Tania Anders hosts A SUSTAINABLE CAMPUS:

 Covering Ground: The Many Sides Of

Ruben Flores:

We're always on the lookout for areas for improvement. So if it's not a newly constructed area, it's just an area that we think is bare or over time plants have worn down, then we'll go in there and redesign it. We also will try to transplant trees or shrubs. You don't just start a lawnmower and mow and then turn a hose on and water, there's a lot that goes into just the mechanics of maintaining it, not to mention the planning and the technical issues that are involved in maintaining the college grounds.

Christina Barsi:

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Speaker 4:

And I know I'm going to achieve my goals. And I know people here are going to help me to do it.

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She is a sociology major, and she's transferring to Cal Poly Pomona. Psychology major, English major.

Speaker 6:

I'm transforming part-time into full-time.

Speaker 1:

I really liked the time that they spend with Julie about how to write a CV and a cover letter.

Christina Barsi:

Or just finding time to soak in the campus.

Speaker 7:

Think of the natural environment around us as a library.

Christina Barsi:

We want to keep you informed and connected to all things Mount SAC. But most importantly, we want to keep you connected with each other.

Christina Barsi:

I'm Christina Barsi, Mount SAC, alumni and producer of this podcast.

Sun Ezzell:

And I'm Sun Ezzell, learning assistance faculty and Professional Learning Academy coordinator.

Christina Barsi:

And this is the Magic Mountie Podcast.

Christina Barsi:

There are many things to consider when thinking about sustainability, such as the long-term plan of the choices being made in new construction. What types of materials chosen to use can determine long-term waste or longterm conservation. It can also have a big impact on campus culture and the student experience itself. In this episode, we learn that there are innovative technologies that have been implemented thanks to the water conservation grant from the state of California, that allows for better, more precise planning when it comes to how we use our resources. Listen in to hear all that goes into making these types of decisions at Mount SAC in the name of sustainability and students.

Tania Anders:

Welcome back to the Magic Mountie Podcast mini series focused on Mount San Antonio College and sustainability. My name is Tania Anders, and I'm our campus' sustainability coordinator. Today's episode focuses on the Mount SAC grounds, all the beautiful vegetation that makes our campus an inviting space to walk around on and to enjoy spending time sitting to study or visit with others. I'm joined today by Brian Scott, Ruben Flores, and Cesar Castaneda. Hi, Brian, Ruben and Cesar.

Brian Scott:

Hey, how you doing?

Ruben Flores:

Morning.

Tania Anders:

Morning. So thank you so much for joining me today. Could you please be so kind and briefly introduce yourselves to our listeners? What is your professional background and your role at Mount SAC?

Brian Scott:

I'm Brian Scott, I'm a professor of horticulture at Mount SAC. My background is in landscape contracting, maintenance and design. And I've been teaching at Mount SAC for 20 years now. And I also work sometimes with grounds. We collaborate on different things, and I'm on the landscape committee now.

Ruben Flores:

I'm Ruben Flores, and I'm the lead for the grounds department here at Mount SAC. I started working at the college's horticulture unit located on the farm. And that started after high school, and just as many of my fellow Mounties, I worked my way through the student assistant ranks and ultimately became permanent, and then eventually transferring to 2014. And while I was working, I attended classes and earned my associates degree in ornamental horticulture. And my official title is lead grounds and horticultural technician, which is a lengthy title. So I support all the horticultural technicians north of temple Avenue. We have about 20 employees, 10 of which are spread out evenly amongst the campus. And the remaining are either tasked with maintaining our athletic fields south of temple Avenue or handling all of the campuses irrigation needs.

Tania Anders:

Wow. That is some title. Thank you so much. And, Cesar, if you could please introduce yourself to the listeners.

Cesar Castaneda:

Hello, my name is Cesar Castaneda. I was a contractor for a little bit over 20 years before coming to Mount SAC, in the private sector. I still do a little consulting here and there, I'm going on my 14th year here as the lead irrigation specialist, so I basically run our Maxicom Central Control System, which runs all of our irrigation on both sides of the street, north and south of Temple. In our irrigation shop, there's three of us who deal with the day to day on irrigation and across the whole campus.

