



ALTADIS car park

Seville, Spain / 2024-

Owner
Constructor
Scope
Architect

KKH
RODIO KRONSA/SANDO
detailed design and construction monitoring
Francisco Baena Ureña

This is a three-level underground parking garage with plan dimensions of 47.00 m × 42.00 m, covering a total area of 1,983.40 m². It provides 191 parking spaces for cars and 20 spaces for two-wheel vehicles. Twenty spaces will include electric-vehicle charging systems, with provisions for an additional 24 in the future.

The retaining and foundation solution is strongly influenced by the presence of the water table. The groundwater level is found at approximately 5.00 m depth, while excavation must reach roughly 11.00 m.

A continuous diaphragm wall 0.80 m thick is planned, with a minimum embedment of 3.00 m into the marl layer (about 24.00 m deep), creating a watertight excavation box to allow safe digging. Because of the wall's considerable total depth (about 27.00 m), reinforcement is not provided along its full length; the final 8.00 m are constructed in reinforced concrete.

Excavation will be carried out in the open air, requiring two levels of temporary steel struts, which will be removed progressively from the bottom up as each basement slab is completed.

Foundations will consist of in-situ bored piles with diameters of 0.85 m or 1.00 m under each column, drilled with slurry from ground level.

At basement level -3, a 0.30 m thick base slab will be placed over a 0.15 m gravel layer and a blinding concrete layer, which will receive the waterproofing. This slab will be permanently drained by pumping to prevent long-term uplift pressures.

Basement levels -2 and -1 will use waffle slabs with a total depth of 33 cm (25 cm slab + 8 cm topping), 14 cm-wide ribs spaced at 80 cm. These slabs will be perimeter-connected to the diaphragm walls with dowels.

The roof level will consist of a 0.65 m-deep lightweight reinforced-concrete slab (circular voids Ø0.40 m at 0.70 m spacing), supported perimetrically on the 0.65 m diaphragm walls and on the interior columns.



C/ Barquillo 23, 2º | 28004 Madrid | España
T. (+34) 917 014 460 | F. (+34) 915 327 864
www.fhecor.com | fhecor@fhecor.es