

Third Quarter 1962  
Volume 4, No. 3.

# PLYWOOD *and plywood products*

**Plywood Hydroplane**  
*Nears 200 m.p.h. in Speed Trial*





# PLYWOOD

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most versatile  
building board**



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*Plan with* **PLYWOOD**

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### OUR COVER:

Racing at almost 200 m.p.h., Canada's Miss Supertest III throws up a flurry of spray from her churning wake. (See story, this page.)

Photo courtesy of Dow Chemical of Canada Ltd.

# BOAT BUILDERS THE WORLD OVER AGREE

## ***PLYWOOD STRONGER THAN STEEL***

Our cover picture depicts the inherent strength and speed potential of plywood constructed boats. This particular boat, Canada's Miss Supertest III, is three times winner of the coveted Harmsworth Trophy in the unlimited hydroplane class.

To a racing hydroplane at close to 200 m.p.h. water is as hard as concrete. And the chop of a wave has the kick of a cannon! That is why boatbuilders the world over make extensive use of plywood in hydroplane construction. Pound for pound, it is stronger than steel.

Marine grade plywood gets its tremendous resistance to weather and stress, largely from the great advances made in glue chemistry. The veneer layers in plywood may be individually snapped over the knee. But when bonded together with phenolic resin glue, the wood fibres will pull apart before the glue line fails!

More than just a "glamour" or "prestige" wood, exterior grade plywood finds applications ranging from exterior building panels that shrug off the worst punishment the weather can mete out . . . to re-usable building forms that stand firm against the pressure of a ton of poured concrete.

### BOATS FROM WESTERN AUSTRALIA, VICTORIA AND N.S.W.

In Australia, boatbuilders and caravan manufacturers are alive to the advantages of marine grade plywood for their exacting work.

In the following pages we feature articles on plywood boats from three States.

From hydroplanes to trimarans, from speed cruisers to amphibious caravans, plywood is always the best product, and often the only product, to suit the purpose.

# In Hydroplane Design Plywood Means Performance

**T**HE Canadian speedboat pictured on our cover typifies the speed and strength of the all plywood hydroplane.

The acid test of any hydroplane is its performance under racing conditions. Speed and manoeuvrability are the keynotes of success.

From drawing board to launching, no detail is overlooked in design or construction which could contribute to the improved performance of the finished craft.

Recognising the importance of structural materials in hydroplane performance, boat builders show a marked preference for plywood.

An all plywood hydroplane completed recently by Custom Craft boats of Melbourne, has been designed and built with the stringent

demands of competitive racing in view.

Les Parker of Custom Craft spent many hours adapting an overseas hydroplane design to suit Australian conditions:

The hull, a rated 153 cubic inch, is 14 ft. long and 4 ft. 2 in. wide with a maximum width of 7 ft. at the sponsons.

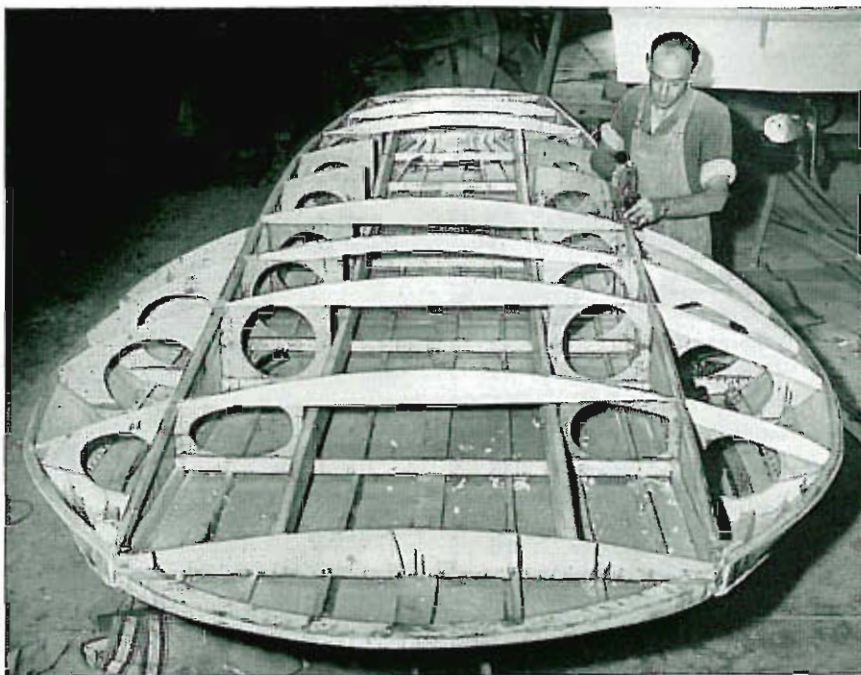
Built of 3/16 in. marine grade plywood, the hull is strengthened with spruce longitudinals and beams. The sponsons are 5/16 in. marine plywood and these are heavily copper nailed and roved into closely set spruce stringers.

The new planing hull is extremely lightly built, but it is glued throughout with epoxy

resins and has been finished with a final coat of epoxy clear resin.

The converted Corvette engine is carried in the hull on two integral 16 ft. plywood box beams. An engine cowling and tail fins are mounted on the hull. The fins are designed to assist in the steering when the craft lifts onto its three planing hulls at high speed.

END



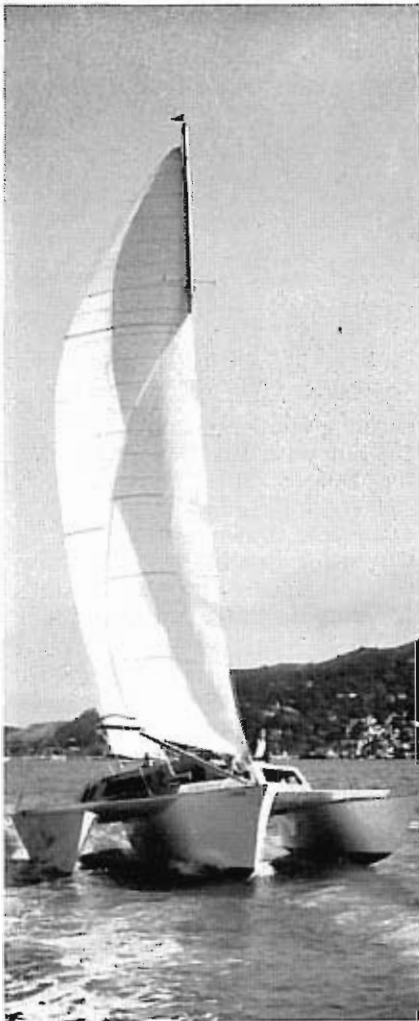
A view of the bow showing the full length box beams which support the engine. All cross beams are spruce, with 3/16 in. plywood diaphragms.