Tania Anders:

Wow, that's fascinating. Okay, well thank you so much. So when one thinks about sustainability, the natural green environment comes to mind right away. In your role on our campus, how are you embedding sustainability efforts into your work? So for example, I'd be curious to learn more about the types of plants and turf that are chosen for the landscaping on our campus and what thought process goes into making those choices. Brian, you had mentioned that you're part of a committee that makes some of these decisions, maybe you can start us off.

Brian Scott:

What I just started on, yeah, they wanted to figure out the turf situation around the volleyball courts. And sustainability-wise, we think about things like water, for sure. And Cesar can talk more about what this Maxicom System does for that. But also, some other things that we'd consider is the long-term use and if we're going to have to continuously renovate or put a lot of human resources into maintenance on a project once it goes in. And so the type of turf we were looking at there, we talked about what type of mowers would have to be used, the other types of activities that would go on, if the grass would go dormant in the winter time during use and we'd have to spend money and time overseeding and putting extra water to get the seed to come up and stuff like that. And that's kind of the choice that goes into a lot of the turf selections.

Brian Scott:

Obviously, it's different on the athletic fields because it's got a total different use than these seating areas around the volleyball court. But with all of that in mind, it comes down to also, again, the selection of the equipment and the end users. And so I think sometimes we overlook sustainability, we don't talk to the end users. Because even talking about what type of mower to buy there, I said, "Well, that we should talk to the staff that are doing the mowing and also our mechanics, as well as Ruben to see what we're already using to see if it fits with the rest of our equipment. And we don't have to go out and buy new parts or anything like that." So it's pretty complex when we get in... In my opinion of sustainability, there's a lot of different things. And sustainability just means, is it going to be practical financially and practical as far as getting the job done in a long-term, as well as, again, making good use of our resources?

Brian Scott:

So the conversation was brought up about artificial turf in those areas. I mean, that's a huge conversation, but ultimately, I think the landscape architect did a good job there deciding not to because of some of the components of artificial turf. The rubber pellets could run down and get tied into the wildlife sanctuary, it reflects heat as opposed to absorbing heat, it's also... doesn't have a positive carbon footprint like turf grass does. So all of those things, when we're talking about design and overall use, they all come into play. Because a lot of people just think it's about not having to water artificial turf. And that's probably the least of the concerns, I think. [crosstalk 00:08:33].

Tania Anders:

Right. And you, you mentioned basically as an example, and I don't think necessarily all of our listeners know this yet, that we are going to get some beach volleyball courts. And they're going to be close to where the wildlife sanctuary is. And if one looks up the renderings, the design, it's very, very exciting what's happening on that side of campus. So yes, there's that proximity to the wildlife sanctuary, and the area that was chosen for actual turf rather than artificial turf is going to be the seating area for the visitors that come to see the volleyball games, is my understanding. And so I think that's a really great example of showing how much goes into the planning of these new areas, that it's not just about, "Oh, well, we'll save on water." But artificial turf, like you said, it doesn't help reduce CO2. And then there's a lot of other issues, the little pellets and the heat and all of that.

Tania Anders:

I'd be curious to hear from Cesar and Rubin also. As far as embedding sustainability into your work, what are some of the things that you consider or have to think about?

Ruben Flores:

When it comes to sustainability, for us, maintenance is at the forefront. So we strive to ensure that the right plant is chosen for the right location. "Right plant, right place," I'm always trying to tell that. And it isn't sustainable if the ground cover, say, with a mature spread of eight feet is planted in a planter that's two feet wide. The amount of maintenance to keep that back and maintained is unrealistic. So when conversations are had over plans for future construction, and when it comes to renovating existing landscaped areas on campus, we try to incorporate material that's suitable and that's needed by other groups of the campus for identification purposes. So overall, we also design these areas according to the mature growth. And the planters may look a little less dense and take a little longer to fill in, but the amount of maintenance up to the point of it reaching mature growth, in most cases, it's zero. Reduces the use of equipment, also reduces the need of chemicals to help control the growth.

