### AUSTRALIAN INSTITUTE OF HORTICULTURE

hortinsights



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### From The Editor

Welcome to the second issue of HortInsights!

The last few months have shown us how wonderful the horticulture industry can be, with so many people finding solace, hope and renewal in the green. In this edition, we bring you a diverse spread of interesting and informative stories to offer inspiration and knowledge, and hopefully a chuckle or two along the way.

I like to say that you can write with us rather than for us – if you would like to share your own take on horticultural happenings near you, your stories are what makes HortInsights varied and diverse.

David Thompson Engagement Manager Australian Institute of Horticulture



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### **Five Recent Developments In Horticulture**

The horticulture industry in Australia continues to evolve and these are five recent developments that the industry is championing. Our goal at the Institute is to bring you some of the latest developments you may not yet have heard about and keep you informed about our dynamic and ever-changing industry.



#### 1. The Good Mood Food

Hort Innovation has released an allencompassing consumer campaign that aims to lift the appeal and consumption of horticultural products (fruit, vegetables and nuts) at a time when consumers are spending more time at home and potentially using more fresh produce.

**Read more** 

### 2. Horticulture Sustainability Report

Following recent industry surveys, Hort Innovation has also released the Sustainability For Australian Grown Horticulture draft report, on which comments are open until the end of July 2020.

What is revealing is that horticultural producers and consumers tend to value the same, important outcomes – clean food, healthy environments and quality.



#### **Read more**



### 3. Wine Industry Climate Change

The wine industry is deeply concerned about the rising impacts from climatic change – and we've seen the immense impacts on wines and grapes from fires, smoke taint and declining consumption over the last twelve months.

The industry has released a mapping report titled '*Australia*'s *Wine Future: A Climate Atlas*' showing the potential impacts on wine-grape regions including Australia.

Read more

### 4. Nursery Marketing Priorities Under COVID-19

The Nursery Industry continues to focus on consumers' needs through COVID-19 and has renewed its focus on health and wellbeing benefits from plants, demand for which has held steady throughout the recent months.

The industry has a four-part plan that maintains capacity in the industry through direct advocacy and industry support.

#### **Read more**



(image credit: ABC News/Nicola Delnevo)

#### **5. Ants Pollinate Native Flowers**

An interesting story in the news covered the discovery that ants are active pollinators of the native *Conospermum*, a discovery made by a PhD student in Perth.

Research like this can open up new ways to use natural resources and the industry is backing efforts to support the use of nonhoneybee pollinators including native bees, butterflies, and even ants.

**Read more** 

### HORTITECTURE



# Atlassian Unveils A Vision For Their New Sydney Office

Sydney software giant Atlassian has unveiled plans for a stunning new office building in Sydney, to be located adjacent to Central Station. It is an amazing look, constructed of 'hybrid timber' that aims to be the tallest of its kind in the world.

Atlassian is an Australian success story – founded by two graduates of UNSW who saw the emerging gap for collaboration and teams software, they have enabled remote-working teams to share information and projects across the world.

This means that they have resources to dedicate towards top-class buildings – and this will be one of those stand-out buildings that aims to blend hard architecture with horticultural brilliance through vertical plantings and rooftop gardens on a tiered structure at the top levels. multi-level structural building material, with its flexibility and durability as engineered timber that imparts strength and shape.

The horticulture industry can now make use of more modern and innovative soil and growing media that provide the right soil volumes and weight characteristics for use on taller buildings, and we will increasingly see the use of rooftop plants at scale, as well as vertical and tiered plantings that add a cascade or layered effect.

It should make for a compelling office space and is expected to open in 2025.



There is increasing interest in using timber as a

### HORTICULTURAL TECHNOLOGY



### What Is Virtual Reality And How Can We Use It In Landscape Design?

By Matt Greenwood LEG Designer of Virtual Worlds

The way in which we as designers realise, represent and convey our concept designs is, like any form of technology, ever evolving.

