

The Stadium of the Future
The Stadium becomes more than a Stadium

Das Stadion der Zukunft
Das Stadion, das mehr als ein Stadion sein
wird.

Prof. Geraint John

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Principality Stadium

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*“I never think about the future. It comes soon enough.”
„Ich denke niemals an die Zukunft. Sie kommt früh genug.“*

Albert Einstein

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" The common people- rather than caring about their freedom (or democracy), are only interested in bread and circuses (ie Food and Entertainment) "

Die normalen Menschen- anstatt sich um ihre Freiheit (oder Demokratie) zu kümmern, sind nur an Brot und Spielen interessiert. (d.h. Essen und Unterhaltung).
Juvenal , Roman Poet

But the architect has to think ahead...

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Ancient Olympia Stadium
20-30,000 Spectators

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THE COLOSSEUM IN ROME 70 AD

It sat 45,000 spectators, with 5000 standing. A protective awning kept the sunlight from the spectators. It had lifts to bring animals and gladiators to the surface . The arena could be flooded . There were 80 entrances . It was tested recently on British Television against the Birds Nest Stadium, and came off better for exit times .



Amphitheatre Verona
Proposed roof

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In the middle ages, there were no stadia.

The city became the stadium.

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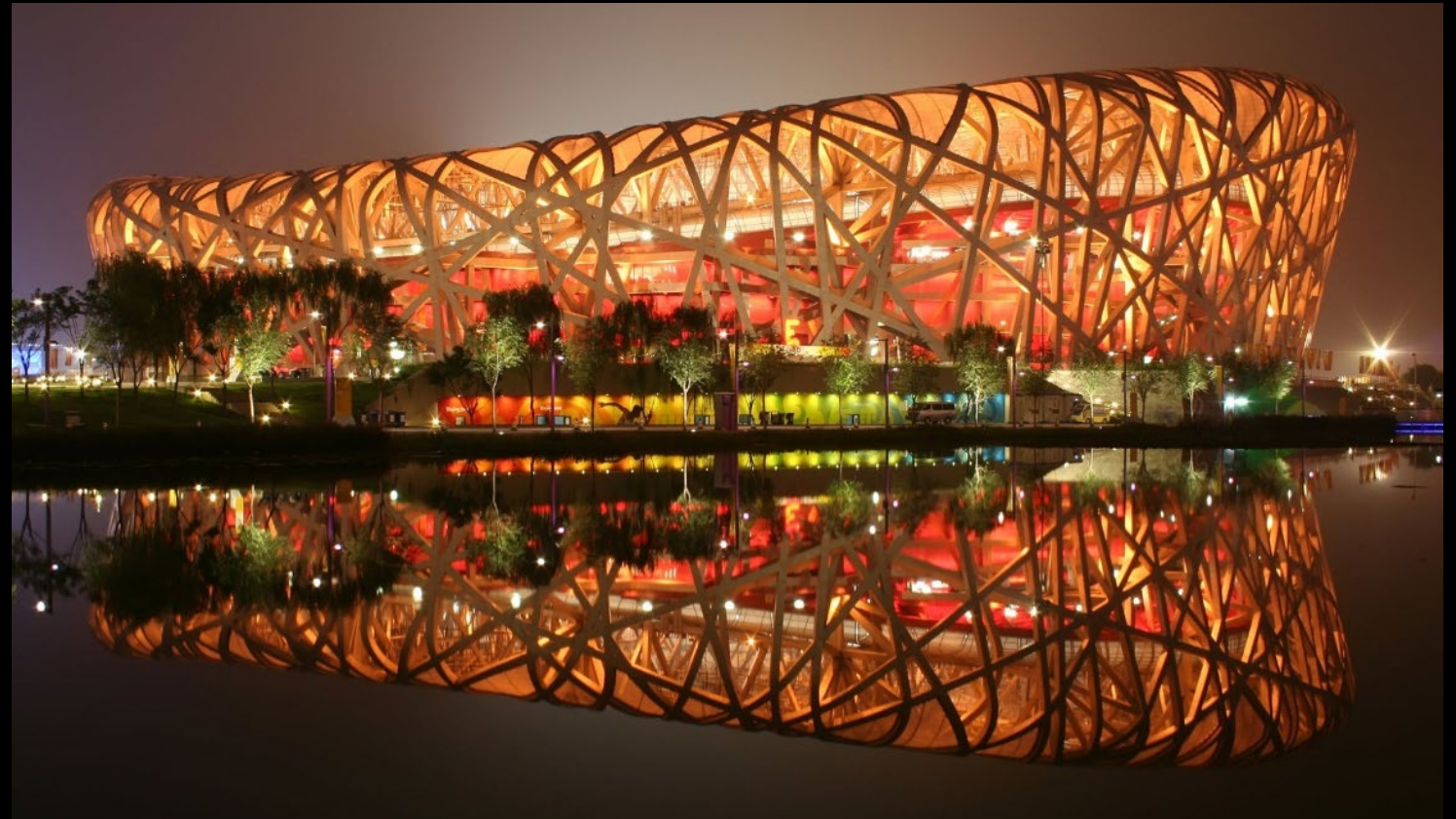


