

POLLEN PRESS

A photograph of a field of purple Salvia flowers. The flowers are arranged in tall, vertical spikes. The leaves are green and serrated. The background is a soft, out-of-focus field of similar flowers under a pale sky.

**CORE
STRENGTH**

MONARCH ENVIRONMENTAL

Monarch provides unbiased, expert consulting for all things landscape. We are an unaffiliated third party working with homeowners' associations, commercial projects, and nonprofits to support landscapes and the people who care for them.

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INSIDE

This quarter, we're getting back to our core: understanding plants, trees, and water

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Cover

Vintage Salvia

Monarch Environmental



EDITOR'S NOTE

Like us, a landscape is an entity made up of parts. These parts need to function independently to function together. Managing a successful landscape is rooted in understanding its core components: plants, trees, and water.

In this issue, I want to take you back to the core of landscaping. We're going into the field with our summer intern to learn about how we support tree health. Our water guru Andrew leads you step-by-step through irrigation renovation. I will personally introduce you to a favorite plant family of mine, Rosaceae, the clan of apples, almonds, roses, and plenty of other botanical treats.

There are factors that we can only respond to and not fully control. Soil character, weather, wildlife – outside forces that can be subtly improved (there's a lot you can do to support soil health or attract pollinators, after all) but ultimately these are up to nature. Our defense is making the best choices when we're lucky enough to have a choice. What plants to choose? How best to water them? Are they healthy and what can we do now for their future? Mastering each component and moving on to managing them all at once is a lifelong practice. The secret to making it work is the same way the landscape makes it work – independent parts functioning together. Join the Monarch Team in this issue to see how we're strengthening our core.

Managing a successful landscape is rooted in understanding its core components: plants, trees, and water.

Jen Wilson

Director of Horticulture
Editor, Monarch Publications

CORE CONTRIBUTORS



Matt Davenport

CEO and President Matt Davenport founded Monarch Environmental in 2008. In addition to his management role, Matt serves as consultant for horticulture, irrigation, arboriculture, and contract oversight.



Jen Wilson

Jen Wilson is Director of Horticulture and Editor for Monarch Publications. She is a horticultural consultant, certified arborist, and Qualified Water Efficient Landscaper. Her background is in horticulture, landscape design, and fine arts.



Evin Lambert

Evin Lambert, Director of Arboriculture, focuses solely on arboricultural consulting, protecting our clients' most valuable assets. Her expertise extends to leading arboricultural technology and urban forest management.



Andrew Chase

As our Director of Water Management, Andrew Chase leads our team in best irrigation practices. His specialty is water conservation in drought conditions and harsh climates. Andrew is also a hydraulic and electrical troubleshooting expert.



CHAT WITH MATT

Matt Davenport
Chief Encouragement Officer

Do you ever ask the question,
How did I get here?

I know I do. That question floats to the top of my thoughts more than I would like to admit. Not because I don't love my life or I'm ungrateful. Rather, my *How did I get here?* moments are quickly replaced by a sense of awe and wonder. The awe comes from a spirit of honesty. The fruit of my labor both personal and professional far exceed my natural abilities. Wonder comes from an attitude of excitement. If one makes plans and they don't work out, but the consequences are better than what you intended, I can't wait to see what's next.



Sow and Let Go

Since starting Monarch in 2008,

I have become increasingly comfortable with the farmer's mentality. You plant the seed, and you pray for rain. Sure, there is a lot of tilling, watering, picking, and pulling in between but at the end of the day our job is to sow and *let it go*. Working to control an outcome is like standing over a seed and demanding it germinate. We must wait for the right soil temperature, sunlight, and irrigation to provoke that seed to pop. **We can't be both the sower and the seed.** Our job is to plant, and the seed's job is to grow. Allow yourself to sit in awe and wonder as that seed does what it is designed to do.

Our core values at Monarch are simple: ***Rooted in Relationships, Cultivate Collaboration, and Growth with Purpose.*** These values are centered around people, yet are critical for the successful care of the landscapes we serve.

In August of 2008, my wife and I had a 3-year-old, a 3-month-old, and a mortgage. I didn't have a rich uncle, a 401k or a backup plan. What I did have was a great relationship with my wife, my kids and my community. That relationship allowed me to feel supported to take a big swing at life. My goal was to provide for my family and fill a needed niche in the landscape industry. I wish I could tell you that I planned on having a dozen consultants, clients all over the state, and an office in Dana Point but I didn't. My focus was and remains on relationships. This focus led to collaborations with some amazing people in our industry. Those collaborations allowed Monarch to grow into what it has become today.

Don't get me wrong, strategy is great and plans are important. But the greatest avenue for growth and personal satisfaction have come through the unintended.

As your Chief Encouragement Officer, I would like to remind you that without you, that seed is sitting in a warehouse and without the seed, your purpose is unclear. Enjoying the unintended and organic life moments will bring awe, wonder of focus to your life.

