



mounted on either end of the blade. By controlling each end of the blade individually, a dual mast system can grade in any direction relative to the slope with equal efficiency and accuracy.

Using manual controls on a dual mast

system, the operator can go from automatic to manual with either the left or right side of the blade and adjust the blade higher or lower than the elevation determined by the transmitter without leaving his seat. This comes in handy when multi-

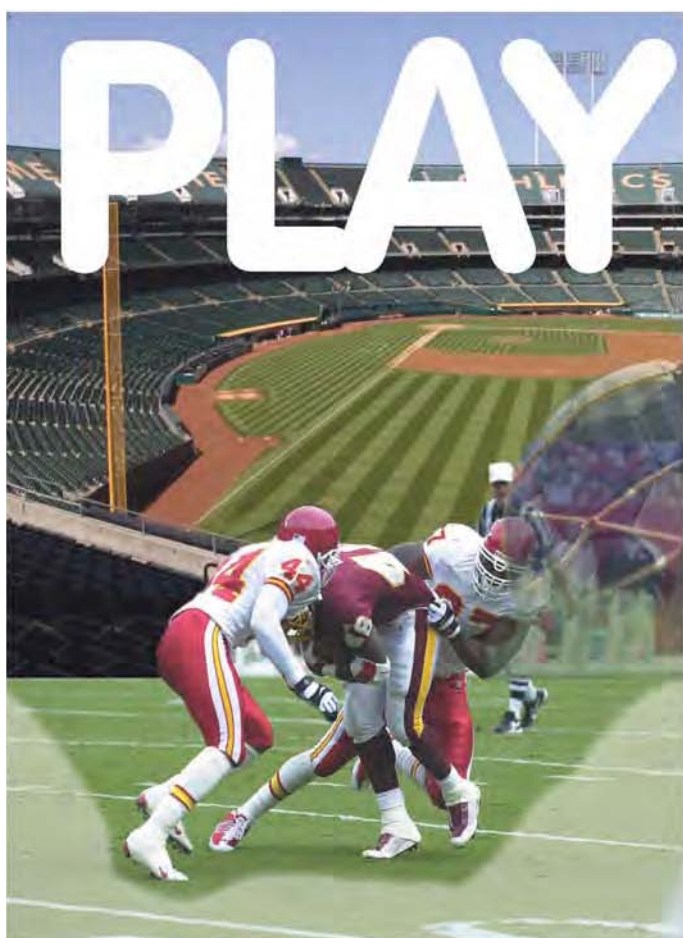
ple passes are necessary to reach the finished elevation or when it is necessary to make minor adjustments when matching existing perimeter elevations. Manual overrides are also provided on single mast systems.

A laser receiver can also be used simply as a visual reference when grading an area without the use of an automated blade control system; the receiver is mounted directly over the cutting edge of the skid steer bucket. The receiver has a series of flashing red and green lights that tell the operator if the bucket needs to be adjusted up or down or if the cutting edge is on grade.

Note: individual transmitter functions vary by model and manufacturer.

As they say in the golf industry, "the proof is in the putting." ■

Jim Hermann, CSFM, is president of Total Control Inc. Athletic Field Management, www.totalcontrolinfields.com.



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>> **BELOW TOP:** New field in Omaha, Fall 2010.
>> **BELOW BOTTOM:** Werner Park in Papillion, NE, 2011 season.

Building two new fields in 3 years

BEING PART OF A NEW FIELD CONSTRUCTION can be looked at as either a blessing or a curse, however, once you catch the bug and have the opportunity to build one you may want to do nothing more but do it again. I looked at it as a chance to attain the elusive “perfect” field. I know it’s impossible and that’s what keeps me humble yet coming back for more.

I oversaw the installation of Parkview Field in Fort Wayne, IN (Single A affiliate of the San Diego Padres) in 2008, and then the install of Werner Park in Papillion, NE (Triple A affiliate of the Kansas City Royals) in 2010. Taking care of a 5 or 10-year old field is one thing, that’s common, but there’s not a text book or established man-

agement plan for a new one. The best thing you can do is talk to people who have done it before.

