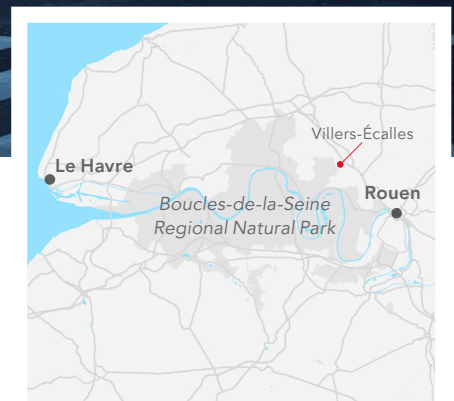


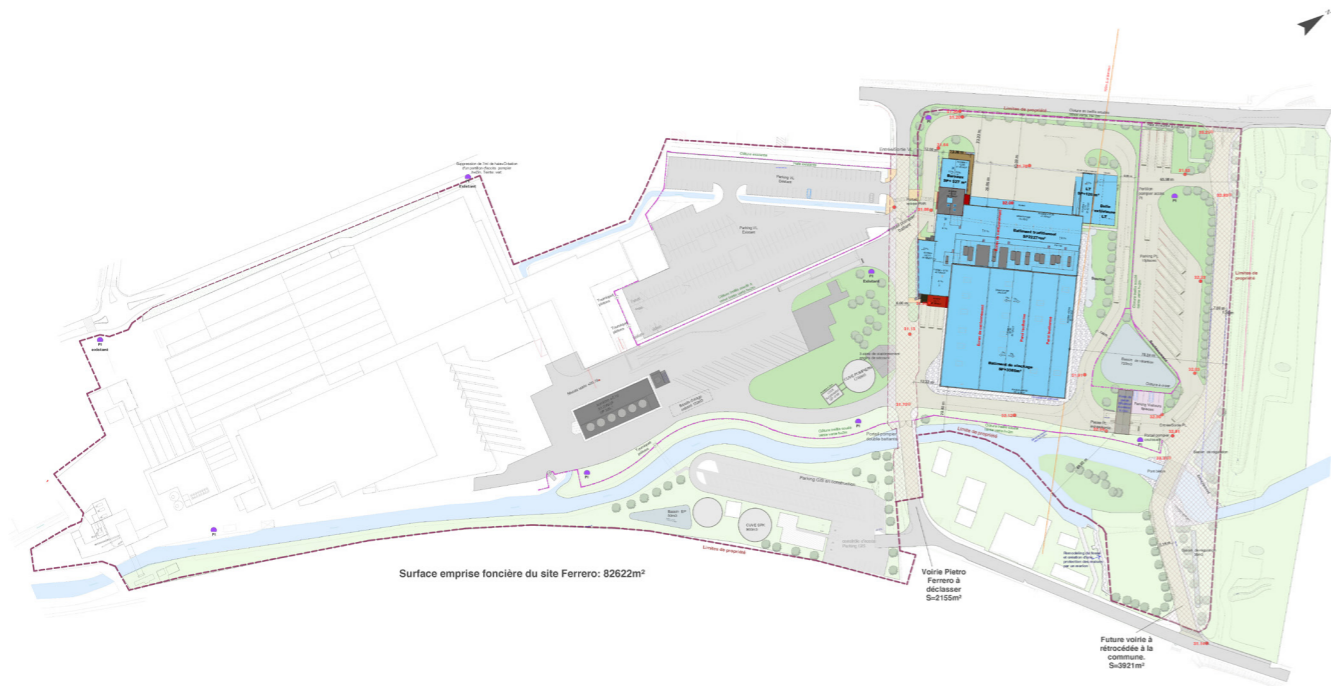
Dedicated to product maturation

A temperature-controlled, automated storage building with stone wool insulated sandwich panels for Ferrero Villers-Écalles | France

Author: Eve Jouannais, Journalist
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Renowned worldwide for its confectionery, the **Ferrero group**, founded after the Second World War, established one of its major production sites in Normandy at the end of the 1950s, to the **north of Rouen** and on the edge of the Boucles-de-la-Seine Regional Natural Park. Through its worldwide growth and expansion, over the decades this firm of Italian origin has become an international group. Its first French site, in the town of **Villers-Écalles**, now exports 33% of its output across Europe, and this is the location of the world's leading production plant for one of the **Group's flagship products: Nutella**.



A site subject to constraints

The new automated warehouse was built on this **historic site**. Located on a plot characterised by a one-metre difference in level in respect of rue Pietro Ferrero, **crossed by a natural spring** that had to be channelled, it is notable for the close proximity of a motorway viaduct. The project combined the constraints of the **flood risk prevention plan** in respect of the Austreberthe and Saffimbec catchment basin in which it is located, and those of an **environmentally sensitive facility**.

The presence of nearby dwellings also required particular **attention to the noise level** generated by the activity, in particular lorry movements assessed at a maximum of thirty per day.