LUNCH WITH LEGENDS: PAUL JOHNSON

Paul is a past President of the Building Industry Association, Orange County and has served on the Executive Board for the Building Industry Association, Southern California. In 2013, Paul was named "Person of the Year" by BIA-SC's SAGE Council.

Matt Davenport, Chief Encouragement Officer

How did you get started in the industry?

My dad was a builder for small homes in the San Fernando Valley. When he got out of the Navy, he started building houses with his uncles. He was a carpenter all his life. In grade school, I would spend summers with him picking up nails or doing anything on the job site. I just knew somehow I would be building stuff. That experience led me to think I wanted to be a civil engineer. The more I learned about being an engineer, the more I realized that it wasn't the right fit, so I earned my degree in Urban Planning. When I finally experienced classes in my major it really clicked.

Was working with your dad voluntary?

Well, our family had six kids. You could go with him or not go with him. I just loved being exposed to his world. I got to spend most summers with him until he took a job at a large finish carpentry company. I have been around wood my whole life. I thought at one time I would try to create furniture but it's remained a hobby. Right now, I'm helping my daughter renovate the inside of an RV. I get called by family and friends to do things here and there.

What was your first paid job?

A paper route! I thought it was the coolest job ever. We were up and out at 5:30 rain or shine. I have always liked to be thinking and doing and getting something done.

Rancho Mission Viejo's Rienda neighborhood is a crowning achievement in development

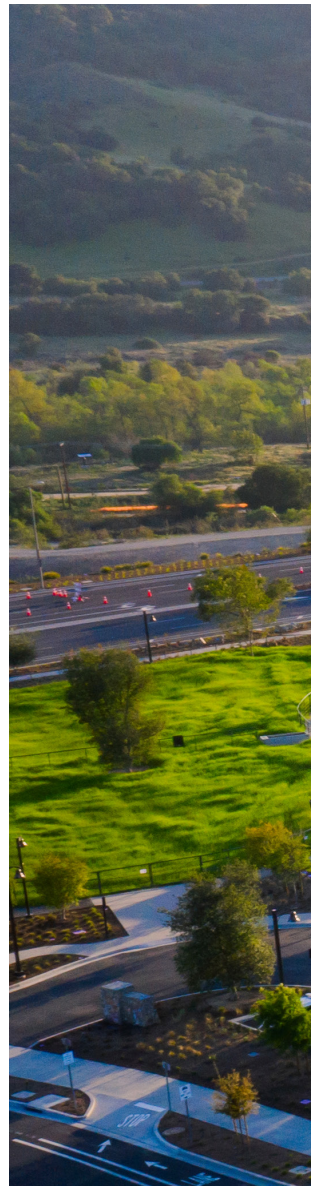
Did you play sports growing up?

Football, until I realized that I was 100 lbs lighter than the guys around me. I wanted to be a linebacker and my coach came to me and said, I just want to tell you it's going to be hard to be a linebacker at your size. In baseball, I was a catcher my whole life. My coach would allow me to call pitches and I just loved figuring out how to beat the other team. I couldn't imagine standing in the outfield. Maybe my desire to be involved as kid who wanted to have influence over the whole game carried over to my career? Pretty cool.

What kind of work were you doing right after college?

My first jobs were back in civil engineering doing entitlement work for builders. That's when I realized I wanted to be on the other side of the table. I ended up at Shea Homes and it worked it out great and I was ultimately exposed to community development. I liked the large scale, complexity of the process with development. I also like looking back and seeing 5,000 homes on the ground.

Short sleeves in Antarctica? Paul is no stranger to tough conditions, at work or at play.





IF I'M DOING
WELL, I WOULD
RAISE MY HAND
AND SAY,
I CAN DO MORE



How have you managed to grow and stay engaged?

I would consider myself a late bloomer. I never wanted to get a position just to get there. I wanted to learn this business from the ground up. Working with a civil engineering firm in Riverside taught me about entitlement and understanding how to get on the builder side. Once I landed with a builder, I absorbed what I was learning and they would eventually give me more to do. I have always been one that if I'm doing well, I would raise my hand and say, *I can do more.*

Eventually, I was running a small master plan for Shea in Walnut Creek. That fueled my interest to see how much bigger this can get. I really wanted to get a job and keep

It took me a while to earn the title VP or Senior VP. I understand the nuts and bolts and really appreciate everyone it takes to build a community. I think if you don't have fun along the way, you will never get the best out of your team. It doesn't mean you goof off but I really appreciate helping people grow. You have to have an element of comradery.

The timing of your urban planning degree was amazing!

Yes, it was. I thought I would end up working at a city but after an internship with the City of Los Angeles, I learned that may not be the best fit. The suburbanization of Southern California was really coming into focus for a lot of folks.