Tania Anders:

That's very interesting, yeah. What about you Cesar?

Cesar Castaneda:

Well, I think our footprint in the irrigation department is probably pretty important in the sense of total sustainability because of the water issues. About seven years ago... Six, seven years ago, we were awarded a grant that we applied for in the Irrigation Department applied for it, and we got a $100,000 from the state of California for water conservation. And what we did with that money is we revamped all our controllers for our Maxicom System that was already in place. And we added another weather station closer to our athletic fields, which are the biggest end users of water on campus. On any given night, the turf fields use quite a bit of water.

Cesar Castaneda:

The first phase was to replace the controllers. We're still working on that. Obviously, COVID kind of slowed us down, but the next step is the flow sensing, to be able to see exactly how much water we use at any given time. Our central control system has been replaced with an actual computer that's inside IT, as opposed to being in an office anywhere else on campus, which was the situation when I first got here. Now, it's being overseen by the IT department, so if it goes down on any given night, it'll back up itself, it'll not lose power. In other words, somebody is actually watching it.

Cesar Castaneda:

The other important factor is that a lot of the controllers, as many controllers as we could, we went ahead and we wired them in into the network so that everything is wired as opposed to being radio controlled, this way we don't lose connection. So the weather station tells the Maxicom computer what the weather was like for today, for example. The Maxicom computer will go ahead and do it's data, it will compile the data, put it together, and will tell our system how much to water tonight.

Cesar Castaneda:

So we're a little bit behind, it's a little bit different than a weather station that we're used to as to when we see the weather on TV. But once the Maxicom computer tells all the controllers what to water, then at about 10 30 at night, we go ahead and we water throughout the night across campus. And in a [inaudible 00:13:06] driven place like Mount SAC, that is also a big challenge. Right now, obviously, it's COVID, there's nobody here, so we're kind of running a muck, so we can water at anytime we want. But in any given day with all the events that we have, it is a little tough at times to get things watered in the windows that we have.

Tania Anders:

That's interesting, yeah. And I'm glad you brought up the water usage because we look at the data, according to our climate action plan, which we talked about in our mini-series already, a lot of data was collected, and in 2016, our campus used a little over 100 million gallons of water. So that is a really large number there. And it was assumed that most of it goes towards maintaining our extensive athletic fields, but we didn't have all the abilities to collect data like the way you're describing now, with it being more computerized and having a weather station. So that's really, really interesting to hear that. So I'm sure that the irrigation practices have probably changed with that grant that your department got and setting up more.

Tania Anders:

So is that true though then? Can you confirm now based on what you have that by far, or do you have a percentage how much of our water usage goes towards irrigating, say, all the athletic things on our campus facilities, or do you have any idea about that?

Cesar Castaneda:

I would say that doing some initial numbers, and once we started talking about this podcast, I did have some data together, and we probably can water anywhere between one and a half to three and a half million gallons of water a week depending on the season. Last year in 2019, for example, December 20th of 2019, we turned off the irrigation system completely off here at Mount SAC. We didn't turn it back on until February 28th because of the rain season that we had. Comparing it year to date, this year we've only turned it off one time, over the Christmas break when we had that little rainstorm. So this year, we're going to be hurting again.

Cesar Castaneda:

And we live in a desert, and that's what I think a lot of people tend to forget, including myself, but we are in the desert. And the desert is going to do what the desert does. And our job here at Mount SAC is to put back whatever we lost throughout the day. And at times, it can be a lot of water, and at times, it could be a little bit, but over the years, it is going to catch up to us if we're not careful with what we plant and where we plant it.

Tania Anders:

So, yeah, you're bringing up what is being planted, so I'm wondering, and I think, Brian, you sort of touched on that, there must be a committee, right? That decides on what is being planted where.