Left: The fine clean lines of the bow show the planing sponsons with the clean sweep of the underwater hull lines.

Right: The interior of the hull showing the extra longitudinals to stop ponting in the 3/16 in. plywood hull.



# Ocean-going Trimarans of Marine Plywood



"Lodestar" sailing at speed on San Francisco Bay.

**S**AILING boats capable of speeds greater than that of harbour speedboats and able to cruise the oceans even under gale conditions are now being built of marine grade plywood. Called trimarans, the new boats use the same principles of plywood construction as those proved in wartime with high speed military aircraft.

The trimaran gets its name from

its three hull construction. It does not need heavy ballast or a keel, and gets its stability from the buoyancy of the hulls on either side of the main hull.

World interest in trimarans is growing so fast that many boat-builders and designers in Europe, North America and Australia predict that they will replace keel boats for cruising within the next ten years.

The traditional sailing boat, unchanged in its essentials for centuries, gets its stability from a heavy keel. The keel helps prevent the boat from rolling right over when wind and other forces push sideways on sails and hull.

However, the keel has involved a tremendous penalty in dead weight, and has needed a strong, heavy, expensive structure to support it. Hence a family cruising yacht has long been outside the

pocket of the average man.

Reasons for the growing enthusiasm for the new boats are therefore not hard to find. With trimaran construction, the owner gets five chief advantages—performance; accommodation; comfort; safety; low cost.

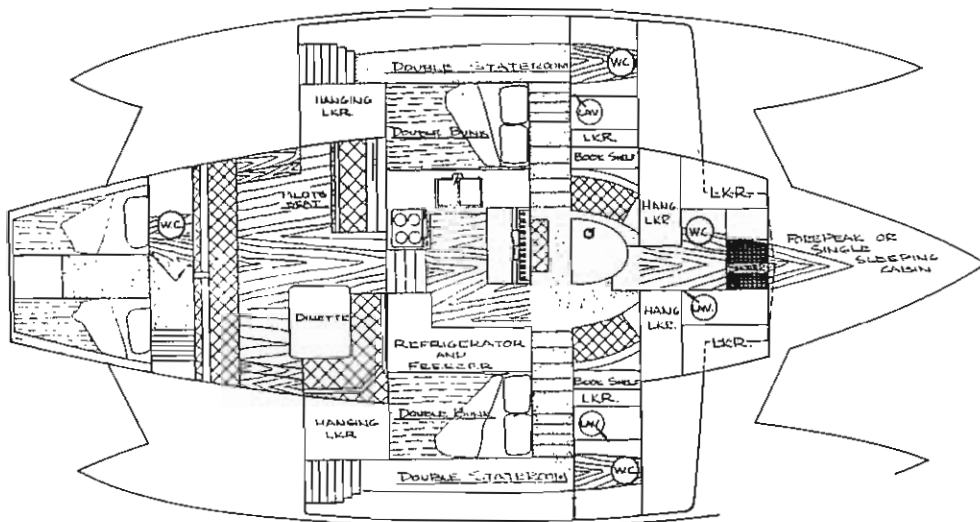
Low cost of a trimaran is due to two main factors; they can be built by the handyman in reasonable time; they need no keel.

Because the trimaran has no keel, and so does not suffer from the great weight penalty of the keeler, it can be as strong or stronger than the keel boat in relation to the forces imposed on it by wind and sea, but with far lighter construction.

Excess weight in any vehicle means excess cost. Modern trimarans can be built of marine grade plywood, which satisfies the demands of cost, weight/strength

**A trimaran nearing completion in Sydney. The elegant bow line of the floats assists in increasing buoyancy and making the hull more functional. Pitching is thereby decreased, and rolling eliminated.**





Trimarans have huge accommodation and deck areas in relation to their length. Illustrated at left is the 45ft. "Medallion" class trimaran. Marine grade plywood is the main structural component of all trimarans. In all, 2,352 sq.ft. of plywood (3/8in. basis) is used in a 35ft. trimaran. Spars and booms are of Oregon.

ratio, and ease of construction.

The light weight, by reducing costs, brings even a luxury cruising yacht within the budget of the average family man. The 35 ft. trimaran Lodestar, for example (see picture), can sleep eleven people, has tremendous deck area, can do up to 30 knots—yet can be built by the average handyman in about 18 months at a cost of about £1400.

Trimarans, moreover, have not merely broken the expense barrier. They are extremely safe, and in any conditions it is claimed that they far outclass keel boats in performance. A 32 ft. keel boat, for example, has a top speed of about seven knots. A trimaran of similar length could double this speed in ordinary conditions, treble it in good conditions, and do even better in ideal conditions.

Of more importance from the family point of view is the safety factor. Mr. Arthur Piver, of Mill Valley, California, a pioneer in this field and now the world's leading trimaran designer, writes: "The trimaran is self-righting to almost 90 degrees, and before it has reached this point the wind has spilled out of the sails—thus relieving heeling pressure."

Piver-designed trimarans which the handyman can build range from the 16 ft. "Frolic" suitable for day sailing (materials cost £100) to a 45 ft. "Medallion" ocean cruising

trimaran with spacious deck and cabin areas and including a lounge and two double state rooms.

Mr. Piver, along with these successful boat designs, has evolved a simplified building system. The man who can do the most modest of handyman jobs can easily build even a big trimaran by himself, following Mr. Piver's step by step methods. No lofting (drawing out full scale plans on a flat floor) is necessary—a process which, even for the smaller traditional boats, can take months of painstaking effort. The main material is a marine grade plywood—which is stronger, weight for weight than steel. Glue is the primary fastener, with nails as secondary fasteners.

