



An industrial facility owned by



Composites

AEROPOLIS FACILITIES





FACILITIES

TOTAL LOT AREA

6.296,27 m²

TOTAL CONSTRUCTED AREA

6.946,61 m²

WORKSHOP PREMISES

5.005,63 m²

Ground floor: 2.823,54 m²

First floor: 720,07 m²

Second floor: 1.462,02 m²

OFFICE BUILDING

1.940,98 m²

Ground floor: 423,65 m²

First floor: 480,70 m²

Second floor: 499,00 m²

Third floor: 499,00 m²

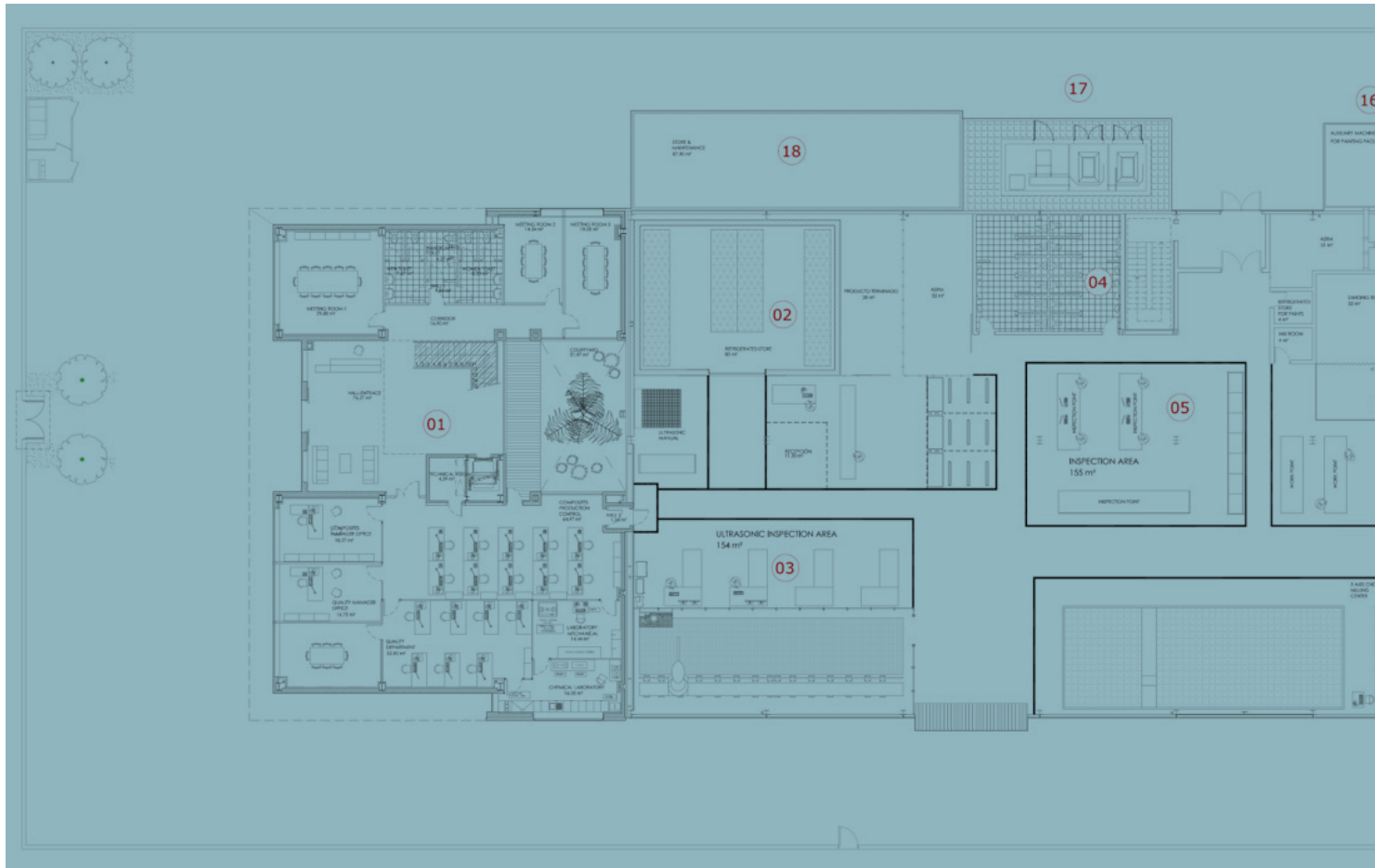
Turret floor: 38,63 m²

OUTDOOR COURTYARD

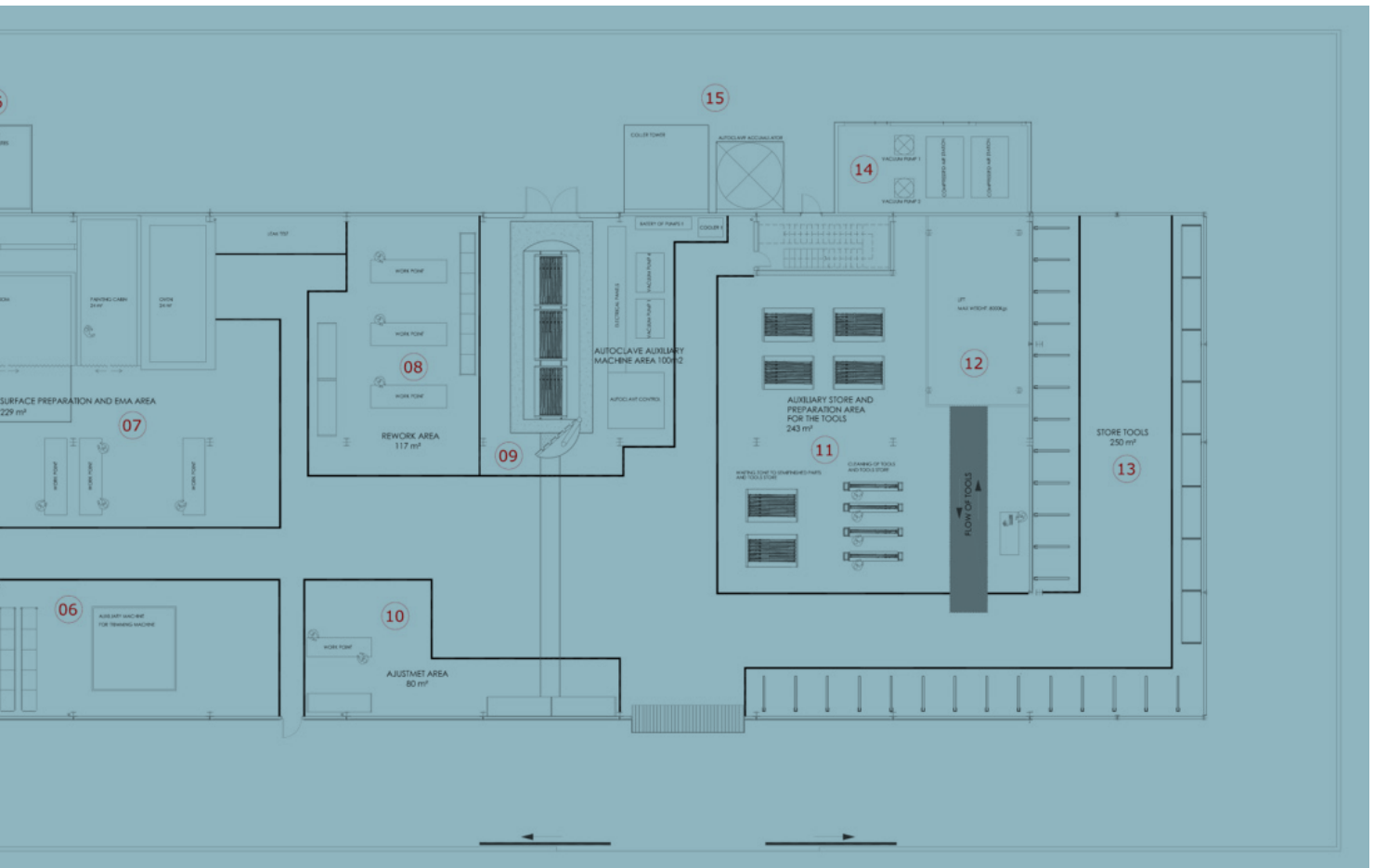
3.246,97 m²



COMPOSITES GROUND FLOOR



1. OFFICES
2. REFRIGERATION CHAMBER (COLD STORAGE)
3. ULTRASOUND INSPECTION AREA
4. SHOP FLOOR RESTROOMS
5. VERIFICATION AREA
6. TRIMMING AREA
7. SANDING AND PAINTING AREA
8. REPAIR AREA
9. PRESET AREA



- 10. AUTOCLAVE AREA**
- 11. HOLDING, CLEANING AND DEMOULDING AREA**
- 12. SERVICE LIFT/ELEVATOR**
- XX. TOOLING STORE**
- 13. COMPRESSOR AND VACUUM ROOM**
- 14. AUTOCLAVE AUXILIARY INSTALLATIONS**
- 15. AUXILIARY PAINTING, SANDING AND STOVE INSTALLATIONS**
- 16. TRANSFORMATION CENTER**
- 17. MAINTENANCE WORKSHOP**

GROUND FLOOR DESCRIPTION

01 OFFICES

- Built area: 423 m²
- Interior patio area: 52,11 m²
- Elevator with access to all floors.
- Centralized air in all areas.
- Network installation for all areas and workstations.

Capacities

Reception: area: 72,10 m²

Restrooms: for men, women, and handicapped.

Men's restroom: 7,67 m²

Women's restroom: 8,33 m²

Handicapped restroom: 4,27 m²

Meeting rooms: four meeting rooms.

Room 1: 29,88 m²

Room 2: 14,54 m²

Room 3: 19,05 m²

Room 4: 18,08 m²

Offices: there are two offices built.

Office 1: 18,27 m²

Office 2: 17,72 m²

Work areas: currently the work area for the various office workstations are distributed in two zones.