Cesar Castaneda:

Yeah, there's a landscape advisory committee that I think oversees a lot of that on campus, which is, I think, really important because it'll put everybody together, especially the stakeholders. On our athletic fields, for example, we got to keep our athletes in mind. They have a certain job here, and it's our job to go ahead and help them in any way to get them to get to that next level. And as far as on campus, there's a lot that goes in with it also, and the landscape committee is important because it gets everybody together and everybody can give their data and their feelings and see what would actually work.

Tania Anders:

So since we're in a semi-desert climate, I agree. I mean, we always have to remind ourselves of that. And I just have to look around my house, and every week it's like, "Wow, I need to dust again. So much dirt is coming in."

Tania Anders:

So when choices are made to plant new things, there's, as Brian indicated earlier, there's so many different aspects to it, right? So part of it could be also what would be good for student use, right? Like could we have a sustainability garden that students can visit. But also, I'm thinking about some of the newer buildings that have just absolutely beautiful what looks more like Zeroscape kind of landscaping to it. And I think maybe sometimes people will walk around campus, I've thought it a few times, there's areas where I'm like, "Is this really suitable for our climate what's planted here?" And it looks so, so beautiful, but then it makes you wonder, should we have a lot more of like Zeroscaping going on in our campus? So I'm just curious how these decisions are made.

Brian Scott:

Yeah. I just started on the landscape committee actually this month. But we had Jennifer Hinestrosa, one of our professors has been on that committee for a while. But it's a good point. Grass areas on campus, for a long time, that was coming under scrutiny as being wasteful use of water. But again, on a college campus, when you look at the use factor and where all the students use, you always see the students sitting on the grass underneath the trees. So you have to balance that. And I think what we've looked at and talked about in the past, I know Mike Gregoric was pretty active when he was working at Mount SAC, is looking at warm season grasses that go dormant in the winter time, so we don't have to really water them in a winter time or anything. They use up far less water than, say, cool season grasses do. And so just a turf selection, as opposed to getting rid of it altogether.

Brian Scott:

And then we have the factors of soil preparation to make sure... We have a lot of hard pans on Mount SAC, so one of the conversations even at the volleyball area was deep rip the soil so that the water can percolate back down into the groundwater table. And wherever we have open landscape spaces that are permeable, water can get down in there, whether it's rainwater or irrigation water, it can kind of percolate, kind of re recycle itself. Those conversations are taking place too.

Brian Scott:

And another thing that that comes up is the use of reclaimed water. We had a very difficult time acquiring that at Mount SAC for a variety of reasons, some political and some just cost. Tom Visosky, who retired a few years ago, he was actively involved in trying to pursue getting reclaimed water. And I know I'm sure Cesar and Ruben have been involved in those conversations too. But it's my understanding that we are getting reclaimed water to the west parcel, which is on the other side of Grand. So we will have a reclaimed water source there. And then the next step would be to cross Grand Avenue with it and get it actually on campus so that we can use the water that's been treated to do a lot of irrigation with. So that's another, I think, hugely sustainable method, is having a different water source that's not potable water that were irrigating with.

Tania Anders:

Right. And I think you bring up a good point, again, that there's so many things to balance. And I completely agree with you that having turf on a campus where students can just sit and hang out, that becomes part of, to me at least, fond memories of a campus experience. Like when I was an undergrad, and I went to school in Germany where there's a lot more rain, but my campus happened to be in the old castle grounds settings of that town. And so it was right next to a park, or in a park. My department was in a park. And I remember us throwing frisbees around and just hanging out and studying.

Tania Anders:

And so I completely agree. It is so important to create, especially in Southern California, where we have those gorgeous climate, where we need outdoor study spaces, inviting spaces. And I think overall, there's the move towards creating more and more of these seating areas, even with outlets now where students can charge their laptops and all that. It all goes together and comes together. So, yeah, I agree. We do need the turf, even if it means that watering of it too.

Tania Anders:

So I want to ask Ruben, what are some other aspects about the Mount SAC grounds and sustainability you would like to share with our listeners? And then we can go around, and everybody can maybe contribute to that.

