Fig.1.1 – Geographic location of the studied area

Study areas

PROJECT Giardino Village (GV) Gated Compound & 1B+G+3 Apartment Building		**METHODOLOGY** Geophysical investigation with Electrical Resistivity Tomography (ERT) for ground characterization and assessment of cavity	**OBJECT** Geographic location of the studied area DATE 02/05/2019	**PANEL** N.1	In cooperation with: Prepared: AP Checked: WZ Approved: AR

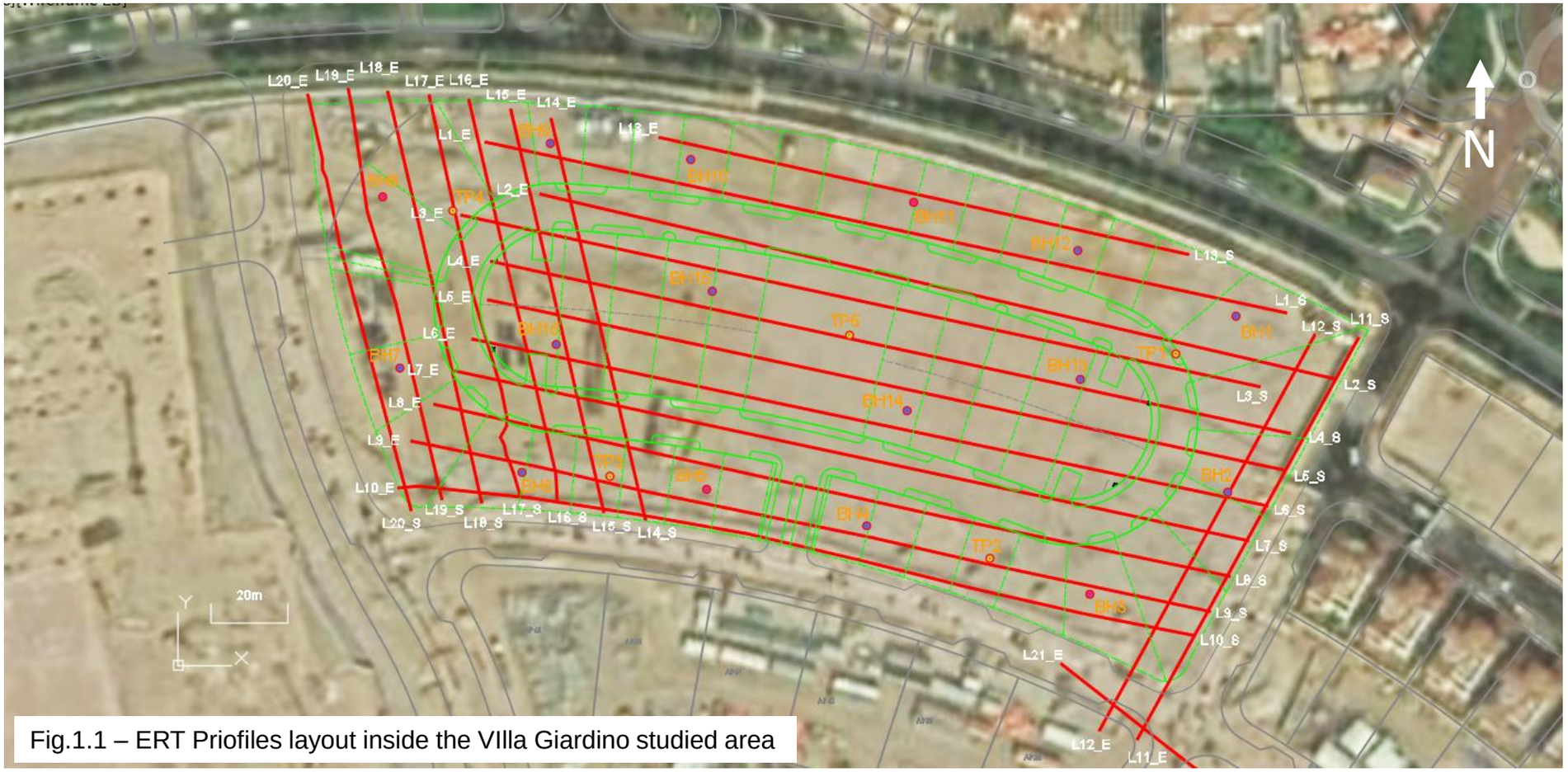


Fig.1.1 – ERT Priofiles layout inside the VIlla Giardino studied area

n.20 ERT Profiles carried out in Villa Giardino Area

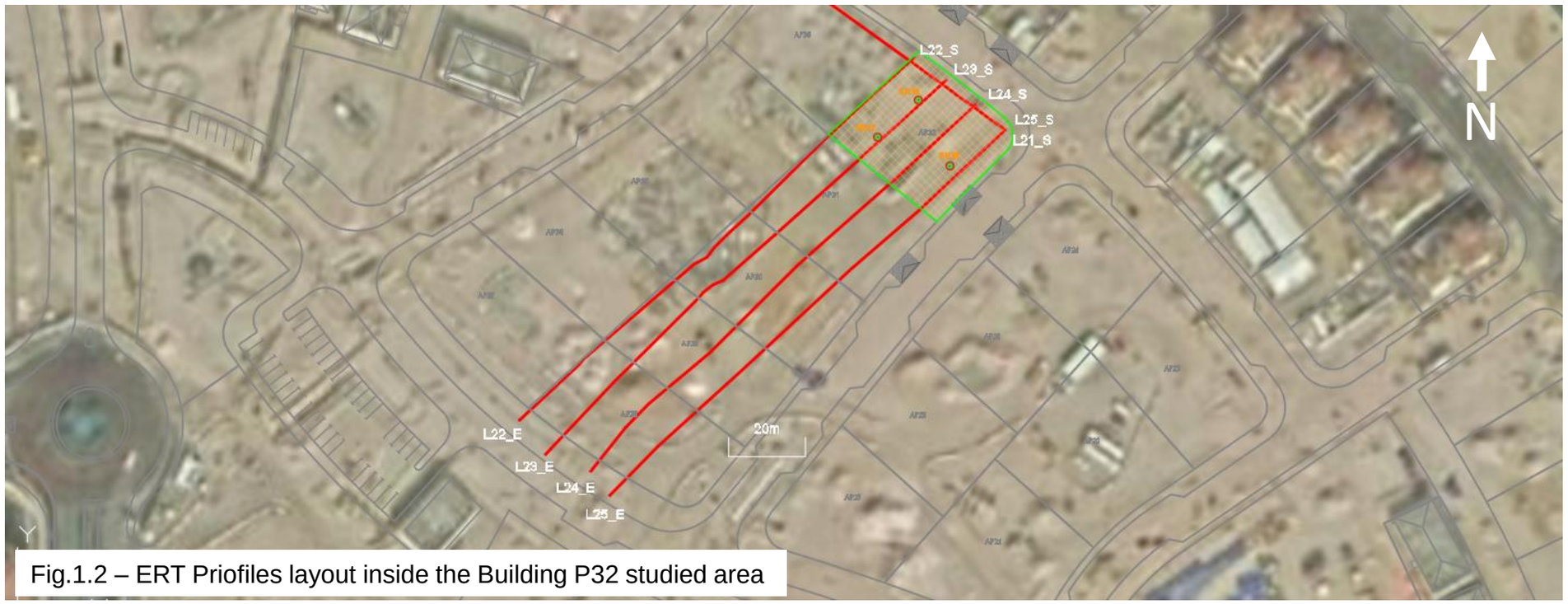


Fig.1.2 – ERT Priofiles layout inside the Building P32 studied area

n.5 ERT Profiles carried out in Building P32 Area

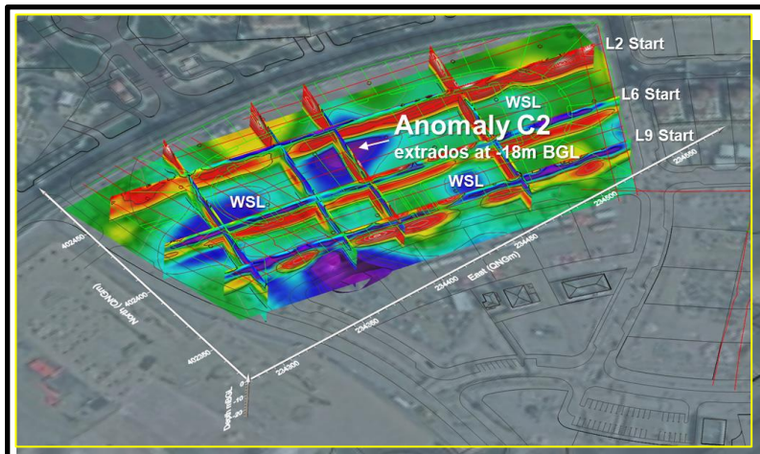
TP1 Trial Pit

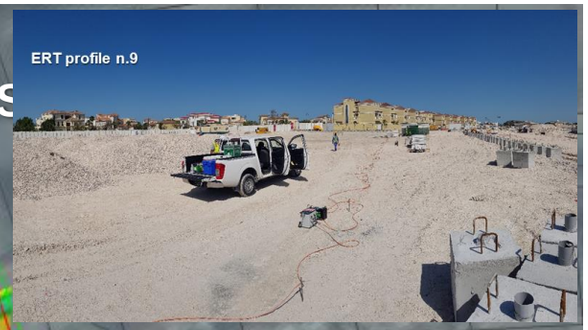
BH15 Borehole

ERT profiles

Project layout
Study areas

PROJECT Giardino Village (GV) Gated Compound & 1B+G+3 Apartment Building		**METHODOLOGY** Geophysical investigation with Electrical Resistivity Tomography (ERT) for ground characterization and assessment of cavity	**OBJECT** ERT profiles layout DATE 02/05/2019	**PANEL** N.2	In cooperation with: Prepared: AP Checked: WZ Approved: AR





V1
V2
V3
V4
L2 S
L9 Start
C2 cavity
C1 cavity
MSL
MS
WSL
East (QNGm)
North (QNGm)
Depth mBGL
Resistivity (Ohmxm)
1.8
2.5
3.2
3.8
4.5

Electrostratigraphic Legend

MS: Marine Sand
MSL: Medium Weathered Simsima Limestone
WSL: Weathered/Fractured Simsima Limestone
C1 = Conductive anomalies

Top of the Simsima Limestone affected by the C1 anomaly
Drop down of the resistivity values below 3 Ohmxm

Thickness of MS material
Variable between 5m to 6m depending on the variation of the MSL electro-layer extrados

Anomaly C1
extrados at -14m BGL
Resistivity < 1.9 Ohmxm

Anomaly C2
extrados at -18m BGL
Resistivity < 1.9 Ohmxm

V1, V2, V3, V4
ERT 2D vertical section built with 3D inversion modelling

Fig.3.1 – Conductive anomalies inside the Villa Giardino Area – 3D SW View

PROJECT Giardino Village (GV) Gated Compound & 1B+G+3 Apartment Building		**METHODOLOGY** Geophysical investigation with Electrical Resistivity Tomography (ERT) for ground characterization and assessment of cavity	**OBJECT** Conductive Anomalies in Villa Giardino Area DATE 02/05/2019	**PANEL** N.3	In cooperation with: Prepared: AP Checked: WZ Approved: AR