Work zone 1: 64,97 m²

Work zone 2: 35,44 m²

Laboratory: there is a laboratory divided in two work zones.

Laboratory room 1: 14,44 m²

Laboratory room 2: 15,99 m²

02 REFRIGERATION CHAMBER (COLD STORAGE)

- Area: 80,00 m²
- Dimensions: 11,00 x 8,30 x 3,50 m
- Facility certified with aeronautic certification.

Construction features

PIR Panels (Poliisocianurato). Polyisocyanurate, meet Euroclass flammability Bs2d0), for walls and ceilings.

Finishing. Interior and exterior 0,5 mm color band around profiles.

Panel thickness. 150 mm.

Freezer chamber floor insulation with polyisocyanurate sheets (PIR), double-ply for a total of 120 mm, including a vapor barrier above and below the insulation.

Door.

- Sliding refrigerator door. Dimensions 3,000 x 2,900 mm
- Application: -20°C
- Insulation: Injected polyurethane.
- Electronic automation
- Curtain of PVC strips

Refrigeration facilities.

- Compressor:
Compressor brand: BITZER (CE approved device)
- Condenser:
CE approved device
Condenser brand: ECO
Design according to the extreme conditions of the area (tropicalized)
- Evaporators (2 units):
CE approved device
Brand: ECO
Type: Cubic
Defrost: Electric
Units: 2
- Electronic expansion valves. The injection of the coolant into the evaporator is carried out using the electronic expansion valve, which allows for the following improvements:
Total utilization of the evaporators
Improved utilization of the exterior conditions (when favorable)
Better system regulation
A significant energy savings (approx. 25%)

03 **ULTRASOUND INSPECTION AREA**

- Area: 154,00 m²
- Currently available utilities: water, electrical, network and compressed air installations.