Frames and bulkheads (of

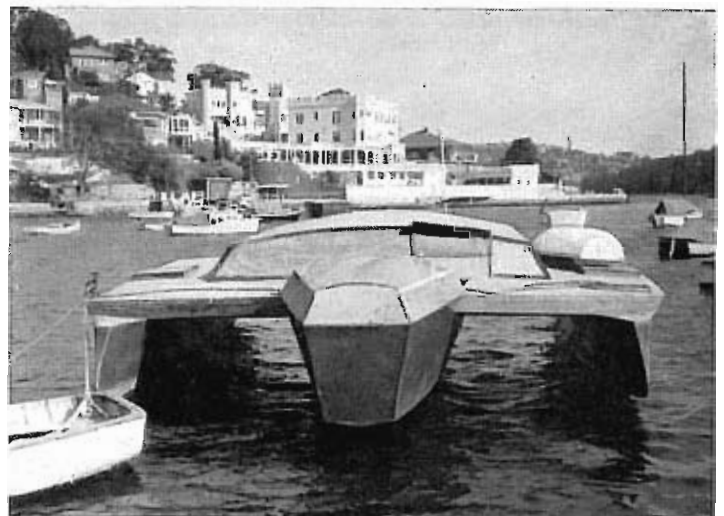
marine grade 5-ply and oregon) are laid out on a Piver-designed Plotting Board. This is an ordinary 8 ft. by 4 ft. sheet of ply with a centre line drawn across it.

By using this line and one horizontal line, easy reference points are plotted, and all frames made up on it, thus ensuring they are exactly right.

These frames and bulkheads are then erected, upside down, on a "strongback"—two parallel lengths of 4" x 2" timber, with braces nailed across them like a ladder. Keel, stringers—and then ply planking—are then applied to complete the hulls. The hulls are fibre-glassed for waterproofing and permanent finish. They are joined together

(continued on page 6)

Trimarans sit lightly in the water. This view of the stern shows the dramatic, small amount of wetted area in the 35ft. boat being built in Sydney.



## Australia has World's First Engineered Amphibivan



The amphibivan has more than 320 sq. ft. of cabin and deck area.

**T**WELVE hundred and fifty square feet of 5 ply marine grade plywood have been used to build the world's first amphibious caravan.

Designed and built by Mr. Alf Franks, Principal of Supalite Caravan Co., of Rozelle, Sydney, the dual purpose craft combines the advantages of a roomy, luxurious caravan with those of a motor cruiser.

This unique craft was fabricated in the following way:

A caravan with dimensions 12 ft. 6 in. x 7 ft. was built on an Oregon frame, using 5-ply marine grade plywood for the outside skin.

The amphibivan has two floors, built one above the other, 6 in. apart. The upper one serves as a floor to the caravan. The lower

one becomes the hull of the "cruiser."

The caravan has a flat roof which may be used as a sundeck. It also adds to the nautical appearance of the craft.

Two plywood pontoons, each measuring 20 ft. x 2 ft. 3 in. are carried on the sundeck whilst caravanning. They may be swung out and down to become floats when the driver and his family decide to go water cruising.

Moreover, the pontoons may be detached and used separately as floating sundecks, or as platforms by spear fishing enthusiasts.

The amphibivan may be backed into the water in the same way as a trailer boat. The chassis has removable bolts, and when the pontoons take the weight, the trailer chassis is drawn out from underneath.

On the water, the manufacturers claim, the amphibivan is unsinkable. Nor can it tip over. This is

because of its 12 ft. beam, which is equivalent to the beam of a 36 ft. cruiser. There are 27 bulkheads in each pontoon, each formed by a single piece of marine plywood fixed transversely across the width of the pontoon.

The underlying principle in the design and construction of the amphibivan is what Mr. Franks terms "one piece construction." Each component part was cut and fabricated from a single piece of plywood. This technique was strictly adhered to throughout. Even built-in furniture within the caravan is "one-piece" constructed. This adds considerably to the overall strength of the vehicle.

Mr. Franks told "Plywood and Plywood Products" that his Company has found that because plywood is so remarkably strong on edge, proper design ensures a structure highly resistant to the stresses and strain that caravanning and water cruising provide.

"On edge, plywood has a girder effect," Mr. Franks explained.

"When a 'one-piece' constructed caravan is supported by built-in furniture fabricated on the same principle, the stress resisting qualities of the unit as a whole are greatly increased. Shelves within the cupboards act as gussets. The reinforcing effect of the all plywood "one-piece construction" technique is manifested in every direction."

Speaking of the high percentage of plywood in the amphibivan Mr. Franks had this to say: "Plywood is not only the best material for caravan construction, it is the only material which can be used satisfactorily if all conditions of weight, strength, cost, ease of

manufacture, and performance are to be maintained."

Of the possible alternatives, an aluminium shell over a steel frame has two important shortcomings—it is too heavy; and the steel and aluminium form a galvanic couple resulting in electrolysis and corrosion. Aluminium over a timber frame gives rise to weakness and distortion, and is subject to dry rot.

In the case of plywood timber frame construction, the plywood components are bonded to the frame with Selley's 308 waterproof glue and the vehicle becomes a stress and strain resistant homogenous structure.

The amphibivan is equipped

For land travel, the plywood pontoons are simply swung up and locked in position on the roof.



with a galley fitted with a gas stove and refrigerator, water pump and a detergent dispenser over a stainless steel sink. There are four single bunks, a drop-down table,

shower, toilet and ample wardrobe space.

While on the water, the amphibivan provides more than 320 sq. ft. of cabin and deck area. A six foot annex across the pontoons at each end adds to the amount of relaxing space. A ladder leads to the flat roof which makes a perfect sundeck, and at the sides the large catamaran-like pontoons enable passengers to walk right around the amphibivan.

The pontoons need not be carried when the unit is being used simply as a caravan. With rounded bow and stern, the amphibivan then assumes a sleek appearance for luxury highway travelling.

END

The amphibivan is light, and will float in 4in. of water. "Launching" and "beaching" are therefore easy.



## OCEAN-GOING TRIMARANS

*continued from page 4*

with strong "cross-arms" and the decking and cabin top, again in ply, are added.

Every detail of the design has been decided with the home builder in mind. And with the plans, the designer includes easy-to-follow instructions. The cost of the plans is about 6½ per cent of the materials cost, and about 2 per cent of the value of the finished boat.

There is a wide range of Piver trimarans, to suit any individual or family need.

Cruising Trimarans Australia, a company formed to market Piver trimaran plans and boats in this country, reports a marked increase in the popularity of the new craft in recent months.

Mr. John Gunn, of Castlecrag, N.S.W., principal of the company, anticipates that within ten years

Australian owned and built trimarans will be sailing the oceans of the world.

