

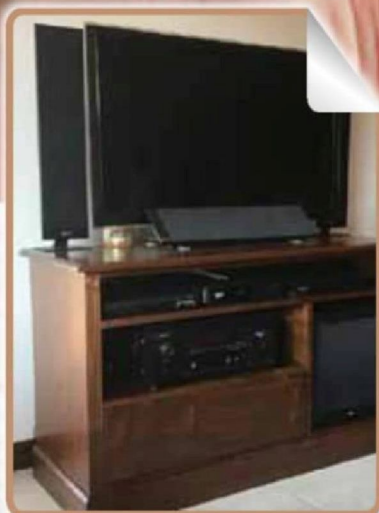
The Home HANDYMAN

May/June 2021 • Vol 31 No 5

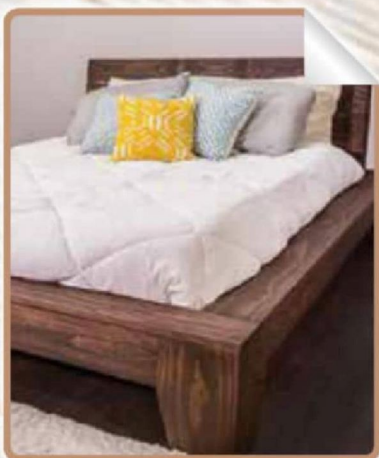


SA'S
ORIGINAL
DIY
MAGAZINE

Everything you
need to know
about wood
finishes



MAKE A TV CABINET



STEP-BY-STEP
PLATFORM BED



- How to create a shoe rack
- Make a metalwork bench vice
- Tips for maintaining your garden in winter
- Improve your lounge (plus 3 simple projects)
- Must-have power tools for the intermediate DIY'er



All the DIY projects, tips and advice you could need

Do you need to refresh your toolbox?



ELECMINI



WAK1



H3M



TCT8KT



L100250

FROM THE WORKBENCH

Lessons from the animal kingdom

Although many woodworkers and woodturners enjoy the solitude of their workshop – just you, your tool and that unmistakeable musk of wood – for many DIY tasks around the home, it is often best, and safer, to have a helping hand. The animal world has some powerful inspiration for workplace teamwork. For instance, did you know that ants hate each other, but work together? And that chimpanzees can recognise when collaboration is necessary and identify the optimal partner?

The 'Flying V' formation is used by Canada Geese for migrating long distances. If the leader at the apex of the V gets tired or sick, another goose will take its place. This ability to rotate leadership shows how important it is, not only for leaders but for a whole team, to be flexible and watch out for each other. Be alert and aware of the needs of your others – especially when working with power tools.

Meerkats live in harsh and dangerous conditions. They have adopted a smart survival strategy which is based on mutual trust. One member is assigned the job of guard while the mob feeds. As soon as they spot any danger, they alert the whole clan, which then has enough time to run for safety. The amount of trust the group places on each other is massive; one slip of alerting the mob can be the difference between life and death, but they still do it with a high rate of success. Similarly, trust in each other is the most basic requirement when working with someone, be it on a sports team, in a marriage, or on a DIY task. You cannot grow or achieve much individually until you trust your team and work together.

Bees are often used as shining examples of teamwork in the animal kingdom; this isn't without reason. A hive of honey bees can consist of up to 60 000 bees, each with a specific task that contributes to the overall success of the hive. Structure and delegation of work is critical to productivity – it is pointless jumping headfirst into a restoration project without the hint of a plan!

Spotted hyenas are pack animals with food on the brain and their problem-solving skills rival that of some chimpanzees. A group of hyenas were presented with a food reward and two ropes; the animals soon discovered they needed to tug the ropes in unison to get the food. Group work can be the key to successful projects. Two or more people may be able to address certain problems better together than individually, and bouncing ideas off each other can help you come up with the right solution to a tricky DIY dilemma.

While we may say that mankind is more evolved because human cognitive abilities are much higher than that present in the animal kingdom, as evidenced above, however, there are certain species of fauna that display traits, which we can learn from when it comes to working alongside someone else. I've been there many times before when frustration gets the better of me during a DIY project. A seemingly simple task, such as replacing a toilet seat, can leave me huffing and puffing. Admittedly, there is hardly enough space around a toilet cistern for one person, never mind two, but the value of having someone to provide support – and help pick up the numerous parts which you tend to drop just out of arms reach while sprawled on the bathroom floor – cannot be understated!

Gregg



The Home HANDYMAN



www.homehandyman.co.za

2021 SUBSCRIPTION FORM

Subscription Fees:

South Africa	Printed	Digital
Back Copy	R35.50	R27.95
6 issues	R209.00	R169.00

Neighbouring countries: R528.00 for 6 issues

Overseas by Air Mail: R618.00 for 6 issues

Subscription fees are valid until 31 December 2021

Subscriber's details:

I would like to receive a printed/digital copy.
(Please indicate)

Start subscription with the issue?

Name:

Email:

Postal Address:

Postal Code: Tel:

Gift subscription from:

Tel: Email:

Direct Deposit / EFT Payments:

EFT - (Electronic Fund Transfer) directly to our account:

ABSA Bank

Branch Code: 632 005

Cheque account: **BB Print** 404 881 8651

Reference: "Sub + HH + surname"
(example SubHH-Lindeque)

Fax/Email proof of payment plus this completed
subscription form to 086 234 5052.

**Please Note: There is an additional deposit fee of R65
if payment is made in CASH.**

Contact us:

Email: subs@homehandyman.co.za

BB Print | PO Box 24938 | Gezina | 0031 | Fax: 086 234 5052



CONTENTS

The Home Handyman is published bi-monthly (6 issues per annum) by WJ Lindeque cc t/a BB Print (CK99/23366/23)

Address: PO Box 24938 | Gezina | 0031 | RSA

Office: 065 849 3264

Fax: 086 234 5026

Email: editorial@homehandyman.co.za

Publisher Hannes Lindeque

Associate publisher Allan Swart: allan@homehandyman.co.za

Editor Gregg Cocking - editorial@homehandyman.co.za

Feature writers André Gous, Annalien Grensemann,

Catherine Reimers, Clifford Roberts, Kim Roberts and Warren Schmidt

Technical consultant Denis Lock

ADVERTISING REPRESENTATIVES

Wilma Lindeque 065 849 3264

Email: advertise@homehandyman.co.za

Ruth Schultz 083 583 5243

Email: ruth@homehandyman.co.za

HOW TO SUBSCRIBE

Email: subs@homehandyman.co.za

Fax: 086 234 5052

Online www.homehandyman.co.za

Layout & design dee@stormdeezigns.co.za

Printing D&S Print

Distribution On The Dot | 011 713 9322

About The Home Handyman magazine:

The Home Handyman magazine is a specialized D.I.Y. publication and caters for a well-defined niche market since November 1993. The magazine equips its ever-growing readership with relevant D.I.Y. information, knowledge and skills.

The views expressed in this publication are not necessarily those of the publisher or its agents. While every effort is made to ensure the accuracy of the contents of this magazine, neither the editor nor the publisher can be held responsible for any omissions or errors. Images used are for illustration purposes and are not endorsed by The Home Handyman. Every care has been taken to ensure that all the information and projects presented in this publication are accurate, reliable and safe. It should be noted, however, that the ideas for design and product use are presented as suggestions only! The editor strongly advises that the reader check local by-laws and consult a qualified professional before undertaking any project and cannot be held responsible for any loss, damage, injury or death resulting from any information contained here.

Copyright: The Home Handyman, 1994. Copyright is expressly reserved and no part of this magazine may be reproduced or transmitted, in part or whole, in any form or by any means, electronic or mechanical, including photocopying, recording or any information storage or retrieval system without prior permission of the publisher. All enquiries regarding editorial correspondence, manuscripts and photographs should be directed to the editor.

FEATURES

10 Lounges

Lounges are the focal point of every home – find out how to make yours even better (including three DIY projects)

14 Wood finishes

The experts from Woodoc discuss how to choose the right finish to get the best out of your woodworking projects

18 Woodworking

Build yourself a beautiful platform bed

22 Metalworking

Make a steel bench vice

24 Gardens

Learn how to maintain your garden in winter

26 Power tools

Must-haves power tools for the intermediate DIY'er

28 Woodworking

Design and build a handy shoe rack

32 Advice

A beginner's guide to rainwater harvesting

36 Woodworking

Make your own TV/media cabinet

42 Heating

All you need to know about solar geysers

45 Electricity

Safety advice when working with electricity

48 Windows

Learn how to evaluate your old windows and buy replacements

52 Young DIY'er

Make a wooden toy robot



REGULARS

4 Off the shelf

All the latest products for the DIY'er

6 Voice your views

Your chance to air an opinion

8 DIY matters

News, views and reviews from around the globe

51 Bright ideas

Readers share their innovative time-and-space saving DIY ideas

54 Ask our experts

Your DIY queries answered by our panel of experts

56 A woodworker's diary

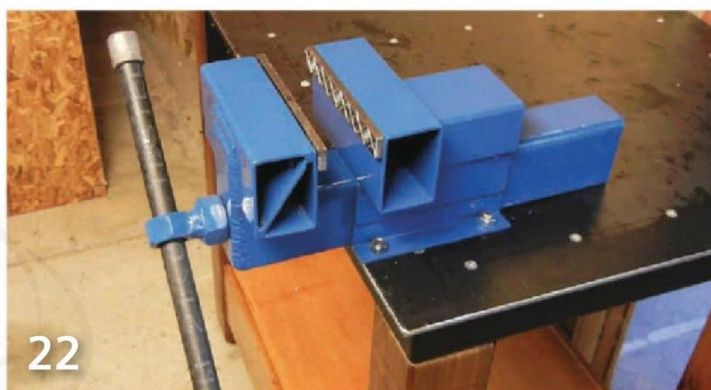
Denis Lock presents part 2 of his series on routers

60 Woodworker's corner

Sharing techniques, ideas and a love of wood

64 Tailpiece

Annalien Grensemann dusts off her tools and gets back to DIY'ing



Competitions & giveaways

6 **Win** a MT M37 00B Trimmer from Makita

51 **Win** a Tork Craft 8-piece wood turning set from Vermont Sales

54 **Win** a subscription to *The Home Handyman*

OFF THE SHELF

Your guide to the latest products in the world of DIY

Homemation and Control4 gives you control of your privacy

Do you think there is no need for another smart home gadget because Alexa already switches off the lights, dims the volume, and chooses your TV programmes? Because Siri already gives you the weather forecast and plays your favourite podcasts?

Firstly, only Control4, distributed exclusively by Homemation in South Africa, gives you comprehensive control of your home in one convenient place – more about that in a bit. Secondly, there are no free lunches. We need to think and be concerned about the degree of privacy in our homes and not just our communications. There is no place like home. Home is our sanctuary, our safe place, our private place. Home is the place where we can just be. Especially now during the COVID-19 pandemic.

Homemation and Control4 take your privacy seriously. They are committed to strict and transparent data privacy standards that put you and your family, firmly in control of what gets shared and with whom. With Control4 you can be sure that what happens in your home, stays in your home.

So, what does happen in your home? Control4 consolidates devices from your whole house into a single screen giving you the one-stop control over all air-conditioning, security systems, smart locks and, of course, your entertainment system. The software interacts with tens of thousands of devices from hundreds of brands. One device really can rule them all.

Voice assistants, smart locks, cameras and entrance controls allow you to reduce contact with products that may have been touched by others. Staying safe and in control is now easier than ever before.

No more worrying about if you turned the lights (or oven) off when you left the house. Instead, a simple button press can do that for you as you depart, as well as arming your home alarm and even closing the curtains. On your return, your home welcomes you in by turning the lights on, playing chilled music and setting the house to the perfect temperature. While home, your fixed-home-automation-devices are right where you need them from when you rise in the morning until you retire in at night. Use the fixed-touchscreen in your kitchen to easily follow a recipe or see who is at the door, a handheld remote control for watching TV and lighting keypads for bedtime. Control4 has everything covered.

For more information, call 011-781 8887 or visit www.homemation.co.za or www.control4.co.za



A powerful and compact tool

Powerful 600W motor of the GBM RE Professional drill is ideal for drilling holes up to 10mm in diameter in metal

The GBM 10 RE Professional is a compact corded 1-gear rotary drill. Its reliable 600W motor enables easy drilling of holes of up to 10mm in metal. This rotary drill's lightweight and compact tool body design provides convenience with perfect handling and manoeuvrability in medium-duty applications. Additionally, the drill spindle is fixed within the bearings, ensuring stability in operation and thus enabling high-precision drilling.

This tool is intended for drilling in metal and wood. The GBM 10 RE Professional includes features such as right-left rotation and speed selection.

For more information, visit www.bosch-professional.com/africa



The tool of the decade; the Felo AllStar double Magnetic Bit Holder

Everyone should own one of these magic bit holders as it is a must-have for every toolbox, workshop, all tradesmen and DIY'ers

This innovative Felo AllStar chrome-molybdenum vanadium steel screw bit holder comes with double the magnetic strength, depth stop and quick change. The Superior hardness exceeds DIN and ISO requirements by up to 100%. There are a huge number of outstanding bit holders available today, all doing different jobs, but nothing comes close to the Felo AllStar Automatic holder. This unit will hold the screw in the bit holder with double the strength like nothing you have used before, allowing you to use one hand for the drill/driver without the screw bolt or fixture you are using dropping out.

It will let you handle any type of fixing job above your head, horizontal, at any angle or down wards which would normally see the screw dropping out. This would never happen with the magical Felo AllStar a precision bit holder that's reliable and can be used with any standard 1/4" bit or 1/4 hexagonal bit hold tool, with the 25mm bits it can hold up to 350mm long bolts.

The free pivoting screw head is equipped with an extremely strong magnet end clamping on the bit. The 70mm long double magnetic stem holder can also be used manually or with a power tool. Thanks to the extremely strong magnet, it holds the bit confidently and keeps the screw extremely tight with 25 mm long bits. This makes it possible to truly use one-handed operation when screwing with a machine at any angle. Felo screwdriver tip and bits use a long-term safe solution for screwing operations and also come in various lengths.



For more information, call 011-314-7711 or visit www.vermontsales.co.za

See your
product
in this
space!



**The Home
HANDYMAN**

www.homehandyman.co.za

To advertise in
The Home Handyman's
Off the Shelf,
please contact Wilma
on 065 849 3264 or
e-mail:

advertise@homehandyman.co.za

ASK FOR IT BY NAME

Den Braven PUR FOAM



Den Braven PU Foam is a very strong, dense cell (foams vary in density and strength) structured foam filler for filling large cracks between walls, ceilings and floors, gaps around pipes, windows and doors, loose tiles and boards and much more. Ideal for use in partition walls, on concrete, brick, stone, plaster, wood, metals and many plastics. It is water resistant, a good sound insulator, and 100% CFC free. Excess PU Foam can be cut away once fully cured, and can then be either plastered, covered over with Den Braven Acryl-W, or painted.

Keep PU Foam upright when transporting or storing, and handle with care. Den Braven PU Foam is supplied with free gloves (under the cap of the nozzle) and an apron should also be used to protect clothing.

Please contact Den Braven Sealants on 011-792-3830 or Sales on sales@denbraven.co.za for further product and technical information.



Scan this QR code or go to DB Pu Foam <https://www.youtube.com/watch?v=P6VsnGpgvC4> to watch how to applicate PU foam



Available in
500 and 750ml
canisters

VOICE YOUR VIEWS

Do you have any thoughts or comments on DIY issues?



Share your opinion

The Home HANDYMAN

www.homehandyman.co.za

Send us your views, ideas and opinions and you could win a state-of-the-art power tool from Makita.



Send your queries to:
editorial@homehandyman.co.za or
P.O. Box 24938, Gezina, 0031

Please include your name, physical address and contact number (office hours)



Gerry F Kuhn

wins a Makita
MT M37 00B Trimmer

Prizes are not exchangeable

A word on safety



As much as I hate to rock the boat, or whine a little, I do need to take you on safety as I have a definite case. This is totally non-negotiable and while you guys are telling us how to do it all, you are not setting a great example.

The March/April edition, page 60, shows someone using an unguarded circular saw and doing so in the most dangerous way. The bottom right on page 43 is also borderline and unsafe at the very least.



This could be construed as encouraging a dangerous practice. Please use that practical, sensible thought and common sense and attitude that you have throughout almost every article, which I love.

Gerry F Kuhn, by email

Ed replies: Thank you for getting in touch, and I agree, we should by no means be promoting unsafe practices. As a publication we need to continually promote safety and not entertain unsafe practices, and on the editing side, we will spend more time vetting the images which are used (the image in question was sourced from a stock photography website).

Our regular woodworking contributor, Denis Lock, was also horrified and provided the below feedback on the image:

It is by far the most dangerous picture I have seen of table saw use.

1. There is no riving knife.
2. There is no blade guard.
3. The user's right hand is between the fence and the blade with the left hand about to follow. A most dangerous position.
4. The piece of wood between the blade and the fence is roughly square – a prime candidate for wedging, being lifted by the back of the saw, spinning into the blade taking the user's right hand with it.
5. The user is wearing long sleeves covering part of his hands. The sleeve will be caught, wrapped around the saw arbor and drag his hand into the blade resulting in the loss of more than fingers.
6. You don't stand at the side of a saw and cut. You stand at the front.

Denis has offered his service and expertise to us to check images before they are published. As he says, which is worthwhile reading for all, "I have been using power tools for 68 years without incident. This is not just luck – I have studied safe practice and follow it religiously and preach it whenever the opportunity arises."

On the subject of chainsaws

It was interesting to read Brian Hutton's query about petrol versus electric chain saws in a previous issue of *The Home Handyman*. I wanted a chain saw, but an electric one. One automatically thinks about Stihl or Husqvarna. It wasn't the cost of the chain saw so much as the batteries and charger. They are only viable if you are investing in a whole system.

Then I came to my senses and looked at what I already had, which was Makita drills etc, where I already had two chargers and several batteries.

Sure enough, they did a chain saw the size that I needed, so I bought it, and am enjoying the ease of use, never mind no smell. I was also surprised at the power it had to cut. Quite impressive!

Eddie Fisher, Eswatini (Swaziland)



A little relief during the pandemic

You have just got rid of all the COVID-19 pandemic stress for me (I don't have or have had COVID). Thanks for bringing back the best magazine ever published. I'm really looking forward to reading it.

Bruce Strachan, by email

I buy *The Home Handyman* for my hubby every issue. It is truly an amazing magazine. I even love paging through it!

Karen Langley, by email

I have been getting *The Home Handyman* magazine since 2000 and cannot wait for the next copy. I have enjoyed all the articles, tips, bright ideas and readers projects. I have learned so much and love DIY.

It is nice to see new products from your advertisers that make DIY a breeze. Is

it possible to bring out a magazine file that you made years ago to store the magazines? Keep up with the good work and looking forward to the next copy.

Ernie Boshoff, Randburg

Ed replies: Thank you Bruce, Karen and Ernie for your kind words – we are so glad that you are enjoying having the magazine back. We have been looking into the magazine files which were previously available, but we are having trouble sourcing a supplier. As soon as we have something suitable, we will let all our readers know.



Reader's projects



The Home HANDYMAN

www.homehandyman.co.za

Willing to share your latest project with our readers? Send a step-by-step write up of how to make the project, along with step-by-step photographs (at least 300kb) and a picture of the finished product.

Email projects and photographs to:

editorial@homehandyman.co.za



Our competitions – the fine print

Prizes may not be exchanged for cash. The closing date is stipulated by the competition box. If not stipulated, it closes on the last day of the issue. For example: Jan/Feb edition. All competitions close on the last day of February. To enter simply e-mail your answer to: editorial@homehandyman.co.za and include your name, surname, address and a day time contact telephone number with your entry. Unless otherwise stipulated, competitions are lucky draws and the correct entry drawn on the closing date will be the winner. The prize may differ from the picture shown. By entering this competition you agree to all rules and accept that the decision of the publisher is final and that no correspondence thereto will be entertained. This competition is open to all readers of *The Home Handyman* except employees of THH, BB Print and employees who work for the company that sponsors the prizes and their immediate families. Prizes not claimed within 60 days will be forfeited.

Successful opening of new Leroy Merlin Fourways store

Group Adeo opened their fourth Leroy Merlin store in Johannesburg, opposite Fourways in March. "From the day of opening and during the course of the weekend we welcomed over 5000 customers," says Claudia Krishna, Leroy Merlin Brand and Customer Experience Leader. "We were cautiously optimistic about the turnout as we are still in the midst of a pandemic and we were uncertain if customers would come out in their numbers." In order to split the risk, DIY retailer Leroy Merlin ensured the same promotions were available online as well as in the rest of their stores.

From 7am the queue outside the store began to form, and by 9am the line grew to approximately 50 metres in length. There were 130 Leroy Merlin staff members gathered outside the store and, as is customary for the Leroy Merlin group worldwide, the staff with scissors in-hand inaugurated the store's first day of business by simultaneously cutting the bright green ribbon. As the doors opened, staff members lined up on either side of the Leroy Merlin atrium and with singing, clapping, and cheering welcomed the first customers as they entered into the store through the large white and green balloon arch. The ceremony lasted approximately half an hour.

"We are proud of the warm welcome and positive feedback received from

customers both in-store and posted on social media," says Cedric Sennepin, CEO of Leroy Merlin South Africa. "We believe we have met a need and our partners play a huge part in this success." Leroy Merlin have proudly partnered with local small businesses, such as Mugg & Bean on the Go; Zviribho Repair Centre for in-store tool repair, and Kandua, South Africa's largest online home services marketplace, which confidently assists customers to hire vetted contractors for their projects. Coastal Hire is available for tool rental, Trailer Boys if you would like to get your project started as soon as possible and JTSI for key cutting services. Fourways is the first of the Leroy Merlin stores to partner with the in-store florist, Electric Butterfly Flowers.

Departments that proved to be most popular with sales were considerably different to the opening of the Leroy Merlin branches in Greenstone, Little Falls and Boksburg. "Home Decor, Lighting and Bathroom were in pole position as well as landscaping," adds Claudia Krishna. "Our other openings

were dominated by Plumbing due to the excellent price on geysers and Landscaping with one particular patio set that was always very popular. Our ranges in the three top performing departments are unlike anything available on the market. We can clearly see that the South African consumers were eagerly awaiting an alternative to what is currently available at competitors."

Leroy Merlin Fourways boasts a unique layout with the aim of motivating customers as they embark on their DIY Journey. The inspirational display areas help customers visualise their future living space in a realistic setting. "The customers I spoke to over the weekend were blown away by this new take on DIY & Home Improvement," continues Krishna. "Our workshops were also of particular interest and it seems that we really have some DIY enthusiasts in the Fourways area."

For more information, call 010-493-8000 or visit www.leroymerlin.co.za



Builders extends its Gauteng footprint



To deliver an improved retail experience for contractors, building professionals, and home and DIY customers, Builders is opening a brand-new standalone store in Midrand that offers state-of-the-art technology, a Vida e caffè and a meeting hub.

Taking the total number of Builders stores to 110 in South Africa, the store opened at the end of March and promises customers a complete shopping experience through online integration, improved departmental adjacencies and new services that delivers a seamless shopping experience. Customers

visiting the store can look forward to an incredible store layout and floor plan totalling 4625m², an external dispatch yard of 8307m² and a 560m² garden centre.

"We are excited for customers to experience our Midrand store and see all of our improvements. Midrand is the centre of a large number of commercial developments, office parks, and residential areas. Its population is diverse and reflective of a new booming South African market that we want to be a part of. We prioritised convenience and the ease of use for all our customers and wanted to make

Mother Nature takes centre stage with Plascon's Autumn colour palette

As the evenings start to cool and leaves start to change colour, Plascon looks to Mother Nature's Autumn guise for inspiration. This season, Plascon has created a calming colour palette that celebrates the radiance and power of nature's earthy tones and embraces living in the moment.

Plascon's new Sunset Shadows palette draws its inspiration from rich greys while celebrating vibrant yellow, calming green and warm terracotta tones. These colours are versatile and give you the freedom to create both vibrant, energetic combinations and calm, grounded combinations. The Sunset Shadows collection embraces the warm African landscape allowing you to carry the palette from within your home to your outside spaces. Embrace the change in season and update your home to reconnect with nature.

The foundation for Plascon's Sunset Shadows palette is two of our favourite greys Paris Paving (GR-Y09) and Geneva Morn (GR-Y01). Speaking to Plascon's Nozipho Kunene, who heads the Colour Advisory Service, she highly recommends these two shades as they are neutral and versatile and work with any number of colour combinations. Inject spice, enthusiasm and vibrancy into your home

with the rich, terracotta tones of Plascon Free State Earth (01-C1-2). Or harness the deep green shade of Plascon Ocean Grotto (g1-E1-4) to bring balance and calm. Plascon's Favourite Hue for 2021, Plascon Golden Syrup (Y2-B1-2), will bring both a literal and figurative glow to your home. Whichever combination you create, you are sure to feel the power and grounded energy of nature through this earthy palette.

You can tint the colours of the Sunset Shadows palette in Plascon Double Velvet Pure – Plascon's advanced coating with ground-breaking, air-purifying technology that neutralises the harmful effects of formaldehyde emitted from fabrics, engineered woods and furniture in your home. This means that not only will you feel energised from this natural palette, but also from the improved quality of air. If you are updating your exterior space, tint the colours of Sunset Shadows into Plascon Micatex.

