ground Penetrating Radar Survey Report

Project : Central Police Station Conservation and Revitalisation Project

Location : 17/G/13

Grid No.	Description	Scanning Direction	Assessment
11/G/13-T1	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
11/G/13-T2	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
11/G/13-T3	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
11/G/13-T4	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
11/G/13-T5	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
11/G/13-L1	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.5m to 1.5m below ground
11/G/13-L2	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.5m to 1.5m below ground
11/G/13-L3	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.5m to 1.5m below ground
11/G/13-L4	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.5m to 1.5m below ground



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Summary of Ground Penetrating Radar Survey Report

Project : Central Police Station Conservation and Revitalisation Project

Location : Room 17/G/12 Walkway

Grid No.	Description	Scanning Direction	Assessment
11/G/12-T1	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
11/G/12-T2	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
11/G/12-L1	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
11/G/12-L2	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground



Summary of Ground Penetrating Radar Survey Report

Project : Central Police Station Conservation and Revitalisation Project

Location : Room 17/G/D01

Grid No.	Description	Scanning Direction	Assessment
17/G/D01-T1	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
17/G/D01-T2	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
17/G/D01-T3	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
17/G/D01-T4	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
17/G/D01-T5	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
17/G/D01-T6	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
17/G/D01-T7	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
17/G/D01-T8	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
17/G/D01-T9	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
17/G/D01-T10	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
17/G/D01-T11	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
17/G/D01-L1	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.5m to 1.5m below ground



Summary of Ground Penetrating Radar Survey Report

Project : Central Police Station Conservation and Revitalisation Project

Location : Room 17/G/D01

Grid No.	Description	Scanning Direction	Assessment
17/G/D01-L2	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.5m to 1.5m below ground
17/G/D01-L3	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.5m to 1.5m below ground
17/G/D01-L4	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.5m to 1.5m below ground
17/G/D01-L5	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.5m to 1.5m below ground
17/G/D01-L6	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.5m to 1.5m below ground
17/G/D01-L7	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.5m to 1.5m below ground
17/G/D01-L8	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.5m to 1.5m below ground
17/G/D01-L9	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.5m to 1.5m below ground



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Summary of Ground Penetrating Radar Survey Report

Project : Central Police Station Conservation and Revitalisation Project

Location : Room 17/G/18

Grid No.	Description	Scanning Direction	Assessment
17/G/18-T1	Detection of Underground Void	Transverse	No observable void or loose material or detectable pipe or utility
17/G/18-T2	Detection of Underground Void	Transverse	No observable void or loose material or detectable pipe or utility
17/G/18-T3	Detection of Underground Void	Transverse	No observable void or loose material or detectable pipe or utility



Summary of Ground Penetrating Radar Survey Report

Project : Central Police Station Conservation and Revitalisation Project

Location : Room 17/G/11

Grid No.	Description	Scanning Direction	Assessment
17/G/11-T1	Detection of Underground Utilities & Voids	Transverse	No observable void or loose material or detectable pipe or utility
17/G/11-T2	Detection of Underground Utilities & Voids	Transverse	No observable void or loose material or detectable pipe or utility
17/G/11-T3	Detection of Underground Utilities & Voids	Transverse	No observable void or loose material or detectable pipe or utility
17/G/11-L1	Detection of Underground Utilities & Voids	Longitudinal	No observable void or loose material or detectable pipe or utility
17/G/11-L2	Detection of Underground Utilities & Voids	Longitudinal	No observable void or loose material or detectable pipe or utility
17/G/11-L3	Detection of Underground Utilities & Voids	Longitudinal	No observable void or loose material or detectable pipe or utility
17/G/11-L4	Detection of Underground Utilities & Voids	Longitudinal	No observable void or loose material or detectable pipe or utility
17/G/11-L5	Detection of Underground Utilities & Voids	Longitudinal	No observable void or loose material or detectable pipe or utility
17/G/11-L6	Detection of Underground Utilities & Voids	Longitudinal	No observable void or loose material or detectable pipe or utility
17/G/11-L7	Detection of Underground Utilities & Voids	Longitudinal	No observable void or loose material or detectable pipe or utility



