

GLOSSARY

Allowable Load – The load which may be safely transmitted to a foundation member.

Anchor Pile – A pile connected to a structure by one or more ties to furnish lateral support.

Bearing Pressure – The maximum pressure which is transmitted through the rigs weight being spread over the area in contact with the ground.

California Bearing Ratio Tests (CBR Tests) – A test to establish the strength of subgrade material primarily for use in the construction of roads.

Continuous Flight Augered Piles (CFA Piles) – A single length auger which is drilled into the ground to the required depth. On retraction concrete is pumped into the void under pressure. The steel reinforcing cages are then pushed into the concrete. These piles are installed by our piling division.

Contiguous Piled Walls – Bored cast-in-situ piles are frequently used as an efficient and economic method of constructing temporary or permanent retaining walls. These techniques are suitable for the provision of deep basements, underground structures and motorway cuttings where working space is limited or adjacent existing structures require restraint. They avoid excessive bulk excavation and help to control ground movements.

Deep Foundations – A design whereby structural load is transmitted to the ground at some depth through piles.

Displacement Pile – A driven pile which is either solid or hollow, closed at its lower end and displaces the ground when it is driven.

Down The Hole Hammer (DTHH) – Percussion drilling technique using compressed air. Usually used for drilling hard ground/rock.

Drilled Hollow Threaded Bar Systems – A term used to describe Soil Nails and Rock Anchors.

Driven Pile – a pile which is hammered or vibrated into the ground.

Drop Hammer – A metal weight which is raised up a mast by a hoist and allowed to drop freely on to a pile head to drive it into the ground.

Duplex Rotary Percussive – Using a down the hole hammer and a temporary liner, the hammer and casing are advanced through the unstable overburden onto more competent self-supporting material such as rock. The hammer is advanced out of the bottom of the

casing to form a rock socket. The casing is larger than the drill bit and will sometimes be slow in advancing through dense or obstructed overburden, which is where the Odex method becomes more economic.

Dynamic Load Testing – A Measurement of force and velocity at the pile head to estimate bearing capacity and settlement characteristics.

Dynamic Probing – Driving a standard cone into the ground to assess changes in ground density.

Factor of Safety – The failure load divided by the design load.

Footing – A member, usually concrete, that distributes the foundation load over an extended area and thus provides increased support capacity on any bearing soil.

Foundation – The part of a structure in direct contact with the ground which transmits the load of the structure to the ground.

Frost Heaving – Expansion that results when a mixture of soil and water freezes. Upon freezing, the total volume may increase by as much as 25 percent, depending on the formation of ice lenses at the boundary between the frozen and unfrozen soil.

Gas Monitoring – Monitoring of ground gasses.

Ground Anchor – A steel shaft containing one or more helixes which is screwed into the earth to provide a retention system against uplift forces.

Ground Stabilisation – A procedure for improving natural properties of soil to make it a more adequate base for construction.

Integrity Testing – Low strain ultrasonic tests to confirm integrity of the pile.

Jacking – A means of imposing a static driving force on a pile by jacks. Used extensively to install piles in underpinning existing structures and in a static load testing.

Kentledge Load Tests – Static load testing of the pile using concrete weights supported on grillage as a means of reaction.

Micropile – A pile which is installed using mini and medium sized rigs able to access restricted width and height spaces. As a result micropiles are usually less than 600mm diameter.

Monitoring Well Installations – Small diameter wells consisting of slotted plastic pipe to enable ground water monitoring and sampling.

Noise Monitoring – Monitoring of atmospheric noise levels usually due to piling operations.

Odex – Methods of Odex other than Odex Rotary Percussive use the permanent liner as a drive tube and once drilled through the overburden the tube can be dry packed and driven

to a set, which is useful when trying to form driven piles through dense and obstructed overburden.

Odex Rotary Percussive – Using an eccentric bit the Odex system drags a permanent mild steel liner down through overburden onto rock head by drilling the fill and flushing through the casing using compressed air. The Odex hammer is withdrawn and a rock socket is formed using a down the hole hammer.

Pile Cap – Precast or cast insitu, steel-reinforced, concrete pads that are of sufficient size to adequately distribute the load of the foundation across their area and the length of the piles.

Pile – A timber, steel, precast or cast insitu reinforced concrete post which is driven, drilled or cast into the ground as a bored pile.

Plate Bearing Tests – Load testing of the ground to assess bearing capacity.

Refusal – The condition reached when a pile being driven by a hammer has zero penetration per blow (as when the point of the pile reaches an impenetrable bottom such as rock) or when the effective energy of the hammer blow is no longer sufficient to cause penetration. When so stipulated, the term refusal or substantial refusal may be used to indicate the specified minimum penetration per blow.

Rotary Drilling – A method of drilling deep holes for testing and sampling purposes. Lengths of heavy, hollow drill pipe screwed together pass down the hole and carry a cutting bit at their tip.

Rotary Percussive Drilling – As Rotary drilling but combined with a vibratory or percussion motion on the bit; a fast method of rock drilling.

Screwpile – A multiple helix pile which is screwed into the ground by winch or capstan and used mainly in soft silts or clay.

Secant Piled Walls – As a Contiguous Piled Wall, Hard/soft Secant Bored Pile Walls provide excellent performance in terms of stiffness but also ground water control.

Settlement – The drop of some portion of the foundation below the original as-built grade.

Sectional Flight Augered Piles (SFA Piles) – Multiple auger sections which are drilled into the ground to the required depth. On retraction concrete is pumped into the void under pressure. The steel reinforcing cages are then pushed into the wet concrete. These piles are installed by our micropiling division.

Slab – A concrete foundation that is supported entirely by the surface soils and spans the footprint of the structure.

Smartfoot® – Van Elle's precast modular ground beam solution. The only system which can be installed upon ground without piles where ground conditions allow.

Soakaway Tests – Insitu testing to assess permeability of the ground and obtain values for soakaway design.

Soil Nailing – Driving or grouting steel angles both ways into a steep slope so as to create a reinforced earth retaining wall.

Static Load Testing – Static load testing of the pile using concrete weights supported on grillage as a means of reaction.

Trial Pits – Hand or machine excavated pits to establish the ground conditions.

Upheaval – The situation in which areas of the foundation are raised above the as-built position.

Vetrak® – Van Elle's Vetrak offers the site access capability of a Window Sampling Rig, but with drilling capability of a Cable Percussion Rig.

Vemech® – Vemech is Van Elle's precast concrete piling system offering a quality, fast and versatile driven piling solution either 150mm square SWL 150 kN or 200mm square SWL 375 kN.

Vibration Monitoring – Monitoring of ground vibration levels usually due to piling operations.

Water Monitoring – Monitoring of ground water levels.

Water Table – The upper surface of water saturation in permeable soil or rock.

Windowless Sampling – Soil sampling using a top driven hammer to obtain undisturbed soil samples in a plastic liner.