# DOCK WALL LOCATION 2 INTERPRETATION

Cover Depth (m)

610mm

Cover Depth (m)

Dock Side

Regent Road Side

Top of Wall

Top of Wall

GPR

GPR

Ground Level

Ground Level

Obstruction

m/m

m/m

## Key

- ▭ Interpreted void or rubble observed from either side of the wall
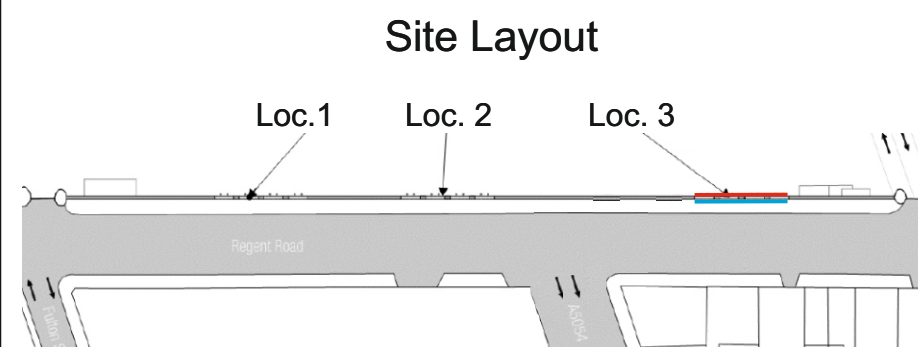- ● Interpreted void or rubble observed on one side of the wall
- ┅ Outline of high amplitude GPR reflection indicative of a void
- Granite Stone Blocks (depth from core logs)
- Sandstone Rubble & Cement Fill (depth from core logs)

−1   0   +1

normalised amplitude

## Site Layout

Loc.1   Loc. 2   Loc. 3

**Client:**

**BURO HAPPOLD**

**Site/Project:**

**BRAMLEY MOORE DOCK**

**EXAMPLE GPR DATA - SURVEY LOCATION 2**

Figure: 2B

Job: 55320

Report: 55320-R01

Date: August 2019

Scale: As Shown

DOCK WALL
LOCATION 3
INTERPRETATION

Dock Side

Regent
Road Side

Cover Depth (m)

0.00  0.25  0.50

540mm

m/m      m/m

Cover Depth (m)

0.50  0.25  0.00

Top of Wall

Top of Wall

3.50

3.00

2.50

2.00

1.50

1.00

0.50

0.00

GPR

GPR

Ground Level

Ground Level

Obstruction

Key

Interpreted void or rubble observed from either side of the wall

Interpreted void or rubble observed on one side of the wall

Outline of high amplitude GPR reflection indicative of a void

Granite Stone Blocks (depth from core logs)

Sandstone Rubble & Cement Fill (depth from core logs)

-1        0        +1

normalised amplitude

Site Layout

Loc.1    Loc. 2    Loc. 3

Regent Road

RSK

Client:

**BURO HAPPOLD**

Site/Project:

**BRAMLEY MOORE DOCK**

**EXAMPLE GPR DATA -
SURVEY LOCATION 3**

Figure:  2C

Job:  55320

Report:

55320-R01

Date:
August 2019

Scale:
As Shown

# GSSI SIR-4000 RADAR

***A portable, digital Subsurface Interface Radar System designed for a broad range of environmental, geotechnical, geological and engineering applications.***



The SIR® 4000 is GSSI's first high-performance GPR data acquisition system designed to operate with analog and digital antennas. This evolutionary step allows true versatility and flexibility by supporting a wide range of users, beginner to advanced, in numerous applications.

The SIR 4000 incorporates advanced display modes and filtering capabilities for 'in-the-field' processing and imaging. Fully integrated, the system provides a simple user interface, plug-and-play GPS integration, and WiFi enabled data transfer capabilities.

The SIR-4000 is compatible with all GSSI antennae; frequencies range from 20MHz to 2.5GHz, thus facilitating a broad range of applications.

## System

| | |
|---|---|
| Antenna Support | Compatible with all GSSI antennas |
| Number of Channels | Records data from 1 single-frequency antenna or 1 dual-frequency antenna |
| Data Storage | 32 GB |
| Display | Enhanced 10.4" LED display with internal high brightness, Active matrix 1024 x 768 resolution and 32-bit color |
| GPS | Data logged internally |
| Display Modes | Linescan, Linescan plus O-scope, Wiggle trace Full 3D, 256 color bins are used to represent the amplitude and polarity of the signal |

## Data Acquisition

| | |
|---|---|
| Data Format | RADAN™ (.dzt) |
| Output Data Format | 32-bit |
| Scan Interval | User-selectable, up to 400 scans/sec |
| Number of Samples per Scan | 256, 512, 1024, 2048, 4096, 8192, 16384 |
| Operating Modes | Continuous (time) or survey wheel (distance triggered) or point mode |
| Time Range | 0-20,000 nanoseconds full scale, user-selectable Gain: manual adjustment from -42 to +126 dB Number of segments in gain curve is user-selectable from 1 to 8 |
| Standard Real-Time Filters | Infinite Impulse Response (IIR) - Low and High Pass, vertical and horizontal Finite Impulse Response (FIR) - Low and High Pass, vertical and horizontal |
| Advanced Real-Time Filters | Migration, Surface Position Tracking, Signal Noise Floor Tracking, Adaptive Background Removal |
| Automatic System Setups | Storage of an unlimited number of system setup files for different survey conditions and/or antenna deployment configurations |
| Automatic Antenna Recognition | Automatic recognition of Smart Antennas to allow maximum compliant transmit rate |

## Languages

| | |
|---|---|
| | English, Chinese, Japanese, French |

## Operating

| | |
|---|---|
| Operating Temperature | -20°C to 40°C external (-4°F to 104°F) |
| Battery | Inspired Energy Ni2040ED, 3 hour runtime* |
| Transmit Rate | Up to 800 KHz (International), US/Canada and CE rates depend on antenna model |

## Input/Output

| | |
|---|---|
| Available Ports | Antenna inputs analog and digital (one at a time), DC power input, Serial RS232 (GPS port), Accessory connector, HDMI video output, Ethernet to PC, USB 2.0 port, mini USB |
| WiFi | 802.11B/G |
| Ethernet | RJ45 100BT Ethernet |
| USB Host | USB host with external keyboard support, USB flash drive support and USB HUB support |

## Mechanical

| | |
|---|---|
| Dimensions | 14x10x2.75 in (36x25x7 cm) |
| Weight | 10 lbs (4.53 kg) with battery |
| Relative Humidity | <95% non-condensing |
| Storage Temperature | -40°C to 60°C (-40°F to 140°F) |

## GSSI SIR 4000 RADAR SPECIFICATIONS

RSK