



# La Liga

Setting the example in Sustainability

 **ARCADIS**

 **sports+  
vitality**

 **LaLiga**

**9 June 2023**

Dear Mr. Steenhof,

In response to the “**Making LaLiga Sustainable**”-challenge, we are pleased to send you this proposal on behalf of Arcadis to support Sports+ Vitality and La Liga in their quest to reduce La Liga’s environmental impact and promote a deeper culture of environmental sustainability at all its clubs.

With this proposal, we hope to convince you of the flexible, integrated, and all-encompassing service Arcadis can provide for La Liga’s clubs. The combination of our **global experience** and **local presence in Spain** allows us to deliver personalized strategies for each and every club on how to tackle the main challenges related to energy consumption and mobility, waste generation, water consumption, and sustainable construction.

We have a vast experience in the development of solutions for sustainable challenges all over the world. In Spain we know the market, the players and all the relevant stakeholder necessary to turn great ideas into great projects.

One of our most recent examples is the design for the FC Barcelona **Microgrid** covering the Nou Camp stadium and its surroundings. We optimized various business case scenarios taking into account the production, storage, and selling of energy. A Microgrid makes economic and environmental sense, and we would love to accompany La Liga in promoting this and other sustainable initiatives for the rest of the stadiums.

This proposal highlights some of the examples that we consider might be relevant for La Liga. We would very much appreciate the opportunity to present our ideas in Breda on June 26<sup>th</sup>.

Thank you very much.



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# Who are we?



Arcadis is the **leading global firm** delivering sustainable **design, engineering, and consultancy solutions** for natural and built assets.



FOUNDED IN  
**1888**

Global Reach, Local Presence

## Arcadis by the numbers



Annual Revenue  
**\$4.2 Billion**



**70+**  
Countries



**36,000 +**  
Staff



**>120 +**  
Offices



**35,000+**  
Projects



**300+**  
Locations



**1,17 MT CO<sub>2</sub>**  
Carb. footp. p.FTE



# Why clients choose us?

- Because we can be **everywhere**, we are never far from where our clients need us
- By combining sector specific and built asset 'know how' we create **innovative solutions** for our clients.
- We generate **positive outcomes** for clients in the planning, creation, operation and use of built assets.
- Our relationships are built on a clear understanding, mutual sense of purpose and **delivering value**



- 01 Global & local**  
Pan European presence with expert knowledge of local regulatory & market drivers
- 02 Sector knowledge**  
ESG experience across all key asset classes
- 03 One-stop shop**  
Integrated technical and commercial team
- 04 Data analytics**  
Meaningful insight and benchmarking to aid fast decision making
- 05 Market intelligence**  
We are working with many of the leading lenders and investors and can share best practice



# Why clients choose us?

## International experience in the development, delivery and operation of sports stadiums



We have established a leading position in the provision of a range of consultancy services to clients involved in the Sport and Leisure sector that has resulted in strong relationships with various recognised brands and stadiums where there are potential opportunities to pursue partnership agreements.

Experiencia Relevante



Feyenoord stadium (Rotterdam)



Johan Cruijff ArenA (Amsterdam)



Olympiasite (Brugge)



Parkstad Limburg Stadium (Roda JC)



Bosuilstadion (Antwerp)



Qatar 2022 World Cup



Manchester United FC



Arsenal FC



Liverpool FC

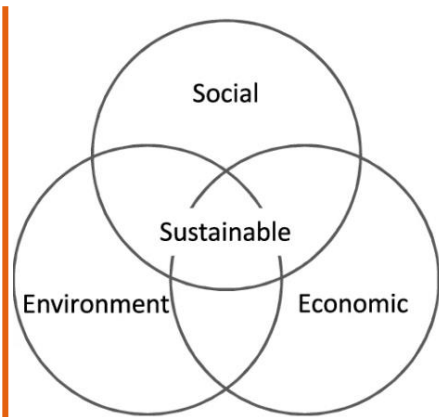


Luton Town - Power court

# How can we help La Liga?

**La Liga** has a very clear understanding of the three sustainability dimensions and the potential impact.

## Definition according to the UN



**Sustainability** refers to the use of the biosphere by present generations while maintaining its potential yield (benefit) for future generations.

Experts often describe sustainability as having three dimensions (or pillars). These are **environmental**, **economic**, and **social** dimension.

Source: <https://data.un.org/Glossary.aspx>

## Definition according to La Liga



To address **sustainability** in a sports organization, it is useful to take these **three dimensions** into account separately, in order to organize and plan initiatives or projects. However, it is essential to always keep in mind that sustainability requires an **integrated approach**, since the three dimensions are interconnected and affect each other.