We have seen this in the shift from delicate hand-drawn plans to impossibly precise CAD (Computer Aided Design) drawings and more recently to BIM (Building Information Modelling) where an intelligent 3D model is created through the documentation process.

We have also seen this in the way we present our work to the client, evocative illustrations and watercolours where 'the hand' is visible are almost extinct, replaced by computer generated 3D renderings and animations that aim to create a photo-realistic view of a future vision.

However the latest shakeup to hit the design and entertainment world has been the rapid development of Virtual and mixed realities.

This technology can range from a simple 360° photograph, or playing Pokemon GO on your mobile phone, to hyper realistic video games on home entertainment systems. The unmistakable headsets worn by users flailing at seemingly invisible objects is now commonplace across many industries.

Most importantly for designers and our clients, it offers a unique opportunity to design and showcase our work at what we would call 1:1- in other words, real-life scale.

But before we dive too far into the possibilities, what is Virtual Reality or VR? VR in the current everyday sense is the use of a headset that positions two screens, one in-front of each eye with lenses that provide peripheral immersive vision.

What is displayed on these screens and how this is constructed is completely up to the individual designing the experience.

Headsets are now commonly accompanied by headphones and handheld devices called 'Motion Controllers' that essentially track the users hands in 3-Dimensional space allowing interaction with digital objects.

Until recently the computing power and software to realise an interior space let alone a whole landscape has been out of reach. However we can now use this technology to not only design better exterior environments but also showcase this in an immersive and digital environment.

#### Virtual Reality As A Design Tool

As a designer the ability to put on a headset and be inside your creation offers unparalleled opportunity to create better landscapes, gardens, or outdoor environments particularly where there are changes of levels and more hard landscape elements.

We can now send a 3D model that we are developing on the computer to a Virtual Reality headset and upon entering this digital world you get a sense of scale and awareness immediately that isn't possible from a flat computer screen or a 2D plan.

This technology isn't just representational, we are not only able to view designs, we can start

to make notes and changes within this digital setting.

This technology is now so precise that we can take real-world measurements from within virtual reality, which is excellent for getting that bench seat, or climber clad pergola to just the right height.

That is what we can do with one headset.

Imagine what is possible when we start to add two or more headsets- we then gain the ability to have design meetings and presentations within the digital space itself allowing real-time feedback and discussions between colleagues in completely different offices, states even countries.



Side by side of the final built outcome and the design model in Virtual Reality at concept stage. By exploring a project in Virtual Reality during the design process we can start to understand the look and feel of spaces and moments.

#### Virtual Reality For You

It is all well and good for us to talk about the impact that Virtual Reality has on us and our design process, however what does this mean for the client?

Imagine, if you would, coming in for your concept presentation- we take you through the plans, the theoretical backing of the concept design and show you conceptual renders of your future garden.

We then ask you to place the headset sitting on the table on your head and you are instantly transported to a full size representation of your future garden. These are not just static environments or still images- there is movement, breeze, light and life.

You are able to walk around this digital recreation of your future garden, getting a sense of the size of spaces, layout, and how the overall design may look and feel like upon completion.

You can experience the way that light casts shadow (accurate to your home's geographical location) and as the sun slowly sets you get a glimpse of how it transforms at night with accent and path lighting all conceptually represented in a digital environment.



With dynamic lighting and time of day effects, Virtual Reality allows us to experience the space in all conditions, times and weather.

Virtual reality is not as daunting or difficult to navigate as it may seem- sure you can use the handheld motion controllers to teleport into the distance or pick up a wine glass- however you are more than able to just walk around the space like you would do in real life.

The headsets are tracked in the real-world by a suite of sensors that enable you to walk, turn and crouch like you would normally – and your designer is always on hand to guide you as needed or draw your attention to a particular element of discussion.

