

STONE, GRAVEL AND SAND

The key to Australia's infrastructure



CEMENT CONCRETE
& AGGREGATES AUSTRALIA

WHAT IS QUARRYING?

An aerial photograph of a quarry site. In the foreground, there's a large, rectangular pond with greenish water, surrounded by a concrete or stone wall. Several dirt roads wind through the site, which is filled with piles of rocks and gravel. The background shows a dense forest of green trees under a blue sky with some clouds. The top of the image has an orange gradient overlay.

Quarrying is quite simply the extraction of natural resources from the earth, usually from some form of surface working or quarry site.

Quarries produce a range of useful materials, including limestone, dimension stone and rock. In Australia, the most common materials extracted are construction aggregates such as crushed rock, sand or gravel.

These abundant yet essential raw materials are the foundation of our homes, schools, hospitals, roads and almost all aspects of the built environment that we depend on.

People have relied on quarry materials for thousands of years because of their strength, durability and dependability, and while the technology and processes have improved, these materials are as important to modern society today as they have ever been.

HOW QUARRIES BENEFIT AUSTRALIA

Australian quarries support our vital building and construction industries which generate over \$160 billion in revenue each year and directly employ more than one million Australians. The building and construction industry demands more than 150 million tonnes of construction aggregates each year to meet the need for our homes, workplaces, public buildings and roads.

As well as providing these essential materials, quarries stimulate local communities through investment and by providing jobs. In fact, the quarry industry creates over 10,000 jobs directly and supports another 80,000 indirectly, often in rural and regional locations.

THOUGHTFUL PLANNING

Stone, sand and gravel are naturally occurring materials and their location is determined by the local geography, so a quarry must be placed where these materials are located and where they can be efficiently transported to where they are needed.

Well before a quarry is established, it must satisfy stringent planning and environmental regulations. Extensive planning and development activities are carried out to determine the best way to develop and manage the quarry and to minimise any impact the operations may have on the environment and local community.

Once the quarry is approved and development and operations have commenced, regular monitoring is undertaken to ensure the operations are clean and safe.

LIFE AFTER QUARRYING

Quarries are usually long term operations and they often serve the needs of their community for many years. As the resources are progressively extracted and exhausted, the quarry is progressively remediated to bring it back to a natural state.

The remediation plan is usually determined as part of the quarry approval process and often involves replacing the original topsoil, reproducing waterways and replanting local trees.

This is a continual process as operations move from one section of the quarry site to another, and results in thousands of new trees being planted in and around quarries across Australia each year.

In some cases, quarries are completely redeveloped at the end of their life into parklands, sporting facilities, even housing estates.

6 INTERESTING FACTS ABOUT QUARRYING

WE ALL NEED QUARRY PRODUCTS

Every Australian requires **7 tonnes** of stone, sand and gravel every year to build the roads, houses and other infrastructure they need.



WHERE WE LIVE

To build an average new house we use about **110 tonnes** of construction aggregates and 53m³ of concrete.



THE ROADS WE USE

To build one kilometre of two-lane highway requires about **14,000 tonnes** (or 400 truckloads) of construction aggregates.



BUILDING AUSTRALIA

Quarry products are the essential raw materials needed to build new infrastructure projects. Over **150 million tonnes** of aggregates are used in the construction of homes, commercial buildings, schools, hospitals, roads and bridges every year.



LOCALLY SOURCED

Quarrying needs to be carried out close to where these materials will be used. This keeps transportation costs low and helps **keep building costs down** in local communities.



COMMUNITY FIRST

The quarry industry is committed to **co-exist with local communities** and follows stringent planning and operating conditions.



The background of the entire page is a photograph of a rowing boat on a body of water. The water is a deep blue with ripples and reflections. A dark, semi-transparent rectangular box is centered over the image, containing the title and three paragraphs of text. The title 'PENRITH LAKES REMEDIATION' is written in large, bold, orange and white letters. Below the title is a thin white horizontal line. The three paragraphs of text are in a smaller, white, sans-serif font. The overall composition is clean and professional, with a focus on the water and the rowing activity.

PENRITH LAKES REMEDICATION

Penrith Lakes in Sydney's west was once a major quarry, with a history stretching back to the days of colonial settlement. The quarry supplied the stone, sand and gravel from which much of metropolitan Sydney was built and was progressively remediated into a series of recreational lakes in the 1990's.

The Penrith Lakes Scheme is amongst the world's most innovative and sizeable quarry remediation projects. Both the Sydney International Regatta Centre and Penrith White Water Stadium located at Penrith Lakes hosted many rowing events during the Sydney 2000 Olympic Games.

Further plans for development will see it transform into a popular regional destination that will be home to thousands of families whose newly constructed homes will be surrounded by pristine, natural environment and unrivalled parkland, waterways and outdoor recreational facilities.