Adventurers Paul and Roylean take on Machu Picchu

Who in your journey, personally or professionally is the best leader you have been around?

Obviously, my dad. He was a very honest guy. I think in my career, Steve Schrank. He was a very smart guy. He was really a big creative thinker that closed a lot of gaps in my career. I didn't want to get to the top and not know what I was doing. That feels insincere. How can I lead people and tell them I want them to grow but not know how to do it? Steve Kellenberg was another guy that had a big impact on me. Steve is a brilliant planner and being able to work alongside him opened a lot of big ideas during the Ladera Ranch days. Hanging with these guys was like getting a PhD in three years while working 60+ hours a week. It was amazing! I really wanted to accomplish good things. You do that by being around people who will push you. Both guys were patient with me.

You have served as BIA (Building Industry Association) President and have been involved in so many key initiatives in the industry. How did you manage to accomplish so much?

You know, I would never say no to helping. Because if you take it on with the right attitude which is *I'm not going to do it all*. I'm just going to organize it and then we are all going to get involved and have some fun. If you want to get something

done, find the busiest person with the right attitude and they will get it done.

How would you define leadership?

For me, leadership is about giving back. You as leader are the one that gives back to your team. You are a giver, not a taker. As a leader, you should have vision. Crystallize that vision so that those around you can pick it up and get wins for themselves. You are only as good as those around you. The team needs to know that you have their back.

What do you get the biggest kick out of at your job?

I think today, I have more and more fun watching my managers growing their people and their teams. Leading people to get the best outcome

FIND WHAT YOU LOVE
TO DO AND WHEN
YOU FIND THAT YOU
WILL DO YOUR BEST



is fun I really love watching the team grow and adding some creative thoughts along the way. Keeping things fresh by pursuing new ways of thinking is fun for me. You must be open to new ideas. Leaning into being inventive always brings good things.

What accomplishments are you most proud of?

I have been married 47 years! We didn't marry out of high school, but she was my high school sweetheart. We have three great daughters who are grown and out of the house and four grandkids. This is not common based on how driven I was. Kudos to my wife, Roylean, for always letting me know when I needed more balance. People in the industry know her better than they know me. We always did things in the industry together. She got to know colleagues and friends throughout my career by coming to most events with me. She can hang with anybody! Professionally, there wasn't a time where I learned more than the Ladera Ranch days. In your 30's you learn what you love to do and then in your 40's you want to get those skills you need for your 50's and beyond. The Ladera days were quite a gift. I'm most proud of those days because of my personal and professional growth was exponential.

I know you love adventure, what's been your favorite?

I am an adventurer. I love to mountaineer. In fact, next week I will be backpacking for a week in the Sierras. I climbed Mt. Rainier where you have to ice climb and that really test your skills. I learned there that I don't want to die in the ice on Ever-

Paul credits Ladera Ranch as the proving grounds in his career

est. I also did Kilimanjaro where you get to 20,000 feet. I always wanted to get to that height because that's the base camp at Everest. I have always kept something athletic wise out in front of me to keep me healthy. We used to do adventure races and other crazy things like that.

If you were blasting off to Mars tomorrow, your ultimate adventure, what would you want to say to the next generation?

Find what you love to do and when you find that you will do your best.

Do you see any similarities in the housing market in 2008 to today's market?

First off, you need to be careful about media headlines. The media likes to be negative because they need to sell papers. This business is a very localized business. In the world of South Orange County there is only Great Park, Irvine Co, and Rancho Mission Viejo as land suppliers. Irvine is not selling land anymore, Great Park is retooling but will be out of lots by 2030. So, by 2030 we will be the last standing community developer with available lots. Is it slowing, yes. Interest rates make an impact but in this area we have huge demand and low supply. We are selling 5-10 houses a week. It may slow more in 2023 but it's not going to be draconian. Areas that have become overextended will see larger impacts. Parts of the country like Austin, Idaho and parts of Arizona will be hit harder because there is simply more supply to choose from. That's just not the case here.

What is next for you?

I turn 70 in March. So, at the end of that month, I will move on. I will take a few months off and take the whole family on vacation. I have some ideas of what I want to do after that. I'm not a good enough golfer to do just that so I will stay plugged into the industry and will do some consulting.

Paul, I want to personally thank you for allowing myself and the Monach Team to partner with you and your team at Rancho Mission Viejo. I owe you a great deal of gratitude for the model you have set and the time you have shared with me along the journey. I can't wait to see where the next adventure takes you.

-Matt Davenport



WELCOME TO THE FAMILY



Straight out of Shakespeare, plant families are sprawling, complex, and fraught with peril. A rose by any other name would smell as sweet (but would not be taxonomically correct).

Even to the uninitiated, plants appear to have similarities and relations that shift them into categories. We are especially sensitive to plants in our daily lives; while you may not know the difference between a cultivar and a varietal, you can probably name your favorite type of apple or cut flower.

