Although the presenter is domiciled in Darwin, Northern Territory I have an office in Canberra and enjoy up to six trips per year to service national companies, government, army, navy, air force, governor general, prime minister’s department, diplomatic missions, schools, etc. Of course in light of what you will be observing today the most interesting potential customers for flags and flag hardware are the prime minister’s department and cabinet, the governor general, the defence force academy and most recent Australia’s frontier guard. A picture tells a thousand words and no doubt you will have many questions.

Unlike in the USA where nylon material is used most Australian made (or sewn appliquéd) flags are from poly bunting material (defined as defence quality). However I have produced nylon flags, again sewn and satin also.

With approval of the National Capital Authority over 650 flag poles have sanction to fly flags in Canberra, add to this commercial and domestic flag poles. Most relevant for an all up population of 350,000 people. A major spin-off from government and semi-government requirements of me from Canberra is an immense database of potential or immediate customers and/or creativity of networking in every state of Australia. Those who have enjoyed my website also know how we exclusively assisted Timor Leste with their independence, May 2002 by officially supplying their flag in many sizes also every member’s flag of United Nations on that day.

Parliament House flag mast

“The flag is the unifying symbol of the Nation. It is placed at the crossing of the land axis with the east-west axis of the two chambers, thus providing a single visual synthesis for the parliamentary system and the government. The tubular structure that supports the mast is stainless steel and spans the entire top of the complex, avoiding obstruction of the land axis. It is our intention that the mast will serve as an emblematic structure, an image to be remembered like the spires of Westminster or the dome of the US Capitol.”

The external profile of the complex also received its final form with a new modification of the hillside in overall scale and in external shape to become a series of steps following the arc of the two curvilinear walls. This series of levels then become visu-
ally unified by the form ultimately chosen for the flag mast structure, of stainless steel, which no longer springs from heavy towers, but rather rises organically from the curved walls. The mast structure itself becomes insubstantial when seen from a distance, leaving to the viewer only the simple, familiar sight of the waving flag and the contoured hill.

With the structural form defined, the Architect specified two basic requirements for the mast:

- A clean slender profile.
- A stainless steel finish.

We considered a mild steel structure with applied stainless steel cladding, but rejected this option because we foresaw extreme detail problems in cutting, fitting and sealing cladding plates to ensure a low maintenance life of 200 years. The net dimensions available inside such a cladding became inadequate to maintain structural strength and stiffness with acceptable plate sizes. A stainless steel structure of the required standard of finish was adopted. We were confident that the final cost of the proposal would be less than for the first option, and that the result would be a simpler, more efficient, and more durable structure.

The Architect examined several options for finishes, such as grit blasting of differing intensities, coarse or fine finishing, and combinations of these. After studying samples and prototypes fine finishing was chosen. The decision for a fully stainless steel structure posed many challenges for design, detailing, and fabrication, the most significant being:

- the location and detailing of all workshop and site joints had to ensure not only structural integrity but had to meet the Architect’s exacting requirements.
- all details must prevent penetration or collection of water, which can initiate intergranular corrosion, to which stainless steel is vulnerable.
- the plates and castings would need extremely careful handling at all stages of
fabrication and erection. Plates could be cut and prepared before finishing. However, after that operation all bending, assembly, and welding procedures would have to be planned and controlled to protect the finished surfaces from damage.

- Workshops, equipment, and tools would require meticulous decontamination from all ferrous residue, and dedication to this one project.
- All welds and heat affected surfaces must be chemically passivated to prevent onset of corrosion.

**Erection**

The falsework tower was subject to very careful design, detailing, and checking. It provided direct support for the lower leg sections and the bends on adjustable cradles. The two sections of each leg were welded and the base bolted down and grouted, before erection of the heaviest part, the lower cluster.

Precise surveying controlled erection at all stages, and critical welding was performed in the early mornings or late evenings, when the structure would be at an even temperature. Small enclosures were provided around each joint to provide protection and security to the welders during their work. The access hoist was installed before the falsework was dismantled.

**Conclusion**

The first flag was flown in January 1987 and the falsework was removed within a few months of that. The flagmast now stands as the pinnacle of the New Parliament House and an established symbol of Canberra and the Nation (Fig. 1). It has significantly advanced the techniques of fabricating and finishing stainless steel in structural use and has well fulfilled the Architect’s ambitions for the project. I must acknowledge Mr Ronald Thyer, retired engineer who supplied me with a lot of valuable information on this paper inclusive of slides.
About the author

Ronald Strachan is owner and manager of National Flags in Darwin, Northern Territory, Australia. He has lived in Darwin for twelve years, moving there from Melbourne, Victoria, having also conducted his own business in that state. Ron was chairman of the 1989 congress of vexillology in Melbourne and remains on the executive of the Flag Society of Australia. Ron was involved heavily with the new flag of Timor Leste, producing flags in many sizes. In the showroom of National Flags in Darwin the size and PMS colours of the Timor Leste flag were decided by Dr. Alkatiri, Chief Minister of Timor Leste. The first ten flags measuring 90x180 cm were sent to the United Nations in New York. Also the UN ordered 192 member country flags to be flown on Timor Leste independence day.

Author’s address: Ronald Strachan
National Flags
1 Edmunds Street
Darwin City
Northern Territory 0800
Australia
Website: <http://www.nationalflags.com.au>