

The Cutting Edge

A periodic magazine that celebrates the activities of the Shed and its members

Volume 1 No. 13

Hornsby Woodworking Men's Shed

Spring 2017

Makita Tools Demonstration

The Shed uses a number of Makita products so a visit to demonstrate its extensive range of woodworking tools was thought to be of interest to members. At lunchtime on 5 September, Dave Bates, Makita Product Research and Development Representative NSW, arrived in a van, tastefully decorated with Makita images. He had a huge range of tools, mostly battery powered, for tradesmen who had limited access to power.



He provided the following information about his company:

Makita is a 102 years old, Japanese company, still family owned with factories in 9 countries around the world. In Australia Makita employs about 160 people. Its Australian head office is located in Pemulwuy (in western Sydney).

Batteries are predominantly 12 and 18 volt.

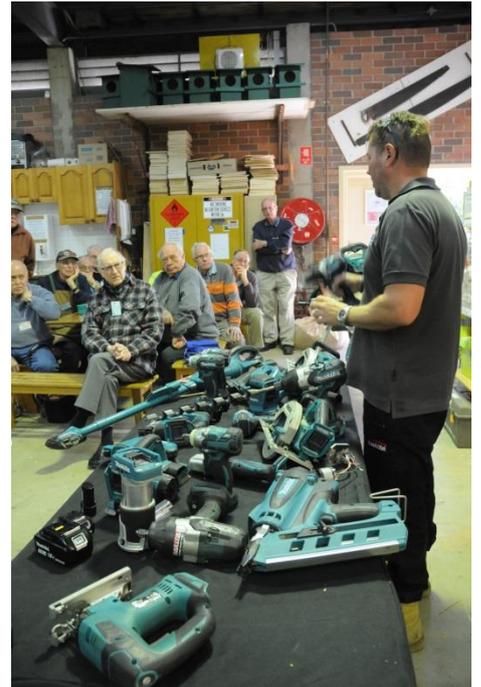
- 12 volt - small in design, to fit smaller tools designed for confined spaces. About 25 tools are on this platform.
- 18 volt - most popular, will fit 170+ tools on this platform. This platform is growing rapidly and is the most popular of tools Makita sells.
- 2 x 18 volt - requires 2 normal 18 volt batteries, (regardless of amp hour) for the tool to work. Currently there are about 20 tools on this platform.

Makita also has a large range of corded (AC) tools, petrol tools and pneumatic tools, however battery tools account for majority of Makita sales. As well, Makita has around 8,500 accessories to fit its range of tools.

Battery chargers are single port as well as rapid single port which charge three times as fast as a regular chargers. Makita also has dual port rapid chargers, a four bay/port charger, a 12 volt rapid charger and a combination dual 12 volt and 18 volt charger.



Makita is rapidly expanding its 18 volt platform. It anticipates that there will be at least 190 tools on this platform by Christmas 2017. It has just released 2 x 18 volt battery 7" and 9" grinders, as well as a 165mm plunge saw. Later in the year Makita will release a 2 x 18volt battery rear handled saw, as well as a 10" slide compound saw with a laser, bevelling 45 degrees left and right with Bluetooth technology.



The company is focused on outdoor power equipment (OPE) and business maintenance equipment (BME). OPE products include a range of battery operated lawn mowers, hedge trimmers, brush cutters, blowers, pruning shears and power head with a range of attachments. The BME is focused on the cleaning industry with stick, backpack and robotic vacuums, as well as an 8 litre normal vacuum all on the battery platform. There is also has a range of corded (AC) vacs than can be used by the cleaning industry as well as dust extraction for tradesmen. Makita has dust extraction on the

majority of its tools, including rotary hammers, trimmers, jig saws, drop saws, slide compound saws, multi tools, planers, sanders, grinders, etc. There is a focus on improving safety for the user; therefore dust extraction is a big focus.

Makita is currently the number one tool company in Australia with close to double the tool skins of its nearest competitor, Milwaukee, a big reason why Makita is so popular with tradies, apprentices and weekend warriors who want to do some home renovations themselves. Its technology in its tools, batteries and chargers, all of which talk to each other, protects each component and extends the longevity of all tools.

I have asked Dave to approach Makita to consider some kind of sponsorship arrangement with the Shed. He responded; "My boss is overseas until the last week of September. I will have a chat to him upon his return and see what we can organise....."

Member Profile: Louise Pollock

As one nearing ‘three score years and ten,’ it is hard to know how much to include in such an article about myself, the good, the bad or the ugly? Since finishing my coffin, I did wonder if this summary of my life could complete the set by forming part of my Eulogy.



