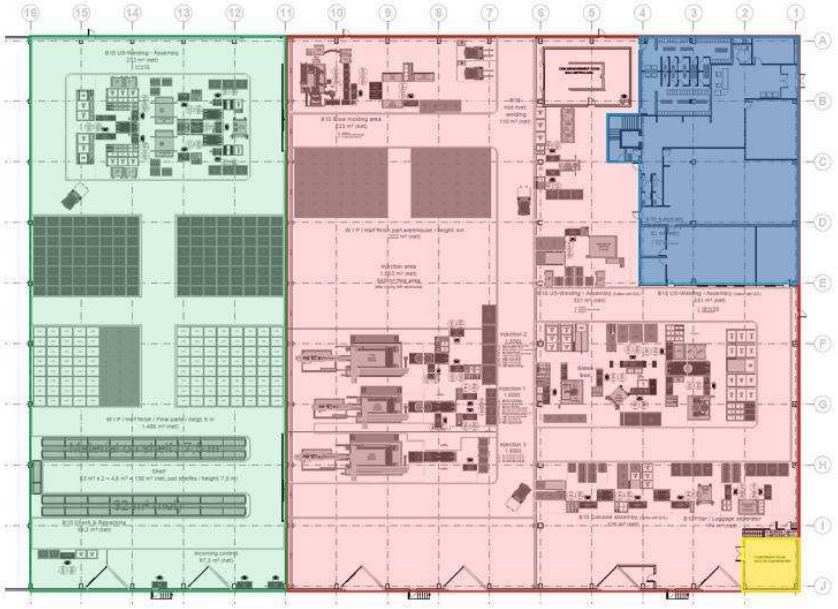

Image 3. Distribution by use

3 APPLICABLE REGULATIONS

For the activity and uses to which the building is intended, the following Rules and Regulations are applicable, with their respective updates:

- Technical Building Code, Royal Decree 314/2006, of 17 March, with its Basic Documents and subsequent updates.
- Law 31/1995 on the Prevention of Occupational Risks.
- Royal Decree 486/1997, of 14 April, which establishes the minimum health and safety provisions in the workplace.
- Royal Decree 1627/1997, of 24 October, which establishes minimum health and safety provisions in construction works.
- Electrotechnical Regulations for Low Voltage (REBT) and Complementary Technical Instructions according to Royal Decree 842/2002, of 2 August, BOE no. 224 of 18 September 2002, and subsequent updates.

All those Regulations that are not specifically contemplated in the previous list but that are applicable to it, as well as all those to which reference is made.

4 HVAC INSTALLATION

The proposed installation consists of two differentiated solutions. On the one hand, the areas of the warehouses with static workstations and on the other, the injection machine area.

In the first case, given the large volume of air in the warehouse as a whole, it is not efficient or technically feasible to air condition the entire building. Therefore, punctual and/or mobile equipment is installed in areas with a permanent presence of workers, so that the thermal criteria established by RD 486/1997 are met.

Heating is solved by electric fan heaters anchored to walls or pillars, with a range of up to 19 m to be able to cover open areas. They incorporate a small controller for their operation.

As for the temperature in summer, portable evaporatives are installed, with a maximum consumption of 85 l/h each. Depending on the area to be covered, two different sizes of equipment will be installed: the small one, with a fan of 5,760 m3/h and 0.75 kW; and the large one, with a 13,511 m3/h fan and 2.2 kW.

This equipment requires an open circuit water intake (plumbing, sanitary water), with a 10 m hose. The drainage must be done manually and according to the maintenance requirements.

Given that these are portable or mobile devices, both the installation and the supply of these could be assumed, if required, by the customer. For these purposes, what is essential is to execute the electrical and connection installation necessary for their operation.

The distribution of plumbing pipes will take advantage of the bridge crane beams, walls or other existing structures or trays.

As for the injection machine area, with an initial number of machines of 3 and reserve space for more future units; each injector uses refrigeration machines (outside the scope of this project, being a peripheral of the process machinery) that evacuate a maximum of 98 kW each to the environment. To try to evacuate this heat in unfavourable weather, a cross ventilation installation is proposed. On the south façade, and at a height of about 10 m (to be confirmed after on-site stakeout), wall-mounted fans are installed to extract hot and stratified air. On the north façade, admission is made naturally by means of 2.9x1.48 m outdoor grilles.

The regulation and control of these fans will be carried out manually, by means of speed selectors (frequency inverters integrated into the electrical panel).

4.1 ELECTRICAL INSTALLATION

At the electrical level, two specific electrical panels are generated. One to service the equipment in hall 8 and the other for the equipment located in halls 9 and 10.

These panels already have a circuit and space defined for them in the general panel of the plant. The cabling will take advantage of the trays already executed in the previous batches of installations.

4.2 PLUMBING

As described above, in the case of air conditioning equipment for the summer season, it is necessary to undertake a plumbing installation that provides sanitary water to the mobile evaporatives to be installed in areas with permanent workstations.

To this end, it will start from the plumbing connections located on the north façade of the buildings, specifically from the existing one in nave 9. If necessary, warehouse 8 has another similar connection in the same area.

A perimeter plumbing installation with DN25 pipe will be drawn in the warehouse, using the beams of the overhead crane, walls or installation trays; as shown in the attached plans.