Much like custom building a car before it’s rolled off the assembly line, I was lucky enough to be brought on board during the install process and have input, which is often times not the case in the minor



leagues. All of a sudden you start thinking about changes you want and not problems you inherited. When it will make your job easier and your crew more efficient, go for it. I’m not talking about asking for heat or an air system, but simple things like quick connect locations, 3/4-inch hose connections like I have in my bullpens, or infield and

warning track cutout sizes. We intentionally offset the mound radius and made it larger in Omaha to minimize wear for our extra high school games. It may not be a cure all, but every little bit certainly helps.

Irrigation design is also a key importance. Most designers submit a neutral layout because everyone has different preferences. Head layout is extremely important especially on your infield grass and foul territory because a couple feet from center either way and your cutouts will always be wet. I also try to have the installer keep heads away from player locations to reduce a bad hop but also for maintenance. If I'm resodding or aerifying behind where the second baseman or shortstop plays, I don't want a head right there.

I prefer to manufacture or fix anything we can in-house which means we have a lot of tools and the same goes with our irrigation. Our remote controller for the system is such a time saver for locating heads (especially before aerifying) and running cycles without having to go to our controller located in center field. Along with that are our infield skin zones; I know the coverage is not always perfect, but it has benefits. We use it when the team is out of town to keep moisture in the skin, since the wind can wreak havoc if it dries it out, as well as between lower level games. High school doubleheaders are tightly scheduled and sometimes the only way to water is to turn on those zones for a minute or two; it's better than nothing.

Another thing is to know your material specs put in place by the field designer and to be approachable. Get a feel for how things should look and be installed and go from there. The better relationship you have with everyone involved from the general contractor to every subcontractor, the easier they will be to approach and talk about changes, but keep in mind the domino effect. It's hard to change one thing, whether it's an elevation, home plate diameter or pipe size, without that changing other things down the line, so talk it out with everyone.

Understanding what materials are being installed helps with the design but also the maintenance. My track material on both fields was a higher maintenance crushed lava material. As I came to find out, that meant

Taking pictures is the single best way to document the install and have some sense of assurance on what's below once it's covered up with sod and clay. I don't love to read, let alone take the time to write, but taking pictures tells a much greater story and says everything without saying anything.

extra watering and constant grading and dragging to maintain the negative slope for drainage. I understood that early enough and was able to purchase a large enough box grader and laser setup that not only allowed me to constantly work the warning track, but also allowed me to grade my infield skin whenever I needed. This multi-use need helped me sell the purchase to management.

Taking pictures is the single best way to document the install and have some sense of assurance on what's below once it's covered up with sod and clay. I don't love to read, let alone take the time to write, but taking pictures tells a much greater story and says everything without saying anything. It al-

lows you to look back, compare and see many things that may have been missed on installation such as buried valve and drain boxes, head locations, even how the field drained before the sod was laid.

All contractors will tell you "We want you to be happy" or "If you're happy, then we did our job", so make sure you are happy. The potential problem with that is being too nice. Don't settle for "that will do" or "I'll fix it later", it will come back to bite you. I did a terrible job about this on my first field and a little better job (emphasis on little) the second go around. Don't make more work for yourself that you won't have time to perform in the spring. It's under-

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>> 2011 CREW for Omaha Storm Chasers. Left to right: Matt Kozeal, Gavin Cordaro, Roger Bettmann, Mitch McClary (head), Noah Diercks (assistant), Andrew Miller, and Troy Lorenz. Intern George Powell is not pictured.



>> 2010 CREW for Fort Wayne TinCaps, L to R: Adam Basinger, Greg Slee, Keith Winter (assistant), Dave Joest, Mitch McClary (head).

standable that the fine detail work may not be just how you want it, but edging, mound and plate construction, even infield skin grading should all be written in the specs and finished to a game-ready condition.

Sod is down, the infield is graded and mounds are built so now what? Depending how far along your budgeting and equipment process is this becomes a great time to get a feel for the field and equipment. If possible

completion 2 months ago, but keep at it. Many times the importance of this area and the timeframe it's needed in is overlooked. Just like irrigation is needed before sod is laid, the maintenance shop is a key part for prepara-

have everything lined up and see if it's possible to have the field handed over that fall.

This is a great time to get a relationship with equipment dealers, demo their equipment and see what you like. It is also time to begin your fertility and fungicide program and get a feel for the products and the field.

All of this being said, don't lose sight of one of the most important areas of the whole job, the maintenance shop. By this time I'm sure your new home has been promised for



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>> **OPENING DAY** in Fort Wayne, April 7, 2010.

tion, organization, and storage before the season.