Grouping plants together helps us understand how they function in nature. Taxonomy is the scientific classification system used to organize living things. Typically, you'll see seven major levels used to represent this system: Kingdom, Phylum, Class, Order, Family, Genus, and Species. Occasionally, more nuance is used but these levels represent a good working knowledge of practical taxonomy. From Kingdom to Species, the taxonomical system orders organisms from broadest to closest relation. The Plant Kingdom contains all plants, for example, while the next level down, Phylum, only

Heteromeles (toyon) is a staple of the native California landscape

ROSACEAE

The Rose Family and Sub-Families

Amygdaloideae

Includes stone fruits and more

- Apricot
- Almond
- Cherry and cherry laurel
- Peach
- Plum
- Photinia
- Toyon

Spiraeoideae

- Bridal wreath
- Meadowsweet





The strawberry is a landscape hero - charming, tasty, colorful, tough, and pollinator friendly

includes flowering plants. As we go down the ladder, plants share more and more traits until they can become quite difficult to tell apart.

So, what do we do with this system? In agriculture, specific plant groups are used in seasonal crop rotations to keep soil in its best condition without depleting resources. Ornamental landscaping, on the other hand, is a long game. Species selection is infrequent since plants are expected to perform for many years, if not decades, in the same soil.

The most helpful classification to the landscaper starts at the Family. In this case, we'll look at the Rose Family, Rosaceae. Plants in this group are seemingly diverse – roses, of course, but also raspberries, plums,



KINGDOM
Plantae
Plant Kingdom



PHYLUM
Angiospermae
Flowering Plants



CLASS
Dicotyledonae
Dicots



ORDER
Rosales
Roses and Rose Allies



FAMILY
Rosaceae
Rose Family



GENUS
Rosa



SPECIES
Rosa sp.

The hierarchy of taxonomy from the perspective of a rose

Maloideae

Includes apples and more

- Crab apple
- Pear
- Loquat
- Quince
- Pyracantha (firethorn)
- Cotoneaster

Sub-families further help us refer to plants that share useful characteristics

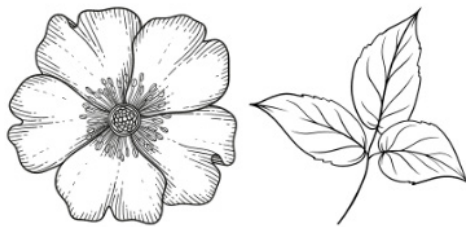
Rosoideae

Includes roses and more

- Strawberry
- Raspberry
- Blackberry
- Cloudberry

quinces, *Photinia*, and *Pyracantha*. Deep familiarity with these plants allows the horticulturist to easily grasp the similarities in this family – bisexual flowers are typically five-petaled in a limited range of colors; leaves are alternate, simple, or compound; fruit will present in one of about five types. When identifying a plant in the field, we are using a process of eliminating possibilities based on these predictable characteristics. A positive identification is the first step in plant care.

Knowing what a plant is and what family it belongs to can help us understand its vulnerabilities and the overall integrity



FIVE-PETALED FLOWERS ARE A COMMON TRAIT SHARED BY MEMBERS OF THE ROSE FAMILY

Field ID looks at how plant parts are constructed: texture, color, shape, smell, arrangement, and many other clues tell us about a plant's identity

of the landscape. If you have ever grown and lost an ornamental pear tree, you may be harboring a grudge against fire blight. This bacterial disease is especially destructive to edible and ornamental pears, apples, and popular ornamentals like *Pyracantha* (firethorn) and *Heteromeles* (toyon). These are species that are frequently planted in masses (picture parkways lined with pear trees, apple orchards, and slopes populated heavily by *Pyracantha*). Any loss of material in the landscape is frustrating but when an entire species is at risk the losses can become catastrophic. Now imagine a slope planted not just with *Pyracantha* but carpet roses at the toe and punctuated with toyons. Suddenly, one plant's susceptibility becomes a liability for the greater landscape.

Biodiversity (a healthy selection of diverse material that

in landscape design for this reason, as well as other factors in environmental sustainability such as supporting beneficial wildlife. Achieving diversity comes from awareness of relationships.

Taking this next step in design is a worthwhile investment and will hopefully enrich your environment and your appreciation for the spectacular range of plants available.