Summary of Ground Penetrating Radar Survey Report

Project : Central Police Station Conservation and Revitalisation Project

Location : Room 17/G/10

Grid No.	Description	Scanning Direction	Assessment
17/G/10-T1	Detection of Underground Utilities & Voids	Transverse	1 utility cable at approx 0.5m to 1.5m below ground
17/G/10-T2	Detection of Underground Utilities & Voids	Transverse	1 utility cable at approx 0.5m to 1.5m below ground
17/G/10-T3	Detection of Underground Utilities & Voids	Transverse	1 utility cable at approx 0.5m to 1.5m below ground
17/G/10-L1	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.5m to 1.5m below ground
17/G/10-L2	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.5m to 1.5m below ground
17/G/10-L3	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.5m to 1.5m below ground
17/G/10-L4	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.5m to 1.5m below ground
17/G/10-L5	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.5m to 1.5m below ground
17/G/10-L6	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.5m to 1.5m below ground
17/G/10-L7	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.5m to 1.5m below ground



Summary of Ground Penetrating Radar Survey Report

Project : Central Police Station Conservation and Revitalisation Project

Location : Room 17/G/09

Grid No.	Description	Scanning Direction	Assessment
17/G/09-T1	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
17/G/09-T2	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
17/G/09-T3	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
17/G/09-T4	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
17/G/09-T5	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
17/G/09-T6	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.5m to 1.5m below ground
17/G/09-L1	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.5m to 1.5m below ground
17/G/09-L2	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.5m to 1.5m below ground
17/G/09-L3	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.5m to 1.5m below ground
17/G/09-L4	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.5m to 1.5m below ground
17/G/09-L5	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.5m to 1.5m below ground



Summary of Ground Penetrating Radar Survey Report

Project : Central Police Station Conservation and Revitalisation Project

Location : Room 17/G/05

Grid No.	Description	Scanning Direction	Assessment
17/G/05-T1	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
17/G/05-T2	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
17/G/05-T3	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
17/G/05-T4	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
17/G/05-T5	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
17/G/05-T6	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
17/G/05-T7	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
17/G/05-T8	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
17/G/05-T9	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
17/G/05-T10	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
17/G/05-L1	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.5m to 1.5m below ground
17/G/05-L2	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.5m to 1.5m below ground
17/G/05-L3	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.5m to 1.5m below ground
17/G/05-L4	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.5m to 1.5m below ground
17/G/05-L5	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.5m to 1.5m below ground
17/G/05-L6	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.5m to 1.5m below ground
17/G/05-L7	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.5m to 1.5m below ground
17/G/05-L8	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.5m to 1.5m below ground
17/G/05-L9	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.5m to 1.5m below ground
17/G/05-L10	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.5m to 1.5m below ground
17/G/05-L11	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.5m to 1.5m below ground
17/G/05-L12	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.5m to 1.5m below ground



Summary of Ground Penetrating Radar Survey Report

Project : Central Police Station Conservation and Revitalisation Project

Location : Victoria Prison -12/G/D02 (Prison No.10)

Grid No.	Description	Scanning Direction	Assessment
Prison N0. 10-T1	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
Prison N0. 10-T2	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
Prison N0. 10-T3	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
Prison N0. 10-T4	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
Prison N0. 10-T5	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
Prison N0. 10-L1	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.5m to 1.5m below ground
Prison N0. 10-L2	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.5m to 1.5m below ground
Prison N0. 10-L3	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.5m to 1.5m below ground



Summary of Ground Penetrating Radar Survey Report

Project : Central Police Station Conservation and Revitalisation Project

Location : Victoria Prison -12/G/D02 (Prison No.11)

Grid No.	Description	Scanning Direction	Assessment
Prison N0. 11-T1	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
Prison N0. 11-T2	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
Prison N0. 11-T3	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
Prison N0. 11-T4	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
Prison N0. 11-L1	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.5m to 1.5m below ground
Prison N0. 11-L2	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.5m to 1.5m below ground
Prison N0. 11-L3	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.5m to 1.5m below ground
Prison N0. 11-L4	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.5m to 1.5m below ground



Summary of Ground Penetrating Radar Survey Report

Project : Central Police Station Conservation and Revitalisation Project

Location : Victoria Prison -12/G/D02 (Prison No.12)

Grid No.	Description	Scanning Direction	Assessment
Prison N0. 12-T1	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
Prison N0. 12-T2	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
Prison N0. 12-T3	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
Prison N0. 12-T4	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
Prison N0. 12-T5	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
Prison N0. 12-L1	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.5m to 1.5m below ground
Prison N0. 12-L2	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.5m to 1.5m below ground
Prison N0. 12-L3	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.5m to 1.5m below ground
Prison N0. 12-L4	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.5m to 1.5m below ground



Summary of Ground Penetrating Radar Survey Report

Project : Central Police Station Conservation and Revitalisation Project

Location : Victoria Prison -12/G/D02 (Prison No.17)