Whilst in virtual reality there are a couple of things to keep in mind. Like any drawing, sketch or 3D render, what is being presented is conceptual only and elements such as materiality and planting is shown to invoke a sense of what the space may be like, with these details being finalised later in the technical documentation stages.

The important elements to focus on in Virtual Reality, to get the most out of the experience as a client is; the positioning of objects, the scale of designed features (Wall heights, pergolas, terraces, path widths etc), and the ratio of hard landscape to planted areas.

So when having your next garden or landscape designed, perhaps consider the opportunity and experience that comes with having your design realised in a Virtual interactive setting.

It certainly gives us the designers greater opportunity to resolve the design in the most tailored fashion whilst offering you- our client- a lasting digital experience and opportunity to visit your future garden well before its real-world construction.

Matt Greenwood is a Graduate of Architecture from the University of Melbourne, specialising in digital design. Prior to joining LEG on a full time basis, Matt taught virtual reality at the Melbourne School of Design and was instrumental in the establishment of the Virtual Reality syllabus.

Lisa Ellis Gardens is a multi-award winning design studio based in Melbourne. Since its establishment in 2004, the studio has formed strong ties within the industry – and is now a leader in its field. With a diverse portfolio of design work, the studio lives and breathes its strong values in every project. Principal, Lisa Ellis MAIH, published this article on her website in April 2020. Reproduced with permission.

### SCIENCE



Image credit: Professor Sebastian Leuzinger

### **Are Plants Social Creatures?**

Unremarkable and largely unnoticed by the many hikers that passed it on their way to higher peaks, there is a half-rotted remnant of a Kauri tree (*Agathis australis*) that fell to the earth decades ago in a New Zealand forest. Unnoticed, that is, until Professor Sebastian Leuzinger of the Auckland University of Technology passed by, and realised it was not dead at all.

This unassuming trunk has remained alive decades after it fell and Professor Leuzinger quickly found the live wood was functional and showed definite water flows.

How could this be possible, when the stump had no leaves and none of the normal equipment a tree would need to draw water through its stems and leaves?

This Kauri remained grafted and connected through its roots to other Kauri trees in the surrounding forest, whose own activity provided the water flows and nourishment the stump needed to remain alive.

By supporting each other, these trees form a resilient colony that works together, genetically unique as individuals but linked together through the roots.

"This is different from how normal trees operate, where the water flow is driven by the water potential of the atmosphere," Professor Leuzinger says.

"The stump has to follow what the rest of the trees do, because since it lacks transpiring leaves, it escapes the atmospheric pull."

So are plants social creatures?

Social organisms are groups of individuals that form social structures to enhance their survival in the world – just as you and I live in societies and form communities to better specialise and provide mutual support in our lives.

There is increasing evidence that plants of all kinds do exactly this: working together to develop specialisations, mutualisms and cooperative structures that enhance their survival. In Peter Wohlleben's now-famous book, *The Hidden Life Of Trees*, it describes how umbrella thorn acacias react to feeding by giraffes.

Very shortly after the trees detected feeding damage they produce a chemical that turns the leaves bitter and inedible, and the giraffes no longer find them palatable. However, this isn't just in the trees the giraffes fed on – it influences the surrounding trees, up to about 100 metres away.

These trees are communicating and it turns out the chemical exchange is through ethylene, the same gas that ripens your bananas and damages cut flowers.

Other plants can tell when insects have begun chewing on them, and mount a chemical communication that readies their neighbours for the coming attack.

Research from ETH in Switzerland found that Brassicas infested with herbivore eggs induced a chemical response that caused surrounding brassicas to turn on their defence mechanisms, even before they had eggs on them.

In turn, these plants produced more flowers and more seed much faster than they normally would have, as a proactive means of ensuring the transfer of their genes and ongoing survival.

This strategy of working together to share information and mount a defence is a clever evolutionary response to the enduring threats posed by insect damage and almost looks like an 'arms race' as insects and plants react and respond.

