

Location: Capital Hill,
Canberra, ACT

Architect: Mitchell/Giurgola &
Thorp Architects

Construction Management:
Concrete Holland Joint
Management

Construction Date: 1988

written by: Bernard Toogood | design: Peter Walker



Australian Parliament House

Canberra - Australian Capital Territory

• Introduction - In 1974 the Australian government made a decision to hold an international design competition for a new parliament house, in Canberra. Italian-American architect Aldo Giurgola's winning design shows deep respect for Walter Burley Griffin's original plan for Canberra, incorporating the major axis of the city's plan into the form of the building.

Parliament House was an enormous project that aimed for the highest quality in all areas, including the extensive timber interiors. Being basically a concrete and masonry building, timber was used to provide visual warmth and a softer approachable character to the interiors.

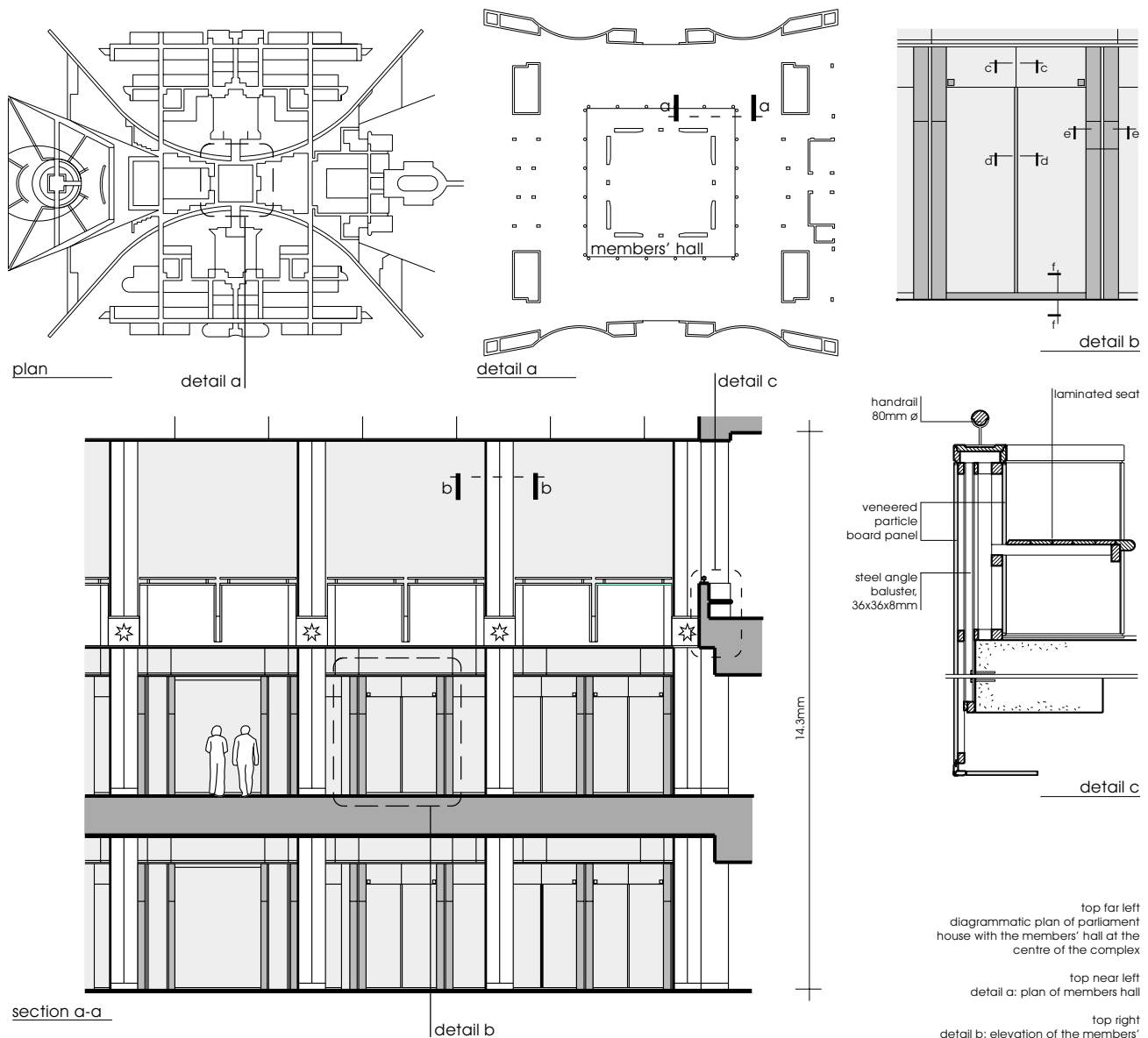
main image
view of parliament house
on capital hill
photo - courtesy of the
architects