Plascon Micatex is significantly more durable than conventional paints, giving it the strength to protect your exterior walls from the harsh South African weather and general wear-and-tear of everyday living.

For more information, email
ColourAdvice@kansaiplascon.co.za



it easier for them to walk through and get everything they need either through assisted or unassisted services." shares Munier Solomon, Marketing Operations Manager at Builders.

Enabled by free WIFI, the store has high-definition screens, and tablets conveniently located to give customers the opportunity to shop and place orders, as well as view promotions or search for product information or inspirational DIY content. With this store, Builders will also introduce a

meeting hub and a Vida e caffè making it convenient to host one-on-one or group meetings with quality coffee, beverages and snacks on-hand.

Solomon continues; "We've prioritised technology and have enhanced it with personable, helpful service to offer our customers a remarkable, relevant and inspirational shopping experience. We also wanted to bring in a lifestyle element to the store to add to the overall shopping experience and customer needs."

The store services will include specialised glass cutting service and mirror finishing service, Tool Hire, a cut shop – to cut vinyl flooring, shade cloth, pool covers, steel etc. Pool Water analysis, key cutting, car key programming, remote programming and locksmith services, quotation and estimations, roof truss design and manufacture, delivery are also some of the services that can be enjoyed in store.

For more information, call 0860-284-533 or visit www.builders.co.za

Lounges are the focal point of every home – find out how to make yours even better.

LOUNGE AROUND IN STYLE

Lounge DIY project 1: Crate bookshelf

Crate furniture is a great way to turn unused crates into something valuable! This crate bookshelf is super simple to make, and adds a rustic look to any space! What's more, you can paint it whatever colour you want. You can also arrange the crates however you want. Of course, it depends on your space and preferences. Make it your own!

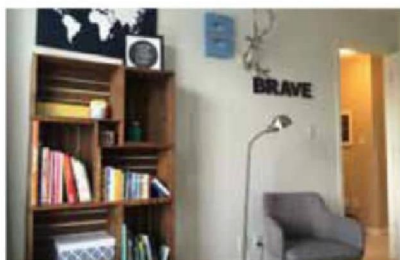
Materials

- 8 unfinished wood crates
- Sander. A few grades of sandpaper should also work
- 6-8 Sponge brushes
- Rags
- Plastic tablecloth
- Wax
- Drill or screwdriver
- Screws
- L-bracket

Steps

1. Sand crates.
2. Place crates on plastic. Then, use a brush to coat them with the stain.
3. Use a rag to coat them in wax. At the end of the day, this isn't necessary. But, it protects the crates.
4. Time to put it all together. Firstly, line up the bottom crates. Then, drill them together.
5. Next, put the rest of the bookshelf. Then, add extra screws where needed.
6. Decorate!

For more detailed steps, visit www.taramichelleinteriors.ca/blog/



Lounge DIY project 2: Crate coffee table

Here is another project for your lounge area using simple, cheap crates as a starting point.

Materials

- 4 unfinished wood crates
- Plywood. Of course, the size of the plywood depends on the size of the crates.
- Wood stain. This one uses dark brown, but you can use whatever colour suits your space
- Wood screws.
- Hooded ball casters
- Ruler/measuring tape
- Pencil marker
- Drill



Steps

1. Stain everything. Then, arrange the crates.
2. Attach wheels or legs to the bottom of the plywood.
3. Drill everything together.

For more detailed steps, visit www.diyprojects.ideas2live4.com



Lounge DIY project 3: 5-minute candle holder

This DIY is a perfect project for a rustic inspired centre piece. It can also be a great accessory for a modern lounge with a little spice. This DIY candle adds a cosy touch to any space! You can use scented candles, as well, for a warm touch.

Materials

- Glass candle holder
- Rope
- Hot glue
- Candle

Steps

1. Place hot glue where the rope will go, around the base of the candle holder.
2. Then, wrap the rope around the candle holder.
3. If needed, cut the rope down.
4. Place the candle inside.

For more detailed steps, visit www.fourgenerationsoneroof.com



BM Maintenance

Bevin
0824965752

Sangirai
0731687461

Plumbing

Interior & Exterior
Painting

Print Brokering

011 794 4001

sales@infinitytanks.co.za
www.infinitytanks.co.za

Harvest rain water or maintain a FRESH water supply!

FOUR ELEGANT COLOURS:

Australian designed thinnest 2,000L tank on the market measuring only 2400 x 2010 x 470 at 135kg per tank. Easy installation for numerous configurations as single or multiples. Mount your tank against walls or freestanding to create fences, courtyards, enclosed carports, etc.

FOUR ELEGANT COLOURS

**Tanks available nationally, kindly enquire about rates to other provinces.*

Should you need to make changes to your lounge, think about your budget and immediate needs first. While you may want a new sectional for the holiday season, it could make the most sense to rearrange your current chairs and pull them together

with an inexpensive table or area rug. Explore the following strategies to determine if there are any items you may need to add, subtract or change. After tackling each tip, the area will become more pleasant and useful to you and your guests.

11 HELPFUL TIPS FOR ARRANGING YOUR LOUNGE

Ergonomics looks at adjusting your workspace desk to improve your physical work experience. There are also some tricks you can follow to improve your mental state as you switch over to working from home.

Measure furniture before buying

Understand how big your space is before you purchase a large item, such as a sectional couch. Many homeowners pick up a beautiful new piece, only to realise it doesn't fit in their living area or fails to leave room for other furniture. First, measure the length and width of the spot you plan on placing your armoire or couch. Next, obtain the specifications of the new object online or in the furniture store. Compare the two sets of numbers to determine if there is ample leeway. If not, you may need to consider another style or design for arranging your lounge.

Consider household traffic flow

Big items or multi-piece furniture sets are a hindrance to natural traffic flow. Leave enough room between coffee tables, chairs and desks so your family and guests can easily travel from one doorway to another. If you notice people tripping or twisting their bodies to get around furnishings, it's time to redesign your setup. It may be helpful to move your pieces back toward the wall. You can also consider adjusting vertically or horizontally.

Create inviting social areas

Every lounge is a social space. For this reason, your guests should be able to gather without having to turn their bodies or shout at one another. If you have a large room, you can design comfortable seating areas that facilitate easy conversation. Pair a couch or set of chairs with a coffee table or a couple of end tables. Smaller quarters benefit from one central point that brings together the most essential furniture. To create more intimacy, place couches and recliners across from one another. Put bigger tables in between the furnishings or arrange smaller ones besides seating areas. This way, visitors can set down their beverages or bags without having to put them on the floor.

Incorporate natural lighting

Natural lighting from your windows enhances the mood of the room and makes it easier to enjoy entertainment and conversation. Make the most of the sunlight by arranging your living room furniture around your openings. Install blinds or shades to prevent the sun from bleaching sofa and chair fabrics. If your living space is particularly bright or warm in the summer, consider a room-darkening variety. Cordless blinds are also an excellent choice for creating a sense of orderliness and avoiding safety concerns for children and pets.

Select and arrange lamps carefully

When it's dark outside or too warm in the room to take advantage of natural light, strategically placed lamps will make it easier to chat, read and watch television. If you already have attractive floor lamps to sit next to your chairs and sofas, make sure there is a coffee table nearby to hold magazines, drinks, and snacks. End tables should be complemented by a table lamp. While they range in size, be sure they don't consume the entire space. If you plan on placing a ceiling lamp or chandelier in your living area, make sure you put a large furnishing under it. Sectional sofas and couches make great partners.

Add a stylish rug

An area rug is an essential tool for bringing the entire room together. Select one in a colour and fabric that matches the other furniture, as well as your décor and artwork. Place it in the centre of the primary seating arrangement. Ensure it extends beyond the lounge suite or chairs to provide an anchored feeling to the place. These textiles aren't only beneficial for rooms with hardwood or tile. If you have carpet in your living area, put a thicker rug in a bolder colour on top to add distinction and warmth.

Offer several different seating styles

Whether your grandfather has a favourite reclining chair or your kids love to watch movies on the couch, it's easy to notice that everyone has their own seating preferences. Providing several types of options will allow everyone to relax, talk and nap. Larger spaces may be best suited by a sectional lounge suite and a few loungers, while smaller rooms are completed by a loveseat and plush armchairs. Consider your family's favourites first. Then, think about what kinds of furniture will allow guests to stay awhile during a dinner party or celebration. If you're arranging your lounge or furnishing a new home, start with a few key items. You can always add chairs if the room allows it.

Small coffee table

When it comes to coffee tables, often bigger is better. However, if you have a small living room, bigger furniture will make it look cramped and messy. Try using two small coffee tables instead of one big table for arranging your lounge. They will save you a lot of space. They are also good for the easy flow of traffic. Moreover, you can easily move them to wherever else you may need them. Another way to make better use of your space is to use two or more ottomans in place of a traditional coffee table. These can work as a coffee table and also work as extra seating when you have many guests.

Hanging artwork on walls

No room is truly complete without a display of some form of art in the room. However, the artwork doesn't have to be inexpensive. You can decorate your walls for very little money by framing the children's artwork. You can also frame keys, jewellery, silverware, etc. in shadow boxes or frame pages from old books. The best place to hang artwork in the lounge is above the couch. However, the piece of art should be two-thirds the width of the sofa.

If you have smaller pieces, use a grouping of pieces and place them strategically in proportion to the couch. Similarly, you can also hang your artwork over a mantle or on either side of a window. If you have drapes on the windows make sure you've got enough room between the drapes and the walls so the art doesn't look too crowded.

Divide large spaces with furniture living/dining/kitchen

If you have a large and open lounge/dining/kitchen space, you might want to arrange your living room into distinguishable parts. A simple, yet effective way to distinguish areas in a large living room is to group furniture in separate areas. Another simple way to define your space easily is to use curtains. Other options include using metal dividers, bookshelves, Natural and artificial screens, open shelves, sliding doors, TV tower, and fireplace installation. Include

an extended breakfast bar or island to separate the cooking and eating zones. The main thing to keep in mind is the easy transition from one space to another.

Distance between furniture

Whether you are arranging your lounge or designing your first space, arranging the furniture is an important consideration. It is important to allow for easy movement throughout the room. You should also consider the entrances to the rooms and doors. If the doors open in, you need to allow room for them to open fully. You should also consider the feel you want in the room. If you want a cosy and intimate space, place the furniture in closer groups. However, if you want an open and spacious feel, keep more space between pieces. Also, if your room is used as a pathway to another room, you should allow space for an easily navigable pathway from one room to another. The best thing to do is to measure your room and assess what you have before buying anything new.

You may also find new solutions for your current chairs or couches by drawing out different scenarios on a piece of paper or participating in a community furnishing swap. Remember: Your living room should be enjoyable, not necessarily perfect. The most important thing is that you like spending time in your space, can move about freely and have enough freedom and solutions to happily entertain others.

DRIVE LESS PAY LESS!

**Comprehensive
car insurance**

R299 P/M

Cars valued up to R500,000 travelling less than 100km



**KingPrice™
INSURANCE**

SMS 'king' to 44629

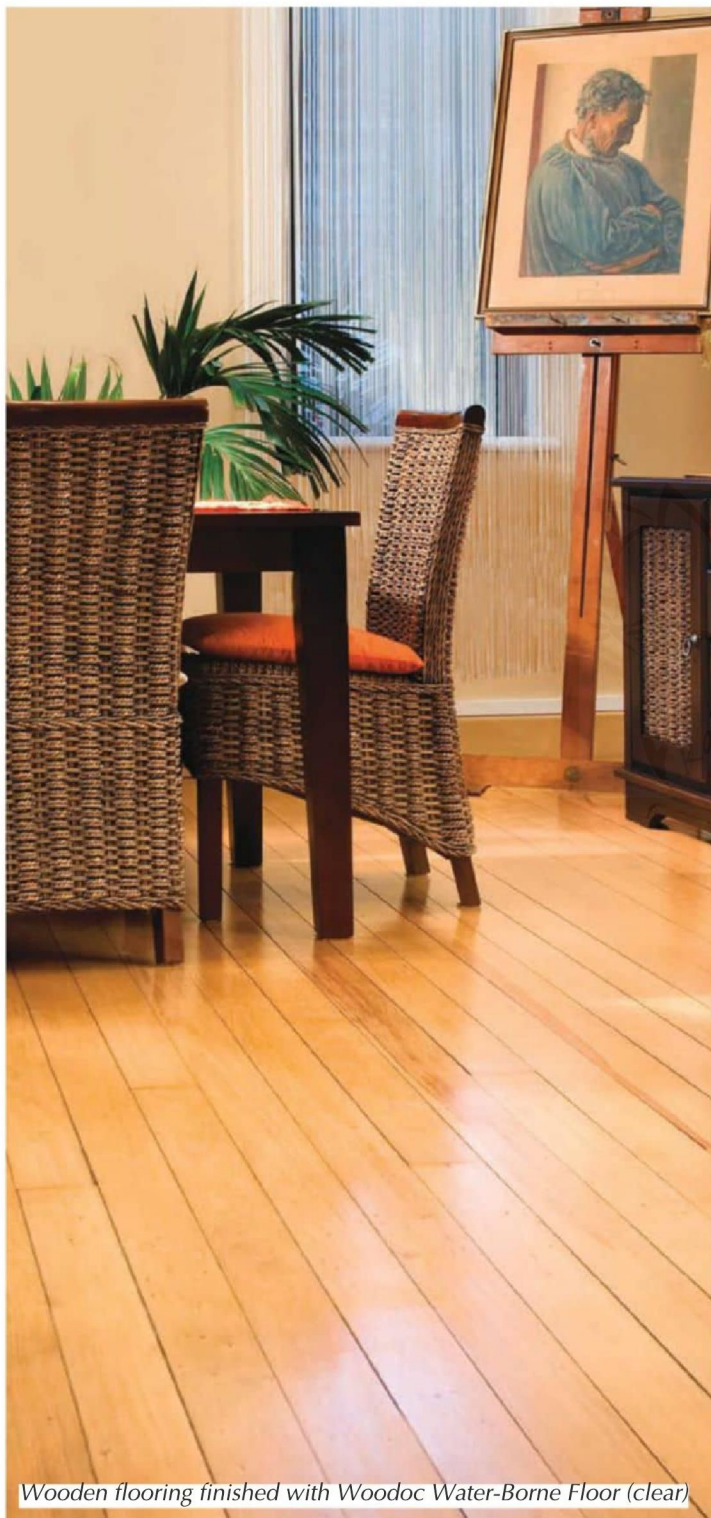
Standard SMS rates apply

kingprice.co.za

FSP no. 43862 | T's and C's apply

CHOOSING THE RIGHT WOOD FINISH

The experts from Woodoc discuss how to choose the right finish to get the best out of your woodworking projects



Wooden flooring finished with Woodoc Water-Borne Floor (clear)

Few things add more to the enjoyment of our environment than to be surrounded by beautifully-cared-for wood, whether it be interior or exterior wooden furniture, floors, woodwork, joinery, or wooden decks. The first step to ensure that wood stays beautiful and to prevent damage, rot, and decay, is to ensure that the wood is correctly treated with an appropriate preservative for the type of use it will be subject to. This is especially important for wood to be used outdoors and specifically if the wood will be used as part of a structure, like a wooden deck.

Look for the SABS mark on the wood that will identify it as having been treated with an appropriate preservative at the sawmill. The next step is to protect the wood against weathering and damage by sealing the wood with an appropriate sealer. The best way to do this is to apply a sealer that can penetrate wood, bind with the wood, and then build up on the surface. This yields a coating that is part of the wood, able to move and “live” with the wood rather than just clinging precariously to the surface of the wood. This is true irrespective of type of wood or application, inside as well as outside.

The process of sealing wood may be broken up into the following essential steps:

1. Carefully inspect the wood to determine the condition of the wood and of the existing finish. Look for any signs of wood rot and make sure the surface of the wood is firm and in good condition. Any suspect areas may be tested by trying to insert a pin into the wood. If the pin cannot be pushed into the wood with mild force, the wood is in good condition. If the pin slips into the wood with little effort, you may have wood rot. Unfortunately, wood rot cannot be fixed, and the affected wood must be replaced as a matter of urgency.

If the wood is in good condition and no repairs or replacements must be done, we can move on to preparation and sealing.

2. If the existing finish is in good condition it may not be necessary to sand and re-seal. In that case, merely treat the wood with Woodoc Deep Penetrating Furniture Wax (for indoor wood) or Woodoc Penetrating Weatherproof Wax. These maintenance products will penetrate the existing finish to feed and rejuvenate the wood beneath and will build up to a beautiful antique patina over time.

If the existing finish is not in good condition (damaged, peeling or flaking, etc.), sand down to bare wood using sandpaper, preferably mounted on a sanding block. Start with relatively coarse paper (60-80 grit) and work your way down to finer and finer paper as the sanding progresses. You should end up with sandpaper of no coarser grit than 180. This is a time-consuming job, but essential to ensure a good finish. The better the preparation of the surface, the better the finish will be. Of course, in the case of a floor or a wooden deck

that must be sanded and re-finished, one is better served by using an industrial floor sander to sand the surface.

Once all the old surface coating is removed the wood should be thoroughly wiped clean with a soft cloth dampened with mineral turpentine. This will remove all the sanding dust and will give you an indication of the real colour of the wood. Just like skin, wood is very light in colour when dry. A solvent-based sealer will rehydrate wood just like moisturizing cream will rehydrate skin, making the skin appear a shade or two darker. When this happens to wood, it is called wood warming and represents the real, or natural colour of the wood. Water-Borne sealers do not have a wood warming effect, so if you prefer the light ("dry") colour, choose a water-borne sealer to finish the wood with.

3. Now, at last, it is time to decide how you want to finish the wood and what sealer to use on it. Typically, interior wood is best protected by a penetrating sealer designed to dry relatively quickly and hard, whilst exterior wood is best protected by a penetrating sealer that dries relatively slowly and retains its flexibility for as long as possible and can protect wood against UV radiation. Consequently, a sealer is specifically formulated as either an indoor sealer, or an exterior sealer.

We often find that customers think that an exterior sealer is somehow 'tougher' than an indoor sealer, and therefore better to apply to indoor wood that will have to survive in trying conditions like a bathroom or kitchen. This is not correct as the exterior sealer will almost always disappoint, being too soft to properly protect the wood.

Likewise, applying an indoor sealer to outdoor wood will be a disaster, as an indoor sealer will simply not last in exterior conditions. Rather use the correct indoor sealer for indoor applications and the correct exterior sealer for outdoor applications.

Having determined what type of sealer is appropriate (indoor or exterior), you must still decide on the type of finish. Do you prefer matt, gloss or something in-between? Do you want a sealer that will "warm" the colour of the wood, or must the wood remain as light as possible in colour? Do you want a clear sealer (colourless) or a tinted sealer? The choices can become quite daunting and in-store help is not always of the same quality.

To make choosing and using the correct Woodoc product easy, we developed a handy tool; a Web Application that may be accessed at www.woodoc.info. Simply type this web address into any browser or, when in-store, use your mobile telephone to scan the QR-code printed on the shelf wobblers at the Woodoc display. You will then access our handy Web Application (the Woodoc Wizard) that will assist in choosing the correct Woodoc product for your needs. Click on the type of application (interior or exterior), the type of finish or colour and the right product choice will appear on your computer or mobile telephone screen. It



An outdoor deck treated with Woodoc Water-Borne Deck

JORGENSEN & PONY.

**ADJUSTABLE HANDSCREWS CLAMPS
LIGHT DUTY AND HEAVY DUTY VISES
PROFESSIONAL WOODWORKERS VISES
PIPE FIXTURE CLAMP
SPRING CLAMPS
GEAR CLAMPS
BAR CLAMPS**

**EST. 1903
PONY TOOLS
INCORPORATED**

For more info and distribution enquiries, Call **Vermont Sales** on (011) 314 7711 and visit www.vermontsales.co.za



really is as easy as that. You can even access our website directly from the Web App or contact us for prompt and expert advice on wood-related matters on WhatsApp by simply clicking the icon that will appear on the screen. Alternatively, send an email to information@woodoc.com or give us a call on 0800 411 200 (during office hours, Mondays to Fridays). Our Toll-Free line is manned by real people with the knowledge and experience to assist you in a meaningful way.

4. Having had some fun with the Woodoc Wizard and chosen the right product to apply to the wood, it is essential that the application must be done correctly. Please read the application instructions printed on the product container very carefully and follow these instructions to the letter.
 - a. The first step is to ensure that the product is stirred very thoroughly. Woodoc products should never be shaken before application. Shaking the product container forces air bubbles into the liquid and can lead to bubbling on application. It also speeds up the drying of the product in the tin and therefore shortens the pot-life of the product. Rather treat Woodoc products like a James Bond martini: stirred, never shaken. Use a flat piece of offcut timber or an old ruler and stir thoroughly, making sure that any heavier ingredients that may have settled to the bottom of the tin is mixed in properly. Repeat the mixing process from time to time whilst applying the product.
 - b. Make sure that the timber surface to be sealed is clean, dry, and well-sanded. It will do no harm to give the wood another quick wipe-down with a cloth moistened with mineral turpentine.
 - c. Now proceed to application. Use only good-quality paint brushes, as a cheap paint brush is nothing more than a source of frustration. Use a brush of the appropriate width for the job at hand. Dip the brush straight into the product and pull it straight out; do not scrape the excess product off against the lip of the tin. If you scrape the bristles against the lip of the tin, you push the bristles apart and let air in. When you apply the product, the air will be squeezed out and cause foaming and bubbles on the wood surface. Rather allow the excess product to drip off the brush, back into the container, and start applying when the dripping slows down.
 - d. Apply the product evenly, re-wetting any areas where the sealer penetrates quickly. The first coat is complete only once the surface is evenly glossy wet with no dull

patches. This is very important, as Woodoc sealers are formulated to penetrate wood and bind with the wood. The first coat is the 'foundation' upon which the product build to offer optimal protection and beautification of the wood. Therefore, sufficient product must be applied with the first coat to completely saturate the wood. The second and third coats applied should not be able to penetrate and must build up on the surface of the wood to complete the finish and protect the surface.

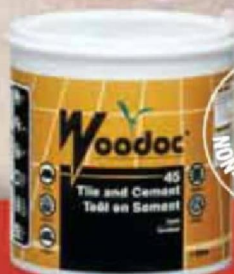
- e. Allow the first coat to dry completely, sand lightly and wipe with a mineral turps cloth. Then apply the second and third coats in exactly the same way.
- f. Wash your paint brushes with mineral turpentine if you used a solvent-based product or with water if a water-borne product was used. Then wash the brushes again, using shampoo and water. Hang the brushes to dry and they will last for many, many years.
- g. If you have any left-over product, it can be saved for a fair amount of time without spoiling. The trick is to close the container lid as soon as possible after use, making sure that the lid fits securely. A light tap with a hammer here and there will help. Store the container upside down in a cool area, away from direct sunlight. The product dries (cures) by oxidation, i.e., it reacts with oxygen to change from a semi-polymerized liquid to a fully polymerized solid. If you find that the left-over product has hardened in the container over time, it cannot be saved by dilution. Rather allow the product to dry completely in the tin before disposing of it.



Applying liquid wax

Creatively fresh

The Woodoc Way



Woodoc 45 is a water-borne sealer, suitable for unglazed, porous substrates making it the ideal solution for unique concrete creations like these.

A safe, non-toxic finish that is water-repellent and stain-resistant too. Gives a clear, gloss- or matt finish and is compatible with the Woodoc Colours Range.

Image and platter by www.tishcarruthersconcrete.com

Our website has full details and "How-to-do"-advice.

Use our new Woodoc Wizard to help find your perfect sealer. www.woodoc.help

Woodoc Products are available at all leading hardware stores. Now also online at www.mysealer.store, a new trusted online partner.



Woodoc
FOOD FOR WOOD™

Woodoc Customer Care: For friendly, personal assistance and advice, phone Toll-Free 0800 411 200, during office hours.

Visit www.woodoc.com

WhatsApp +27 66 302 4702

Build yourself this beautiful platform bed and you're sure to have sweet dreams.



Sweet dreams ARE MADE OF THESE

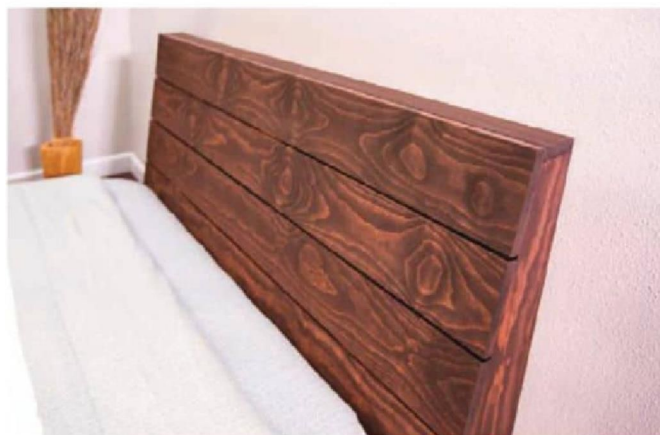
This platform bed offers a sophisticated style you'd pay big bucks for in a store, but this bed is easy and economical to build. Kreg show you how to make it from pine boards which you can get at any home centre or hardware store that can be stained for any look you'd like.