In an interview, Mr. Gunn told "Plywood and Plywood Products":

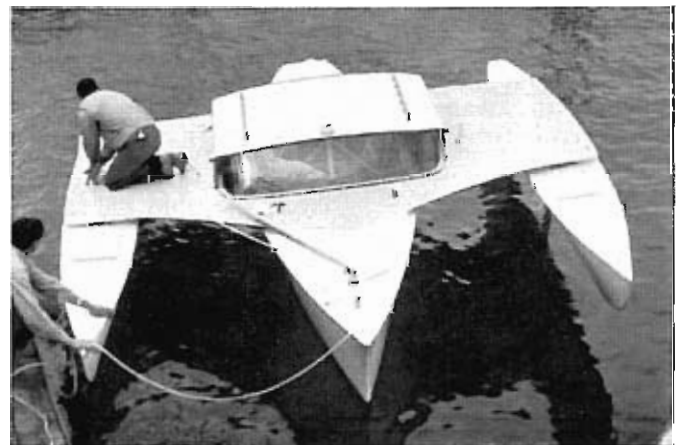
"One of the main factors in individual trimaran performance is the quality of the materials of which it is built. Yachting en-

thusiasts in Australia are fortunate in that they can obtain locally produced marine grade plywood which satisfies the stringent demands of trimaran construction.

"The importance of this becomes obvious when it is realised that without plywood, the trimaran as we know it would not exist."

END

The 24ft. trimaran "Nugget" may be built for less than £500. Note the large deck area.



# Plywood Speed Cruiser

## has Flared Bow

**T**HE biggest plywood planing hull launch in Western Australia, the 28ft. "Bungana" sports an unusual flared bow. Unobtainable with conventional straight planking or solid sheets of plywood, it was formed by bonding and nailing double diagonal planking in 6in. strips of  $\frac{1}{4}$ in. African mahogany faced 5-ply marine grade plywood.

The main plywood planking below the water line is  $\frac{5}{8}$ in. thick, and above the water line is  $\frac{3}{4}$ in. thick. The hull is covered with 1/16in. skin of fibre glass.

Powered by twin 80 h.p. Volvo-Penta inboard-outboard motors, "Bungana" is capable of speeds up to 27 m.p.h.

The main cabin which has a



6ft. 9in. headroom, is fitted with two fold-down 30in. wide bunk seats on each side of a central table. When not in use flaps on each side of the 3ft. by 4ft. 6in. table are folded down. In one corner of the cabin is a built-in mirror and powder bar. Other fittings include a refrigerator and cocktail bar.

The well-fitted galley has a double-burner gas stove, sink, drawers and cupboards. On the opposite side is a toilet fitted with a hand basin. Divided from the rest of the launch by twin folding doors is a forward cabin with 6ft. headroom and twin bunks 6ft. 4in. long.

Selected African cherry mahogany plywood of Australian manufacture has been used in the interior panelling.

The "Bungana" was named after the famous airliner of that name which was flown by its owner, now retired from commercial aviation, Mr. Harry Baker of the Perth suburb of Applecross.

It was designed by Mr. Max Hocking, of Marine Division of Home and Outdoor Supply Centre and built by Cullity Timbers Supermarine Boat Division.

END



From bow to stern, Bungana's graceful lines are apparent from every angle.

Twin 80 h.p. inboard-outboard motors are mounted on the stern.



# PLYWOOD AT BOAT



**A Healing Supercraft "Scout", beautifully balanced and perfectly proportioned for family boating enjoyment. Construction is of 5/16 in. marine grade plywood.**

stronger than fibreglass, weight-for-weight," said Mr. Legg.

Mouldcraft also displayed a 14 ft. 4 in. runabout. This was a round bilge boat, very strong and light, and of excellent appearance. The hull is made of moulded plywood and all decking and accessories are of plywood.

This company specialises in the use of moulded plywood construction for marine craft; a process whereby selected veneer strips are laid over a mould or mandrell shaped to the ultimate hull form.

The laminated plywood veneers are then fused together in a large oven and when the mould is withdrawn the result is a homogeneous wooden hull with all the proven advantages of wood, plus the extra strength and water resistance given by impregnation with an indestructible synthetic resin.

## PLYWOOD PROMOTION IDEAS.

"Flying Dutchman" hull, in course of construction, was on display at the Boat Show, and a number of firms featured 'do-it-yourself' construction kits for various types of boats.

This is a field of display which could well repay some enterprising plywood manufacturers and distributors at future boat shows.

The boating industry is a steadily growing segment of the consumer market and it cannot be denied that fibreglass (and,

**A**USTRALIA'S Third National Boat Show was held from July 18 to 28, at the Exhibition Buildings, Melbourne.

Many exhibits supported the contention that there is a swing back to wood in small boat construction. Overseas and local trends have indicated for some time that designers of small marine craft are looking once more to timber and plywood.

This trend was noticeable at the 1962 boat shows in both New York and Chicago.

As one American boat dealer put it: "There will always be fibreglass boats on the market, but the honeymoon is over. I believe all second boat buyers will turn to wood, which seems to be the trend at the moment."

Significantly the largest exhibit in the Melbourne Boat Show—the 26 foot sloop "Southerly Buster"—was built of  $\frac{1}{2}$  in. marine grade plywood.

Timber and plywood construction was featured in other exhibits by many well-known firms, including:

- A. G. Healing's "Supercraft" Division; who displayed a 20 ft. "Sea Queen", a 19 ft. "Princess II" and the smaller 16 ft. "Scout," all made from marine plywood and designed to take full advantage of the beauty of timber construction.
- Lightburn & Co. Ltd.'s "Clausen Craft" Division; whose display included a

14 ft. timber ski-boat designed to tow two skiers at 30 m.p.h.

- J. J. Savage & Sons Pty. Ltd. displayed a 16 ft. "Vendetta" runabout, constructed in  $\frac{3}{8}$  in. Seaply planking. This sturdy little craft combines maximum safety with top performance and can be powered by engines of 40 h.p. to 100 h.p.

## SINGLE-UNIT MOULDED PLYWOOD HULLS.

Mouldcraft Pty. Ltd. (whose Director, Mr. Bob Legg, is an ardent advocate of timber construction in marine craft), had a magnificent display of wood boats, including a 20 ft. "International Flying Dutchman."

The minimum weight of this class is 276 lb. and Mr. Legg stated that timber

**This 20ft. "Sea Queen" displayed at the Melbourne Boat Show is a framed boat built of 3/8 in. marine plywood with longitudinal timber bottom battens from transom to bow.**



was the only possible material that could be used to construct a boat of this class and achieve minimum weight with maximum strength and speed.

