

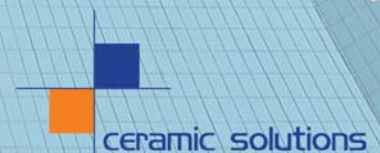


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Sustainable Tradition

Highlighting the Benefits of Traditional Pool Design and Construction

In the rush to improve our 'sustainability credentials' and reduce our environmental footprint, we can sometimes overlook what we already have – searching for new

alternatives without first considering the benefits of the 'traditional'.

This is perhaps not surprising in a world where 'traditional' is often frowned upon as being out of touch with modern expectations.

In fact, for many people, the slightest mention of the word 'traditional' conjures up mental images of all things passé, inefficient and often, by extension, not sustainable.

With that in mind, it's heartening to see that not all 'traditional' things are being overlooked. Indeed, when it comes to swimming pools and aquatic structures, an ever-increasing number of councils and operators around the country are now discovering the many benefits that 'traditional' concrete pool design and construction can offer.





Sustainability through Longevity

By any measure, when considering the 'sustainability' of a structure - be it a building, road or pool - one of the primary considerations is that of longevity.

This not only relates to the overall useful/operational life of the structure, but also the quality, performance and appearance of both the structure and its individual components.

Put simply, as with all things, the ESD (Environmentally Sustainable Development) credentials of a structure extend far beyond the amount of embedded energy associated with the materials used and the energy invested in the construction process. In fact, for many structures - particularly those with a design life in excess of 25 years - the energy and effort invested in repairs and maintenance can often far outweigh the initial 'environmental' cost of the project.

Oliver Huss, Managing Director with commercial tiling specialists Ceramic Solutions, explained:

"The only way to truly assess a project's ESD credentials is to make a full life-cycle

assessment of the structure - one that also takes into account all aspects of its on-going performance."

"The overall quality, performance and longevity of every component has a direct impact on the overall sustainability of the project," he said. "After all, every time that any maintenance work has to be carried out on a structure, no matter how minor, you are investing energy into that structure."

"From the energy required to manufacture repair materials and ship them to the site, through to the energy and effort involved with getting a maintenance crew to the site and completing the work, it all adds up - in terms of both cost and invested energy," Oliver Huss added.

One area where the benefits of high quality long-term performance are clearly evidenced is in pool design and construction. Interestingly, this is also an area where the 'traditional' methods of design and construction have also come to the fore in terms of sustainable development.

"While there had been a trend in some areas that saw a move away from tiled concrete pool design and construction to a number of alternative methods, recent years have seen strong shift back towards the 'traditional' tiled concrete pool," Oliver Huss said.

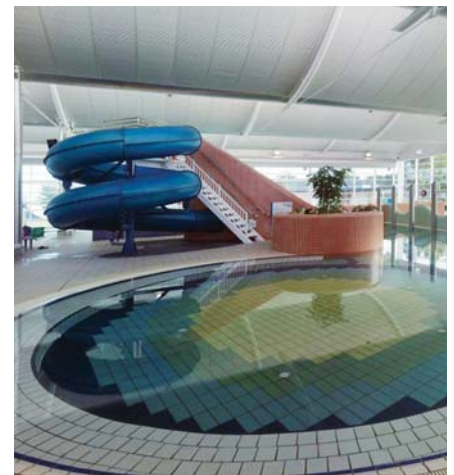
"Indeed, an ever-increasing number of councils and other pool and aquatic centre operators are recognising both the performance, aesthetic and sustainability benefits that 'tradition' tiled concrete pools have to offer."

While there are major benefits associated with tiled concrete pools, few would argue that the most important of these is longevity. Put simply, concrete pools are, and have always been, built to last.

Formed and poured reinforced concrete pools have been around since the first 'modern' pools were constructed some 70 years ago. Many of the public pools still in operation around Australia are over fifty years in age. Importantly, the majority of these are still structurally sound, and can expect to continue in 'active service' for another 20-40 years - a staggering lifespan (especially in this day and age).

Furthermore, some of these pools also have tile claddings that have lasted in excess of 50 years with some maintenance using the original tiles and adhesion systems. Reinforced pools have a proven life.

While the old pool joints generally used





Virgin Active – Frenchs Forest, Sydney



waterstops made of copper that lasted at least 30 years, their modern equivalents – with rubber or PVC waterstops, either internal to the concrete or applied to the water-side of the joint – have also proven themselves to be extremely effective and long-lasting.