Chemicals such as jasmonic acid influence the responses of surrounding plants and induce chemical or hormonal reactions that prepare their colleagues for imminent attack.

Professor Stephan Mancuso is a scientist at the University of Florence who believes that the parts of a plant are, in effect, much like a giant brain.

A plant needs to be able to communicate across its whole structure as well as through the environment that surrounds it, using a combination of electrical, biological, physical

## "How aware are plants of their own existence?"

and chemical stimuli. This, he says, poses the question of awareness and consciousness in plants. How aware are plants of their own existence?

"Consciousness is a little bit tricky in both our languages. Let's talk about awareness. Plants are perfectly aware of themselves.

A simple example is when one plant overshadows another – the shaded plant will grow faster to reach the light. But when you look into the crown of a tree, all the shoots are heavily shaded. They do not grow fast because they know that they are shaded by part of themselves. So they have a perfect image of themselves and of the outside," says Professor Mancuso.

Mancuso says that plants are excellent at detecting vibrations, especially around the 200 to 300 hertz frequency because that is close to the vibrations that running water makes. This kind of stimulus-response helps the plant's roots to orient toward the water source, hidden from light in the damp earth.

As horticulturists and plant professionals, we let the plants do the talking. But if you look a little closer, you may just find they are doing a lot more talking that any of us ever realised.



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### **TERRA SOLAR JACKIE WARBURTON**



### What Is A Succulent And What Makes Them Different From Other Plants?

By Jackie Warburton MAIH (Photos: Jackie Warburton)

Succulent plants store water in their leaves, roots and stems and have much thicker leaves than other plants. The word succulent comes from the Latin word 'sucus', meaning juice, or sap. They are drought-resistant plants and have adapted to living in dry environments especially well.

#### Crassulacean Acid Metabolism (CAM)

Succulent plants store water in their leaves and stems and therefore can withstand long periods without water. This is described as Crassulacean Acid Metabolism (CAM).

Crassulacean Acid Metabolism is a carbon fixing pathway that has evolved in some plants as an adaptation to arid conditions. The stomata (air holes) in the leaves are closed during the day to reduce evapotranspiration and open at night to collect carbon dioxide (CO2). Succulents have reduced stomata and photosynthesise from their stems rather than their leaves.

Figure 1



### Carbon dioxide enters, while water and

CAM plants fix CO2 at night and convert it to carbohydrates during the day. This allows them to close their gas-exchanging pores during the day and minimise water loss.

This is a variant of the C4 pathway of photosynthesis and was first discovered in the Crassulaceae family of succulents and there for named after the family. It has evolved in other plants such as Bromeliads, Orchids, terrestrial and ground dwelling plants such as Tillandsias, Euphorbia's, Grapes, Liliums and some 25 other plant families.

Cacti are only CAM plants but one exception the Pereskia family. CAM plants can sit 'idle' and the internal recycling of the fixed carbon dioxide gets the plants through a dry spell.

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#### Photosynthesis

There are only three different ways plants can undergo photosynthesis, taking carbon dioxide from the air, water, and roots as well as sunlight to transform into sugar and oxygen.

The first chemical made by the plant is a three or four chain molecule and is known as C3 and C4 and CAM.



**Figure 2** C4 plants separate carbon fixation and the Calvin Cycle by carrying out the pathways in different places.

CAM plants separate them by carrying out the pathways at different times of day.

These adaptations allow C4 and CAM plants to survive in environments where C3 plants cannot.

### C3 Plants

C3 Plants are normal plants that don't photosynthesise to reduce photorespiration and is the first step of the Calvin Cycle. About 85% of plants are C3 plants and like a cool wet environment to grow. Common C3 plants are all cereal grains such as wheat, rice, barley, oats and include most trees and most lawn grasses such as rye and fescue.