My twin brother and I, along with two sisters, made up my family of origin. We lived in Epping where the family had lived for several generations. We grew up in very strict, church-going family where personal independence was not only encouraged, but essential for survival. Once we finished school we were on our own and had all left home to establish lives of our own. All my siblings chose to become school teachers, but not me! I left home looking for new experiences and adventure! I had heard of a need for people to help bridge the gaps between how Aboriginal communities operated and the government expectations placed on them!

So, at 19 years of age I boarded a plane bound for Darwin, having signed up for a two-year contract working with families as they manoeuvred through welfare paperwork and encouraging children to reach their potential. Certainly, I found that I had more questions than answers, especially the question: “who did I think I was to come into their world and expect them to live like me?” There was much to admire about their understanding of ‘family’ and their care for each other. What saddened me was the impact of alcohol on the community and how we (as white people) judged according to ‘whitemen’ expectations.

During these years I wrestled with many of the difficult questions in life, i.e. why are we here, what makes people tick, the birth lottery, suffering, injustice, racism, contentment and worth. What is important? Returning to Sydney, I worked to save enough to put myself through tertiary education and to establish some direction for my life. As a Christian, I felt I lacked understanding of what it meant to live according to the Scriptures and as a follower of Jesus. This led me to sign up at Morling College to undertake Theological studies.

During these years of study, my twin brother was diagnosed with melanoma cancer and subsequently passed away two years later! At this point ‘*those hard questions*’ became painful and I became desperate for answers, not any answers but answers that satisfied!

Graduating from Theological College, my quest for answers led me to embark on post graduate qualifications in Counselling and Pastoral Care. It was possibly at this point that my studies, questions and experiences in life helped me to move on from my pain and care for others. The natural path was to work in fields of bereavement, family counselling, chaplaincy, pastoral care, community education etc. After ten years of walking with people in pain I was very close to ‘burning out’ and in need of a big dose of celebrating happiness and joy in peoples’ lives.



At this point, following my ordination and accreditation as a Baptist Pastor, I accepted an invitation to join the pastoral team at Epping Baptist church. Seven years later I moved to Thornleigh Baptist. As part of my ministry at Thornleigh, I led a group on a pilgrimage to the Camino de Santiago (an 800 km trip, commencing in France and concluding in Spain). Wow! What a life changing

experience it was. I came home inspired to make some significant changes to my life!

Over the next five years, I analysed all aspects of my life, the physical, emotional, my health, stress levels, expectations on myself, priorities, who I was accountable to and with whom I would spend my time!

My *'mid-life crisis'* that enabled me to move to a place of 'living life', and not just 'surviving' life resulted in semi-retirement and tapping into my creative side, giving my head and heart a rest!

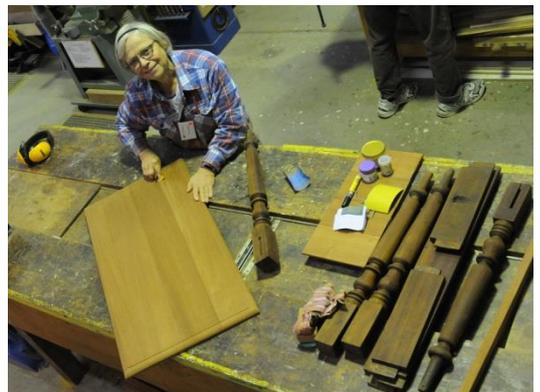
My twin and my father were both Woodwork teachers and my grandfather a builder, so I have grown up with wood and have a real love for timber. The motto at home was "only buy what you are unable to build."

Whilst at Bunnings in Dural one day, Ian Raper was handing out Hornsby Woodworking Men's Shed fliers. I made the comment that I would love to join yet my gender prevented this. To my surprise and delight Ian corrected my thinking. He said that the Shed welcomed lady members and that a number had joined.

Relieving Pastors during their holiday leave, allowed me time to explore the Shed and see if it was what I was looking for. The skill base, knowledge and experience within the members is enormous and their willingness to share their talent is indeed beneficial to novice woodworkers (especially when you are highly independent and instant gratification is your biggest liability). Hopefully, by the time I need to use my coffin these will not feature in my personality!

Since joining the Shed, I have hand-made every gift I have given (Christmas, birthdays, weddings etc.) I have given all recipients something made from my hands and heart, each one resulting in varying levels of appreciation!