Area currently designated for automated ultrasound inspection, includes water collection trough and specialized foundations for automated ultrasonic inspection machinery.

Ultrasound robot not included.

04 **SHOP FLOOR RESTROOMS**

- Men's restrooms: area: 23,68 m².
- Women's restrooms: area: 23,68 m²
- Utilities: electrical, lighting, and hot- and cold-water installations.

05 **VERIFICATION AREA**

- Area: 155,00 m².
- Currently available utilities: electrical installation, network installation, and vacuum and compressed air installations.

Area currently designated for the workstations for verification by qualified composite materials staff. Includes vacuum installations for installing a vacuum verification table.

06 **TRIMMING AREA**

- Area: 239,87 m².
- Currently available utilities: electrical installation, network installation, and vacuum and compressed air installations.

Area currently designated for the trimming of composite material products, with the possibility to install numerical control (CNC) machinery.

Trimming machinery not included.

07 SANDING AND PAINTING AREA

- Total area: 325,08 m².
- Currently available utilities: water, electrical, network and compressed air installations.
- Distribution: Store, cold storage, sanding booth, mixing booth, painting booth, stove, work area.

Store

31,00 m². Facility certified with aeronautic certification.

Sanding booth

55.00 m², with lighting installation, compressed air to service pneumatic tools and dust extraction installation. Facility certified with aeronautic certification. Primary characteristics:

- Construction features: polyurethane foam insulating panels.
- Access doors: 2 sliding doors, manual operation.
- Work temperature: room temperature.
- Number of air changes: 475 changes/hour.
- Air characteristics: filtered linear Flow of 0,4 – 0,6 m/s over the surfaces being sanded, by impulsion and aspiration of air.
- Air purification system: dry filters.
- Filtration quality: f-8.
- Lighting system: > 750 lux 1 meter above the floor.

The principal of the function of this type of facility is based on an air barrier over the entire front area of the booth, thus preventing possible dust leaks to the exterior.

The booth is formed by a self-supporting metallic structure, with enclosures formed with 50mm thick sandwich panels, with a Wall-Door, for part and personnel access.

The entrance of the air is filtered using covers, and will be carried out in the upper area, while the aspiration will be frontal in the rear/back of the booth. On this same surface a filtration system is located, complete with filtering cartridges that will separate dust from the air used.

The aspiration fan is located behind the filter, that is to say, the clean air area, on a metallic structure located outside the warehouse. The air is expelled directly outside through a galvanized metal flue.

Cold storage

4.00 m², constructed with polyurethane panels. With air conditioning installation by 4,00 Kw conducts. Facility certified with aeronautic certification.

Mixing booth

4.00 m², constructed with polyurethane foam panels. With air conditioning installation by 4,00 Kw conducts. Facility certified with aeronautic certification. Primary characteristics:

Air aspiration fan. CMP -1025-4T-1, 1Kw.

Metallic worktable, measuring approx. 1.20 x 0.8 x 1.00 m., equipped with frontal aspiration via aspiration hood, and lateral aspiration via two lower hoods.

Aluminum CAA air damper, measuring 400 x 400 mm. As well as 200 mm actuator with 24V motor all/nothing to control opening and closing.

Painting booth

24.00 m², with lighting installation, compressed air to service pneumatic painting tools. Facility certified with aeronautic certification. Primary characteristics:

Interior dimensions: Planta de 8,00 x 3,00 y 2,50 m.

Construction features: Polyurethane foam insulating panels.

Access doors: 2 sliding doors, manual operation.

Work temperature: 20-32°C.

Relative humidity: 30-70%.

Number of air changes: 420 changes/hour.

Air characteristics: filtered linear Flow of 0,4 – 0,6 m/s over the surfaces being sanded, by impulsion and aspiration of air.

Air purification system: dry filters.

Filtration quality: EU-7.

Lighting system: > 750 lux 1 meter above the floor.

Due to the functioning of the booth and requiring an inferior aspiration, the cabin has a pit of about 500mm created by metal profiling to form the general aspiration plenums.

The impulsion plenum is located over the structure itself and ensures the correct delivery and uniformity of the air flow by using a flow distributor and a final filtration of the air to be introduced.

The effective working area inside will be 6,000 x 2,000 mm., that is, the entire floor except for a lateral perimeter where the operator will be located to carry out the painting tasks.

Aeronautic parts painting booth designed following laminate system principals with impulsion from above and aspiration from below, as well as a controlled environment both in terms of temperature (summer and winter schemes) and humidity.

The operating principle of this type of facility is based on propelling air from the upper part of the booth, conveniently filtered and conditioned (both temperature and humidity) and aspirating it through the lower part of the booth.

The impulsion will be carried out with an air treatment unit, consisting of a prefiltration, a filtration, two phases of air conditioning, a humidification phase and a block of electrical resistances for temperature peaks in the winter scheme. The aspiration, however, is carried out through three stages of filtering, using as a depressive device a fan with a non-sparking system, to avoid possible problems if some of the Paint were to accidentally reach the fan.

During the painting process a rigorous control of the thermo-hygrometric conditions that will drag the propelled Paint towards the bottom, where it will be aspirated and filtered to then be expelled to the exterior.

Stove

24.00 m², with interior vacuum installation. Facility certified with aeronautic certification. Primary characteristics:

- Interior dimensions: floor measuring 8.00 x 3.00 y 2.5 m.
- Enclosures: triple layer formed by 100mm thick sandwich panels, rockwool insulation and finished with sheet metal.
- Access doors: two-slat front doors with triple layer identical to walls and roof.
- Working temperature: 200 °C.
- Number of air changes: 200 changes/hour.
- Air characteristics: 100% recirculated air in turbulent flow, by impulsion and aspiration from the ceiling of the booth.