"The timber construction we use in our 'Flying Dutchmen' is probably 30%

to a lesser extent, aluminium) has made enormous inroads into this traditional field of timber usage.

Much of the popularity of fibreglass and aluminium in small marine craft construction is based upon the "no

# NATIONAL SHOW

maintenance" claims made on behalf of those materials.

Plywood users must counter these claims by pointing out the basic fallacy of any claim to production of a marine

The Healing Supercraft "Princess II" displayed at the Melbourne Boat Show is a timber frame launch constructed from 3/8in. marine plywood. The bridge is lin. meranti, dressed to 7/8in.



The Presswell Panels display at the Melbourne Boat Show. Several veneers were featured including a two-toned boat decking of 1 1/2 in. strips of Silver Ash and Maple.

craft that is completely maintenance-free.

All boats get dirty with normal usage in either salt or fresh water, and without anti-fouling paint will attract marine growths in certain waters.

It is important for proponents of timber boats to hammer home the point that modern timber preservation methods have reduced to bedrock the old problems of boat maintenance.

Today's wood boat requires much less maintenance than yesterday's product, and, if properly cared for, is easy to maintain in first class condition.

**PLYWOOD HAS MANY ADVANTAGES**

Other important points which illustrate the advantages of plywood boat construction over other materials are:

- (a) There is no known method of producing a completely colour-fast boat in any type of construction. Any finish that can be applied to metal or fibreglass has a counterpart that can be applied to timber, but timber

has the added advantage of the beauty of the natural grain.

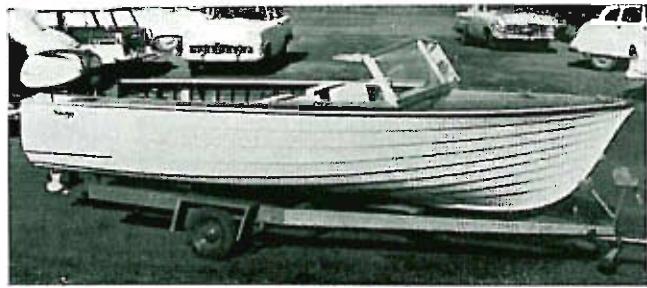
- (b) Many plastics and metals are subject to crazing or cracking; timber has a natural elasticity which avoids this defect provided the timber is carefully selected and finished.
- (c) In the event of accidental damage to a plywood hull, the damaged part can be easily matched and replaced.

Other types of hull require more extensive repairs when damaged, and in many cases the tensile strength of the hull is weakened after repairs are made.

- (d) Resistance to fatigue is absolutely essential in a boat. Water is constantly in motion and when a craft is under power or sail both water and motion develop enormous force upon the hull.
- (e) **WOOD IS THE ONLY INHERENTLY STURDY MATERIAL THAT CAN BEND AND RE-BEND WITHOUT FATIGUING, CRACKING OR ULTIMATE FRACTURE.** Many instances have been recorded of monolithic non-timber hulls splitting along the lines of continued vibration and stress.
- (f) The force of water and motion upon a boat hull can be up to 3 1/2 tons per square foot of hull surface. Modern marine plywood with the grain laminated in at least two directions is stronger than steel—pound for pound.
- (g) Wood keeps its strength (irrespective of age, sunlight or vibration) for many years more than competitive materials. This has the economic effect that a wood boat always has a higher trade-in value or selling price than any other type of used boat.

END

The popular 16ft. "Vendetta" runabout, constructed by J. J. Savage & Son Pty. Ltd. from 3/8 in. marine ply planking.



**T**HE completion of Australia's first skyscraper at Circular Quay, Sydney, in February last, aroused nation-wide interest. Built for the A.M.P. Society at a cost of six million pounds, the new building is a prestige structure in every respect.

The first impression of the interior is one of unobtrusive efficiency. This has been achieved through the architects' insistence on a presuige finish aimed at creating a mood at once friendly and efficient. Judicious use of plywood and timber as a decorative medium has contributed largely towards this effect.

The extensive application of natural timbers, and of plywood and solid core veneer, is also in line with the policy of giving the building a decor consistent with its high standard of design and construction, and goes hand in hand with selected building products from many world wide sources.

Wherever possible the architects specified Australian timbers. The deciding factors in selection of materials generally, according to Mr. Graham Thorp of the architects for the building, Messrs. Peddle Thorpe and Walker, were easy and economic maintenance over a long term, and attractive appearance and durability.

That the architects have succeeded in satisfying these demands is well evident throughout the 26-storey building. From ground floor to roof, plywood and timber decorative finishes and furniture impart a warm atmosphere to the interior, as the accompanying illustrations show.

One of the more significant examples of this occurs at the ground floor (Sydney Cove) level, where a multi-purpose auditorium has been built near the main entrance. This theatre has a seating capacity of 250 and is available for use by the Society and by outside organisations. Most features in the auditorium have aesthetic appeal as well as being part of a well ordered functional design.

On the east wall alternating panels of plain and perforated Australian made Sapele mahogany plywood are used for acoustic and aesthetic effect.

Pillars in the theatre are also encased in Sapele mahogany plywood.

The floor of the auditorium is composed of  $\frac{7}{8}$ in. brush box parquet, enhanced on both aisles by deep blue Brussels carpet. Flooring on the stage is sprung, and of tallowwood.

On the western side of the building's main entrance, a branch of the Bank of N.S.W. forms an integral part of the ground floor design. Interior decor of the bank is in keeping with that used in the building generally. Feature walls and partitioning are vertical timber panelling. The timber is Tas-

manian blackwood, superimposed on black-painted plywood panels. Flower boxes are also of Tasmanian blackwood and lend an informal atmosphere to the more austere office areas.

The same timber has been extensively employed on the first floor of the new building, where the joinery and panelling is Tasmanian blackwood.

The general offices on other floors are finished in Queensland black bean plywood panels.

The office of the N.S.W. Manager of the A.M.P. Society on the 11th floor, panelled with Tasmanian blackwood battens on painted plywood, is furnished in the tasteful creations of one of the world's foremost furniture designers, Danish-American Jens Risom.

Teak was selected for furniture in the executive offices on the 24th and 25th floors. It was designed by Mr. Donald Johnstone, and manufactured by Ricketts & Thorp of Rockdale, Sydney.

The same firm was responsible for the manufacture of the Society's now famous board room table. This table posed some special problems for both designer and manufacturer.

