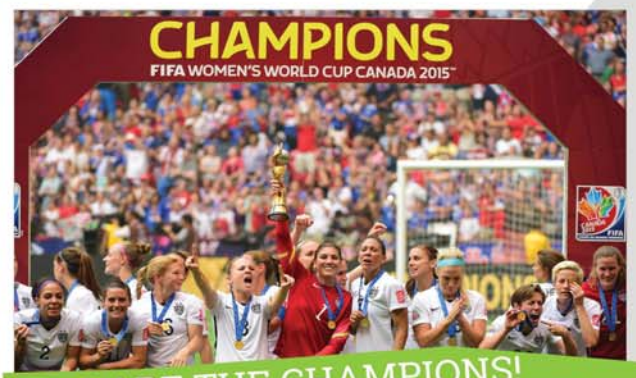
SYNTHETIC TURF MAGAZINE

THE MADEIRA SCHOOL CASE STUDY

2006 - 2016 SPORTS FIELDS INSTALLATION LIST

WHAT'S INSIDE



WE ARE THE CHAMPIONS!

TEAM USA WINS THE 2015 FIFA WOMEN'S WORLD CUP ON SYNTHETIC TURF FIELDS WITH NO INJURIES
THE COMMONWEALTH STADIUM WAS THE BEST!

On Page 03.

CELEBRATING

GTR TURF™

A SPECIAL

THANK YOU

TO ALL OUR CLIENTS AND STAKEHOLDERS

Benoit Laverdure
THE AMERICAN PILLAR

Benoit Laverdure - second from the left

With over 15 years of sales, project management and business development experience gained in the U.S and Canada, Benoit joined GTR Turf in 2006 as a founding member of GTR Turf USA.

Following successful years of growth in this region, Benoit became the vice president of operations and now oversees all of GTR's Key activities in the United States.

Benoit is also responsible for driving sales and expanding channels to accelerate GTR Turf's regional growth, capitalizing on the rising demand for synthetic turf sports fields that enable organizations to have the best sports facilities.

Benoit is an accomplished international senior executive and customer relationship management expert with demonstrated achievements in developing plans and strategies to deliver profitable growth.

He created a culture of success, putting in place, infrastructures and systems to support the various installation teams, capable to manage customer expectations and contribute to a high level of client satisfaction.

Benoit is a grey eminence in the synthetic turf industry.

He is always in front of the client, managing the key relationships and actively participates in all the project processes; from the needs assessment to the construction of the base, to the installation of the field and never closes a project until the client is 100% satisfied

Benoit has an extensive construction expertise that brings value to every client. Being in the synthetic turf industry for over a decade,

Benoit is clearly an important key resource in every project.

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Director of Finance CPA, CA.

DIANE SIMARD
Controller

BEHIND A GREAT COMPANY, THERE IS A GREATER TEAM.

At GTR TURF, we have a very clear vision to innovate in order to provide athletes high-level synthetic turf sport facilities to greatly improve their playing experience.

We align our vision with our mission of being the best synthetic turf company that sets the standard of excellence in our industry.

Our employees are a strategic asset, who contribute, with their work and talent, to sustainable value creation.

This is why I am very proud to introduce our management team responsible for positioning the company as a world leader in the synthetic grass industry.

GTR Turf employees are its most valuable asset and are primarily responsible for business growth.

Our employees are aware that each one of their actions has a direct impact on the performance level of athletes.

Consequently, each of us plays a very important role in order to exercise corporate responsibility for GTR Turf.

- Luc Rochon
CEO GTR Turf

USWNT CHAMPS

In 2015, for The U.S. Women's soccer National Team, playing on synthetic turf fields was no hurdle to winning the prestigious trophy of the FIFA Women's World Cup Canada 2015™.

The opening game of the competition was played at the Commonwealth Stadium in Edmonton, Alberta, Canada. The U.S. Women's National Team played the Eighthfinals game at the Commonwealth Stadium against Colombia and successfully advanced to the quarterfinal without any complaint, injury or negative comment of the field.

The eyes of the world watched the USWNT perform on the fifth generation of artificial Turf for the first time, during an international tournament.

GTR Turf installed the new synthetic grass in the Commonwealth Stadium and showed the world that its new generation of artificial turf is close to nature, and, the future of major worldwide sports tournaments.

SYNTHETIC TURF

GTR Turf was also selected to complete the field installation for three other sports grounds which served as training facilities for International elite soccer players. The three additional fields are Rocky Stone Field in Moncton, New Brunswick; Winnipeg Soccer Complex in Winnipeg, Manitoba; and Henry Singer Sports Centre in Edmonton, Alberta. With 400,000 square feet of synthetic turf installed in May 2015, the company had installed more than 4 million square feet in 2015, equivalent to 50 fields.

"This gives you an idea about the interest of clients, willing to change their natural grass to artificial turf. Obviously, when it just came out, it was a thin carpet on pretty much asphalt underneath."

Today, our 5th generation of artificial grass reflects many years of innovation, R&D and the introduction of new technologies that provides the best combination of durability, playability and safety, replicating the playing characteristics of natural grass."
Says Luc Rochon, President and CEO at GTR Turf.

The surface properties of first, second and third generation synthetic turf were very different, in many aspects. The lack of impact absorption and the high friction/traction on the earlier surfaces were associated with an increased risk of injury.
However, the modern fourth and fifth generation pitches are very different in construction and have the same properties and injury-risk profiles as natural grass.

...NO PROBLEM!

Recent studies have found that playing or training on artificial turf does not raise the potential for acute injury. In fact, synthetic grass may actually reduce the risk of some specific injuries under specific conditions, due to some key characteristics that may reduce the stress placed on joints.

The new synthetic field at the Commonwealth Stadium is certified FIFA RECOMMENDED 2 Star, meaning that the playing field underwent rigorous testing, to satisfied a number of surface property standards before being played on. The Powerblade Elite 2.5-S system installed on this field is designed to provide safety as well as performance benefits for the athletes, by achieving the right balance of firm, fast and safe surface.

In addition to shock attenuation (which can help prevent injuries from tackles, trips and falls), the field is designed to combine low Gmax levels with the foot stability and force reduction (lower extremity protection) values in the range of high-quality natural grass.

Every fiber of the Powerblade Elite 2.5-S system is manufactured to be a replica of the one next to it, so no areas are uneven or differently textured to alter the speed of the ball or the ability of a player to achieve secure footing, allowing more precise turning and stopping. The Powerblade 2.5-S fibers produce significantly less friction between the playing surface and players' skin compared to both natural grass and older versions of synthetic turf.

HEAT IS NO LONGER A PROBLEM!

To impress the players around the world, the Commonwealth Stadium has a unique ground cooling technology; The HydroChill system.

This is the latest innovation of Shaw Sports Turf products, exclusive to GTR Turf.

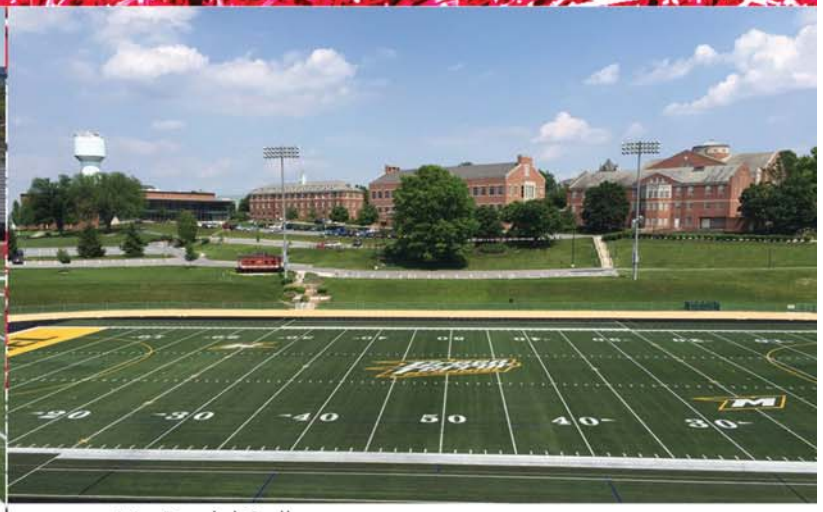
Artificial turf can increase its temperature during the hot and sunny days. However, the HydroChill evaporative cooling system reduces the temperature of the ground of up to 30°C.

The USWNT proved the world that you can win championships on synthetic turf fields in a major tournament, having the best performance without major injuries.

10 YEARS INSTALLATION LIST

The Madeira School 8328 Georgetown Pike, McLean, VA 22102, USA

Washington - Lee High School 1301 N Stafford St, Arlington, VA 22201, USA



Mc Daniel College 2 College Hill, Westminster, MD 21157, USA

Maplezone Sports Institute 1451 Conchester Hwy, Garnet Valley, PA 19061, USA

DC United training field 279 Oklahoma Ave NE, Washington, DC 20002, USA

National Cathedral School 3612 Woodley Rd NW, Washington, DC 20016, USA

Georgetown University 3700 O St NW, Washington, DC 20057, USA

2016

Project	City, State	Delivery
Madeira school	McLean, VA	2016
North Point High School	Waldorf, MD	2016
Archbishop spalding High School	Severn, MD	2016
Thayer Academy	Braintree, MA	2016
Princess Anne	Virginia Beach, VA	2016
Narragansett High School	Narragansett, RI	2016
Mc Daniel College	Westminster, MD	2016
Manhattanville College	Purchase, NY	2016
John Hopkins University	Baltimore, MD	2016
Archbishop Spalding HS	Severn, MD	2016
Matthew Maury Elementary	Alexandria, VA	2016
The Field School	Washington, DC	2016
Salisbury University	Salisbury, MD	2016

2015

Project	City, State	Delivery
Madison Day School	Alexandria, VA	2015
Notre Dame School, CT	Fairfield, CT	2015
Tinton Falls Park	Tinton Falls, NJ	2015
Athletic Georgetown	Washington, DC	2015
Bishop McNamara School	Forestville, MD	2015
Body Renew, Fitness & Family Sports Center	Winchester, VA	2015
Calvert Regional Park	North East, MD	2015
CNY Family Center	Syracuse, NY	2015
DC United	Washington, DC	2015
EC Glass High School	Lynchburg, VA	2015
Georgetown University	Washington, DC	2015
Herndon Park	Durham, NC	2015
Lasalle College High School	Glenside, PA	2015
Maple Zone Sports Institute	Garnet Valley, PA	2015
Marching Virginians Center	Blacksburg, VA	2015
Washington - Lee High School	Arlington, VA	2015

2014

Project	City, State	Delivery
College of the Holy Cross	Worcester, MA	2014
Nobadeer Farms Road Play-Field	Nantucket, MA	2014
Clark University	Worcester, MA	2014
Blue Hills Regional Technical School	Canton, MA	2014
Belmont High School	Belmont, MA	2014
Brunswick School Natatorium Field	Greenwich, CT	2014
Christian Brothers High School	Memphis, TN	2014
Ensworth School	Nashville, TN	2014
Oxon Hill High School	Oxon Hill, MD	2014
Veterans Memorial High School	Peabody, MA	2014
Soccer Association of Columbia F.7	Howard County, MD	2014
Soccer Association of Columbia F.8	Howard County, MD	2014
Sports Reality Indoor	Mechanicsville, VA	2014
Wakefield High School	Arlington, VA	2014
Washington College	Chestertown, MD	2014
KIPP Trinidad Rec Center Campus	Washington, DC	2014