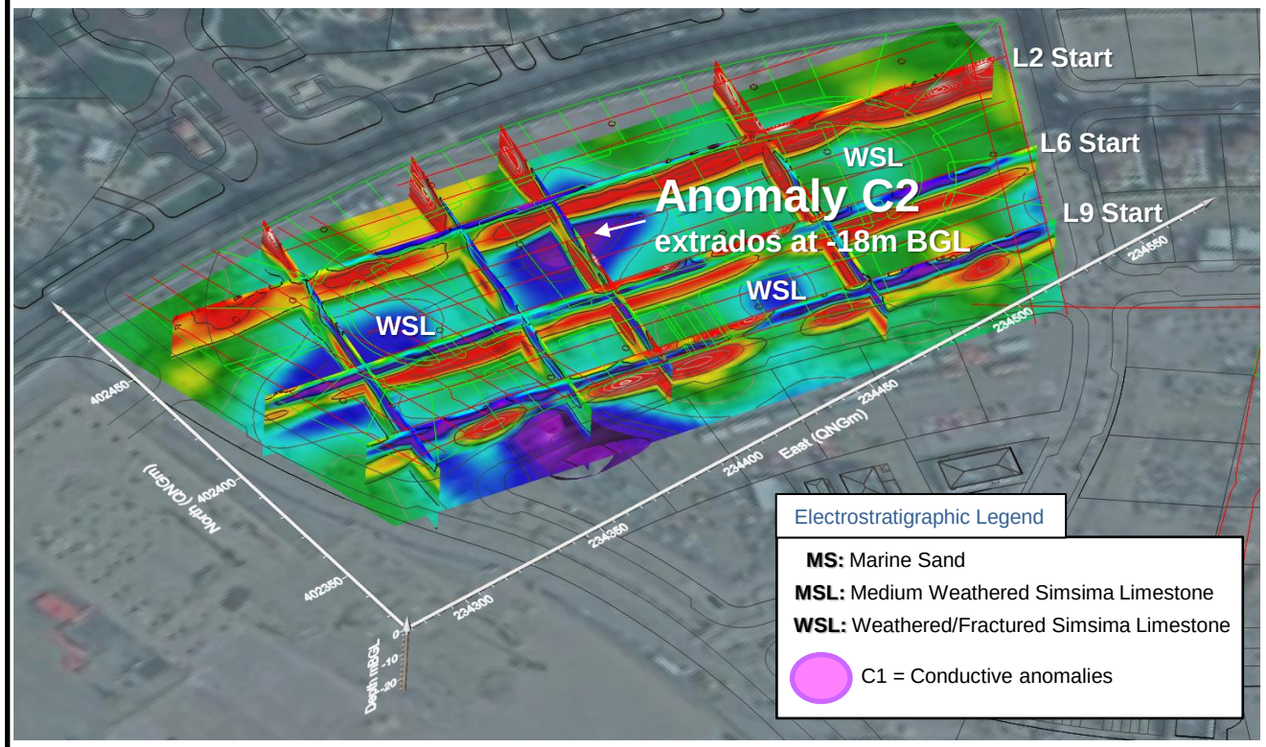


Fig.4.1 – XY (horizontal) resistivity plane @ -18m BGL – 3D SW view

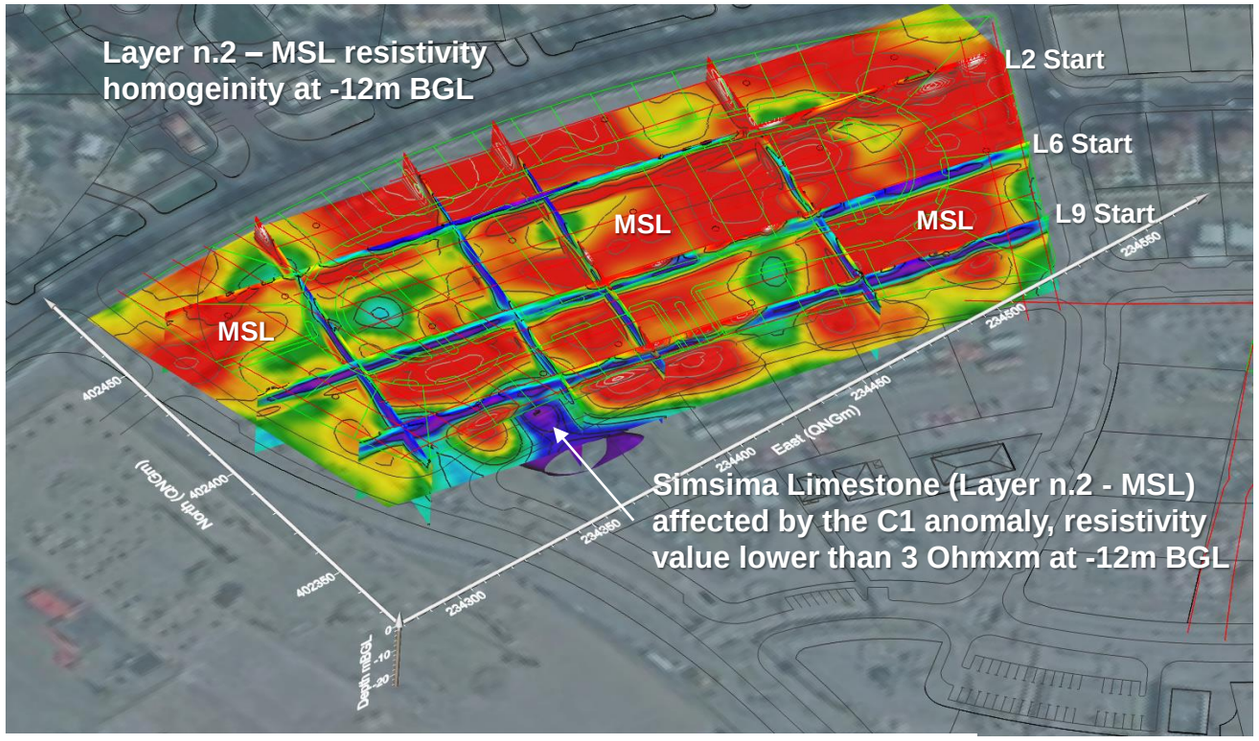


Fig.4.3 – XY (horizontal) resistivity plane @ -12m BGL – 3D SW view

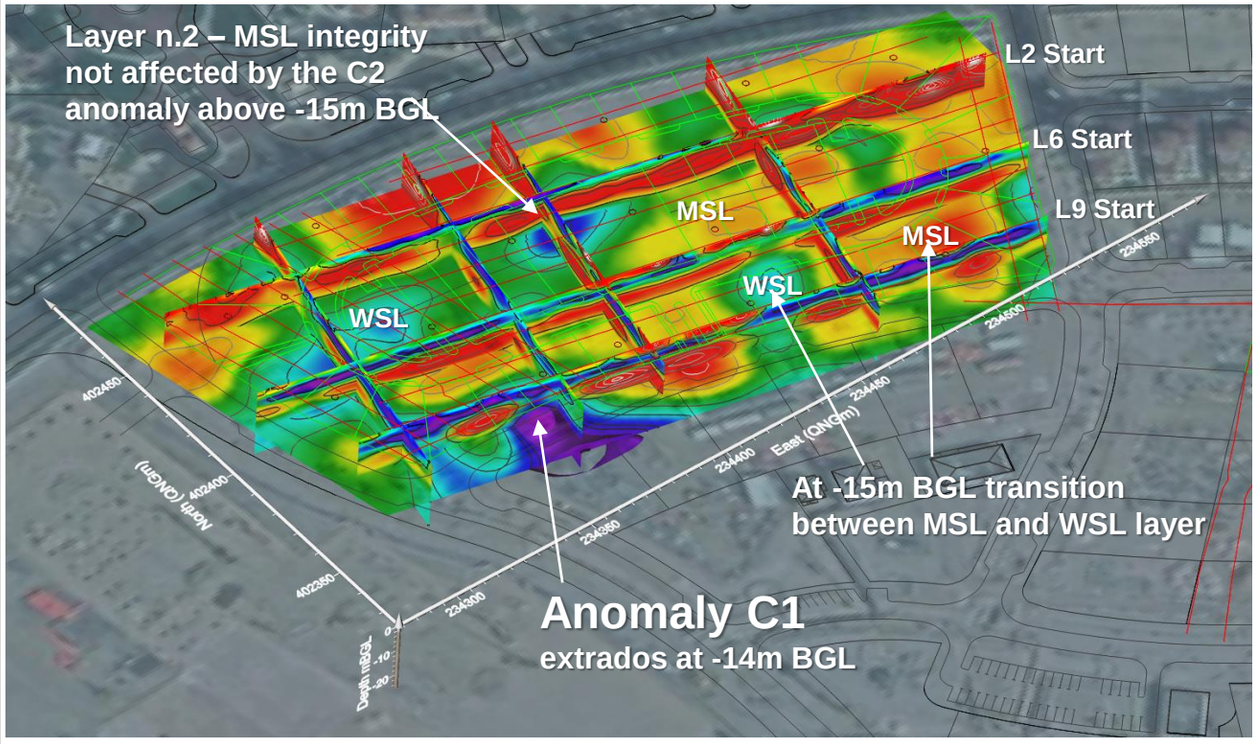


Fig.4.2 – XY (horizontal) resistivity plane @ -15m BGL – 3D SW view

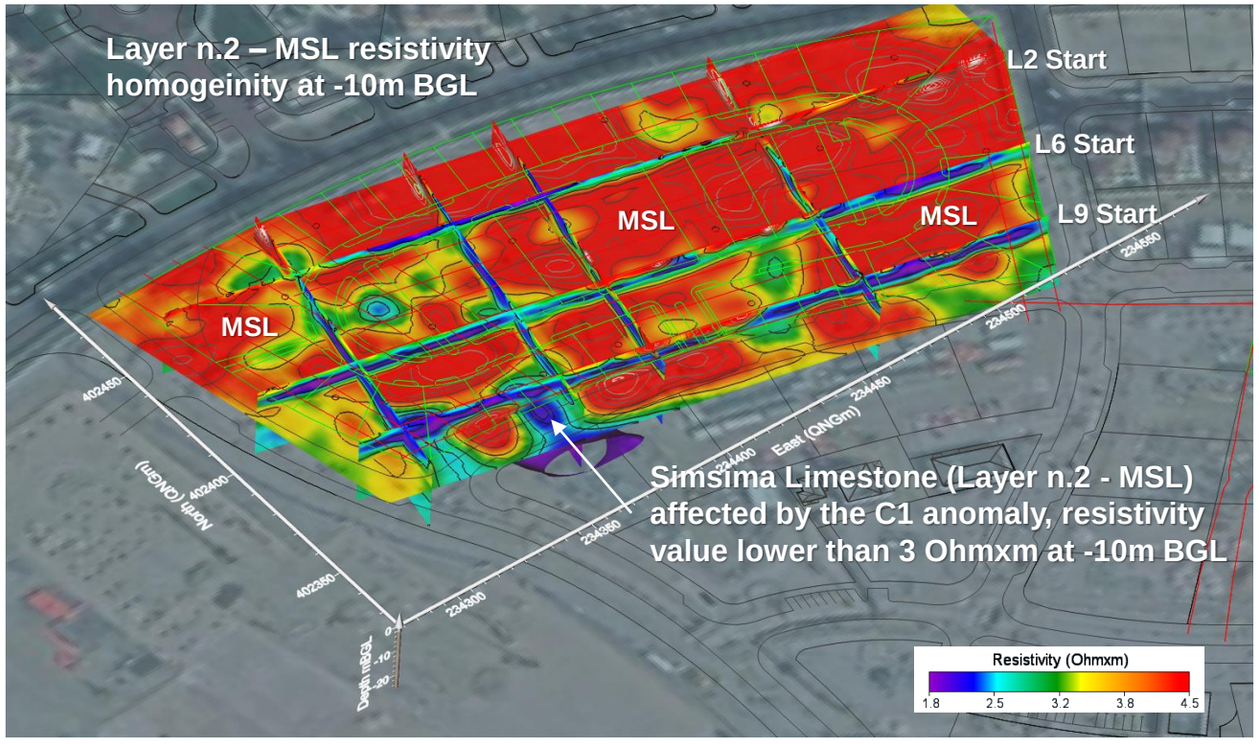


Fig.4.4 – XY (horizontal) resistivity plane @ -10m BGL – 3D SW view

PROJECT Giardino Village (GV) Gated Compound & 1B+G+3 Apartment Building		**METHODOLOGY** Geophysical investigation with Electrical Resistivity Tomography (ERT) for ground characterization and assessment of cavity	**OBJECT** Villa Giardino Area: XY Resistivity Horizontal Plane DATE 02/05/2019	**PANEL** N.4	In cooperation with: Prepared: AP Checked: WZ Approved: AR