Source: <https://www.laliga.com/en-GB/foundation/laliga-environmental-fair-play>

La Liga is looking for ideas and solutions that will help them in the process of  
**“Creating a deeper culture of sustainability”**.



# Focus of the Sports Vitality challenge



## The challenge



It is our understanding that Sports+ Vitality & La Liga are looking for a trusted partner to support La Liga in its journey towards **environmental sustainability** particularly, regarding:

- Energy consumption & mobility;
- Waste generation;
- Water consumption;
- Sustainable (re)construction.



## Our approach



### Global expertise, local partner, individual solutions

We understand that each client, each club, and each stadium has its own characteristics. We can help La Liga in creating individual approaches for each club according to their needs and possibilities.

For each project we can design technically feasible sustainability plans that are based on **viable business plans** that will save (or even make) money for the clubs.

In the following slides we will describe our way of working and showcase some specific references of projects that Arcadis has worked on international and national (Spanish) level.

We have designed energy strategies that involve digitalization of demand and production, smart building management and artificial intelligence optimizing the value streams. Our Mobility plans range from supply chain management to crowd control.



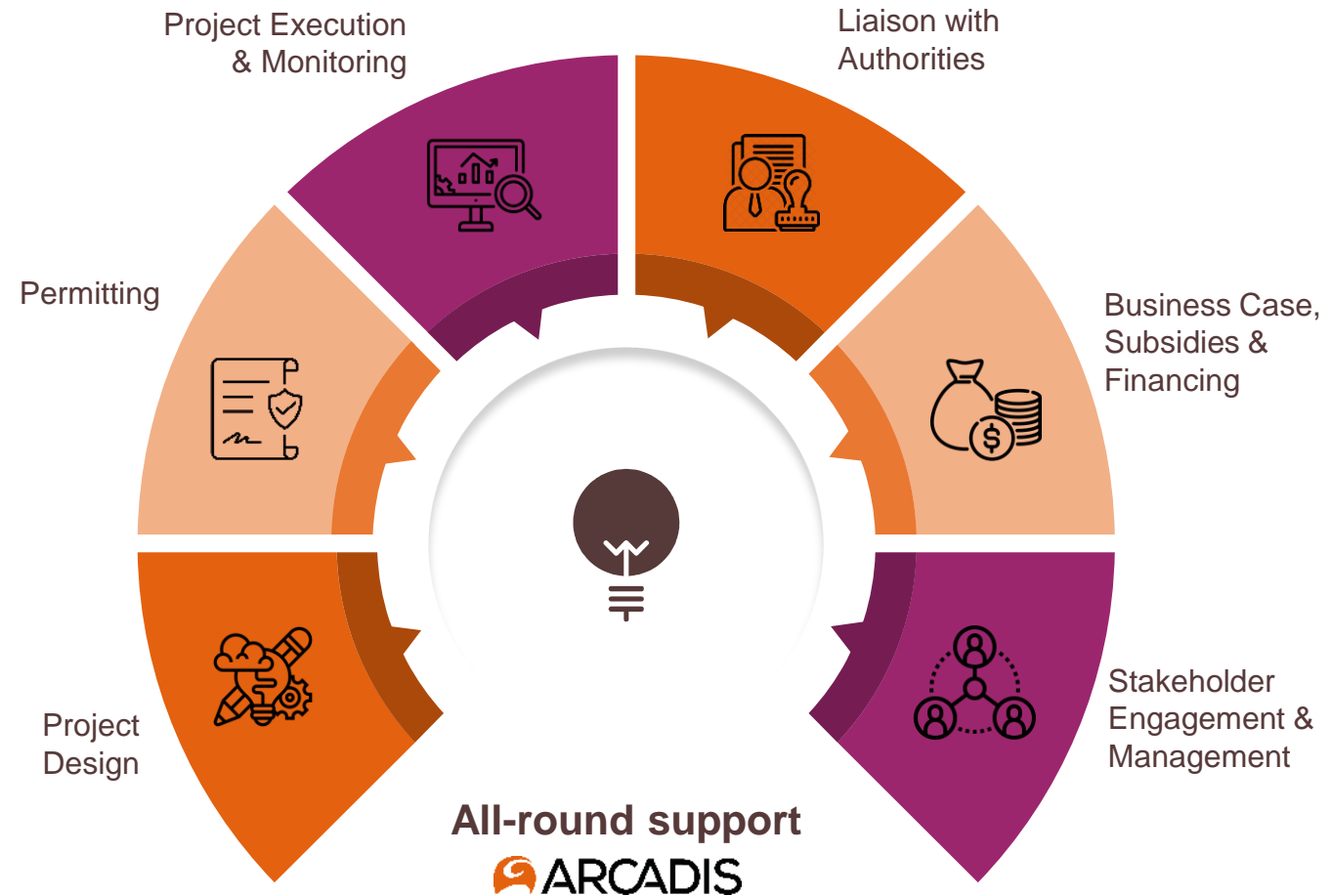
## Creativity in solutions

Our prior experiences and large pool of experts make that Arcadis can offer personalized services for each and every club. Not 1 project is the same. Clubs are different, stadiums are different, and most of all, people are different. We understand that each club has different priorities, location-specific characteristics, and possibly some sustainability solutions already in place.

## Capabilities to execute

It's not about the idea, but about the execution of the idea. Arcadis has a unique team of experts with global project experience and boots on the ground in Iberia with 190 Arcadians working in our offices in Madrid, Barcelona, Malaga, Bilbao and Lisbon.

When it comes to solutions, we can assist in their design, permitting, execution, and monitoring, as well as the development of a business case, the arrangement of subsidies and financing, and the engagement and management of relevant stakeholders. Furthermore, we can act as an orchestrator for the integration of third parties involved. We can manage the entire value chain or give specific support in one or several parts of it.



**We know the market; we know the players and we know the regulators.**

## Challenge

- Stadiums have a high energy consumption with peak profiles during matches and concerts.