2013

Project	City, State	Delivery
Dulles Sportsplex	Sterling, VA	2013
The Fairfax Sportsplex	Springfield, VA	2013
Friendship Collegiate Academy	Washington, DC	2013
Georgetown University	Washington, DC	2013
NS Norfolk SP Field	Norfolk,VA	2013
NS Norfolk Q Field	Norfolk,VA	2013
NAS Norfolk Oceana	Norfolk,VA	2013
Wyoming Seminary Nesbitt Field	Kingston, PA	2013
Richmond Kickers Field 2	Richmond, VA	2013
ST. Albans School	Washington, DC	2013

2012

Project	City, State	Delivery
National Cathedral Upper Field	Washington, DC	2012
National Cathedral Lower Field	Washington, DC	2012
Howison Park	Woodbridge, VA	2012
Virginia Highland Park	Arlington, VA	2012
Virginia Highlands Park	Arlington, VA	2012

2011

Project	City, State	Delivery
Grizzly Football Field	Warrentown VA	2011
Grizzly Football Field Fld #2	Warrentown VA	2011
Madison High School	New Jersey, USA	2011

2010

Project	City, State	Delivery
SportsQuest 16 Field	Richmond, VirginiaUSA	2010
Maret School	Washington. DC	2010
Upper Perkiomen	Red Hill, PA	2010
Cupples stadium	Pittsburg, PA	2010
Greenbelt Sportsplex	Glenn Dale, Maryland	2010
Hampton Roads soccer Complex	Virginia beach, VA	2010

2009

Project	City, State	Delivery
Randolph Athletic Field	Lynchburg, VA	2009
MBL Tropicana Field	St-Petersburg, FL	2009
Woodlawn High School	Woodlawn, MD	2009
Washington International Tregaron	Washington, DC	2009
Stanton Elementary School	Washington, DC	2009
Riggs Lasalle Park	Washington, DC	2009
Ridge Park	Washington, DC	2009
Spring Hill Park Field # 2	Mclean, VA	2009
Draper Drive Park	Fairfax, VA	2009
Eastern High School	Washington, DC	2009
Springarn High School	Washington, DC	2009
Cardozo High School	Washington, DC	2009
Lake Highland Preparatory School	Orlando, FL	2009
NCAA Florida International University	Miami, FL	2009
Heard County High School	Franklin, GA	2009

2008

Project	City, State	Delivery
University of Delaware Practice Field # 2	Newark, DE	2008
Richard Montgomery High School	Rockville, MD	2008
Gallaudet University	Washington, DC	2008
Yale University Baseball Field	New Haven, CT	2008
Roland Park Country School Field # 1	Baltimore, MD	2008
NCAA Dickinson College Biddle Field	Carlisle, PA	2008
NCAA Princeton University Soccer Stadium	Princeton, NJ	2008
Mountain Brook High School	Mountain Brook, AL	2008
Milford High School Field # 2	Milford, DE	2008
University of Delaware Harrington Field	Newark, DE	2008
University of Delaware Practice Field	Newark, DE	2008
Baltimore County - Northwest Regional Park	Owing Mills, MD	2008
Braddock Park Field # 7	Clifton, VA	2008
Howison Park Field # 2	Woodbridge, VA	2008
Ramapo College	Mahwah, NJ	2008
Baltimore County – Essex County	Baltimore, MD	2008
Cedar Lane Park – Field # 6	Howard County, MD	2008
Pascack Hills High School	Montvale, NJ	2008
Our Lady of Lourdes Church	Bethesda, MD	2008
Warren Township	Warren, NJ	2008
Seminar Park	Lutherville, MD	2008
Philadelphia Soul	Voorhes, NJ	2008
James Long Park Field # 1	Haymarket, VA	2008
James Long Park Field # 2	Haymarket, VA	2008
Milford Academy High School - Field # 1	Milford, DE	2008
University of Delaware Laird Campus	Newark, DE	2008

2007

Project	City, State	Delivery
Mountain Ridge High School	Frostburg, MD	2007
Wilson Senior High School	Washington, DC	2007
McKinley Technology	Washington, DC	2007
Dunbar Senior High School	Washington, DC	2007
Ballou Senior High School	Washington, DC	2007
McKinley Technology School	Washington, DC	2007
Solomon Schechter School	New Milford, NJ	2007
Penn Manor School	Millersville, PA	2007
Holton Arms School	Bethesda, MD	2007
Coolidge High School	Washington, DC	2007
Roosevelt Senior High	Washington, DC	2007
James Madison High	Vienna, VA	2007
Lawrenceville Prep School	Lawrenceville, NJ	2007
South Run Park	Springfield, VA	2007
Blair Academy	Blairstown, NJ	2007
St. Mary's High School	Annapolis, MD	2007
Tower Hill School	Wilmington, DE	2007
Hockessin Montessori School	Hockessin, DE	2007
Towson University	Towson, MD	2007
Washington International School	Washington, DC	2007
Roanoke College Athletic Field	Salem, VA	2007
Naval Academy Athletic Association-Bishop	Annapolis, MA	2007

2006

Project	City, State	Delivery
Mason District Park	Annandale, VA	2006
Bishop Sullivan	Virginia Beach, VA	2006
Wakefield Park	Fairfax, VA	2006
Boca Campus	Boca Raton, FL	2006
Hampden-Sydney College	Hampden-Sydney, VA	2006
Diamond Dreams	Salisbury, MD	2006
Georges Mason High School	Fallschurch, VA	2006
Ridgefield High School	Ridgefield, NJ	2006
Hampden-Sydney Col	Hampd-Syd, VA	2006
E.H.S.Hummel Stadium	Alexandria, VA	2006
E.H.S.Greenway Field	Alexandria, VA	2006
Georges Mason H.S.	Fallschurch, VA	2006
City of Salem	Salem, VA	2006
St. Anne's Belfield	Charlottesville, VA	2006
St. Anne's Belfield	Charlottesville, VA	2006
Rye Country Day School	Rye, NY	2006
West Springfield H.S.	Springfield, VA	2006
City of Salem	Salem, VA	2006
Palisades High School	Kintnersville, PA	2006
Greenbrier Park	Arlington, VA	2006
Ontario Soccer Center	Vaughan, ON	2006
Greenbrier Park	Arlington, VA	2006
Fauver Stadium	Rochester, NY	2006
Hackensack High School	Hackensack, NJ	2006
Fauver Stadium	Rochester, NY	2006
Morristown Beard	Morristown, NJ	2006
Kent Place School Lower	Summit, NJ	2006
Kent Place School Upper	Summit, NJ	2006

HIGH PROFILE ORGANIZATIONS

USING THE BEST SHAW SPORTS TURF SYNTHETIC TURF

shaw™ SPORTS TURF

INSTALLATION	TYPE	CITY	COUNTRY
Washington Nationals	MLB	Washington	USA
San Jose Sabercats	AFL	San Jose	USA
Chicago Cubs	MLB	Mesa	USA
Cleveland Browns Training Facility	NFL	Berea	USA
Buffalo Bills-Indoor Practice Facility	NFL	Orchard Park	USA
Atlantic Health Jets Training Center	NFL	Florham Park	USA
San Francisco 49ers Practice Field	NFL	Santa Clara	USA
Mercedes-Benz Superdome (Louisiana Superdome)	NFL	New Orleans	USA
Richmond Kickers	USL	Richmond	USA
Southern Illinois Miners	IFL	Carbondale	USA
University of Denver	NCAA	Denver	USA
University of Colorado	NCAA	Boulder	USA
University of South Carolina	NCAA	Columbia	USA
University of Maryland	NCAA	College Park	USA
University of Syracuse-Manley Field	NCAA	Syracuse	USA

YOUR FIELD TURF CAN BE BETTER IF YOU CHOOSE shaw™ SPORTS TURF

BASEBALL


KENT STATE UNIVERSITY — Kent, OH

Product: Momentum Pro	SQFT: 116680	Year: 2014


EAST TENNESSEE STATE UNIVERSITY — Johnson City, TN

Product: PowerBlade HP	SQFT: 146017	Year: 2012


HERMLEIGH ISD — Hermleigh, TX

Product: TruHop	SQFT: 48747	Year: 2011


BIG LEAGUE DREAMS SPORTS PARK — Mansfield, TX

Product: Momentum HP	SQFT: 151000	Year: 2011

OTHER INSTALLATIONS

INSTALLATION	CITY	STATE	PRODUCT	SQ.FT.	AGE
Benedictine College	Atchison	KS	Truhop	40877	2015
Kerry Wood Cubs Field	Chicago	IL	Momentum HP	131104	2015
LakePoint Sporting Community (8 fields)	Emerson	GA	Truhop	116525	2015
Quincy University	Quincy	IL	Truhop	43550	2015
Seaman High School	Topeka	KS	Truhop	79360	2015
City of Whiting	Whiting	IN	TruHop	10000	2014
Iron Horse Baseball (4 fields)	Windber	PA	Momentum HP	111130	2014
Kent State University	Kent	OH	Momentum Pro	116680	2014
Mt. Aloysius College	Cresson	PA	TruHop	39135	2014
U Performance Center	Farmingdale	NJ	TruHop	24510	2014
Deming Sports Park	Deming	NM	Momentum HP	74700	2013
Lordsburg Baseball Field	Lordsburg	NM	Momentum HP	106900	2013
Rio Rancho School District	Rio Rancho	NM	Momentum HP	125000	2013
East Tennessee State University	Johnson City	TN	PowerBlade HP	146017	2012
Mason County Parks	Shelton	WA	Momentum HP	46000	2012
Rio Rancho High School	Rio Rancho	NM	Momentum HP	125000	2012
Scott Evans Baseball Park	Silver City	NM	Momentum HP	335508	2012
Memphis University	Memphis	TN	Legion HP	24241	2011
University of Maryland	College Park	MD	Momentum HP	31244	2011

SOCCER


UTAH VALLEY UNIVERSITY — Orem, UT

Product: PowerBlade HP	SQFT: 412000	Year: 2013


PROVIDENCE COLLEGE — Providence, RI

Product: Legion HP	SQFT: 96700	Year: 2013


SOCCER ASSOCIATION OF COLUMBIA — Elliott City, MD

Product: PowerBlade HP	SQFT: 81400	Year: 2011


SPORTSPORT SOCCER FIELDS — Maryland Heights, MO

Product: Legion HP	SQFT: 281200	Year: 2015

OTHER INSTALLATIONS

INSTALLATION	CITY	STATE	PRODUCT	SQ.FT.	AGE
Columbia College Owens	Columbia	MO	SpikeZone Pro	102146	2015
DC United	Washington	Washington DC	PowerBlade	76327	2015
Grand Terrace High School	Grand Terrace	CA	PowerBlade HP	6675	2015
Hummer Sports Park	Topeka	KS	Momentum HP	80500	2015
Monterrey Soccer Stadium	Monterrey	Mexico	Elevate	37000	2015
Vista Montana Park	San Jose	CA	PowerBlade HP	81000	2015
Wall Soccer Club	Wall	NJ	PowerBlade HP	91000	2015
Winnipeg Soccer Complex	Winnipeg	Canada	PowerBlade HP	89983	2015
Jefferson HS - Portland Public Schools	Portland	OR	PowerBlade HP	73987	2014
Metro State University	Denver	CO	PowerBlade HP	112400	2014
Soccer Association of Columbia (3 fields)	Columbia	MD	Momentum HP	54000	2014
Southern Oregon University	Ashland	OR	PowerBlade HP	97714	2014
Valley Catholic High School	Beaverton	OR	Legion HP	85000	2014
Bavarian Soccer Project	Glendale	WI	PowerBlade Bolt	95000	2013
Orange County Great Park	Irvine	CA	Legion HP	91768	2013
Providence College	Providence	RI	Legion HP	96700	2013
Quincy University	Quincy	IL	PowerBlade Pro	93400	2013
Richmond Kickers	Richmond	VA	PowerBlade HP	115000	2013