My two years at the Shed have greatly contributed to me achieving a more balanced life. Finally, both sides of my brain are in sync and I am well on my way to slowing down enough to smell the wood! Some of the fruits of my labours are shown below.



Louise Pollock (Rev)

The Shed Trip to Garden Island – 5 October

Thanks to Ian Raper, 15 members plus guests had a unique experience during the outing Garden Island, both a naval base and public picnic grounds in Sydney Harbour.

We met at Pier 2, Circular Quay, to catch the 10.05am Watsons Bay ferry for the short ride to the island (it is not strictly an island since land was re-claimed in the 1940s, effectively joining it to Potts Point).

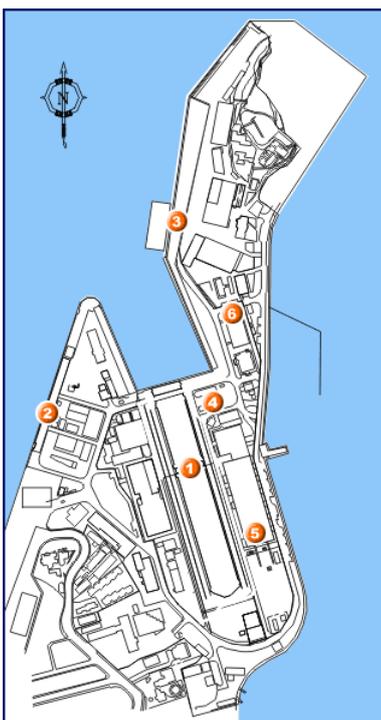
A Brief History of Garden Island

The Navy relationship with Garden Island began 10 days after the Fleet arrived in 1788 when Captain Phillip gave it to the crew of the SIRIUS to grow their vegetables. It was referred to then as “The Garden Island”. The stewardship of the Navy has been interrupted from time to time, however the Commonwealth Government owns Garden Island and it is a Naval establishment controlled by the Commanding Officer HMAS KUTTABUL. ADI and some other non-Navy units lodge on parts of the Garden Island site.



Garden Island has a rich and active history. The key phases in its history are:

- Pre 1788: Australian Aboriginal use of Garden Island
- 1788: European settlement and use of Garden Island as a naval port and ship repair site
- 1940-1946: World War II and the building of the Captain Cook Graving Dock
- 1946-1990: Garden Island as the nations dedicated strategic naval defence site
- 2002: Garden Island now



- 1 Middle of the Graving Dock
- 2 From Fleet Base East
- 3 From Top of Crane
- 4 In the Pumphouse
- 5 Top of Building 52
- 6 In the Chapel



Naval Historical Society
of Australia

We were welcomed at the ferry wharf by a guide and two uniformed sailors who asked for photo IDs and handed out blue vests for us to wear. He gave us some information about the base then led us through the public area to the Royal Australian Navy Heritage Centre that was full of interesting naval artifacts, sailors in their smart uniforms, the museum and the Salthorse Café where we would be having lunch at the end of the tour. We then proceeded down the road to the secured area, past some huge gun barrels, parts of the old cranes,



ship memorials and missile launchers. Passing through the security gates, we entered the *Boatshed* where we watched an interesting video on the history of the island. Some of that is reproduced at the end of this article. Three guides were provided so we split into groups, each also accompanied by a sailor. It was disappointing that no photographs were allowed of the base, for security reasons. Despite that, there were plenty of other opportunities to record memories of the trip, to accompany this article.



Chapel of Remembrance

All timbers used in the Chapel of Remembrance are either reclaimed or recycled and are generally over one hundred years in age. Wall panelling was milled from a rare reclaimed log of Australian cedar found in Bowral. The pillars or ‘masts’ are carved from reclaimed rosewood logs found in Mullumbimby. Ceiling timbers consist of recycled Oregon laminated beams and recycled kauri ribs from the Grace Bros site in Broadway. The altar stone is topped with carved and shaped red ironbark floor joists from the site. The top of the reception table located in the vestibule is also made from the same red ironbark together with Tasmanian oak stair treads recycled from the removed spiral stair. The base of



of the reception table is made up from various recycled hardwoods. Chairs with leather seats are made from a combination of recycled blackbutt, Australian red cedar, western red cedar and maple.