Grid No.	Description	Scanning Direction	Assessment
Prison N0. 17-T1	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
Prison N0. 17-T2	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
Prison N0. 17-T3	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
Prison N0. 17-T4	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
Prison N0. 17-T5	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
Prison N0. 17-L1	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.5m to 1.5m below ground
Prison N0. 17-L2	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.5m to 1.5m below ground
Prison N0. 17-L3	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.5m to 1.5m below ground
Prison N0. 17-L4	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.5m to 1.5m below ground



Summary of Ground Penetrating Radar Survey Report

Project : Central Police Station Conservation and Revitalisation Project

Location : Victoria Prison -12/G/D02 (Prison No.16)

Grid No.	Description	Scanning Direction	Assessment
Prison N0. 16-T1	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
Prison N0. 16-T2	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
Prison N0. 16-T3	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
Prison N0. 16-T4	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
Prison N0. 16-T5	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
Prison N0. 16-L1	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.5m to 1.5m below ground
Prison N0. 16-L2	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.5m to 1.5m below ground
Prison N0. 16-L3	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.5m to 1.5m below ground
Prison N0. 16-L4	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.5m to 1.5m below ground



Summary of Ground Penetrating Radar Survey Report

Project : Central Police Station Conservation and Revitalisation Project

Location : Victoria Prison -12/G/D02 (Prison No.15)

Grid No.	Description	Scanning Direction	Assessment
Prison N0. 15-T1	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
Prison N0. 15-T2	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
Prison N0. 15-T3	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
Prison N0. 15-T4	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
Prison N0. 15-T5	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
Prison N0. 15-L1	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.5m to 1.5m below ground
Prison N0. 15-L2	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.5m to 1.5m below ground
Prison N0. 15-L3	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.5m to 1.5m below ground
Prison N0. 15-L4	Detection of Underground Utilities & Voids	Longitudinal	1 loose material at approx 0.5m to 1.5m below ground



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Summary of Ground Penetrating Radar Survey Report

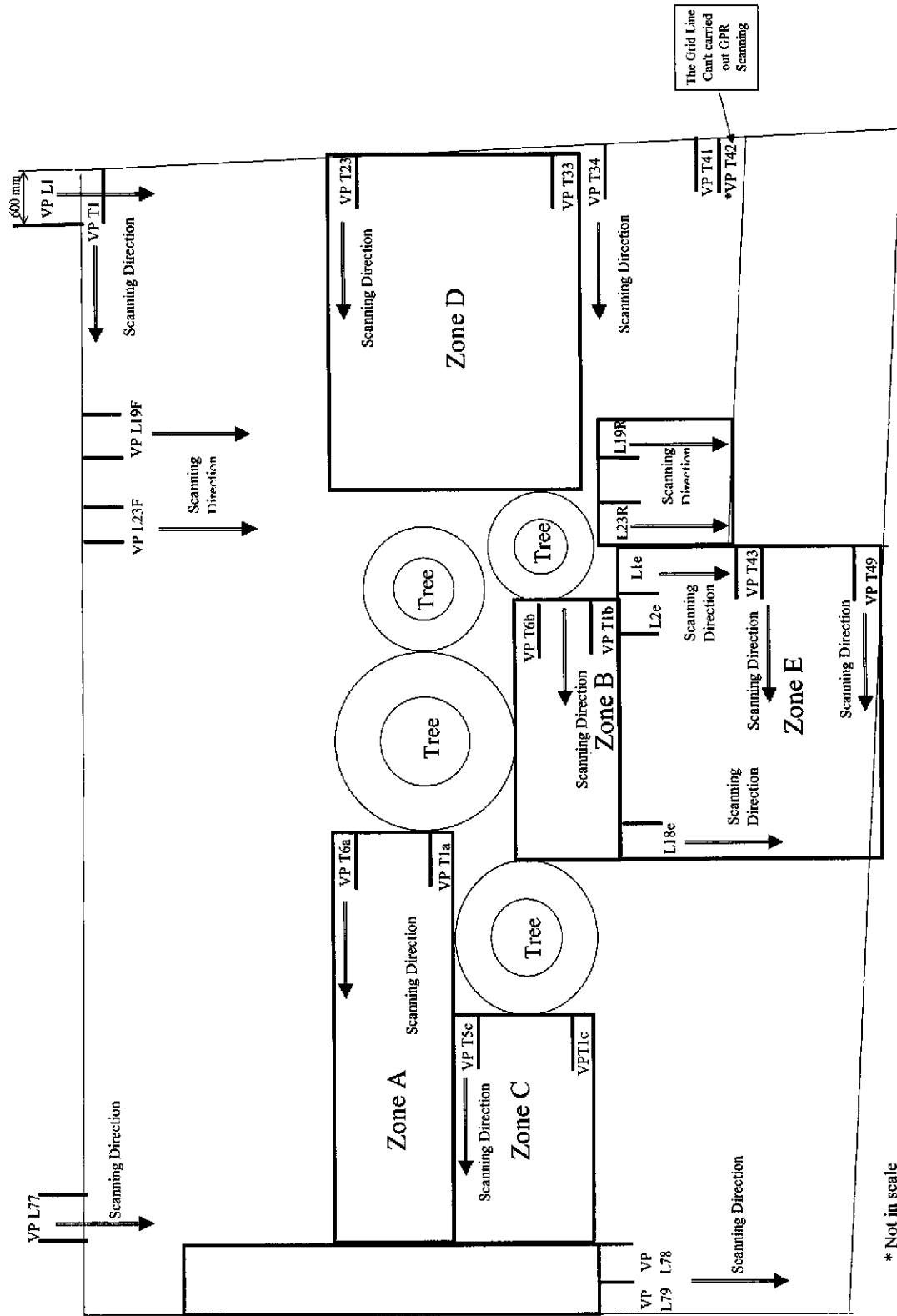
Project : Central Police Station Conservation and Revitalisation Project