Tools and materials

- Miter saw
- Jig saw
- Tape measure
- Drill/driver
- Pocket-hole jig
- Sander
- Wood glue
- 100 x Kreg 32mm coarse-thread pocket-hole screws
- 26 x 50mm flat-head wood screws
- 40 x 32mm flathead wood screws
- 16 x 28mm connector bolts
- 16 x 28mm connector nuts

WOOD NEEDED

- 1 x 19mm x 64mm x 1800mm board
- 13 x 19mm x 140mm x 2400mm board
- 1 x 19mm x 184mm x 2400mm board
- 8 x 19mm x 140mm x 2400mm board (#2 grade for slats)
- 2 x 38mm x 38mm x 2400mm board



Step-by-step guide

Step 1: Cut six Legs and two Back Legs from a 19x184mm board, as shown in the cutting diagram. Cut the angle, as shown, on the Legs (but not the Back Legs) using a jigsaw. Then sand the cut edges smooth. With your pocket-hole jig set up for 19mm material, drill pocket holes on four of the Legs, making sure they mirror one another as shown.

Step 2: Assemble the Legs and Back Legs as shown to create four leg assemblies. Use 32mm coarse-thread pocket-hole screws

Step 3: Cut one Head Rail and one Foot Rail to size from 19 x 140mm boards, as shown in the cutting diagram. Then drill pocket holes where shown.

Step 4: Glue and clamp the Foot Rail to the two leg assemblies that have angled sides, and then secure the parts by driving four 32mm flathead wood screws through the Foot Rail from inside, and into the leg assembly. Attach the other leg assemblies to the Head Rail in the same way.

Step 5: Cut the Headboard and Footboard Caps to length from 19 x 140mm boards, as shown in the cutting diagram. Attach the caps to the Leg and

Rail assembly with 32mm coarse-thread pocket-hole screws, as shown.

Step 6: Cut two Side Rails to length from 19 x 140mm boards, as shown in the cutting diagram. Then drill pocket holes where shown.

Step 7: Cut two Side Caps to length from 19 x 140mm boards, as shown in the cutting diagram. Attach the Side Caps to the Side Rails, as shown, using 32mm coarse-thread pocket-hole screws.

Step 8: Cut two Rail Cleats from a 38 x 38mm board, as shown in the cutting diagram. Then drill 10 evenly spaced pilot holes for 4mm flathead screws that will be used to attach the Rail Cleats to the Side Rails.

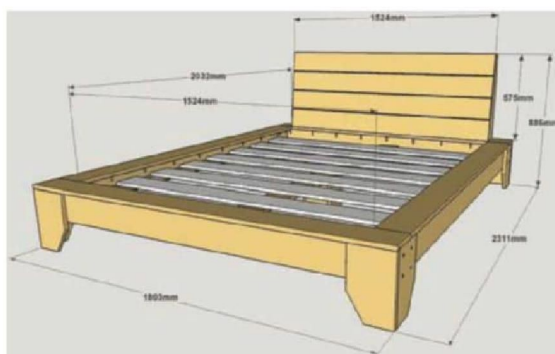
Step 9: Attach the Rail Cleats to the Side Rails where shown using glue and 50mm flat-head wood screws.

Step 10: Now you need to drill holes for the connector bolts that will be used to hold all of the leg/rail assemblies together. To do that, first clamp the head rail assembly and the foot rail assemblies to the side rail assemblies. Now lay out four holes, as shown. Then drill the holes all the way through each

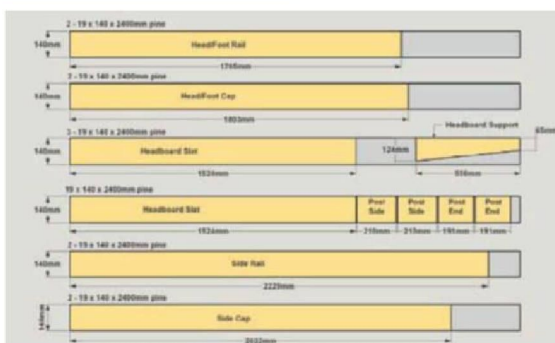
PARTS LIST

6 x Leg	19mm x 184mm x 292mm
2 x Back Leg	19mm x 184mm x 292mm
2 x Head/Foot Rail	19mm x 140mm x 1765mm
2 x Head/Foot Cap	19mm x 140mm x 1803mm
2 x Side Rail	19mm x 140 x 2229mm
2 x Side Cap	19mm x 140 x 2032mm
2 x Rail Cleat	38mm x 38mm x 1918mm
3 x Headboard Support	19mm x 124mm x 556mm
4 x Headboard Slat	19mm x 140mm x 1524mm
1 x Headboard Top	19mm x 64mm x 1524mm
2 x End Cleat	38mm x 38mm x 254mm
2 x Centre Post Side	19mm x 140mm x 210mm
2 x Centre Post End	19mm x 140mm x 191mm
1 x Centre Support	19mm x 140mm x 2235mm
8 x Slat	19mm x 140mm x 1715mm

Note: Measurements may be rounded up/down to standard sizes



1. The dimensions of the bed



2. Cutting diagram 1



3. Cutting diagram 2



Leg and Rail using a 6mm drill bit. The connector bolts will pass through these holes. Unclamp the assemblies. Next, you need to enlarge the holes in the Rails to 9mm to accept the connector nuts that the connector screws thread into.

Step 11: Cut three Headboard Supports from 19 x 140mm boards, as shown in the cutting diagram. Then cut the angled shape in each one using a jigsaw. Sand the cut edges smooth. Next, drill pocket holes in the Headboard Supports where shown. Note that you'll need to make two that are 'mirror images.' That way, the pocket holes will be on the inside faces of the outer Headboard supports, and won't show when everything is assembled.

Step 12: Cut four Headboard Slats from 19x140mm boards, as shown in the cutting diagram. Then cut one Headboard Top to length from a 19x64mm board.

Step 13: Now you can attach the Headboard Slats and the Headboard Top to the Headboard Supports. Start

by attaching the lowest Headboard Slat using 32mm coarse-thread pocket-hole screws. Then attach the Headboard Top. Now add the uppermost Headboard Slat, making sure the edge is flush with the Headboard Top, as shown. Finally, add the two remaining Headboard Slats. Positioning them so there are equal gaps between all of the Slats.

Step 14: Attach the Headboard assembly to the Headboard Cap where shown using 32mm coarse-thread pocket-hole screws. Cut two End Cleats to length from 38 x 38mm boards, as shown in the cutting diagram. Then attach the End Cleats to the Head Rail and Foot Rail where shown using glue and three evenly-spaced 50mm flat-head wood screws.

Step 15: Cut one Centre Support, two Center Post Sides, and two Centre Post Ends from 19 x 140mm boards, as shown in the cutting diagram.

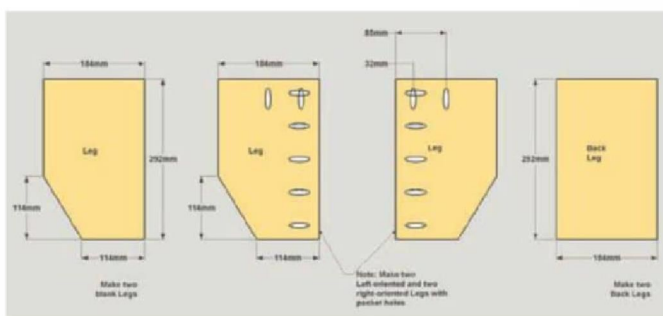
Step 16: Attach the Centre Post Ends and Sides one another, and to the Centre Support, as shown, using 32mm flat-head wood screws.

Step 17: With 16 connector nuts and bolts, attach the rail assemblies to the headboard and footboard assemblies. Set the Center Support assembly in place and screw the ends to the End Cleats using two 32mm flat-head wood screws at each end. With that done, you can give the bed a final sanding, and paint or stain it to your tastes.

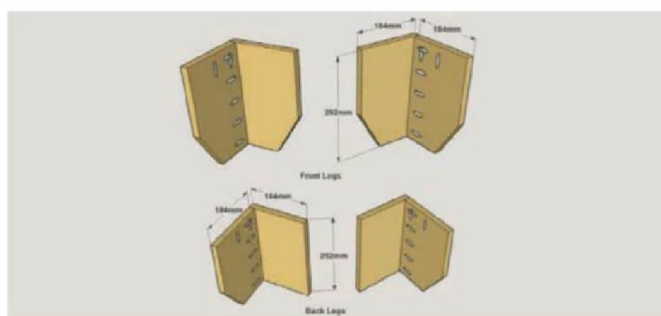
Step 18: Cut eight Slats to length from 19 x 140mm boards, as shown in the cutting diagram. For these, you can use lower-grade boards. Once you have the platform bed set up where you want it, lay the Slats on the Rail Cleats and Center Support, spacing them evenly. The Slats don't have to be screwed in place; the weight of your mattress will hold them in position. Once you set your mattress in place, your bed is ready.



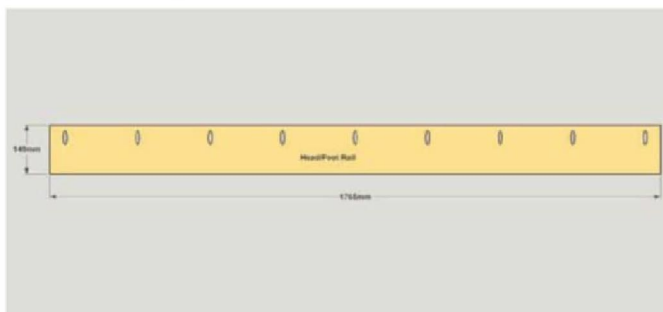
Project copyrighted by Kreg Tool Company. Used with Permission. All rights reserved. For more information, visit www.kregtool.com, and for more projects, visit www.buildsomething.com



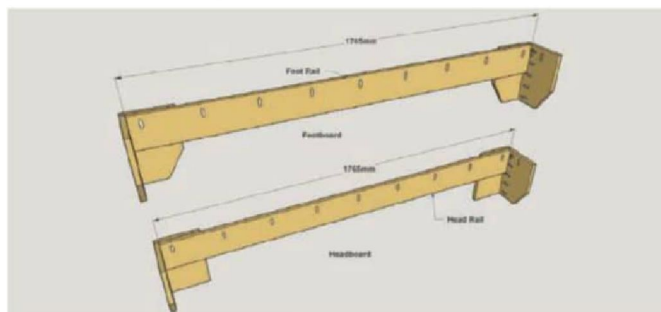
3. Make the Legs



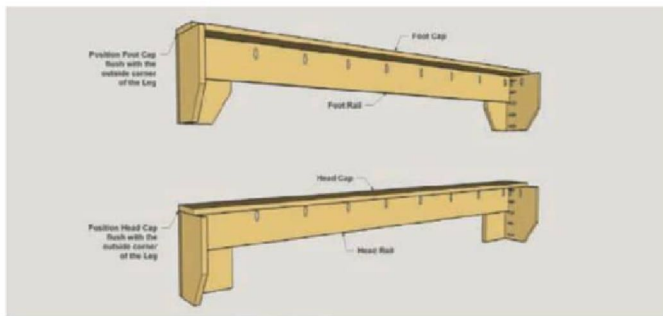
4. Assemble the Legs



5. Make the Headboard and Footboard Rails



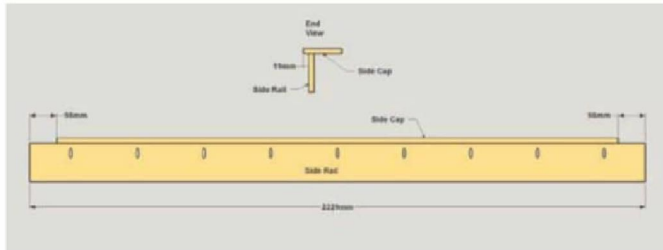
6. Connect the Legs and Rails



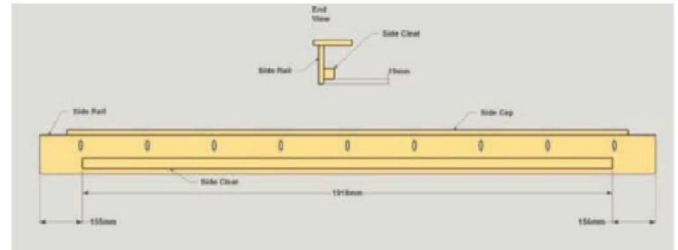
7. Make the Head and Foot Caps



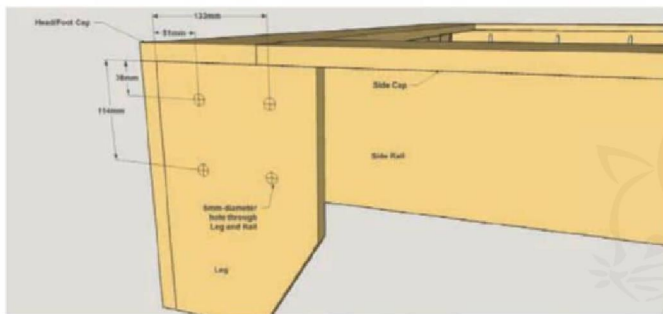
8. Make the Side Rails



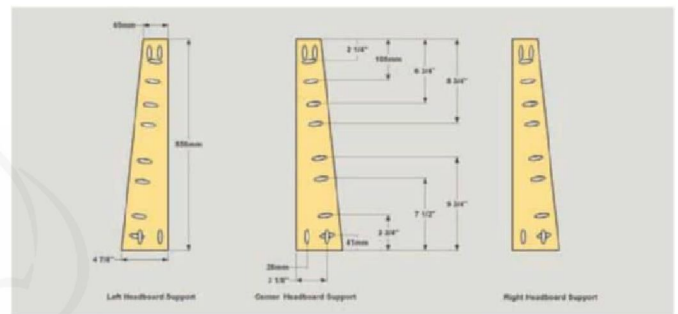
9. Attach the Side Cap to Rails



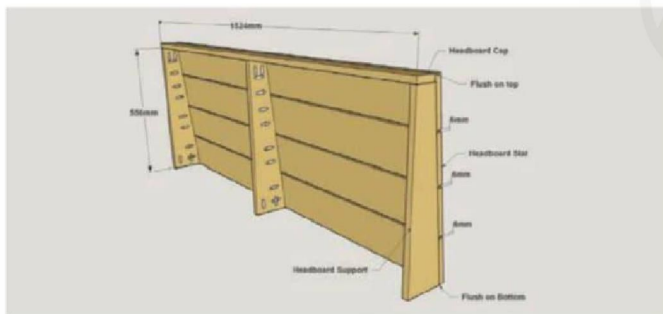
10. Make and the attach the Rail Cleats



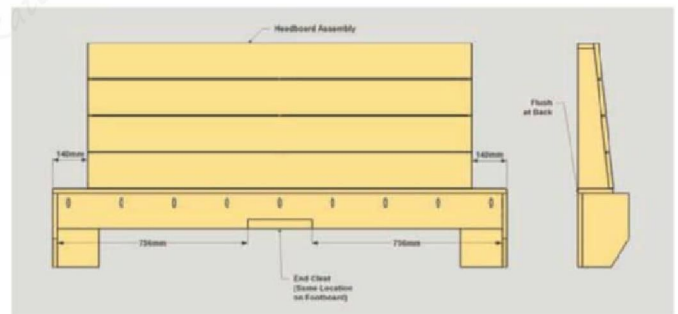
11. Lay out and drill holes



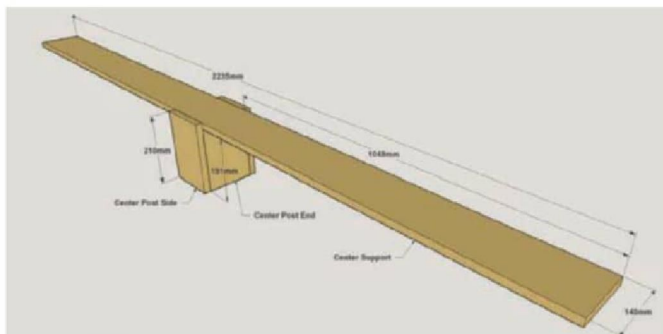
12. Make the Headboard Supports



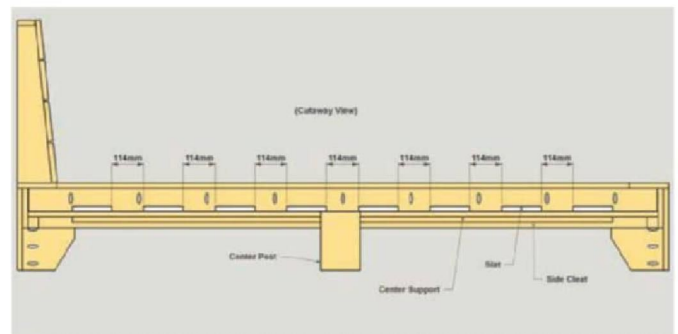
13. Assemble the Headboard



14. Mount the Headboard and End Cleats



15. Make and assemble the Centre Support



16. Add the Slats

For a high res version of the dimensions and measurements of this project, email editorial@homehandyman.co.za

Before getting started on a steel table build which I had been planning, I had to look for a bench vice. In the end I made my own...

MAKING A STEEL BENCH VICE

>> John Heisz

My experience in the past with the lower cost vices was not positive, in that I've owned two and broken two. The first split along the 'anvil' surface (flat area behind the fixed jaw) from pounding out metal on it. Since then, I've been told that this is not to be used as an anvil. If that's the case, why make it so darn attractive to use like that? Machined flat, the right size and in a good location...

The second one broke where the lead screw threads in. I tried to weld this together again, but the repair didn't hold.

Both of these vices were made from cast iron. Cast iron is perfect for making cheap vices, since it is a cheap material itself, has a relatively low melting point, good fluidity and castability. However, it is brittle and not as durable as most other iron alloys, like steel, for example. It is

also very difficult to weld effectively, so repairs to a fracture are usually not long lasting.

Steel, as a vice material is fairly uncommon, and I was taken aback by some of the prices I saw for such vices. Even the better quality cast iron units (ones that use ductile iron) came with a hefty price tag, especially the larger ones. Confronted with this dilemma, I had to either settle for cheap one and hope it doesn't break, or empty out my bank account to obtain a vice of good quality, I went with the third option: take a shot at making one myself.

It took me roughly a day to make this vice complete. This is thanks, in large part, to the very accurate SketchUp model. All I had to do was cut out the parts and weld them together, with very little adjustment required.

Cost was low; the only items I had to buy were the threaded rod, nuts and the welding wire for my machine. The rest of the material I already had, from various sources.

Regardless of the money saved, I now have a good vice that can withstand some abuse, and if I ever break it, I can certainly repair it.

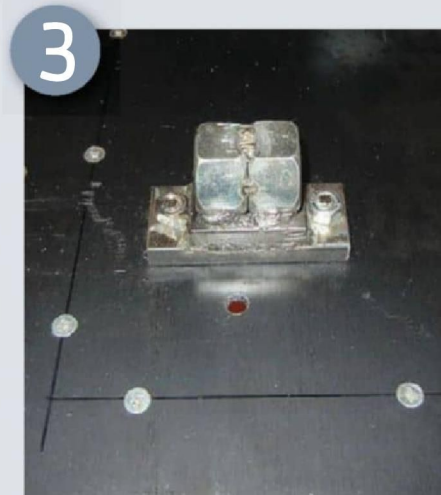




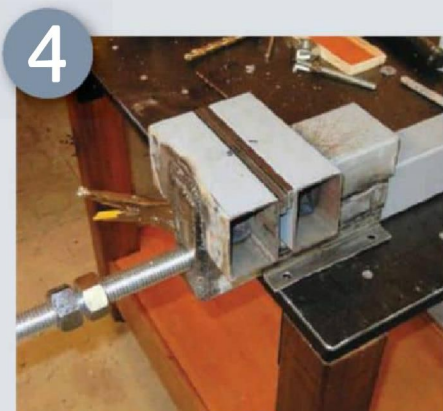
1 I used rectangular tubing for the majority of the vice. Here are all of the parts cut and ready to assemble



2 The vice uses a 1-inch threaded rod as a lead screw and what it screws into must be strong. I've used two nuts, welded to two thicknesses of steel bar stock



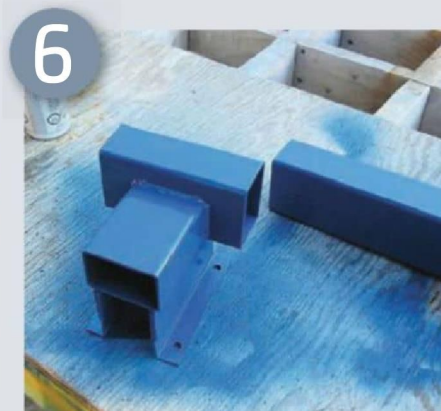
3 This is bolted directly to the table surface



4 Much of the assembly done, the lead screw is tried and measured



5 This vice has a fairly large capacity, with 150mm wide jaws and more than 150mm throat depth



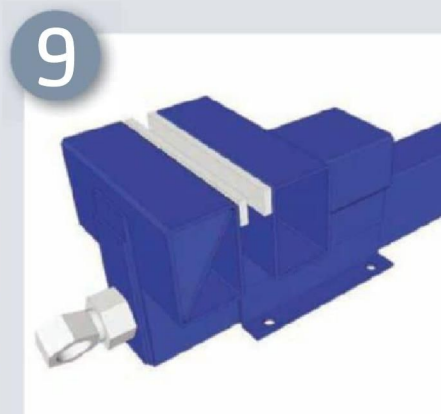
6 Once the vice was finished, it was time for paint



7 After cleaning the parts with mineral spirits, I sprayed on three coats of paint



8 The parts were left to dry a full day before putting the vice back together



9 An accurate SketchUp model made the whole process much quicker

For the SketchUp plan, email editorial@homehandyman.co.za Note: you will require the SketchUp programme to view the file



Many homeowners tend to neglect their gardens in autumn and winter, which is a pity as that is really the time when you can do the landscaping and reorganising that you don't have time for in spring and summer.

Maintaining your garden IN WINTER

State agents agree that an immaculate garden can increase the value of a property by as much as 20%. Buyers are also attracted by well-kept outdoor areas, so maintaining your garden year-round makes good sense – especially if you are thinking of selling.

Whatever the season, there is always work to be done in a garden, and most people are too busy to do it themselves so their gardens never look their best. With regular maintenance throughout the year, you can have an exceptional garden, so don't put your professional garden services on hold just because the lawn doesn't grow as fast as it does in summer.

Garden maintenance entails more than just mowing the lawn, and most gardens could do with a general clean-up after summer. Gardeners and garden services are only too happy to spend winters trimming shrubs, trees and shaping hedges. Other tasks could include digging over flower beds in preparation for spring planting, removing weeds from paving, raking up leaves, weeding and general planting as well as digging up and replanting an entire lawn.

Landscaping aspects of the job could include laying of new lawns, building flowerbeds, and choosing suitable plants and features. This might also be the time to put up a pergola, lay down paving or make a new water feature.

Autumn and winter gardening tasks could include:

- Pruning of roses should be carried out from mid-July to August.
- The colder months are also the time to prune shrubs like honeysuckle, butterfly bushes, hibiscus, lavenders, verbenas, tibouchinas and viburnums as well as vines, trees, and fruit trees.
- Cut out dead branches from garden trees and transplant woody shrubs.
- Plant summer-flowering bulbs like nerines and daffodils as well as the lilies including Aztec, ifafa, plantain, pineapple, flame, and spider lilies.
- Prepare herbaceous borders for planting in spring by digging over the soil and adding plenty of manure and compost.
- For winter colour in the garden, interplant winter-flowering seedlings with spring-flowering bulbs. Prepare the bed before planting seedlings like alyssum, calendula, bokbaaiygie, phlox, pansies, fairy primulas, dianthus, Iceland poppy and candytuft. Then plant some indigenous bulbs like Ixia, Sparaxis, Tritonia, Babiana, Freesia and

Lachenalia. These are easy to grow and can be left in the ground to sprout again next spring.

- If you have a patio or decking, use a pressure washer to spray away any grime and slime, and consider applying a fresh coat of paint or varnish.
- If you have an existing garden shed or studio, make sure the wood has been treated so that it is weatherproof, and you can easily give it a facelift by adding a touch of colour.
- Freshen up a perimeter fence with a coat of paint or varnish.
- If your home is overlooked by other homes or gardens, winter would be a good time to create the feeling of privacy in the garden. Adding hedges or trees in key spots will enable potential buyers to imagine themselves enjoying a peaceful afternoon outdoors.

Add a shed or a studio

Adding a garden building – from a shed to a summerhouse or a log cabin – provides extra space at a fraction of the cost of a building extension. The outdoor room can be used as an entertainment area, a workshop or studio, an office, a gym or a small cinema room. In many municipalities garden buildings won't require planning permission, so it can be a relatively simple process. But be sure to check with your local authority. The colder months are an ideal time to carry out the projects needed to optimise your home.

Care for grass in winter

Grass needs to be regularly maintained to look neat and attractive by cutting, fertilising and watering it. Winter can cause these lush green summer lawns to either turn muddy or threadbare, depending on where you live. Winter in South Africa can be broadly separated in two types of climate – cold and wet, and cold and dry.