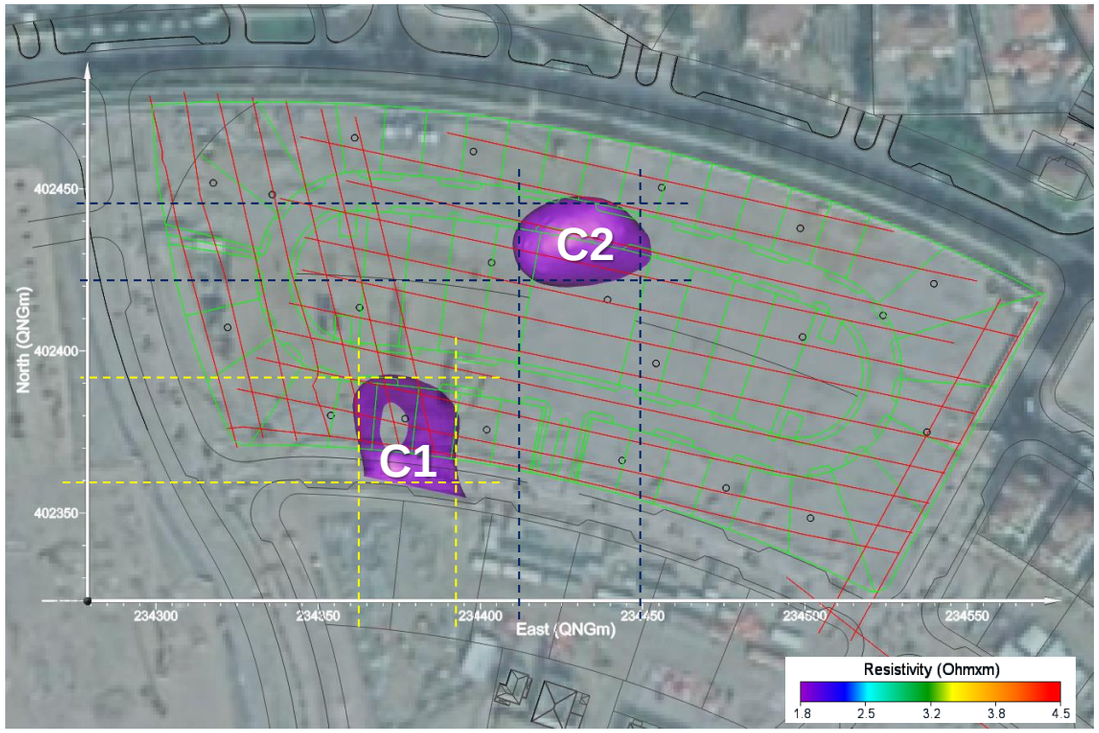


Fig.5.1 – Conductive anomalies in Villa Giardino area: 3D volume – Top View

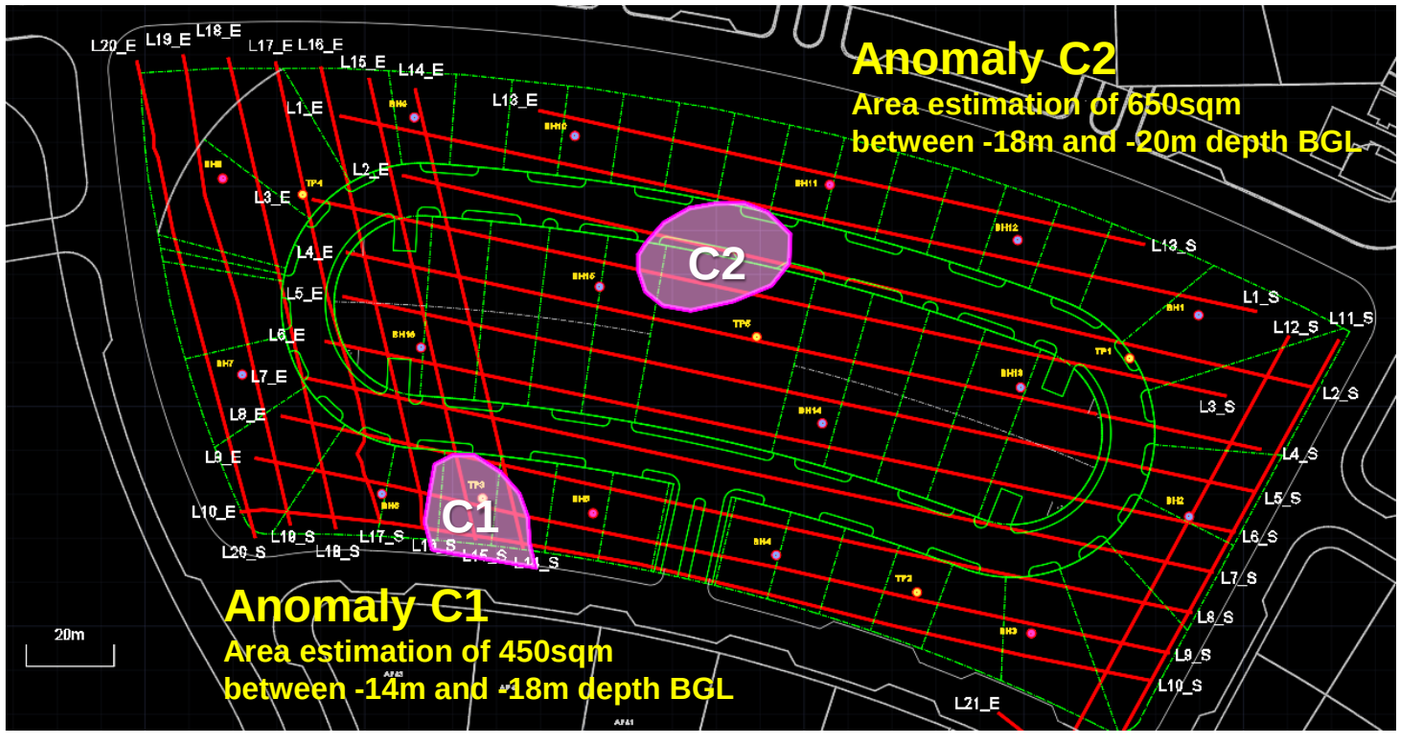


Fig.5.3 – Area estimation of Conductive Anomalies in Villa Giardino Area

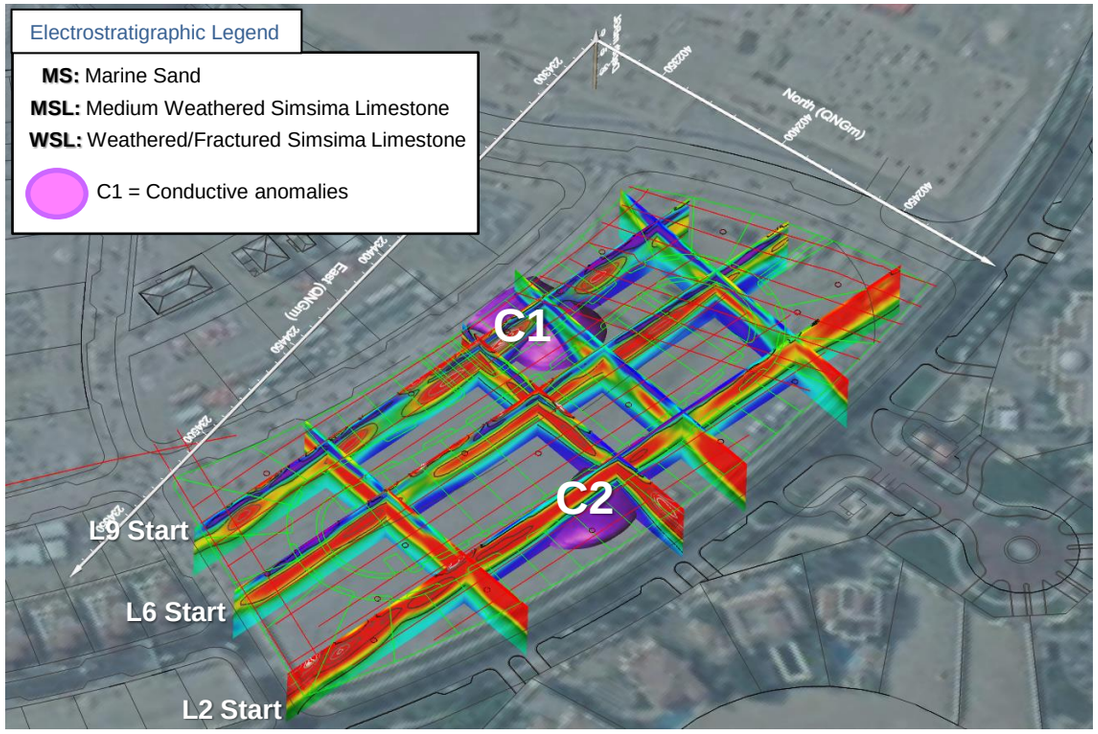


Fig.5.2 – Conductive anomalies inside the Villa Giardino Area – 3D NE view

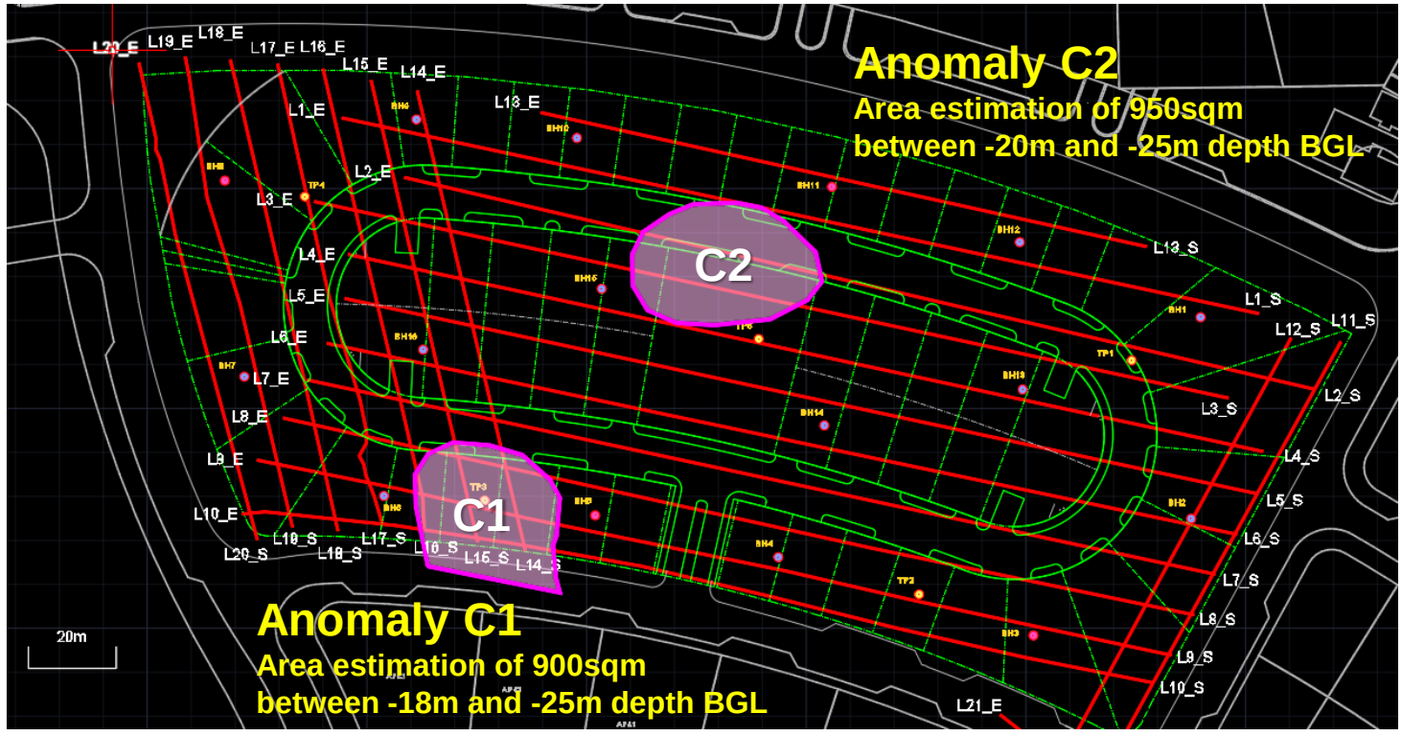


Fig.5.4 – Area estimation of Conductive Anomalies in Villa Giardino Area

PROJECT Giardino Village (GV) Gated Compound & 1B+G+3 Apartment Building		**METHODOLOGY** Geophysical investigation with Electrical Resistivity Tomography (ERT) for ground characterization and assessment of cavity	**OBJECT** Villa Giardino Area: Conductive Anomalies Characterization DATE 02/05/2019	**PANEL** N.5	In cooperation with: Prepared: AP Checked: WZ Approved: AR

