

# 'WE SEE A BRIGHT FUTURE'



Alan Ferguson discusses the research behind the preparation of FIFA World Cup 2026 playing surfaces in the US, Canada and Mexico

BY DAVID LYNCH, FREELANCE WRITER

With Alan Ferguson having previously delivered two men's FIFA World Cup tournaments as FIFA's senior pitch management manager, you might think he would be relaxed about taking on a third. However, while the 2026 tournament, due to be held across the US, Canada and Mexico, is guaranteed to be just as prestigious and exciting as those that preceded it, the task facing a turf professional in putting it on could not be more different.

That is particularly true when the last tournament was held in Qatar, where the longest distance between any of the eight stadia used was 43 miles. This time, however, the tournament will span over 2,450 miles north to south, three different time zones east to west, and – most crucially of all – three climatic regions.

## RESEARCH PARTNERS

In order to cope with the challenges thrown up by that reality, the bid to ready the 16 venues, 84 training sites and 178 practice fields that will be used in FIFA's 2026 tournament needed to begin the moment after the final whistle was blown in Doha in 2022. And, as Alan explains, the most important factor for him and his team was to do their research.

"We always identify local research facilities and typically they've been quite limited in the countries in which we've hosted tournaments the last four or five years," he says. "However, the US has obviously been quite a step up because they already have a well-established network of turfgrass universities and colleges.

"We identified the University of Tennessee and Michigan State University as two of the leading turf research universities in the US that could deliver data back to us. With us supporting and putting in additional facilities, we could really hone in on the stadia pitch challenges – including of the lack of light, different pitch types for NFL stadia that had never used natural grass surfaces, effective irrigation systems and so on. And this partnership has been running for the past two years," Alan explains.

FIFA demands complete uniformity from the pitches used in its tournaments, and that these exacting standards are met by closely measuring how the ball bounces and rolls once the surface is laid.

However, such consistency is particularly difficult to guarantee when you are dealing with different climates, a mix of roofed and open-air stadia, and venues that have only ever housed artificial surfaces.

For that reason, much of the research

that has been done so far has focused on what type of grass should be used to ensure that the players get the same surface experience no matter where they are playing.

"Grass type is dictated by whether it's in a warm- or cool-season climate – ryegrass or is it maybe paspalum? Then there's some Kentucky bluegrass in the mix as well because – in Mexico, for example – we have venues at altitude where the green plant just doesn't grow the same as in other places," Alan explains.

"We identified all the grasses that were currently being grown in the stadia and regions we were going to use, and then just did a deep dive into all of them. How they performed in an open training site or in an enclosed stadium, for example. That's the type of research we've been working on."

## TECHNICAL AIDS

Beyond choosing the right grass, Alan says it's also important to put in place systems that can minimise the potential disruption caused by inclement weather or general wear and tear within a stadium environment.

**Right: Alan Ferguson is no stranger to growing turfgrass in challenging conditions, as he has taken his skills all over the world – he is pictured here in Yokohama, Japan**

SATHEESH SANKARAN SHUTTERSTOCK





**Above left: Delegates at a reinforced turf trial**

**Above right: Grass variety trials in Azteca Stadium, Mexico**

“For example, we need to include vacuum ventilation systems so if we get hit with a big rain event, we can manage that. Equally, we also use ventilation systems to ventilate the rootzone, so if we establish a pitch in a hot region, we can maintain an optimum temperature.

“We did that successfully in Qatar and Russia in the last two FIFA World Cup tournaments, so this has become one of our key mandatory requirements.”

Another technical pitch aid on trial is hybrid grass reinforcement. “The tournament schedules can be really intense,” Alan explains. “We often get games coming in every two days and so we have to turn the pitches around in 24 hours. If we have a game on a bad weather day, for example, the hybrid pitch reinforcement allows for that, so the surface is playable.”

### **TRIED AND TESTED**

Of course, the huge progress in quality pitch standards for FIFA tournaments made over the last two-and-a-half years owes much to a number of mistakes made along the way. As Alan happily admits: “We had to develop a very special pitch profile for some of the indoor stadia, and some of the elements around drainage and irrigation just didn’t work. But we’ve managed to work around that.