The table incorporates one of the world's largest single-piece plywood tops, being  $1\frac{1}{2}$ in. thick. Of unconventional leaf shape, the table top is 24ft. long and 9ft. 2in. wide at its broadest point. It is finished in Queensland walnut veneer.

The designer was set the basic problem of planning a table which



The leaf-shaped board room table has a scarf-jointed plywood top measuring 24ft. long. It is finished in Queensland walnut veneer.



would seat up to 20 men, with the Chairman having complete control of view.

He submitted three designs, one a symmetrical surf-board shape, the other two being variations of the leaf shape.

Three full-sized templates were made of these designs and tested for their function by being laid on top of the present board table at the Society's former 87 Pitt Street building.

Once size and shape had been determined it was necessary to decide on the type of manufacture and selection of materials.

The advantage of a single-piece laminated plywood top was in its inherent strength. The Society was in favour of using an Australian manufactured unit and Australian materials.

The manufacture of the table top called for special preparation by Ricketts & Thorp Pty. Ltd. A tubular steel base had already been prepared for its arrival from the plywood factory and templates of the various radii which formed the

required design were also in place.

From the templates the main surface piece was cut to shape together with the solid walnut edge strip. The edge strip, when cut,

was put on a spindle, and moulded to detail and then applied to the edge of the plywood table top.

The tape marks on the veneer were then cleaned off by special electric sanders. The veneer itself was cleaned by hand because of the 1/64th of an inch face.

The table top, now ready for polishing, had to be manhandled by 20 men and stood on edge.

A scaffold was built so that three men, working over different areas, could fill and stain to a selected colour and hand french polish the whole. (French polish was used because of the ease of repairing the surface in the event of damage.)

The plywood table top was then ready for another important operation — packaging ready for transport.

It was wrapped first in soft crepe paper and then enclosed in a specially tailored plastic envelope with silica-gel crystals to absorb moisture. The envelope was made watertight and packed in 1/2 in. felt and polythene foam cushioning, with sisalkraft added as an extra precaution against moisture.

It was then placed in its wooden

**As office dividers, plywood partitions in various designs meet every demand.**

**The Actuary's office has plywood feature walls of fumed walnut.**





Above: On the east wall of the Auditorium, alternating panels of plain and perforated Sapele mahogany plywood are used for acoustic and aesthetic effect. Right: On the ground floor a branch of the Bank of N.S.W. has feature walls and partitioning of Tasmanian blackwood batten superimposed on black painted plywood panels.

crate and, with the aid of a mobile crane, positioned on edge on a flat top truck, ready for transport to the A.M.P. building.

Too big to enter the building by normal means, it was necessary to install it while the construction cranes were still operating, and before the executive floors were enclosed by the curtain wall.

Swinging a large flat surface weighing 4,800lb. to a height of 350ft. presented a further problem. The Weather Bureau was contacted to check the wind velocity on the morning when the top was to be lifted and it was decided to lift the top on its flat surface, and the unit was hoisted by crane to the 25th floor without a hitch.

On most other floors, the furniture was designed by the architects



for the building, Messrs. Peddle Thorp & Walker.

Design of the new building is such that no major structural alterations need ever be made. It is the seventh building to house the headquarters of the A.M.P. Society since its inception in 1849. Present rate of expansion indicates that the new office will accom-

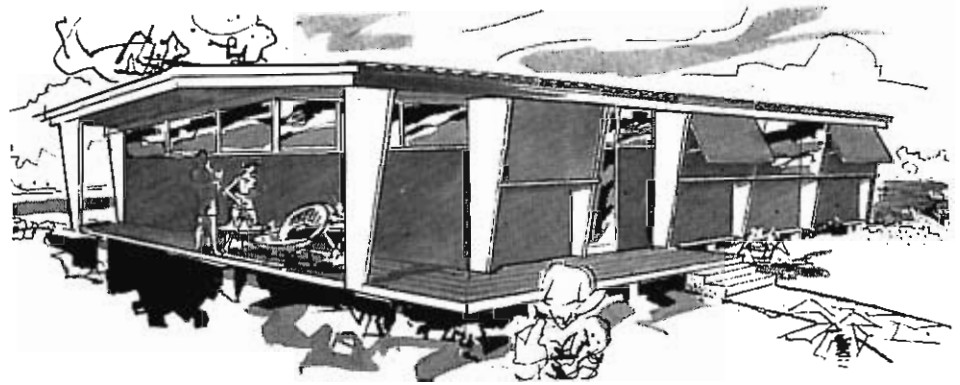
modate the Head Office and N.S.W. branch staff at least until the year 2000.

It should stand as a monument to present-day architectural, engineering and decorating skill for an even longer period.

The builders were Concrete Constructions Pty. Ltd.

END

..... instant  
service  
in  
plywood  
week-enders



handle components. This makes it particularly attractive to the handyman as he can purchase it in kit or knocked down form for £1,072 or as little as £3 per week when advantage is taken of an easy ten year repayment plan. This price includes painting, flyscreens and glazing.

The cottage includes two 12 ft. x 9 ft. bedrooms, 18 ft. x 12 ft. living room, 9 ft. x 6 ft. kitchen and a bathroom, and an outside balcony.

The interesting fact about the week-end is that 80% of the material content is plywood. Home and Outdoor Supply Centre considered that component manufacture is admirably suited to plywood usage because of its versatility, strength in rigid frame con-

struction and perhaps most important was the fact that it retains its stability and is not easily damaged during transit. Estimated quantity of plywood of all thicknesses used in one week-end is 6,000 sq. ft.

The external dimensions are 36 ft. x 18 ft. and the structure consists of six bays or sections spaced at 6 ft. modules (see illustration), with a 21 ft. x 6 ft. under-cover balcony.