- Need to lower energy costs and become sustainable.
- Need for objective expert business case on optimal balance between investment in installation, storage and business case for EV charging points.



## Microgrid FC Barcelona – Les Corts Campus

### Arcadis designed the Microgrid Solution for the Les Corts Campus

The campus consists of the Camp Nou stadium, an ice-skating rink, a hotel, various office buildings, green zones and parking spaces.

- **Energy Generation:** Design optimal energy generation projects for self consumption in and around campus. Complementary PPAs to assure 100% green consumption.
- **Energy Storage:** Industrial batteries can be used for necessary peak shaving and load shifting solutions.
- **Energy Optimization:** Microgrid designs use Artificial Intelligence to guarantee the highest economic value for each generated MWh.

**Three business case scenarios ranging from the optimal self consumption strategy to the selling of surplus energy and flexibility.**

## Challenge

- The transportation of professionals and fans and the movements involved in La Liga's entire supply chain result in large mobility movements and consequently in significant greenhouse gas emissions.
- Besides the challenge to reduce mobility related emissions, effective crowd and traffic management are important challenges during events in La Liga's stadiums.



## Formula 1 - Zandvoort

Arcadis has a vast experience in managing mobility at large events:

- Crowd management is key for each sports event. For the Formula 1 racing event in Zandvoort, Arcadis reviewed the municipality's Mobility Plan.
- Besides reviewing this Mobility Plan in preparation of the event, Arcadis coordinated the entire traffic and safety operations outside the event area during the event. Solutions included:
  - **GIS Story Map** to visualize traffic measures
  - Zandvoort **Traffic Count Dashboard**
- The organization of "La Vuelta Holanda" needed our services for the preparation and operation of mobility and traffic control during the event.

**Arcadis can help to explore many ways to explore mobility solutions.** We have the tools to investigate which movements can be influenced to be more sustainable, which movements can be newly created, and what the impacts of these measures would be.

La Liga could consider the promotion of long-distance electric busses to move players/spectators or a mobile application to organize carpooling (La Liga BlaBla Car app).



## Challenge

- Football games generate a large amount of waste, including plastic bottles, aluminum cans, glass, paper and cardboard, food waste, etc., both within as well as around stadiums, not only by spectators, but also in the entire supply chain.
- The large size of waste production also brings a large opportunity for waste reduction and recycling.



