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## Experts spell out the true cost of synthetic turf maintenance



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By: [Lynne Brakeman](#)

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Outside Contractor Maintenance Charges	
<b>Consultation and/or Training</b>	\$1,200 to \$3,000 per day plus expenses
<b>Repairs</b>	\$30 to \$70 per linear foot
<b>Crumb Rubber</b>	\$.50 to \$1.00 per pound applied
Source: "A Sports Field Manager's Perspective: Synthetic Turf Construction Considerations, Maintenance Costs & Concerns," Amy J. Fouty, CSFM, MiSTMA Synthetic Turf Infill Seminar, Detroit, May 11, 2005.	

Detroit — Maintaining synthetic turf systems is not as inexpensive or as "labor free" as some people may have been lead to believe.

That was the take-home message from the Michigan Sports Turf Managers Association's (MiSTMA) May 11 Synthetic Turf Infill Maintenance Seminar held at the Detroit Lions' practice facility in Dearborn, MI.

About 75 attendees represented the entire spectrum of job titles that typically get involved in athletic field management in schools, universities and park systems: from custodians right up through athletic directors.

You could tell the ADs because they were the ones with the cell phones glued to their ears at every break.

Attendees were treated to a compressed introduction to synthetic turf systems. Along the way, they got some tips on painting synthetic surfaces from a vendor, met with regional equipment and supply vendors and got a tour of the Lions' three-year-old, multi-million dollar practice facility and its state of the art grounds shop.



The Detroit Lions' Headquarters and Training Facility cost \$35.5 million and opened in 2002. The 460,000 sq. ft. complex includes a full-size indoor synthetic turf practice field, 2.5 outdoor practice fields, an auditorium and (of course) lots and lots of amenities for the players. MiSTMA members got to tour the facility on a brisk but beautiful spring day.



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### The architect/builder

Bruce Lemons founded [Foresite Design](#) in 1990. His firm plans and builds athletic facilities. He has designed many synthetic infill system fields for schools and parks around Michigan. Lemons was a founding member of the Synthetic Turf Council (STC) which is creating voluntary industry standards for synthetic infill system manufacturers. He said STC is also preparing position papers to answer frequently asked questions about synthetic infill system construction and maintenance.

Lemons showed slides of the synthetic field construction process. He warned attendees planning on installing new infill systems to make sure the contract requires testing the carpet material *before* the manufacturer sends it out to a finisher to apply the latex or polyurethane backing.

"You have to have the results before it is shipped to you," Lemons said. "Because if it's not to spec when you receive it, you will end up in negotiations with the manufacturer."

Lemons said his experience has shown that after a few years, the Gmax values (a measure of hardness) can vary quite a bit in different parts of a synthetic field. Since the consistency of the surface is very important to the safety of athletes, Lemons said STC now suggests that specifications stipulate that the Gmax values over the entire field must remain within plus or minus 5%.

Lemons passed around a 2 in.-thick piece of dense "e-layer" shock absorption pad manufactured from recycled rubber and urethane. Although it increases the initial cost of an infill system, many experts recommend paving a seamless e-layer over the asphalt or gravel base prior to laying synthetic turf. The substance is installed just like an athletic track and provides an extra cushion for the surface.

Lemons said new monofilament fiber technology is on the horizon that will offer better wear and performance characteristics and a longer guarantee than the current slit-film technology.

### The university athletic turf manager

Amy J. Fouty, CSFM, athletic turf manager for [Michigan State University](#) (MSU), currently supervises the Astroplay indoor



Bruce Lemons, president of Foresite Design, was among the founding members of the Synthetic Turf Council. He gave MISTMA members an overview of synthetic turf system construction considerations.



Amy J. Fouty, CSFM, athletic turf manager for Michigan State University and her colleague, Mark Viele, grounds keeper, MSU football fields. Fouty presented details about the cost of maintaining MSU's synthetic turf practice field.



Charlie Coffin, sports field manager for the Detroit Lions in front of the facility's "just-for-

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practice field at Duffy Daugherty Football Building and a modular natural bluegrass field at Spartan Stadium. In her previous position at the University of Michigan, she managed a Field Turf infill system. Fouty believes synthetic systems have a definite place in an athletic field manager's toolkit.

fun" putting green. Coffin shared his experience maintaining the synthetic surface at Detroit's Ford Field.



Attendees take a break on the Detroit Lions' Practice Facility indoor synthetic infill field.

"However, safety is our first priority," she said. "There are concerns with regard to the safety of the products used to make the fields, as well as with how to clean and disinfect synthetic infill fields. Synthetic infill manufacturers need to get information and solutions out to the people who have to deal with these issues on a daily basis."

Fouty said her three main concerns are:

- Safety (stability and footing)
- Playability (consistency and confidence)
- Aesthetics

Fouty prefers sewn seams to glued seams because they are stronger, more flexible and last longer. When it comes to line markings, she recommends spending the money to tuft-in as much as possible.

"If you paint lines, the first time you groom over the lines the product spreads over the field. The dried paint is abrasive, slippery and the lines don't look good very long," she said.

Fouty had her crew manufacture a field magnet that can be dragged over the field once or twice a year to capture metal objects that get tossed or dropped. And, for the first few years, static control is a problem that requires a spray of diluted fabric softener.

"It also takes away the old tire smell," Fouty said. "Without the fabric softener, our indoor facility smells like old tires and locker rooms."

