

# RECYCLED ON-SITE FOUNDATIONS, CIVIL AND EARTHWORKS SLASH CONSTRUCTION COSTS

On-site crushing and recycling of native materials is a win-win for cost cutting and the environment.

The latest in mobile crushing technology is being used as part of an efficient, innovative and environmentally friendly process that has demonstrated significant cost savings for residential building, commercial structures and wide applications for infrastructure engineering.

An MB C50 crusher bucket fitted to an 8 tonne Kubota hydraulic excavator has been deployed on a steep and challenging residential building site to crush demolition spoil for recycling into by a revolutionary recycling process.

The MB Crusher processed tiles, bricks, mortar and foundation concrete that was recycled in-situ on a steep double block in Sylvania. The site presented challenges in terms of gradient and need for stabilisation. The result is massive and super-stable foundations on which two new homes are being built.

Soilstone™ technology uses mechanical and natural chemical processes to treat native spoil to produce the properties of rock that can be formed into a structure. The process has been tested, evaluated and approved by the New South Wales building regulator.

## NEW TECHNOLOGY

Instead of building foundations from purchased concrete, the natural site material is crushed together with additive chemicals that recycle the spoil into an extremely durable and progressively hardening rock-like mass.

A major benefit of the site drainage design is the ability to form multiple drainage lines while retaining structural mass and stability. The material is moisture impervious and allows you to use it to form drainage and other structures in a way that would be difficult or more expensive than if using poured concrete.

The Soilstone process has been used successfully for mitigation of soil erosion, improved bearing capacity or subgrade reaction, improved resistance to water permeability, improved resistance to ground movement and vibration forces. The environmentally sustainable recycled material is not prone to corrosion like steel.



Retaining walls produced from crushed and treated recycled demolition spoil on site.

Materials from demolition ready for crushing and Soilstone® process.



## SUSTAINABILITY OF IN-SITU SOIL MATERIAL

Alternative to unwanted or excess soil material, demolished concrete or brick material; materials can now be engineered to form mass engineered soil structure for particular use and function on site.

## HUGE COST SAVINGS

Using the Soilstone process not only provided an ideal engineering solution on the Sylvania site; it saved the customer in excess of \$36,000, which would have been required for material removal and disposal costs.

Soilstone's developer, consulting and research engineer, Edgar Agda said, "Typically, you save around 50 per cent of the material that has to be removed off site. This means all construction materials can be minimised. The reconstituted material is extremely stable yet can be drilled easily or have sections cut out to add or retrofit service lines.

"In addition, there is virtually no limit to the type of material that can be used for the process. Sand, gravel, clay rock recycled bricks, tiles, tyre waste and processed plastic can be used."

The Soilstone process is ideal for applications such as slope embankment stabilisation, buttressing to halt and remediate coastal erosion, in complex construction, flood mitigation (diversion

channels, levees, meandering river control, groyne, jetties, river and sea wall and others) and management and the prevention and repairing of flood damage to buildings. It can be used as alternative material in waffle pod, foundation works retrofitting and stabilisation. It is also an economical alternative to road base material as well as mine site erosion control, land fill contamination control and other in-situ ground improvement works.

## SOIL STONE'S ENGINEERED SOIL AND WASTE GRAVEL MIX

Engineered in-situ soil and processed waste aggregates mix provide a simple alternative in ground improvement that minimise if not eliminate the use of material grading, compaction requirement; and yet attains properties of varied shear, compressive, and bonded strength of stone.

## MOBILE CRUSHING IS KEY TO SUSTAINABLE REUSE OF DEMOLITION WASTE

MB Crusher and screening buckets allow operators and contractors to reprocess materials in-situ, helping to reduce the load on the environment by making useful by-products of otherwise low value raw feed, which may add significantly to their profitability.

In urban areas the carting and dumping costs alone often mean a fast ROI, and in rural areas it can mean producing very useful and valuable materials in places where buying materials is often prohibitively expensive.

The MB Crusher bucket crushes demolition material.