Florence & Pamplona are live examples



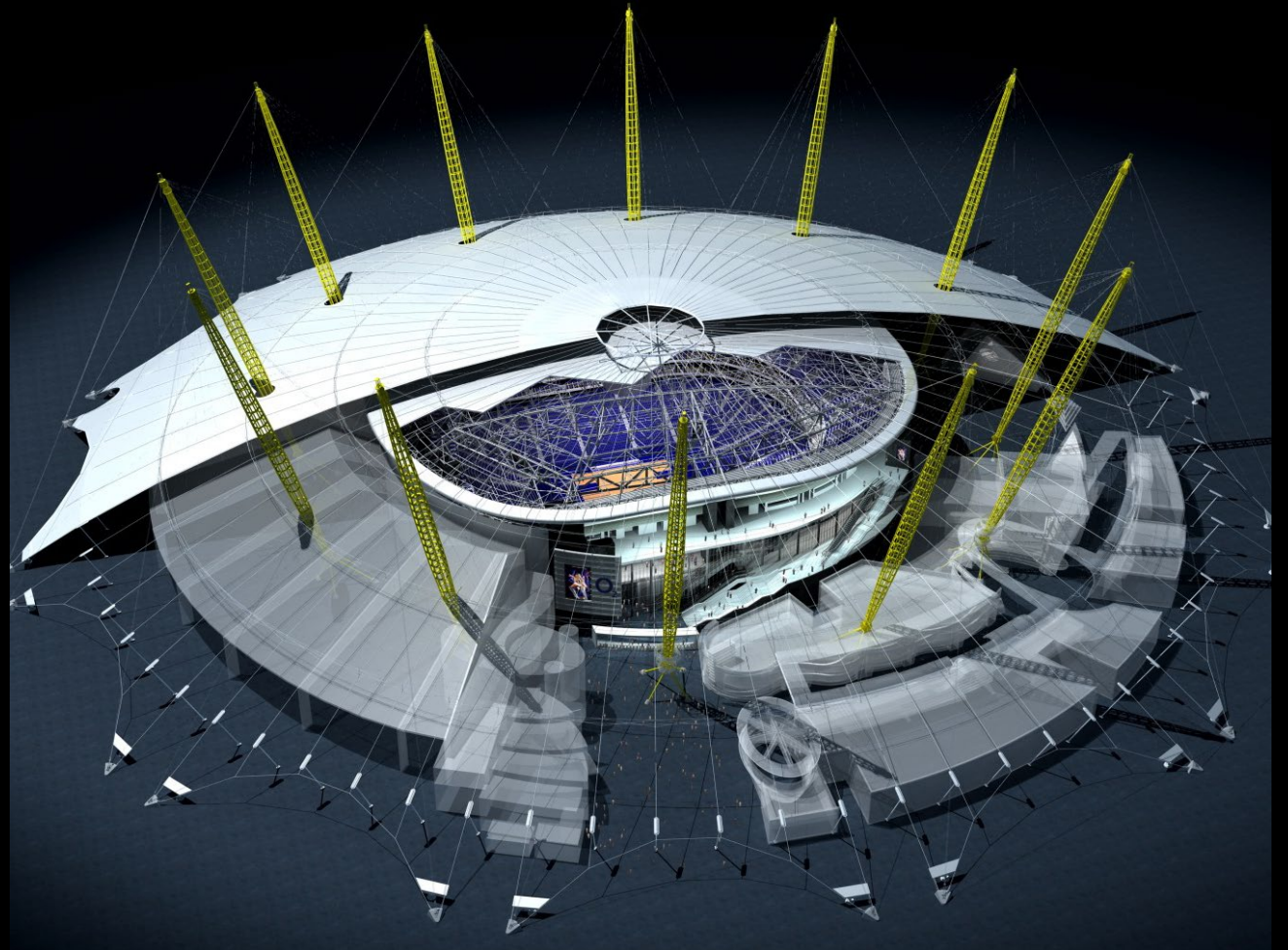
The Icon

A stadium can be an icon for the city, though it must not be a “white elephant”.



So here are the thoughts
from a Populous think
tank..

Going to a stadium is
increasingly more about the
entertainment provided
around the venue, as well as