Location : Equipment & Power

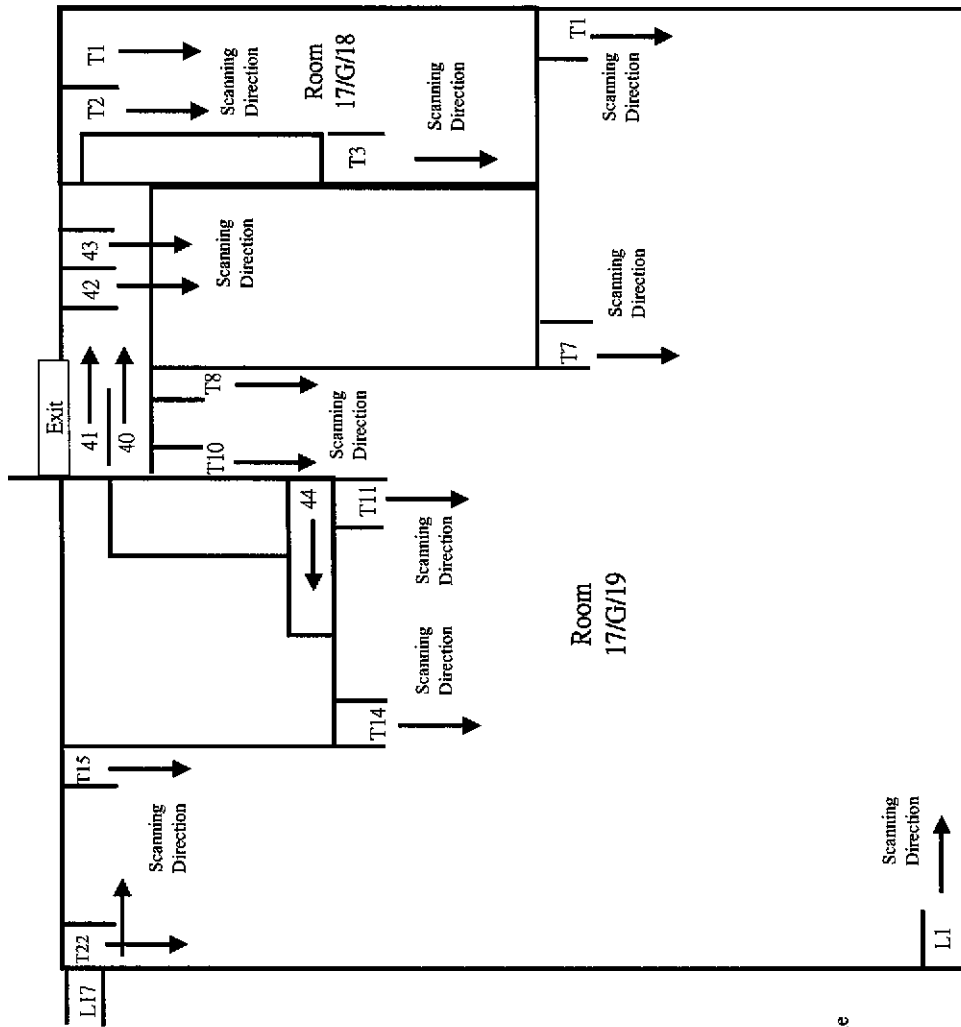
Grid No.	Description	Scanning Direction	Assessment
Equipment Room	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground
Power Room	Detection of Underground Utilities & Voids	Transverse	1 loose material at approx 0.5m to 1.5m below ground

