

CIDETEC ULTRA DRY ROOM

PROJECT VISION

CIDETEC is an applied research organisation that integrates three technology centres of international reference in Energy Storage, Surface Engineering and Nanomedicine. In this case, we have worked with CIDETEC Energy Storage, which is the sector of the organisation that deals with research and development in advanced battery technologies. They have been designing, developing and testing the batteries of the future for 25 years. Its headquarters are currently located in the Science and Technology Park of Gipuzkoa, in Donostia-San Sebastian. Although they are constructing a new building in Zubieta, where we have been awarded the new ultra-secure rooms that are going to be built.

Five ultra-dry rooms (-50°DP) with a total surface area of 450 m² will be built. These types of rooms are used in the manufacture of lithium batteries. It is important that the humidity level is kept to a minimum so as not to damage the products. In this case the process requires a minimum level of humidity in the environment, although it is not necessary that the room is classified, i.e. that the level of particles is controlled. To ensure room conditions, a total flow rate of 124,200 m³ is foreseen.

This award is very important to continue Valtria's leadership in ultra dry room installations and to expand our reference portfolio. This type of hall has enormous potential, as the manufacture of electric vehicles requires the construction of ultra-dry halls that enable the production of the necessary lithium batteries to be boosted. At the European level, the construction of several giga-factories for the production of these batteries is planned.

CURRENT ARRANGEMENTS

As an initial stage, a great deal of detailed engineering and BIM (Building Information Modelling) modelling work is required. To do this, we will need the help of the Barcelona Engineering Department.

The work will be managed by staff from the Bilbao Delegation. Although we will have the support of Enric Juera as Project Manager. Koldo Oyagüez will be the Production Manager, while Iñaki de Miguel will be the Site Manager.

INNOVATIVE TECHNOLOGIES

We have selected state-of-the-art air handling equipment that achieves the level of dehumidification to meet the specific needs of this application; energy efficient, smaller equipment with higher performance, high efficiency EC fans, thermal bridge breakage in the construction structure, high level of airtightness with reliable, efficient and

resistant enclosure, with excellent performance thanks to the technology applied to the rotor.

Highly airtight welded duct installation with welded flange joints, which minimises air leakage and humidity infiltration in the rooms to a minimum, with the consequent energy savings in the air drying equipment.

Enclosure with maximum watertightness, based on tongue and groove joints, with 4 sealing points per joint. The sealing elements are non-water based, which means that they are not sensitive to the ULTRA-DRY conditions, which we will have inside the rooms. Highly watertight doors with a static seal at the entrance of each room are planned to be installed. With these very low-maintenance doors, a high level of watertightness is achieved, as the door closes with a static seal on all four sides of the door. The flooring in the rooms shall be conductive vinyl with vapour barriers.

In terms of safety, we have developed a control integration using a Siemens PLC model 1513 R-1-PN. It is a redundant PLC that considerably improves security since, as it is a closed-ring system, redundancy is established in the event of a failure, with the CPU protected and the data safeguarded.

Energy consumption counting and monitoring is foreseen: The installation shall have electricity consumption meters at the main switchboards and energy meters (at each hydraulic control panel) at all consumers in the installation. This will create an installation that allows consumption monitoring and can be incorporated into the AI (Artificial Intelligence) data analysis project that Valtria is developing for its critical and energy-intensive installations.

DURATION

This specific work will consist of two phases:

The first will focus on the design, engineering and construction of 6 ultra-dry rooms in a new building being constructed by the property. To this end, 5 new dehumidifiers will be installed and one existing dehumidifier will be used. This first phase will last 35 weeks and needs to be coordinated with the company in charge of the civil works of the new building.

The second phase consists of the dismantling, removal, installation and commissioning of 3 pieces of equipment (dehumidifier, chiller and boiler) which are located in the client's current installations.