the show itself.



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These are 2 views of the new Tottenham Stadium showing the interior quality and the landscaping around the stadium.

Watching but not watching.

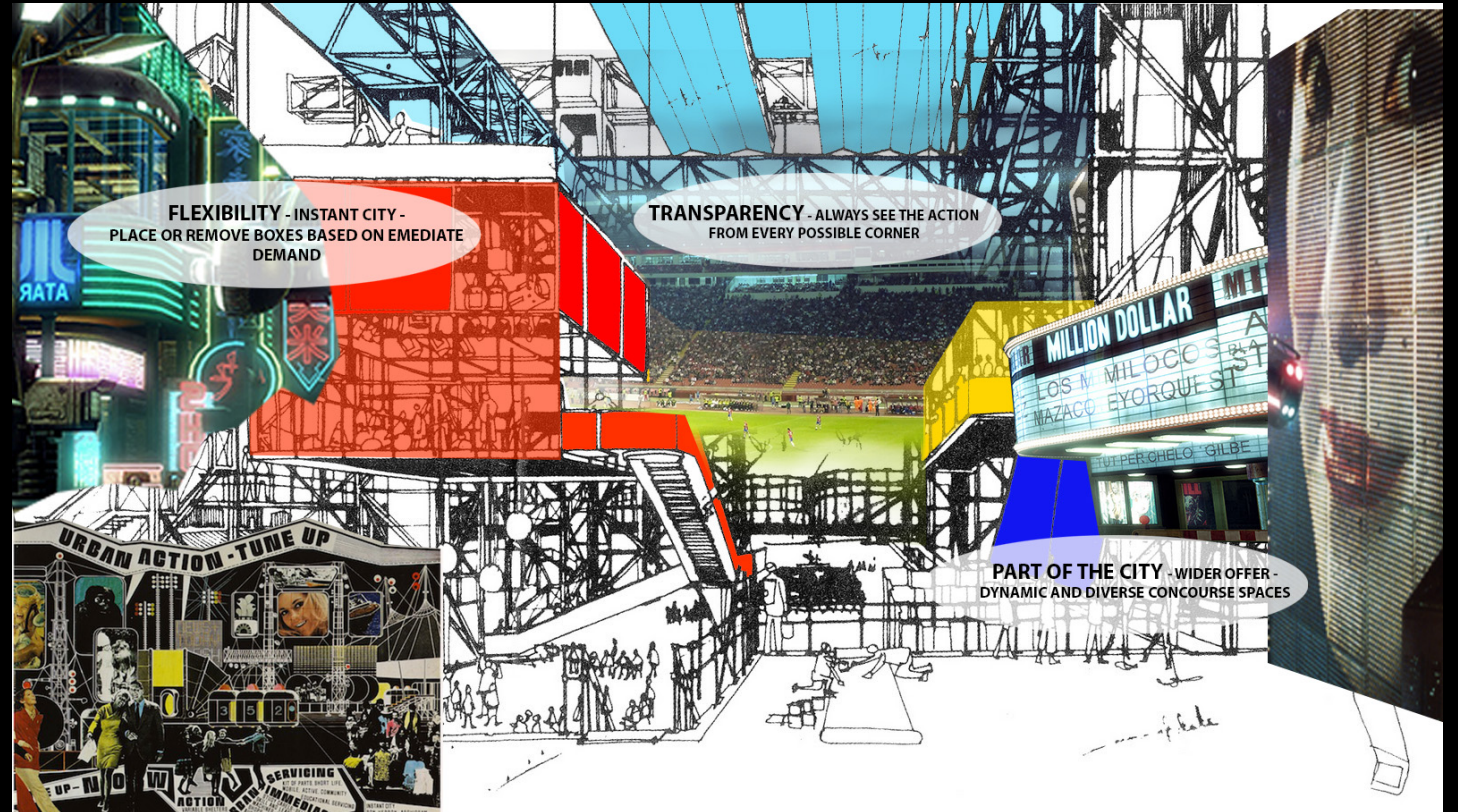
Being at the venue but not necessarily being interested in the main event-being seen.