#### C4 Plants

C4 plants are created through the Calvin Cycle and made into an enzyme called RuBisCO (Ribulose-1,5-bisphosphate carboxylase/oxygenase). They have a two-step fixation mechanism. C4 pathway is used in about 3% of all vascular plants such as corn and sugar cane where common habitats are hot and dry conditions. C4 plants use Mesophyll cells then evolve the bundle sheath cells and have the highest carbon dioxide (CO2) output and the lowest oxygen (O2) and water loss through the leaves.

#### **CAM** Plants

CAM plants have a wonderful adaptability to fix the atmospheric CO2 and minimise photorespiration. The slow-growing desert succulents exhibiting CAM cycles have the slowest photosynthetic rate, while the species possessing C4 pathway possess the highest rates.

Stomata Open	Best Adapted Environment
C3 Day	Cool, Wet conditions
C4 Day	Hot, sunny environments, high water, high light
CAM	Very hot dry climate, low water availability.

#### The Calvin Cycle

Calvin Cycle is a chemical reaction performed by plants to 'fix' carbon from CO2 into three carbon sugars which then can be used to build other sugars such as glucose, starch and cellulose and used by plants as a structural building material.

The Calvin Cycle takes molecules of carbon straight out of the air and turns them into plant matter. The carbon created in the Calvin Cycle is also used by plants and animals to make proteins, nucleic acids, lipids, and all other building blocks of life.

The Calvin Cycle has four main steps: carbon fixation, reduction phase, carbohydrate formation, and regeneration phase. This is where the energy to fuel chemical reactions in this sugar-generating process starts and is provided by ATP (adenosine triphosphate) and Nicotinamide adenine dinucleotide phosphate (NADPH).

They are chemical compounds which contain the energy plants have captured from sunlight.



The Calvin cycle is a part of photosynthesis, the process plants and other autotrophs use to create nutrients from sunlight and carbon dioxide. The process was first identified by American biochemist Dr. Melvin Calvin in 1957.

#### Figure 3

**Step 1: Carbon Fixation** is the method plants use to attach carbon dioxide from the atmosphere to a chemical called RuBisCO (Ribulose-1,5-bisphosphate carboxylase/oxygenase) in order to start the process of photosynthesis.

**Step 2: Reduction Phase** - Second step in the Calvin Cycle of photosynthesis, where energy reacts with chemicals to create the simple sugar G3P.

Step 3: Carbohydrate Formation - Type of sugar that is an important nutrient for most organisms.

**Step 4: Regeneration Phase** - Fourth and final step in the Calvin Cycle of photosynthesis, where energy and sugar interact to form the molecule RuBP, allowing the cycle to start again.

So, what does all this mean to us horticulturists? Do we try to grow more C4 and CAM plants for our changing climate? What will this mean for our everyday 'popular' C3 plants that we like to grow?

If we adapt the plantings that we grow, will this benefit the environment and will the plantings will be more suited to our changing environment??



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### **DESTINATION: HORTICULTURE**



### **Destination: Horticulture**

This is an ongoing series that profiles amazing horticultural places we would love to visit. We'll take you on a little journey to some of the world's most gorgeous gardens and landscapes and you'll be able to join us online to find virtual tours and multimedia content from these incredible places.



### **Dubai Miracle Garden**

Dubai Miracle Garden is a stunning floral display garden planted during the cooler months from November to May, featuring mass plantings of flowers, shaped topiaries and structural plantings over more than 72,000 square metres.

It is the world's largest natural flower garden and the numbers behind this place are truly staggering: more than 50 million flowers, 250 million plants and uses recycled water at more than 757,000 litres a day!



The Miracle Garden holds three Guinness World Records for the largest vertical garden in the world, and that jaw-dropping Emirates A380 flower structure is the biggest in the world.



Finally, the record for the largest supported topiary structure in the world goes to the 18 metre high Mickey Mouse, which weighs more than 35 tonnes. This incredible garden is truly worth a visit!

