

MAHAFFEY ASSOCIATES

COMPANY

PROFILE

“Setting The Standard In Construction Materials Technology
Since 1978”



MAHAFFEY ASSOCIATES PTY LTD

(ABN 90 001 629 036)

Incorporating BEMAC Laboratories

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***MAHAFFEY ASSOCIATES
SPECIALISTS IN CONCRETE
AND
BUILDING MATERIALS TECHNOLOGY***

Mahaffey Associates was the first independent organisation in Australia to provide professional expert advice in the highly specialised area of concrete and construction materials technology. Now nearing our 35th year, our company has been instrumental in the achievement of durable concrete design and practice in the Australian construction industry.

Mahaffey Associates is a firm of specialist consulting engineers that is uniquely placed in the field of construction materials durability and assessment.

Our company has worked on many high profile projects, both in Australia and overseas. Our role has always been to ensure that materials used in construction and rectification are of the right quality to ensure that our client's objectives are met.

Our extensive laboratory facilities provide us with a unique ability. Not only can we provide specialist professional advice but we can also back this up with performance information on materials and structures based on testing and investigation work carried out under our own control.

We are pleased to assist our clients either with durability assessments, specifications and procedures for new construction work, in the assessment of materials for use in construction or rectification, or in the assessment of the performance of materials in existing structures.

The company was established in 1978 by Paul Mahaffey as BEMAC Laboratories. Paul has now retired, and the company is run by David Mahaffey, who is also a Past President of the Australian Concrete Repair Association. We are proud to be an Australian owned company with more than 30 years experience, and are committed to providing the highest level of professional service.

Our Mission

The management and staff of Mahaffey Associates, both as a team and as individuals, are committed to providing the highest level of service to each and every one of our customers.

As recognised leaders in the technology of concrete and other building materials, we remain at the forefront in this highly specialised field, ensuring that our level of knowledge is always complete and up-to-date. We will, at all times, operate independently and only within our field of expertise.

Our in-house laboratory, BEMAC Laboratories, will remain fully appraised of all relevant standards and test procedures, and will ensure that, at all times, our testing equipment is in good order, and in calibration.

We recognise, and continually remind ourselves, that our customers rely on us and that our actions can have an impact on their wellbeing and way of life. In this knowledge, we will work towards achieving the highest level of quality and professionalism in all our endeavours.



Areas of Expertise

Mahaffey Associates operates in 4 main areas -

- Providing advice on the use of concrete and other engineering materials in new construction, including the provision of durability assessments and recommendations.
- Problem solving - Investigating problems that occur during construction so that defects can not only be rectified but also avoided in future work
- Investigation of concrete deterioration, and the selection and specification of appropriate repair technologies
- Specialised testing, particularly structure testing. This includes such things as testing full scale prestressing anchorages, full scale load testing of building members and instrumentation of structural members under a range of load conditions.

Our in-house laboratory facilities allow us to make sound engineering judgements in all these areas.



This could include -

- Using concrete analysis to assess causes of cracking
- Determining the properties of tiles that may cause delamination
- Developing new concrete mixes to meet specific performance requirements
- Measuring contaminants in concrete that could cause reinforcement corrosion
- Assisting in the development of new products with both research and conformance testing
- Testing of concrete from fire damaged structures, to assess the effects of the fire on the integrity of the concrete
- Determining the configuration of existing concrete members (ie reinforcement details, concrete strength and thickness)

Or any other material property that may be relevant.

Our laboratory has achieved accreditation to ISO 17025, a standard recognised both in Australia and internationally.



Highlights

There have been many highlights in our history, and some of these are –

- ***New Parliament House, Canberra***



Our involvement in this project as concrete technology consultant earned us awards from both the Concrete Institute of Australia and the international body, FIP

- ***Sydney Harbour Tunnel***

We were involved in every stage of this project, and were again honoured with an award of merit from the Concrete Institute of Australia. Our biggest input was the development of durable concrete for use in the immersed section of the tunnel, and providing advice during the construction of the units.

- ***Airport Link Rail Tunnel***

We were appointed by Transfield Bouygues to prepare a concrete durability model for the whole project. We were also charged with the responsibility for developing a concrete for the precast tunnel lining segments that would achieve a 100 year design life.



▪ ***Stadium Australia***



The designers of the main stadium for the Sydney 2000 Olympics involved Mahaffey Associates in all areas where concrete performance was an issue. This included strength, watertightness, surface finish, quality of manufacture, and suitability of specifications. We also developed a concrete durability model, which will ensure that the concrete in the stadium will achieve the required design life. Our involvement in this project has ensured that all concrete, from the foundations to the precast seating units, will achieve the level of performance required in a project of this importance.

▪ ***Pavements***

Mahaffey Associates has designed the concrete for much of the concrete pavements constructed in NSW, including the Bulahdelah Bypass and the West Charlestown Bypass currently under construction.

▪ ***War Damaged Structures, Vietnam***

Working for the Asian Development Bank, we carried out a study into the viability of repair of numerous items of infrastructure that have laid in disrepair since the Vietnam war. We have also worked in Indonesia, Thailand and New Zealand in areas of materials performance and specialist testing.

Concrete Repair

We have also established ourselves as a major force in the field of concrete repair work. This has led to David Mahaffey being made an honorary life member of ACRA, the Australian Concrete Repair Association. As a consultant with specialist technical knowledge in the field of concrete technology and performance, we have the required expertise to correctly diagnose the causes of concrete deterioration. And it is only when the precise nature of the deterioration is known that an appropriate rectification strategy can be developed.

Some examples are –

- Australia Square
- The Matthews Building at University of NSW
- Bankstown Square shopping centre
- Matavai and Turanga, twin residential towers for the Department of Housing
- The Entrance Bridge
- Strathfield Plaza residential tower



Recent projects have included developing a repair strategy for a large bank of silos in Newcastle. We have also designed systems for the partial reconstruction of a number of home unit buildings where the deterioration due to reinforcement corrosion was so severe that repair was not viable.



Both the universities of Sydney and NSW have entrusted us with their concrete repair problems many years.

The Future

We are proud of all that we have achieved in more than 30 years of operation. Builders and designers of virtually every significant construction project carried out in NSW have relied on our expertise, as have many building owners and managers. We will continue to provide the highest level of professional service, with constant improvements to our expertise and capabilities. This is reflected in recent appointments to our staff, and the expansion of our test facilities.

In this day and age, when demands on material quality are constantly changing, and new techniques are being developed for both construction and repair, our role in the industry is more important now than it has ever been.