In addition to this technical data, **environmental integration** was one of the requirements with regard to the inhabitants of the neighbouring houses and the location's natural features. Despite the **great height of the new building**, a relatively **moderate visual impact** was sought. The automated warehouse incorporates a "temperature-controlled storage unit", to which are attached a traditional despatch building and plant rooms, as well as offices and social facilities on two floors. 4-hour (EI 240) and 2-hour (EI 120) fire walls separate the various parts, which have differing construction methods: metal structure for the storage unit, concrete for the other two, the whole being covered by steel roof panels with insulation and weatherproofing.



The new, automated, temperature-controlled storage unit is the most important part of the project.





Controlled temperature

The most important part of the project, the storage unit rises to **nearly 35 metres in height** on a square footprint of approximately sixty metres per side. An **imposing structure**, therefore, it contains 18,500 pallet locations served by fully automated rack operating devices; only maintenance personnel are required to enter.

Connected at roof level by open-web joists, the **building's self-supporting structure** is part of the scaffolding in which the storage racks are inserted, and to which are fastened the flat sandwich panels that enclose the building.

More than 10,000 m² of sandwich panels from 80 to 200 millimetres thick, combining stone wool with a painted galvanised steel sheet skin, **provide the insulation that is essential for the maturation of the products and their storage.** With the **insulated panels** that demarcate three interior volumes, they contribute to the provision of **three different temperature environments:**

- at 17°C and 9°C combined with controlled humidity, they provide for the preservation and stabilisation of finished products;
- at 20°C for the packaging warehouse.



More than
10,000 m²
of stone wool insulated sandwich panels were required for this building

Moderate visual impact

From the exterior, furnishing a **"pixellated" facade**, the 120-mm stone wool insulated sandwich panels, with one-hour (EI 60) fire resistance, rectangular in form and arranged vertically, are grey in the **lower part and become white in the upper part.**

"The initial idea was that the upper part of the building would be toned down in order to mitigate its effect," explains architect Bernard Gaud, a partner of the AFA practice. "The chocolate colour initially chosen was ultimately abandoned in favour of a more neutral grey." A desire for discretion on the part of the client.

"The initial idea was that the upper part of the building would be **toned down** in order to **mitigate its effect.**"

Bernard Gaud
Architect, AFA

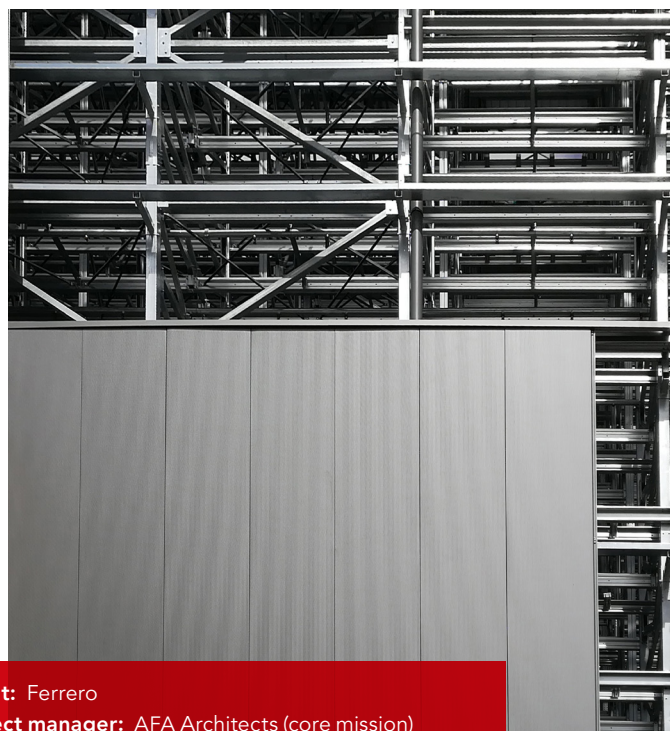
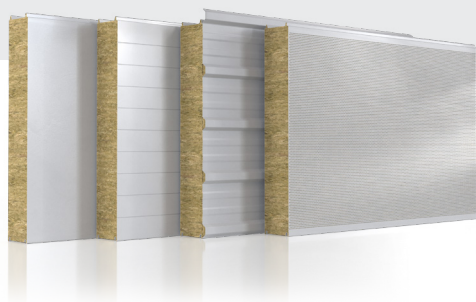




Stone wool insulated sandwich panels required for this building:

- 820 m² of Vulcastell Wall FC 80 mm
- 9,550 m² of Vulcastell Wall FC 120 mm, EI 60 fire resistance
- 510 m² of Vulcastell Wall FC 200 mm, EI 180 fire resistance

All were produced using **ROCKWOOL** stone wool insulation.



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Client: Ferrero
Project manager: AFA Architects (core mission)
Consulting Engineers: Artelia Bâtiment et industrie
Contractors: Eiffage (main); Face (assembly)
Sandwich panel supplier: Joris Ide
Main contractor: Eiffage Construction
Sandwich panel installation contractor: Face
Surface area: 6,430 m² floor area
Timescale: 2016-2019



CORE SOLUTIONS