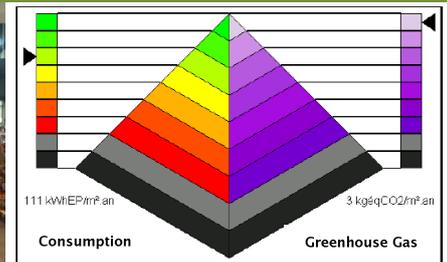




# CHALLENGE

## TO BUILD COST EFFECTIVE FUEL RETAIL SITES ACHIEVING ENVIRONMENTAL CERTIFICATION



## Sustainable development and fuel retail

Artelia has initiated and led the construction of the first fuel retail Motorway site with HQE (French High Environmental Quality) certification for Shell in France.

### Challenge

A major oil company, Shell, has selected Artelia International to manage their CAPEX investment programmes across their fuel retail business (construction, preventive maintenance, rebranding).

A key challenge is to increase the profitability of the fuel business by reducing Total Cost of Ownership (TCO) of sites. In other words, it aims to take into account from the initial design stage, all site costs from construction investment itself to operational costs (maintenance, energy & water consumption,...), disposal and recycling.

Indeed, it is only by having this comprehensive approach that value generation can truly be accounted for and be in line with sustainable development principles.

### The Artelia Solution

Going for an environmental certification is a challenging way of reaching this objective, and also a valuable medium for a client to promote its policy to customers.

For the construction of the largest Shell Motorway fuel service station in France, Artelia decided to go for HQE (Haute Qualité Environnementale), a French environmental certification equivalent to LEED and BREEAM. It aims at taking into consideration 13 criteria defining building quality for customers (visual, acoustic, thermal and olfactory comfort, air and water quality,...) and the environment (energy

consumption, material selection, maintenance and waste management,...).

By correctly prioritising these criteria, Artelia could automatically claim the BBC Label (French Low Energy Building Label), which is a significant progress in terms of TCO to reduce energy consumption.

Some of the main technical decisions, made during studies, which led to reach HQE certification were:

- Specific building orientation to take into account sun exposition for heating and cooling.
- Solar heating panels installation for hot water preparation and heating.
- Full LED lighting illumination (interior and exterior).
- High performance insulation.
- Water and Power consumption control and monitoring.
- Use of low environmental impact materials for construction.
- Rain water reclaim for non-drinking purposes.

Some specific challenges had to be addressed to adapt standard fuel service station construction to align with environmental certification criteria:

- Construction was undertaken on an open site with high customer volume during the summer holidays. Waste management and customer traffic management was high priority.

- The 1500 m<sup>2</sup> building included three restaurants, a shop, a rest area, a Motorway Company area and a gaming zone. Apart from Shell as our client, Artelia had to consider and work together with third parties strongly involved in the project (Motorway Company and caterers).

Despite these constraints, the certification process was made possible thanks to our Project Management methodology, sharing best practice and team skills.

### Outcomes and Key Benefits

This new building was successfully delivered on time, receiving the HQE certification and BBC labels (recognition for buildings consuming at least 50% less than a reference building in same category).

From a financial perspective, the investment cost is slightly higher than standard construction. However, Total Cost of Ownership is significantly reduced thanks to maintenance and energy consumption reduction.

Furthermore, this outstanding result highlighted a variety of technical innovations that could be replicated to the entire fuel retail network.

Finally, the HQE certification enabled our client, Shell, to differentiate itself from its competitors by showing to customers its involvement in sustainable development.