FOOTBALL

THE UNIVERSITY OF ARKANSAS — Fayetteville, AR

Product: PowerBlade HP	SQFT: 88150	Year: 2012

VANDERBILT UNIVERSITY // DUDLEY STADIUM — Nashville, TN

Product: Legion HP	SQFT: 89500	Year: 2012

MONTANA TECH — Butte, MT

Product: PowerBlade Pro	SQFT: 92000	Year: 2013

FURMAN UNIVERSITY // PALADIN STADIUM — Greenville, SC

Product: PowerBlade Pro	SQFT: 108000	Year: 2013

CARSON NEWMAN UNIVERSITY — Jefferson City, TN

Product: PowerBlade Pro	SQFT: 101350	Year: 2014

MIDDLE TENNESSEE STATE UNIVERSITY — Murfreesboro, TN

Product: Legion HP	SQFT: 112705	Year: 2014

UC DAVIS // AGGIE STADIUM — Davis, CA

Product: Legion HP	SQFT: 105110	Year: 2015

COASTAL CAROLINA — Conway, SC

Product: PowerBlade HP	SQFT: 104544	Year: 2015

OTHER INSTALLATIONS

INSTALLATION	CITY	STATE	PRODUCT	SQ.FT.	AGE
Coastal Carolina	Conway	SC	PowerBlade HP	104544	2015
Commonwealth Stadium	Edmonton	Canada	PowerBlade Elite	118072	2015
McKendree University	Lebanon	IL	Legion HP	99998	2015
UC Davis - Aggie Stadium	Davis	CA	Legion HP	105110	2015
Carson Newman University	Jefferson City	TN	PowerBlade HP	101350	2014
Georgia Tech - Roe Stamps Field	Atlanta	GA	PowerBlade Elite	163175	2014
Middle Tennessee State University	Murfreesboro	TN	Legion HP	112705	2014
Colorado Mesa University	Grand Junction	CO	Legion HP	96000	2013
Furman University - Paladin Stadium	Greenville	SC	PowerBlade HP	108000	2013
Montana Tech	Butte	MT	PowerBlade Elite	92000	2013
Seattle University	Seattle	WA	Legion HP	108330	2012
University of Richmond	Richmond	VA	Legion HP	155125	2012
Vanderbilt University - Dudley Stadium	Nashville	TN	PowerBlade HP	89500	2012
GA Tech-Grant Fld/Bobby Dodd Stad.	Atlanta	GA	PowerBlade Elite	37103	2011
University of California-Humboldt Stadium	Arcata	CA	Legion HP	80000	2011
University of North Texas	Denton	TX	Legion HP	96885	2011
Western Oregon University	Monmouth	OR	PowerBlade HP	120769	2011
Youngstown State Stadium	Youngstown	OH	PowerBlade Elite	88500	2011
Baltimore Ravens M&T Bank Stadium	Baltimore	MD	Legion HP	108000	2010
Georgia Tech	Atlanta	GA	Legion HP	76046	2010

INDOOR FOOTBALL

CLEVELAND BROWNS — Berea, OH

Product: Momentum HP	SQFT: 60000	Year: 2010

NEW YORK JETS — Florham Park, NJ

Product: Momentum HP	SQFT: 72000	Year: 2008

VANDERBILT UNIVERSITY — NASHVILLE, TN

Product: Legion HP	SQFT: 61042	Year: 2013

BALTIMORE RAVENS — BALTIMORE, MD

Product: Momentum HP	SQFT:109000	Year: 2011

VIRGINIA TECH — Blacksburg, VA

Product: Momentum HP	SQFT: 85102	Year: 2015

YOUNGSTOWN STATE UNIVERSITY — Youngstown, OH

Product: Spike Zone HP	SQFT: 64000	Year: 2011

GEORGIA TECH — Atlanta, GA

Product: Legion HP	SQFT: 76046	Year: 2010

LOUISIANA STATE UNIVERSITY — Baton Rouge, LA

Product: Momentum HP	SQFT: 82555	Year: 2006

A smart investment that will add excellent value to your community

Artificial, or synthetic, turf first came on the scene in the 1960s, however, it was not as technologically advanced as what we see used in fields today. It wasn't until the 1990s that our modern version of artificial turf was introduced. Artificial turf bears a strong resemblance to natural grass in look, feel and playability, and it has grown in popularity over the years.

Installation of a synthetic turf field is not a small investment. However, it can have numerous benefits. Our Shaw Sports turf synthetic grass is the best in the industry and can generate recurring revenue for your organization. Our artificial turf offers many benefits; versatility, 24/7 availability and surface stability regardless of weather conditions.

Your field may be used for longer periods of time, more tournaments and more special events than if it was made of natural turf. The revenues generated by a single event can translate into thousands of dollars for your community.

Your Shaw Sport turf artificial grass can also save you money during its life cycle in comparison with a well-maintained natural grass field.

- No field closures due to rain
- Looks similar to natural grass
- No water, no pesticides or fertilizers required
- Supports high traffic for all practiced sports, minimum maintenance
- No contamination of storm waters from pesticides and fertilizers
- Reduces carbon footprint

THIS YEAR, PLAN THE INSTALLATION OF A SYNTHETIC TURF FIELD

How much will you save if you replace your Natural Grass field with a Synthetic Turf field

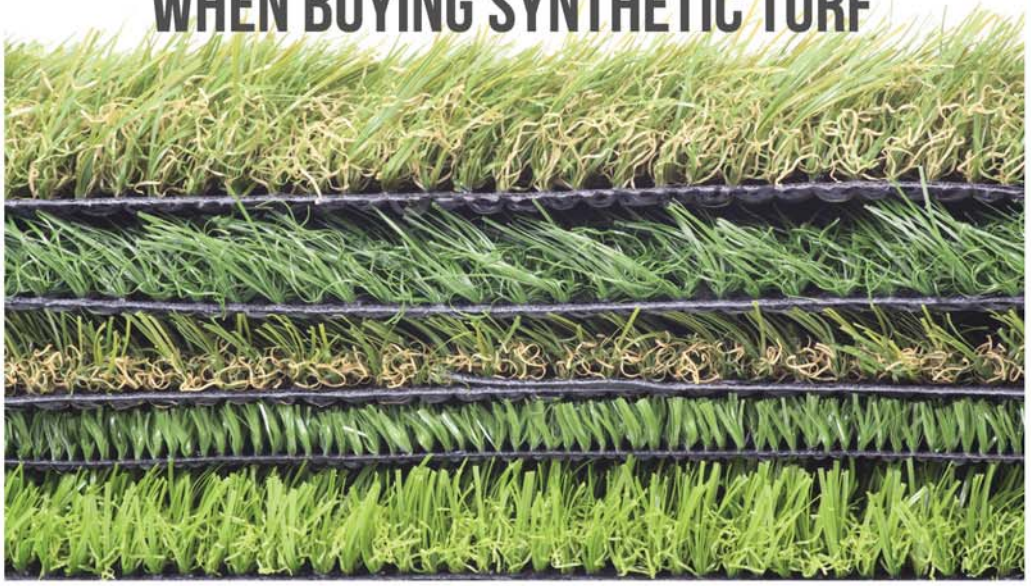
BASED ON A 100,000 SQUARE FEET FIELD

Expense	Natural grass field	Synthetic turf field
Initial Installation	$390,000	$440,000
Maintenance cost	$12,000	$2,500
Equipment	$4,000	$1,500
Fertilizers	$2,000	$0
Grass Seeds	$4,000	$0
Sprinklers repair	$1,000	$0
Lines painting	$2,500	$0
Total annual maintenance cost	$25,500	$4,000
X 10 years	$255,000	$40,000
Total cost after 10 years	$645,000	$450,000
Total savings	------	$165,000
Savings per year	------	$16,500
Number of events per year	55 events	735 events
X 10 years	1650 events	7350 events
Cost per use	$390.91	$65.30

Synthetic turf, a smart choice that gets smarter when you choose GTR Turf.

WHAT TO CONSIDER

WHEN BUYING SYNTHETIC TURF



It is important that before you acquire a synthetic turf, you should be assured that the synthetic grass you select is of high quality and will continue to perform as warranted. Below are some critical guidelines you should consider before getting one;

• Research the synthetic grass manufacturer and installation company with whom you may contract. Carefully check their service record with client references. Visit some of their installations, particularly those that are several years old and be sure to understand how customer questions, service issues, and warranty claims will be handled. Do business with companies that you believe are most likely to be in business to respond to a warranty claim throughout the warranty period.

• Insist on a quality product that meets or exceeds your specifications and that is identified as appropriate for its intended use

• Review all documents, including work plans, construction schedules, and contractor warranties. Make sure all agreed terms and extras are in writing;

• Keep the synthetic grass sample you select, and compare it before installation to the product that is delivered.

Beside these critical guidelines, exist other specific guidelines which should be considered. They include:

Quality guidelines

Total Yarn Weight: This refers to the weight of the yarn above the backing.

It depends on factors such as yarn length above backing (pile height) and the distance between the individual fiber tufts (density or tufting gauge). Longer pile and denser synthetic grass look more natural.

Most synthetic grass have a pile height of between 1½" and 2", and a density of between ¼" and ½" for a total yarn weight of between 23 oz. and 80 oz. per square yard.

Primary Backing

Used in the tufting process to provide initial dimensional stability for the synthetic grass system, the primary backing materials are of a woven or non-woven fabric in one or more layers. GTR Turf recommends a system with a dual primary backing with a weight of at least 7 oz. per square yard.

Coating (aka Secondary Backing)

The back of synthetic grass is coated with secondary backing materials to lock the fibers in place (tuft bind). Several different coating materials are used, including Polyurethane (PU), Hot Melt Polyolefin (HMP), and Latex.

The coating should be applied with a weight and thickness configuration that depends on the design of the system and able to meet or exceed your minimum tuft bind standard.

Tuft Bind

This term refers to the force (usually measured in pounds) required to pull a tuft from the synthetic grass backing.

The minimum tuft bind recommended is 6.8 lbs., but the higher the tuft bind, the better.

Water Permeability Rate (drainage)

Synthetic grass systems with infill and base materials should drain to accommodate local weather and rainfall patterns.

Permeable synthetic grass systems are typically designed to drain 25" of water per hour.

Guidelines for Infill

The Infill prevents the synthetic grass installation from moving, provides an even distribution of weight to minimize expansion and contraction of turf when the temperature changes.

Among the acceptable infill materials are crumb rubber made from recycled auto or truck tires, washed silica sands that are round, sub-round or sub-angular.

Other types of acceptable infill include heat-treated acrylic coated silica sand or colored crumb rubber, TPE-coated silica sand, TPE and EPDM granules.

Where can you install Synthetic Turf

KIDS PLAY AREAS

The sunbaked ground in America can become so hard that any child falling over could easily get injured thus GTR Turf™ artificial grass system creates a safe surface that will encourage your kids to spend more time in the garden.

As part of our artificial lawn system we offer an underlying shock pad which is placed beneath our GTR Turf™ and will produce a certified 'critical fall height' of 2.1m or more if required, so if your kids fall they won't hurt themselves. At GTR Turf™ we want your kids to have as much fun in the garden as possible but equally protect them from injury. We always recommend the use of shock pad to keep the little ones safe.

GARDENS

If you have pets, artificial grass is the perfect surface for your garden. It is so suitable for pets that kennels often install artificial grass in their exercise runs.

The durable nature of the grass and the way it is constructed means that any urine drains straight through. Anything more solid can be removed easily. The grass won't be harmed by their mess and there won't be any staining or smells.

GOLF GARDEN

GTR Turf™ offers a full range of products for golf gardens thus providing the best practice experience to reduce your handicap.

SWIMMING POOLS

It is extremely difficult keeping grass by the side of a swimming pool looking its best, especially if it's continually walked on when wet. We've all seen those muddy patches by the side of pools.