### HORTICULTURE TECHNIQUES



### **Burning The Competition**

By Andrew Price FAIH RH (Photos: Andrew Price)

Weed growth is a valuable indicator of the health of the landscape. Weeds tell you so much about the potential of the site and should be given your full attention.

In cultivation I get much joy from the "happy accidents" of a plant coming up in the perfect spot that makes my job so much easier, plus the client essentially gets a free plant.

Unfortunately a majority of weed growth is unwanted and antagonistic to the cultivated garden, which is why weeding is such a necessary albeit overwhelming task.

Chemical control has so many biological drawbacks without even factoring in operator safety, plus you are left with the ugly dead shell of the weeds that need removal anyway.

I have been experimenting with weed burning

for several years now and consider it the best method of control for a number of reasons:

- Easily eradicates seed growth that would be impossible to remove without the patience of a saint.
- There is nothing to remove from site except your memory of what was there.
- The temperature removes the biological signature and seeds left by the weed residue allowing new species to establish.
- Your hands stay clean and warm great on a winter's morning.
- This makes weeding fun and quick not something that gets put in the too hard basket. An employee of mine had an apt saying "If it is fun it gets done".
- I regularly quote a line from Apocalypse Now when using this weed control method which is "Terminate with Extreme Prejudice".

Now before you go setting your weeds ablaze and perhaps causing a runaway fire that will not look good on your CV, please consider that this is a skill that has to be done with thought, care and caution.

This is not a job relegated to an employee that would be outwitted by a box of hammers.

Like anything that sounds too good to be true there are limitations to the effectiveness of this method, there are some species of weed that will need regular treatments before it gives up the fight - dandelions and onion weed are prime examples.

Species that it works best on are Flickweed/ Hairy Bittercress (*Cardamine hirsuta*), Spotted Spurge (*Euphorbia maculata*) and Winter Grass (*Poa annua*) - with a name like that it is no surprise that it hates being burnt.

Interestingly Ficus species (*F. macrophylla & rubiginosa*) that come up in walls are easily killed plus wayward Ficus pumila shoots and stems are eliminated with extreme prejudice.

Another good trick is to pull the weed out by the roots if it is large or has the potential to regrow and burn the root stem or tuber, which gives most plants a death sentence.

The trick is to get them when they are young as they are a smaller target. Larger weeds are normally slashed down with a whipper snipper then burnt at ground level; a repeat treatment a week later normally forces it off this mortal coil.

I hate clichés like the plague but one teaspoon of prevention is better than a pound of cure.

Be prepared to have your insurance updated by the good people of Fitzpatricks with a runaway fire clause listing the risk minimisation measures you have in place e.g. fire extinguisher on hand, site preparation, weather monitoring etc.

Never use this method on dry windy days with a high fire risk!

Sweep paths and gravel of leaves to negate flare-up hazards, being especially careful with



highly flammable leaves like Eucalyptus. Ensure that there has been no fuel or oil residue on paved areas.

Wet the soil and mulch before attempting to wilt weed growth and treat only in cool still conditions with watchful care of any ember activity.

Be sure to go back over treated areas and check for any smoke activity. If in doubt use a pump sprayer to wet any spots that might reignite with a sudden gust of wind.

If you are prepared and of sound mind you will find that the norm is a weed free garden and when they do gather the courage to germinate you almost pity their fate.

I have experimented with a variety of butane guns but my favourite is found in the tool section of Bunnings that will cost you \$40 with enough change for a small chocolate bar.

Be safe and enjoy the smell of burning weeds in the morning!

### **CURIOSITY**



### Say It With Flowers - But Probably Not This One...

A few months ago we had a little bit of cheeky fun on the socials for Valentine's Day, which is usually the time of year you would celebrate love and gratitude for your loved one with a bunch of freshly-picked fragrant blooms.

This is a fascinating plant that never fails to draw a crowd when its spectacular blooms emerge from the distinctive leafless spathe.