The adaptation of the stair to an imposing ‘floating’ structure has ensured that massive red and grey ironbark bearers reclaimed from the RTA site in Botany will remain part of our history. The bearers, 5.5 metres in length x 450mm x 350mm in section were sent to Echuca on the Victorian border, the only known place with the facility to mill timber of this size. Ironbark is used for all stringers and balustrade posts. The main stringer is red ironbark and located directly above the main entry doors, is 3.2 metres in length and twice cranked x 450mm x 150mm in section and weighs approximately 1.3 tonnes. Taking a good part of the overall live and dead load,

this stringer is fixed into the walls at either end giving the appearance of a ‘floating’ stair. Sydney blue gum, reclaimed from the Home Yardage Building, formerly WD & HO Wills warehouse in Kent and Bathurst Streets Sydney, will also remain a part of our history. The reclaimed timber is 350mm x 75mm sections of floor joists and is used for the risers, treads, landings, handrails and balustrades.

Tunnel System

There is a tunnel system under Garden Island that was once used by the Royal Australian Navy. Within this tunnel system was a power station, offices and air raid shelters. This tunnel complex also had a command centre. Other tunnels also exist which headed further in towards Kings Cross. The tunnels were used to move guns from one side of the island to the other.



After the tour, we had lunch at the Salthorse Café which had an interesting display of naval items. The Café is housed in the Royal Australian

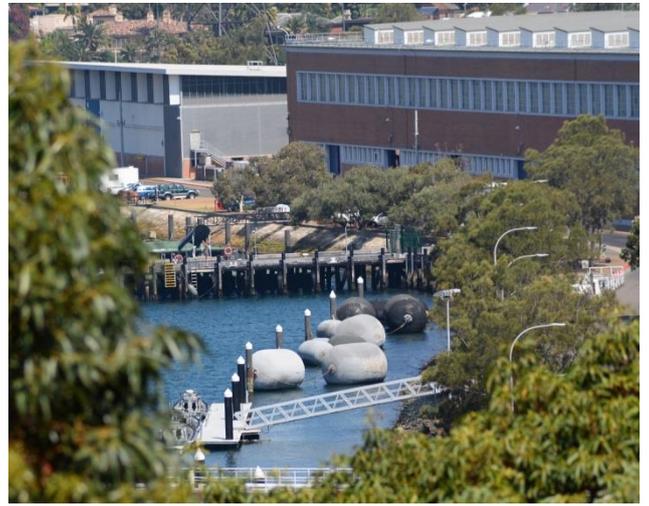


Navy Heritage Centre building. There was time to explore before our ferry was due to arrive so some of us climbed the stairs to the top of the Centre which led to the highest point of the island and



some magnificent views to the mainland and parts of the naval base, using a long lens.





Arriving back at the ferry terminal, we were given the news that the ferry was running late. Very late as it turned out but it turned into a photo opportunity as if the Navy was putting on a show for us. In reality, it was in preparation for a VIP reception later that evening.



Naval History of Garden Island

1778-1810 Garden Island and produce

- The log of HMS SIRIUS records under the date of 11 February 1788: “Sent an officer and party ashore to the Garden Island to clear it for a garden for the ships company”.
- In the first garden corn and onions were planted. The garden was situated between the hummocks on the island and was probably near the museum and chapel.
- While the exact identity of the first gardeners remains unclear they were no doubt a combination of convicts and sailors. Interestingly, on the knoll area to be opened to the public is the oldest white graffiti in Australia – consisting of carved initials – ‘FM’, ‘IR’ and ‘WB’ that have the year 1788 engraved beneath them. ‘FM’ was most likely Frederick Meredith from the Sirius who went on to become a police constable.
- These initials were lost to public consciousness until 1920. At that time newspapers speculated that the rock on which they were cut was said to be the tomb of Judge Advocate Ellis Bent and of Major John Ovens. You should note that this may not be correct and that the remains were removed to the cemetery in the grounds of St Thomas’ Church North Sydney sometime after 1886.
- The identity of one of the early gardeners is known. He was Australia’s first bushranger called ‘Black Caesar’ a Jamaican negro who was transported and sentenced to seven years of penal servitude in 1785.
- The island continued as a vegetable garden until about 1810 – although one of the problems for the garden was a lack of fresh water.