Appendix B
Scan location

Victoria Prison Ground Penetrating Radar Scanning Location Plan

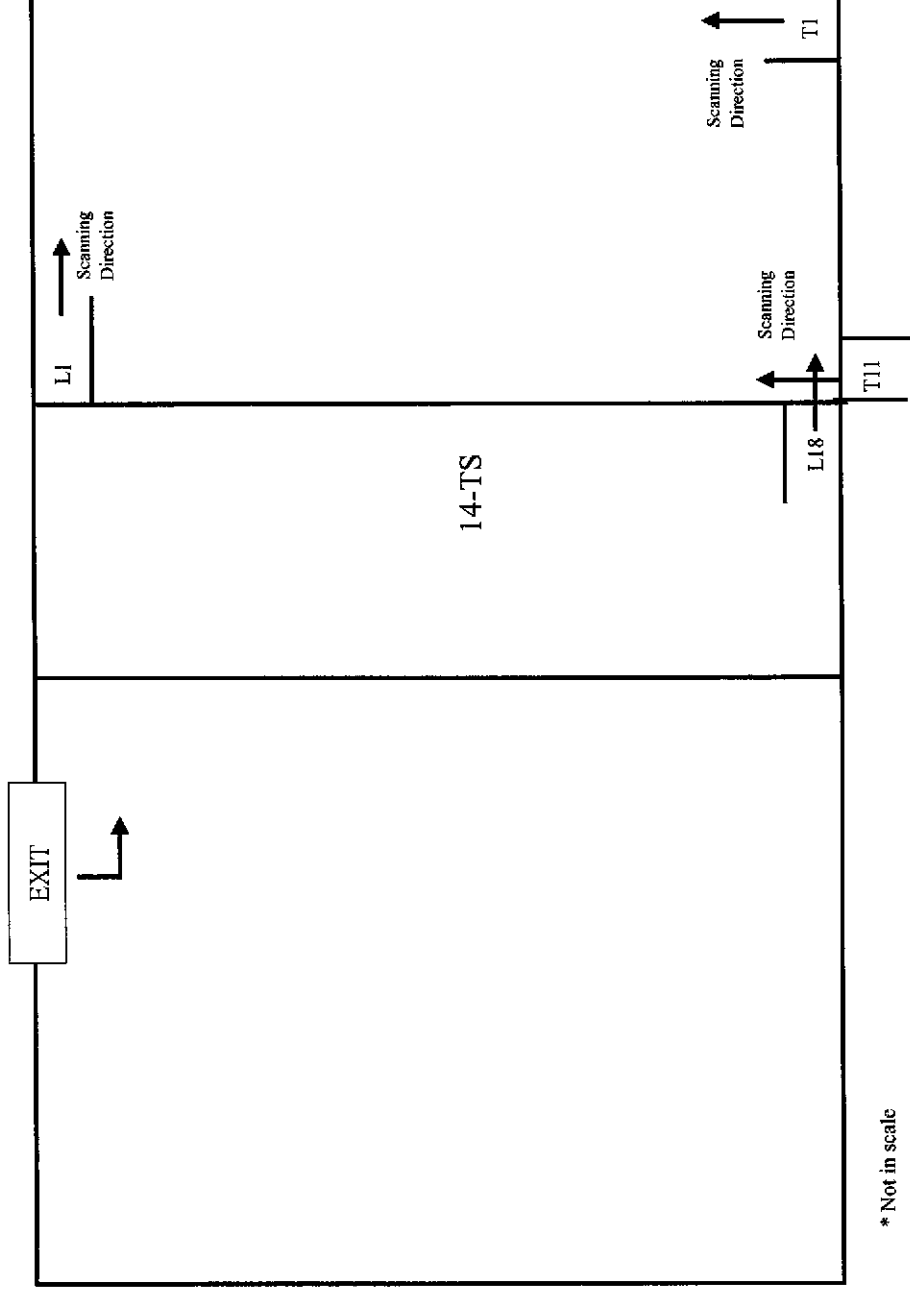


Room 17/G/19 Ground Penetrating Radar Scanning Location Plan



* Not in scale

14-TS Ground Penetrating Radar Scanning Location Plan



* Not in scale