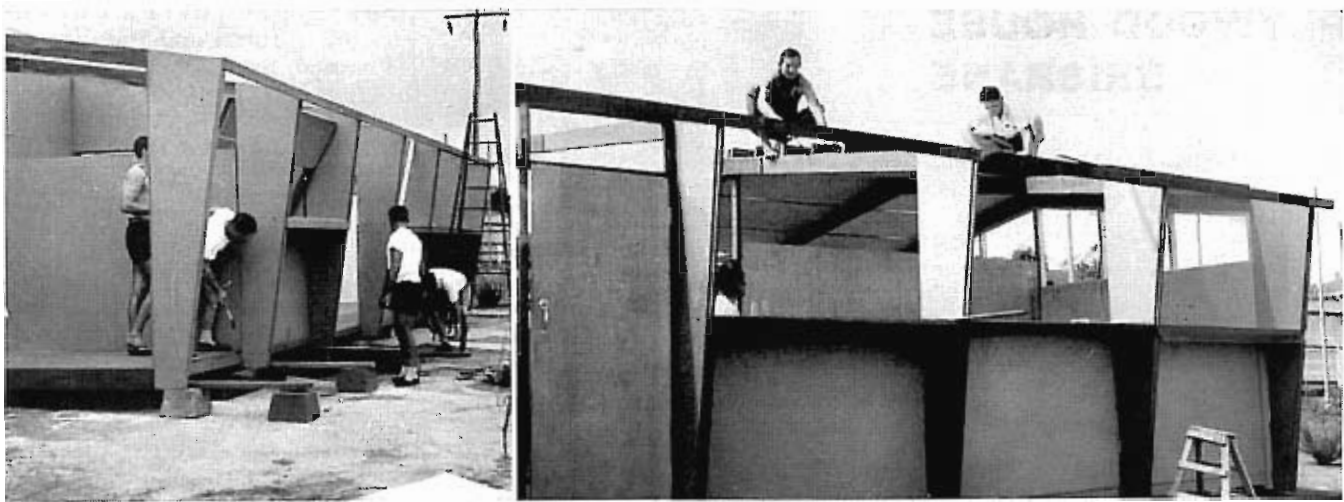
The seven frames are factory manufactured to a rigid frame principle and consists of 4 in. x 2 in. hardwood uprights covered by  $\frac{1}{4}$ " in. Crezon clad waterproof plywood with 6 in. x 2 in. roof beams and bolted together through plywood gussets, and the flooring consists of  $\frac{3}{4}$  in. termite treated Karri Aquatite plywood. These

**I**N Perth you can order a Wesply week-end today and move into it on your own site, with your own furniture, at 5.00 p.m. the next day. The week-end is being marketed and manufactured by Home and Outdoor Supply Centre which is a division of Cullity Timbers Pty. Ltd.

The speed of erection is made possible by the fact that the whole of the 5½ square structure is factory prefabricated into easy to



One and a half hours after building begins, the foundation and frame are complete, and plywood in-fill panels are installed.



panels, with 4 x 2 in. bearers, fit across the floor joists.

Crezon clad plywood is Australian made. It features a plastic surface or face which is ideally suited for painting and it will not crack or craze even under extreme weather conditions. This product is now accepted by W.A. State Housing Authorities and by other Government authorities such as the Main Roads Department.

The bays in between the frames are in 6 ft. modules and are either windows, or shutters with flywire. It can be seen then that an owner would have no problem in extending the length of the cottage, it is only a matter of adding the required number of bays and bolting onto existing panels.

The following building materials have been used:

Exterior:  $\frac{1}{2}$  in. Crezon Clad plywood.

Flooring:  $\frac{3}{4}$  in. termite treated plywood.

Ceiling:  $\frac{1}{4}$  in. Aloes plywood over exposed beams.

Roof: Supersix asbestos.

Insulation: Double sided sisalation.

Internal partitions:  $\frac{1}{2}$  in. stressed plywood panels.

The accompanying series of illustrations was taken at a recent Perth Homes Fair at which four carpenters, two labourers and a team of painters completed an exhibition Wesply week-ender in just over eight hours. Basic structural details are shown in the photographs.

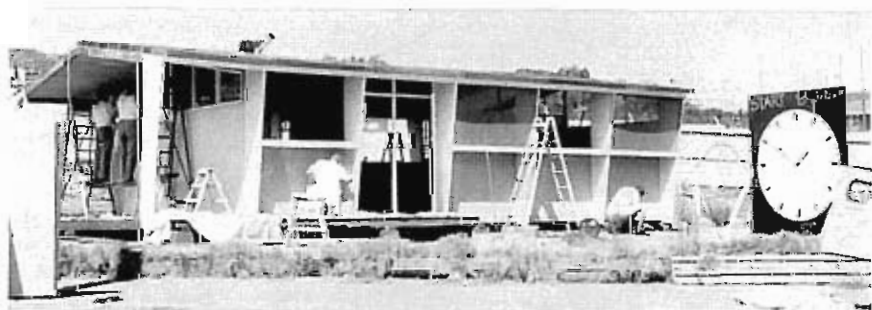
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**This Wesply week-ender was erected and painted in just over eight hours by four carpenters, two labourers, and painters.**



**Above: Crezon clad plywood panels for the roof are unloaded. Four-fifths of the material content is plywood.**

**Below: Less than six hours after commencing, the weekender nears completion.**



# PLYWOOD HOUSE BRISBANE

World's Largest Plywood  
Showcase.

**T**HERE is a wider range of exhibits at Plywood House, Brisbane, than probably any other permanent plywood exhibition centre in the world.

Since its official opening in May this year (see story, 2nd Quarter 1962 issue of "Plywood and Plywood Products") Australian industrialists and members of the general public alike, have expressed surprise at the diversity of uses of plywood displayed. From kitchen fittings to suites of furniture, from farm equipment to swimming pools, plywood is emerging as the prestige building product of today.

Plywood is no longer simply another sheathing material. Recent years have brought a marked impetus to the development of plywood as a structural and finishing material, and in the industrial sphere there is no limit to the extent of plywood usage.

Improved manufacturing techniques, and advances in the industry's knowledge of adhesives, have enabled manufacturers to produce a range of types and grades of plywood to meet almost any structural or decorative need.

Structurally, plywood is used today in box beams, I-beams, tapered girders, plywood barrel vaults for roofing . . . the list is almost endless.

However, of the ever-increasing number of plywood applications



few provide more opportunities to exploit its versatility and strength than its use in concrete formwork. In Australia, plywood is now being employed for formwork on bridges, dams, multi-storey buildings and other structures using substantial quantities of concrete.

As well as allowing the designer more creative freedom, plywood has many material advantages as a formwork material. These derive from the characteristics of the plywood itself.

Most important of these intrinsic qualities are its strength, stiffness and resistance to impact — an effect of the cross-bonding of plies to make full use of the inherent with-the-grain strength of timber.

Cross-bonding (laying the grain of alternate plies at right angles to each other) also produces a stable panel, free of shrinkage and swelling, and capable of being nailed close to the edges without fear of splitting.