Synthetic Turf Maintenance Equipment	
<b>Boom Sprayer</b>	\$1,000 to \$35,000
<b>Sweeper</b>	\$1,500 to \$20,000
<b>Broom</b>	\$500 to \$3,000
<b>Painter</b>	\$500 to \$3,000
<b>Groomer</b>	\$1,500 to \$2,000
<b>Cart (to tow equipment)</b>	\$2,500 to \$16,000
<b>Field Magnet</b>	\$500 to \$1,000
<b>Rollers</b>	\$250 to \$2,000
<b>Total:</b>	\$8,250 to \$82,000
Source: "A Sports Field"	

The meat of Fouty's presentation was a break down of the maintenance budget for MSU's indoor practice field. You could see field managers scribbling notes as she listed the actual maintenance equipment needed, typical costs for outside contractors and cost for materials and labor for regular field grooming. Bottom line: MSU's field costs nearly \$23,000 a year to maintain.

Manager's Perspective:  
Synthetic Turf Construction Considerations, Maintenance Costs & Concerns," Amy J. Fouty, CSFM, MiSTMA Synthetic Turf Infill Seminar, Detroit, May 11, 2005.

<b>2004-2005 Maintenance Budget Synthetic Infill Field (three-year-old surface)</b>	
<b>Seam Repairs</b> (outside contractor; \$30 per linear foot)	\$8,000
<b>Apply Crumb Rubber</b> (1x per year; 20 hours per application; 10 tons of top dressing @ \$500 per ton)	\$5,000
<b>Spray Field</b> (4x per year; 3.5 oz rate per 1,000 sq. ft.; 3 hours each; 12 hours per year)	\$216
Fabric softener @ \$7 per 64 oz. container	\$120
Disinfectant @ \$5 per gallon )	\$100
<b>Sweep Field</b> Parker Sweeper; 4x per year; 8 hours each; 32 hours per year	\$1,500
Broom	\$500
Groomer	\$1,500
<b>Hand Pick</b> (3x per week; 1 hour ea.; 156 hours per year @ \$18 per hour)	\$2,800
<b>Paint Field</b> (2x per year; 30 hours ea.; 60 hours per year; 30-40 gal. per year @ \$25 per gal.)	\$1,000
<b>Total Straight Hourly Cost</b> (Field only; 280 hours @ \$18 per hour; benefits not included)	\$5,040
<b>Total Supply Cost</b>	\$6,220
<b>Total Equipment Cost</b>	\$3,500
<b>Total Outside Contractor Repairs</b>	\$8,000
<b>Total Maintenance Cost 2004-2005</b>	<b>\$22,760</b>
Source: "A Sports Field Manager's Perspective: Synthetic Turf Construction Considerations, Maintenance Costs & Concerns," Amy J. Fouty, CSFM, MiSTMA Synthetic Turf Infill Seminar, Detroit, May 11, 2005.	

**The professional field manager**



Charlie Coffin, sports field manager for the Detroit Lions, shared stories about the challenges of managing a synthetic infill system at **Ford Field**, a \$500 million multi-use professional facility that opened in August 2002. The facility was designed to host up to 120 events a year, including Detroit Lions football games, other sporting





Seminar attendees got to meet equipment and material vendors during a tour of the facility's shop.

events, concerts, banquets, tradeshow, business meetings and conventions. For its first year alone, planners expected 1.5 million people to attend events at Ford Field.

"We were sold these fields on the basis that there would be no maintenance," Coffin said. "That just wasn't true."

Coffin said planners decided the covered field didn't need a drainage system. But with no rain to flush through the infill system, contamination has become a worrisome issue. What to do about erasing paint lines alone has become a major headache. Because so many types of sports are played on the field, Coffin is painting and erasing lines every week of the year.



Craig O'Berry from Pioneer Paint shares turf painting tips on the practice field.

During one event, Coffin noticed that the opposing team had set up a tent along the sidelines. It turned out, rather than take a long walk to get to the bathroom, the players were using the tent as cover and peeing right onto the field.

With events as diverse as flea markets and marathons, Coffin says he can quickly fill a magnet with the junk that gets dropped on the field. Covering the field for events like rock concerts has been another adventure. Coffin discovered that laying down plywood meant the field got filled with wood splinters that had to be picked out by hand.

Coffin recommended the field managers be sure and cover areas that would get heavy foot traffic with canvas.

"But, Lord help me! Do *not* use duct tape," he exclaimed. "We taped a sideline tarp down once. In order to get the glue off the turf we sat on our hands and knees rubbing Goof-Off® into the fibers."

Despite the hairy stories of trial and error, Coffin, like Fouty, said he has gained respect for synthetic turf systems.

"This synthetic indoor field has made our outdoor facilities better," Coffin said. "When it rains, they go inside. That improves the main field. As a grass guy, I didn't really want a synthetic field at first. But it's been good for us. In fact, we're now thinking about installing an outdoor synthetic field."



Coffin's synthetic turf line marker uses a special paint that is formulated to be flexible when dry.





Essential equipment: utility vehicles, mowers and hoops.



The Detroit Lions' Practice Facility was designed to be environmentally responsible. This water recycling station cleans and filters the water used to clean mowers and vehicles.



These filters capture grass clippings, dirt, fertilizer and other contaminants from the reclaimed water before it is recycled.



More than 75 athletic field managers and athletic directors learned a lot at MiSTMA's 2005 Synthetic Infill System Maintenance Seminar.

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