THE NEW JTI HEADQUARTERS IN GENEVA - AN ICONIC SHAPE IN THE SWISS LANDSCAPE

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Abstract

The new JTI Headquarters constitute a novel architectural landmark in Geneva. The nine-storey building stands on a triangular shaped parcel; it is characterized by three main tubes creating an open environment on the ground floor which boasts a public pedestrian passage. The facade trusses create an impressive 60-meter-span cantilever on the north-east side. On the south-west side, the building also lifts off the ground in a bridge-like fashion spanning over 80 meters. The main frame is composed of three-dimensional steel trusses supporting light-weight composite slabs without intermediate supports. Specific procedures, namely, controlled unpropping, jacking and temporary tie-down of the structure, allowed for safe cladding installation and control of building deformations. Advanced natural fire analysis led to a consistent reduction of fireproofing measures of the steel floor framing.

Keywords: Bridge-like structure, cantilever, construction sequence, controlled unpropping, jacking, fire engineering

1 Introduction

The new JTI Headquarters is an innovative structure in the heart of the newly developed quarter of Sécheron in Geneva, Switzerland. The building stands over a triangular-shaped parcel surrounded by railway network on the west side and other buildings on the north and east sides. The new headquarters will provide open spaces for offices and other amenities, such as an auditorium, a panoramic restaurant and a fitness centre. The underground construction is dedicated to the car park and technical rooms.

The building consists of 2 levels of concrete frame below ground and a steel structure of 9 levels above ground. The superstructure is a model of refined modern architecture. The building is completely lifted off ground on the northeast and west sides (Figure 2). This unconventional structure is the result of intense collaboration between the architects and engineers. The building is composed of six main trusses that support the facades and create vast interior floor space without intermediate supports. Due to the complex geometry, the slabs are connected over the entire building floor plan only at levels 4 to 6.

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