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AN ECO-EFFICIENT FINAL ASSEMBLY LINE FOR THE AIRBUS A350 XWB

The Airbus A350 XWB (Xtra Wide-Body) assembly line building has been built close to the existing A330 assembly line in Toulouse, France. Work on the building lasted almost two and a half years and was completed during the third quarter of 2011, equipment was installed from September 2010 to September 2011. The construction cost and the required surrounding infrastructure represent an overall investment of €140 million.

An eco-efficient building

The L-shaped A350 XWB Final Assembly Line covers a total area of 7.2 hectares. The part dedicated to the aircraft halls represents 53,000 square metres and in addition are 21,000 square metres of ancillary buildings that house the supply chain services, stores, workshops and offices as well as 20,000 sq. metres of taxiways and runways. The building is 300 metres large, 125 metres long and 35 metres tall. In compliance with Airbus' commitments to eco-efficiency, the Final Assembly Line is the "greenest" ever built by Airbus and meets the 2005 Thermal Regulation insulation standards, which is not compulsory for that type of industrial building.

Concerning the earthworks, many of the materials present on the site were recycled during the construction work. The taxiway and aircraft parking zone where the building is constructed were planed off, crushed and re-used in the new building, thus reducing the volume of materials brought in from quarries. Altogether, around 10,000 cubic metres of materials were recycled, thereby significantly reducing lorry traffic (nearly 1,000 fewer lorries).

Essentially natural lighting

Natural lighting is used as extensively as possible in the aircraft halls to improve working comfort, keep the use of artificial lighting to a minimum and reduce electricity consumption. The windows, polycarbonate panels and Skydom roof (vaults) have a surface area of more than 6,300 square metres, the equivalent of 24 tennis courts.

An energy management system has been implemented in order to optimise the use of liquids and power according to the needs and working hours (weekends, nightshifts, etc.).

22,000 square metres of photovoltaic panel roofing

The flat part of the roof has a total area of 44,000 square metres, half of which are fitted with photovoltaic solar panels. The power generated by these panels is equivalent to the amount of electricity needed to light 83,000 square metres of offices. It is estimated that this building can produce 55 per cent of its own energy and therefore avoid production of 150 tonnes of CO^2.

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Building-work organization
Airbus was responsible for development and project management was entrusted to SETEC for the engineering aspects, associated with the Cardete et Huet firm of architects.

The work was split into three main packages: the first one was managed by two companies from the FAYAT Group (Castel et Fromaget associated with SAREC) and included the construction of the framework, cladding and roofing. The second one, including workshops, offices and logistical activities, as well as earthworks, civil engineering and technical bodies, was placed under the responsibility of the VINCI Group (GTM, SOCOTRAP, GBMT, SOGEA, INEO, TUNZINI, FOURNIE GROSPAUD). The final work package, covering the handling equipment, was entrusted to REEL, a LEVMAN Group company.

The worksite generated 400 jobs for the 2009-2011 period, 50% on site and 50% in preparation and manufacturing outside the site.

When the A350 XWB programme reaches full production rate, the number of employees working on this site should be around 1,500 people.

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