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Technological developments allow new thinking...

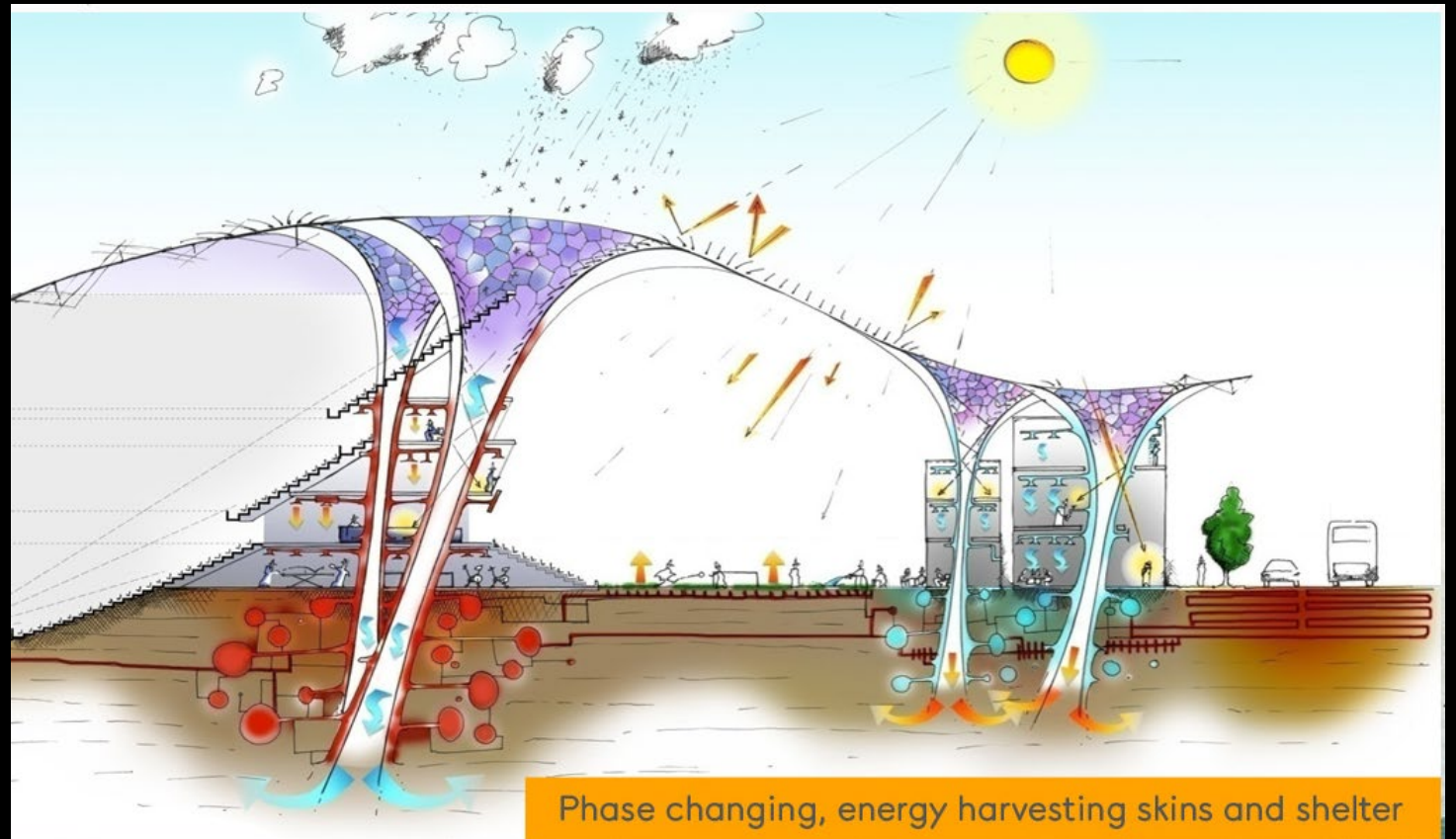
More sophisticated camera technology can allow for viewing control by the fan.