The booth is formed by a self-supporting structure. Manufactured with carbon steel profiles, and its enclosures both lateral and superior. The outermost layer is made of a 100mm thick sandwich panel, capable of withstanding continuous temperatures of 180°C. The middle layer is composed of industrial insulation made from 100mm thick rockwool, for a maximum temperature of 450°C. The finishing of the stove is made of sheet metal as a trim, both on the sides and roof.

The floor has double insulation, formed by a floor-type insulation, a rockwool insulation, identical to that of the walls, and a non-slip surface.

The access doors are at the front and made of two slats, made in the same way as the rest of the enclosure.

The equipment that makes up the heating system (centrifugal fan and electric resistances) is located in the upper part of the booth, supporting itself on its own structure.

The stove is located next to the painting booth, from which, by means of a carousel, the pieces arrive.

The principal function of this facility is based on the 100% recirculation of the air contained in the booth, supposing a certain number of hourly renewals as a function of the uniformity and thermal ramp required.

This level of ventilation is determined by the dimensions of the booth itself and the time needed to reach the working temperature. This design has been made considering that there are no volatile emissions, which ensures ability to use total recirculation.

The area is not classified as Atex and a turbulent system will be used for the correct functioning, in order to homogenize the interior temperature.

The air used for heating will be taken directly from the interior from one end of the booth, through two ducts located in the ceiling of the booth itself.

Once aspirated, the air is passed through a ventilation phase, composed of a centrifugal fan prepared for continuous use at more than 250°C, the maximum operating temperature of the stove. This equipment is responsible for the movement of all the air in use for the correct functioning of the booth and drives the hot air through a rectangular diffuser to the upper area and end opposite from the aspiration.

After passing through the fan, the air travels through six 9Kw electrical resistances located in the interconnection, and then is introduced again into the booth through the rectangular diffuser.

08 REPAIR AREA

- Area: 117.00 m²
- Currently available utilities: electrical installation, network installation, and vacuum and compressed air installations.

Area currently designated for manual repairs of composite material products.

09 PRESET AREA

- Area: 80.00 m²
- Currently available utilities: electrical installation, network installation, and vacuum and compressed air installations.

10 AUTOCLAVE AREA

- Area: 142,15 m²
- Currently available utilities: water electric, network, compressed air and vacuum installations.
- Facility certified with aeronautic certification.

Primary characteristics of the autoclave:

- Manufacturer: SCHOLZ.
- Usable diameter: 3.000 mm
- Usable length: 8.000 mm
- Working precision: max. 14 bar.
- Working temperature: 250°C max.
- Autoclave the required connections for:
 - Pressure gauge/manometer
 - Safety valve
 - Air intake and output vents
 - Water coolant intake and output
 - Control temperature and pressure
 - 96 thermocouple conducts
 - Pressure and vacuum lines for 48 sockets

11 HOLDING, CLEANING AND DEMOULDING AREA

- Area: 117,00 m².
- Currently available utilities: electrical installation, network installation, and vacuum and compressed air installations.

Area currently designated for manual repairs of composite material products.

12 SERVICE LIFT/ELEVATOR

- Manufacturer: Hidral, EH/4C
- Dimensions: 9,00 x 4,20 m.
- Type: hidráulico.
- Capacity: 8.000 kg.
- Stops: 3
- Speed: 0.20 m/s.

xx TOOLING STORE

- Area: 250 m²
- Facilities: electrical and lighting installations.

Area currently designated for the storage of the toolings used for the manufacturing of composite material products. The toolings are stored in Cantilever-type shelves, with a maximum height of 4 m. and various load levels.

13 COMPRESSOR AND VACUUM ROOM

- Area: 47,00 m².
- Currently available utilities: electrical, network, compressed air and water installations.

Room designated for the compressed air and vacuum generators that service the entire plant.

Compressed air installation

- Compressor: Ingersoll-Rand.
- Low-pressure refrigeration dryer: Ingersoll-Rand.
- High-pressure refrigeration dryer: Parker Hiross.
- High-pressure filter: Ingersoll-Rand.
- Low-pressure filter: Parker Hiross.
- Low-pressure accumulation boiler: 15 bar, 2,000 L.
- High-pressure accumulation boiler: 30 bar, 83,000 L.

A compressed air generation and distribution system is designed with two basic circuits; one high-pressure at 14 bar and a second, low-pressure, at 7~8 bar.

The system generator is an Ingersoll-Rand lubricated, air-cooled, two-phase screw compressor. The compressed discharge air from the compressor, is subjected to an initial filtration using an Ingersoll-Rand filter, followed by a high-pressure refrigeration dryer, in order to reduce both humidity and oil in suspension.

From the high-capacity refrigeration dryer, it passes to a second filter and is then stored in a boiler designed for a maximum pressure of 30 bar and with a capacity of 83m³. This boiler will serve, on the one hand, to power the autoclave, by means of a direct connection, and on the other hand, as a reserve for the boiler of the low circuit, which will run through the different facilities, in the form of a closed ring and an auxiliary branch.

In the low circuit, a pressure reducer and a second refrigeration dryer will be installed, all located upstream of the accumulation tank.

The distribution pipes are Ø4" DIN-2440, except those corresponding to the Branch of the cutting room, which are Ø3". At opposite ends of the ground floor ring, water traps will be installed. The shut-off valves used are of the ball-type, with flanges, iron body, stainless steel ball, Teflon locking rings, steel lever, for a nominal pressure of 16 bar.

The dryers and filters have automatic purges.

The accumulation tanks have a safety valve and pressure gauge. Additionally, automatic purges have been installed in the drainage line.

