









Soil - Rock Mechanics and Aggregate Testing Laboratory					
	Type	Photo	Manufacturer	Description of equipment - Auxiliary equipment	Tests performed
1	Triaxial digital load frame		MATEST Srl	Triaxial Tester 50 KN - Automatic load frame with load speed range 0,00001 mm/min to 9,99999 mm/min	<ul style="list-style-type: none"> - Triaxial testing for soil (UU test) - Unconfined compression test - California bearing ratio test (CBR) - Marshal test
4	Triaxial testing load frame		VJ TECHNOLOGY WYKEHAM FARRANCE Tritech 50 KN	<ul style="list-style-type: none"> - Automatic load frames (2) with load speed range 0,00001 mm/min to 9,99999 mm/min. - Triaxial cells (7) for specimens with diameter 35-50 mm, maximum cell pressure 2000 kPa (Wykeham Farrance, VJ TECHNOLOGY) - 8-channel Data-loggers (2) (GDS) - Pressure sensors 2500KPa 	<ul style="list-style-type: none"> - Triaxial testing for soil - UU, Unconsolidated undrained, - CUPP, consolidated undrained with pore pressure measurement, - CD, consolidated drained test
5	Controller for triaxial testing		GDS	<ul style="list-style-type: none"> - Stations (9)- Electronic control pressure and volume units 3MPa/200cc, with serial connection to PC - GDSLAB modular software in Windows 	
2	Direct/residual shear test apparatus		VJ TECHNOLOGY MATEST Srl	<ul style="list-style-type: none"> - Automatic shear testing machines (2) with range of horizontal deformation speed between 0,00001 mm/min and 9,99999 mm/min - 16-channel Data-logger MPX-300 (VJ TECHNOLOGY) - Load cells - Linear transducers 25mm/0,001mm 	<ul style="list-style-type: none"> - Direct shear test Unconsolidated undrained (UU) Consolidated undrained (CU) Consolidated drained (CD) - Residual strength shear test
3	Oedometer (consolidation apparatus)		MATEST Srl	<ul style="list-style-type: none"> - Front loading Oedometers (13) - Linear transducers 25mm/0,001mm - 16-channel Data-logger (Matest) - UTMNet software 	<ul style="list-style-type: none"> - Consolidation test (load up to 3200 kPa) - Swelling test - Soil Permeability measurement
6	Load frame for rock testing		MATEST Srl	<ul style="list-style-type: none"> - Compression load frame for rock/concrete specimens, loading capacity 2000kN - 16-channel Data-logger MPX-300 (VJ TECHNOLOGY) - Winhost V4.3 software - Linear transducers, Strain gauges 	<ul style="list-style-type: none"> - Uniaxial compression test for rock - Determination of modulus of elasticity and poisson ratio of rock - Indirect Tensile strength test
7	Automatic CBR/Proctor compactor		MATEST Srl	<ul style="list-style-type: none"> - Automatic compactor ensuring extremely uniform degree of compaction with completely automatic test cycle through a program managed microprocessor - UTM software 	<ul style="list-style-type: none"> - Proctor test - C.B.R. test

	Rock Shear box		IMPACT	<ul style="list-style-type: none"> - Shear box assembly - Manometers 10kN - 25 kN - Dial gauges for measurement of vertical and horizontal deformation 	- Shear test for Rock Discontinuities
	Cerchar testing machine		M.Kouroubakakis Ltd	<ul style="list-style-type: none"> - Cerchar machine - Microscope 	- Cerchar abrasivity test
	Slake durability test		IMPACT		- Slake durability test
	Point load tester		IMPACT	Point load testing machine with manometers (25kN/0.1kN and 100kN/ 0,5kN)	- Point load test
	Test Sieves		IMPACT	Complete series (30) of test sieves with diameter 300mm with opening aperture of 4", 3", 2", 1 1/2", 1", 3/4", 1/2", 3/8", No4, No10, No20, No40, No100, No140, No200.	- Classification of soils (sieve analysis)
	Hydrometer		HUMBOLDT TESTING EQUIPMENT	<ul style="list-style-type: none"> - Steering apparatuses (2) with speed 12000 rpm - Water tanks (2) - Volumetric flasks (30) - Pycnometers 	<ul style="list-style-type: none"> - Classification of soils (hydrometer) - Specific gravity for soils, aggregates
	Casagrande apparatus		HUMBOLDT IMPACT	<ul style="list-style-type: none"> - Hand-operated precise apparatuses (2) for the determination of liquid limit - Grooving tools 	- Determination of Atterberg limits
Other auxiliary equipment of the laboratory includes: Ovens (THERMAWATT), precise balancing equipment (OHAUS, ORMA, KERN & SOHN GmbH), thermometers, gauges, vacuum pumps, rock rutting and grinding machines (DIAMANT BOARD), Sample extruder for soil specimens (Matest), Proctor – CBR moulds.					