• **Description** - Being a natural material with great warmth, beauty and versatility, timber was the obvious choice for the finishing of much of the interior of Parliament House. Timber was chosen for both practical and aesthetic reasons. Native hardwoods were used in solid sections in hard wearing areas such as floors, skirtings and railings, and on surfaces that came into human contact such as handrails and doors. Brush Box, the same timber used for the flooring of the Sydney Opera House, was chosen for its hardness and density to floor the major circulation areas. In other areas timber was used as a veneer, for economic reasons.

The use of timbers from all over Australia also played a role in expressing a national identity and character in the building. Within the colour scheme the timbers were chosen to both reflect the natural colours of the landscape but also to interpret the traditional Westminster colours of red and green for the upper and lower houses of parliament. Western Australian Jarrah and Tasmanian Myrtle were used to create the red of the Senate. For the green of the House of Representatives, Grey Box and Turpentine were used. These last two timbers had not normally been used as veneers, and research was carried out to overcome splitting and warping while drying. This led to whole new industry applications for these timbers.

Jarrah, recycled from a 100 year old wool store in Western Australia, was used for a pergola on the public terrace and for a series of public and private outdoor trellises and verandahs.

Distinguished by its spectacular use of timber, the Members' Hall lies at the very centre of the Parliament House complex, between the Senate and the House of Representatives.



top far left
diagrammatic plan of parliament house with the members' hall at the centre of the complex

top near left
detail a: plan of members hall

top right
detail b: elevation of the members' hall lining

bottom right
detail c: section through balustrade and seating

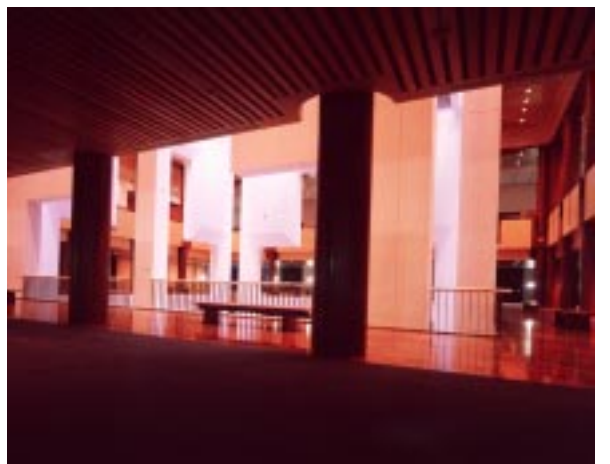
bottom left
section a-a (elevation of members' hall wall)

The flooring of the hall is rich geometric patterns of **parquetry**, in the centre, and Brush Box strip flooring in the circulation spaces around the edge. The concrete masonry columns around the edge of the member's hall are clad in 22mm thick solid strips of Turpentine mounted on a steel stiffener ring, which in turn is bolted to the column. The steel and timber cladding unit has **control joints** both vertically and horizontally to allow for differential movement in the timber.

In the Members Hall, and in most other major internal spaces, the masonry walls are clad in modular, prefabricated timber panels. By having the panels fully shop fabricated off site, a consistently high quality of finishing was achieved. This also allowed for various services to be installed in the panels while still in the workshop. The panels were too big to be clad in one single veneer, so rather than match continuous runs of a single species, as was done with the ceiling of the Sydney Opera House [#02], the architects chose to use 2 or 3 different species in each panel. This enabled a gradual development of the colour scheme throughout the building. In the Members Hall, the panels were made up of veneers of Turpentine, Grey Box and White Birch. Each panel consists of a dimensionally stable manufactured board backed by a timber frame and edged on the all sides by solid timber. The panels were then hung onto a secondary timber frame mounted directly to the concrete structure.

The balustrading on the edge of the different levels of the hall was constructed in a similar way to the panels, with the top of the balustrade and the seat solid timber, and the vertical faces veneers on manufactured board.