Common problems with winter lawn:

- **Dehydration and over-hydration:** It is difficult to keep up a lush, green lawn in dry areas during winter. Even in the winter, grass needs moisture, and cold weather can damage your grass and soil and dry it out. If your area experiences regular frost, make sure you choose a more frost tolerant grass. Lawn can also easily become over-hydrated in winter by giving it too much water.
- **Fertilizing:** Fertilize your lawn according to the seasons. Use a fertilizer high in phosphate (a 2:3:2 fertilizer) in winter, which will encourage root development. During warmer months, a nitrogen-rich fertilizer will encourage leaf development. Remember to water your lawn thoroughly after fertilizing.
- **Irrigation:** A well-irrigated garden is important if you live in an area with a high winter rainfall. When excess water is allowed to pool around the roots it will cause them to rot.



MOST POPULAR LAWN GRASS VARIETIES:

Kikuyu (*Pennisetum Clandestinum*):

- More affordable than other grass types.
- Fast growing, vigorous grass which needs good soil, plenty of fertilizing and water.
- Plant in sunny positions.
- Does not do well in shade, although it can grow in light shade.
- Tends to invade flower beds and paved or tarred areas.
- Not a Waterwise grass.

Buffalo (*Stenotaphrum secundatum*):

- More expensive than Kikuyu.
- Slower growing grass, flatter in habit with deep green-grey blades.
- Will grow in either full sun or part shade (will grow in up to 60% shade).
- Waterwise – does not require much watering, fertilizing or cutting, and the soil can be light, heavy, damp or dry.

Bermuda (*Cynodon Dactylon*):

- Fast growing grass (grows vigorously in summer and slower in winter).
- Best suited for sunny positions and light sandy soils (can also grow on heavier textured soils).
- Does not require as much feeding, watering or cutting as Kikuyu (unless one is using it or one of the other varieties of Cynodons for golf tees, putting greens and bowling greens).

LM Berea (*Dactyloctenium australe*):

- More shade tolerant than Buffalo grass, and recommended for a lawn in a shady area (can tolerate up to 80% shade).
- Set your lawn mower to the maximum height setting when cutting grass in the shady areas of your lawn.

Gulf Green (*Cynodon Transvaalensis*):

- Gulf Green or Golf Green is an indigenous, quick growing species, ideal for manicured areas of lawn.
- Best suited for the wet Western Cape winter, as it keeps its colour and soft texture throughout the cold months.
- This lawn loves water, and responds well to traffic.
- Not for the dryer interior regions in the winter, and does not grow well in frost areas.

Other options:

That spot in your garden that consistently suffers in winter, can be replaced by flower beds or a paved path. Or you can invest in artificial lawn or fake grass to keep that trouble spot looking lush and green.

For more information, visit www.privateproperty.co.za and www.gardenwise.co.za



HITACHI
Inspire the Next
Whether it's restoring an old piece of furniture to its former glory or installing new flooring, the right tool makes any project go that much smoother.

MUST-HAVES for the intermediate DIY'er

Not only will having the appropriate tool get the job done right, but it will also save you precious time that you could use doing something else. With that in mind, here are a few intermediate power tools that every DIY'er should have on hand in order to be prepared for the majority of projects around the house.

Nail gun

A nail gun can really come in handy with projects that require brad or finish nails. This includes installing wall trim or moulding, and really anything that needs a fastener with a low profile. While nail guns come in all shapes and sizes, the easiest and most convenient ones to use are battery-powered. Along with the convenience of being cordless, these battery-powered nail guns also eliminate the need for an air tank. The best part about nail guns is they are easy to use. Just install the correct nail that corresponds to the project and you are ready to go.

Rotary tool

The biggest strength of a rotary tool, like many of the other tools on this list, lies in its utility. When used with the right attachment, this tool can drill, sand, grind, sharpen, saw, rout, polish, clean, engrave, and carve a number of different kinds of material. They come in a number of different options including cordless, which makes this tool a perfect fit for just about any level of DIY project.

Sander

More often than not, you will come across a DIY project that involves working with a wood surface. When this happens, a

power sander will quickly become your best friend. Not only will this small device save you hours of hard work that comes with having to sand down surfaces by hand, but it's also super easy to use. Simply buy the appropriate type of paper for the job, attach it to the sander, and get to work.

Jig saw

The jig saw is king when it comes to cutting curved lines on the go. This makes it a very versatile tool that can be used for a number of different projects, from cutting drywall to framing pieces. Another great aspect is the amount of options available, including jig saws that are wireless and ones that have laser guides. Jig saws can be used to cut wood, steel, PVC, rubber, almost any material depending on the type of blade you use.

Circular saw

For cuts that need to be made quickly and on the go, a circular saw is the tool for the job. Whether its cutting pieces of plywood to length or cutting down some wood for a framing project, a circular saw can really make a job go faster and comes with a fairly reasonable price tag. Furthermore, circular saws come in a variety of shapes and sizes, so finding one to fit your needs is pretty straightforward. For jobs that require limited cuts, consider purchasing a smaller, cordless circular saw, which are easier to handle and manoeuvre especially well in tight spaces.

Impact driver

Impact drivers are starting to become a staple in many DIY toolboxes because of their ability to drive screws effectively. In fact, an impact driver can drive a screw better than any other

tool on the market, including cordless drills. They are extremely useful if you find yourself involved in projects that require driving a lot of screws into hard surfaces, like installing new subflooring or building an extension to your deck. Although they are similar to a cordless drill, impact drivers use a collet that takes hex-shank bits instead of the usual chuck bits that are common in most drills.

Mitre saw

Perhaps the greatest part of a mitre saw is its versatility. While

one might be quick to dismiss it as a tool for the advanced DIYer, mitre saws can be used for a host of simple projects. Specifically, a mitre saw's best feature is its ability to cut angles, which makes it perfect for cutting trim and frame work. To get the perfect cut every time, simply turn the saw to the desired angle and pull down.

Of course, as is true with all the tools on this list, make sure you follow all the safety measures that are outlined in the manual to ensure you remain accident-free.

30 TIPS FOR HAND AND POWER TOOL SAFETY

The danger of hand and power tools is evident in the 400 000 emergency room visits they account for each year. But many of those emergency room visits are caused by misusing tools and not working safely. When used correctly and with the proper safety measures, you can significantly reduce the chance of an accident.

The Power Tool Institute distinguishes three significant reasons for injuries caused by power tools:

- **Unexpected causes:** Most of the power tools work with high speeds so when things occur, they took a few seconds. Surprising occasions are bound to end severely when administrators are unpractised or inexperienced, plan inadequately or don't know the function of a specific tool.
- **Overconfidence or inexperience:** The most common cause of accidents is due to inexperience or overconfidence. The inexperienced operator fails to recognize the danger and the experience one does the fault because of its overconfidence.
- **Complacency or inattention:** The chances of risk increase when the person is in a hurry to finish their work before the deadline. Regardless of how able and certain the administrator, the person should not permit oneself to get self-satisfied.

General safety tips for hand and power tools:

- Buy quality tools. Many tools, including cutters and hammers, should be made of steel and should be heat-treated.
- Regularly inspect tools to make sure they are in good shape and fit for use.
- Be sure to maintain your tools by performing regular maintenance, like grinding or sharpening. Always follow the manufacturer's instructions.
- Dress for the job by avoiding loose clothing or articles that can get caught in a tool's moving parts, like jewellery.
- Wear appropriate personal protective equipment, like leather gloves.
- Use the right tool for the job. In other words, don't try to use a wrench as a hammer.
- Make sure that your feet are planted on a stable surface.
- Be aware of the people around you and make sure they stay clear of the tools you are using.
- Never carry tools up a ladder by hand. Instead, use a bucket or bag to hoist tools from the ground to the worker.
- When working at heights, never leave tools lying out in the areas where they could present a hazard to workers below.

- When appropriate, secure work with a clamp or vice to keep it from slipping.
- Never carry pointed tools in your pocket. Carry them in a toolbox or cart instead.
- Inspect your tools on a regular basis, checking for damage.
- Make sure to keep extra tools handy in case the tool you had planned to use is damaged.
- Make sure tools are stored in a safe place.

Safety tips for electric power tools:

- Keep floors dry and clean to avoid slipping while working with or around dangerous tools.
- Keep cords from presenting a tripping hazard.
- Never carry a power tool by its cord.
- Use tools that are double-insulated or have a three-pronged cord and are plugged into a grounded receptacle.
- Do not use electric tools in wet conditions unless they are approved for that use.
- Use a ground fault circuit interrupter (GFCI) or an assured grounding program.
- Use appropriate PPE.

Safety tips for pneumatic tools:

- Verify that all parts of the tool are fastened securely before use.
- Never point a compressed air gun at yourself or another person.
- When you are finished using the tool, make sure that the pressure is released before you break the hose connections.
- Use a safety clip or retainer to prevent attachments from being ejected during operation, and use a chip guard when using high-pressure compressed air for cleaning. Be sure to limit the nozzle pressure.
- Always wear eye protection.
- Use screens to protect nearby workers from flying fragments.
- Never leave your tool unattended.
- Never store a loaded air gun.

We got tired of seeing my shoes piled in a heap at the entrance door. So, some tidying-up was needed.

A SHOE-IN PROJECT

>> Geoff Hollingdale

From the scrap pieces in the workshop wood stock, a shoe rack was designed. It is sufficiently robust so you can sit on the rack while you put on or take off your shoes.

There are many designs you can follow posted on the web but the design used was inspired by keeping it simple. This essentially simple design has its carcass made from 16mm veneered chip board with inner supports made from a standard cut size of PAR pine.



Step-by-step guide

Step 1: Prepare the Side Supports. Start by cutting the frame (the two side pieces and the top) from a piece of 16 mm veneered chipboard.

The diagram (Fig. 1) shows the dimensions I used. You could scale up and down, triple-deck depending on the number of pairs of shoes you need to store; mine was quite modest, the wife's, well...

The top was to be 'hidden' dowelled to the side supports; the cross-support pieces dowelled to the side supports. 8mm dowels would be used.

Okay, so the top, and two side supports have been cut to size (I gave the 'man' in my local wood shop some lunch money as I don't have a table or circular saw) and now I set-up the two side supports to cut the slots. This was done for both sides using a router and a simple jig to hold the two pieces and I used a scrap, straight piece of wood as a cutting guide. You need to do this as a series of passes to cut to the required depth (about 8mm) and the required width of the chipboard.

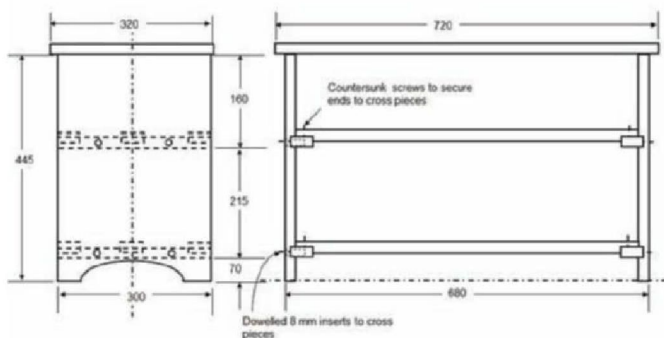


Fig. 1: Overall dimensions

There are a few important things to bear in mind before starting:

1. You need to check you're wearing safety glasses (even if you've got normal eyewear), plus you've got safety earplugs, not bits of cotton wool stuffed in your ears.
2. Chipboard, MDF and SA Pine are not easy materials to work with. The glues used to bind machine made products wear-out tools quickly and you can't make deep cuts with home handy-person routers; sanders get clogged easily. Pine is not very good to work with; it tears easily and the knots in the wood don't cut well. Together with the resinous nature of the material which, like the machine-made materials, cause over-heating of tool bits.
3. Before cutting, recheck and check again where the router cutter is set; do a very light 'kiss' of a test cut to see if the cutter lines-up with the pencilled slots marked on the material.

Step 2: Start cutting the side slots. Keep the router moving at a steady pace with a very thin 2 or 3mm deep cut across both side supports. Fig. 2 shows this in progress.

I don't have any professional tools, just a basic router, power drill, sanders. I do have lots of clamps, (you can never have enough clamps) and a trusty Workmate bench.

Step 3: Drill the holes for the dowels, which will strengthen the fixing of the side supports. I guess you could have simply glued the supports in place, even screwed and glued, but I needed a little more strength as I usually sit on the shoe rack to put on/take off my shoes so I used dowels.

Fig. 3 shows the step of drilling, (I have the 'luxury' of a drill press), of the holes (8mm) to locate the dowels. Drill a small pilot hole all the way through, then reverse the workpiece and use an 8mm dowelling drill.

Drill carefully to avoid a ragged hole. Later, the dowels can be glued and tapped into position. The dowel will be trimmed to finished flush with the surface. If you are happier with a screw securing the sides, drill and countersink for a 5 x 30mm screw.

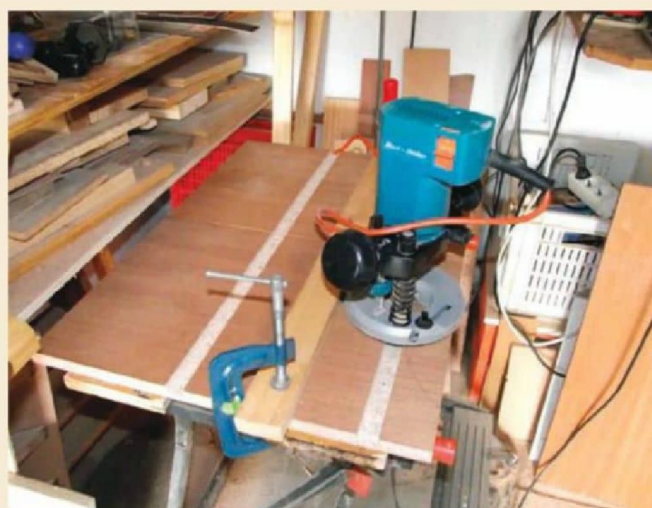


Fig. 2: Cutting the two slots on the side supports



Fig. 3: Preparing the dowel fixing to the sides



Fig. 4: Drilling the side supports



Fig. 5: Dowelling the top



Fig. 6: Cutting the curve on the side supports



Fig. 7: Gluing and clamping the sides to the top



Fig. 8: Clamping the side supports in position; positioning and marking the cross stretchers

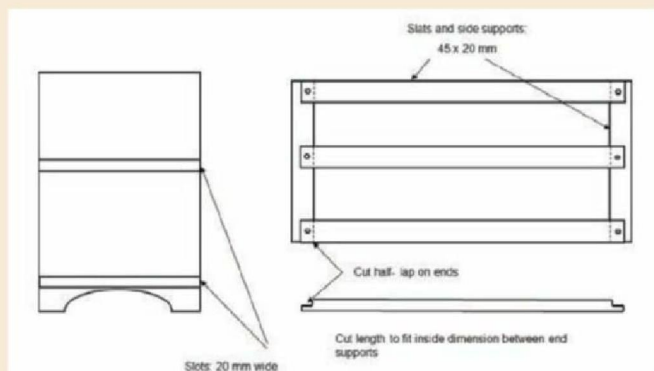


Fig. 9: The assembly of the cross supports and stretchers

Step 4: Preparing the top. This is quite straightforward. Here dowelling holes for 8mm dowels are drilled into the top; matching 8mm holes are drilled into the side supports. The best way to take the fiddling about trying to line-up dowels is a dowelling jig. I treated myself to a JointCrafter 1360A by Milescraft.

There are other designs and makes available, but this one works well. Like any other tool jig, you need to spend a bit of time learning how to use it and practising on scrap – then it's a breeze to get perfectly aligned dowelled joints.

In Fig. 4 you can see the jig in action creating the holes to match those in the top. To make sure you don't over-drill the depth of dowel holes, you can fit a 'stop' collar onto the drill bit. When purchasing a dowelling drill a stop collar is often included in the package.

Note the handy clamp being used as a 'third hand' to hold the dowel jig in position. As I said, you can never have enough clamps.

Remember, when drilling the holes in the top do not to go all the way through. See Fig 5.

Step 5: Finishing the side supports and edging. Before getting to the stage where the top is glued to the side supports, we need to just finish-off a couple of jobs.

The first is to cut the circular cut-out at the bottom of each side support. For this a marking template needs to be made from stiff paper board/cardboard. You can use a piece of flat aluminium strip to get the curve right. Use a marking pen to show the width of the side support. Transfer the curve to the paper board/cardboard and trim the curve shape with a box cutter. Cover the bottom of the side support with two or three widths of masking tape. Now you can transfer the curve along which to cut to the side support.

I used a jig saw to cut the curve shape. Its rather important to choose the right jig saw blade depending upon the material you're using. Don't start cutting with the nearest blade that comes to hand. Too coarse and the jig saw will create a rough cut; too fine, a burning smell will be the result as the jig saw battles to cut and jams in the chip-board or MDF. Check on the recommended TPI in the handbook for the jigsaw. You did keep the handbook didn't you?

Fig. 6 shows the process as I cut the curve. I finished the shaping with a wood rasp. I have removed the masking tape to show the resulting clean cut. The masking tape stopped the veneer from tearing/splitting.

The other remaining job as I was using veneered chipboard was to use some 'iron-on' edging strip to finish the sides of the side supports and the top. This is easy to do and you 'borrow' the 'management's' iron to do this. Iron-on the strips

using the 'cotton' setting. After the glue has dried, trim the excess off with a sharp chisel or a box cutter and lightly sand edges. You can also purchase lengths of glue-on edging strip.

Remember to put the iron you 'borrowed' back in exactly the place it normally sits, clean of any sawdust.

Step 6: Gluing the sides to the top. The only careful check needed at this stage is to ensure that the sides are at right-angles to the top when gluing the top to the sides. Start by lightly gluing the dowels, tap into position on the top piece.

Lightly, do not over glue, glue along the top of one of the support pieces. Use a rubber or nylon headed mallet and tap the top into the side piece. You can see in Fig. 7 how I used a large block, cut with the sides at a right-angle (check) to ensure the top was at right-angles to the side support.

Note also, the use of clamps to secure the side support while the glue dries. Repeat this process on both sides, call it a day. Leave overnight for the glue to set.

Step 7: Setting the side supports and cross stretchers in position. Once the glue of the frame has set, sand-down using a 220-grit paper. Coat all sides using a wood sealer. I used Woodoc 5 Indoor Polywax Sealer (Velvet). Leave to dry.

The next step is to position the side supports in the slots and get the dimensions needed to cut the cross stretchers (6) to size. As the cross stretchers are secured by both gluing and screw fixing, the position needs to be marked where the pilot holes for the screws are located.

The cross stretchers have a half-lap joint cut into both ends. Once the side supports are positioned, a measurement can be made to determine the overall length of the cross stretchers and the depth of the half lap. Do the measuring again using the rule of checking, then double checking. "Measure twice, cut once, no mistakes, no yelling and shouting".

I used standard 45 x 20mm PAR pine for the side supports and cross stretchers. The pieces were sanded then stained once cut to reasonably match the veneer used on the top and side supports.

Drill a pilot hole through the ends of each stretcher, positioned by measuring in from the ends about 20mm. Use the type of countersink drill bit you can see in Fig. 8 to drill and countersink in on go.

You can also see in Fig. 8 the action of clamping the side supports in position; the process of marking the position of the pilot holes for the screws in the cross stretchers.

The side supports have been clamped into position; the position of the pilot hole used to secure the stretchers has

been marked. Note: At this stage the half – lap has not been cut. The cutting position has been lightly marked on the underside. It's not critical to get a super accurate perfect fit.

Remember when you are working with the cross stretchers they are on the reverse side to where they will be screwed and fitted. You'll be able to locate where they are positioned as the pilot hole goes all the way through the side support. Mark on pieces of masking tape that the support is e.g., bottom, right hand; a stretcher is outside front, arbitrarily marking the frame "front", "left" and "right".

Repeat the process with the other five cross-stretchers. Remember to position the middle stretcher half-way on the supports.

Mark and cut the half lap joints on each end. Use a tenon or back saw to accurately cut the half lap. Fig. 9, shows a side and top view of the slats/stretchers and cross supports.

Step 8: The top and bottom slats/stretchers and be assembled to the side supports as a unit. Position the top and bottom assemblies using the masking tape marked pieces as a guide. Double check you've got the pieces correctly positioned.

Very lightly glue each half lap joint and fix in position using a 4 x 20 screw. Clean-up any squeezed-out glue. Leave everything until the glue dries.

Hand sand down each assembly with a 120-grit paper. I then used wood stain close to the colour of the top and side supports. When dry, apply a coat of wood sealer. Leave to dry. Rub down lightly, give another coat. Leave to dry.

Lightly tap, using a rubber or nylon headed mallet the top and bottom assemblies into the slots cut into the side supports. Don't force anything! If the piece does not lightly tap into position you can always shave a bit off the side support.

Align the assemblies between the side supports. Lightly tap glued dowels into the side supports or, if you decide to use screws, screw into position until the screws are just below the surface to allow the use of wood filler to hide the screws.

In the unit, I put together, after the glue had set, I first trimmed the dowels flush with the sides support surfaces using a fret saw and sharp chisel. The cut dowel ends were stained with an artist brush using the same stain used on the stretchers/ cross supports. After another light rub down another coat of sealer was applied to all parts of the assembly.

You might discover an easier way to make the unit, but the key purpose of all woodwork experiences is to enjoy the journey and improve your skills. It works well as a seat and shoe storage.

For a high res version of the dimensions and measurements of this project, email editorial@homehandyman.co.za

Rainwater harvesting is the practice of collecting and storing rain for reuse, rather than letting the water run off and be absorbed into the ground or channelled into drains, streams, or rivers. It is one of the easiest ways to conserve water at home while also lowering your bills.



A beginner's guide to rainwater harvesting



A basic system that collects rainwater from a roof via downspouts and a barrel or tank is ideal for outdoor use

The practice of rainwater harvesting is gaining new relevance as the impacts of the climate crisis accelerate and parts of the world experience drier and longer droughts, depletion of groundwater, and freshwater pollution from saltwater flooding.

Rainwater harvesting provides a source of clean fresh water in places where water is scarce, polluted, or only seasonally available. In addition, harvesting and storing rainwater can be a less expensive way (compared to desalination or piping water long distances) to guarantee safe, clean water for drinking and home use, as well as gardening, watering livestock, or agriculture.

While there are all kinds of modern rainwater catchment systems,

collecting rain is an ancient practice. Anthropologists believe that being able to capture and store water went hand-in-hand with the development of agriculture, especially in drier environments. Cisterns for storing rainwater have been found in communities as far back as Neolithic times, and by 2500 BC they could be found in what is now Israel and the Greek island of Crete, and later in the Roman Empire, Istanbul, and even Venice.

How it works: capture, store, reuse

The most basic rainwater harvesting systems include a way to collect the rain (which could be as simple as the roof of a house), a way to direct the water (like a gutter and downspout), and a place to store the water (like a barrel). Because it lacks filtration and proper storage, water collected from a system this simple would only be suitable for basic uses like watering a garden, fire suppression, or as grey water – like toilet bowl water.

A more complex system that would provide more potential end uses for the water would include a collection system and several layers of filters to keep dirt and debris out of the water supply. An appropriate storage tank should have a way to safely handle overflow water and be made from materials that won't leach into the water and will inhibit bacteria growth. That container should be then hooked to a control system that can further filter the water for drinking-level purity if needed, or at least to a monitor that tracks the water level. Finally, the system would require a pump to direct water, a flow meter, and backflow prevention system, all of which would need to be hooked up to a power source.

Ways to harvest rainwater

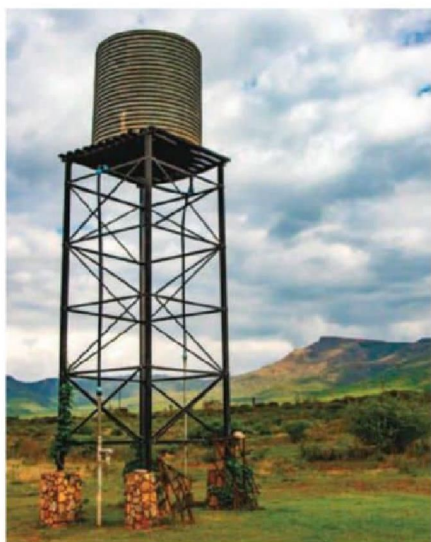
There are many ways to harvest rainwater, from the really basic DIY, to complex systems. The most important question is what you will use the water for. That will determine how much filtration and monitoring it needs, and how complex and expensive your system will be.

A basic system that collects rainwater from a roof via downspouts and a barrel or tank is ideal for outdoor use – for watering plants or other outdoor chores. These systems don't require much more maintenance than typical gutter-cleaning upkeep.

The next level of complexity is household water – for sinks, showers, washing machines, and toilets (or outdoors for a swimming pool). Harvested water for those needs will require a good basic filter or two (and those filters should be monitored and changed regularly). The water should be kept in a bacteria-resistant cistern (which can be above ground or buried), and you'll need a pump to move the water where it needs to go. This water will need to be used regularly; if it sits too long unused,

bacteria will proliferate unless it's chemically or otherwise treated. You will also want to ensure that the water isn't coming into contact with lead, heavy metals, or preservative-treated timber on your roof, if that serves as your catchment area.