Attic stock materials may be built into the specs but storage of them is not. The last thing you want is \$5,000 of loose materials

sitting outside on a construction site getting contaminated. Plenty of work will need to be done come spring time and the last thing you will want is a disaster of a shop and materials when games start in the spring.

I faced this in Fort Wayne when the shop was promised in November and we finally were able to move equipment in 2 days before the team came into town in April for workouts. You make do, you get by and hopefully if there is a next time you've learned the importance like I did this time in Omaha. Everything goes so much smoother and more efficiently when you have organization, no matter what the setting is.

There will always be challenges on every field, new and old, but the more you know about your field the better prepared you can be to keep an issue from turning into a disaster. Relationships are key in this industry and just about everyone is willing to talk and help out, as long as you are willing to ask. Don't make that the hardest part. ■

Mitch McClary is head groundskeeper for the Omaha Storm Chasers.

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Sports turf management sustainability in the transition zone

SUSTAINABILITY in sports turf management is a topic that covers a vast amount of territory, and can be as complex as an in-house bio-diesel production facility or as simple as recycling cardboard. Both are steps in the right direction, but how can we improve?

Certainly the public is looking at all areas of industry and demanding more environmentally friendly methods of doing business. Ironically, many environmental activists have targeted the turf industry, especially golf, as enemies of the environment. However, as sports turf managers, this push toward sustainability is an opportunity for us to promote our industry and show that we were green before Green was cool.

For example, the October issue of *Sports-Turf* magazine had an informative section on storm water management. A simple shift in perspective could view sports turf managers as protecting 2.8 million acres of *filter media* rather than contributing to 2.8 million acres of runoff-producing development.

One of the hottest topics in the world of sustainable agriculture/turf is water usage. Unfortunately, many people in the transition zone have come to view a green field during the summer as quite possibly a bad thing because of the water required to maintain that field. The reality is that the water used to maintain a field is paying dividends by providing erosion control (as mentioned above), a carbon diox-

The reality is that the water used to maintain a field is paying dividends by providing erosion control (as mentioned above), a carbon dioxide scrubber, an oxygen producer, and last, but not least, a venue for entertainment.



>> A CISTERN being installed under the southwest corner of the natural turf practice field.



ide scrubber, an oxygen producer, and last, but not least, a venue for entertainment.

That being said, there are things that we as an industry can do to become even better stewards of the environment, and hopefully begin to change public sentiment about what we do. Start by following BMPs for water management. Also, consider reducing the input to common areas and some fields that may not be your highest profile sites. Install basic controls that stop irrigation due to rain. This last one should be a no brainer at this point, but recently I witnessed an athletic site being irrigated in the rain. Ouch. Consider stepping up to a central control type system that can both help you water most efficiently and also closely monitor usage.

Another idea is to incorporate plant growth regulators (PGRs), specifically trinexapac-ethyl, into your maintenance program. The use of PGRs is widespread in the golf community; however, there has been more hesitancy to embrace this family of chemicals in the sports turf world. This is certainly understandable as wear patterns in golf and sports are vastly different. Further complicate this with tiny grow-in windows (specifically from overseeding stress/damage) and the idea to use something that “slows” the plant down is counterintuitive.

The reality is that trinexapac-ethyl reduces the plants’ vertical growth and elongation while promoting turf density and turf quality by stimulating growth of other plant parts such as stolons, rhizomes, tillers and roots. These deeper roots and denser turf can reduce water usage by up to 25%.

A growing trend among colleges and some school sites is to build water retention sites that collect water from a variety of sources including air conditioning condensate. Last summer at Georgia Tech we installed a third such system on our athletic properties. The campus has also installed several cistern systems and plans to expand the use and installation of them as part of the Institute’s larger initiative to strive for LEED certification on all new construction. The concept is quite simple in that a site collects water in anything from tanks to ponds and then uses a pump to irrigate with the collected water.

The system installed at Georgia Tech’s practice field in the summer of 2011 is 280,000 gallons and collects water from the 93,000-square foot roof of the Brock indoor practice facility, the 75,000-square foot natural grass practice field adjacent to the building, and the surrounding hardscape (see photo). Interestingly, the cistern at this site is also tied to a campus cistern that collects condensate water from the Ford Environmental Science & Technology Building. Due to this cistern’s central location, it is able to provide irrigation water for the track, practice football, and baseball fields. The other two cistern systems are located at Grant Field (stadium football) and the Shirley Clements Mewborn softball field.