1810-1856 Garden Island-the picnic area for Sydney residents

- From 1810 until 1856 Garden Island was used essentially as a picnic area for the residents of Sydney – today it is returned to that purpose.
- In the 1850s there were rumours that the Island was the favoured place for Naval Officers of various ships to fight their duels

1856-Garden Island as the dedicated Naval Base

- In 1856 the NSW Government suggested that the Island be given over to use by the Royal Navy as a Naval Base and in 1858 the admiralty approved an outlay between 200 and 300 pounds to render the Island available for repair of ships.
- On 10 July 1911 the title Royal Australian Navy was granted by King George V to the Naval Forces of the Commonwealth of Australia. On 1 July 1913 all naval establishments in the Australia Station were handed over by the Admiralty to the RAN. These facilities included Garden Island and the buildings that had been erected by the Government of NSW in the years before federation.
- Considerable litigation followed when, in 1923, the NSW Government claimed the island as its property. After seven years the High Court and the Privy Council ruled that the NSW claim as valid.
- This was somewhat unfortunate for the Commonwealth as, in the meantime, the naval installation on the island had been greatly extended.
- With the outbreak of WW II in 1939, the Commonwealth Government resumed the island under wartime powers and, in 1945, purchased it from NSW for the sum of £638,000.

1940’s-Joining Garden Island to Potts Point

- During the War, Garden Island started to take on the shape visible today. The Captain Cook Engraving Dock, the largest in the Southern Hemisphere, was built as a matter of wartime emergency. Work proceeded in shifts round the clock, employing between 3,000 and 4,000 workers for four years. It opened early in 1945. The principal feature of the plan for the dry dock was the reclamation of 33 acres of sea bed between Potts Point and the southern shore of Garden Island that effectively joined the island to the shore.
- Not within the public access but within sight of the public access area is the site where HMAS KUTTABUL was sunk on 1 June 1942 by a torpedo from a Japanese Midget submarine, impacting the wharf below her. This resulted in the deaths of 21 sailors and was the time that *war came to Sydney*.

Source – Publicly Available Material and The Naval Historical Society of Australia

A Bit About Retirement Villages

On 15 September, Tom Gait gave a presentation to members that highlighted the complex nature of retirement village structures and contracts that meant prospective occupants really needed expert advice before making an “informed” decision. It generated a lot of interest so I asked Tom to write this article.

It is not possible to generalise that retirement living is cheaper or more expensive to enter compared to general residential. Retirement village living is cheaper where surrounding residential has been designed for and has features suitable for “downsizers”. Retirement village living is also cheaper in locations, like Sydney, where the current residential market is particularly strong. Where general residential is designed for and/or marketed to investors and first home buyers it was cheaper than retirement village living. This is not necessarily appropriate for seniors to age in place as apartments are designed for people who would be absent during the day without many of the facilities found in retirement villages. Apartments owned by investors will be rented out, often to a younger more transient demographic. Seniors buying into such a building could find it difficult to make friends with the neighbours increasing any sense of isolation.



For seniors choosing to downsize much of the general residential available today is not really appropriate. State and local governments seeking to promote the downsizing option need to be aware that medium and high density development does not necessarily result in appropriate choices for seniors. Along with an ageing population there is a growing demand for age appropriate housing options. Retirement villages are increasing faster than any other age-specific housing option in the country, and are home to approximately 5% of Australia’s older population.

The retirement village industry landscape has changed significantly over time and most State Governments have responded with reviews of the governing legislation to ensure it remains relevant and protects the rights of both residents and operators.

In recent years retirement villages have become known as Lifestyle villages, many with resort type facilities. They are heavily advertised for the over 55’s. Dwellings available today are well designed, spacious and include all the conveniences of a modern home.

Facilities offered may include heated swimming pools, bowling greens, clubhouses, in-house cinemas and sometimes a small golf course. The list goes on. Organised social activities in a village are wide and varied and designed to please as many residents as possible.

The ability to put your feet up and do as much, or as little as possible, without worrying about cutting your lawn or doing maintenance is just one of many reasons why people after downsizing choose to buy into a village.

Buying into a village is a decision, which can be richly rewarding and satisfying. It can also be a decision, if hastily made, which you may regret for the rest of your life.

Buying into a village is the ‘real estate transaction you have when not having a real estate transaction’. It is really more a lifestyle decision.

This decision to downsize and move into a village is one of the most important decisions in your life. Therefore, do not make any hasty decisions. Do your homework carefully. Gather as much information as possible, and inform yourself of all aspects of village life and the costs associated with it. Discuss your intentions with family and friends. The Office of Fair Trading has several publications available and there is a lot of information available on its web site (fairtrading.nsw.gov.au).



There are many things that need to be considered before moving. Probably the most important is the location of your preferred village. Do you want to stay close to your present locality, family and friends or do you want to make a complete sea-change to a different part of the state?