The best materials for roofs that will be used to harvest rainwater are slate, aluminium, and galvanised iron. Finally, you will need to install piping into your house to bring your stored rainwater to the appliances or faucets where you want to use the water. The costs for all these items vary depending on existing plumbing.



USES FOR HARVESTED RAINWATER

Harvested rainwater can be used in almost every way water from a well or other supply can be used. If the water is to be used for drinking (potable), food preparation, or other direct human consumption, it needs to be filtered to improve the flavour and remove pathogens, grit, and other particles. At the very least, it should be boiled at a rolling boil for at least one minute to kill disease-causing organisms.

Outdoor uses:

- Gardens and landscaping
- Swimming pools
- Livestock water
- Household chores like car or dog washing
- Water features like bird baths or fountains
- Fire suppression or emergency water

Indoor uses:

- Washing machine
- Dishwasher
- Hot tub, bath, or shower
- Toilet
- Utility sink

Potable water system



The highest level of complexity for a rainwater harvesting system is to create potable, or drinkable water. These systems would include all of the expenses previously mentioned, including determination of safe collection area, filtration, safe storage, pumping, and additional filtering or treatment, as well as additional piping and pumps.

The filtration for this type of system can cost a lot and require a fair amount of maintenance, since any overlooked filter replacement could compromise water quality and lead to illness and even death. However, this investment might make your home or building self-sufficient and, if adequate rainwater is available in your area, could mean you don't need to be hooked up to a city water supply or dig a well, which could be a money-saving situation, too.

There is a growing number of companies and professionals who can work with you on any of the above systems, and ensure you are getting the combination of filters, storage, monitors, pumps and pipes you need for your location and water needs.

When it comes to the safety of water inside your home (especially drinking water) – even if you want to do the work of putting the system together yourself – it makes sense to consult a professional for guidance.

Just think of all the water you could collect from your roof for use around the home

Rainwater harvesting vs. grey water recycling

Harvesting rainwater can be part of a larger system that includes grey water recycling, but they are not the same thing. Grey water is a term that is defined by what it's not, which means that grey water is all kinds of household waste water that is not from a toilet. That includes effluent from kitchen and bathroom sinks, showers and baths, washing machines, and dishwashers. It has fewer potential disease-causing organisms, or pathogens, than toilet water, and so it's simpler to treat for reuse.

Grey water can be recycled on-site at a home, apartment building, office, or a hotel, and it can be used for toilet flushing (after which it's called black water), garden or lawn watering, or for crops. Grey water reuse is often designed into a rainwater harvesting system as a way to make the harvested water go farther, as it can be used more than once. For example, harvested rainwater could be filtered and stored, and used first in a shower or washing machine, and then the grey water from those tasks could be collected and used to water landscaping.

Using grey water also reduces the amount of wastewater that needs to be collected and treated, if sewage is limited.

How much water can I collect?

When you start to think about rainwater harvesting it's important to know what kind of rainfall you can expect and what you may be able to collect.

You should be able to find the average annual rainfall for your particular region online. Then you need to do the following in order to determine how much water you can collect:

- Calculate the 'flat area' of the roof, which is usually the same as the

footprint of the house below.

- Then multiply the rainfall by the roof area.
- Finally deduct 20% for evaporation and overflow will give us the figure we need.

So as an example:

A house with a roof area of 100m², in an area which has a rainfall of 660mm per year, the calculation will be 100m² x 660mm x 0.8, which equates to 52 800 litres of potentially collectable rainwater each year.

The ever-flowing benefits

Rainwater harvesting has a host of benefits beyond reducing demand on local freshwater resources. By collecting rainwater during a storm, there's less stormwater runoff, which can overwhelm local sewage systems and result in local pollutants making their way to rivers and streams, lakes and ponds, and out into the ocean.

Collecting rainwater can also reduce erosion in especially very dry environments where it is common and reduce flooding in low-lying areas. Of course, if you pay for water from a municipal source, harvesting your own will save you money on your water bill.

The benefits of this practice have been recognised in many cities around the world that now require or encourage rainwater harvesting systems. For example, Bermuda, the U.S. Virgin Islands, and Santa Fe, New Mexico, now mandate a rain catchment system on all new homes, and Texas offers a tax exemption for the purchase of harvesting systems to encourage the practice. Cities in Australia, Kenya, China, Brazil, and Thailand all utilise large-scale rainwater harvesting, and the airport in Frankfurt, Germany, collects rainwater for use in its terminal's toilets and landscaping.



ARTI-GRASS
EVER GREEN

ARTIFICIAL GRASS



Artificial grass is a top contender for home improvements due to its low maintenance and high-quality finishes, making it the best choice product when considering how to improve your home. Whether for home or commercial applications, artificial grass can suit your requirements and budget.

WHAT ARE THE BENEFITS OF ARTIFICIAL GRASS?

- It saves water
- It's easy to maintain
- Artificial grass can be environmentally friendly
- Durable – lasts up to 20 years
- Long term investment



25mm Augusta



25mm Cruz



30mm Pet Grass



**40mm Soccer
Duo Rye**



13mm Multisport



30mm Autumn



30mm Spring



35mm Supreme

Make your own
TV/media cabinet.

Creating a cabinet

Tools required

- Table saw
- Planer/thicknesser
- Router/router table
- Wood turning lathe (if rosette is made)
- Biscuit cutting machine
- Battery driven screwdriver/drill
- Sanding machine (random orbital is recommended)
- Spray painting equipment (should lacquer finish be preferred)

Margaret, the widow of my late friend, moved into a retirement home during this year and asked me to make her a cabinet for the TV and sound system. After some

discussion and measuring of the items the proposed cabinet had to house, we settled on a concept design. She asked for something not too elaborate yet with some classic features. See drawing 1.

Because her late husband, who was a formidable woodworker himself, had some imbuia planks in storage, this was the wood of choice. We all know that the beloved imbuia that was so much in fashion in the years gone by, is no longer sold. In fact, it went off the market already some 15 or more years ago when Brazil put a ban on the export thereof. You may not realise that imbuia is just another specie of the same genus (Ocotea) as our own stinkwood, and it looks quite similar. The only imbuia to be had for the past number of years was from someone who had stashed away a

>> Willie Marneweck
couple of planks. Well, let us not get too nostalgic about imbuia, suffice to say it is a fantastic wood to work with.

The completed cabinet is shown above and in picture 2. The overall sizes are 1250mm wide x 460mm deep x 700mm high.

A reader may look at the design of the cabinet in this article and find that it does not entirely suit their requirements. However, by changing some of the dimensions and perhaps some layout features, and following the instructions, a cabinet to suit you may evolve. What I will do is to describe how to proceed with the cabinet that I built, and you may change sizes and spacings inside to suit yourself. Even the elaboration detail can be modified to your taste.

CUTTING LIST (measurements in mm)

ITEM NAME	SYMBOL	MATERIAL*	QTY	THICKNESS	WIDTH	LENGTH
Side panels	A	Imbuia	2	20	405	600
Decorative strips	B	Imbuia	2	20	40	610
Bottom panel	C	Imbuia	1	20	402	1160
Filler strip	C1	Imbuia	1	20	20	1125
Shelf - long	D	Imbuia	1	20	401	1160
Filler strip	D1	Imbuia	1	20	20	1125
Shelf - short	E	Imbuia	1	20	401	720
Filler strip	E1	Imbuia	1	20	20	705
Stretcher	F	Secondary	2	20	80	1160
Filler strip	F1	Imbuia	1	20	20	1125
Divider panel	G	Imbuia	1	20	422	430
Back	H	3 ply or MDF	1	3	600	1180
Top	I	Imbuia	1	20	460	1250
Base front	J	Imbuia	1	22	100	1260
Base sides	K	Imbuia	2	22	100	450
Base rear	L	Secondary	1	20	100	1210
Coupling strips long	M	Secondary	2	20	20	1200
Coupling strips short	N	Secondary	2	20	20	390
Drawer sides	O	Secondary	1	16	180	450
Drawer front side	P	Secondary	1	16	180	645
Drawer rear	Q	Secondary	1	16	167	641
Drawer bottom	R	3 ply or MDF	1		400	673
Loose drawer front	S	Imbuia	1	18	212	702
Drawer slide spacer	T	Secondary	1	20	60	400

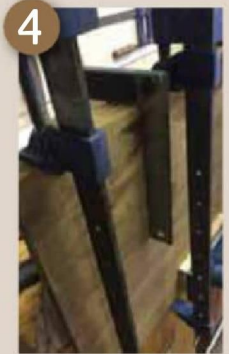
* Imbuia may be replaced with another primary wood

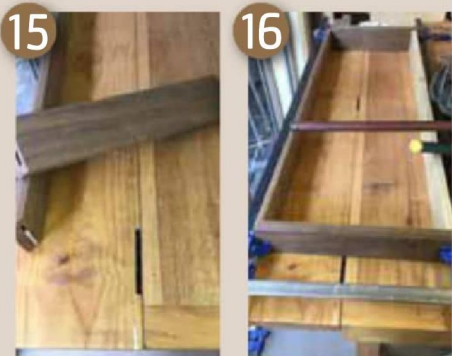
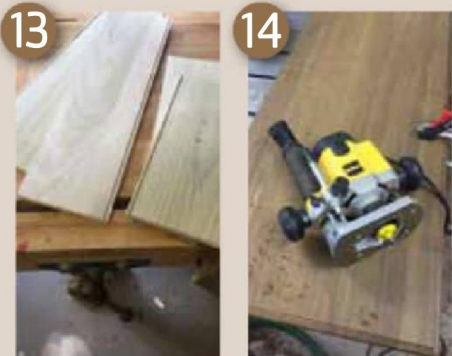
HARDWARE ITEMS

Drawer runners	Ball bearing type	1 set	45	400
Drawer handles	Own choice	2		
Pozi or sq. Head screws	As required			
# 20 biscuits	As required			
Z-clips		2		

General comments

Drawing 2 shows three detailed views of the cabinet with the relevant dimensions. The cut list, however, complements the drawings and shows all individual item dimensions. Some details are not shown, such as the number and spacings of biscuits and the various profiles, etc. These will be discussed





later or are left for your own discretion. Note that the cut list shows some items with their dimensions underlined. It indicates exact finished sizes. If not underlined some extra sizing has been added to allow it to be cut to size during construction.

While the primary wood is your choice, where not visible on the finished cabinet, some items can be made of cheaper wood, and is called secondary wood. This would be e.g., the drawer and stretchers. Imported poplar, meranti, and even pine (ouch!) are some examples.

When dealing with solid wood one must always take the natural expansion and contraction, due to seasonal changes in humidity, into account. In this case, it will be noticed that all panels, shelves, and top will move in harmony front to back. The only item that is not in harmony is the base which will not expand and contract. This issue will be dealt with when the base construction is discussed.

It may be found strange that items C1, D1, E1 and F1 are employed to bring items C, D, E, and F flush with item B (in front), instead of making items C, D, E and F all 20mm wider. The rationale is that notching the latter items at the corners so accurately that no gaps appear after assembly is quite a challenge. If you feel up to it, simply make the latter items 20mm wider and do away with the former items. Otherwise follow the method set out below.

All gluing is done with good quality normal white glue. Stay away from fast curing glue; this will get you in trouble with the biscuit gluing.

For some unknown reason, the manufacturers of hardened steel woodworking screws indicate the sizes according to the head diameters, not of the shanks the diameters. Two variants of the head drives are available i.e., so-called Pozzi and square. Thus 8 x 25mm will refer to a head of 8mm diameter and 25mm long. Both come in only in countersink style heads and in brass or chrome finish.

As a final comment, it is assumed the someone that undertakes such a project is acquainted with basic woodworking, such as making laminated panels, etc. I will elaborate somewhat on these steps but will mostly concentrate on explaining the more out of the ordinary steps. The construction jointing is, however, much simplified by utilising No. 20 biscuit joinery. If you are well acquainted with the 'pocket hole' method (e.g., Kreg) this could possibly be substituted for the biscuits.

Preparing the panels and other components

The preferred method to start is to cut rough sawn planks to the cut list lengths, plus a bit extra. Cut enough pieces of a particular length to make up the width of every panel.



Mark the ends of the cut pieces with a Koki pen with the associated symbol in the cut list. This helps keep track of all the items.

One would naturally try to measure the pieces out on the rough planks and

attempt to economise best one could. Always start with the longest pieces and utilise that which is left over for the shorter pieces. Another consideration is to select the nicest planks for the top and sides. When all the pieces have been cut to length (slightly longer), the next step is to surface plane one face of each piece and then one edge. Next switch to the thicknesser and bring all pieces to specified thicknesses. It may and will be necessary to rip some planks to obtain the wanted widths. All planks must also be put on edge through the thicknesser to bring the widths to size.



After a piece has been through the thicknesser and is sufficiently 'cleaned' on the non-faced side, alternate the side being thickened on every pass. This helps to even out internal stresses in the wood and thus minimise warping and bending.

You may prefer to do it differently, but I never use biscuits or splines to laminate planks to obtain a desired panel width. Usually, one would lay the planks for a panel next to one another to obtain the best appearance and then glue and clamp the relevant pieces to form the panels as specified in the cut list. It is prudent to glue and clamp only two planks at a time and then, when dry, laminate further. Especially an item such as the top requires careful lamination. Most hobbyists do not have wide sanders, but there are some firms that will do sanding of panels at a reasonable charge. However, if a sterling job has been done with the lamination, a random orbital sander, starting with 80 grit discs, will be all that is required to tidy up a panel after lamination. This necessitates that adjoining planks, after gluing, must be level to within 0,1 to 0,2mm.

Continue to laminate the panels A, C, D, E, G, and I, and when this is finished cut each to exact length and width as well as perfectly square. Finish sand the panels to ready them for the next step. Similarly, make items B, C1, D1, E1, F, F1, J, K, L, M, O, P, S and T. It is of utmost importance to cut the lengths and widths of items A, C, D, E, F, G, and O exactly to sizes (and square) and furthermore to cut the lengths of items C, D and F all against a stop, 1160mm from blade.

Building the carcass

Making the decorative strips (drawing 3 and pictures 3 and 4). These strips (item B) have two features, i.e., flutes down the front face and a rosette at the top. First square one end of items B and then cut off one length of exactly 60mm from each piece. These cut off pieces will be used to make the two rosettes. Mark all pieces at the back so they can go back in the same orientation. On your router table cut flutes on the front face of item B (which is still a bit overlength) with a

3/16" (4.76mm) diameter veining cutter (e.g., Pro-Tech number KP 1502). See drawing 2 and picture 3. Since there are only four flutes you need only to set up the router table guide twice!

Making the rosettes is a bit tricky, but not difficult. It does require a wood turning lathe. Drill a hole about 5mm diameter, or to suit your screw chuck, at the back of the 60mm lengths as shown in drawing 3. This is off centre. Mount on the chuck, bring up the tool rest parallel to the outer face. Turn rings on the face with a 'button' in the middle. Use a 'turning chisel' as shown in drawing 3A.

The rosette blocks must now be re-joined with the fluted parts of item B. This can be done with dowels, biscuits, or Dominoes (if you have a Domino machine). See drawing 2 how to join with half-biscuits. Glue and clamp (over the length) the items together. Once dry and sanded items B is ready to be biscuit joined to items A.

When cutting biscuit slots always keep orientation and reference lines/faces in mind and mark clearly where necessary. Drawing 2 and picture 4 refers. All biscuit slotting is done with the base of the machine as reference, except the mitres of the base.

Left hand panel item A must receive biscuit slots to accommodate items C, D, E and F. It must also be rebated for the backing (3mm deep x 10mm wide). Items C, D and E require 4-6 biscuits each where it meets the inside face of panel A. Space slots evenly but always measure the distances from the same edge (say front edge). Where Items F will join with items A only two slots are necessary, spaced 40mm from the front/rear edges. (Item F is 80mm wide). The spacing between bottom panel item C and short shelf item E can be gauged by using a scrap board of 230mm 'high' (see pictures 5 and 6), gauging from the bottom of item A. Similarly, the position of item D can be gauged employing panel G as a gauge, with an added 20mm high spacer underneath (to make up for the item C thickness).

Right hand panel A must receive slots at bottom and top of the inside face similar to left hand panel A. Again, utilise item G (plus 20mm filler) as a gauge to slot the panel where item D will join. Remember to rebate the back inside edge for the backing.

Cut a slot in the middle inside top of panels A to accommodate 'Z' clips as shown in drawing 2 (to pull down the top). See cabinet side view from the left in drawing 2, right at the top. The upper edges of these slots must be 12 to 13mm down from the top edge of the panel (a Z-clip is 10mm high)

Next cut slots in the front edges of both panels A lying outside face down, say four slots, spaced at specific distances measured from the top. Slot both items B inside faces at the same spacings, with their outer edges down. Items A and B can now be glued and clamped to form an L-shape. See picture 4. Afterwards the excess length of item B can be precisely cut off.

The left- and right-hand edges of items C, D, E and F can now be slotted to coincide with the relevant slots in both panels A. Keep reference faces of these items in mind. That is, if the slots in item A were cut with the base of the machine as reference then the shelves and stretchers must be slotted with the relevant face down.

Panel G needs slotting on the top and bottom edges where it joins items C and D, and on the left-hand face where it meets item E. To cut the slots on the left-hand side, use the previously made 230mm high scrap board to gauge the slots from the bottom of item G, but cut off 20mm underneath to compensate for the thickness of bottom C. Lay panel G on its left-hand face (reference face) to cut slots at the top and bottom edges. Where item G meets items C and E, utilise item E as a gauge (from the left end) to slot the upper side of item C and underside of item E to coincide with the slots on the edges of panel G.

You will no doubt realise how utterly important it is to be exact concerning

the lengths and squareness, as well as accuracy of cutting biscuit slots.

Preliminary assembly of carcass

When all slotting has been completed, the carcass can be dry assembled with all biscuits in place and it can be checked that everything comes together correctly. Put clamps where necessary to ensure that all joints close properly. Mark any incorrections so that after disassembly these can be attended to, even in an iterative process, if necessary. Dry assembly is relatively easy because biscuits can easily slide sideways to find the right position. After gluing it is not nearly as easy.

Tightly clamp cabinet from the front, over the outsides of items A, directly across from C, D and F to ensure the shelves and front stretcher F close perfectly onto the insides of these panels. Also clamp over shelf E. Notice that item E will protrude 20mm with respect of front edges of items C, D and F. The filler strips C1, D1, E1 and F1 can be cut to length one by one ready to be glued in place on relevant items C, D, E and F. Make sure the strips fit absolutely tight end to end, otherwise some gaps may appear on the final assembly. Best is to go back and forth from the saw to the cabinet and each journey nibble a fraction off one end until at a strip fits tight. Sorry, if a strip is cut to short even by 0.5mm, it has to be rejected! No other remedy.

Now glue and clamp the strips front to back and making sure the strips are perfectly level with the shelves. (picture 7).



During dry assembly, take careful note where corrections are required. Note particularly that the top and bottom of sides A, the two stretchers and the bottom C are perfectly flush. Use a straight edge. Any high spot will eventually result in gap between cabinet and top and/or base.

After disassembly, corrections can be attended to and all items be finally sanded. Now is also a good time to do finishing, especially if the finish is going to be sprayed on. It is impossible to do spray painting once assembled. Of course, all the areas where gluing will be

done must be masked beforehand. The other advantage, should spray finishing be done, is that it can be done in the horizontal orientation.

Final assembly of cabinet

It is always a sound practice to plan the clamping procedure before applying glue. Have an assistant help you if possible. It is almost impossible by yourself to hold clamps, cauls and protection pads while working a clamp. If not already available, make at least four cauls. These must be at least 500mm long and about 50 high x 30 wide mm made of strong wood such as oak. The inside face must have a slight convex curvature with the middle about 3mm higher than the two ends. The inside of cauls can be covered with something to protect the workpiece. Kraft paper or thin cardboard perhaps. Where clamps will press against the panels, have a lot of small inserts at hand, say 12mm MDF of about 50 x 50mm. While on the topic of protecting the project during assembly, make sure that the finish is completely cured.

It is highly recommended that assembly be done piece meal. I started with joining item G to item C. You will notice that a caul is used, as in picture 8. Always check for squareness. You want to wait a couple of hours (maybe 12 hours) for the glue to dry before proceeding and this goes for each step. Next the left panel A and shelf E can be joined with in combination with items C and G, as shown in picture 9. This can be followed up by joining shelf D to both panel G and left-hand panel A. (pictures 10 and 11). You probably now have a clear enough picture of the process to complete without further instructions.

When the cabinet is fully assembled position item T, as shown in drawing 3, flush behind left hand item B, down on bottom C and screw through predrilled holes against item A. (3 off screws 8 x 35mm)

Making and fitting the drawer

The parts of the drawer (items O, P & Q) are simply butt joined at the corners with two biscuits per joint (drawing 4 and Picture 13). The final length of items

P/Q must be checked. Measure the gap between items B and G (should be 70mm), from that subtract 27mm (for the drawer runners) and then subtract twice the thickness of item O (i.e., 2 x 16mm). This is the final lengths of item P and Q. Groove the insides of items O and inside of item P by 3.2 x 6mm deep. Slot for biscuits, glue, and clamp flat and square. You may want to pre-finish the parts before assembly.

For later attaching of the drawer front items S, drill 6 countersunk holes 4.5mm dia. from the inside through item P. A hole near each corner about 40mm from the sides and bottom/top. Also, a further two holes in the middle of P, 40mm from top and bottom. The bottom item R can now be trimmed to slide into the grooves in O all the way into the groove of item P, and come to rest on item Q. Nail or screw the bottom down onto item Q.

One may give the (loose) drawer front item S, a profile all round, or keep it unprofiled, depending on your preference. It is important to observe that the drawer front is inset, i.e., it fits inside the opening of 700mm x 210mm. It is common practice to make the front a little too large and after the cabinet is ready to shape it to size to fit in the opening with a gap of 1 to 1.5mm all round. Then do the profiling afterwards.

To install the drawer first disassemble the runners and then fit the 'cabinet part' of the ball-bearing type runners by screwing down with three screws 6 x 16mm at 12mm above the bottom of the cabinet bottom (see drawing 1A). The front edges must be set back by the distance that the front will be set inside the cabinet. What is meant by this is that when a profile is made around the front, (even a bevel) the profile should protrude somewhat (see drawing 3B and picture 13). The 'drawer part' of the dissembled runners are screwed with 3 screws (6 x 16mm) at 12 mm from the bottom on the sides of the drawer. The front of the part flush with front side of item P.

Once the drawer has been installed and running smoothly the drawer front item S can be attached utilising double-sided tape. Use shims along the bottom and

sides to ensure that the gap around the front is maintained. Hold the front in place and push the drawer forcefully forward (the cabinet back is not yet installed) to make the front stick to the drawer. Carefully push the drawer slightly out, enough to apply clamps to securely hold the front in place, and screw in six screws (8mm x 30mm). It is perhaps a good idea to attach the drawer handle before attaching the front, otherwise long screws must be installed from inside the drawer (some people actually prefer it that way). Note that on my model, "push to open" runners were used, doing away with a handle.

Making and fitting the top

Not much need be explained on making the top since this is merely a large panel (cut list and picture 14). Being the main focus of the project, it should be made with special care as to its appearance. Apply a profile around the front and side edges if this appeals to you (see drawing 3B and picture 14). It should be sanded very well and finished before being attached to the cabinet.

Before fitting the top, some countersunk holes must be drilled through items F (see drawing 1). Drill 4.5mm diameter holes at an inward angle (because the upper shelf is in the way) from below upwards at appropriate places near the outer edges of items F, about 20mm from outer edge. Check that the top fits without any gaps all round after putting it in position and applying clamping pressure where necessary. By reaching underneath put the 2 x Z-clips in place and mark the screw holes with a Koki pen on the underside of the top. Whenever the top is removed to make any corrections, take the opportunity to pre-drill 3mm holes in the Koki marked spots, and run 8 x 20mm screws in and out (this will make it so much easier to attach the Z-clips in the awkward space of 130mm). Refit the top when all issues have been resolved, clamp firmly in place with 25mm overhang on the front and sides. Use 8 x 35mm screws all round. Screw a Z-clip each side into the underside of the top using the prepared holes (8 x 20mm screws). Use an angle drive or flexible drive on your screwdriver.

Making and fitting the base

The front and sides of the base can receive profiles at the top edges (drawing 3 and picture 15). This is again a matter of taste. Do profiles before proceeding to cut the mitres. The mitre cuts are done on the table saw with blade tilted at 45° and using the mitre gauge. The outside measurement of the front item J must be equal to the cabinet width 1200mm, (but do check) plus 40mm, minus 4mm. The 4mm deduction is because the cabinet must overlap the base inside by 2mm on each side. The measurement of the base side items K must be equal to the cabinet depth 425mm, (but do check) plus 20mm minus 2mm. The result will be that the cabinet will overlap the inside of the base by 2mm all round except at rear where it will be flush with the back of the base.