Synthetic grass will keep the surrounding of your pool in perfect condition and looking green all year.

Just as importantly though because you never need to cut artificial grass you don't need to worry about cuttings and dirt from the lawn mower entering the pool and blocking the filters.

TERRACES, BALCONIES AND ROOF

Have you ever looked at your balcony and wondered how you can give it a more natural inviting look? Well, GTR Turf's synthetic grass is the answer!

Roof, terraces and balconies are rapidly becoming one of our most popular installations. Homeowners now realize that they can transform a previously bland or unattractive terrace into the centerpiece of the entire property that will transport you from the hectic pace of city life into a tranquil oasis.

OUTDOOR DINING SPACES

Using artificial turf to carpet outdoor dining spaces complements the style of furniture and will be able to withstand the front and back movement of chairs across it.

Indeed, artificial grass can be your best option in such place since it will not stay damp like natural grass.

WHY BUY SYNTHETIC TURF FROM GTR TURF?

WE ARE EXPERTS

We are experts in every aspect of our industry. We have completed above 500 sports fields globally, and over 5000 residential projects across Canada and the US, which implies we have gone over each conceivable shape and size you can envision. We have learnt how to solve any issues a project may have but more imperatively we have learnt how to anticipate and stay away from any future issues so that your artificial grass installation will be looking great for a considerable length of time

WE ARE PERFECTIONISTS

We are perfectionists and professionals. We believe that there is perfection or there is nothing and this can be observed from our warehousing to our products to our clean and tidy uniforms at GTR Turf™. The one and only one reason why it is implanted in our company's is; so that our customers are 110% happy and satisfied when they step back and look at their completed project. If it's not perfect, then it's not finished.

ONLY THE BEST

Our grass is the most realistic worldwide; it is produced to the highest global standards and is guaranteed to be safe.

Shaw Sports Turf has been conceiving artificial turf for years and recently, some extraordinary advancements to upgrade their grasses have been put in place by their award winning R&D team.

SAFETY, SAFETY, SAFETY

We need to ensure that our customers have genuine feelings of serenity and feel good knowing that they are buying a safe product.

There are no leads, no heavy metals as well as no harmful chemicals in our products. All of our products are safe for the athletes, for children and pets.

UV STABLE TURF

Our artificial grass has superb UV Stability. As we are aware the sun can be exceptionally harming, particularly in the US south-east states, the middle-south and the west-coast.

Every one of our items has had a UV safeguard and can withstand the intense beams of the sun.

THE GTR TURF™ INSTALLATION SYSTEM

The best way to install artificial grass is with the GTR Turf™ installation system.

To ensure your artificial grass will still be in a good state years after, we go the extra mile with our unique installation method.

WE REALLY DO CARE!

Finally and likely above all, we care, we mind a great deal.

We care about you, your family, your wellbeing, your joy and your valuable time.

In this way, we wish to make your entire journey with our synthetic turf as smooth and pleasant as it could be.

Sit back, relax and in the blink of an eye you'll be able to feel the best synthetic turf system from GTR Turf™ under your feet.

BOUTIQUE-STYLE SYNTHETIC SPORTS FIELD CONSTRUCTION AND INSTALLATION SERVICE

Luc Rochon, President and CEO - GTR TURF

While looking for an artificial turf provider, it is best to hire real experts and take professional guidance by the specialists that have been in the industry for a long time. It does not always mean to take the biggest company, the oldest company or the best branded company. It means, having a trusted advisor from the beginning to the end of the project, and beyond.

The synthetic turf world can lack human touch, especially since speaking to a company's automated phone service has become the norm. Further, in many large synthetic turf companies, decisions can be dragged out as they climb the hierarchy-ladder.

GTR Turf puts an end to this impersonal trend by ensuring top management is always a phone call away. Our personal touch puts you front and centre and not buried somewhere on an internal organization chart.

Our professional but accessible management works to develop close working partnerships and strives to identify with you, your needs, your reality and your goals for your new synthetic turf sports field.

However, it is your field and you are the best judge for it. Hence, GTR Turf's boutique-style synthetic turf installation and construction services means the President and the rest of the upper management are involved in the entire process and helps the construction and installation team build your dream field.

When you approach a GTR Turf expert for such boutique service, the expert will first sit with you and understand what your real requirement is. This involves not only understanding your requirement, it also involves understanding what are the problems faced by you previously with regards to the earlier field surface, if that's the case.

This ensures that the product that you invest in meets your expectations and the results will exceeds your expectations. After this process of understanding your requirement, the professional team draws up a range of alternatives to suit your needs and the alternatives are then explained to you to help you understand which suits you better.


Jacques Zara, Sales VP - GTR TURF

The professionals will provide you guidance at every step. Once the material and solution has been defined, the team will start implementing the turf and GTR Turf's upper management will be involved with you in the entire implementation process. Finally, after the implementation, the installation team trains your maintenance team on the kind of maintenance required and how to do the job.

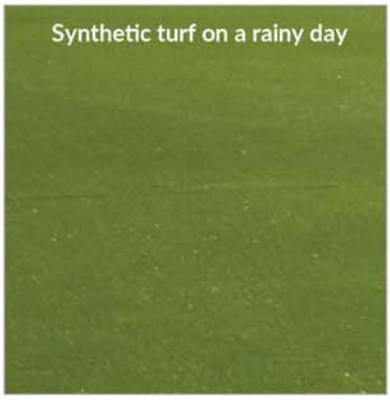
A well trained maintenance team will help increase the longevity of the turf bringing in more value for your investment. GTR Turf's boutique-style construction and installation services have become extremely popular due to the nature of their inclusivity and are being claimed by more and more clients across the world.

SWITCHING YOUR NATURAL GRASS FIELD TO A SYNTHETIC TURF FIELD

Synthetic turf fields have a natural life of eight to ten years but their life depends on the installation and maintenance.

If you are planning to convert to synthetic turf field, GTR Turf is your best bet.

We are a team of synthetic turf experts who are experienced in this field.



This will ensure that the work done is professional and your investment is in the best hands.

Although synthetic turf fields have higher upfront cost than grass fields, the cost is recoverable within three to four years proving to be a cost effective investment. They can be used for 3000 hours of play per year since they don't need resting periods.

This is equivalent to two to three times less than natural turf since it does not need mowing, irrigation or chemicals. Because of lower maintenance requirement, a synthetic turf field can be used for other activities when not being used for games.

This means that fields with synthetic turf can be rented out for community events, school and college programs in between game days. This helps in earning extra bit of revenue from the field and results in quick recovery of cost of synthetic turf installation.

Unlike grass turfs, synthetic turf can hold up under heavy use.

Grass turfs needs more maintenance and cannot be played on during or immediately after a rain storm or application of pesticides or fertilizers.

Synthetic turf does not have these issues. Synthetic turf can be played on immediately after maintenance and hence can withstand heavy use.

Synthetic turf required lesser time and money to maintain than a grass field.

While switching to synthetic turf, it is important to know the various types of artificial grass available in the market.

An expert guidance by GTR Turf in this regard may prove to be extremely beneficial. This will not only help in making the right choice of the turf, according to your needs, it will also help in providing the best of the best to your athletes.

IT'S TIME TO REPLACE YOUR OLD SYNTHETIC FIELD

Is your synthetic turf field more than a decade old?
Is it flat and needs another round of infill?
Is your synthetic turf field exposed to high temperatures or even if you brush it, we can only see the infill...?

IT'S TIME TO REPLACE THE SYNTHETIC TURF.

Synthetic turf is made up of artificial materials which require regular maintenance like additional infill, irrigation due to unacceptable high temperatures on sunny days, chemical disinfectants etc.

Maintenance of synthetic turfs are crucial to players and sportsman to ensure their overall health and wellbeing. Hence drainage to synthetic turf needs to be repaired and maintained, temporary lines and damages need to be tended to at regular interval.

While regular maintenance increases the life of synthetic turf, heavy usage over the 9 year period can make the field unsafe.

Uneven spots, less to no turf fibre and detached places can harm the athletes and cause serious injuries.

However, if replaced every eight to ten years or upon extreme damage, synthetic turf can not only benefit players to a great extent, they are much low maintenance and much less costly than natural grass.

Natural Grass are high maintenance and they have high replacement cost as well. Synthetic turfs on the other hand are three times less costly in maintenance than normal grass which is a boon for people maintaining and using them.

So look at your synthetic sports field once again. Does it have an odour, does it look damaged? Does it need urgent tending? Is it more than ten years since it was installed?

If the answer to any of the above questions is yes, your synthetic sports field needs to be changed to ensure a healthy life to sportsmen and to reduce heavy maintenance costs.

RECYCLING YOUR OLD SYNTHETIC TURF

One of the challenges the synthetic turf industry is determining how best to manage the removal and disposition of synthetic turf once it has reached the end of its useful life.

Synthetic turf includes a variety of polymers such as polyethylene, polypropylene, nylon, styrene butadiene rubber and polyurethane. Natural materials such as silica sand and calcium carbonate are also present. These materials must be separated in order to be recycled and the variety presents a unique challenge not seen in other recycled materials such as plastic bottles, carpet or plastic bags.

The conversion of synthetic turf into recyclable material is very complex and costly. Once the decision has been made to recycle the synthetic turf, the turf is cut, picked up and rolled into easily transportable bundles.

The Infill must be removed from the turf and further separation may be required to separate sand and debris.

After components have been removed from the turf, it can be broken down into materials suitable for post-consumer recycle content in the plastics industry or reuse as a component in its original form.

The other components of the synthetic turf such as the infill have different reuse and recyclable processes depending on its composition. Infill such as the Crumb Rubber can be reuse as infill on new synthetic turf sports field or landscape installations, road base, acoustic barriers, floating docks and energy can be recovered from crumb rubber infill by incineration, pyrolysis or gasification.

Both EPDM and TPE infill are reusable as infill and recyclable into infill or other products. Energy can also be recovered from TPE where the calorific value (CV) can be up to 25-30 MJ/kg.

At the end of its life cycle, organic infill can be recycled directly into the environment.

Pure Silica Sand can be reused as infill on new synthetic turf sports fields or landscape installations. It can also be used in natural turf soil amendments to improve wear tolerance and prolong playability.

Coated Crumb Rubber can be recovered, sanitized and recoated for reuse as infill for synthetic turf sports systems and can be recycled into rubberized asphalt or molded products.

Other parts of the synthetic turf have various reuse and recyclable purposes, some of which include:

- Shock Pads which last more than one turf lifecycle. Select pads can also be reused for other uses such as golf mats and farm animal mats.

- Integrated Drainage and Shock Pad Underlayment which can be recycled and incorporated into a new drainage pad or other products. Cross-linked polyethylene can be a fuel source and has a caloric value of 45 MJ/kg.

SOME OF THE USES TO WHICH OLD SYNTHETIC TURF CAN BE REUSED AND RECYCLED INCLUDE:

- Baseball: Batting cages, in front of dugouts, bullpens, indoor practice and hitting facilities
- Golf: Driving ranges, lining for sand traps for erosion control, tee lines, driving mats,
- Sports fields: grass field sidelines, running track protective strips, band practice field, indoor general use practice and play fields
- Landscape and Recreation: Play areas, small landscape areas, highway erosion control, dog runs, pet parks, equestrian stables and airports.
- Energy can be recovered from synthetic turf by incineration, pyrolysis or gasification.

It can be used in synthetic lumber such as boards, railroad ties, posts and also to produce parts such as Injection molded parts and Compression molded products.

The popularity and demand for artificial turf keeps increasing as people become more aware of not only its economic advantage but also of its technological advancement which makes of it the ideal surface for all sports played on it, offering the athletes with better ball control and more protection thus making the sport faster and more exciting.