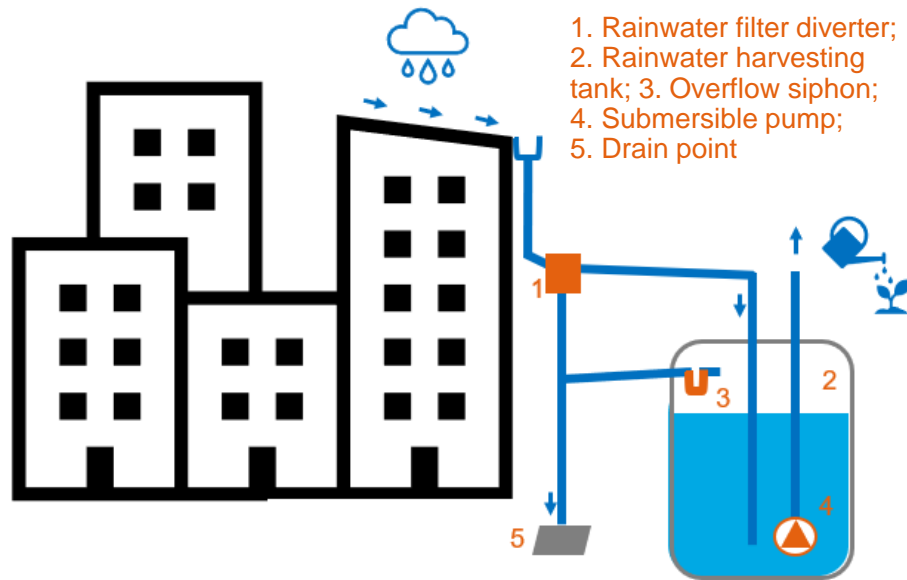
## Waste Management Solutions

- Arcadis has wide experience in **Waste Surveys** for industrial clients, such as Archroma and Johnson & Johnson.
- The objective is to, on the one hand, obtain a greater understanding of waste generation and management per source of waste, and, on the other hand, the identification of opportunities for improvement adopting the EU Waste hierarchy as defined in the Waste Framework Directive.
- As a result of these insights, the prevention potential of the waste streams can be identified, as well as their reduce-, reuse-, and recycle capacities, and accurate methods for their recovery and disposal.

**Arcadis has wide in-house expertise to explore waste management solutions for La Liga.**

## Challenge

- Football stadiums to have large water footprints due to irrigation of fields, water usage by sanitary services, etc.
- Need for insight in overall water consumption and the monitoring thereof to identify areas where excessive water consumption can be reduced.



## Water Management Solutions

- Arcadis offers a wide range of water management solutions, such as rainwater harvesting, urban drainage systems, and waste-water treatment.
- Rainwater harvesting is the process of collecting rainwater which falls onto a large surface area and storing it for later usage.
- Other Arcadis solutions include the improvement of the efficiency of water supply points (showers, taps), optimized irrigation practices to prevent excessive runoff, etc.

**Arcadis could apply Rainwater harvesting as a technique to irrigate fields to significantly reduce the stadiums' water consumption.**

## Challenge

- The renovation of existing stadiums or the construction of new ones brings a great opportunity for sustainable (re)construction.
- Renovation opportunities for La Liga include the usage of biobased materials, energy efficiency measures and management, heating and cooling management, etc.



## Hydrogeological study for heating and cooling FC Barcelona

- Arcadis was commissioned by FC Barcelona to conduct a **hydrogeological study** to assess the feasibility of the implementation of an open loop geothermal heat pump system for **efficient heating and cooling** of buildings around the Camp Nou Stadium.
- The study included a desktop research as well as groundwater sampling, test pumping, and video inspection on an existing irrigation well to determine the groundwater quality, aquifer characteristics, and possible sustainable well yields.
- Moreover, Arcadis handled the definition of the energy concept and determination of the energetic starting points for the sizing of the geothermal exchange system.
- The team was also responsible for the groundwater modelling of the thermal and hydrological impact of the geothermal system on the aquifer as well as in liaising with competent authorities for groundwater extraction and injection.



## Challenge

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## Arts Hotel Barcelona

- Arcadis was commissioned by the Arts Hotel Barcelona to lead on the sustainable renovation of the hotel.
- Sustainable reconstruction services provided include BREEAM and WELL certifications and carbon footprint assessment.

### Arts Hotel

**Client:** HOST HOTELS & RESORTS / Archer Hotel Capital B.V. / Marriot (Ritz Carlton) (Operator)

**Services:** Project Management  
Cost Management  
Licenses & Permits  
Architecture  
Health & safety  
Procurement  
BREEAM certification  
WELL certification  
**Carbon footprint assessment**  
**Sustainability ESG PM**

### Description:

Historic building (1912). The building has 470 rooms, with a total area of 48,500 m2, divided into 3 basements and 8 floors

**Status :** Ongoing  
**Area:** 48,500 sqm

 Zero Carbon related services

**Arcadis can help to explore many ways for the sustainable (re)construction of La Liga's stadiums.** Arcadis can analyze the whole portfolio and come up with aligned measures to improve the overall sustainability of the assets, from energy efficiency to water efficiency and waste management. Arcadis can also assist in the obtainment of BREEAM, WELL, and LEED certifications.



 **ARCADIS**  
team

ARC-NL

ARC-SPAIN

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**Erik Verschoor**  
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Event Management

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# La Liga

Setting the example in Sustainability

**Arcadis.** Improving quality of life.