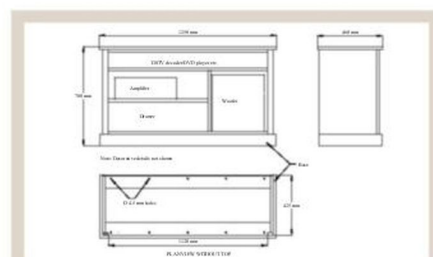
The mitred front corners are joined with biscuits (one biscuit per joint), while the back corners are butt jointed. Glue and clamp base together assuring it is flat and square. When the glue is dry the attachment strips (M & N) can be fitted all around the base inside. The strips should ideally be about 0.5 to 1mm below the top edge of the base but never protrude. One can glue and nail the strips on with F – type air nail gun (30mm long nails), but you may prefer to glue and screw. Sanding completes the base ready it for finishing. These strips items M and N must get slotted holes (see drawing 4) drilled from underneath, for attaching the base to the cabinet. One hole at each corner and a couple in between. Slot the other holes by simply swinging the drill somewhat back to front, once a hole is through. The round fixing hole in the middle of strips N allows any extension or contraction of the cabinet relative to the base to move forward and back from this location.

With the cabinet upside down the base must be placed in position and clamped at the four corners. The back of the base should protrude 3mm over the bottom of the cabinet and the cabinet should overlay the inside of the base sides and front by 2mm. Check for gaps and do corrections where necessary, then screw down with 8 x 35mm screws.

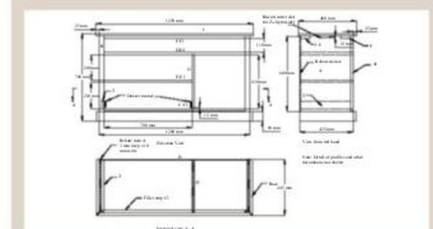
Making and fitting the backing

The backing board (picture 17) must fit sideways between the rebates of the side panels. At the bottom it must be flush with the upper back of the base as well as flush with the back stretcher. This may require a bit of correcting to get a nice fit. I was able to get a piece of really nice ply, but I realise that it is not readily available. In the end you may have to settle for MDF. Screw the backing on with sufficient screws (6 x 16mm screws is the recommended, but nailing may also suffice).

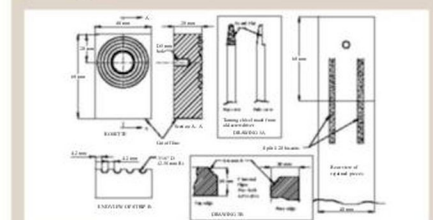
That completes the project. I hope my instructions are adequate. You may, however, direct any queries to me by addressing it to the editor.



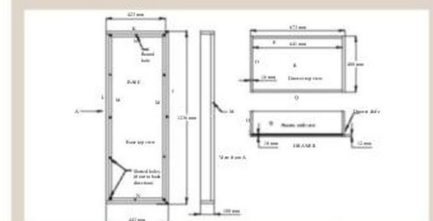
Drawing 1



Drawing 2



Drawing 3



Drawing 4

For a high res version of the drawings of this project, email editorial@homehandyman.co.za



All about solar geysers

Looking for a way to cut costs at home on your electricity bill? Solar geysers are the ideal way to heat your water, and protect the environment.

Because of the energy costs saved as well as the Eskom subsidies, a solar geyser will pay for itself in a few years

Our sun pumps about 386 billion million gigawatts into space, mostly in the form of electromagnetic radiation. By comparison, a large nuclear reactor generates about one gigawatt and global energy consumption is a few thousand gigawatts. Only a minuscule portion of the sun's energy falls on our earth, yet this energy is responsible for running almost every living thing on the planet.

To put this into context, every second the sun produces the same energy as about a trillion one megaton bombs! In one second, our sun produces enough energy for almost 500 000 years of our current needs of our so-called civilization. If only we could collect it all and use it.

The energy from just 20 days of sunshine is equivalent to all the energy stored in the earth's reserves of coal, oil and natural gas. Every second, the outer layer of the earth's atmosphere receives radiant solar energy of about 1300 watts per square metre. About one third of this light is reflected back into space, and the atmosphere absorbs a portion of this. By the time it reaches the earth's surface, the solar radiation has fallen to about 1000 watts per square meter, at noon, on a cloudless day. Averaged over the entire surface of the planet, each square metre collects approximately 4.2 kilowatt-hours of energy every day.

How a solar geyser system works

A typical household solar geyser system consists of a solar panel with a heat transfer fluid flowing through it to transport the heat energy collected to the geyser.

The solar panel is located somewhere with good light levels throughout the day, often on the roof of the building. A pump pushes the heat transfer liquid (often just treated water) through the panel. The heat is thus taken from the panel and transferred to a storage container.





A typical household solar geyser system consists of a solar panel with a heat transfer fluid flowing through it to transport the heat energy collected to the geyser

CHOOSING A SOLAR GEYSER

Selecting the correct type of solar geyser for your needs will ensure maximum savings on your energy bill and maximum return on your investment. Solar geyser options include three basic varieties:

1. Direct solar geysers

Direct solar geyser systems usually consist of one or more solar panels or evacuated tubes. Water is pumped into the panels, where it gets heated by the sun and stored in a geyser. Although this type of geyser system is reasonably effective, they tend to have a shorter life span. Chemicals in water erode the panels, pipes and tank and parts need to be replaced fairly often. The water in the tank can also freeze in colder weather, resulting in cold water and also damage to the geyser and entire heating system.

Areas in South Africa that are affected by frost from time to time wouldn't be suitable for direct geyser systems.

Suitable for:

- High solar radiation areas
- Medium to good water quality

Not suitable for:

- Frost-prone areas
- Harsh water areas

2. Indirect solar geysers

Indirect solar geysers also consist of one or more solar panels or evacuated tubes. Instead of pumping water into the panels directly as one would with a direct system, an anti-freeze substance circulates through the panels.

Once the liquid inside the panels is hot, it flows to the geyser system. The liquid then either circulates in a sleeve that is fitted over the geyser, or into copper pipes inside the geyser thus heating the water. The copper pipes are a less effective way of heating the water in the system because only a small volume of water comes into contact with the pipes at any given time. The pipes also allow less room for water, meaning a 300-litre geyser tank will have less than 300 litres of water due to the presence of the pipes. An indirect geyser system has a longer life span, because the anti-freeze is non-corrosive. It also retains heat longer and can't freeze, even in the coldest conditions.

Suitable for:

- Low solar radiation areas
- Hard water areas
- Frost-prone areas
- Fast recovery

3. Split/pumped solar geysers

These kinds of geyser systems involve panels which are situated on the roof, while the geyser tank is situated within the roof. This kind of heating does not involve a natural thermosiphon process, but requires a pump in order to move the water for heating lessening the effectiveness, as energy is consumed, running the risk of no hot water if there is no electricity and incurring high maintenance costs on pumps.

Time will show you whether you have made the right purchase. Go for products with a proven history and track record in place.

What size solar geyser do I need?

An average person uses 75 litres of water in a 24-hour cycle. Thus, the amount of people times 75 gives you the correct size. Example, four people $\times 75\text{L} = 300\text{L}$

If you don't use this formula to calculate the correct number of litres you need, you could fall short and then the electricity backup will kick in making up the shortfall. This will minimize the effect of the solar water heater and your return on investment. If you struggle to know which system will be the best choice for you, contact us! We will help you find the best solar water heating system or geyser for your family!

Factors affecting financial return of a solar power system

Life of the solar power system

The expected life of a solar water heater system depends on many variables, including: construction quality of materials, water quality, temperature, pressure and solar water heater system installation and maintenance.

Available solar radiation (irradiation)

The daily average for each month of solar radiation (MJ/m^2) falling on the solar collectors is an important factor when determining the solar water heater system performance. This depends on latitude, local climate, tilt of the collectors from the horizontal and the orientation to the equator.

Patterns of usage of hot water

The pattern of usage of hot water affects the efficiency of the solar collectors and therefore the boosting energy required to provide sufficient

hot water. This in turn affects the operating cost. For example, reheating overnight with auxiliary electric heaters can potentially reduce the efficiency of the solar collectors the next day, if this hot water is not used before the collectors started heating.

Effect of tariffs

The structure of and tariffs for boosting energy from electricity can affect the cost-effectiveness of solar water heating systems.

Governmental rebates

Governmental rebates are an incentive that encourages people to convert to solar power. In most cases, the rebate is in the form of a once off monetary payment towards the capital cost of the solar power system. It must be noted that to qualify for the relevant rebates certain terms and conditions have to be adhered to.

Monthly cost saving

Most customers would want to know their monthly saving if they were to convert to solar power. As mentioned previously numerous factors will affect the financial (monthly cost saving) return of the solar power system. The best method to determine a return is the nett present value method, which calculates the difference in the total present day values of each system, over the lifetime of the solar power system. This method accounts for inflation and interest rates, which change the value of money over time. It also accounts for replacement costs of alternative systems over the solar power system's lifetime. A less complex method is the simple payback time method, which compares the difference between installed capital costs and annual operating costs.

FREQUENTLY ASKED QUESTIONS ABOUT SOLAR GEYSERS

What if there is no sun or if it's raining?

The heat output of the solar geysers is reduced on overcast days, but it will still be able to provide heating. About a quarter of the sun's energy gets through the clouds. Most solar geysers have a built-in electric heater that heats the water if there is not enough sun.

How much maintenance is required?

Most solar geysers don't require any maintenance.

What is the life expectancy of a solar water heating system?

The life expectancy of a solar geyser system is between 20 and 30 years.

How long does it take for a solar geyser to pay for itself?

Because of the energy costs saved as well as the Eskom subsidies, a solar geyser will pay for itself in a few years.

How long will it take to install a solar geyser?

An average installation will take one day.

Is the solar geyser protected from frost?

It is possible to lower the temperature at which water freezes by mixing it with another substance. For example, the salt in seawater lowers the temperature by nearly 3°C. That is why salt is sometimes spread on roads in colder climates to prevent the build-up of ice. There are many anti-freeze substances. Among the most common is ethylene glycol, an additive used in automobile cooling systems. But most of these substances are not suitable for use in solar water heater systems as they are toxic. The design of a solar water heater system features a closed-circuit collector that is filled with a non-replacing charge of fluid. 'Collector Protector' is a propylene glycol, non-toxic antifreeze additive used in solar water heater systems. By introducing 'collector protector' into the closed circuit, the fluid freezing point decreases to temperatures below 10°C.

What are the basic requirements to install a solar water geyser?

You need to have enough roof space that is free from shade. The roof also needs to be strong enough to support the solar panels of the solar water geyser system.



Electricity is dangerous
– there are no two
ways about it – but if
you insist on working
with electricity, here
are our tips.

Understanding ELECTRICITY

Before we start, we fully understand that homeowners will carry out DIY electrical work in their own home, however we would always strongly recommend hiring a registered electrician...

In an attempt to save money and time hiring a tradesperson, and amid fears of rogue traders taking advantage, more

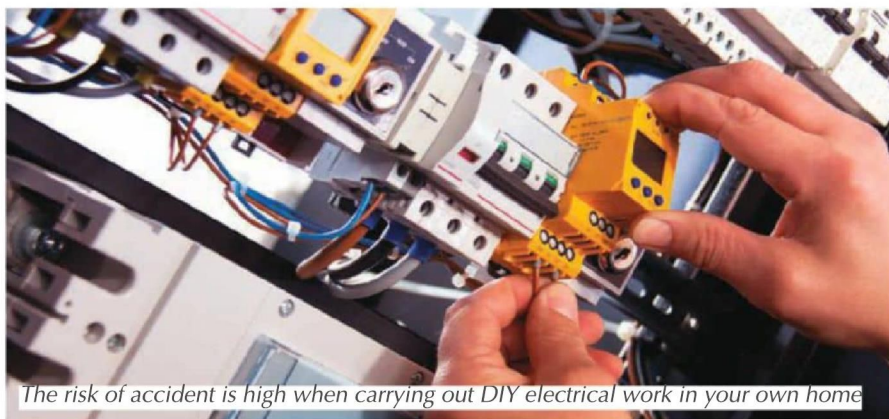
and more homeowners have chosen to take matters into their own hands. It is estimated that around 30% of people play around with their electrics each year, risking their life and their family's life every year in the UK.

DIY electrics could include anything from changing your socket covers, to installing a new light, to extending

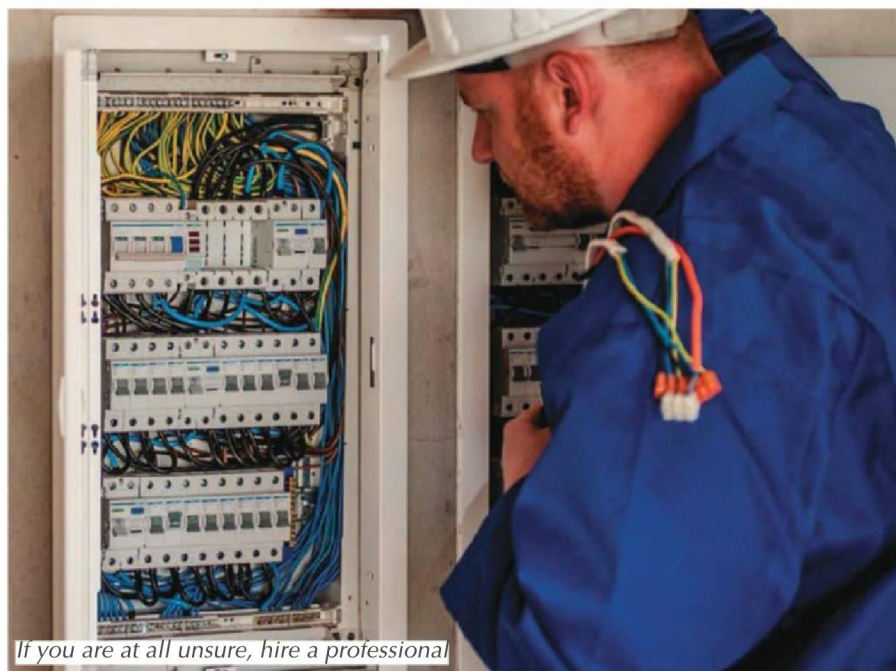
a circuit, to even rewiring a house. However, only 5% of the public say they would attempt a full rewire.

With no real regulations in place to stop homeowners from carrying out small electrical work in their own home, they continue to do it. Nearly six out of ten DIY projects are relatively safe and successful, even with homeowners lacking necessary skills some jobs require. Almost a quarter of DIY jobs have gone so wrong that a tradesperson has had to be called in to fix.

Ironically, the motivation to carry out DIY electrical work in your home is to save money, but it ends up costing millions of rand each year to fix those DIY faults. People have confessed to cutting through power leads, attempting to repair electrical items that were still switched on and even drilling into wiring buried in the walls. It's important



The risk of accident is high when carrying out DIY electrical work in your own home



to remember, some types of work you should not carry out, due to the work needing to be safety tested, prior building application approval, and a certificate of electrical conformity.

When it comes to DIY, how much do you really know? Have you got the skills to carry out work that complies with the regulations and is safe? Or are you out of your depth and in need of professional help?

We know that however much the government and companies stress the necessity for a registered electrician, there will still be those who do it themselves. Our message is to you is if you are going to do your own electrical work in your own home, be safe.

If your electrics fail to comply, then you are breaking the law and will invalidate your home insurance. Your insurance provider will not cover you should any damages or faults occur. Just like gas work, electrical work carries catastrophic risks, such as: death, fire, electric shock and serious injuries. Follow this guide to make sure you know what you are doing, shouldn't be doing, what regulations to follow and when to call for help.

Some electrical jobs you should never attempt to do yourself. Minor work is

altering, extending and or changing any existing circuits in the home, except in a bathroom, which is known as a special location.

Minor electrical work

Minor work can include replacing socket covers, control switches, ceiling lights and replacing cables from a single circuit if damaged; adding additional lighting points to existing circuits; replacing light fitting.

You should not carry out any minor work that is in a special location: locations containing a bath/shower; swimming pools; hot air saunas; electric floor heating systems; garden lighting or power installations; solar PV.

If you are unsure about the electrical work you are carrying out, it's best to check with your local building council. Remember that any DIY electrical work carried out by an unregistered person must be tested and certified by a competent electrician, to ensure the safety of the wiring in your home. A large percentage of homeowners wouldn't think about getting their DIY electrics checked, but it's important you do due to home insurance invalidation.

Safe DIY electricity

The internet allows anyone to Google

Electrician's tools

If you plan to carry out work yourself, make sure you have the right electrician's tools to do the job safely. We suggest using these tools as a minimum for electrical work:

- To test for the presence of power, you should use an approved voltage detector.
- Make sure you use a VDE 1000 V screwdriver to protect you from any shocks.
- VDE cable cutters will make sure you are trimming wires neatly and efficiently and protect you from any shocks.
- A cable detector to check the location of wires in the wall.



Top 5 tips to remember

It's important to be sure that you know what you are doing, the risks of carrying out the job and the warning signs.

- Make sure you have read up the current Building Regulations and Wiring Regulations.
- Check for wires in your wall. Commonly, homeowners have drilled into wiring and it has resulted in electric shock. A cable detector can help avoid accidents by tracking where the cables are buried in the wall before you start work.
- Ensure your power tools are in working order and use battery operated where possible.
- Make sure you are using the correct tools for the job, as well as access equipment. This includes correct and safe fibreglass ladders.

- One in five homeowners choose to carry out work because they fear rogue traders. However, when it all goes wrong, they turn to a trader to help them. Sometimes it can cost the homeowner more in trying to rectify a wiring problem, than it would to have called an electrician to begin with.

Electricians are the trade which is most often called out to help correct dangerous and faulty DIY electrics. A third of electricians have said they have seen or been involved in fixing faulty electrics so bad that they had resulted in fires, significant repair costs or serious electric shocks. Electricity can kill. It's safer for you to not attempt to carry out extensive electrical work yourself, leave that to a registered, competent electrician. If you hire an electrician to carry out the work for you or if you need a helping hand in a disaster, make sure you are hiring a registered, competent electrician who is up to date with the regulations and will ensure the safety of you and your family.

advice on DIY tasks. From woodwork to plumbing to electrics, the internet has the answer. However, whether it is the correct way is another question. Internet tutorial videos have given one in ten people the false sense of security and confidence that they can easily carry out certain jobs by themselves.

The risk of accident is high when carrying out DIY electrical work in your own home, with one in twenty having ended up in hospital due to a DIY failure.

The advice you get from the internet is not always reliable. There is a great chance it could lead you down the wrong path with your electricity and cause you more problems than you originally had. You may have aimed to save money, but often it will cost you more money to do it yourself and then have a registered electrician repair the work that you have attempted.

The first step before you carry out any electrical work in your home is to safely

isolate the power. If you know the circuit you are working on and it is clearly labelled on your distribution board, then you can safely isolate the circuit by flicking the circuit breaker off. You can then double check by switching the light on in that room, if it doesn't come on, then it is safe to work on.

However, if you are not sure which circuit breaker the room belongs to or the circuit breakers are not labelled, then proceed to turn off each circuit breaker, from left to right before turning off the mains switch last. This is in order to make sure there is no current flowing through the mains switch when turned off last.

You can then check with a voltage detector on the electrical circuit you are working on, with the probes on positive and negative, to check that there is no power going through the circuit. This will take seconds, but it could be the difference between getting a severe shock to saving your life.

THE ULTIMATE SMART SOLAR INVERTER

INVERTER RS 48/6000 230V SMART SOLAR

GET YOURS TODAY!

WWW.VICTRONENERGY.CO.ZA/WHERE-TO-BUY

Energy. Anywhere. Anytime

victron energy
BLUE POWER

Learn how to evaluate your old windows and buy replacement windows.

FAQS ABOUT BUYING NEW WINDOWS

Tools for this project

Have the necessary tools for this DIY project lined up before you start – you'll save time and frustration.

- 4-in-1 screwdriver
- Cordless drill
- Extension ladder
- Hammer
- Level
- Mitre saw
- Pry bar
- Reciprocating saw
- Safety glasses
- Square
- Stepladder
- Tape measure
- Utility knife
- Wrecking bar

Additional tools may be needed for siding and trim repair, if required.

Materials for this project

Avoid last-minute shopping trips by having all your materials ready ahead of time. Here's a list.

- Casing and finish nails
- Caulk/silicone
- Felt or house wrap
- Flashing tape
- Replacement windows
- Screws



Q: Repair or buy replacement windows?

Tough question. New windows are tempting because they offer so much – smoother operation, lower maintenance, energy savings, fewer drafts and easier cleaning. But they're expensive, and pros charge almost as much as the cost of the windows to install them, which is a major investment.

Ask yourself the following three questions to evaluate your old windows and weigh the benefits of new ones.

1. Are your old windows a hassle?

Are you sick and tired of nursing your windows along, or are you OK with the

minor maintenance jobs that go along with them? Consider:

- **Ease of operation:** Do they lift, swing or slide easily, or do you hesitate to open them when you want ventilation?
- **Scraping and painting:** Painted windows require regular maintenance. Otherwise they'll rot and fall apart. New windows with aluminium or vinyl cladding or that are made from vinyl or a composite eliminate this chore.
- **Condensation:** Does condensation regularly collect on the glass, cloud the view and soak the window trim? Higher-efficiency glass in new windows will help reduce this problem.
- **Storm windows:** Do you mind cleaning, maintaining and putting up and taking down storm windows? Do your storms need replacement?
- **Cleaning:** Is this so difficult that you avoid doing it? Many new windows are designed to make cleaning a snap.

2. Are your old windows comfortable?

Single-pane windows often leave rooms feeling chilly and dry in cold weather and overheated in warm, sunny weather. Windows with double-pane glass can greatly improve the comfort of your home. They can block much of the heat of direct sunlight but still allow the light to come through (less need for shades). They'll reduce cold drafts and the chill of cold glass. And they'll reduce condensation so you can keep the indoor humidity at a higher, more comfortable level in cold weather. New energy-efficient windows will also save on your fuel bills but rarely enough to justify the investment if your old windows are still in good shape.

3. Are your old windows worth repairing?

You can almost always repair and restore old windows if you're willing to set aside the time and can find replacement hardware. But it's not always worth the effort and expense. Major problems include:

- **Rot:** Once rot starts, it's tough to stop unless you commit yourself to replacing rotted wood (a difficult job) and then maintaining it regularly. Consider replacement.
- **Sagging casement (crank-out) windows:** You can usually replace worn-out crank mechanisms, but bent or worn hinges are tougher and replacements don't always solve the problem. Consider new windows.
- **Fogged double-pane glass:** The fogging that occurs between the glass panes can't be fixed. Glass replacement (sometimes the entire sash) is the only solution. This is often difficult and it's expensive if a pro does it. Compare the 'fix-it' cost with the cost of a new window.
- **Hard-to-find replacement hardware:** Call the window manufacturer or local window dealer if you can identify the window brand and model number. Many hard-to-find parts are available from online suppliers. But often new windows are the only option.

Q: WHAT'S THE BEST WAY TO REPLACE MY WINDOWS?

Option 1: The easiest way to replace windows is to remove the old sashes and slip a window insert into the old frame. You get the benefits of high-efficiency glass, weather-tightness and a maintenance-free exterior with minimal impact on the appearance of your home.

To start the process, simply measure the frame and order a new wood or vinyl unit to fit it. This always works for double-hung (slide up and down) windows but only sometimes for casements (crank out) and sliding windows. A window dealer will advise you on your options. Or you can opt for sash replacement, which works for double-hungs only. You can complete the changeout this way in about an hour per window (or much less after learning the ropes on the first one!). But this approach has several drawbacks. The old frame must be rot-free and reasonably square. And you still have to maintain the exterior wood frame and trim.

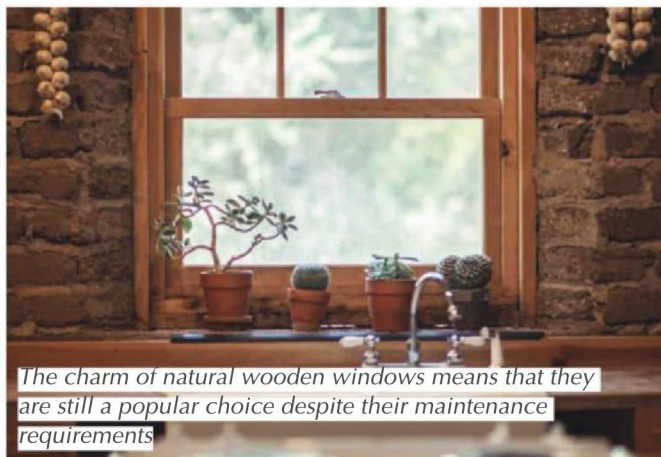
Option 2: Completely tear out the old window and frame and put in a new one. You usually have to go this route with casement and slider windows. This project takes longer and is more difficult because you have to remove the exterior and interior trim, make the new window weathertight and then replace the trim. Plan on spending a whole day per window.

On the plus side, this method allows you to start fresh with a new, weathertight, low-maintenance window. And you have the option of reframing the opening and changing the window size while you're at it.

Keep in mind that complications can arise if your old window doesn't have exterior trim. Sometimes brick, stucco, vinyl siding or other siding materials butt right up against the window frame. In these situations, you may have to remove or cut siding to get the old window out and the new one in, and then patch or restore siding to finish up.

Q: SHOULD I REPLACE THEM ALL AT ONCE?