All the drainage lines that correspond to the purges are directed to a manhole.

Vacuum installation

- Vacuum pumps: Elmo Rietschle (Siemens)
- Storage tank: 2,000 L.
- Cyclone separator.

Centralized vacuum system, formed by a ring on the ground floor and a second ring, located in the clean room, with an auxiliary branch that extends to the cutting room annex.

The active elements of the installation are two SIEMENS liquid-ring vacuum pumps, with 12 Kw of power each. These pumps are supplied by the main with water from the grid, which acts as a seal for the pump and allows the formation of a vacuum. There are non-return valves on the air-side both for entering and exiting.

The system is completed with an accumulation tank which gives inertia to the installation as a whole and the water/air cyclone separator which also functions as an exhaust silencer.

When the system starts up, beginning from the resting conditions, the two pumps work simultaneously. Once the designed vacuum level has been reached, they stop. When the pressure rises/falls above/below the setpoint of the system, one of the pumps is started, which will stop once the setpoint has been restored. If with one of the pumps working, the specified vacuum is not reached, or even is the pressure were to rise, the second pump would begin to function, until the designed conditions are restored.

The choice of the first pump to be started, in each cycle, will be manual. Accordingly, a selector will be available on the door of the electrical panel. An hourly counter will allow the alternative selection of each pump, in order to achieve a balanced operation between both.

The inertia boiler has a capacity of approximately 2,000 L. It is equipped with a vacuum gauge, vacuum breaker valve and drain connection with a manual valve.

The water/air separator cyclone, located downstream of the vacuum pumps, evacuates, from the top, the air coming from the formation of vacuum 1, eliminating, at the bottom, the water droplets that accompany the air once this air has passed through the liquid ring formed in the interior of the body of the pumps. In addition, it acts as an exhaust silencer.

The watermain supply lines to each of the pumps are $\frac{3}{4}$ " , DIN 2440, and are equipped with a pressure switch (if the main's pressure is not enough to secure the ring to the vacuum pump, these will not start), solenoid valve that opens/closes when the vacuum pump runs/stops. Additionally, they have a manual shut-off.

The vacuum lines are Ø2" DIN 2440, except for the intake and output on the air side of the pumps, which are Ø2½". Wofer-type shut-off valves are used. All sockets have two female quick connections (in series), with corresponding vacuum gauge.

14 AUTOCLAVE AUXILIARY INSTALLATIONS

Consists of the autoclave cooling system, the installation is comprised of:

Cooling tower

Made of polyester resin reinforced with fiberglass and structural elements to increase its resistance, and whose main technical characteristics are detailed below:

Model:	TVA-085.
Cooling fans.....	One, 4 Kw
Sound pressure:.....	64 dB(A).
Electrical resistances:.....	One, 3 Kw
Heat power:.....	853 Kw

Acumulation tanks

Two tanks for water accumulation: once for the accumulation of cold water and the other for hot, they are polyester GRP tanks suitable for drinking water.

Maximum volume.....	7.000 Liters.
Usable volume.....	5.000 Liters.
Manhole.....	diameter 600 mm.
Diameter.....	2.050 mm.
Length.....	2.700 mm.

Pumping group

Formed by four centrifugal pumps, for the four circuits of the cooling tower system: the tower circuit, the main circuit of the autoclave, secondary circuit of the autoclave or fan and the auxiliary tank circuit. In addition, auxiliary tank two is equipped with a centrifugal pump to bring the water from it to the hot water tank.

- **Pump EN 40 - 125 A**

Installed power	4 CV.
Nominal running flow.....	20 m ³ /h.
Height.....	20 m.c.a.
Circuit.....	Auxiliary tank

- **Pump EN 65 - 160 C**

Installed power	12,5 CV.
Nominal running flow.....	75 m ³ /h.
Altura.....	20 m.c.a.
Circuit.....	Cooling tower

- **Pump EN 65 - 200 C**

Installed power	20 CV.
Nominal running flow.....	71 m ³ /h.
Height.....	40 m.c.a.
Circuit.....	Main autoclave circuit

- **Pump MHI 204 T:**

Installed power.....0,75 CV.
 Nominal running flow.....0,6 m³/h.
 Height.....40 m.c.a.
 Circuit.....2nd circuit, fan

- **Pump EN 32 -160 C:**

Installed power.....2 CV.
 Nominal running flow.....15 m³/h.
 Height.....20 m.c.a.
 Circuit.....Auxiliary tank 2

Water softener

Water softening equipment formed by containing columns made of GRP resin. The control of the stages is carried out by means of diaphragm valves that operate automatically and are in turn controlled by an easily-programmed advanced microprocessor. It incorporates the brine preparation system from solid salt, including the double-bottom brine aspiration valve.

Model.....BI BLOC DD 300.
 Máx. flow.....12 m³/h.

Auxiliary tank

Vertical cylindrical auxiliary tank made of polyester and measuring 1.0 m³ in volume, equipped with maximum and minimum level detectors for the control of the pump forwarding water to the hot water compartment. The dimensions of this element are:

Diameter..... 1.140 mm.
 Height..... 1.280 mm.

Auxiliary tank 2

Vertical square auxiliary tank made entirely of stainless-steel measuring 1.0 m³ in volume, equipped with maximum and minimum level detectors to control the bilge pump which sends water to the hot water tank. The dimensions of this element are:

Width..... 1.000 mm.
 Legth..... 1.000 mm.
 Height..... 1.280 mm.

15 AUXILIARY PAINTING, SANDING AND STOVE INSTALLATIONS

Area where, on a metal structure, the installations and equipment for the air conditioning for the store and mixing booth, aspiration for the sanding booth, air conditioning for the painting booth and ventilation for the stove are located.

Air conditioning and aspiration of mixing booth and store

Air aspiration fan. Cmp -1025-4t-1, 1 kw.

