

HOME BUILDER

THE SOUTH AFRICAN A-Z GUIDE



Energy-efficient homes
Structural renovations
Owning your first home
Advantages of anodised aluminium

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editor's
note

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Drastically increased interest rates on mortgage bonds and the effect of a depreciated rand on prices in general are not good news for the homeowner. It is true to say, however, that 'life goes on': people still need to acquire homes and make improvements to existing homes in keeping with changes in their family circumstances.

In this context, knowledge is undoubtedly the key to making limited financial resources stretch. Knowledge of various home ownership options and of organisations who can provide a guarantee with respect to defects in construction work greatly facilitates the process of building a first home. Knowledge of building materials, finishes and fittings is invaluable when selecting the most cost-effective and functionally suitable ways of fitting out a home - whether building or adding on. Knowledge of the processes involved in renovating and decorating an existing home can make the difference between the proverbial 'renovator's dream' and a surrealistic nightmare replete with incomplete work and unpaid bills.

This is where the *Home Builder A-Z guide* is proud to play a unique role as the only magazine of its kind which is written and edited by qualified building industry professionals with the objective of translating technical 'jargon' into terms understandable to the man in the street. We hope that our articles and illustrations inspire new ideas and encourage homeowners and homebuilders to be innovative. We know that there is a wealth of technical information packed into these pages... it is up to you, the reader, to systematically draw out all the information which is relevant to your circumstances, and to follow the leads which are provided by the many specialist manufacturers and service providers who advertise on these pages.

In addition to the A to Z guide to building materials, products, services, municipal approvals et al, this edition of *Home Builder* brings you a special focus on energy efficiency in the home. It has been prepared by an expert in the field, Antonio Ruffini, who has a Masters Degree in Electrical Engineering and is a well-known technical writer, both in South Africa and abroad. South African homes have been inherently inefficient as far as energy consumption is concerned - perhaps this has to do with our temperate climate and historically cheap energy costs. The latter is rapidly becoming a thing of the past, and we would do well to find ways and means of reducing our electricity bills. The added bonus of enhancing the energy efficiency of our homes lies in the levels of thermal comfort that can be enjoyed all year round. Our focus doesn't only address thermal insulation however, it takes a look at more effective and efficient lighting systems, as well as a number of other aspects of energy consumption.

It must be emphasised again that the *Home Builder A-Z guide* is an independent publication and is therefore laced with observations and comments, usually the result of previous experience, or the related experiences of various individuals. These comments are, however, subjective to a certain extent, and it is ultimately up to you, the reader, to assess their veracity and applicability with respect to your own circumstances.

The fifth edition of this journal endorses the efforts of South Africans who are involved in buying, renovating, building, or simply maintaining a residential property. It also represents a vote of confidence in our ability as a people to prosper under adverse circumstances. May you reap maximum reward from your endeavours.

Richard Holden Editor

Richard Holden has a Master of Architecture Degree and is currently Executive Officer: Building Control in the Western Metropolitan Local Council of Greater Johannesburg. He was winner of the Siemens Award for Journalism Excellence in 1993, has been a judge for the awards of the Specialist Press Association of South Africa, and is the former editor of *PLANNING* (Architectural and Planning Review for Southern Africa). He is a regular freelance writer on urban design, architecture and building and lives in Johannesburg with his sons, Mark and Paul.

Polycarbonate and acrylic

In an ever-changing world, new alternatives for commonly-used materials such as glass are being produced that prove to be particularly suited to specific uses, such as roof lighting systems and barrel vaults.



Glass has been the definitive material for the creation of structures which permit light to enter the interior, and allow the occupants the luxury of enjoying outside views and vistas. It has its limitations however, in the glazing of roof lights and horizontal surfaces and this is where the alternative glazing materials have made their mark. The two best-known alternatives to glass are polycarbonate and acrylic, both of which are ideally suited to extensive roof lighting systems and the creation of barrel vaults.

New technologies have resulted in the production of alternative glazing materials to traditional glass, which are particularly suited to extensive roof lighting systems, such as barrel vaults. Polycarbonate sheeting can be obtained with the additional advantage of an integrated ultra violet light-resistant coating. This improves the resistance of the material to ultra violet light attack, which has been a problem in the past, particularly in South Africa, with its high UV levels. It is advisable to shop around for polycarbonate products, or obtain the advice of a specialist, as certain products offer specific advantages, some of which are listed below:-

- ★ Sheeting may be bent, curved or cut on site.
- ★ De-lamination (where the products splits up into individual laminate

components and thereby effectively disintegrates) has been eliminated.

- ★ Minimal reduction in the optical clarity of the sheeting over time.
- ★ Enhanced capabilities with regard to inherent toughness and strength.
- ★ An impact strength which can be up to 250 times that of normal glass.
- ★ Polycarbonate sheets are roughly half the weight of equivalent glass products, and therefore eminently suited to large, translucent roof light structures as would be envisaged over internal atriums, for instance.
- ★ Hail resistance is an advantage, particularly on the Highveld, and test results from the standard SABS hail test are available.
- ★ The fire properties of polycarbonate are impressive as it is a self-extinguishing material.

Acrylic glazing materials have intrinsic properties, amongst others, resistance to weathering, scratch-resistant surfaces, enhanced rigidity, chemical resistance and impact resistance – not as impressive as polycarbonate, however.

The visual properties of poly-carbonates and acrylics are such that they are ideally suited to roof lights, but do not have the same inherent optical qualities as glass. Its very unlikely that they would replace glass for windows and doors. 