

It's hoped the 49ers' new home will revitalise Santa Clara, helping create an 'entertainment zone' with restaurants and shops

It'll play host to Major League Soccer matches, plus WrestleMania 31 in 2015 and Super Bowl 50 in 2016

**GAME ON**

Construction on the stadium began on 19 April 2012, with Santa Clara Stadium Authority borrowing the initial \$850,000,000 to kick off the initial development process. The rest of the funding has come from a number of areas, including the National Football League (NFL) itself.

**DRIVER CLUB**

Originally, the 49ers asked the NFL to avoid scheduling any Monday or Tuesday games at the Levi's as there wouldn't be enough parking spaces to match the seating capacity of the fixtures. However, an extra 21,000 spaces were created using fairways bought from the adjoining golf club.

**THE HIGH LIFE**

The 'green roof' of the stadium is meant to be more than a way of ticking a box for the eco-minded. Sitting 36m from field level, this 1,800m<sup>2</sup>-garden will be waterproofed and filled with a variety of plant species to spearhead the venue's ongoing green plans.

**LOVE THY NEIGHBOUR**

Unlike many of its fellow NFL venues, the Levi's Stadium has openings at both ends. These spaces allow sound to escape, which seems a wise choice considering its snug urban setting in California's Santa Clara.



# THE FIELD OF JEANS

**Holding up to 75,000 fans, the San Francisco 49ers' new home is groundbreaking and green**

WORDS BY **Dominic Reseigh-Lincoln**

**W**hen you think of American sporting venues, the word 'big' usually comes to mind – but it's when architects and engineers come together to innovate in a smaller space that things become really interesting. When NFL team the San Francisco 49ers originally decided to look for a new venue for their home games, they hoped to build a brand new stadium on the site of their old one, Candlestick Park. However, talks fell through so

the team diverted their attention to the site of their administrative offices in Santa Clara, California. The new stadium, named following a 20-year licensing deal with San Francisco-based jeans company Levi Strauss & Co, has a basic capacity of 68,500 people, with the option to increase the number to 75,000 for special events. While the Levi's Stadium isn't the biggest – the Michigan Stadium, home to NCAA team the Michigan Wolverines, holds that record with a

capacity of 109,901 – when it opens in time for the new NFL season in July, the new Niners' home will be setting trends with some truly groundbreaking approaches to construction and technology.

**GRIDIRON INNOVATION**

The stadium has been designed to create a perfect atmosphere of sound (see 'Science Of Sound', right, for more information), as well as paving the way for the use of 'green friendly' technology on a grand, commercial scale. It will be the first 'smart building' to be awarded LEED certification, using photovoltaic panels that will power most of the

stadium's electrical needs, plus a nifty geothermic water-conservation system for the whole venue. It will have an 1,800m<sup>2</sup>-roof housing 40 different species of plant and vegetation, along with an array of solar panels that will (weather permitting) provide enough power to charge up the stadium for an entire game day. It will also boast the largest open bowl in the United States – a fact that's informed every aspect of the stadium's construction. By increasing the side of the lower bowl (the main ring of seats that circumvent the field), more fans are able to enjoy each game and event at a close distance. Plus, with movable seats and sections, the

Levi's is a multipurpose venue that can adapt for different events (such as motocross competitions and the FIFA World Cup). And yet, despite a good 1,200m<sup>2</sup> of video screens keeping every fan closer to the game, the designers behind the stadium have purposely tried to create an open and inviting venue – a direct contrast to the closed feel of stadia such as the Dallas Cowboy's AT&T Stadium. ☺

+++++



**Dom Reseigh-Lincoln**  
*Freelance science journalist*  
+ Dom studied veterinary medicine at university before deciding to pursue his love of journalism. @furiareseigh



ABOVE Sound at the Levi's Stadium is amplified and trapped to create a totally immersive experience

## SCIENCE OF SOUND

*How the new 49ers home won't be setting any records for the loudest venue – for a reason*

+ One fact stands out when it comes to America's latest top level stadium – it's all about bringing fans closer to the action. And it's not just the incredible Wi-Fi coverage that's paving the way. It's the very design ethos behind the structure itself. According to 49ers CEO Jed York, the aim has been to conjure up the most immersive experience possible. "We started with making sure we have the largest lower bowl in the NFL: two-thirds of our seats are in the lower bowl. It's designed more like a baseball stadium with open concourses. The concessions are in the back so when you're in the concession line, you can see and feel the game going on behind you."

Since sound loses energy as it travels, it's vital to keep a venue intimate. So the minds behind the Levi's Stadium constructed the ground to amplify and trap sound in the right ways. Due to its urban location, the stadium can't be the loudest, so openings at either end allow some of the sound to dissipate, while the oval's long sides have been truncated to bounce the noise back at the players. The use of materials such as wood and metal also increases reverberations. The stadium also features a unique video and audio display system, including a state-of-the-art audio super system, digital audio mesh, from US electronics manufacturer Daktronics. This mesh consists of freeform LED elements mounted over the venue's speaker system. Measuring a staggering 14.5m by 17.5m, it allows sound to pass through it uninhibited, creating an unobstructed audio experience for fans on game day.