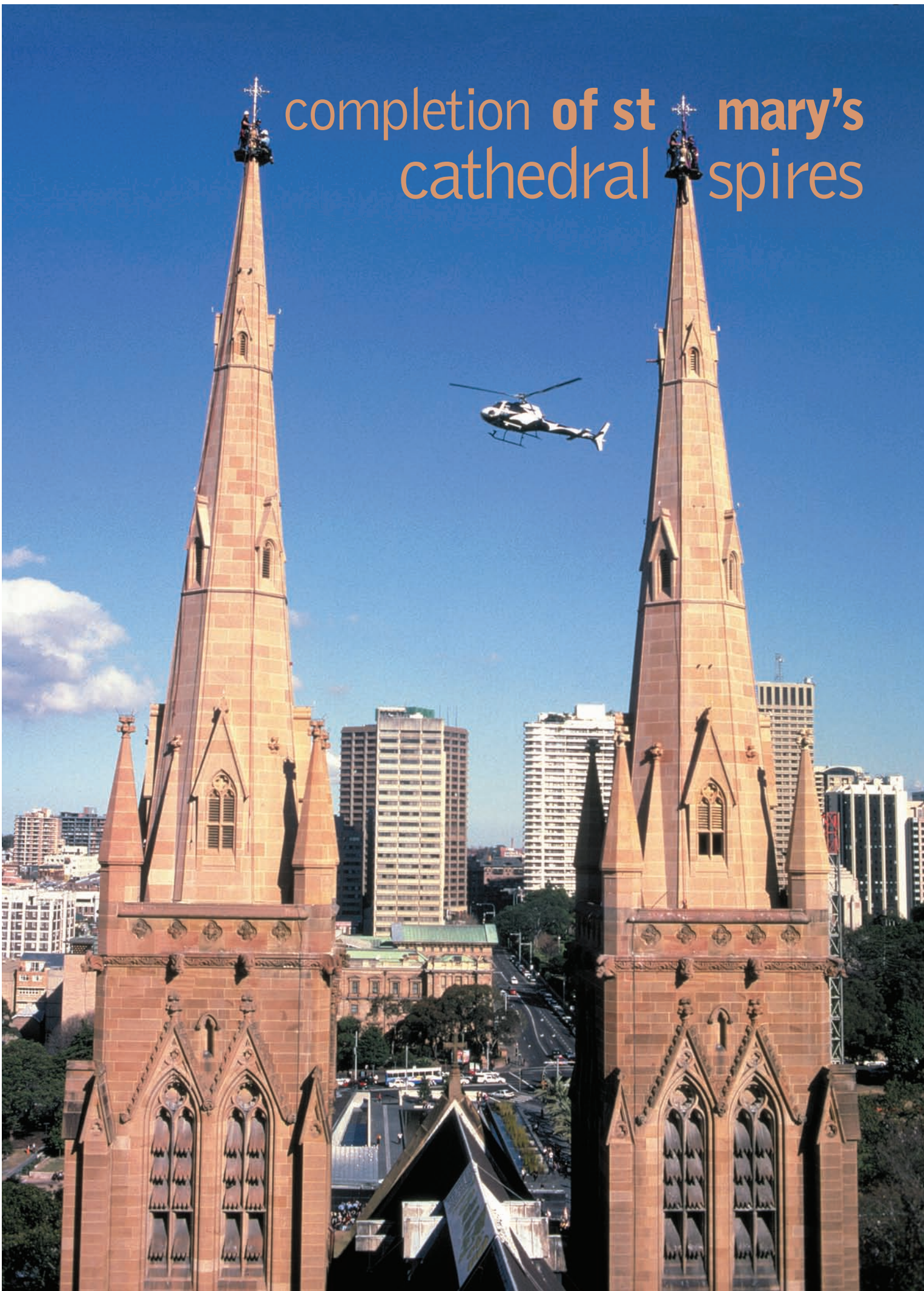


completion of st mary's
cathedral spires



introduction

In August 1998 Gosford Quarries received notification of their successful tender bid for the supply and installation of 'Wondabyne' sandstone to complete construction of the spires of St Mary's Cathedral.

The name of Gosford Quarries is synonymous with sandstone in Sydney, and the company is renowned for the restoration and conservation of many of Australia's significant 19th century historic buildings. The opportunity to be involved with the building of the spires at the southern towers of St Mary's Cathedral, faithful to the original Wardell design, was the 'opportunity of a lifetime' for the company.

Prior to the tender on the spires in September 1997, Gosford Quarries had commenced work for the Cathedral on a separate contract for the conservation and repair of the Western Transept stonework as the head contractor.

The company's formal introduction to the spires project was at the briefing for pre-selection of contractors held in October 1997. During his introduction Monsignor Tony Doherty outlined budget figures, basic stone requirements, requirements for seismic strengthening and importantly, target completion dates for the Cathedral to be crowned with spires by the time the Olympic marathon was to pass by in September 2000.