HVAC equipment, with external unit with 4 Kw of power.

Aspiration of the sanding booth

- **Air aspiration filter**

Located at the rear of the booth, built from sheet metal and equipped with lower drawers for the collection of filtered dust and front aspiration grilles.

This filter is responsible for separating the dust generated from the air used, which will be expelled to the exterior. The primary characteristics of this element are:

Dimensions

Width: 5,810 mm.

Height: 2,500 mm.

Depth: 1,030 mm.

Production: Carbon steel

Filtering elements: 324 mm. diameter by 1200 mm. de long cartridges.

Dust collection system: removable lower drawers.

Cleaning system: pneumatic, automatic and continuous, directed by an electronic sequencer to control cleaning periods with built-in differential pressure gauge.

Clean air outlet: superior

- **Air aspiration fan**

Type: high-performance centrifugal single-ear aspiration

Rotation speed: 1,431 rpm.

Installed power: 45 Kw

Estimated absorbed power: 32.87 Kw

Performance: 76.6 %.

Sound level without soundproofing booth: 85.5 dB(A).

Approximate weight without soundproofing booth: 500 Kg.

Coupling: Transmission by belts and pulleys

Inspection hatch: Built-in.

Dimensions of external enclosure: Ø 1,530 mm.

- **Circular ducts**

Interconnection between the aspiration fan and the upper Hopper of the body of clean air of the filter, 800mm in diameter and made of galvanized steel sheets.

Painting booth air conditioning

System of introducing or propelling air: it is the system in charge of introducing air into the booth, conveniently filtered and acclimatized to reach the specified temperature and humidity schemes, and will have the following elements and equipment:

- **One (1) air treatment unit**, whose primary specifications are:
 - Type MC 240 Horizontal, located externally, built with aluminum profiles and 43mm thick sandwich type panels made from rigid polyurethane. .
 - Air flow: 26,000 m³/h.
 - Filtration:
 - Prefiltration: Synthetic EU 4.
 - Filtration: from bags EU 7.
 - Cooling section: Refrigeration power: 100 Kw
 - Cooling/heating section: Power: 100 Kw
 - Heating section: Electrical resistances: 4 x 24 Kw
 - Humidification section: Pump, wetting and draining panels made of stainless steel.
 - Impulsion section::
 - Fan..... Back-facing Blades
 - Installed power 15 Kw
 - Estimated absorbed power..... 11 Kw
 - Performance..... 80 %.
 - Rotation speed 1,533 rpm.
 - Motor..... 4 poles, IP 55-B3

- **A network of ducts that will interconnect the UTA's** with the impulse plenum and will present the necessary diameters to ensure the proper functioning of the installation.

- **An impulse plenum** made of carbon steel sheets, measuring 6 x 2 meters, and equipped with a flow distributor and a final filtration stage type PA 560 G.

- **One (1) water cooler** (cold only type) to feed the refrigeration unit of the UTA and whose main technical characteristics are:
 - Brand: Carrier
 - Nominal cooling capacity: 115 Kw
 - Coolant: R407 C
 - Hydronic group: Built-in
 - Inertia tank: 500 Liters

- **A water cooler with heat pump** (cold/heat type according to scheme) with the following characteristics:
 - Brand: Carrier
 - Nominal cooling power: 106 Kw
 - Nominal heating power: 116 Kw
 - Coolant: R407 C
 - Hydronic group: Built-in
 - Inertia tank: 500 Liters

- The cold water and hot/cold water circuits are made of carbon steel pipes for the UTA supply, including fittings and accessories, as well as a regulation system by means of total or partial water passage to the battery, through a three-way motorized valve and actuator, controlled by the instructions previously set in the temperature controllers arranged for this purpose in the general panel.

Aspiration system

Responsible for aspirating the air through the bottom of the booth, filtering it and expelling it to the exterior. The elements that form it are:

- A general plenum made of carbon steel sheet, so that it houses the entire work area.
- Dry type double filtration system (Paint-stop and Colossus) incorporated in the floor of the booth, resistant to a wide temperature range and with a fire protection level M2 (non-combustible).
- Duct network to interconnect the plenum with the aspiration fan, which will be installed in the clean air area. These ducts will offer the appropriate diameters to ensure the correct operation of the installation.
- Aspiration fan, Mod. BPR 711/B, which will be responsible for creating the necessary vacuum to ensure the correct operation of the booth. The main features of this equipment are:
 - Type: centrifugal single-ear aspiration.
 - Motor: Directly coupled, 4 poles B3.
 - Insulation: IP 55, Class F.
 - Manufacturing: Carbon steel.
 - Anti-sparking system: Built-in.
 - Rotation speed: 1,450 rpm.
 - Installed power: 15 Kw
 - Sound pressure: 79 dB(A).
 - Inspection hatch: Easy access.

Ventilation and heating of curing stove

- Recirculation fan:
Bpc 501.2 to 850 r.p.m. 5,5 Kw lg 90
- Electrical resistances, tmax 9