Balance your home's appearance with your budget. Even if you try for a close match, new windows will probably look a bit different from the old. And even the glass itself (we recommend the low-E) usually looks somewhat different from clear glass. So, replacing one or two in a conspicuous area may look bad. One good strategy is to replace all the windows on one side (or level if you have a two-story house) to retain a consistent appearance. Often the windows on one side of a house deteriorate much faster than the others.



The charm of natural wooden windows means that they are still a popular choice despite their maintenance requirements

Q: HOW DO I KNOW I'M GETTING A GOOD-QUALITY WINDOW?

Buy replacement windows

Quality is a matter of detail. So, we strongly recommend that you visit a showroom where you can compare windows of different brands or different models within the same brand to buy replacement windows. Check these features and answer these questions:

Appearance: Imagine the windows in your home. Does the style of the windows blend well on the interior and exterior? Are the wood or vinyl joints well made? Do the muntins (grids that divide the glass) fit tightly and cleanly? Is the hardware attractive? Unless you're trying to match existing window colours, choose a low-maintenance exterior (such as vinyl or aluminium) so you'll never have to scrape and touch up the paint.

Operation: Try out the display windows. Do they open and close smoothly? Are the cranks, runners and locking devices solid and do they look as though they'll withstand heavy use? Does the window latch firmly without too much effort? Does the weatherstripping fit snugly? Are the screens solidly built and easy to remove?

Cleaning: If cleaning is a priority, can you easily reach both interior and exterior glass? Remove or rotate the sashes to test them.

Service: Are parts available if something should break or wear out? Can you replace the weatherstripping when it wears out? Both these questions favour window companies with long track records because they'll likely serve their customers well into the future. If the glass breaks or fogs, how difficult and costly is replacement?

Warranties: Compare the warranties for parts and finishes. Probably the most frustrating (and expensive) problem is the failure of the seal between doublepane glass and the resulting fogging. Look for a warranty that covers glass replacement up to 20 years. Note: Keep the receipt for your window purchase and the warranty in your records.

Glass selection: Energy-efficient double-pane glass is fairly standard now. But it's almost always worth paying a bit extra for two additional features: a low-E coating and argon gas between the panes. Most manufacturers have two variations of this type of glass, one designed for cold climates and one designed to control sunlight in warmer climates. If you spend more for air conditioning than for heating, choose the warm-climate type, and if you spend more for heating, choose the cold-climate type.



SAFETY CONSIDERATIONS

You might have chosen the best possible replacement windows, but they won't be energy efficient, effective or even safe if they're not installed properly. You need to make sure your replacement windows are installed properly to keep your home safe and functioning. Not to mention that your manufacturer warranty probably won't be valid without a proper installation.

To stay ahead of your home's safety, energy efficiency and beauty, and to be on top of your windows' warranty, it's important to know the warning signs of a bad replacement window installation. This way, you can make the bad contractor fix his or her mistake before you present the final check. Common warning signs of a bad window replacement installation include:

Gaps: If a window is measured properly, it will fit perfectly in the window opening. If not, there will be gaps between the sill and the frame.

Water damage or drafts: Water and air should not be able to get through your new windows. If you feel a draft, or see signs of water damage like pooling water, visible mould, bad smells, or bubbling paint or wallpaper, something is wrong.

Poor function: New windows should readily open and close. If your new windows were not measured or installed correctly, they won't open or close as they should. Also, if you are having trouble opening or closing your windows right after installation, it will only get worse as time goes on.

Messy caulking: Caulking around the exterior of a new window helps weatherproof and seal the window. The top and sides of your new window should have a visible, even layer of caulk. If the caulk is uneven, patchy, or messy, that's a big red flag. Also, if you can see messy caulk, how many steps that you can't see were messed up?

Foggy panes: Fog or condensation between windowpanes of double glazed installations means the window seal is broken, or the window was improperly installed. If your window is brand new and the condensation can't be removed by cleaning, the seal was broken during the installation. This is a big problem, as the window seal is a large part of the window's energy efficient features.

If you see any of these warning signs, reach out to the original window contractor to see if they will fix their work.



Window installation, due to the nature of glass, is a hazardous exercise and care must be taken

BRIGHT IDEAS

Readers share their time-saving, space-saving or innovative ideas

I had to solve a problem...

In Afrikaans we have the expression: "As jy nie sterk is nie, moet jy slim wees. (If you're not strong, you need to be smart). Well... I'm not strong.

My wife's illness gradually reduces her physical and mental abilities. I take care of her. I have to adapt as the situation changes. When her legs became too weak to carry her body, it brought new challenges, especially in the bathroom.

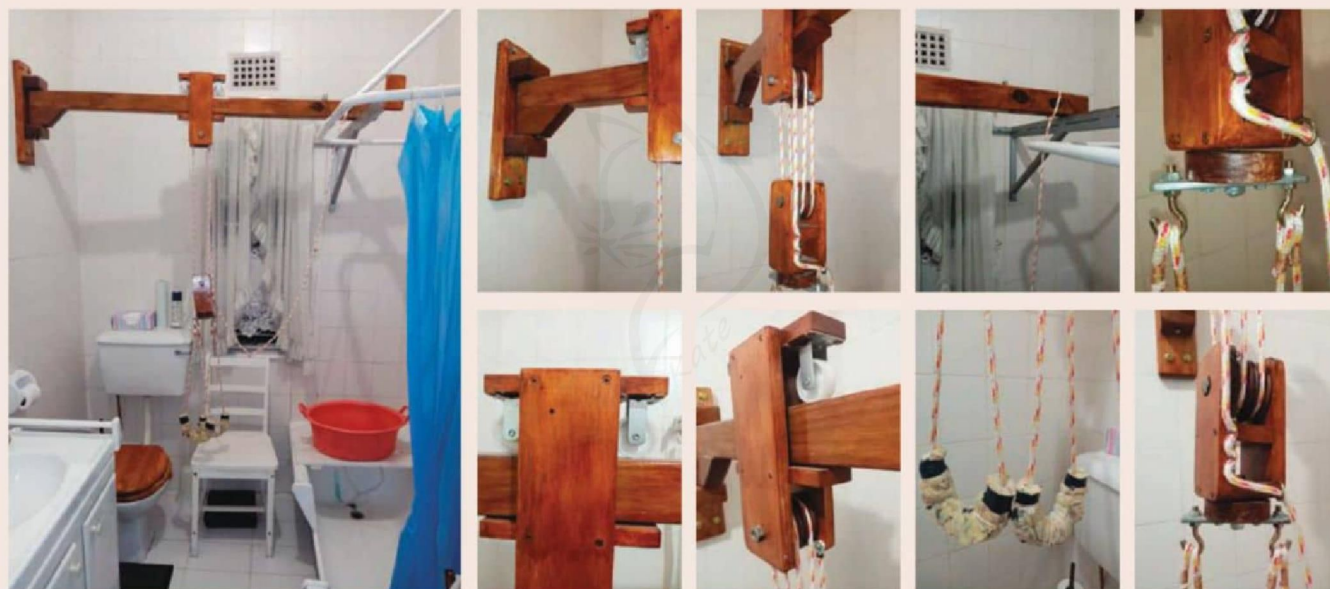
I needed someone to help me or I had to design and build a device that could help me. I started thinking how to build something that could help me to move her from the toilet to

the bath and back on the wheelchair. The challenge was to make something that could move up and down, left and right, forwards and backwards and to turn around.

I did not really know how a pulley system works. Our faithful friend YouTube provided all the interesting information. I turned the pulleys from Meranti. The rest is varnished Pine. I wondered whether her shoulders would carry the weight. It's a little bit uncomfortable but so far it does not create problems.

The photos tell the story. It works great.

Chris Erasmus, De Doorns



Curing the split

Often when putting a screw into a supawood joint the one piece splits, even if you have pre-drilled it; that's just Murphy's law. I prevent this by putting a small clamp on the receiving piece and then driving the screw in. Problem solved.

*Bob Gillies,
by email*



WIN!

Tork Craft's CH10004 8-piece wood turning set

Tork Craft's 8-piece set of wood carving and wood turning chisels with crafted wood handles in a tailor-made wooden case designed for comfort, grip and impact complete with their proven treated stainless steel hardened polished shafts and blades.

Send your bright ideas to:

editorial@homehandyman.co.za with 'Bright Ideas' in the subject line or PO Box 24938, Gezina, 0031

Please include your name, physical address and a contact number (office hours). You may also include a photograph (300kb) of your bright idea (where applicable).

Please note: Winners' prizes may take up to six weeks for delivery and are sent by the prize sponsor. Prizes are not exchangeable.

Vermont Sales (Pty) Ltd
SOUTH AFRICA'S #1 SUPPLIER
of power tool accessories



VALUED AT R750

Congratulations to Bob Gillies who wins a Tork Craft 24-piece router bit set from Vermont Sales.

DIY Wood Robot Toy



Do you want to make a wooden robot toy? Or maybe looking for the first woodworking project for kids? Try this one!

>> Jeffrey and Liska Hinckley

Tools & Materials

- An assortment of wooden blocks and scraps of wood
- Wood glue and polyurethane glue
- Drill
- Heavy-duty string
- Woodburning pen

One morning, while our son was still sleeping, a surprise guest climbed onto his windowsill...

The previous day, our son saw us working on this wooden robot toy and even participated in his making, but he hadn't seen him completed, and of course, couldn't imagine what he was doing on his windowsill. It was a pleasant

surprise! Our boy decided to start their acquaintance by comparing the robot with himself. "Robot's got a smile. I've got a smile." Then he cuddled with the robot and made him do a crazy jiggly dance. In no time, they were best friends.

While the wooden robot lacks realism or fantastic articulation, he definitely possesses all the charm of a toy made with love. Why else would he be wearing his heart where everyone can see it?

We made a sketch of a wooden robot in a notebook that we kept in the months before our son's birth. Our son is almost two now. Some projects do take a while... It's a very simple project to make, however, whether you want to make a toy for a young kid or want an older kid to have their first woodworking experience (and this articulated wooden robot can be the next step). No special tools or materials are required.

Toy robot: woodworking process

We love using wooden blocks for making new toys. For one thing, you don't need to have a lot of tools to work with wooden blocks: everything comes already pre-cut. In addition to that, we often see wooden blocks at craft markets, so it's easy to replenish our supply for new projects and give some new life to old toys. As a result, we have a pretty good collection of blocks of different sizes and grains.

For the robot, we took two cuboids and four cubes. The combination of light and dark wood in one project always looks exciting, so we also used a scrap of a cherry board for making a panel on the front of the robot. That little front panel was actually the most complicated part of the whole toy robot project.

Making of the front panel

To make the panel, cut a small rectangle. Using a ruler and a pencil, mark six buttons on it. With the help of a miniature mitre box, make the straight cuts, then widen them with a needle file. Glue the panel to the body block with wood glue and put a weight on it for a while.

For stamping "1, 2, 3" and "A, B, C" on the buttons, we got to finally use a stamp set we got last Christmas. We seemed to have so many ideas when we received it, but it's the first project we used it for! We also considered writing or woodburning the numbers.

Making of the toy robot body

If you look at the original sketch, you'd see that we marked the places where we

were going to drill holes. We planned to drill holes right through the blocks, run strings through them, then tie knots at the ends, like in the sketch. When I showed my sketch to my husband, he didn't seem overly fond of knots and suggested using glue for holding the strings in place instead. I decided to trust him, but you can use either idea.

For assembling the robot, drill the holes, using the right size bit to make a snug fit for your string. One hole in each limb block, one hole in a head block, and two holes at each side of the body block to attach the limbs to. We squeezed polyurethane glue in each hole, then pushed the string in with a nail. Polyurethane glue is ideal for this job: not only because it is strong, but because it expands as it dries, securing the string in the hole.

At first, the eyes were supposed to be just holes, drilled inside of each other, like on the picture. Then we decided to plug the inner holes with dowel cut-outs, giving our robot dark brown eyes. He was very pleased!

The smile and the heart were woodburned. If you don't have a woodburner, you can always draw them with a marker. And the robot is ready!



The wooden blocks we used and the original project idea

Wood robot toy: Final look

The final result isn't an elaborate toy, but it has a few things going on for it!

1. It is very sturdy, so it won't break easily. (Update: Ours is still just as good as new after five years!)
2. It has a simple kind of articulation, but it works. The kids like to pretend all kinds of things with this robot. Mostly he is a wiggly dancer.
3. It's made of natural materials. First, it will be safe for babies and toddlers to handle and teeth on (under reasonable parental supervision). And one day, when this toy has been loved enough and you no longer need it, it doesn't have to go to waste-fields. You can use it for a marshmallow roast or compost it like you would any wood.

4. And it can be a good first project to try with older kids, introducing the joy of woodworking to them.



Making the robot



The process for the front panel



ASK OUR EXPERTS

Our panel of experts answer your questions on DIY problems

Potential damp in a property I want to buy

WINNER

I have a property that I want to buy that has some damp issues.

There are potential issues in two of the bedrooms.

Additional details:

- Bedroom three, which has the worst of it, is next to the family bedroom.
- There is a loft above the first floor that has been packed full of books and junk about knee high (could be interrupting the overall ventilation of the property through the roof).
- The property was let out for a decade to tenants who didn't like opening windows to ventilate the property.

Questions:

1. What kind of damp is that (I assume condensation because it's on the first floor)?
2. Do the kitchen and master bedroom also have damp? What is that in the master bedroom?
3. Are the damp issues workable and manageable with some specialist help and care (bearing in the mind the details above)? Or is this property one to avoid?

4. How much would it cost (very rough guesses) to redo the room which has the worst of it?

Any help would be much appreciated!!

Albie Groenewald, by email

Ed replies: Unfortunately, the images you sent through were too small to publish, but having sent them to a dampproofing professional, it looks like you have a couple of different issues here. Rising damp at the lower level, condensation and also mould growth which was initially caused by condensation but has got much worse because of no immediate treatment. You should contact a damp surveyor to diagnose each issue and then recommend a practical treatment for each area.



Help needed after dismantling wardrobe to redecorate

I have a large wardrobe in my room that I took down to paint the wall behind it. One of the side boards has snapped off and I need to attach it back on. It's a heavy piece of wood so I was thinking drilling heavy screws into it to reattach it?

Also, I need to add some metal wire to the back to stop it from leaning over into a parallelogram shape. I have the back boards but they are not the best and I'm anxious on them failing again (as they popped out shortly after it was fitted).

I have added some pictures.

Gail Ashworth, Kenilworth

Ed replies: Use screws to refit the corners but they will need to be around the 4 x 70mm size or you will split the chipboard. Stabilise the wardrobe by using angle brackets screwed into the wall and into the side of the wardrobe.



A subscription to *The Home Handyman Magazine*

Receive *The Home Handyman* magazine free for a year

Send us your DIY queries and you could be a winner!

Send your queries to:

The Home Handyman DIY Queries | editorial@homehandyman.co.za or P.O. Box 24938, Gezina, 0031

Please include your name, physical address and contact number (office hours)

Please note: Queries will only be answered in the magazine. Winners' prizes may take up to six weeks for delivery and are sent by the prize sponsor. Prizes are not exchangeable.

Our winning query comes from Albie Groenewald who wins a subscription to *The Home Handyman* for a year.



Gap between floor and wall after removing skirting

I am renovating one of my rooms. I have taken off the skirting board and now I see that between the floorboard and wall there is 1-2cm gap from which I can feel strong airflow. That airflow is, I am guessing, from the wall ventilation outside the house.

My question is: Would be wise to fill these gaps with expanding foam? From one point I assume that airflow is good

there. But if the air humidity is high it could have a bad effect on the skirting board and plaster in the long-distance period. Photo attached.

Charles Louis, by email

Ed replies: Yes, fill the gap with expanding foam before replastering. The only issue will be where it looks like the airbrick is where there is a large gap. This could be filled if filled gradually from the top.



Laying a small patio

I'm laying a small (3m x 3m-ish) patio with square 45cm slabs, which will also be surrounded with rounded (and deeper) 60cm edges too. Simply, should the edges be laid before, after or at the same time as slabs are laid?

I was thinking of either laying the patio in full, then surrounding with edges, or laying one length of edger, start the patio against this length and then laying the edges gradually after enough slabs are laid to create length.

Simon Redmond, by email

Ed replies: Provided you have a concrete base larger than seven slabs and two edging blocks, lay the slabs first then the edging. This will save having to cut strips off the slabs. If you are laying the slabs on a soft base the same applies but you should have a concrete strip around the outside for the blocks.



Which drill to keep?

As a normal non-pro DIY guy with some home projects and smaller renovations here and there, I have been quite happy with my Bosch PSB 650 RE Hammer Drill. Someone spoiled me and gave me for my birthday a cordless Bosch Impact Combi Drill.

I definitely wouldn't want to keep both, but I am not sure if the cordless one can replace my conventional drill (and I don't want to test it, because up to now, the cordless is still un-opened and can be exchanged).

I do need to be able to get through the

occasional stubborn part of the wall (a sturdy old house), but I am by no means a power user.

Will the impact drill serve my purposes? Because cordless would be a charm...

Jean Pienaar, Muldersdrift

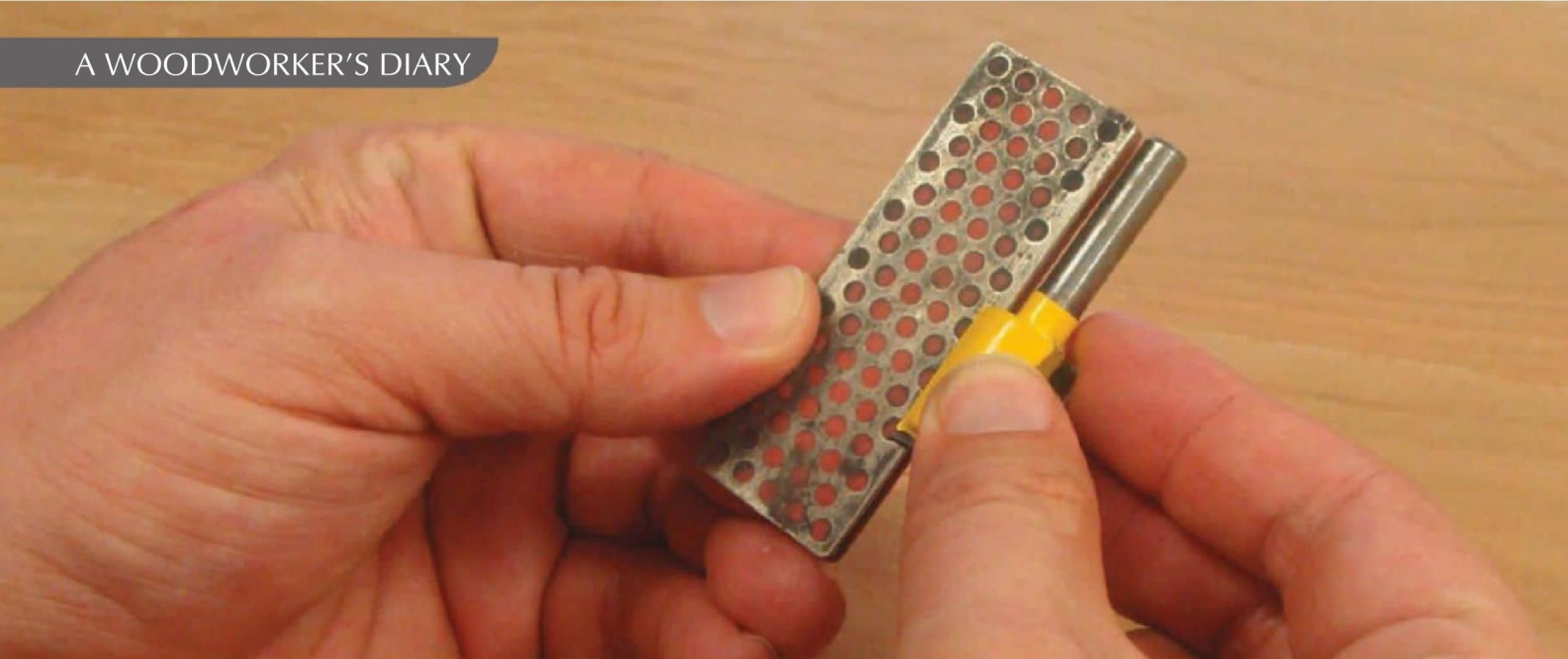
Ed replies: I consulted two handyman who had the following replies:

"Stick with the mains one – it has a larger chuck and does not rely on batteries which tend to decay over a month or so."

"Like most DIY'ers, I use battery tools for pretty much everything these days as modern

batteries are absolutely awesome. But saying that, I would keep the powered model as the new one is entry level anyway, and whilst the small chuck and power might be okay for your purposes, the big problem is the battery which needs exercising regularly otherwise it will stop taking a charge."





ROUTING 201

Denis lock explains that the smallest and most important component of a router is the chuck that holds the bit.

>> Denis Lock

Unlike the chuck on a drill that can hold many size bits a router chuck can only hold one size. This chuck has a special name. It is called a collet and two sizes in general use in South Africa are $\frac{1}{4}$ " and $\frac{1}{2}$ ". A collet is a conical shaped bush with a central opening of $\frac{1}{4}$ " or $\frac{1}{2}$ ". Photo 1 shows two $\frac{1}{4}$ " collets. The upper one (1.1 and 1.2) is from a Bosch router, the lower (1.3 and 1.4) from a budget router.

The overall size of each is about 17mm long and 12mm in diameter. The outside of the collet is tapered to match the taper machined inside the end of the router motor shaft. The taper on the Bosch collet is 12mm long (1.1), that on the budget collet is 3,5mm long (1.3). The collets (Photo 1) have slits in them. When the collet nut is tightened the male taper is forced into the female taper. The slits allow the collet to compress and squeeze tightly onto the bit shank. The Bosch collet (1.1 and 1.2) has eight slits: four from the top and four from the bottom. The budget collet (1.3 and 1.4) has three slits: three from the top and none from the bottom. I leave it to you decide which is the more effective collet.

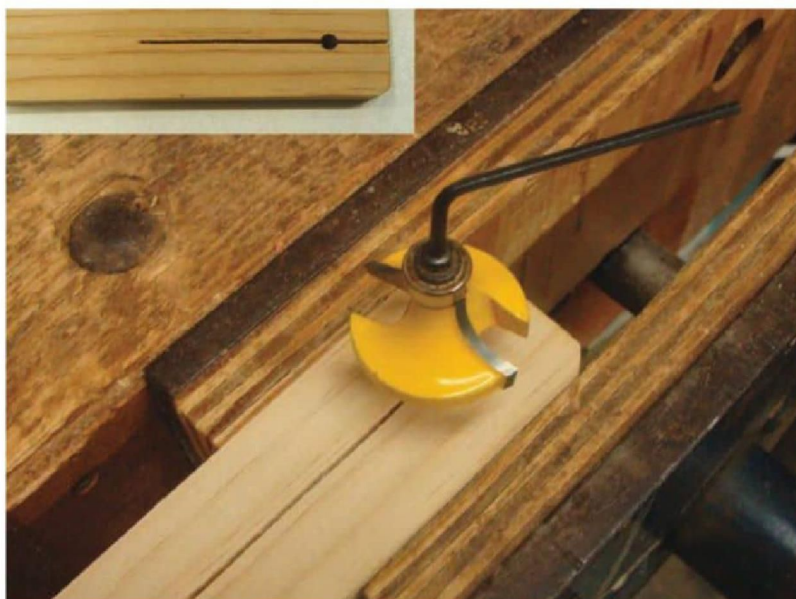
There is no mechanical interlock between the collet and the shank of the bit. The bit is gripped purely by pressure and has to hold securely under the stress and strain of cutting through dense woods at speeds generally above 20 000 rpm. The shank of a router must be very accurately machined. A perfectly sized router bit shank should be 0,249" or 0,499". That is within 0,001" (0,025mm) of the collet size. Below 0,248" or 0,498" is suspect: there is a real risk that the bit will creep up in the collet. At best this a ruined workpiece. At worst it could be a nasty accident.

I keep my collets scrupulously clean as I do the shanks of my router bits. A regular blast of compressed air through the collet followed by a brushing does the trick. Photo 2 shows the use of an old toothbrush to clean a $\frac{1}{2}$ " collet. Photo 3 shows the use of a pipe cleaner (they don't make toothbrushes that small) to clean a $\frac{1}{4}$ " collet. I keep the shanks of my router bits clean by burnishing them with a fine abrasive pad. You could use fine steel wool (#0000) to do the job as well. I just don't like steel wool in my workshop. You need steel-on-steel not dirt-on-dirt for a secure grip.

Router bits

Router bits have come a long way since I started routing more than 50 years ago. In those days the bits (see Photo 4.2) were machined (including the pilot at the tip) from a single piece of high-speed steel (HSS). A very old bit, stamped from a piece of steel plate, is shown in Photo 4.1. Today's bits (Photo 4.3) have brazed tungsten carbide tips and ball-bearing pilots. Some, typically spiral bits, are machined from a single piece of tungsten carbide. Any American article on cutting mortices with a router will recommend the use of spiral bits. The advantages claimed are smooth mortice walls and that the spirals lift the shavings from the mortice. They don't warn you that you will pay an arm and a leg for spiral bits in South Africa. I have cut hundreds of mortices with tipped bits. My mortice walls are smooth enough and attaching my shop vacuum to the router solves the shavings problem.

