RATP Bus Center

Location: Thiais, France	**Date: 2008**
Architect: Agence ECDM (Emmanuel Combarel & Dominique Marrec)	**Solution and technologie: Envelope**

Introduction

The semi-flowable nature of Ductal® Envelope facilitated the pouring of 3D panels with a fine yet nubby Lego®-style texture. Only 3 cm thick, their lightness are made for fast installation and adjusting.

Description

Architects Emmanuel Combarel and Dominique Marrec of the firm ECDM were hired to do the Thiais bus centre job for the RATP. The building has several functions: primarily as a command post moving traffic for nearly 300 buses, but it also has lounges designed for bus driver relaxation.

Contex

The architects' main idea was to integrate the new building in its environment by ensuring urban continuity in the commercial-industrial zone. Therefore, the building appears to materialize from the ground via panels of grey anthracite colored Ductal® Envelope. That skin conforms to the angles of the building, ground and roof and is broken up with wide windows in bright colours. The façade was the subject of a technical experimental assessment validated by the Centre Scientifique et Technique du Bâtiment (CSTB - Scientific and technical building centre).

Optimization

Mould fabrication is a key step in Ductal® panel fabrication. Wood covered with a silicon skin was chosen for the mould structure. Ductal® is a semi-flowable concrete that facilitates the reproduction of the finest details of the mould such as the nubs (1 cm high, 20 mm diameter) of the bus centre's panels. That required significant thoroughness in designing and cleaning moulds and in storing panels.

Installation

Les panneaux sont fixés sur la structure béton par des équerres inox 304L. Ces dernières présentent des trous oblongs pour absorber les tolérances géométriques du gros œuvre et pour assurer l'alignement des plaques. L'accrochage sur les équerres est réalisé à l'aide de douilles serties dans les panneaux après leur fabrication. Des essais d'arrachement ont permis d'obtenir des efforts d'extraction de 427 daN sans rupture du support. La technique de pose de la douille n'engendre pas de contrainte d'expansion dans le matériau support. Un joint de dilatation de 12 mm placé entre les panneaux permet d'encaisser les variations dimensionnelles des pièces.