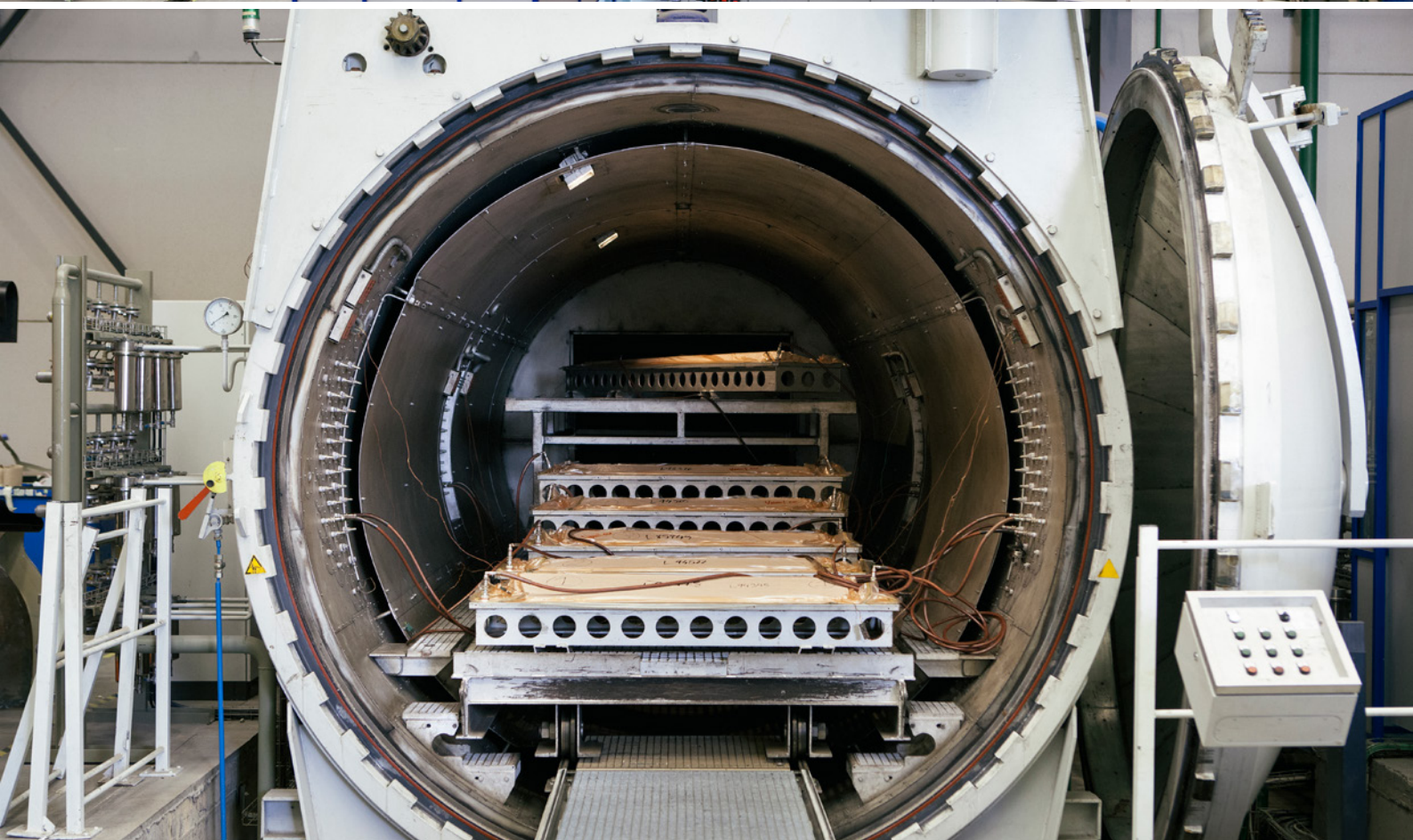
16 TRANSFORMATION CENTER

- Area: 54.00 m²
- Complete delivery center, in prefabricated concrete building with equipment for maneuvering, safety/protection and auxiliary elements.
- Transformation center in building with equipment for maneuvering, safety/protection and auxiliary elements.
- 1250 kVA transformer.
- Conductors between both centers.
- Possibility of duplicating the transformer