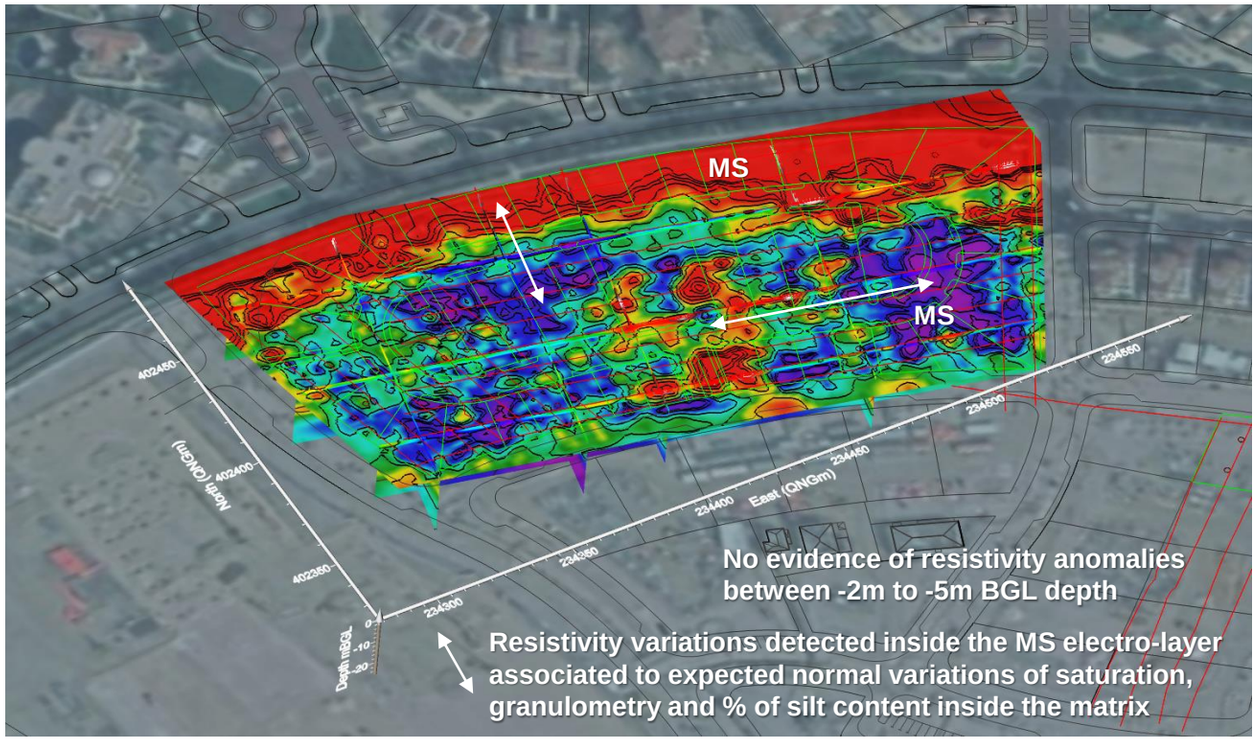


Fig.6.1 – Shallow analysis, XY Resistivity Plane @-2m BGL – SW 3D View

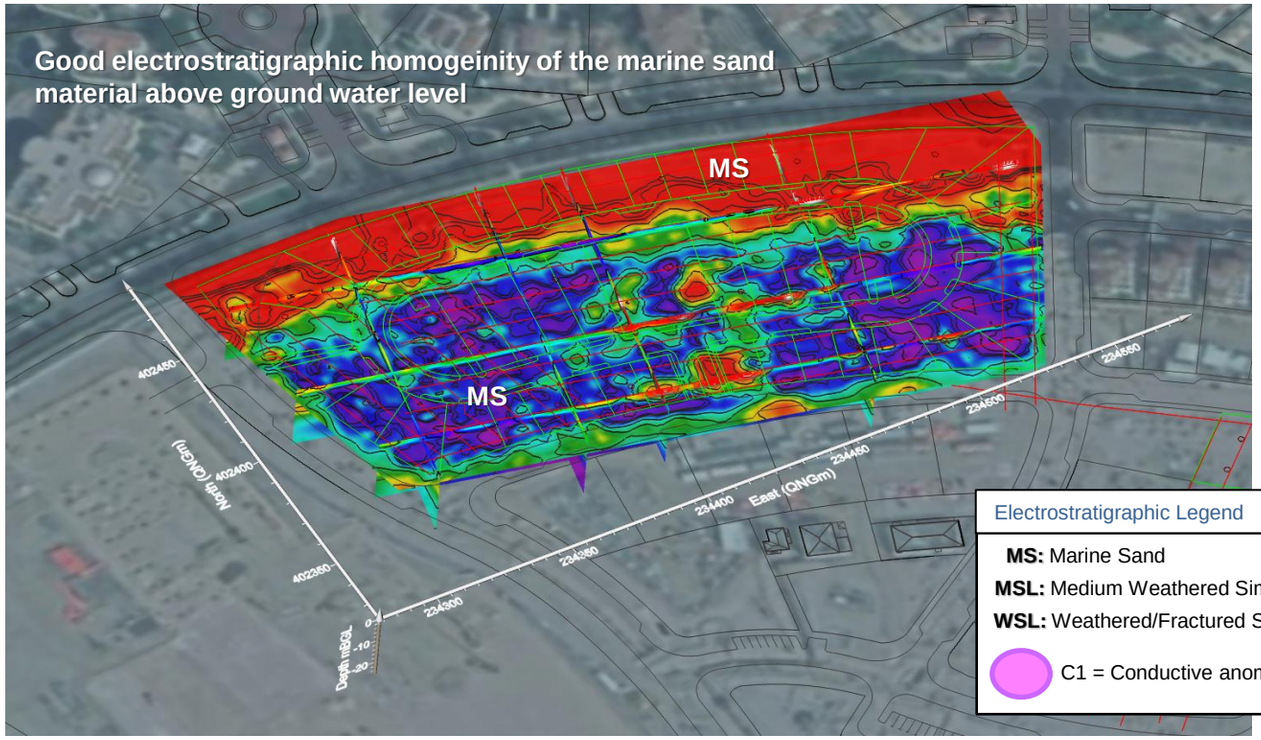


Fig.6.2 – Shallow analysis, XY Resistivity Plane @-3m BGL – SW 3D View

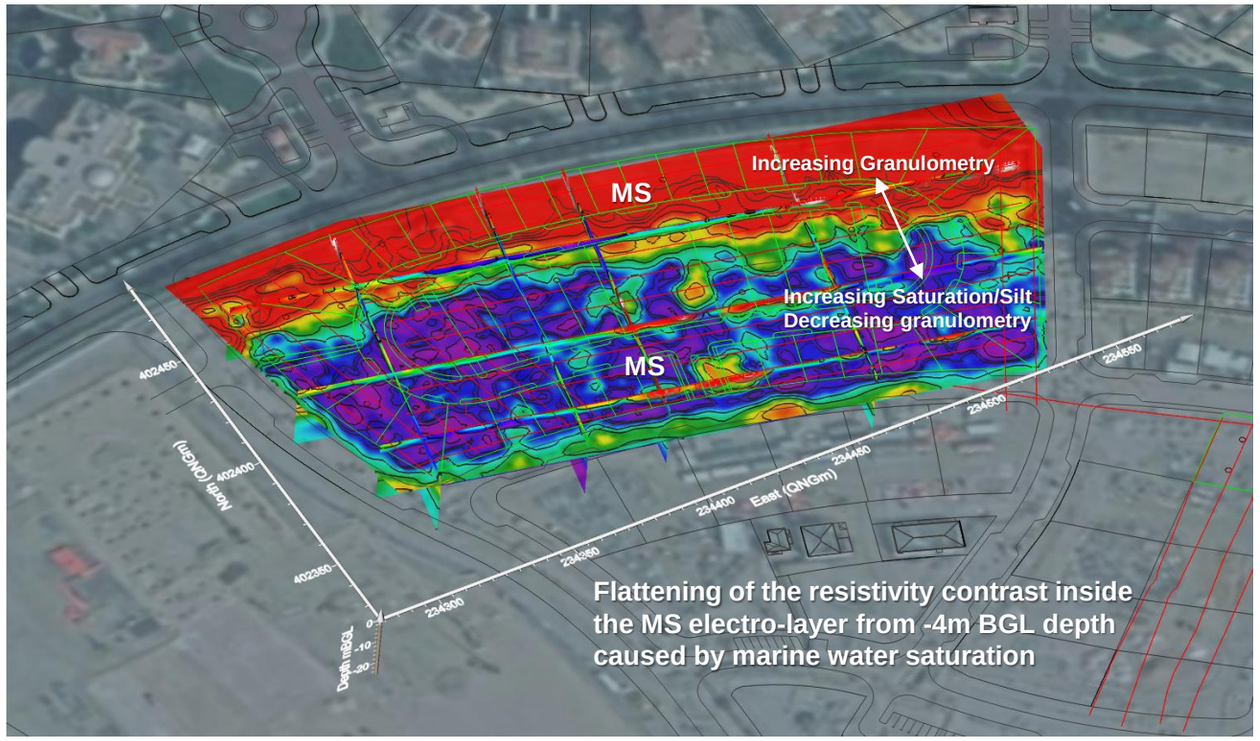


Fig.6.3 – Shallow analysis, XY Resistivity Plane @-4m BGL – SW 3D View

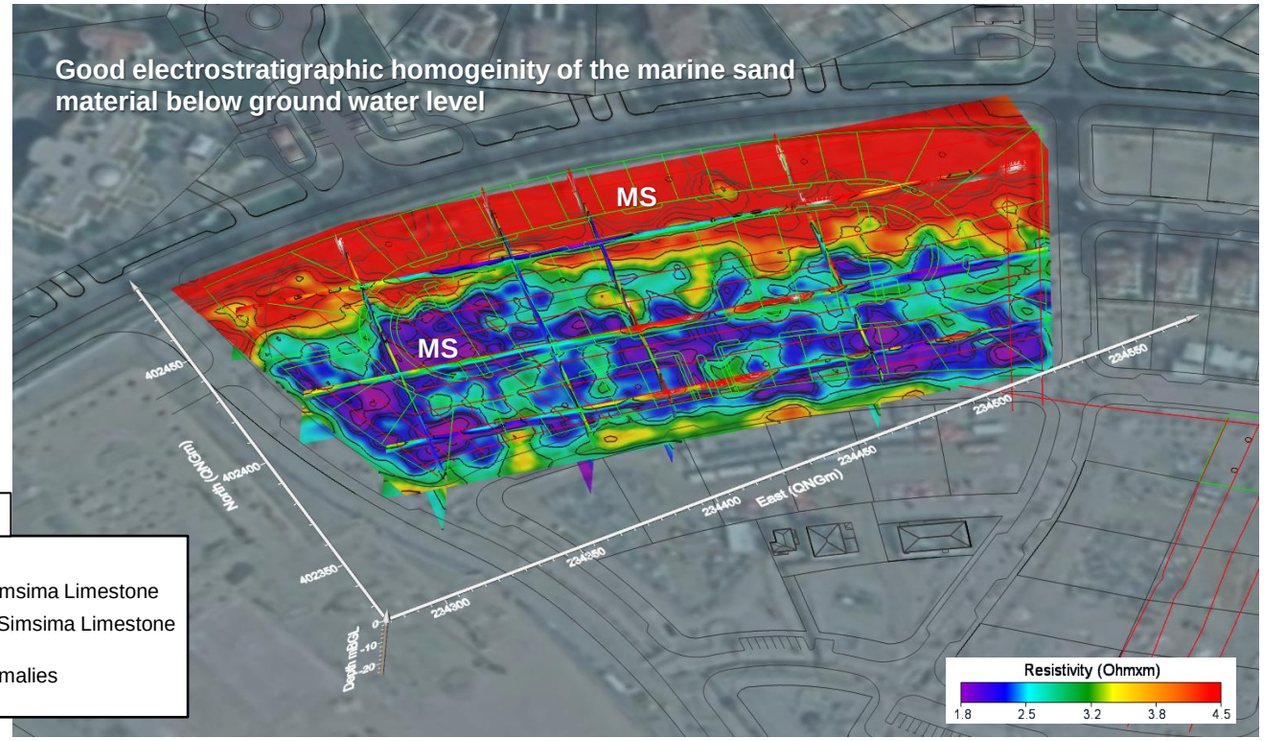


Fig.6.4 – Shallow analysis, XY Resistivity Plane @-5m BGL – SW 3D View

PROJECT Giardino Village (GV) Gated Compound & 1B+G+3 Apartment Building		**METHODOLOGY** Geophysical investigation with Electrical Resistivity Tomography (ERT) for ground characterization and assessment of cavity	**OBJECT** Villa Giardino Area: shallow analysis DATE 02/05/2019	**PANEL** N.6	In cooperation with: Prepared: AP Checked: WZ Approved: AR