Clockwise from top left: apple, firethorn, California rose, strawberry, loquat, pear, toyon



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Water Wise Up

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C E L F B C Q A Y B T D Q N N L A S H A D E U F
O R L P E U X Z I E E W K O R E T E N T I O N V
M C G A X S D D G N E D R I S J V N A T U R E U
M L B D W U E Z A A R Y S T O W H A W T E Z U E
U I U T I S D C T N H O F A I C Z Y Z B S J E D
N M D C S V W H R M S Q F G L S T R A T E G Y R
I A Q E Q E E Y E U L B N I W O A T C V J Q D O
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V I Y P S Y T N L N H Z S R W S D E S J Y X C T
S T O O R E Z T J Q R A I N F A L L W H B N X A
Y R C H R Q P P V Z X S E R O S I O N T O A Q L
Q E P A C S D N A L Y R D K Q C Z R O M D P G D

DROUGHT PROJECT
RESOURCES COMMUNITY
IRRIGATION WATER
LANDSCAPE NATURE
DESIGN RAINFALL
WORKSHOP RETENTION
CONSERVE SWALE
REBATE HARDSCAPE
CALIFORNIA EROSION
CLIMATE FOLIAGE
SOIL SHADE
SHRUBS ROOTS
BLOOM STRATEGY
SEASON WEATHER
ECOSYSTEM

TREE HEALTH: RESISTOGRAPHS

JORDYN TAMANI

Cal Poly SLO Landscape Architecture Student
Monarch Intern

As a landscape architecture student, monitoring the health of trees is not something we learn in the studio or classroom. Fortunately, I had the opportunity to accompany the Director of Arboriculture Evin Lambert and consultant Kathleen Craig in the field to resistograph a *Pinus halepensis* in the city of Mission Viejo. A resistograph is a diagnostic tool to detect decay in a tree by measuring the wood's density.

WHAT IS IT?

A Resistograph is an electronic drilling device that measures and records wood density. There are several types of these instruments, but the one that Monarch utilizes has a 16-inch-long stainless-steel drill bit that is only 3 millimeters in diameter. This method of wood inspection is minimally invasive and provides important wood density data that is otherwise difficult to gather without such a tool. The resistance the drill bit experiences ultimately informs us on the structural stability of the trunk at the given drilling point.

Even with some internal decay, it may not be necessary to immediately remove a tree if it still has sound outer walls. However, if more than 30% of the circumference of the trunk appears to be decayed, removal may be recommended.



Ever see colored pins in a tree? They are placed in areas where the tree has been surveyed by a resistograph. Sites for drilling are often chosen near the base of the trunk and at cavities/suspicious areas.

This is an especially critical decision when targets such as people, pets, property or vehicles may be within the tree's fall zone. As with any tree located close to valuable targets, it is important to reinspect it (at least) annually for any signs that the decay

Director of Arboriculture, Evin Lambert, explains how to use a resistograph to Monarch's summer intern.



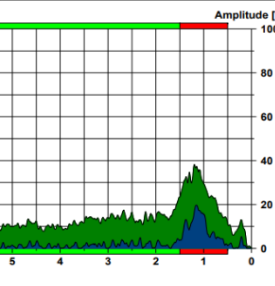
Measuring / object data

Measurement no. : 7
 ID number : ELS PEAR 90 - 2
 Drilling depth : 12.886 "
 Date : 20.06.2019
 Time : 09:32:09
 Feed speed : 30 7/min

Assessment

Needle speed : 3500 r/min
 Needle state : —
 Tilt : -90°
 Offset : 72/401
 Avg. curve : off

Diameter :
 Level :
 Direction :
 Species :
 Location :
 Name :



As per the results, the wood is riddled with decay.

These are the resistograph results of a Callery Pear tree that suddenly fell over.

has spread or any other conditions of concern have developed.

WHAT IT MEANS TO YOU

It all boils down to safety. Where decay exists, the structural integrity is diminished. Tree failure can happen at any time, falling on residential or commercial structures, vehicles, or even people Risk assessment of trees on your property is crucial to preventing property damage and ensuring everyone's safety.

WHAT IT MEANS TO A STUDENT

I see landscape architecture as an opportunity to blend art and the natural world. There are so many other aspects to consider in the maintenance and health of a design, and tree health is one of them. Learning beyond the classroom is a step toward becoming a better designer and collaborator.

WHY DECAY HAPPENS - AND HOW TO PREVENT IT

Any sort of wound leaves a tree vulnerable to the wood-decay fungi. While trees can be exposed to decay from natural weather conditions, the main threats to trees are human actions.

- Using trimmers and lawn mowers too close to the root collar
- Irrigation heads over-spraying water onto trunks
- Improper pruning practices

Improper pruning of branches or roots can promote the development of decay, so it is important to remove decaying limbs so that it does not spread to the rest of the tree.

While it is not pleasant to have to remove such a valuable asset from

the landscape, removing a decaying tree in a timely manner can save lives.

If you are concerned with the health and stability of your urban forest, we offer the following arborist services:

- General tree assessment & care recommendations
- Risk assessments
- Resistograph/sonic tomography testing
- Pre-construction tree protection plans
- Construction observation
- Fire risk assessment

When using the device, you must push hard into the tree. Make sure to bring a partner so you don't slip off the slope!