“You have to start somewhere and it’s only by picking a starting spot that you know whether you’re in the right place or not. For everything that didn’t work, we went back to the drawing board – and we did that several times until we got to where we wanted to be.

“The time limit on these testing periods is obviously the tournament

deadline. Time has never been on our side in this project because you could research for years on some of these areas and never get the right result.”

That time pressure is becoming more acute with each passing day, but a recent move into university field trials has certainly helped cement the feeling that huge steps forward have been taken.

Should those trials prove successful, then the next big test of the group’s research will be the 2025 FIFA Club World Cup, which is set to be held in the US at stadia also lined up for use in 2026.

However, Alan says that due to factors outside of FIFA’s control, there are some stadia pitches where such thorough preparations won’t be possible. “Typically, we would maybe have a year to 15 months to put a pitch into a newly built stadium and we’d go through a complete growth cycle to ensure it would be ready for tournament time. That’s not going to be possible in all of the tournament stadia. In fact, we may need to turn some of them around in as little as four to six weeks because they will also

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be getting prepared for the NFL season [Major League Soccer is taking a mid-season break for the 2026 FIFA World Cup, so there will be limited windows].”

However, Alan says his team have been aware of this issue for a couple of years, so part of the research has been to challenge the sod farmers.

“If we can’t grow the grass in the stadium, we can grow it on the sod farm, then it’s lifted directly from the farm into the stadium – almost like a lay-and-play pitch system.”

He says the team will know later this year how successful this initiative has been, but he believes that they are certainly making good progress.

### **FIT FOR THE FUTURE**

Facing such pressure, it is hard to imagine anyone involved in the research project spending the next two years focusing on anything other than delivering another successful tournament in 2026. However, Alan insists the impact of this research and the huge investment made by FIFA will be felt for years to come.

He adds: “We had our first big research field day in Tennessee in April, and it was attended by turf representatives from all the FIFA World Cup 2026 host city stadia and training sites, as well as some of the other soccer confederations, such as CONMEBOL, CONCACAF and UEFA, as we were keen to connect them to the programme.

“We see a bright future beyond the 2026 FIFA World Cup, such is the significance and enormity of the challenges in taking top-level international tournaments into ever more challenging host countries and stadia.”

## FIFA World Cup 2026 host cities

### CANADA

#### 1 Toronto

The city has staged fixtures at the 1976 Olympic football tournament, the 1974 CONCACAF Youth Championship, 1987 FIFA U-16 World Championship, the 1998 CONCACAF Women's Championship, the 2007 FIFA U-20 World Cup and the 2024 FIFA U-20 Women's World Cup.

#### 2 Vancouver

Vancouver staged nine matches during the 2015 FIFA Women's World Cup and is home to Major League Soccer (MLS) team Vancouver Whitecaps FC.

### MEXICO

#### 3 Guadalajara

The city was a host city for the 1970 and 1986 FIFA World Cup Finals, a football venue during the Mexico 1968 Olympic Games and has hosted the 2011 Pan American Games.

#### 4 Mexico City

Mexico City has three professional football teams: Club America, Club UNAM and Cruz Azul. It has hosted two FIFA World Cup Finals – in 1970 and 1986 – as well as Central America and Caribbean Games, the Pan American Games and the 1968 Olympic Games.

#### 5 Monterrey

The 1970 FIFA World Cup in Mexico, combined with an improvement in CF Monterrey's performance during the following years, turned football into a social phenomenon by 1973.

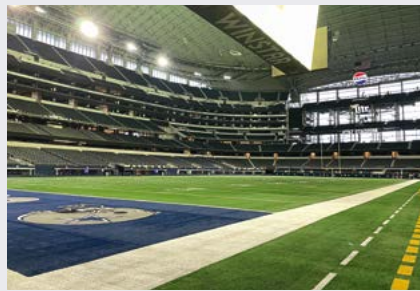
### US

#### 6 Atlanta

Atlanta will use the opportunity to further promote the game. It is hoped that its modern stadium will be a model for the way new technology can transform the way an audience experiences live sport.