Whatever you decide, the village you ultimately choose should be reasonably near to a hospital, medical centre, shopping centre and public transport. It has to be said that some villages have a bus to assist with shopping and medical appointments.

Retirement villages operate under different types of contracts. The most common ones are Strata and Leasehold.

Strata Schemes

Buying premises in a strata or community scheme is where you purchase the unit and become the owner of the premises and a member of the owners' corporation. You will have to pay levies, on an agreed basis to the owners' corporation to cover the cost of managing the common property. You will need to be familiar with your rights and obligations under the Strata Titles Act as well as the Retirement Villages Act.

Unlike other Strata schemes you need to enter into a service contract with the operator before you can move in. There may also be an existing agreement in place between the operator and the owners corporation. This agreement, often for the life of the village is for the operator to assist the owners corporation carry out its functions in relation to the management and administration of common property. Any management fees are covered by your levies.

You usually have the right to sell your premises at any price you like. You can appoint any qualified person, including a real estate agent, or the operator, to act as your selling agent. Under the terms of your service contract, you may have to pay the operator a share of any capital gains, as well as, departure fees and other charges from the proceeds of the sale.

Leasehold

Leasehold is an arrangement where the village operator owns the residential premises in the village and the resident leases the dwelling from the operator. The lease is registered on the title deed held by the NSW government agency, Land and Property Information, which gives you added protection if the village is sold.

The amount you pay for the leasehold varies depending on the market; similar to if you were buying the premises. You also pay recurrent charges, usually on a monthly or quarterly basis.



When you permanently vacate the dwelling, your contract may require you to pay a departure fee or other amounts to the operator, such as recurrent charges and sale costs. Your contract may also provide for you to share any capital gains with the operator.

Departure fees are also known as Deferred Management Fees (DMF). Deferred Management Fees cause the most angst when departing a village. Most times those handling this part of the transaction were not involved in the first part of the transaction. The family need to be made aware of what the contract contains whilst you are still resident in the village. It could save a lot of tears later on.

The maintenance and repair of the fixtures and fittings in your unit (excluding your own) is the responsibility of the operator. This cost is included in your monthly recurrent charges which also pay for the maintenance of all common areas in the village.

Loan and Licence

This type of contract is similar to the Leasehold mentioned in and is mainly offered by non-profit organisations, such as where a Church or Charity owns the Village.

A loan/licence agreement allows you to live in the dwelling, but you do not own it or have a registered interest in it. Sometimes a separate loan agreement sets out matters relating to the loaned amount. Your permission to occupy the dwelling ends when your village contract is terminated. You are entitled to receive your refund within 14 days after your dwelling is re-sold or re-occupied. However, it must be refunded within six months from the date you move out, even if the dwelling remains unoccupied, unless your contract provided for earlier payment. The refund may be reduced by a departure fee or donation if this was in your contract.

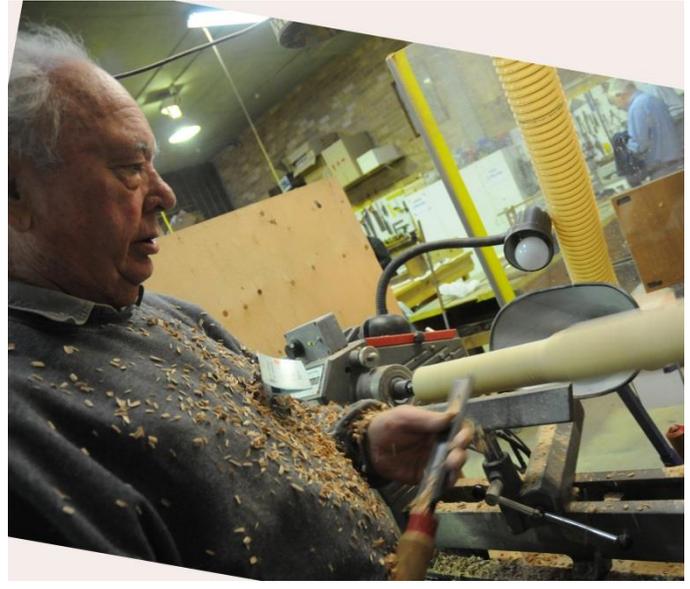
Retirement village contracts are lengthy, complex in detail and difficult for the average person to interpret, let alone understand and digest. Legal advice from a solicitor who mostly works and specialises in this area is a must.



Tom Gait

Tom is a senior member of the Shed and President of the Retirement Village Residents' Association.