One of the key areas of development is the artificial grass infill.

These are infill placed between the grass blades to enable it to;

- Look and perform like natural soil
- Perfectly absorb shock
- Let the grass blades stand perfectly upright
- Provide enough strength and support so that the grass can withstand depression

The market offers a wide variety of turf infill adapted to satisfy the customer's individual requirements and suited to withstand the different climatic variations. They include;

SBR

(Styrene Butadiene Rubber)

This is basically constituted of SBR rubber encapsulated with a crosslink UV resistant coating, it is highly resilient–excellent shock absorption, low cost and contains post-consumer recycled product.

Its disadvantages are the new tire odor and the public perception of potential health impact. The price increase over typical system is 70/30 Coated SBR / Sand +$84,000.

TPE

(Thermoplastic Elastomer)

This is made from a group of rubber type block copolymers having physical crosslinks between soft and hard segments. It has high resiliency (good shock absorption), made of virgin material (raw materials can be controlled), can be melted so they can be recycled after use and Can be colored; match to turf application and potential reduction in temperature.

Its disadvantages are high cost; limited availability results in high transportation costs,

extruded particles: All particles are the same size (do not settle together), round particles can create slipping problems on sidewalks or tracks and improper formulation can lead to premature aging issues. The price increase over typical system is 70/30 TPE / Sand +$280,000.

EPDM (Greenfill)

(Ethylene Propylene Diene Monomer)

This consist of a copolymer of ethylene and propylene having diene linkages that can be cross-linked with peroxides or sulfur. It consist of virgin material (control of raw materials), high to medium resiliency depending on filler level. It can be crumb form (settles like crumb rubber) and can be colored.

Its disadvantages are its high cost, limited availability that results in high transportation costs, high filler level that may result in chalking or degradation of materials. Improper crosslinking can lead to premature aging. The price increase over typical system is 70/30 EPDM / Sand +$282,000.

Rounded Silica Sand

Principally made of large particle-sized and highly-rounded sand that can provide a synthetic turf infill that does not compact in the way the smaller more angular sand tends to compact. Its cost is relatively low (per lbs), made of Inorganic material that can be cleaned to have low impurities and can be coated to give it a color. Its main disadvantages are that is has no resiliency (low shock absorption), requires a pad, high transportation costs due to weight and requires a high number of pounds to infill the system (high cost). The price increase over typical system is 100% EnviroSand + Pad +$246,000.

Organic (Geofill)

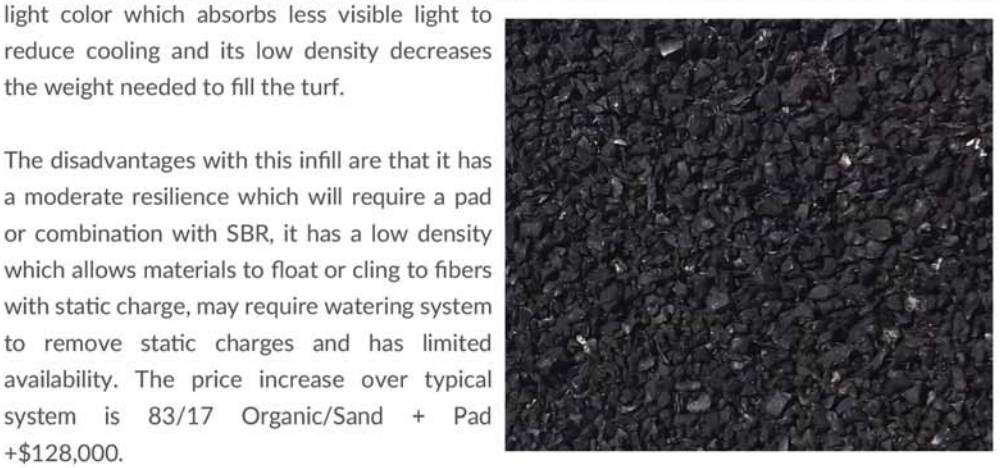
(Coconut Husks)

Consist primarily of coconut husk and coconut peat. Its key features are that it is made from natural product (not chemically produced), provides playing characteristics similar to natural turf and retains water for evaporative cooling. The disadvantages are that it requires higher costs than SBR crumb rubber, requires more maintenance and refreshing than crumb rubber fields, has limited resilience (requires a pad) and it requires a watering system and water to maintain playability. The price increase over typical system is 83/17 Organic/Sand + Pad +$188,000.

Organic

(Cork)

Consist primarily of coconut husk and coconut peat. Its key features are that it is made from natural product (not chemically produced), provides playing characteristics similar to natural turf and retains water for evaporative cooling. The disadvantages are that it requires higher costs than SBR crumb rubber, requires more maintenance and refreshing than crumb rubber fields, has limited resilience (requires a pad) and it requires a watering system and water to maintain playability. The price increase over typical system is 83/17 Organic/Sand + Pad +$188,000.



light color which absorbs less visible light to reduce cooling and its low density decreases the weight needed to fill the turf.

The disadvantages with this infill are that it has a moderate resilience which will require a pad or combination with SBR, it has a low density which allows materials to float or cling to fibers with static charge, may require watering system to remove static charges and has limited availability. The price increase over typical system is 83/17 Organic/Sand + Pad +$128,000.

Nike Grind

Made from Ground-up soles from athletic shoes. Has as key features good resilience and shock absorption, has less public perception of health risks and uses post-consumer recycled material.

Its disadvantages are that is limited in supply, has non-natural color and there is an unknown control over the source of supply.

GREENFILL

THE BEST INFILL IN THE INDUSTRY

GTR Turf's dark green EPDM is made from Virgin EPDM polymers and has an outstanding UV Stability. The wide range of Greenfill® granules sizes are designed for use in different climatic conditions, and can be installed in fields exposed to the coldest as well as the hottest weathers in the world.

It has premium technical features, passing all FIFA testing and an optimal sliding properties with good foothold.

Greenfill provides optimal footing and support without the mess of dirt and instability of other infill system.

Greenfill demonstrates great infill stability and excels in critical ball-to-surface interactions such as ball roll and ball bounce.

It is environmentally safe, while providing the best in performance characteristics. Greenfill's dark green color blends with the turf fibers' color to enhance the look & feel of your sports field with the added benefit of a cooler playing surface.

Just like natural beauty...

Geofill®

"Close to nature"

Geofill is the leading natural alternative infill in the synthetic turf market. It is made from completely natural materials that are environmentally friendly. Geofill is composed primarily of coconut husks and fibers.* Coconut fibers are 100% organic and are a rapidly-renewable resource.

Geofill provides the natural footing and support of a natural playing field without the mess of dirt and instability of other infill system. Geofill demonstrates great infill stability and excels in critical ball-to-surface interactions such as ball roll and ball bounce.

The use of a shock pad with a Geofill system keeps the field safe, while providing the best in performance characteristics. GeoFill performance Infill looks and performs like natural soil with the added benefit of continuous hours of play you expect from high performance synthetic turf systems from Shaw Sport Turf.

Engineered for traction and performance, GeoFill provides a stable surface for the athlete by preventing infill shifts and flyout, and excels in critical ball to surface interactions such as ball roll and ball bounce. GeoFill systems are naturally cooler due to the fact that the composition of materials holds in moisture.

100% Organic turf infill

For many people, it is contradictory to think that replacing natural grass with artificial turf can be environmentally friendly.

The coconut in our Geofill system comes from Sri Lanka or India. These two geographic areas are the leading suppliers of coconut coir fibers in the world.

Geofill is the leading natural "soil" infill in our industry – it acts like soil. Due to salt water retting, Geofill is resistant to mold, mildew, and salts. Geofill's unique mix of coconut fibers create a natural matrix; locking in the infill and reducing infill flyout.

The organic nature of the material alleviates the concerns with questionable chemicals from any synthetic infill material. It is a completely safe system that serves as an excellent natural choice. Geofill will not negatively affect the environment, subsequent users, or a land fill at the end of its life cycle.

IT'S COOLER

As an absorptive organic material, Geofill is inherently cooler than other synthetic turf playing surfaces.

The coconut fibers in Geofill have excellent moisture retention qualities which allows the system to absorb water; which is released when sunlight warms the field.

The release of water removes the heat through evaporative cooling. The surface will remain cooler as long as there is water present.

Geofill fields have been seen to be as much as 40 degrees cooler than traditional synthetic turf fields.

Other alternative infills claim to be cooler, but most are hydrophobic and cannot provide the cooling effect that Geofill has.

IT'S PROVEN

Currently, there are over 500 successful Geofill installations around the world, ranging from recreation fields to professional level soccer pitches.

Coconut fibers have also been used for hundreds of years.

Ancient Polynesians used coconut husks for everything from ropes, to baskets, and materials for holding their homes and canoes together.

Coconut fibers are used in netting which is used to stop and prevent erosion.

ENVIRONMENTALLY-FRIENDLY

Because it's natural, Geofill provides an organic ground layer for a field. Geofill allows for clean water runoff.

Coconut fibers have an excellent natural resistance to mold, mildew, and decay.

For Geofill, end-of-life recycling means it's as easy as using it to create a soil layer in a garden bed.

In most cases, this is performed on a yearly basis.

SAFETY FIRST

How New Generation of synthetic turf can reduce sports injuries

It has often been argued that synthetic turf induces sports injuries.

The case is the opposite actually. Shaw Sports turf's next generation of synthetic turf systems are designed, having in mind, safety as a big priority. The technology used in Shaw's synthetic turf is so advanced that they not only are easier to maintain than natural grass, they help players avoid injuries too.

Natural grass fields are not free from problems either. There are studies which demonstrate that playing on a grass surface that is not well maintained may also increase injury rates.

This issue has become particularly important in cold-weather climate areas such as Green Bay, Minnesota, New England, and New York. In these areas the weather can take a heavy toll on the fields, making them dangerous, despite the best efforts of ground crews.

"There's that perception out there that you're more likely to be injured on synthetic turf than on natural grass, but that doesn't apply anymore to new generation, infilled synthetic turf because it's such a different product,"

-Thomas Serensits
Manager
Center for Sports Surface Research
Pennsylvania State University.

July 19, 1966: Ffirst major league game played entirely on the first generation artificial surface

Furthermore, many of the professional stadiums are high traffic arenas where high school and college teams may play in addition to concerts, car shows, and other events. These circumstances virtually preclude the maintenance of a natural grass field within safe limits.

Older generations of synthetic turf that included no infill were problematic, resulting in several cases of lower-extremity injuries to athletes who played on those earlier fields.

New generation of Synthetic turf on the other hand provides greater traction, rotation and slip resistance, surface abrasion and stability. A stadium is usually used for many activities apart from the sports being played there. This sometimes includes special events, concerts etc which again, damages the grass surface.

There are currently 14 different studies which compare injury rates on synthetic turf versus natural playing surfaces. Nine of the studies are specific to soccer with most being conducted in Europe. They span the gap from children to professionals, and in both game and practice situations. Four of the studies are specific to football, with one dedicated to high school athletes, two to the college level and the other to the National Football League. The remaining study focuses on rugby. These studies really don't make any account to differentiate between synthetic turf fields and natural grass fields. About 10 to 20 per cent of all concussion injuries in football, for example, occur as a result of the head's impact with the playing surface. One study suggested there was a higher concussion incidence on natural grass when the surface was dry and presumably harder.

Is your field in danger for a life-threatening injury?

The soccer studies suggested there was no real difference between the two types of playing surfaces and their correlation with sports injuries.

Surface hardness is tested by the Gmax method, or the ratio of maximum negative acceleration on impact in units of gravities to the acceleration due to gravity. When a field becomes hard, there is a higher potential for head injuries. Gmax is the maximum point on a curve of G force. Anything above 200 Gs is when a life-threatening injury can be expected to occur.