TREE BLINDED ME WITH SCIENCE

EVIN LAMBERT

Director of Arboriculture

KEY TERMS

Resistograph: a device that physically measures internal tree density with a drill bit

Sonic Tomograph: a device that measures tree density through soundwaves

Caring for a community of trees is a responsibility that builds a legacy. Trees are your biggest landscape asset, physically and financially, and the longest-lived.

Retaining or removing a tree is not a decision to take lightly. Advanced diagnostic technology can help you make the right decision for your landscape in the moment and act strategically in the future. Monarch uses resistograph and sonic tomograph data to help our clients make the best possible choices for their trees. Both tools give us information about the internal structure of trees. Knowing how and when to use each device and interpreting their data requires specific expertise.

Why might an arborist recommend resistograph or tomograph readings?

The information revealed from the diagnostics will certainly be

valuable to the arborist, but it is even more critical for community leadership to support their decisions:

- Allows the property manager to get real data instead of speculation regarding the structural integrity of tree trunks and accessible branches
- Provides evidence to refute or confirm suspicions of instability, and allows all involved parties to share one set of facts
- Trees are an emotional topic, and an unbiased record can be useful in approaching removals scientifically. Whether someone is adamantly for removal or against it, having hard data to provide proof of

REFUTE OR CONFIRM
SUSPICIONS OF INSTABILITY,
AND ALLOW ALL INVOLVED
PARTIES TO SHARE ONE SET
OF FACTS





structural integrity (or lack thereof) puts the issue into a neutral context.

How does this information inform decisions?

If there is a question of a tree's structural stability and a qualified arborist has recommended further diagnostics, the decision makers involved need to understand their responsibility to the tree, the community, and individual residents who may be affected.

- Removing trees unnecessarily is a huge loss to the community and the landscape. Trees provide shade, carbon sequestration, aesthetic value, wildlife support, soil integrity, and so many other benefits. Trees also represent time commitments – you may be able to replace a tree but not match its maturity.
- Where there is a structural defect, taking the wait-and-see approach is similarly not ideal. Given the unpredictability of the natural environment, delaying action is inherently risky. Limb and whole tree failures can occur

Mushrooms are concerning as they flourish in decaying wood. This tree is a good candidate for internal diagnostics.

The exterior of a tree may appear as sound as ever while it is rotting away inside



without fair warning, after it's too late to take action to mitigate the chances of failure.

In what circumstances are these tools useful?

Sometimes, it seems more cost effective to simply remove a tree that is causing concern rather than investing in diagnostics. Beyond deciding whether to remove an individual, this data is valuable to the rest of the urban forest and can help in future planning.

- Allows us to see which species are more susceptible to decay, and should not be used in the future (in certain locations / applications)
- Trees that have been chronically at risk for decay (trunks occluded by built-up soil or leaf litter, for



example)

- Some species have a lower tolerance for root pruning (not able to compartmentalize wounds as well as other species) which may have been pruned in the past without our knowledge, which predisposed them to decay development that begins below grade and spread to the trunk.

Contact a qualified arborist to help you assess, diagnose, monitor, and make decisions for your trees.

Director of Arboriculture
Evin Lambert holds the following credentials:

- ASCA Registered Consulting Arborist
- ISA Certified Arborist
- ISA Tree Risk Assessment Qualified
- CA Pest Control Adviser

ASK A WATER MANAGER



Burning questions about irrigation? Monarch's Nick Mayer is a Certified Water Manager, here to answer some of our most frequently asked irrigation questions.

NICK MAYER

Resource Management Consultant

Q: How do we protect our irrigation system from being vandalized?

A: Try *softscape* (living things) to disguise and create a barrier from high traffic areas. If you can't plant here, natural materials like repurposed rocks can protect above-ground components from off path traffic.

Q: Our HOA regularly incurs costly emergency calls for "stuck valves", why is this happening and how can we be proactive?

A: There are a number of reasons why irrigation valves will not shut off normally; the most common include:

- Controller programming error
- Valve was physically opened
- Debris inside the diaphragm
- Damage to the solenoid

Installing a *master valve and flow sensor* that communicate with a smart controller will catch irrigation valves that have not shut off normally, and will close down the supply of water until the next programmed water day.



Trees have their own watering needs to consider, which will change as they mature

Q: We hired a landscaping company to install a number of trees on our common area slopes. The trees continue to dry out while the surrounding plant material is thriving and green, what should we do?

A: Trees require *deep and infrequent watering* once established. Juvenile and recently installed trees require frequent and deep supplemental watering to soak the entire root system as the tree attempts to get established. The existing irrigation system is likely designed to water the established plant material; this can be resolved through programming adjustments and the installation of a dedicated zone with tree bubblers for the newly planted trees.