Ruben Flores:

I just wanted to add that we're always on the lookout for areas for improvement. So if it's not a newly constructed area, just an area that we think is bare or over time plants have worn down, then we'll go in there and redesign it. We also will try to transplant trees or shrubs.

Tania Anders:

Interesting, yeah. Cesar, what are some other aspects of your work where you really have sustainability in mind?

Cesar Castaneda:

One of the things that we did a few years ago was we started incorporating drip irrigation to campus. And for the longest time, it seemed like our specs just didn't support it and we weren't using it. And it happened sometime around 2013, I believe. And everything kind of goes up and down as in regular life. Right now, how we're having issues is with the absence of people on campus, we're getting some coyotes that are disturbing the drip irrigation because they, I think, are hearing the water at night or they were hearing it at night, and they started looking for the water. And they would chew it up and then pull the drip tubing out, and then we'd have breaks. And when I'm talking about breaks, I'm talking about maybe five to 15 a night. So we combated that a little bit by starting to water throughout the day, but it seems like they're changing their patterns, and they're either coming out during the day because it's still happening here and there on campus.

Cesar Castaneda:

Very interesting. But the drip irrigation saves us a lot of water also. When you talk about efficiency rates between a spray head, traditional spray head, and a drip emitter, you're talking about 50% difference. So the drip helps out with the planting. Obviously, when you're trying to water or trying to irrigate a turf area, you can't do it with the drip because when you try to fertilize it, well, then it doesn't work too well. But as far as plants on campus, that's been huge.

Cesar Castaneda:

The other thing that we did do to the whole campus is that we saw that the drought was kind of gaining ground on us. And what we did was we put in our specs so that our tree area, all our trees have their own irrigation zone, so that if we do have to, for whatever reason, turn off the whole area because of the drought and California's started imposing certain fines and certain regulations regarding how much you can water and when you can water, and if it started hitting us here at Mount SAC, then what we could do is we could just at least water those trees by themselves, which I think would be huge because you don't want to lose the trees.

Tania Anders:

Yeah, for sure. One thing that I've always thought about trees is I'm sometimes surprised by campuses using trees that don't provide as much shade as they could. It's interesting to see. My former campus was in South Texas, and they planted so many palm trees also near parking lots and stuff. And I'm like, "Man, plant something that's going to shade our cars." And so I'm sure there's always also that kind of a balance that has to happen between what trees are actually suitable for our area and for different purposes.

Tania Anders:

Brian, I'm curious as far as your role on campus because you're a professor also. So I'm curious if you're embedding sustainability into the courses that you teach your students.

Brian Scott:

Yeah, sure. I think, again, that's kind of a natural ebb and flow with education, is this is... Again, the term sustainability sometimes, it's a pretty broad term, but absolutely, it's very important to continue to teach sustainability. One of the things that we've done around our building and around the horticulture unit in general is to have trial plantings of different things that we might think will work well in Southern California. And so we work with different nurseries who would donate plant material. And we're getting ready to renovate the front slope at building 80, I think. We did a corner planting. We ripped out all the turf because that wasn't sustainable on the corner of building 80. It was a big slope, and it just wasn't an area people were using.

Brian Scott:

And we put in a bunch of California native plants to see how well they would do. And as soon as COVID hit and we were out of there, it kind of got overtaken with gophers and castor bean plants, which are prevalent on the farm. We used some mulch that was out on the farm and put it in there, and all these castor bean plants started germinating. So we're actually going on campus Saturday, with permission from DUETA , and I've got a few people coming out. We're going to do a little cleanup around there. But we're doing things like that constantly with plant material. And again, I know Ruben's been involved. It's a nice thing to be able to have a relationship with Ruben and Cesar and other folks on campus because we actually do talk about a lot of stuff that kind of impact the general campus, and even they help out with stuff with our program so that we can translate that.