If a field is tested and its reading is higher than 200, some serious remediation steps must be taken to bring the field back into compliance with the threshold.

Most scientists feel that there are two specific material properties of the turf which can affect injury rates: the coefficient of friction, and the coefficient of restitution.

A bright and sunny day will produce high temperatures on the synthetic playing surface.

Shaw Sports Turf has invested a large amount of money in R&D, to develop their patented technology to reduce the temperature of the playing surface of up to 30 degrees Celsius.

This technology prevents burns resulting in reduced danger of friction injuries among players and adds confidence to the athletes when sliding on the artificial grass.

5th generation of synthetic turf field with a shock pad and 100% environmentally friendly infill

Coefficient of Friction

This relates to how sticky or "grabby" the surface is and how much force it will take for a planted foot to slip. For surfaces with high coefficients of friction (e.g. old AstroTurf™) this requires a large amount of force. It is these surfaces on which players say their foot gets "caught in the turf." Studies have shown that there is a higher incidence of ACL injuries with surfaces that have a higher coefficient of friction.

Coefficient of Restitution

This is defined as the ability of a field to absorb shock. It is measured by using the G-Max value where one "G" represents one unit of gravity. The United States Consumer Products Safety Commission (USCPSC) has determined that fields with a G-Max of greater than 200 are unsafe for athletic play. For example, concrete has a high G-Max level and grass has a low G-Max level. Athletic fields with a high G-Max level place more impact upon the athlete during a collision with the field. This translates to higher injury and concussion rates.

THE TURF IS TO **HOT** TO PLAY?

...**NOT** ANYMORE

HYDROCHILL™
EVAPORATIVE COOLING SYSTEM

100 % UNIQUE

The HydroChill system is unique in the industry and is an innovative and patented technology from Shaw Sports Turf. No other company can provide a system that reduces the temperature of the synthetic grass surface up to 50 degrees Fahrenheit.

LOWER THE TEMPERATURE
OF THE PLAYING SURFACE OF UP TO 50°F

The synthetic grass is revolutionizing sports fields. However, very high temperatures can define whether you can play or not. When it's too hot and sunny, the surface temperature of the synthetic grass can rise above 70 degrees Celsius.

Fortunately, Shaw Sports Turf has invested millions of dollars in R & D to discover and come up with an innovative product, unique in the world and patented for the next 15 years!

It's called HYDROCHILL™ EVAPORATIVE COOLING SYSTEM

Whether it's the repetitive grind of practice or the last drive to win the game, athletes feel the heat……. in more ways than one.

It's no secret that synthetic turf fields can be hot. That kind of heat affects athletes, too.

Now, with the development of the HydroChill™ cooling system, athletes can focus on the task, not the temperature.

The HydroChill system cools your field like nature cools your body. Sweating is a natural means of thermoregulation called evaporative cooling.

Evaporation of moisture from the skin's surface has a cooling effect. Similarly, HydroChill™ has been shown to cool synthetic turf surfaces by working on the same principle. As the turf surface is heated by solar radiation, moisture stored in the HydroChill turf is released.

Evaporating moisture removes heat, leaving a cooler more comfortable surface for the players.

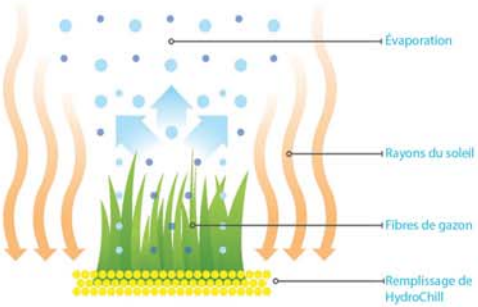
Ambient temperature outside doesn't necessarily dictate surface temperature.

The solar radiation time period, sun's angle, cloud cover, wind and other elements all contribute to the temperature of the surface. A standard field with a wet surface will cause some cooling, but temperatures can quickly rise and may exceed uncomfortable levels of heat.

A HydroChill field has been shown to create a substantial temperature differential in real-world applications. HydroChill provides maximum benefit when the sun is nearest the Earth, as shown in the solar radiation calendar.

HYDROCHILL UTILIZES MOISTURE TO PROVIDE A COOLING EFFECT.

RAINFALL, DEW OR IRRIGATION CAN HELP KEEP THE FIELD COOL FOR DAYS, DEPENDING ON LOCAL CONDITIONS.



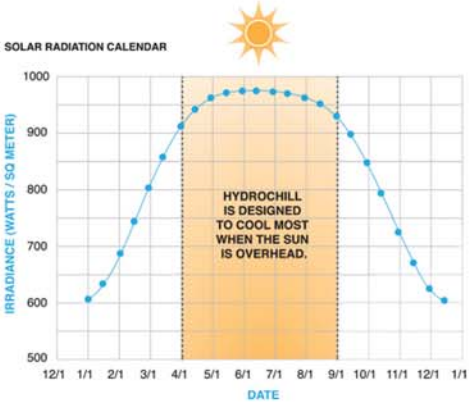
When should the system be hydrated?

As a general rule, the system should be hydrated every three to four days if there is no significant rainfall (significant defined as ¼").

This can vary depending on humidity and partial cloud cover.

We recommend hydrating in the morning, before the field gets hot. Typically this should be done before 10:00 a.m.

Every installation will need to be monitored to develop a customized watering plan specific for that site.



How much should it be hydrated?

As a general rule, 12,000 gallons of water for an 85,000 square foot field.

That is the equivalent of ¼" of rain. Depending on the watering source, 300 gallons per minute over 10 minutes should cover ¼ of the field.

We would not recommend anything faster than this. The watering process can be done slower than this.

That would be dependent upon how much time the customer has to water and what watering methods are available.

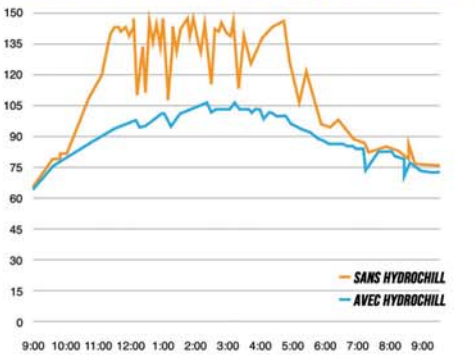
How to groom the field?

The grooming of the field does not change from the methods described in the Shaw Sports Turf maintenance manual, and demonstrated after the installation.

The most important point to note is that the field should not be groomed when it is wet (from rain, watering of the system, or dew).

HYDROCHILL™ PATENTED TECHNOLOGY HAS BEEN DEVELOPED THROUGH YEARS OF TURF SYSTEM RESEARCH.

IT HAS BEEN VETTED WITH LABORATORY TESTING AND, MORE IMPORTANTLY. OUTDOOR FIELD TESTING.



HYDROCHILL CAN BE INCORPORATED INTO MOST SHAW SPORTS TURF INFILLED SYSTEMS.

HYDROCHILL IS UV-RESISTANT.

HYDROCHILL WILL NOT AFFECT THE PERFORMANCE CHARACTERISTICS OF SYNTHETIC TURF AND WILL NOT AFFECT THE WARRANTY OF ANY SHAW SPORTS TURF FIELD.

Based on actual lab and outdoor field thermocouple testing, HydroChill has achieved 30°C lower surface temperatures compared to a standard synthetic turf system.

Further testing was performed by a FLIR-Certified Thermographer using the most advanced camera imagery and technology.

The FLIR camera was calibrated for emmisivities of various materials used in the turf system so additional accurate temperature measurements could be obtained.

NATURAL V

DURABILITY

NATURAL GRASS

Rest time required for overuse, rain, watering and other maintenance requirements

SYNTHETIC TURF

No closing fields due to rain 24/7 play 5x the usage of natural grass

PERFORMANCE

NATURAL GRASS

Uneven or damaged playing surfaces can affect ball roll, speed and even athlete performance

SYNTHETIC TURF

Designed around six critical performance tests to ensure maximum athlete-surface interactions and ball surface interactions

DRAINABILITY

NATURAL GRASS

Muddy or puddle surfaces can retain water for hours and sometimes days preventing play

SYNTHETIC TURF

Can handle up to twenty inches of rain an hour, keeping the field safe and playable.

No rainouts mean a reliable schedule without any lost revenue

SAFETY

NATURAL GRASS

Damaged and uneven surfaces, especially hard and compacted areas can result in lower g-Max ratings Uneven surfaces increase the chance of athlete injuries such as sprained muscles and twisted ankles

SYNTHETIC TURF

Provides a uniform and consistent playing surface

S SYNTHETIC

ENVIRONMENTAL

NATURAL GRASS

Requires water, dangerous pesticides and fertilizers

Lawn equipment produces air pollution

SYNTHETIC TURF

Conserves millions of gallons of water every year Does not require dangerous fertilizers or pesticides No contaminated storm water runoff from fertilizers and pesticides.

There is no need for pollution producing maintenance equipment Because our infill is composed of rubber, we save millions of tires each year from landfill At the end of its lifecycle, all components of the turf system can be recycled

MAINTENANCE

NATURAL GRASS

Weekly and even daily maintenance required

In some cases re-sodding is required on an annual basis

SYNTHETIC TURF

Minimal upkeep Requires less maintenance, no watering, fertilizers and pesticides

AESTHETICS

NATURAL GRASS

Large divots and discolored bald/dead areas can result in an unattractive field and can require costly repair.

SYNTHETIC TURF

Looks and feels like natural grass Maintains consistent and well-groomed look throughout its lifespan.

WARRANTY

NATURAL GRASS

In most cases, warranties are not offered for anything but the quality of the original installation.

SYNTHETIC TURF

Insurable eight-year warranty backed by Shaw Industries Berkshire Hathaway ensures that we stand behind our products from the first day of installation to the end of its lifecycle face

COOLGRASS shawgrass®

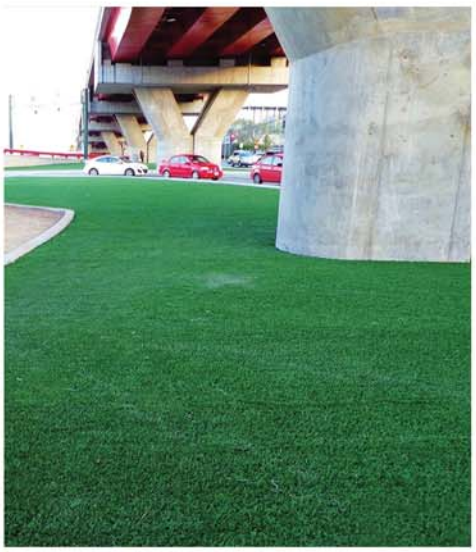
ARTIFICIAL TURF FOR BUSINESSES

Municipalities and Local Authorities

When building amenities and infrastructures for their communities, municipalities and local authorities often face a quandary. Creating green and attractive spaces for their residents is essential on one hand and on the other hand, municipality funds should be spend wisely.

Vast territories of grass are exceptionally costly and tedious carter for. GTR Turf™ artificial grass is the solution as it is simple and less costly to maintain and looks awesome throughout the entire year.

In America hundreds of thousands of gallons of water are squandered watering grass that no one walks on but yet we have a genuine water problem. Daily water consumption could be significantly reduced with the use of artificial grass.



Retail Shops

If you want to create a natural green look inside your store GTR Turf™ is the best. No wreckage, simply delightful green grass for your clients.

Company Logos

Whether for indoor or outdoor use, the logos made with synthetic grass are an attraction for any customer. It beautifies the entrance of your organization and gives a very striking professional look.