In and Around the Shed



Smiling Is Infectious

Smiling is infectious,
you catch it like the flu,
When someone smiled at me today,
I started smiling too.

I passed around the corner
and someone saw my grin.
When he smiled I realized
I'd passed it on to him.



I thought about that smile,
then I realized its worth.
A single smile, just like mine
could travel round the earth.

So, if you feel a smile begin,
don't leave it undetected.
Let's start an epidemic quick,
and get the world infected!

Author Spike Milligan (possibly)

What happens to the brain as we age?



Brain aging is experienced by everyone differently. The rate of cognitive decline affects some people more than others.

Brain aging is inevitable to some extent, but not uniform; it affects everyone, or every brain, differently. Slowing down brain aging or stopping it altogether would be the ultimate elixir to achieve eternal youth. Is brain aging a slippery slope that we need to accept? Or are there steps we can take to reduce the rate of decline? At around 3 pounds in weight, the human

brain is a staggering feat of engineering with around 100 billion neurons interconnected via trillions of synapses. Throughout our lifetime, our brain changes more than any other part of our body. From the moment the brain begins to develop in the third week of gestation to old age, its complex structures and functions are changing, networks and pathways connecting and severing. During the first few years of life, a child's brain forms more than 1 million new neural connections every second. The size of the brain increases fourfold in the preschool period and by age 6 reaches around 90 percent of adult volume. The frontal lobes - the area of the brain responsible for executive functions, such as planning, working memory, and impulse control - are among the last areas of the brain to mature, and they may not be fully developed until 35 years of age.

Normal brain aging

As we age, all our body systems gradually decline - including the brain. "Slips of the mind" are associated with getting older. People often experienced those same slight memory lapses in their 20s and yet did not give it a second thought.

Having slight memory slips is normal in both younger and older people.



Older individuals often become anxious about memory slips due to the link between impaired memory and Alzheimer's disease. However, Alzheimer's and other dementias are not a part of the normal aging process.

Common memory changes that are associated with normal aging include:

- **Difficulty learning something new:** Committing new information to memory can take longer.
- **Multitasking:** Slowed processing can make processing and planning parallel tasks more difficult.
- **Recalling names and numbers:** Strategic memory that helps memory of names and numbers begins to decline at age 20.
- **Remembering appointments:** Without cues to recall the information, appointments can be put safely in storage and then not accessed unless the memory is jogged.

While some studies show that one third of older people struggle with declarative memory (memories of facts or events that have been stored and can be retrieved), other studies indicate that one fifth of 70-year-olds perform cognitive tests just as well as their 20-year-old counterparts. Scientists are currently piecing together sections of the giant puzzle of brain research to determine how the brain subtly alters over time to cause these changes.

General changes that are thought to occur during brain aging include:

- **Brain mass:** Shrinkage in the frontal lobe and hippocampus - areas involved in higher cognitive function and encoding new memories - starting around the age of 60 or 70 years.
- **Cortical density:** Thinning of the outer-ridged surface of the brain due to declining synaptic connections. Fewer connections may contribute to slower cognitive processing.
- **White matter:** White matter consists of myelinated nerve fibres that are bundled into tracts and carry nerve signals between brains cells. Myelin is thought to shrink with age and, as a result, slow processing and reduce cognitive function.
- **Neurotransmitter systems:** Researchers suggest that the brain generates less chemical messengers with aging, and it is this decrease in dopamine, acetylcholine, serotonin, and norepinephrine activity that may play a role in declining cognition and memory and increased depression.

In understanding the neural basis of cognitive decline, researchers can uncover which therapies or strategies may help slow or prevent brain deterioration.

Recent discoveries in brain aging

Several brain studies are ongoing to solve the brain-aging conundrum and discoveries are being frequently made.

Stem cells

Recently, researchers from Albert Einstein College of Medicine in New York revealed in a mouse study that stem cells in the brain's hypothalamus likely control how fast aging occurs in the body.

"Our research shows that the number of hypothalamic neural stem cells naturally declines over the life of the animal and this decline accelerates aging" says Dr. Dongsheng Cai, Ph.D., professor of molecular pharmacology at Einstein. "But we also found that the effects of this loss are not irreversible. By replenishing these stem cells or the molecules they produce, it's possible to slow and even reverse various aspects of aging throughout the body."

Injecting hypothalamic stem cells into the brains of normal old mice and middle-aged mice, whose stem cells had been destroyed, slowed or reversed measures of aging. The researchers say this is a first step toward slowing the aging process and potentially treated age-related diseases.