Brian Scott:

But also, all of our irrigation stuff that we teach. We have a complete class dedicated a drip and low volume irrigation. Our other irrigation classes focus on design and use of things like moisture sensors and the weather station technology and all of the different types of technology that's out there that can help us just dial in our water use to the bare minimum. In soils. I teach how to have sustainable soils and how to let soils kind of regenerate.

Brian Scott:

So you pointed out a good point, Tania, in places like Germany and parts of the United States that get all that rain, it's not a concern. But like Cesar said, we're in a desert, we're in the Southwest, so we have have irrigation technology that's second to none in the world because of our type of environment we're in and the lack of rainfall that we get. We've been forced to kind of be sustainable because water companies, they put the price of water so high anymore, that kind of changes people's behavior. A lot of people want to do the right thing, but until it costs you something, they won't. So we're trying to be proactive in that and try to teach students how to have that whole mindset of what's going to be sustainable in the future, so,,,

Tania Anders:

And that's, of course, the beauty of our jobs, right? We're preparing the next generation and opening their minds to things that maybe they hadn't thought about. What are some other projects that are in the works right now that heavily involves grounds and landscaping? Is there something you can share that people can be excited about? So many of us, we haven't been back to campus in a really long time, and I think everybody's going to be blown away by what's happened when we do return. But so obviously, we know some of the major constructions, buildings going up, but as far as grounds and landscaping goes, what are some things we can be excited about looking forward to?

Ruben Flores:

So the Green Corridor, that was a lot of conversations had by the Landscape Advisory Task Force. And we started off with a long list of trees, and after everyone gave their input, it really narrowed down to only a few. And in that, we decided on a [hotcarcus 00:28:34], which is a fairly large tree. It doesn't branch out as far as we would have liked to cover the canopy of the street, but based off of the maintenance that it's needed and the height and just liability, that's what we decided on. And we're all looking forward to that project coming underway.

Tania Anders:

I'm really excited for that to happen. That green corridor sounds so amazing.

Brian Scott:

I just want to thank you for touching on this subject because I think a lot of times, the grounds department doesn't get due recognition for all of the different things that go into maintaining a college campus and having new plantings. And it's kind of one of those jobs that, I think, they only get noticed when things are wrong sometimes. And so this is... I think it's a good opportunity with Ruben and Cesar here for people to be able to hear that there's a tremendous amount of things. You don't just start a lawnmower and mow and then turn a hose on and water, there's a lot that goes into just the mechanics of maintaining it, not to mention the planning and the technical issues that are involved in maintaining the college grounds.

Brian Scott:

So I just wanted to thank you for thinking about the grounds department and having people understand that they are thinking about sustainability. I mean, that's the first thing that anyone, I think, in our industry really talks about because we've been, I think, at the forefront of that for a long time. People just don't hear about it because we don't really have a platform that we go out and share with the public.

Tania Anders:

Yeah. Right. No, I agree. I personally, from our conversation just now, what I find fascinating is also the weather stations. We have these computers that basically calculate, well, this is how much water should go out tonight. I mean, that's just amazing the technology that we have available in the 21st century. It's just really pretty cool. Cesar, some closing remarks from you?

Cesar Castaneda:

No, again, I thank you for your efforts, and I'm very excited to see what the next decade has for us here at Mount SAC.

Tania Anders:

Ruben, any closing remarks from you?

Ruben Flores:

I just wanted to say thank you for having us. And like Brian said, a lot goes into it. And we start our mornings at 4:30 AM. And so from 4:30 til 7:00, that's the bulk of our work. And so when campus was running like normal, by the time people came in, all the sidewalks were blown off, all the hazards were taking care of. So we get ready for the party every day. And-

Tania Anders:

I love that, and it is so true. I will say, I love walking across our campus. So yes, all that's visible is obviously greatly appreciated on a daily basis by everybody, but today we also wanted to touch on the not visible aspects of your work. And so you guys are so, so greatly appreciated. Thank you so much for your time, and we'll connect again.

Brian Scott:

Thank you.

Ruben Flores:

Thank you.

Cesar Castaneda:

Thank you.

Christina Barsi:

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