The ceiling of the members hall and many of the other, large public spaces in Parliament House are solid slats of Silver Ash mounted a few millimetres apart to help absorb sound and reduce the echoing effect in the hall.



top right
the members hall (over three levels tall
with skylight roof) provides a
spectacular centrepiece for parliament
house

centre right
the members hall

bottom right
central level the members hall
all photos- courtesy of the architects



A Strategy for Design in Timber

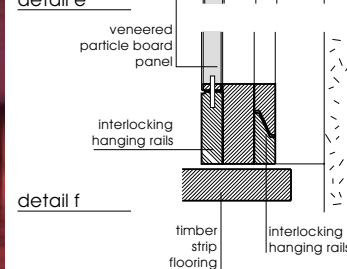
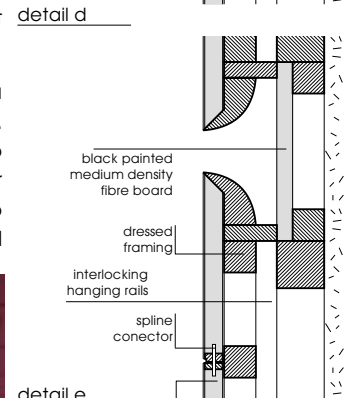
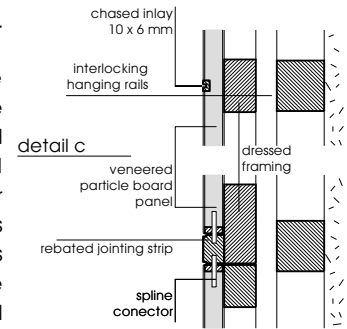
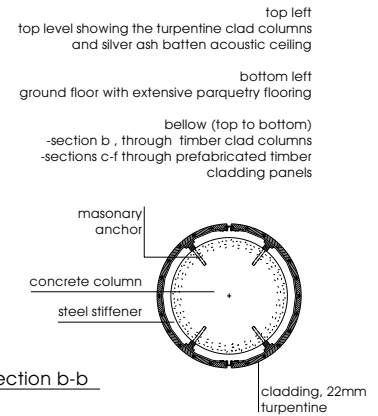
• **Detailing for moisture** - The moisture content of a timber element will always change to be in **equilibrium** with the environment around it. The timbers used in Parliament House came from all over the country. A timber milled and seasoned in a hot humid climate would experience a significant change in its moisture content when placed in the dry air-conditioned environment of Parliament House. As timbers change their moisture content they expand or contract, with the rate and amount of change dependent on the species. Allowing for this movement in timber is part of the art of detailing and finishing timber for interiors. The architects of Parliament House carefully took into account the possibility of differential movement in the timber interiors. In many cases timber elements were **loose assembled** off site, with the final assembly not made until the element was stabilised inside the environment of Parliament House.

In the Members Hall, the large wall panels of veneers are literally hung like a picture to a timber frame on the concrete walls. Between each panel is a small gap at the top and sides. Behind this gap is black painted fibreboard. As the moisture content of the timber changes to reach equilibrium with the environment of Parliament House, the panels can shift on their mountings. The gaps between the each panel might change by a few millimetres, but no joinery will open up and expose unfinished timber. For the same reasons, regularly spaced



control joints were built into the timber ceilings and floors.

• **Colour in Timber** - Every species of timber, in addition to its primary colour, has tints of many different colours running through it. The traditional colour for a Lower House in a Westminster form of government is green. While there is no Australian timber that can be described as primarily green, Grey Box and Turpentine, basically brown timbers, were chosen for their tendency to contain strong underlying tints of this colour. The strength of tints in timber can vary greatly within a species. A piece of timber from one tree for example might have a strong pink tint while timber from another tree of the same species might have a strong blue tint. Unlike strength and hardness, no Australian Standards exist for the classifying of timber by colour. So the architects of Parliament House set up their own control system to ensure that the Brush Box and Turpentine used in the joinery contained the desired tones. The green tints in the timber joinery then complemented the rest of the colour scheme of the Lower House



• references

Guida, H. 1991, Timber use in Parliament House, March, (unpub.).

Progressive Architecture 1988, 'Capital Hill', August, pp. 65-105.

• glossary

control joints: a vertical or horizontal gap filled or unfilled to accommodate differential movement between various elements of a construction

equilibrium: the moisture content at which timber neither gains nor loses moisture from the surrounding atmosphere

loose assembled: the fabrication of timber elements off site so that they are finished but not connected together until on site just prior to installation

parquetry: flooring of small matching pieces of timber laid on a substrate in geometric patterns

• on the internet

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