The most memorable thing about Titan arum (*Amorphophallus titanum*) is its incredible odour, a feature that evolved to attract pollinating flies in the jungles of its home country, Sumatra and Indonesia.

This clever evolutionary partnership relies on the production of odorous chemical compounds at peak bloom, at which point the temperature of the inflorescence increases to around 37C and helps these chemicals becomes volatiles that draw in insect pollinators.

The energy required for such an incredible bloom means these plants only flower about

every decade and between flowerings, the plants produce a single leaf of great size.

If you do like this flowering family, we recommend their more-modest relatives which include the well-known Peace Lily (*Spathiphyllum cochlearispathum*) or the Cuckoo-Pint (*Arum maculatum*), which are much more suitable for 'saying it with flowers'.



### **BUSINESS RESILIENCE**



### What Insurance Cover Does A Growing Business Need?

Provided by Daniel Holmes Fitzpatrick & Co Insurance Brokers

One of the drawbacks to owning a growing business is having more at stake.

An expanding business is likely to be having dealings with an ever-increasing number of individuals, getting involved in a wider range of commercial activities, even expanding into new locations.

A growing business usually requires a growing workforce. With more equipment and larger premises come more expensive rent payments. In such circumstances, any revenue-disrupting interruption to its activities can soon escalate into a cashflow crisis.

In short, the cover that was sufficient when you were a sole trader or running a scrappy start-up isn't likely to be adequate once you're heading up a thriving enterprise.

The end of the financial year is a great time to think about how your business has changed over the last 12 months and review your insurance policies.

If you're pressed for time or simply want the reassurance of an expert opinion, one of our friendly brokers can assist you. The cover that was sufficient when you were a sole trader or running a scrappy start-up isn't likely to be adequate once you're heading up a thriving enterprise.

#### **Employers' Liability Insurance**

When it comes time to make your first employee hire, you'll be legally required to take out workers' compensation insurance.

You should consider taking out a form of backup workers' compensation insurance called employers' liability insurance.

This is because it's possible for an employee to suffer an illness or injury that is job-related yet not covered under a standard workers' compensation policy (employers' liability insurance can cover for these type illnesses, injuries and fatalities.)

Even if it's not a legal requirement, to be an employer of choice, you could have employers' liability insurance as an additional benefit if you want your employees to have better cover in the event of an employee suffering a misfortune.

#### **Directors' And Officers' Insurance**

A growing business will inevitably become more hierarchical and possibly move from a sole trader or partnership business structure to a company one.

In any largish enterprise, there are individuals – executive directors, non-executive directors, executive officers, senior managers and the company secretary – who shoulder important responsibilities.

Understandably, these people don't want to be placed in a position where they could suffer personal financial loss as a result of doing their job.

By providing directors' and officers' insurance, a business owner can provide cover to key staff and board members. That means they can be reimbursed for their legal costs if competitors, creditors, employees, liquidators, regulators or shareholders take legal action against them.

#### **Business Interruption Insurance**

The more your business grows, the larger its fixed costs are likely to be and the more expensive an interruption to its smooth functioning will become.

A suburban café may only be out of pocket a few hundred dollars if a blackout means it has to shut down for the afternoon. In contrast, it's estimated Starbucks' recent decision to close its US stores for an afternoon (to provide racial-bias training to staff) cost around US\$12 million (A\$16 million).

If an unfortunate event means you need to shut up shop, your revenue will typically be severely impacted during the shutdown period. Nonetheless, you'll probably continue to face the usual wage, rent and other business costs.

Business interruption insurance can provide a pay-out to cover you for those costs, as well as make up for lost sales.

#### Cyber Insurance

In the digital age, an IT issue can be as devastating as any fire, flood or storm. The two

threats businesses, especially smaller ones with limited IT budgets, most need to worry about are ransomware attacks and data theft.