At this time the NSW DPWS offered estimates of the volume of stonework based on their computer modelling at 80m³ net per spire.

The calculation by Gosford Quarries of volumes based on net rectangular cubic prisms required to complete the stonework was 350m³ (in excess of 800 tonnes). This would be cut from an estimated 600m³ of gross quarry block from the Wondabyne Quarry.

wondabyne sandstone

Wondabyne is near Woy Woy on the Central Coast of New South Wales and produces 'dimension' sandstone regarded for its excellent carving qualities and durability.

Many famous buildings in Australia have this unique building sandstone adorning their façade. Some examples include: Commonwealth Bank 'Money Box Bank' Stage 2, Pitt Street, Sydney; Grace Bros. Building, George & Market Streets, Sydney; David Jones Buildings, Elizabeth Street and Market Street stores, Sydney; Australian War Memorial and Admin Buildings, Canberra; Spires on St Patrick's Cathedral, Melbourne

Wondabyne sandstone is quarried grey in colour and oxidizes over many decades to a warm light brown colour. For its application as a restoration stone, it can be colour 'toned' to better match the oxidized colours of typical Sydney historic buildings. An example of this technique is the many replacement stones used on the east façade restoration of the Sydney Town Hall in 1991. This technique was also used on the St Mary's spires.

the tender

During the tender for the spires, Gosford Quarries had considerable consultation with the selected group of six contractors chosen by the Cathedral to bid for the project. It was necessary for all tenderers to be briefed about all the complexities of fabrication, delivery and installation of 800 tonnes of fully worked sandstone so that the issues of handling and delivery at a working building site of 30 to 60 metres above the ground could be fully appreciated.

The tender for the sandstone was openly bid with companies from Queensland and Victoria competing for this significant masonry project. The NSW DPWS stoneyard also tendered for the project. Each contractor discussed with Gosford Quarries their preferred method of craning and hoisting for the sandstone units with conventional tower cranes, steel frames supporting gantries and mobile cranes being some of the options. The project specification required approximately 1,272 individually crafted sandstone pieces some weighing 2,000 kg. each. As the specification

prohibited damage to any stone from the time they were lifted onto Gosford Quarries delivery trucks, until final placement into their bed of mortar by traditional 'lewis pin', each stone would require individual and careful handling.

the successful contractor

The tender bid from Waller Construction won the head contract for the building of the spires. Essentially they were to provide the supporting structures for access and hoisting systems for the masonry sub-contract and to install the steel sub-frame required for seismic stability of the stonework. The Waller's system proposed the use of a 'crane beam' located above each spire supported by the seismic sub-frame and the hoisting of stones to a timber work platform at the base of each spire by an 'Alimak' materials hoist.

Although Waller's proposed construction methods were not conventional, their enthusiasm and thorough preparation was a winner with the Cathedral Works Committee.

It was essential for the wellbeing of the project that a harmonious relationship between Waller Constructions and Gosford Quarries developed. To this end and prior to the commencement of quarrying, a meeting was convened by Gosford Quarries with Waller Constructions to lay the foundation for the contractual relationship between the parties.

visit to wondabyne quarry

On 29th March 1999 an inspection was held at the Wondabyne Quarry. Access to this historic quarry is by rail or by boat only. Representatives from the St Mary's Cathedral Works Committee - Michael Fox Architects; the Board of Directors of Gosford Quarries and Waller Constructions attended the quarry and walked upon the prepared beds of sandstone that were destined to be extracted and then carved for the spires stonework.

the contract works

The first stones to the base of the spires were delivered to the building site at the Cathedral on the 11th May 1999 and almost daily deliveries proceeded from this time.

As the main work platform was some 30 metres from the ground and building activity continuous whilst the normal day to day operations of the Cathedral were maintained, it was truly a credit to all concerned that the project was completed without incident.

Gosford Quarries 'master mason' in charge of all aspects of the installation was Mario Rago and without doubt the project was the pinnacle of his lifetime's work as a marble and sandstone mason.

During the course of the work a great benefit to the project, was the use of laser lights to align the horizontal levels and check the vertical 'twisting' of the masonry as it was erected. We believe the two spires are within 4 mm of the theoretical dimension on the contract documents, an amazing success story from the fusion of old and new technologies.

Remarkably and perhaps because of heavenly intervention, for the duration of the site activity, the wind and rain were recorded at very low levels and the 'downtime' was kept to a minimum despite the nature of the extreme exposure of the work platforms. The last stones and crowning finials to the spires were delivered to site on 2nd June and put in position and fixed on 6th June 2000.

the blessing of the spires

A service and blessing conducted by His Eminence Cardinal Clancy was held at St Mary's Cathedral on the 18th August to celebrate the completion of the Cathedral to the original design with the completion of the two crowning spires.

For the personnel at Gosford Quarries the successful completion of this historic project has been a significant and satisfying achievement. *