



## THE NEW UEFA BUILDING IN NYON: PRESTRESSED LIGHT SLABS AND OTHER STRUCTURAL ASPECTS

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### Abstract

The extension of the UEFA headquarters in Nyon is a R/C structure, where each floor consists of a large-span annulus-shaped circular slab supported by two rows of columns arranged along as many circular alignments. Flat precast-concrete sun-shading elements protrude from each annular slab, along the façades. These slab elements are stiffened by means of ribs, in order to limit their weight and to guarantee a rigid connection with the annular slabs. An innovative solution is proposed to limit the thermal bridge between these cantilever elements and the building. Due to the large dimension of the spans (11 m in the radial and 9.5 m in the circumferential direction), the annular slabs have been designed and built as hollow-core slabs made of cast-in-situ concrete and HDPE spherical modules. Each slab is prestressed both radially and circumferentially to control deflection. Connection of the sun-shading elements to the slabs are presented and discussed.

**Keywords:** R/C structures, hollow-core slabs, prestressed slabs, sun-shading.

### 1 Introduction

The Union of the European Football Associations (UEFA) launched an architectural competition in 2009 for the extension of the original headquarters in Nyon (Vaud, Switzerland). The Bureau Bassi-Carella Architects, based in Geneva, won the competition with a project consisting of two circular 4-storey buildings of different sizes, interconnected by an underground parking garage and an underground walkway (under the nearby national road) linking the two new buildings with the pre-existing main building.

The first phase, started in January 2009, extending over a 15-month period, included the construction of the parking garage and of the larger building. The second phase, completed in March 2012, included the construction of the second building.

The main characteristics of the building are the wide glass window façades and the sun-shading elements made of white precast concrete.



Figure 1. The building façade with the concrete sun-shading elements

The function of the sun-shading elements is to reduce the solar radiation on the façades, to decrease energy consumption, as recommended