SuperAgers

"SuperAgers" are a rare group of individuals over the age of 80 years who have memories as sharp as healthy people decades younger.

SuperAgers' brains shrink at a slower rate than people of the same age.

Research by Northwestern University Feinberg School of Medicine in Chicago, IL, compared SuperAgers with a control group of same-age individuals. They found that the brains of SuperAgers shrink at a slower rate than their age-matched peers, which results in a greater resistance to the typical memory loss observed with age, thus revealing that age-related cognitive decline is not inevitable.

"We found that SuperAgers are resistant to the normal rate of decline that we see in average elderly and they're managing to strike a balance between life span and health span, really living well and enjoying their later years of life," says Emily Rogalski, associate professor at the Cognitive Neurology and Alzheimer's Disease Center (CNADC) at Northwestern University Feinberg School of Medicine. By studying how SuperAgers are unique, the researchers hope to unearth biological factors that might contribute to maintaining memory ability in advanced age.



Therapies to help slow brain aging

Factors have been discovered that speed up brain aging. For example, obesity in midlife may accelerate brain aging by around 10 years and both sugar and diet varieties of soda are correlated with fast-

tracking brain age, having smaller overall brain volume, poorer episodic memory and a shrunken hippocampus.

Engaging in regular exercise may help prevent cognitive and memory decline.

A growing body of evidence suggests that people who experience the least declines in cognition and memory all share certain characteristics:

- partaking in regular physical activity
- pursuing intellectually stimulating activities
- staying socially active
- managing stress
- eating healthily
- sleeping well

Recent research highlights a plethora of ways that we can actively take charge of our health and perhaps decrease the rate at which our brains age.

Exercise

One intervention that crops up time and time again to stave off age-related mental decline is exercise. A combination of aerobic and resistance exercise of moderate intensity for at least 45 minutes each session and on as many days of the week as possible has been reported to boost brain power in people aged 50 and over significantly.

Likewise, other research by the University of Miami found that individuals over the age of 50 who engaged in little to no exercise experienced a decline in memory and thinking skills comparable to 10 years of aging in 5 years, compared with those who took part in moderate or high-intensity exercise. Essentially, physical activity slowed brain aging by 10 years.

Dancing has also shown to have an anti-aging effect on the brain of seniors. A study conducted by the German Centre for Neurodegenerative Diseases, Magdeburg, Germany found that while regular exercise can reverse the signs of brain aging, the most profound effect was seen in people who danced.

Playing an instrument

Baycrest Health Sciences in Toronto, Canada, revealed why playing a musical instrument may help older adults ward off age-related cognitive declines and retain their listening skills.

Researchers found that learning to play a sound on a musical instrument changes brain waves in such a way that improves an individual's listening and hearing skills. The alteration in brain activity indicates that the brain rewires itself to compensate for disease or injuries that might prevent a person's ability to perform tasks.

"It has been hypothesized that the act of playing music requires many brain systems to work together, such as the hearing, motor and perception systems," said Dr. Bernhard Ross, senior scientist at Baycrest's Rotman Research Institute. "This study was the first time we saw direct changes in the brain after one session, demonstrating that the action of creating music leads to a strong change in brain activity."



Diet

A key component of brain health is diet. Recent research has linked omega-3 and omega-6 fatty acids in the blood with healthy brain aging. Another study has also determined that consuming foods included in the Mediterranean or the MIND diet is associated with a lower risk of memory difficulties in older adults.

Research by the University of Illinois, Champaign, IL, discovered that middle-aged people who have higher levels of lutein - a nutrient that is found in green leafy vegetables, such as kale and spinach, and eggs and avocados - had similar neural responses to younger individuals than of people the same age. "As people get older, they experience typical decline. However, research has shown that this process can start earlier than expected. You can even start to see some differences in the 30s," informs Anne Walk, a postdoctoral scholar and the first author of the study. "We want to understand how diet impacts cognition throughout the lifespan. If lutein can protect against decline, we should encourage people to consume lutein-rich foods at a point in their lives when it has maximum benefit."

The number of American adults over the age of 65 is set to more than double in 40 years, rising from 40.2 million in 2010 to 88.7 million by the year 2050. Due to this aging population, it will become increasingly important to understand the cognitive changes that go hand in hand with aging.

While many questions remain regarding the aging brain, research is making progress in illuminating what happens to our cognitive functions and memory throughout our lifetime and it is emphasizing ways we can preserve our mental abilities to improve our quality of life as we advance into older adulthood.

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