Resource Management Consultant Nick Mayer holds the following credentials:

- EPA Water Sense Partner
- Certified Water Manager
- Qualified Water Efficient Landscaper
- C-27

TURF MATTERS



JEFF BEARDSLEY
Consultant

What's the matter? THATCH! Thatch is the build-up of dead organic material under actively growing grass. Annual thatch reduction is a requirement for maintaining a healthy stand of warm season turfgrasses. If you are only aerating your turf, it's time to upgrade your turf management practices.

MYTH: Aeration alone will sufficiently remove and adequately maintain thatch

FACT: Aeration reduces soil compaction and introduces air into the rootzone. Aeration is not a substitution for verticutting.

WHY Matters

Peak summer season brings high temperatures, both in air and soil, which accelerates growth for all warm season turf grasses. You may have one of these popular types in your community:

- Seashore Paspalum
- Hybrid and Common Bermuda
- Kikuyu grass

Staying ahead of the growth curve with properly timed agronomic prac-

tices will prevent turf from becoming thatch-y, spongy, and prone to the scalping mess that is frequently found this time of the year.

WHEN Matters

Scalping and thatch reduction is best performed while the turf is actively growing. In SoCal, this is late spring to early summer with soil temps at 65 degrees and climbing (measured at 2" root depth). Equally important is to allow 2-3 weeks of grow back and fill-in time.

A fall renovation window centered around overseeding is beneficial for further reductions of thatch. Fall verticutting should only be done in preparation for overseeding. Fall renovation will open warm season turf to injury without the adequate growing time needed to heal.

HOW Matters

Verticutting is a mechanical operation using equipment outfitted with vertical blades intended to slice and cut stolons.

Scalping used in concert with verticutting physically removes excess material and restores the turf at a proper height of cut (1"). It is critical that this height is maintained going forward. A sharp cutting blade is turf's best friend to prevent damage and maintain turf health.

Aeration is the process of taking small cores of roots and soil from the turf to reduce compaction and allow for gas exchange

Thatch build-up ruins the smooth, firm surface of your turf



IRRIGATION PROJECTS

MANAGING FROM CONCEPT
TO COMPLETION

THE GOAL OF AN
IRRIGATION SYSTEM IS TO
PERFORM ITS
INTENDED FUNCTION:
WATERING PLANTS
EFFICIENTLY



ANDREW CHASE
Director of Water Management

Director of Water Management Andrew Chase holds the following credentials:

- Qualified Water Efficient Landscaper
- Certified Landscape Irrigation Auditor
- Certified Landscape Water Manager
- Certified Irrigation Contractor
- Certified Irrigation Designer
- Professional Member of ASIC (American Society of Irrigation Consultants)

Managing an irrigation project is a daunting task for any community. Along with trust in the expertise of your vendor(s), irrigation renovations can require a healthy financial investment. The majority of funds in an HOA budget are allocated to landscape, and that landscape's health depends on a functioning irrigation

system and proper maintenance. Monarch's Director of Water Management, Andrew Chase, will walk you through what it takes to manage an irrigation project from concept to conservation. Save water, save money, and save anxiety – it's time to finally approach that next big project with confidence.

STEP ONE: Pre-Bid Inspection

What do you really need? One or several of these reasons may prompt your decision:

- Declining landscape
- High water bills
- Visible water waste
- Taking advantage of the rebates of your local water agency

The goal of an irrigation system is to perform for its intended function: watering plants efficiently. The first step for any irrigation system is to determine:

1. What the old system is doing wrong
2. What the new system must accomplish

Key Roles

Designer - Inspects property for design considerations and hears client needs

Contractor - Can explain observed site conditions and limitations

Consultant - Considers all parties' interests for future liaison communications

Property Manager/Client - Communicates site's needs, wants and budget

STEP TWO: Scope of Work

The decision has been made on the best type of irrigation for the site and how it should be executed. Now the scope of work can be put into writing. The benefits of having a sound scope of work from a trusted source are:

- The landscape contractor has the specifics needed to craft a proposal
- Multiple bids can be solicited; all parties are bidding to install the same system to the same specifications
- Moving forward, the scope of work is the foundation that the work is evaluated against. Any deviations or deficiencies from intended performance can be corrected using the scope of work as a guide.



From initial inspection to final review, your Consultant will explain what needs to happen at every step.



Key Roles

Designer - Creates the scope of work
Consultant - Advises designer on site specifics, ensures all work follows scope of work from beginning to end

STEP THREE: Design

Time to work in the field and the office to layout and design the new system using the scope of work as a guideline. Contractors can choose to replace the existing layout or create an entirely new one (this may be prompted by past performance issues, a new plant palette, or a new water source with different pressure). Many contractors will design in the field but some-

times the job requires a landscape architect to create an irrigation design and layout.

Key Roles

Designer - Considers site conditions and landscape intention to craft a design that is suited best for job while following all local and state ordinances

STEP FOUR: RFP and Design Review

The deadline has come, and all proposals and plans have been submitted. Time to review:

- Are all proposals consistent?
- Are materials used as specified?
- Are the methods used correctly per industry best practices?