A ransomware attack results in a business's files being encrypted. Important data is rendered inaccessible, which can make it difficult or impossible for a business to keep operating – until a ransom is paid to return things to normal. It's estimated that, globally, ransomware inflicted US\$5 (\$A6.5 billion) of damage in 2017.

Governments in Australia and elsewhere are tightening privacy regulations and stiffening financial penalties for data breaches.

If a malicious actor overcomes your cyber security and captures your customers' personal data, the consequences can be more serious than brand damage. You could find yourself being investigated by the government regulator and being sued by your customers.

Cyber insurance can help cover financial losses arising from a cyber security breach.



#### Nursery Industry Natural Disaster Risk Mitigation And Recovery Plan

The Australian greenlife industry recognises the emerging risks that could impact on any business operator and commissioned research to assess the potential for natural disasters and severe weather events to impact upon Australia's nursery industry.

The levy-funded project, Nursery industry natural disaster risk mitigation and recovery plan (NY18008) is managed by Nursery & Garden Industry Queensland (NGIQ) and funded by Hort Innovation using nursery industry levies and funds from the Australian Government. The project has developed a national Nursery Industry Risk Map, using data sets for cyclone tracks, wind gusts and will soon include live data maps from the Bureau of Meteorology (BoM).

The Risk Map has recently utilised the Address-Based Natural Hazards Risk Ratings, developed by Risk Frontiers, specialists in assessment and management of risk across the Asia-Pacific region.

The purpose of the Natural Hazard Risk Rating Database is to provide an overview of the natural hazards affecting an individual address or geographical area.

**Read more** 





Beautiful seasonal colour with glowing lemon-yellow autumn following bright limegreen summer leaves. Strong vertical growth habit and a delicately creased leaf make this Maidenhair Tree perfect for courtyard gardens, containers and stylish landscapes. The columnar form is well-suited to formal garden styles but is equally at home in a mixed planting where it provides a contrasting vertical accent.



FULL SUN



### **FEATURES**

- Fast-growing fastigiate and compact form (no need to prune)
- Rich lime-green delicately creased summer foliage
- Clear yellow autumn leaves
- A 'living fossil' from the ancient Gondwanan continent
- Male clone that produces no smelly fruit

### USES

- Ideal plant for containers and patio displays
- Formal gardens and landscapes for vertical accent
- Distinctive hedge with spectacular seasonal colours
- Pollution tolerance suited to street and roadside planting
- Ideal for tight settings
- Popular bonsai specimen

### CARE

Low to medium water requirements once established. Best planted in a position sheltered from severe northwesterly sun and hot and dry winds and will perform best in temperate climates with cool to cold winters. Fertilise in late winter and mid-summer for optimum results.



**ORIGIN:** Netherlands // SPECIES: Ginkgo biloba // PROTECTION STATUS: PBR Protectable



Picture and information intended as a guide only. Visit www.pma.com.au for more info.

### Write for AIH

We welcome contributions to HortInsights from professionals, members and students in the horticulture industries.

Writing for the Institute offers an excellent way to share your views, knowledge and expertise with a passionate audience and you can be attributed CPD points

While we are unable to pay for content submissions, our editorial promise is that if your submission is accepted for publishing, we will endeavor to repurpose it widely, for our website, social media or other public media channels.

#### These Guidelines Will Help You Provide The Right Format To Be Published:

- Articles should be a maximum of 500-600 words. A more concise article with a definite aim and strong take-home messages will help our audience use your expert information well.
- Please provide sources and references if you cite or refer to others' information in your article.
- Please provide 1-2 quality images. Photographs must be large enough to be used in a range of publications with a file size of between 1 and 5 MB (megabytes).

We reserve the right to make editorial, grammatical and stylistic changes to text and images.

HortInsights is published six times per year.

#### **Dates and deadlines:**

#### September 2020

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#### November 2020

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#### March 2021

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### Next Issue: 1st September 2020

## hortinsights

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