#### 7 Boston

The city has played host to the 1994 FIFA World Cup, and two



Estadio BBVA, Monterrey, Mexico

FIFA Women's World Cups in 1999 and 2023.

#### 8 Dallas

The North Texas football community is one of the largest in the US with nearly 176,000 registered players. Six 1994 FIFA World Cup games were hosted in the city.

#### 9 Houston

The tournament will provide a once-in-a-lifetime experience for the city, which will ensure a lasting legacy.

## Pitch research programme

FIFA's research partners are the University of Tennessee's John Sorochnan, advisor to the National Football Players' Association for Field Safety and Performance; and Michigan State University's John 'Trey' Rogers, advisor to Major League Soccer teams and consultant for stadia constructions for 1994 FIFA World Cup Silverdome.

Their three key objectives are to:

- identify the best combination of grass types, rootzone and reinforcement system to provide playing conditions to FIFA standards
- identify construction methods/systems for temporary pitches
- evaluate turf systems under simulated conditions for the 2026 FIFA World Cup.

#### 10 Kansas City

A passionate football city that has a rich history of successful professional football teams, Kansas City has hosted FIFA World Cup qualifying matches, CONCACAF Gold Cups, men's and women's Olympic qualifiers, the 2013 MLS All-Star Game and the 2013 MLS Cup Final.

#### 11 Los Angeles

Los Angeles was the founding city of MLS and home to the North American Soccer League. Historic matches include the 1994 FIFA World Cup Final, the 1999 FIFA Women's World Cup and key CONCACAF Gold Cup matches.

#### 12 Miami

Professional football in Miami started with the North American Soccer League's Miami Gatos in the late 1960s and the Miami Toros in the 1970s. Today, Inter Miami, which is owned by David Beckham, represents the city in MLS.

#### 13 New York/New Jersey

With hundreds of thousands of youth players in the region, New York and New Jersey grew the game from grassroots level after hosting the 1994 FIFA World Cup.

#### 14 Philadelphia

Philadelphia is home to one of the earliest professional franchises in the US – the Phillies of the American League of Professional Football.

#### 15 San Francisco

Since 1967, the Bay Area has been home to professional football teams from San Jose, San Francisco and Oakland areas. The region has also hosted international matches during the 1984 Olympics, as well as the 1994 FIFA World Cup and FIFA Women's World Cup.

#### 16 Seattle

Seattle is one of the greenest cities in the US and is eager to stage an environmentally friendly event.

## FIFA World Cup 2026 host city stadium dichotomy

### Canada

- 1 Toronto, BMO Field (open-air stadium) – natural turf (Kentucky bluegrass)
- 2 Vancouver, BC Place (domed venue) – artificial turf

### Mexico

- 3 Guadalajara, Akron Stadium – natural turf (Bermudagrass)
- 4 Mexico City, Azteca Stadium – natural turf (Kikuyu grass)
- 5 Monterrey, Estadio BBVA Stadium – natural turf (Bermudagrass)

### US

- 6 Atlanta, Mercedes Benz Stadium (domed venue) – artificial turf
- 7 Boston, Gillette Stadium (open-air venue) – artificial turf
- 8 Dallas, AT&T Stadium (domed venue) – artificial turf
- 9 Houston, NRG Stadium (domed venue) – artificial turf
- 10 Kansas City, Arrowhead Stadium – natural turf (Bermudagrass)
- 11 Los Angeles, SoFi Stadium (semi-domed venue) – artificial turf
- 12 Miami, Hard Rock Stadium – natural turf (Bermudagrass)
- 13 New York/New Jersey, MetLife Stadium Field (open-air stadium) – artificial turf
- 14 Philadelphia, Lincoln Financial Field – natural turf (Bermudagrass)
- 15 San Francisco, Levi's Stadium – natural turf (Bermudagrass)
- 16 Seattle, Lumen Field (open-air venue) – artificial turf



### Host cities by numbers

16

stadia

1

stadium with  
cool-season grass

7

stadia with  
warm-season grass  
(Kikuyugrass and  
Bermudagrass)

8

stadia with  
artificial surfaces

3

open-air stadia

5

closed/retractable  
roof stadia