Real Estate

The maintenance expenses of green areas in any development, be it residential, commercial or hospitality can be extremely costly; expenditures which any developer or hotel manager would like to avoid.

Associating the natural look of our artificial grass with the significant cost saving for the developer makes of GTR Turf™ the answer.

GTR Turf™ can also help in obtaining significant LEED points for your new commercial or residential development.

Working Spaces

Why not renovate your office with some synthetic turf from GTR Turf™. You will instantly feel closer to nature and your employees will appreciate it.

Exhibition Displays

GTR Turf™ has different types of synthetic turf that can be cut to any desired shape and easily installed on your stand thus making it ideal for use in trade shows and exhibition stands.

Other Commercial Usage

Airports, daycares, roof tops, golf greens, playgrounds, indoor decorations, etc.

REDUCE WATER USAGE

The effect of hot and dry climate on natural grass can be observed everywhere in America; it is practically difficult to keep it looking green and lush throughout the year. It requires investment, commitment, money but above all; water, lots and lots of water to try and endeavor to keep your grass looking awesome. In case you possess one, you'll know what it takes to prevent it from drying out and going brown. You can now turn off the sprinklers as there's no reason to water artificial grass.

You'll observe a decrease in your water bills once you've replaced your natural grass with artificial turf. Based on your previous water consumption, you could save up to 70% on your water bill. In spite the fact that the underlying expense for artificial turf is more than natural turf, the assessed years payback is 5 to 8 years. This is more likely 5 years in America due to the anomalous high water usage. Consequently you will have paid for your artificial grass within 5 years and from there onwards you will be making monthly savings.

INCREASE THE VALUE OF YOUR PROPERTY?

A rich, green and well maintained grass will not only make your property look awesome for viewing but it will make it easier to rent out or sell your property as your new occupants know that they could save enormous amounts on their monthly water bills. For any new tenant or buyer, this is an issue of concern and due to the water bill issue many potential tenants or buyers will not rent or buy a property.

They don't need to worry about their water bill with artificial turf. To seal a deal on your retail, synthetic turf could be the key.

SAFER FOR YOUR KIDS

When installing synthetic turf, consider installing a thick foam shock pad beneath the turf so that if your kids or anyone for that matter takes a tumble, the shock will be absorbed by a soft foam pad. There is no safer surface for your kids than with a padded playing system.

SIT BACK AND RELAX

You will be astonished on how much more time you have to do things which are important for you rather than worrying about your grass once your synthetic turf will be installed. Compared to a natural grass the maintenance is minimal. You won't need your mower so you can discard of it immediately. Above all you'll save money on gardeners' fees, fertilizers, pesticides, seeding and irrigation maintenance system. All it requires to maintain your artificial grass is clearing the surface of leaves and giving it a quick spray down occasionally.

BENEFITS OF HAVING ARTIFICIAL GRASS

PETS LOVE IT

Artificial grass is soft on the paws of pets and it is fun for them to roll on it so they love it. It's also easy to clean and unlike natural turf, it won't leave any brown patches. You'll see how much they love it if you treat your pet to some artificial grass. GTR Turf has a perforated backing for urine to flow straight through so don't be afraid about them creating a mess. As on natural grass, any solid waste can be picked up and thrown away.

THINK ENVIRONMENT!

By installing synthetic grass you'll contribute in conserving water in areas that urgently needs every bit of help available. In the US, each person uses an average of 550 liters daily, contrasted to a worldwide average of 250 liters daily per person. One reason for this is the quantity of water we use in keeping the county look green. By installing artificial grass you are doing your bit to change this. It requires time and dedication to keep a natural grass looking awesome but it also needs continuous use of harmful herbicides and pesticides.

These nasty chemicals filter down through the soil and rock to reach the water table and pollute the surrounding area. They can create several health and environmental problems once they are in the system. No thought is given regarding this as no chemical is used to maintain artificial grass. Although this may seem like one of the more trivial benefits, it's really not. We can initiate great changes by working together as a community.

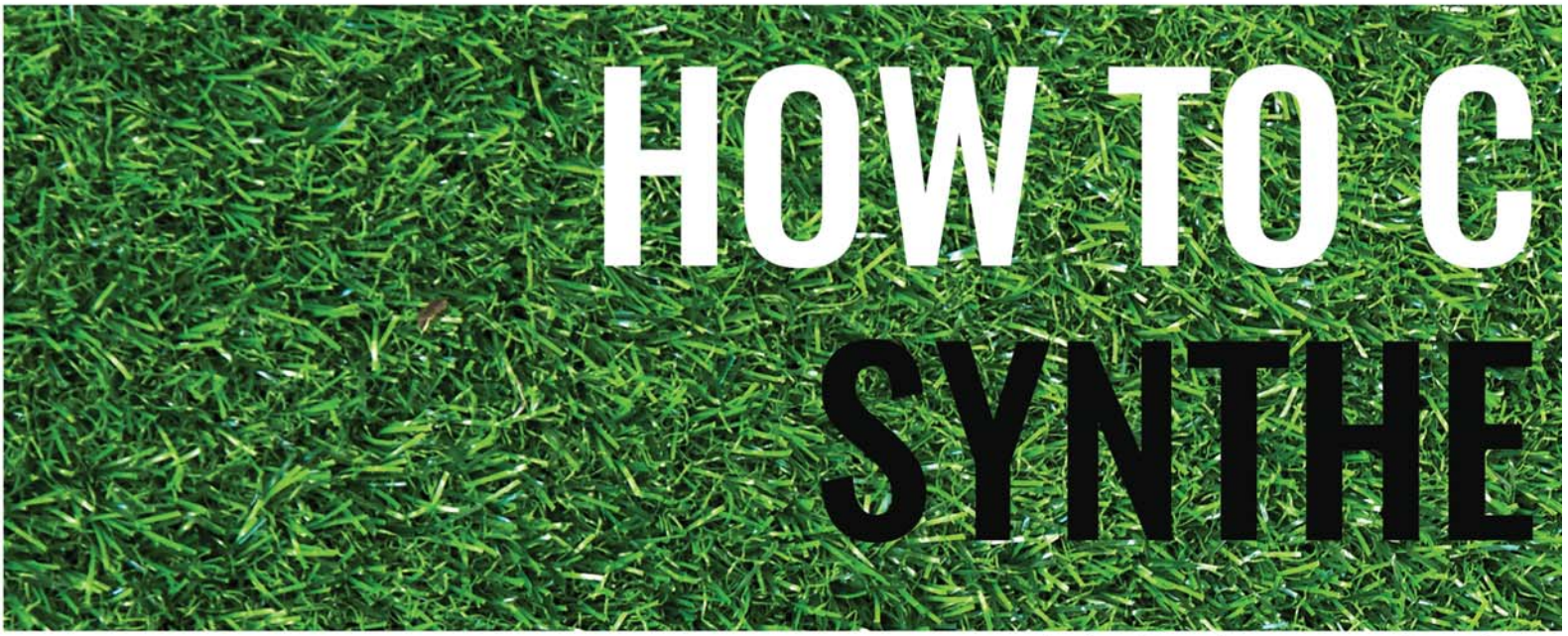
The reduction of the amounts of pesticides and herbicides in the water table is one more step in the right direction for the local environment.

NO SUN, NO PROBLEM

Do you have a portion of your grass on which grass refuses to grow because it looks like it does not receive the necessary amount of sunlight? Unfortunately this situation has no remedy, grass just can't grow without direct sunlight. On the other hand artificial grass is not affected by shaded areas so your grass on that portion does not need to see the sun. Finally, your garden will evenly look green.

ALWAYS ON THE ROAD, IT'S OK!

If you are regularly in and out of the country, the task of maintaining your garden becomes complicated, particularly if you are away for significant periods of time. You don't need to think about your natural grass. Just lock you door and forget about it... it will look identically the same as the day you left. You won't have to spend a penny keeping it looking awesome while you were away.



HOW TO C SYNTHE

The most effective method to clean and maintain artificial grass

How often you have to care for your synthetic grass will depend on specific circumstance.

In case you have pets, kids or trees, you will probably need to clean your synthetic grass more frequently than those who do not.

If you live within a dusty range, this may likewise lead you to clean your synthetic grass more regularly.

In stormy months, you can permit the rainstorm to wash your turf and will not have to clean it as frequently.

Weekly artificial grass maintenance

Most people will need to softly flush their synthetic turf once every week.

Spreading down the grass filaments with a hose will evacuate the tidy little trash that has aggregated between washings.

Maintain the quality of your turf with help from GTR Turf! Our experience is the best and we're always on standby, ready to repair your damaged synthetic turf.

Monthly artificial grass maintenance

Month to month premise cleaning will help keep your turf green, clean and welcoming. Use an adaptable turf rake or sweeper with firm swarms to remove trash from your turf. If you decide to use a hardened brush, be sure you don't pick one with steel swarms which could harm the synthetic grass.

Cleaning your grass as such is also a good approach to keep up the upright position of every cutting edge.

Remember that you may need to perform cleaning more regularly if you have pets or in the middle of seasons when trees lose their leaves.

After you have cleaned your turf, you may observe that it is not upright as you would like.

You may also perceive that your grass is not upright in specific ranges after you, a relative or pet has laid on it.

This is not difficult to alter by preparing your turf using a sweeper to brush against the regular grain to energize every edge of simulated grass to remain up legitimately.

General preparing prevents tangling and keeps your turf's infill from compacting.

Instructions to remove pet waste from artificial grass

Synthetic turf is a pet-accommodating choice, and pet owners can rest assured that minimal extra effort is needed to keep their turf good looking.

To remove robust pet waste from grass, use your favored evacuating strategy which could be a plastic pack or a pooper scooper.

When you have evacuated the strong waste, hose down the range in which the pet waste was placed.

To clean pet pee on artificial grass, use a hose to spread down the zone no less than one time every week.

LEAN YOUR TIC TURF

Instructions to clean spills, gum, blood

We live on turf and this means beverages may be spilled, mulling over gum or treat may be dropped, roughhousing may bring about a bit of blood on it.

Synthetic turf is stain safe, which makes it easy to clean.

Most spills can essentially be flushed away with water.

If a stain remains in the process of hosing off a zone, you can use a mellow with warm water or a blend of vinegar and water, which is likewise an extraordinary alternative for evacuating microorganisms.

To evacuating spills, you have to react rapidly. Spills can easily be removed when they are still in fluid structure.

Gum and other sticky substances can simply be removed by hand picking; if a bit of mulling over gum is hard to evacuate, you can chill the gum with an ice shape to make it simpler to uproot totally.

You can also use a plastic putty blade or comparative instrument for harder evacuations.
Don't use strong chemicals or solvents that will damage your turf.

Step by step instructions to Remove Bacteria from Synthetic Grass

Microorganism development is not a problem with synthetic grass that is much of the time cleaned and legitimately kept up;

If you think there are microscopic organisms present, you can use a blend of vinegar and water to hinder the development of microbes' spores.

If it is in a little territory, for example, a spot where your pet often urinates, you can use this mixture as a part of a spread container.

In case you wish to treat the entire turf, you can use an enclosure hose connection, in the same way as used to spread fertilizer, to treat bigger territories.

Last Thoughts...

Considering fittings and support, you can amplify the life of your synthetic grass and keep it looking great for a considerable period of time.

Performing these simple tasks all the time will help guarantee your turf stays clean, rich and smells good, which will make it a welcoming spot to play, sunbathe, or hang out with family and friends.

You can simply bring in an expert for a careful cleaning, prepping or repair and you can keep expenses to a base by making moves to prevent synthetic grass damage and following a maintenance schedule.

Visit www.gtrturf.com for all your needs of maintenace and repairs.

How **GTR Turf** can help you to obtaining Leed Credits

It's clear that making sports fields greener can have a significant impact on larger environmental goals.