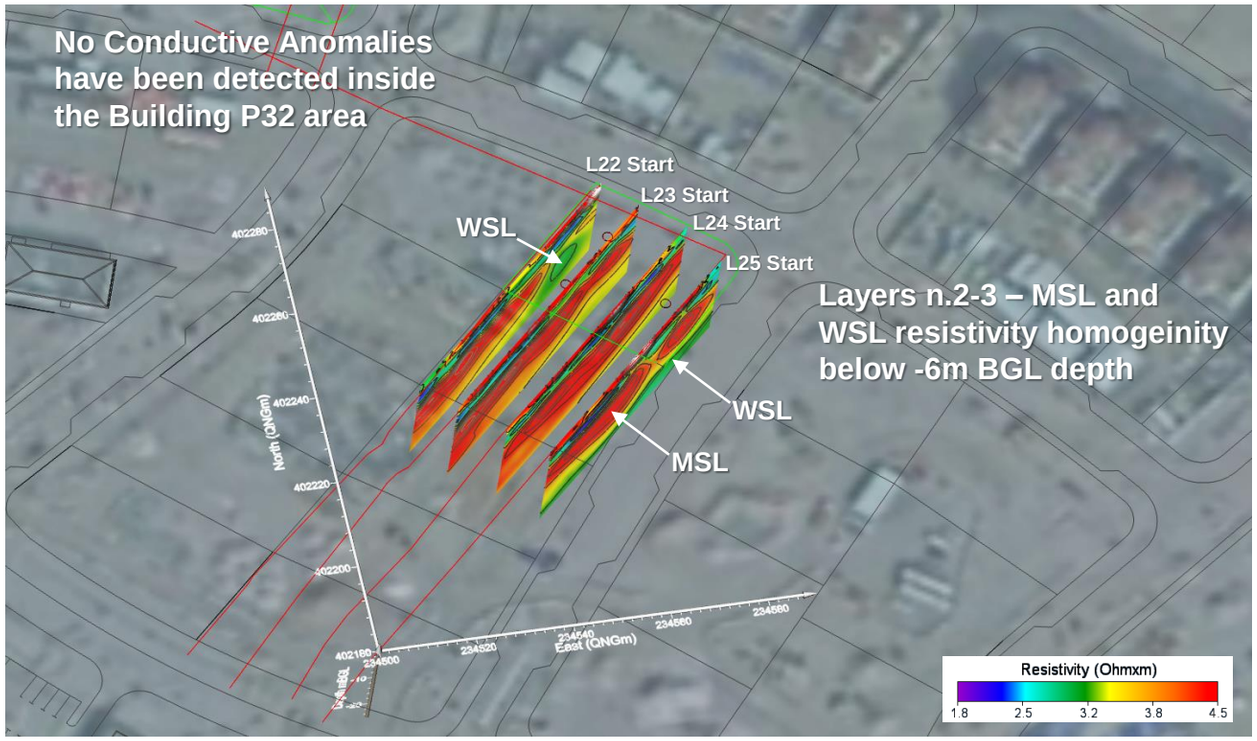


Fig.7.1 – ERT 2D profiles – SW 3D View

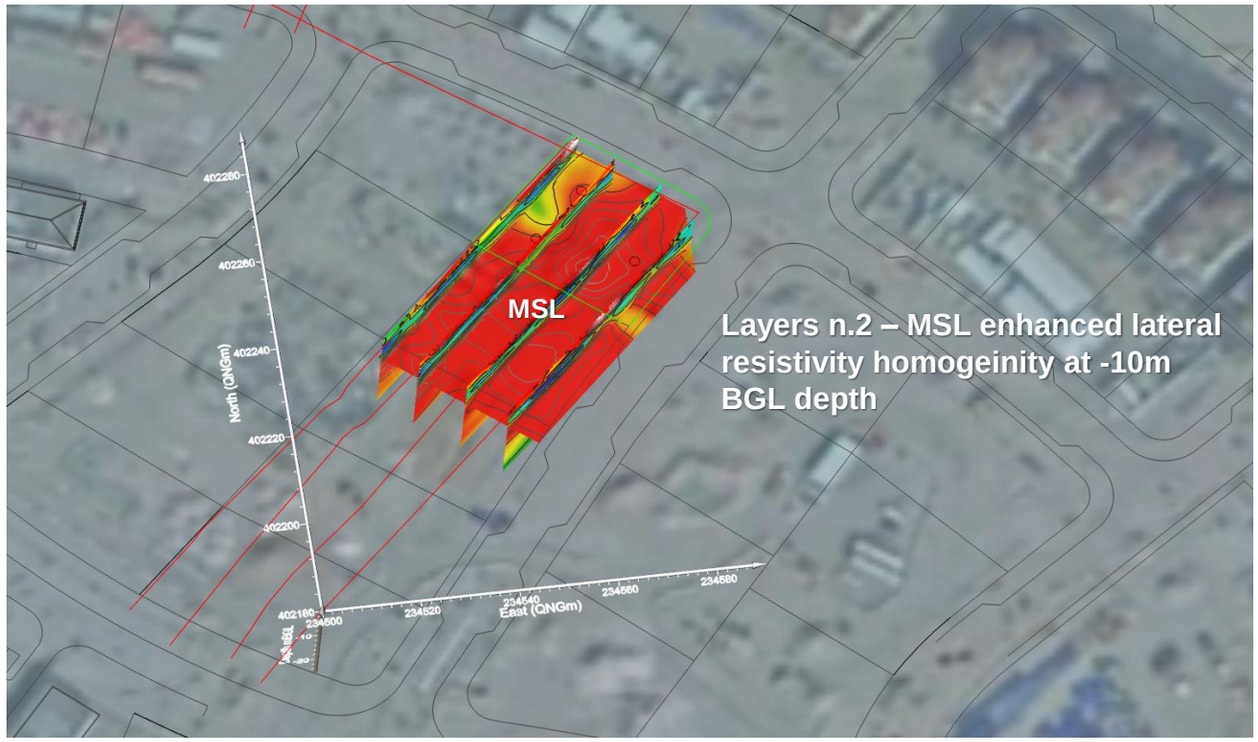


Fig.7.4 – ERT 2D profiles and XY Resistivity Plane @-10m BGL – SW 3D View

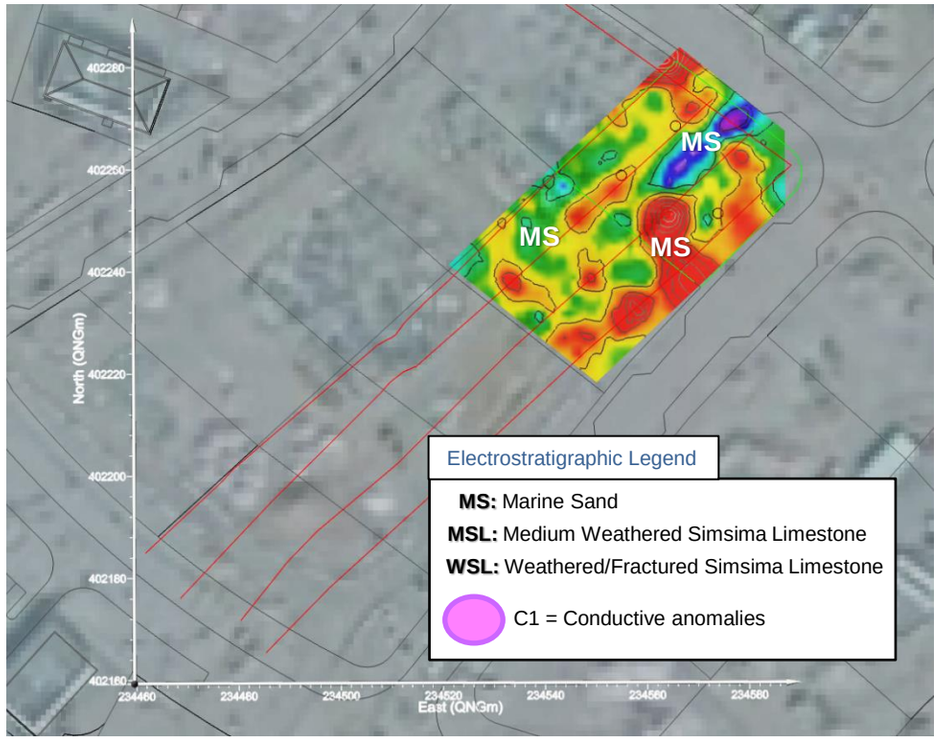


Fig.7.2 – ERT 2D profiles and XY Resistivity Plane @-2m BGL – Top View

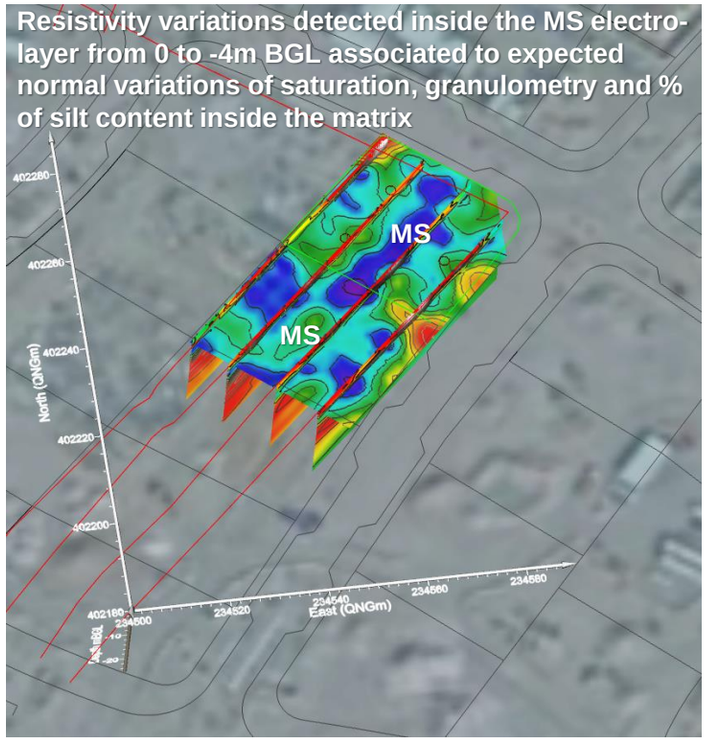


Fig.7.3 – ERT 2D profiles and XY Resistivity Plane @-4m BGL – SW 3D View

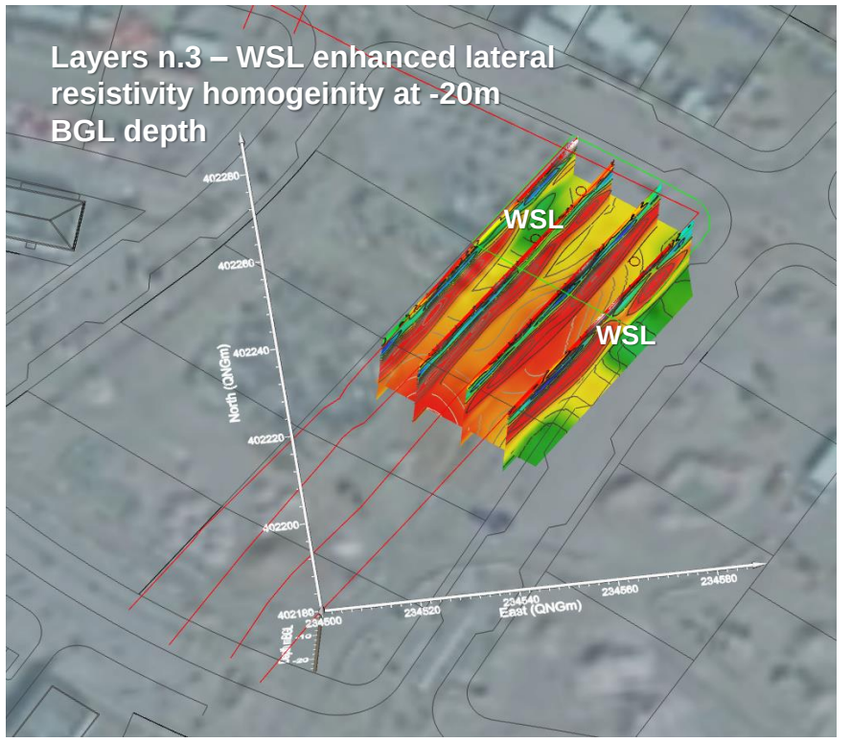
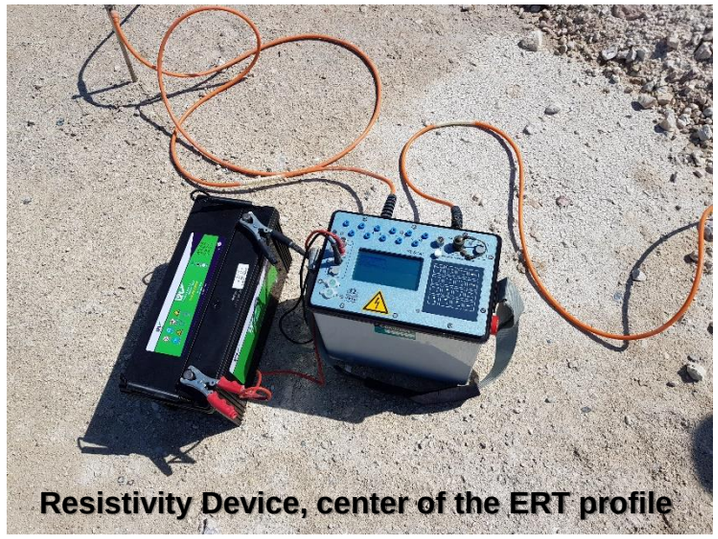
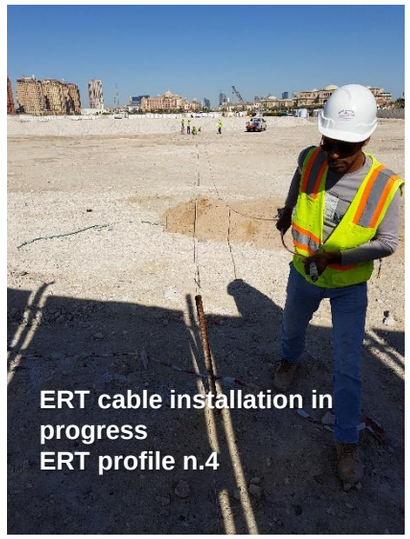


Fig.7.5 – ERT 2D profiles and XY Resistivity Plane @-20m BGL – SW 3D View

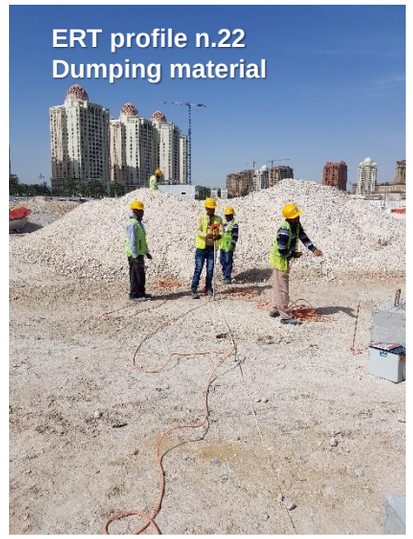
PROJECT Giardino Village (GV) Gated Compound & 1B+G+3 Apartment Building		**METHODOLOGY** Geophysical investigation with Electrical Resistivity Tomography (ERT) for ground characterization and assessment of cavity	**OBJECT** Building P32 Area: results DATE 02/05/2019	**PANEL** N.7	In cooperation with: Prepared: AP Checked: WZ Approved: AR


Resistivity Device, center of the ERT profile


Electrode installation inside loose sandy/gravelly dumping material, watering


ERT cable installation in progress
ERT profile n.4


ERT cable installation in progress
ERT profile n.4
Panorama view of the Villa Giardino survey area




ERT profile n.9


ERT profile n.21


ERT profile n.23

PROJECT Giardino Village (GV) Gated Compound & 1B+G+3 Apartment Building		**METHODOLOGY** Geophysical investigation with Electrical Resistivity Tomography (ERT) for ground characterization and assessment of cavity	**OBJECT** Photographic Documentation DATE 02/05/2019	**PANEL** N.8	In cooperation with: Prepared: AP Checked: WZ Approved: AR