- Are costs where the community expected, or do they exceed a predetermined budget?

If there are significant differences in proposals or questions to why a proposal is bid a certain way, this is the time to clarify before accepting a proposal and signing a contract for work. Even landscape plans need to be carefully examined for errors that need to be corrected.

Once the proposals and plans have been reviewed, a contractor is selected and work can begin.

Key Roles

Consultant - Reviews proposals for accuracy and may request adjustments. Advises on industry and technical nuance.

Property Manager/Client - Reviews proposals; may meet with bidders; confers with Consultant; selects Contractor

STEP FIVE: Installation Inspections

A field meeting and site walk conducted prior to the start of physical work is recommended. During this walk, areas to protect or avoid can be noted for the job foreman.

During installation, random inspections for quality and the correct use of the materials required will make sure the system is installed as agreed. Photo documentation will also help with quality assurance and reference down the line if repairs or adjustments are required.

Key Roles

Consultant - Confirms the contractor follows the design/scope of work. If necessary, can approve or deny contractor's submitted deviation from the design and/or scope of work or acts as the liaison to the designer for recommended solutions to issues found in the field.

STEP SIX: Final Installation Inspection

The contractor has wrapped up work and the job is done! A full inspection of the installation can now be scheduled.

This includes:

- Operating all zones for proper coverage
- Inspecting all components to make sure they are the specified type and performing as intended

Any deficiencies should be noted at this time and given to the contractor to correct.

MONARCH TIP: There is always something to be corrected!

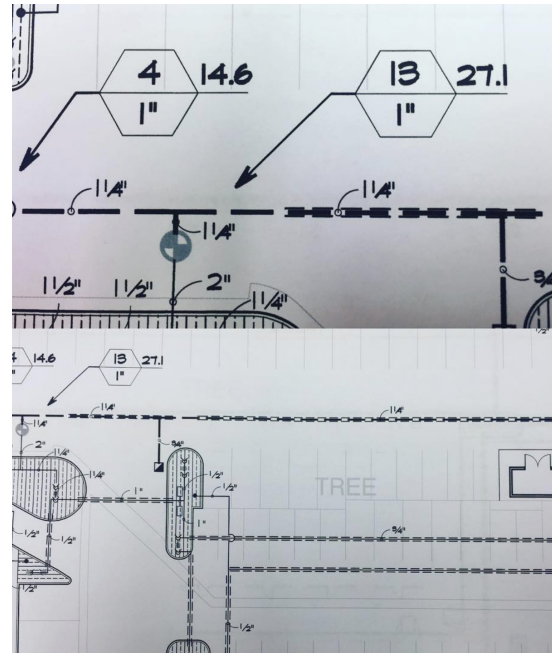
Key Roles

Contractor - Operates all irrigation for inspection, notes issues to correct

Consultant - Inspects with Contractor (Designer optional) all aspects of work to ensure the design and scope of work have been followed and the systems perform as intended. Issues directives to make corrections as needed

STEP SEVEN: Turnover Walks

Often, an enhancement or construction team installs retrofit or new irrigation systems. This is usually not the same crew working in this landscape routinely. A turnover walk is important to allow the installation team to let the maintenance team know how everything works. Any special programming of the irrigation controller, special irrigation nozzles or other items that would be outside of a typical installation can be discussed and understood prior to the installation team walking away. A turnover walk is a crucial part of a site's success from the beginning of the maintenance team's takeover of the landscape and irrigation.



DESIGN FLAWS

In this image, an architect incorrectly designed an irrigation mainline to be smaller than the irrigation zone it supplies. This would cause poor irrigation performance and poor plant health.

Key Roles

Contractor - installing contractor delivers and/or receives information about new site performance; receiving contractor ensures all issues are addressed before accepting responsibility

Consultant - ensures hand-off of site is smooth, and all parties are in agreement of site conditions

STEP EIGHT: Post-Installation Inspections (30, 60, 90, 180, 160-Day Reviews)

Don't think that just because the system installed passed final inspection that it will be operating ideally.

Here are some things we consider:

- Adjustments may be needed for plant installs and/or new species

- The ideal components installed may function, but maybe not flawlessly
- A 30-day review may be more for irrigation controller programming or sprinkler head adjustment
- 90-, 180- and 360-day reviews are your opportunity for incorrectly working items to be replaced

Key Roles

Contractor - Flags and/or reports areas of concern, broken or failing equipment

Consultant - Acts as liaison to installing contractor to ensure warranty work is performed

Expect changes through the life of your irrigation system and have a consultant on-hand to help navigate the future.



MONARCH ENVIRONMENTAL

Check out our digital library for more resources
and the *Pollen Press* archive.

WWW.MONARCHU.COM/MONARCHU