GTR Turf goes a long way towards better environmental sustainability which makes it truly "green." We take measurable steps in providing products that have an extended lifespan, reduce your carbon footprint, conserve water, and use renewable and recycled materials in manufacturing

WE Credit 1.1

1 Point

Water Efficient Landscaping:
Reduce by 50%

Limit or eliminate the use of potable water, or other natural surface or subsurface water resources available on or near the project site, for landscape irrigation.

WE Credit 1.2

1 Point
in addition to WE Credit 1.1

Water Efficient Landscaping:
No Potable Water Use or No Irrigation

Eliminate the use of potable water, or other natural surface or subsurface water resources available on or near the project site, for landscape irrigation.

MR Credit 2.1

1 Point

Construction Waste Management:
Divert 50% From Disposal

Divert construction, demolition and land-clearing debris from disposal in landfills and incinerators. Redirect recyclable recovered resources back to the manufacturing process. Redirect reusable materials to appropriate sites.

MR Credit 2.2

1 Point
in addition to MR Credit 2.1

Construction Waste Management:
Divert 75% From Disposal

Divert construction and demolition debris from disposal in landfills and incinerators. Redirect recyclable recovered resources back to the manufacturing process. Redirect reusable materials to appropriate sites.

*"The **Earth** is what **we all have in common**"*
- Wendell Berry

WE MAKE YOUR **GREEN FIELDS** EVEN **GREENER**

MR Credit 3.1

1 Point

Materials Reuse: 5%

Reuse building materials and products in order to reduce demand for virgin materials and to reduce waste, thereby reducing impacts associated with the extraction and processing of virgin resources.

MR Credit 3.2

1 Point in addition to MR Credit 3.1

Materials Reuse: 10%

Reuse building materials and products in order to reduce demand for virgin materials and to reduce waste, thereby reducing impacts associated with the extraction and processing of virgin resources.

MR Credit 4.1

1 Point

Recycled Content: 10%
(post-consumer + 1/2 pre-consumer)

Increase demand for building products that incorporate recycled content materials, thereby reducing impacts resulting from extraction and processing of virgin materials.

MR Credit 4.2

1 Point in addition to MR Credit 4.1

Recycled Content: 20%
(post-consumer + 1/2 pre-consumer)

Increase demand for building products that incorporate recycled content materials, thereby reducing the impacts resulting from extraction and processing of virgin materials.

MR Credit 5.1

1 Point

Regional Materials: 10%
Extracted, Processed & Manufactured Regionally

Increase demand for building materials and products that are extracted and manufactured within the region, thereby supporting the use of indigenous resources and reducing the environmental impacts resulting from transportation.

MR Credit 5.2

1 Point in addition to MR Credit 5.1

Regional Materials: 20%
Extracted, Processed & Manufactured Regionally

Increase demand for building materials and products that are extracted and manufactured within the region, thereby supporting the use of indigenous resources and reducing the environmental impacts resulting from transportation.

We fundamentally impact athletes's lives and the health of the planet

THE MADEIRA SCHOOL

CASE STUDY

HOME OF THE BEST 5TH GENERATION SYNTHETIC TURF FIELD IN AMERICA

PROJECT NAME:	The Madeira school Turf Field
PROJECT LOCATION:	8328 Georgetown Pike, McLean, Virginia 22102
TURF SYSTEM:	Shaw Sports Turf's Legion PRO 2.0 System with Geofill infill
TOTAL TURF AMOUNT:	156 600 SF.
PROJECT TEAM:	GTR Turf Inc. and Leading Design and Development, LLC

Turf technology meets athletic facilities demands for the new Madeira outdoor playing field

High-performance 5th generation synthetic turf, key to exceptional system design.

New generation materials, construction methods and installation have brought major advances in artificial turf technology and even transformed the way the game is played. High-quality artificial surfaces have set the field for improved play accuracy through offering better ball control, making the sport faster and more exciting for spectators, but they also offer more protection for players who need to slide, tackle and fall without fear of nasty abrasions.

Supporting these advances is an evolution in technology, which has also helped boost the adoption of artificial turf surfaces in soccer, hockey pitches, tennis and American football in recent years.

THE NEED

The Madeira School needed to bring its athletic facilities to the next level to par with other independent schools in the Independent School League. With the planned updates, Madeira needed to enhance the player experience and generate excitement amongst its athletes.

The chosen solution had to improve safety, reduce field damage, and increase playing times on the field spaces.

THE SCOPE OF THE PROJECT

The scope was partially driven by a Campus Master planning process a few years ago and then more specifically shaped by an Athletics vision and usability and ultimately defined by a board articulated budget.

Madeira reviewed the original concept of the project for its functionality, potential cost and ability to be unique in the marketplace.

The process involved a strategic look at the whole of their athletics program and then focused down to the specific needs for field sports and ultimately how to proportion their field spaces/facilities across each sport.

The Madeira school had options such as size of playing surface, seating, scoreboard, blade type, shock pad and of course, infill, which was important given the recent attention given to crumb-rubber fields as well as Madeira's own concerns regarding its pristine campus.

Madeira weighed these options against what they wanted for their athletes, their practical needs for the facility and what they could afford. Several of the leading products for field surfaces, infill, shock pads and drainage systems were evaluated and compared.

They also conducted a similar evaluation of construction/installation companies who are experienced in building athletic facilities similar to the one needed.

The executives had energetic discussions about the project.

They wanted to have a stellar field, an environmentally-friendly field, an attractive facility and a budget conscious outcome.

THE CHALLENGES

Madeira had a geographic challenge whereby they were limited by the amount of suitable land available for athletic field use. They needed a solution that was sensitive to the environment and maximized a limited amount of available space.

Another issue was of course, the premium price tag on each of the three main elements of the desired system; the pad, the in-fill and the blade.

However, these premium products will minimized player injuries, provide facilities maintenance savings, reduce the surface temperature thanks to its 100% environmentally ecological infill.

THE PREFERED OPTION

The Madeira school reviewed multiple providers who were active in installing these types of projects with independent schools. In the end, there were two that stood out.

In terms of the options, they took the anecdotal information about how rare this type of facility would be.

The square footage, the choice of infill, the blade and the shock pad all together made them convinced that this was going to be a project that would transcend the high school standard in the area.

GTR Turf brought a local base and knowledge as well as a stellar partner in LDD.

Madeira appreciated the experience and quality of other installations along with the recommendations and comments of prior customers. The team assembled by GTR Turf, their understanding of the engineering challenges of the site and the requirements of Fairfax County was impressive.

THE RESULTS

Madeira has today, the best 5th generation synthetic turf field in America, with a 100% environmental friendly organic infill.

It will bring a proven innovation and leadership in women's athletics.

MADEIRA

WORLD CLASS TECHNOLOGY

INNOVATION

Geofill is the leading natural alternative infill in the synthetic turf market. It is made from completely natural materials that are environmentally friendly. Geofill is composed primarily of coconut husks and fibers.* Coconut fibers are 100% organic and are a rapidly-renewable resource.

- Soft, comfortable surface
- Safest field on the market
- Looks and performs like natural soil
- Secure underfoot traction
- Excellent moisture retention
- Evaporative cooling system
- Reduces turf temperature of up to 40 degrees
- Mold, mildew and salts resistant

PERFORMANCE

Combining slit film and monofilament fibers into one complete system, Legion provides the benefits of both: not only does it look like natural grass and allows for better ball roll, but it also has added durability and infill control.

- Natural playing experience
- Natural footing stability
- Excellent ball-to-surface interactions
- Exceptional ball roll and ball bounce
- Excellent shock absorption
- Longevity and durability
- Temperature and tear resistance
- Most uniform playing surface

ENVIRONMENTALLY FRIENDLY

Because it's natural, Geofill provides an organic ground layer for a field. Geofill allows for clean water runoff. Coconut fibers have an excellent natural resistance to mold, mildew, and decay. For Geofill, end-of-life recycling means it's as easy as using it to create a soil layer in a garden bed.

- Premium monofilament and slit film fibers
- Extreme amount of ounce weight
- 3-layer Ultraloc composite backing system
- Three layers of backing
- Added UV stabilizers for an extra protection
- High strength to withstand forces
- Polyurethane backing
- Reduces infill fly out

BASE CONSTRUCTION

At GTR Turf, our installation process is carried out by a team of qualified professionals who put in their best in every detail to ensure that the end result is exactly or above customer expectation.
GTR Turf's construction process is carried out in 6 main phases;

• Subgrade Preparation
This is the key for the longevity of the facility as it constitute the support base, it implies;
– Moisture conditioning
– Lime stabilization
– Soil injection
– Engineered fill material

• Drainage Integration
Most synthetic turf systems are designed for Vertical Drainage whereas Running Tracks are designed for Sheet Drainage (don't ask the very porous synthetic turf to drain the perimeter; track, outside stands, etc.).

The tipped edge of the track (Inside track edge = outside turf perimeter) makes use of Positive drainage

The three principal field drainage dispositions used are;

– HDPE Perforated Collector
– Flat Underdrains
– Herring Bone Flat Pipe Layout

It should be noted that Cold climates with cohesive soils avoid trenched in underdrains which reflect up through turf during thaw.

Perimeter drainage makes use of Inside Slot Drain placed at the edge of the field which helps to move water away from the surface quickly, especially in cold climates to minimize surface water during freeze/thaw.

Water will follow the path of least resistance so give it an easy exit.

• Moisture Barrier / Geotextiles
This consists essentially of products/ components such as Geotextile on subgrade permitting sink holes filter fabric, stabilization fabric and oversized collector pipes & outlets room for air to escape, vent.

The Geotextile / Moisture Barrier can be different depending on soils conditions and permitting agencies.

• Free drainage stone / Porous Stone / Dynamic Stone

The Free Drainage Stone Base for synthetic turf has the following characteristics;

– can be utilized as a retention storage area (i.e. 10" stone base with 40% voids will hold 4" rain storm)
– Don't impede Vertical Drainage with multiple layers/multiple fine grade operations and inconsistent compaction
– May need a custom blend
– Laser grade to provide uniform planarity across entire field area (any deviations or irregularities in the stone base will be directly reflected onto the synthetic turf surface)
– Monitor % passing 200 sieve.

The free drainage stone base is set before the turf installation.

The stone base provides stability and compaction to the track and to the turf porous with stability.

• Perimeter Treatments

This is accomplished using a concrete curb with a hood nailer board attached or a continuous trench drain system.

This will provide a neat, clean edge to attach the synthetic turf. The different ways to handle the edge of the synthetic turf depends on if it abuts a running track, grass or a wall.

Fine Grade for Synthetic Turf

To fill all areas that may be over-excavated, a selected fill material is used to achieve a design subgrade elevations.

Select fill material are inert soil, clean and free from organic matter, roots, brush or other vegetation, trash, debris or other detrimental substances, and rocks or unbroken lumps larger than 3 inches.

They shall be tested and approved by the soil testing and observation agency prior to placement. Unless otherwise authorized by Soils Engineer fill shall meet specific requirements.

The subgrade is brought up to elevation using approved select fill material.

This material is placed in lifts not greater than 8" in depth. Each lift (layer or course) is compacted to at least 95% of maximum dry density at optimum moisture content per ASTM D698 Standard Proctor method.

The moisture in the soil, at the time of compaction is uniformly distributed and should be within 90 and 120% range of the optimum.

The finished surface of the subgrade shall have a finished grade in accordance with the plans and specifications. Final subgrade shall be established to within a tolerance of +/ -.5" (.04') of the designed subgrade elevation.

THE ADVANTAGE OF PLAYING LOCAL, IT'S PERFORMING FOR YOUR FANS ON YOUR OWN FIELD!

YOUR GAME... OUR TURF

G T R T U R F

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