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Case Study



Vidago Palace Golf Course

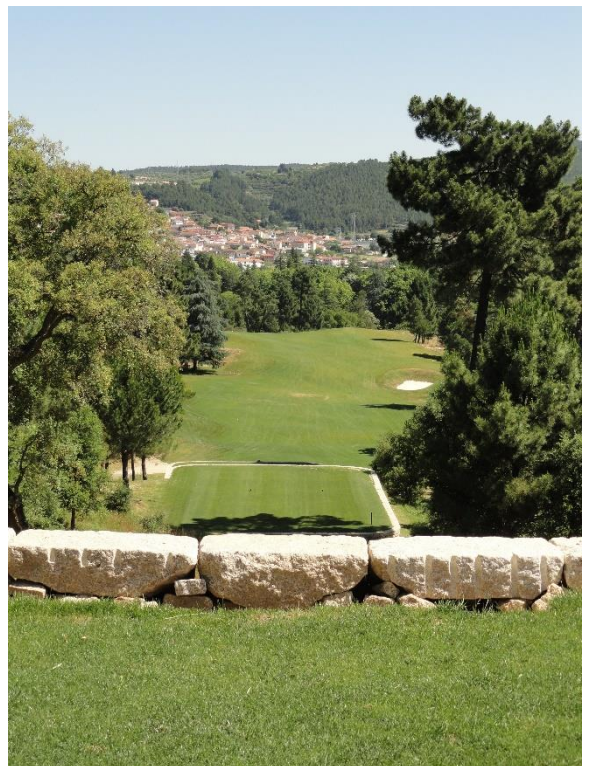
VMPS/UNICER – Vidago - Portugal

Description and Location

The **Vidago Palace** golf course is a **Cameron & Powell** redesign of an original **Mackenzie Ross 9**, dating back to 1936. Today, the upgraded course meets USGA construction specifications, having been transformed into a standard par 72, retaining the integrity of the original design and faithfully reflecting the aesthetics, playability, spirit and character of the site.

The course is one of dramatic contrasts which are united by a singular respect for the surrounding nature. Pathways and retaining walls use local stone and centuriesold trees have been preserved. The first holes are played in a forested and relatively flat valley floor; the later ones in open expanses with magnificent vistas.

The newly expanded course also includes a golf academy with 340m driving range, chipping area and 2 putting greens.



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Initial Assessment and Main Problems

- ◇ The course sits over one of the most important mineral water aquifers in Portugal. The operating bore holes are actually located inside the course (see picture above, Vidago Salus bore hole) and the clubhouse is an old bottling plant. So, the preservation and protection of the aquifer was the main requirement for the whole of the design, construction and maintenance process.
- ◇ Design sensitivity – the initial Mackenzie Ross 9 holes were to be preserved. This required a great amount of care during both the design and construction phases.
- ◇ A difficult drainage situation – with just one (and narrow) natural outlet for the whole course. This situation led to seasonal flooding and a permanent high water table in parts of the course. Additionally, the high slopes were vulnerable to erosion in high precipitation events.

“Thanks to GEOdesenho expertise it was possible optimize the project enabling it to fit the available budget.”

Eng. João Caldeira

General Construction and Maintenance Director for VMPS/UNICER Vidago Palace

GEOdesenho Proposal

- ◇ Planning and Construction Management.
- ◇ Water Logistics Study.
- ◇ Irrigation and drainage design.
- ◇ Water Management System, considering both the aquifer protection and the permanent control of the water quality.



Solutions in Detail

- ◇ The main point to be addressed was the protection of the aquifer. This point influenced both the design of the irrigation and drainage systems, and the whole set-up of the water management system. Irrigation was planned to allow for an advanced irrigation management system, capable of minimizing leaching. Drainage was designed to collect leached volumes and to control the high water table. Additionally, it also intercepts all surface run-offs that might cause erosion. The fertilization and pesticides internal policy was defined specifically to minimize possible impacts.
- ◇ The water management system, supported by one weather station and several sets of soil moisture probes, was set up to minimize irrigation volumes and to monitor both leached volumes and water quality. Leaching only occurs during high precipitation events, when chemicals will be heavily diluted. Results after the first full year of operation point to null impacts on the aquifers.
- ◇ The planning and construction management ensured a smooth process, preserving the Mackenzie Ross design and adding to it. The management structure implemented was fundamental to set the basis for the maintenance procedures and team. After the grow-in, a smooth transition was made for the permanent maintenance team, which has been operating the course during the last year.

“The experience of GEOdesenho made it easier to find solutions in order to assure the safeguard of the aquifers underlying the Golf course.”

Dr. M. Antunes da Silva

Geologist, Hydrogeological Resources Manager at the VMPS/UNICER Group