Material for formwork should be light, smooth surfaced, conveniently sized, reasonably priced, and

satisfy rigid requirements of strength, stiffness and stability.

Plywood meets these standards fully. Another advantage is plywood's flexibility, which enables it to provide formwork for curved surfaces. Curves with radii as small as 20in. are possible with 3/16in. plywood.

The widespread application of plywood to structural work on large industrial undertakings has not overshadowed its development in other fields. The man on the land has found that exterior grade plywood fulfils the need of a light, economical material for the construction of farm buildings and such subsidiary structures as chicken houses, pig feeders and grain silos.

In the home, avenues for plywood usage are unlimited. It finds applications in flooring, as partitions and feature walls, ceilings, cupboards, built-in and free-standing furniture, wall racks, room dividers . . . the list is inexhaustible.

In the world of sport, we find plywood boats, caravans, ski-huts, swimming pools, portable squash courts, to name but a few of its more major applications.

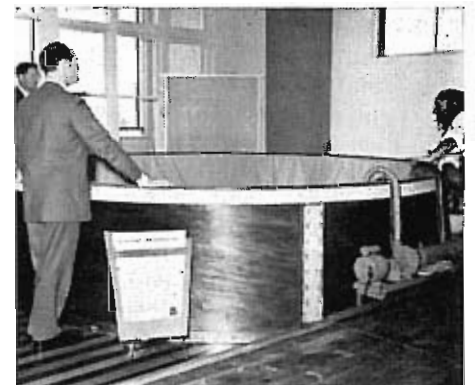
The Australian Plywood Board, in providing a technical advisory service to plywood users throughout the country, serves a significant need. With the establishment of a comprehensive exhibition centre at Plywood House — its national headquarters — architects, builders, engineers and the general public will the more easily be able to keep abreast of future developments in the plywood field.

END



Left: A view of the ground floor exhibit of Plywood House, Brisbane. Note the plywood kitchen unit at right with plywood flooring, the feature wall (left), and the plywood boat in the middle background.

Right: Visitors to Plywood House inspect a build-it-yourself plywood swimming pool.

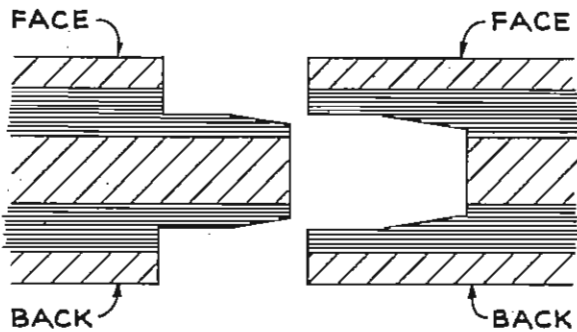
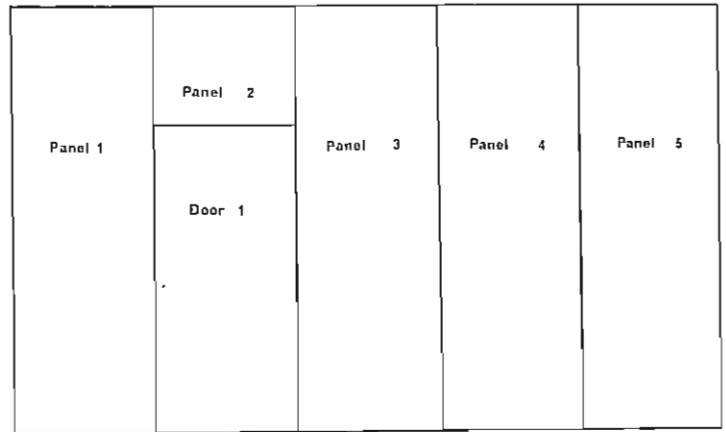


## FIXING PLYWOOD

### Panelling and Ceiling Installation

With reference to the article that appeared on page 11 of the June issue, it is realised that Figure 1 is not an elevation, and that this is a plan which could be used for simplicity where panels are all one length and not cut over door heads, etc.

Figure 1 could have been illustrated with the following explanatory elevation.



## ENGINEERED PLYWOOD JOINT WINS ACCEPTANCE

Tongue and groove joints have been developed in the United States as an alternative to standard butt joints and blocking on plywood sub-floors.

The joint is applied to plywood of  $\frac{1}{2}$  inch,  $\frac{3}{4}$  inch, and  $\frac{7}{8}$  inch thicknesses.

The new joint has been included in Property Standards, and local insuring offices in the United States are being advised of its acceptability.

Use of this joint in place of blocking has resulted in reduced costs due to more efficient handling and fixing in situ.

# T.V. "SURFSIDE 6" LAUNCHES FLOATING HOME INDUSTRY

**F**EW of the fans following the popular television series "Surfside 6" realise that the houseboat background that sets the theme of the show is much more than a stage set.

It's a fully seaworthy floating home featuring some of the latest plywood products currently being marketed in the United States.

The plush houseboat, which is one of a series designed for the U.S. market, has every conceivable luxury from air-conditioning to electrification and plumbing.

Moreover, every houseboat in the range is practical down to the last bollard. The hull of each floating home is a series of water-tight compartments made of marine



grade plywood—each easily accessible, ventilated and treated against fungus, dry rot, barnacles and other animal and vegetable life.


Side wall construction of the spacious cabins and living quarters is also of marine grade plywood with inner walls panelled in mahogany. The top deck (or roof) is covered with  $\frac{5}{8}$  inch marine grade plywood.

"'Surfside 6' structure is equal to that of fast planing craft, although under normal navigation they are not subjected to anything more than normal displacement stresses," says naval architect Richard C. Cole who was called in as a consultant on the original designs.

(Editorial by courtesy of the United States Plywood Corporation).



# FOR FREEDOM OF DESIGN— look to **PLYWOOD**



Plywood beauty goes to the deep heart of a design problem because it rests on a strong foundation of structural integrity. When you stipulate plywood you employ a material that cuts casts on two levels — structural and decorative — simultaneously. Any material that can perform this double duty is a welcome aid in times of rising costs. For the right answer every time, look to Australian Plywood.



## **FREE ASSISTANCE**



Officers of the Australian Plywood Board are always ready to help and advise on constructional uses, new applications of plywood to lower costs; species selection — and to supply information that will assist towards better design. Simply write or phone.

**THE AUSTRALIAN PLYWOOD BOARD LTD.**  
PLYWOOD HOUSE, 457 ADELAIDE STREET, BRISBANE — 31 2521