Sustainability

The future must be sustainable.

What we do now affects the future.



Community involvement & support is essential.

This project was drawn up in consultation with the people of Atlanta about what kind of Stadium of the future they wanted which could be integrated with the city.

Benjamin Flowers





BALL 2 STRIKE 1 OUT 2
INNING 1 2 3 4 5 6 7 8 9 TOTAL
VISITOR 0 0 0 0 0 0 0 0 0 0
HOME 0 0 0 0 0 0 0 0 0 0

BALL 2 STRIKE 1 OUT 2
INNING 1 2 3 4 5 6 7 8 9 TOTAL
VISITOR 0 0 0 0 0 0 0 0 0 0
HOME 0 0 0 0 0 0 0 0 0 0



.653	WIN-LOSS	32-17
.577	88-48	
.568	82-47	

AMERICAN LEAGUE

1 2 3 4 5 6 7 8 9 10 R H E

STRIKE OUT

POPULOUS



IN FUTURE A STADIUM
CAN BE
MANY
MANY
MANY
SPORTS
AND PASTIMES

RIGHT THERE
IN THE CITY

THE STADIUM OF TOMORROW

We asked Populous, an architecture firm that designs stadiums around the world, to envision the stadium of the future. The firm came up with a venue that incorporates current technology pushed to the extreme—with some creative leaps—but that also serves the same purpose as those built almost 3,000 years ago: allowing people to experience astounding athletic feats together.

A SELF-SUFFICIENT ECOSYSTEM

Sustainable technologies have not been used on such a large scale in a stadium before. The stadium roof provides more than enough space for solar and wind power, with enough room left for water collection and a rooftop garden. Guests contribute as well: Their food waste is recycled into fuel and compost.

Wind turbines
Wind turbines can generate much of the power that the stadium needs, and biomass uses energy-saving technologies such as fly ash.

Vegetable garden
A rooftop garden provides a fun escape from the hubbub below, as well as growing herbs for on-site restaurants.

Rainwater collection
Urns collect rainwater to use for watering trees and existing plants, but not for drinking—a treatment plant would use too much energy.

Vegetable garden

Rainwater collection

A MULTIPURPOSE STADIUM

Modern stadiums require a massive investment. To make that investment worthwhile, planners design them to be useful year-round for multiple sports and other events. This stadium of the future is versatile, hosting water sports like sailing, for instance, and even offering places to live within the complex itself.

Water sports observation seating

Residence units

Field dining

Reusable-water storage

Public park

Underwater stadium access

DIGITAL INFRASTRUCTURE

The stadium's ambitious interactive technologies—holograms, drones, sensors on players and fans—require a lot of computer power. An on-site server farm is a necessity, one that stadiums built even a decade ago did not need to take into account.

Adjustable seating
Fans can move back and forth to show their devotion to their play, depending on the sport.

RETHINKING THE PLAYING FIELD

The surface of the field changes text, res and materials for different sports—from artificial turf for football to grass for soccer to wood for basketball. The lines marking the area of play are projected onto the field, allowing the field to vary in size and shape.