Although the water retention concept is quite simple, the reality is a bit more complex. If your facility is looking at installing a cistern system, be prepared to do some homework and provide some data about your specific needs to the system designers. Some obstacles to potentially overcome is how to provide water for small volumes from either a garden hose or small ornamental spray zone all the way up to a multiple rotor zone with heads capable of irrigating at 25gpm+ each.

Also, prepare for the inevitable—running out of water and/or system failure—in which case you will want a readily available back up water source. Be aware that any weakness in your current system may be quickly exposed when dealing with fluctuations with pump driven water if previously on a city source. Do not forget to alert your user groups to the change over from city water to city cistern water, which should be generally good public relations.

Obviously, there are multiple benefits from a cistern system, but it will not be without expense and some of your time as well. They do bear some monitoring compared to a city supply. This is especially true as you are learning/debugging the system, but eventually this will level out. In the long run it is likely that your initial installation expense and maintenance expenses will be offset by the savings in city water.

CARBON FOOTPRINT

If water usage is a hot topic in the world of sustainability, then fuel usage and carbon footprint is certainly a close second. There is only a limited amount we as sports turf managers can do about this until more advanced technology is available. In the meantime, we can make sure our equipment is properly maintained and running efficiently. Once again, consider the use of PGRs. As mentioned above, the water savings from improved rooting and density could be enough to encourage the use of a PGR, but what PGRs are really most known for is their ability to reduce mowing. There is the po-



The advertisement features a central image of a baseball player in white pants and a black shoe, standing on a dirt mound. To the left of the player is a large white bag of 'Mar Mound Clay' by Southern Athletic Fields, Inc. The bag has green and black text and a logo. To the right of the player is a red diamond-shaped logo with the word 'DIRT' in white, and the slogan 'Dirt, You Gotta Love it!' in a script font. Below the bag and logo, the text 'Easy to use • Proven to last' is displayed in white. At the bottom, the website 'MULEMIX.COM' and the phone number '1.800.837.8062' are shown in large green letters, with 'Call For Information' in smaller green text below.

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» **THE NEW INDOOR FACILITY**, the baseball field, Rosebowl football practice field and, in the far back behind the blue wall, the track. All of these can now be watered from the cistern system.

tential for a substantial amount of savings in both labor and fuel by mowing 2-3 times a week rather than daily, to say nothing of the reduction in emissions.

From personal experience, we were having some stress on our fields due to clean-up passes occurring with regular daily mowing. When we got on a Primo program, it allowed us to skip some clean up passes and thereby reduce the mechanical stress on the turf caused by frequent mowing. I will also admit that I was skeptical at first of using a PGR, but have now incorporated them into our agronomic program. Finally, consider ways to potentially reduce the maintenance to non-essential or common areas.

A much more dramatic approach to the fuel and emissions issue is to use bio-diesel. Many equipment manufacturers are offering machines that are bio-diesel ready, making it easier to transition into this fuel source. Westminster Schools here in Atlanta has taken bio-diesel use to the next level by producing their own fuel from cafeteria waste oil. Not everyone will have the capability or even a cafeteria on their site from which to make fuel, but it is a sign of the good things that are happening in our industry to make our green industry greener.

My personal favorite sustainable turf management practice is to simply recycle all the cardboard I come in contact with, even if it was not generated by me or my department. Sure it takes a few more minutes to break down a box and transport it to a recycling area especially when the convenience of a dumpster is all around, but it is the right thing to do. I like to follow a similar practice with pallets. More than likely, there is someone in your area in a ratty truck that will gladly collect them. Not only will you have recycled your pallets, you will have provided for someone willing to go out and do some work. Another idea is to collect your pallets in-house and take them in on a rainy day. Divvy up the money among the crew or have a pizza party, whatever. Recycling triple-rinsed empty 2.5g containers is yet another simple but helpful and smart sustainable way to practice sports turf management.

These last ideas are neither radical nor glamorous, but they do make an impact and most importantly, anyone can do them. Ultimately, to practice sustainable turf management does not require a fancy cistern watering system or a bio-diesel producing facility. It does require some common sense and a little effort. ■

Jon Dewitt, CSFM is athletic field manager for the Georgia Tech athletic department.