Tungsten bits will keep a sharp edge 20 times longer than



a HSS bit. There, is however, no free lunch, tungsten carbide is very brittle and care must be taken not to drop them or bang them against a hard surface. A chipped bit (Photo 5) will be unbalanced and cause vibration. Discard chipped bits immediately.

The inevitable buildup, of what I call gunk, on the tips of router bits effectively blunts them. The bit now runs hotter, more gunk deposits, the bit runs hotter still... The heat generated by a very blunt bit can be enough to alter the metallurgical properties of the tungsten tip, to damage the collet and more. Clean your bits! I use an old toothbrush (Photo 6) and lacquer thinners. Note that the bearing has been removed. The bearing must not get any solvent on it. After the bit has been cleaned, I touch the cutting edges up on a 600-grit diamond whetstone (Photo 7).

The quality of a router cut is a function of router bit quality. Put a mediocre bit in the world's finest router: you will get a poor cut. Put a high-quality bit in a mediocre router and you will get a good cut. I steer clear of budget bits. The shanks may be undersize (discussed earlier). The bits may be poorly ground. The round-over bit used to cut the glazing bar seen in Photo 8 was badly ground. The bearing was run against the face marked A. The fillet seen at B should not be there. It results because the diameter of the bit at point E is not the same as the diameter of the bearing. The bit is slightly larger and results in the unwanted fillet at B. It is going to take quite a bit of sanding to get rid of it. The fillet at C is wanted and is formed by tip D of the router bit.

Router bits – a starter set

The new router owner will be bewildered by the range of router bits. "Where do I start?" Start by downloading a router bit catalogue. I suggest the Pro-Tech catalogue at www.kprouterbits.com – choose Downloads followed by Product Catalogue. The bits are conveniently grouped by category and a schematic of the cut profile. The catalogue starts with straight bits: the least glamorous but the most useful. This is where you should start.



Collets



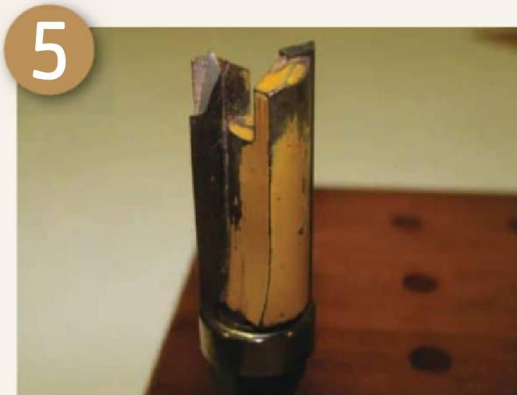
Cleaning a 1/2" collet



Cleaning a 1/4" collet



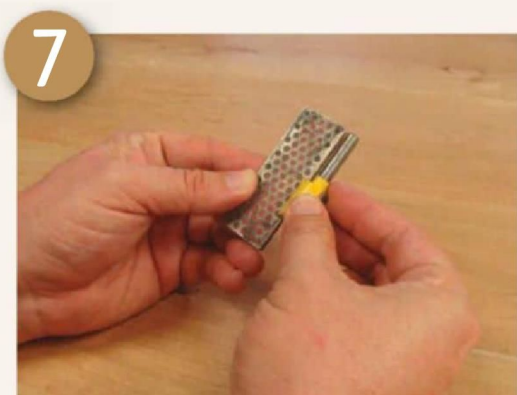
Old and new bits



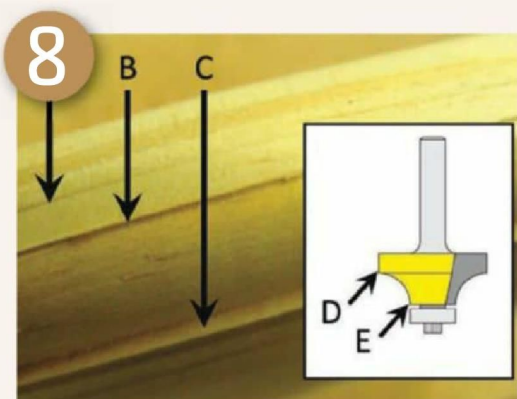
Chipped bit



Cleaning a bit



Honing a bit



Badly ground bit

The first bit you should buy is shown in Photo 9. My Fundamentals of hand-held routing course uses this bit more than any other bit. It is used to: 1. straighten (joint) two boards for edge-to-edge gluing, 2. cut a rebate, 3. cut a dado, and 4. trim a perfect arc. At 16mm in diameter the bit is of a fair mass and results in smooth cuts. As most of the materials you use are less than 25mm thick the cutting length of this bit is more than adequate. In addition, it has a shank-mounted bearing that allows it to be used as a pattern bit. Pattern routing is a very useful routing technique.

One of my pet hates is drawers with flimsy 1/8" Masonite. I won't use anything thinner than 6mm MDF. For high class work I laminate two pieces of 3mm plywood together. The second bit on your shopping list should be the one shown in Photo 10. This does a fine job of cutting the grooves for drawer bottoms, sliding lids, narrow dados and rebates, and the like. Wider grooves, dados and rebates are easily cut by adjusting the router's parallel fence and making a second pass.

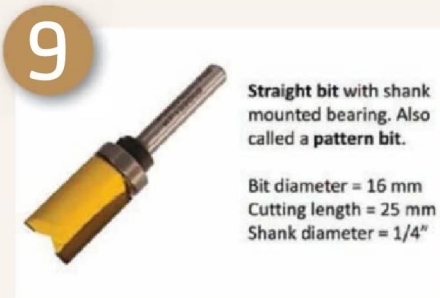
May I introduce you to a word not often heard in woodworking circles: arris. An arris (Photo 11) is defined as a sharp edge formed by the meeting of two flat or curved surfaces. Arrises do not take kindly to life's knocks. The slightest bump leaves a dent. They are sometimes sharp enough to cause a skin cut. Arrises need to be eased. The way to do this is to use the third bit I recommend: one of the bits shown in Photo 12. Photo 13 shows a hand-held cut-out where the arrises have eased with a 45-degree chamfer bit. It is certainly a lot more comfortable to hold than before. Rounding over arrises is a very common operation. Some woodworkers do this so often that they have a dedicated router with a permanently mounted 1/8" or 1/4" round-over bit (Photo 12).

You can have a lot of fun using your router freehand: that is routing without any additional mechanical guidance aid. Freehand routing is an excellent way of improving your eye-hand coordination and control of two-handed tools. It is also a good way to improve the performance of fine and gross motor tasks by your non-dominant hand. After years of routing and other tool operations I am almost ambidextrous. The free-hand sign writing, Chip 'n Dip, seen on the snack tray in Photo 14 was done with a V-bit (Photo 15). The V-bit was also used to cut the V-grooves that frame the sign writing. Make a V-bit the fourth bit you buy. Instead of a V-bit you might decide to buy a core box bit (also Photo 15). The geometric pattern on the face of the keepsake box was freehand routed using a 1/4" core box bit.

Additional router bits

You can do a lot of work with the four-bit starter set I recommend. You will develop your router skills and will soon want to buy some additional bits. Start by getting some additional straight bits of different diameters. An 8mm or 10mm diameter straight bit are useful bits for cutting mortises. An investment in a flush trim bit (a straight bit with a bottom bearing – Photo 17) is also a good idea at this time. It will extend your pattern routing possibilities and when used in conjunction with the pattern bit (Photo 9) wood up to 40mm thick can be trimmed.

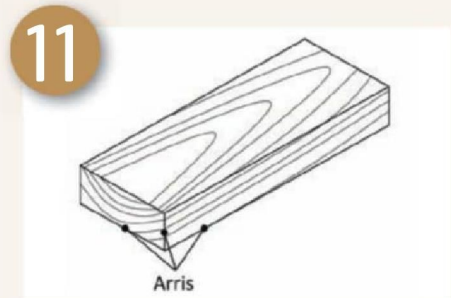
You will certainly want to add an 1/8" and/or 3/8" radius round-over bit(s) to complement your existing 1/4" round-over. It is also time to branch out different moulding bits. Add a Roman ogee and cove bit (Photo 17) so that you can do more than rounding over or chamfering the edge of tabletops and shelves. Finally, if you are making picture frames, mirror frames or framed glass doors a rebate bit (Photo 17) is very useful. Different size



My first choice



My second choice



Arrises



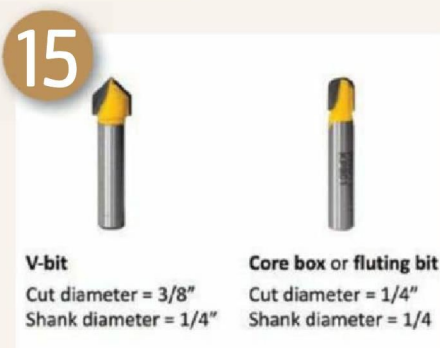
My third choice



Chamfered hand-hole



Freehand sign writing



My fourth choice



More freehand routing



Later purchases

bearings are available for this bit allowing different width rebates to be cut. Our American woodworking cousins call this a rabbit bit and cut rabbets with it.

Please don't be upset with what appears to be a random mix of Imperial and metric measurements. As long as we import from the USA this will be a fact of life. It doesn't matter if a round over has a radius of 6mm or 1/4". It only matters when you are cutting grooves. A 6mm MDF drawer bottom slopes around in a 1/4" groove. What annoys me is when the local agents insist on calling a 1/4" shank router bit a 6,35mm bit.

I hope that I have helped you with the 'where do I start?' question. You are welcome to mail me if you need help in deciding what router bit to buy. I can potentially save you a lot of money.



ABOUT DENIS:

Denis Lock runs a woodworking school and shop. As a result of the COVID-19 pandemic hands-on courses are temporarily suspended. He can be contacted at denis@tacazze.co.za or 082-267-5948. Visit his website at www.routingwithdenis.co.za

WOODWORKER'S CORNER

Sharing techniques, ideas and a love of wood

WoodEX for Africa confirmed for June 2021



Africa's premier timber trade expo, WoodEX for Africa, will be held at Gallagher Convention Centre in Midrand, Johannesburg from 29 June-1 July 2021. The new date was confirmed after the postponement of the event because of COVID-19.

Since its inception in 2012, WoodEX for Africa has established itself as the gateway to Africa's timber trade. The event now offers even more as it will be held alongside the 2nd edition of the

Deck & Flooring Expo and co-located with Africa's biggest construction expo, African Construction Expo.

"The COVID-19 pandemic had a huge impact on business, but we are proud and very grateful to announce that our exhibitors who were confirmed to participate in this year's event, have given us their support for next year's event. With WoodEX now confirmed for 2021, our exhibitors and visitors have enough planning time to ultimately benefit from the platform created by WoodEX for Africa - to meet influential decision-makers, showcase products, position brands and grow businesses," says Stephan Jooste, Director of WoodEX for Africa.

WoodEX for Africa plays host to the most specialised, yet comprehensive range of equipment, tools, machinery, software and wood products available on the market. These include:

- CNC routing machinery
- Edge bander and trimmers
- Panel saws and band saws
- Laser cutters
- Hand and power tools
- Spindles and turning
- Portable sawmills, resaws and edgers
- Fastening systems and screws
- Wood treatment, sealers and varnishes
- Chipboard, MDF and laminates and many more

For more information, call 021-850-8846 or email info@woodexforafrica.com.

Winners of Furniture Design Competition announced

The winners of the 7th National Furniture Design Competition, presented by the Department of Trade, Industry and Competition (the dtic), were announced by Deputy Minister Nomalungelo Gina during the recent online Proudly SA Buy Local Summit & Expo.

Ian Perry from the Durban-based furniture manufacturer, Homewood, won the Established Manufacturers category, while the honour of winning the Student category went to the University of Johannesburg trio Mikhayla Peterson, Amukelani Mathebula and Michael Sushan.

According to Prof Desmond Laubscher, chairperson of the judging panel, the theme of the 2020 competition was "This is mine and these are ours", with the brief to design furniture for young,

newly-employed people who have come together to rent a modest apartment.

"The aim of the design was to use a minimal budget, while designing a range of multipurpose and functional furniture that is modular, that can be purchased as budgets allow," says Prof. Laubscher.

"Possibly the most important criteria when judging the entrants were innovation and how contestants were able to interpret and incorporate functionality and useability, with the design aesthetics and identity having a distinct South African flair," Prof Laubscher said. "We judged the ease of how the designed product can be manufactured, the number of parts that must be produced, the size and shape of the product and finally, what makes the most impact when the final product just looks right."

Bernadette Isaacs, Managing Director of the South African Furniture (SAFI), says that the competition is extremely important to identify and nurture furniture design and talent in the industry. SAFI is a partner and one of the main stakeholders in the competition. "In terms of quality and cutting edge design South Africa is up there with the best in the world, but we still have to work on capturing our story, building a truly African design identity. The furniture design competition goes a long way towards reaching that goal," said Isaacs.

When announcing the winners, Deputy Minister Gina emphasised how important to the South African economy the furniture sector is. "I believe it is possible to position the local furniture industry as the producer of high-value niche furniture products that are globally competitive

and based on quality and differentiated design,” Minister Gina said.

“Consumers must have access to local products and Proudly SA plays a pivotal role in achieving this,” she said. She explained to the delegates how the Furniture Design competition assisted in achieving some of the outcomes contained in the Furniture Industry Master Plan and how locally manufactured and designed furniture demand was on the increase.

“The competition is part of our efforts to raise and nurture design capabilities in the country, raise the image of the furniture manufacturing industry and to grow the industry’s competitiveness by encouraging new product design and differentiation. The furniture industry is an important sector in the South African economy because it has the

potential to contribute to the reduction of unemployment, increase of exports and boost the development of the Small, Medium and Micro Enterprises (SMMEs),” she said.

“By encouraging participation in the furniture industry, promoting the use of design to respond to changing living space, the use of locally manufactured inputs and getting continuous investments, maximum impact will be achieved,” she said.

Five finalists each in the Students and Established Manufacturers categories were in line for prizes, which included a one-year internship in the furniture industry, a six-month Furniture Design Incubation Programme by Furntech and a graphic design tablet for the students, a one-year ‘Proudly South African’ membership, a one-year ‘Institute of the

Interior Design Professions’ memberships as well as an opportunity to participate and exhibit at selected platforms for the winning manufacturer. The competition was presented in partnership with Proudly South Africa, the South African Furniture Initiative, Coricraft Furniture, Mecad Solidworks, Furntech Centre of Excellence, Lewis Stores, the African Institute of Interior Designers and Tsogo Sun Hotels.



Ian Perry, Homewood Founder and Director



2020 Furniture Design Competition finalists

Students Category:

Winner	Mikhayla Peterson, Amukelani Mathebula and Michael Sushan (UJ)
1 st runner up	Benedikt Johannes (TUT)
2 nd runner up	Katlego Madumo and James Fowler (UJ)

Established Manufacturers Category:

Winner	Ian Perry (Homewood, KwaZulu-Natal)
1 st runner up	Sandile Nkosi (Protovate, Johannesburg)
2 nd runner up	Peet van Straaten (Raw Studio, Pretoria)

Some woodturning do's and don'ts

Woodturning can be a hazardous pastime so precautions should be taken to minimise any risk of injury. This page contains some of the basic areas of concern but should not be treated as exhaustive. More detailed instructions for other equipment and machinery should be consulted before they are used.

Are you fit?

Perhaps one that is easiest to overlook – are you physically and mentally able to work safely?

If you are tired, under the influence of drugs or alcohol or preoccupied

mentally, your judgement or your reactions may be impaired and you may take risks you wouldn't normally take.

Clothing

- When working with any rotating equipment (including lathes, grinders, chainsaws, sanders etc.), garments with excessively long or loose sleeves; neckties and scarves should all be avoided.
- Any jewellery that may catch (earrings, neck chains, rings and watches) should be removed beforehand.

- Sensible footwear should be used to avoid injury from sharp objects being dropped.
- When using lathes, gloves should be avoided as they can catch on the wood or chuck.
- Long hair should be tied back to avoid it being caught in the rotating machinery/wood.
- You will get dirty and dusty so wear something like overalls or a woodturning smock. The woodturning smocks are very good because the pockets are in the back so they don't fill with shavings!

MISSING AN ISSUE?

Recent digital back issues can be ordered from the publisher



To order back issues for only R22 each, use the order form below to obtain previous available editions. For orders outside South Africa please phone for a quote.

• Order these and more online on www.homehandyman.co.za •

YES! I would like to order the following: (please tick)

- ☐ Mar '10 ☐ Mar '12 ☐ July '13 ☐ May '15 ☐ Mar '19
☐ May '10 ☐ May '12 ☐ Dec '13 ☐ Aug '15 ☐ May '19
☐ Jul '10 ☐ Jun '12 ☐ Jan '14 ☐ Nov '15 ☐ Jul '19
☐ Oct '10 ☐ Aug '12 ☐ Feb '14 ☐ Dec '15 ☐ Sep '19
☐ Nov '10 ☐ Sept '12 ☐ Mar '14 ☐ May '16 ☐ Nov '19
☐ Jun '11 ☐ Oct '12 ☐ Apr '14 ☐ Jun '16 ☐ Jan '20
☐ Jul '11 ☐ Dec '12 ☐ May '14 ☐ May '18 ☐ Mar '20
☐ Sep '11 ☐ Feb '13 ☐ July '14 ☐ Jul '18 ☐ May '20
☐ Oct '11 ☐ Apr '13 ☐ Aug '14 ☐ Sep '18 ☐ Jul '20
☐ Feb '12 ☐ Jun '13 ☐ Apr '15 ☐ Jan '19

See our website for more recent issues

No. of copies ordered: x R22.00 each = Total R

Name:

Address:

..... Code:

Tel: Cell:

Email: Signature:

Please make a direct deposit / EFT into our bank account:

Account holder: BB Print

ABSA Bank

Branch code: Ben Swart - 632-005

Cheque account: 404-881-8651

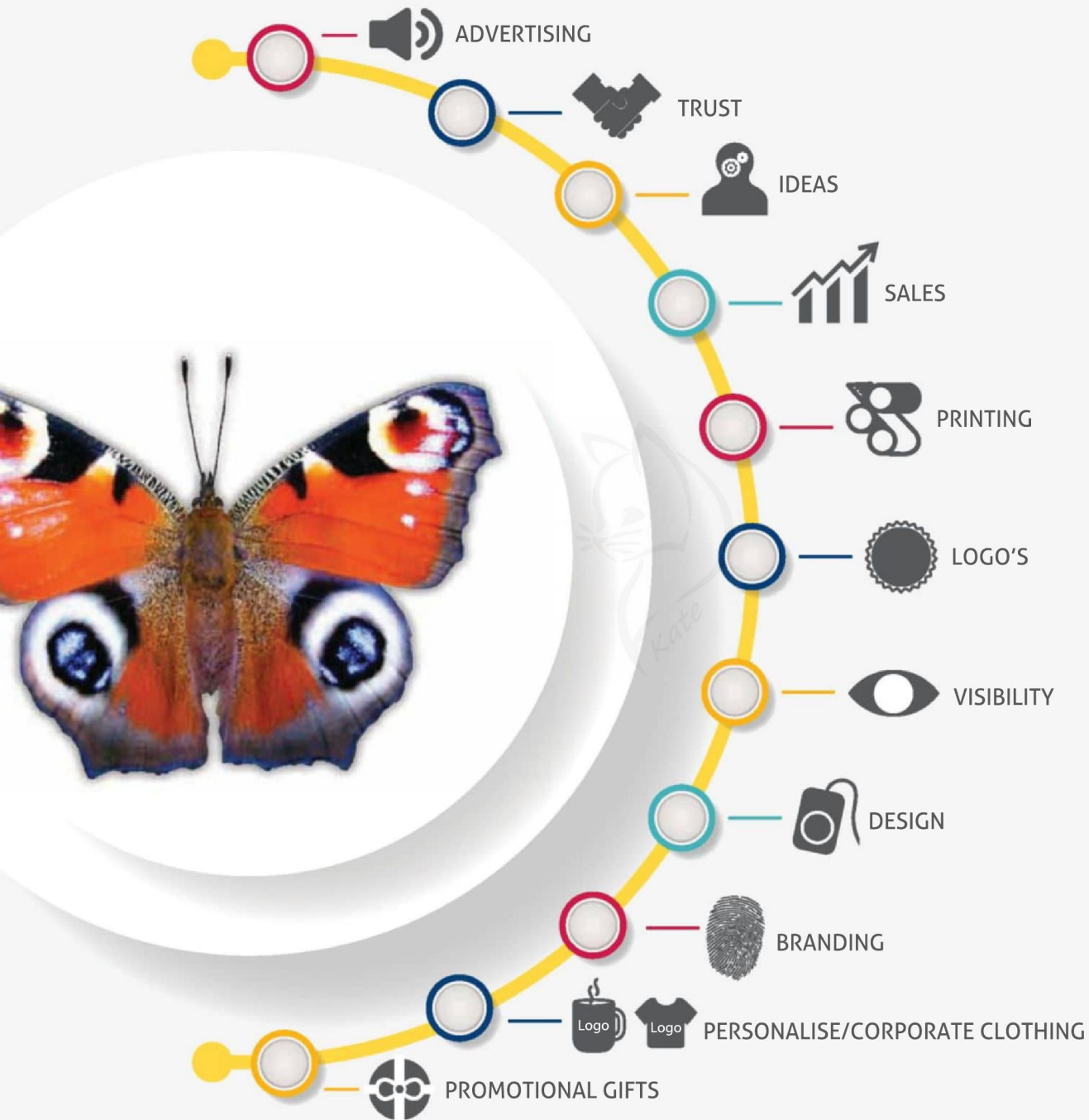
Reference: "Sub+HH+ surname + initials" (Example: SubHH-Lindeque, G)

Fax/email the form and proof of payment to 086-234-5052

(Please note: there is an additional fee of R39 if payment is made in cash)

Price valid until 30 June 2021

Call for your corporate needs



Stay calm and keep on DIY'ing

About Annalien:



Annalien started her career at the SABC on 50/50 before moving to Germany after she met her husband. Later, they returned to South Africa and she took on various freelance projects, eventually getting hooked on DIY. Annalien was part of the team on *The Home Channel's Get It Done!* series.



This issue, Annalien Grensemann dusts off her tools and gets back to DIY'ing

It has been a while since I was able to pull my trusted power tools closer and start calculating millimeters, joints, and the thickness of the wood. But when I eventually got the opportunity again, the most amazing thing happened. It was like riding a bike... suddenly my brain said: "Relax, I've got this," and there was a freedom similar to the wind in your hair when you are riding downhill.

Gaining a student in our small household was exciting, especially because she was a girl. I had two sons and was in desperate need of a daughter, so I have welcomed my daughter-in-law with open arms. She is the best companion for my son any woman could dream of, and having her under our roof for two years was exciting. But students need study space, and with the COVID restrictions my husband was still working from home, thus my office was fully occupied (plus my son was also studying virtually from home, so his study is occupied). Obviously my 'new daughter' needed a space. Being a mother and a DIY'er, I knew just what had to be done.

The planning started with a wish list of a desk and a bookrack, then finding a space where the Wi-Fi was good and where it would be calm and peaceful. After long discussions, serious deliberations (fights) and shifting some furniture around, the perfect area was found and assigned.

Out came the measuring tape and careful measuring began. Peter du Bruyn, who was my DIY tutor and co-presenter on *Get It Done*, knows that this can be a challenge for me as I am a bit vain and don't always wear my reading glasses when measuring. This can lead to terrible mistakes... "Always measure twice and wear your glasses!" I can still hear Peter's voice repeating this like a mantra. "Measure twice and cut once".

At my wood merchant I had the warmest welcome and spent quite a while catching up on small talk while the wood was cut. Now this step can normally be challenging because of the time it takes as one isn't really acknowledged being a lady DIY'er. But maybe that was all in my head in the past? This time it

was like visiting old friends. Sometimes you need to rethink your own attitude towards situations as it can change your perception on many situations.

Whilst dusting off and preparing my tools I needed to do the job, excitement started creeping up on me like standing in the wings of stage waiting to go on the stage to perform. My speaker was belting out *Whole Lotta Love* by Led Zeppelin and I got started. There is a peace in your soul that is released when your hands get on with the familiar work of marking off measurements, drilling, screw-driving and sanding. As the piece of furniture was busy forming and the end result eventually stands all painted and decorated in the area where it is supposed to be, there is no bigger pride and satisfaction in life.

Do you remember the advert with the payoff line, "after action, satisfaction"? I believe every DIY'er feels like that cowboy on the TV. Therefore, don't hide those power tools too far away and keep on DIY'ing.

COMING SOON



HARNESS THE SUN. FEEL THE POWER.

QUATIX® 6 SOLAR

GARMIN.



All our 18V and 18V x 2 (36V) Models use the same battery platform

120+ TOOLS

1.5Ah 3.0Ah
5.0Ah 6.0Ah

18V Lithium-Ion

18V x 2 (36V)



Expand Your
Lithium Line Up

a member of the up
For more info, or your nearest Makita dealer contact: Rutherford: • JHB: 011 879-2600 • CT: 021 932-0568 • DBN: 031 717-6400
www.makita.co.za