Transparent field
A see-through field over an integrated viewing area allows fans to watch the game from below.

TRANSPORTATION

Some spectators arrive at a station within the stadium via a high-speed train on magnetic rails. Others are delivered by drone directly to their seats. Fans willing to pay extra travel through an underwater tube for an aqua-um-like experience (see left).



Transpiration drone

INTERACTIVE FAN EXPERIENCE

Opening and closing ceremonies at the Olympics already include the audience in the spectacle by providing LED lights for the crowd to brandish at key moments. In the stadium of the future, fans share their emotions through LED clothing or even experience what the players are feeling.

Augmented reality
A large hologram with the score and stats hovers next to fans, while small screens are at each seat.

An electric audience
Fans in LED jerseys might feel the heat beats of a favor to player or light as it colors to reflect the mood of the game.

AUTOMATED AMENITIES

Customers avoid the long lines at refreshment stands—and the hassle of holding a balloon vendor—in exciting food and drink to be delivered by drone to their seats. Fans in mobile hospitality pods have their food and drink served by robots dishing into the pod; trashbots take their garbage away.

Hospitality pods
Electromagnetic pods move along rails within the stadium, allowing spectators to view from anywhere they like.

Drone delivery
Loaded by robots, drones deliver peanuts, hot dogs, and Crokin' tanks, among other refreshments, to your seat.

CONNECTING THE STADIUM

Towers connect locals to the progress of the game by pulsating with colors that vary depending on the crowd's reaction. For those who prefer to play rather than watch, small fields are courts open to the public are located within the stadium.

Viewing platforms
Ticket holders watch the game from towers overlooking the stadium with enjoying an elevated tailgate party.



Transpiration drone



JASON TRENT AND FRANK WILLIAMS FOR NORTHERN CONCEPTS/POPULOUS AND THE COPYRIGHT © 2017 NATIONAL GEOGRAPHIC PARTNERS, LLC

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AUTOMATED AMENITIES

Customers avoid the long lines at refreshment stands – and the hassle of hailing a ballpark vendor – by ordering food and drink to be delivered by drone to their seats. Fans in mobile hospitality pods have their food and drink served by robots docking into the pod; trashbots take their garbage away.

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Solar power
Disks in the roof contain photovoltaic panels, which pivot to absorb sunlight and provide shade to fans.

Augmented reality
A large hologram with the score and stats hovers over the field, while small screens are at each seat.

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Fans in LED jerseys might feel the heartbeats of a favorite player or light up in colors to reflect the mood of the game.

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Electromagnetic pods move along rails within the stadium, allowing big-spending fans a view from anywhere they like.

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Loaded by robots, drones deliver peanuts, hot dogs, and Cracker Jacks, among other refreshments, to your seat.



Transportation drone

Viewing platforms
Ticket holders watch the game from towers overlooking the stadium while enjoying an elevated tailgate party.

Retractable seating for larger field

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TRANSPORTATION

Some spectators arrive at a station within the stadium via a high-speed train on magnetic rails. Others are delivered by drone directly to their seats. Fans willing to pay extra travel through an underwater tube for an aquarium-like experience (far left).

Adjustable seating
Tiers can move back and forth to allow for different-size fields of play, depending on the sport.



JASON TREAT AND RYAN T. WILLIAMS, NGM STAFF
STADIUM CONCEPT: POPULOUS
ART: INK
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Wind turbines
Wind turbines can generate much of the power that the stadium needs because the stadium uses energy-saving technologies such as LED lights.

Wind turbines

Retractable roof
The fabric roof folds like an accordion to open the field to the outdoors or extends to shield players from the elements.

Solar power
Disks in the roof contain photovoltaic panels, which pivot to absorb sunlight and provide shade to fans.

Vegetable garden
A rooftop garden provides a tranquil escape from the hubbub below, as well as ingredients for on-site restaurants.

Vegetable garden

Rainwater collection
Drums collect rainwater to use for flushing toilets and watering plants, but not for drinking—a treatment plant would use too much energy.

Rainwater collection

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Design can help to create a safe legacy for the city.

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Tottenham Stadium

POPULOUS