Interestingly, whilst there are many older pools that are still structurally sound and operational, the majority of these have required upgrades to conform with modern gutter designs. In most cases this has been easily achieved by adaption of the top of the pool walls or construction of internal gutters. Tile systems after thirty to fifty years are generally replaced with modern DIN Standard tiles that absorb little water, have minimum growth, and have excellent mortar and grout systems which will give generally in excess of thirty years life.

Experience with many thousands of old concrete pools in Australia has provided



engineers with the experience to design very long-lasting tiled concrete pools.

The key to this longevity lies within the inherent strength of the structure. A reinforced concrete pool designed to “SAA Water Retaining Structures Code” requirements has a design life in excess of 50 years. Even if the surface of the pool fails the pool structures will retain water.

Importantly, concrete pools can be back-filled against and do not require a void around the pool as the steel reinforcement is protected within concrete. Furthermore, concrete pools also allow the concourse to be supported by the pools themselves rather than requiring additional support structures. This also saves the need for a concourse joint with sealant.

Flexibility of Design

Together with their outstanding strength and longevity, another major benefit with tiled concrete pools is the design flexibility that they offer. One only has to visit one of the ever-increasing number of aquatic centres springing up around the country to see just how versatile tiled concrete pools can be.

From competition pools, learn-to-swim pools, hydrotherapy pools and spa pools, through to wave pools, splash pads and leisure centres, rapid rivers, and whirlpools,

it's clear that the design capabilities are almost endless.

Importantly, a well designed and constructed pool, with quality tiles and architectural finishes will not only last for decades, it will also stay looking good for decades. Oliver Huss, explained:

“Tiled concrete pools have an almost ‘timeless’ appeal. So much so, in fact, that for many people, they would be hard pressed to estimate the age of most pools. Even the pools that are 20-30 years old very rarely look dated.”

“Now, thanks to the myriad of tile designs and colours now available, architects and designers can let their



(From Left) Oliver Huss from Ceramic Solutions and Gordon Smith from GNFP inspecting the work at Monash City Council's Oakleigh Aquatic & Recreation Centre



imaginations run wild, with the confidence that whatever they choose, the tiles will still look good for decades to come," he added.

Renewable Resources

When it comes to sustainability, one of the most significant benefits of tiled concrete pools is that in most instances, they can be renovated, updated and given a new lease on life – the ultimate in 'renewable resources'. What's more, in the majority of instances, this renewal can be completed at a significantly lower cost than many alternative construction methods.

The benefits of traditional tiles concrete pool design were once again highlighted

during the recent refurbishment works being carried out for Monash City Council at its Oakleigh Aquatic & Recreation Centre in Melbourne's metropolitan south-east.

Together with the construction of new interactive leisure water and spa areas, the \$9.21 million redevelopment of the Centre has included the refurbishment of the existing diving and 50 metre pools. Originally opened in 1958 by the then Prime Minister, Sir Robert Menzies, the Oakleigh pool and diving tower (which opened some 18 months after the main pool) are an iconic part of Melbourne's south-east, and the recent refurbishment will restore the City's only diving tower and dive boards to their former glory.

Speaking about the refurbishment works, Monash Special Projects Manager, John Klein, said that longevity was a key consideration when choosing a tiled concrete pool solution.

"When it came to selecting an appropriate solution for the Oakleigh Pools, we wanted to be sure that the structures would have a minimum life of at least 30 years," he said. "We felt that a tiled concrete pool would be the only way to ensure this outcome."

Interestingly, prior to the refurbishment of pools, core samples were taken from both the 50 metre and dive pools as part of a full structural analysis. Amazingly, even

after more than 50 years of service, both structures are completely structurally sound, and the concrete was demonstrating the same high level performance characteristics as when the pool was originally constructed.

"We're extremely happy with the refurbishment works," Mr Klein said. The pools look excellent."

"Furthermore, we're confident that they stay looking good and keep on performing for many years to come," he concluded.

The works also included the construction of a new thermal pool and interactive leisure water and spa areas. The centre has been designed as an eco-friendly venue with water harvesting and solar boosted hot water features to the amenities areas to minimise its impact on the environment.

Works at the site are nearing completion, with the Centre expected to open during the summer season of 2009/2010.