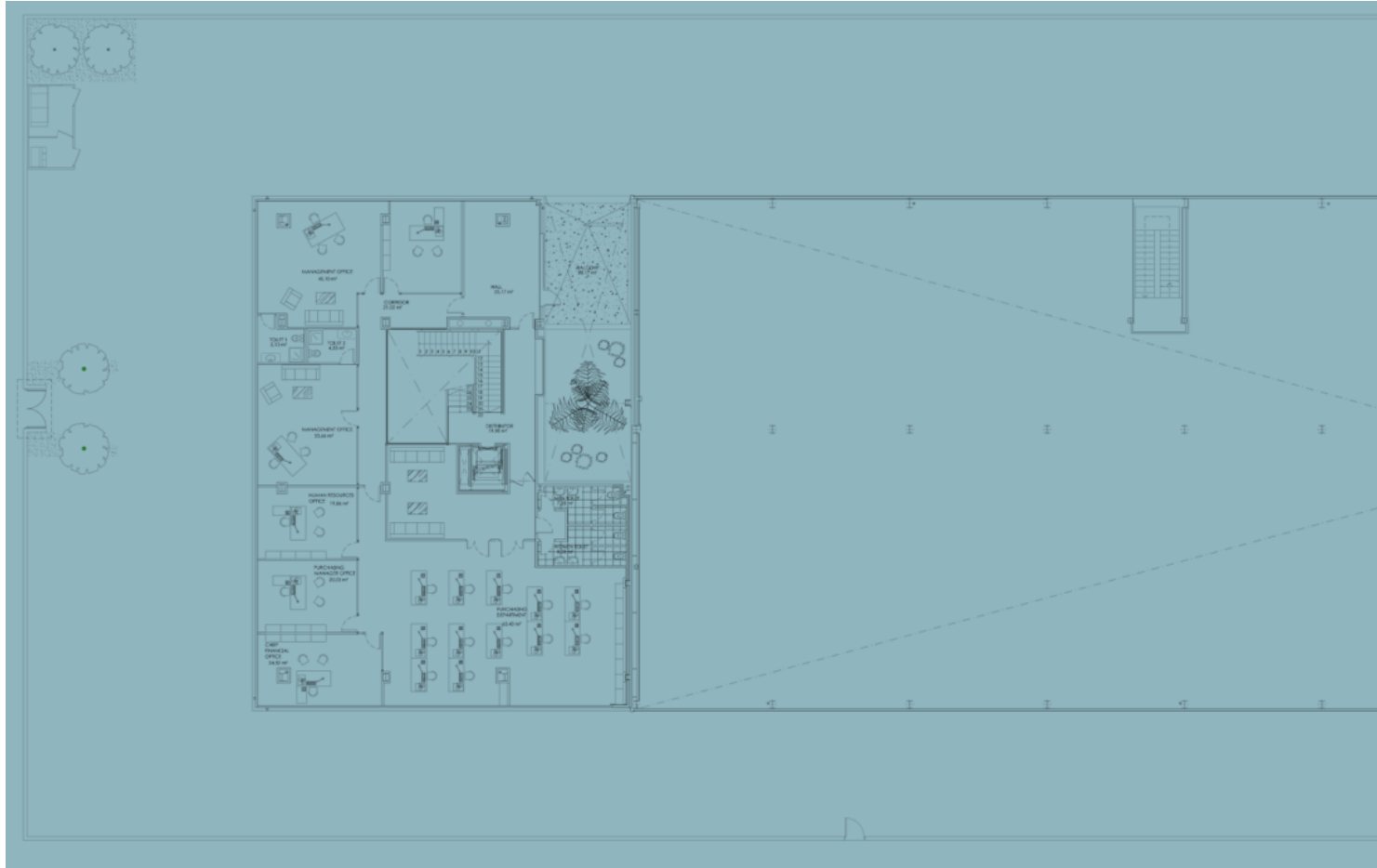
17 MAINTENANCE WORKSHOP

- Area: 87.90 m²
- Currently available utilities: electrical, network and compressed air installations.

Area currently designated for the facility's maintenance workshop.



COMPOSITES OFFICE MEZZANINE



OFFICE MEZZANINE DESCRIPTION

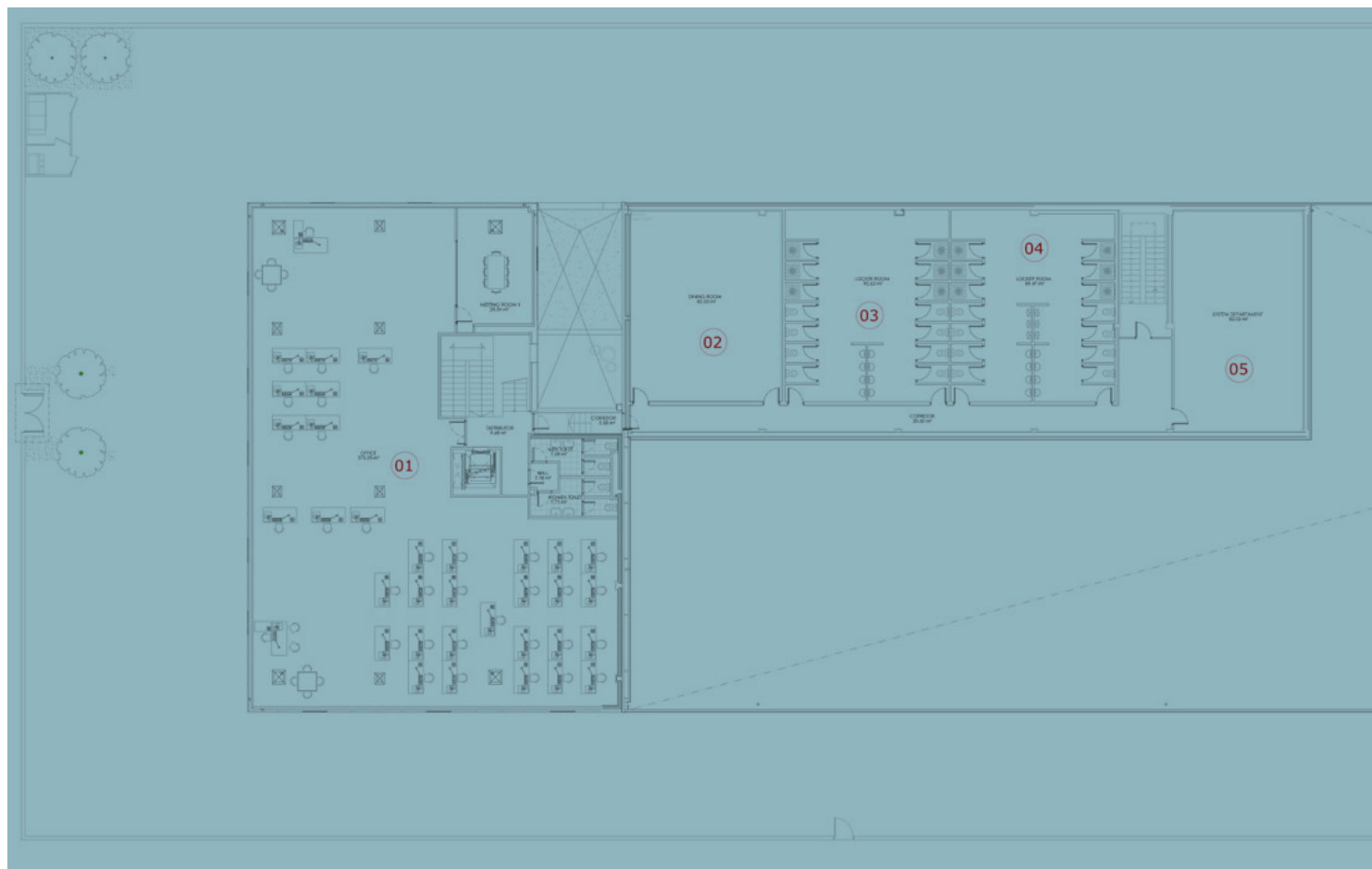
- Built area: 480.70 m²
- Terrace area: 52.11 m²
- Centralized air conditioning installation in all areas.
- Network installation in all areas and workstations.

Capacities

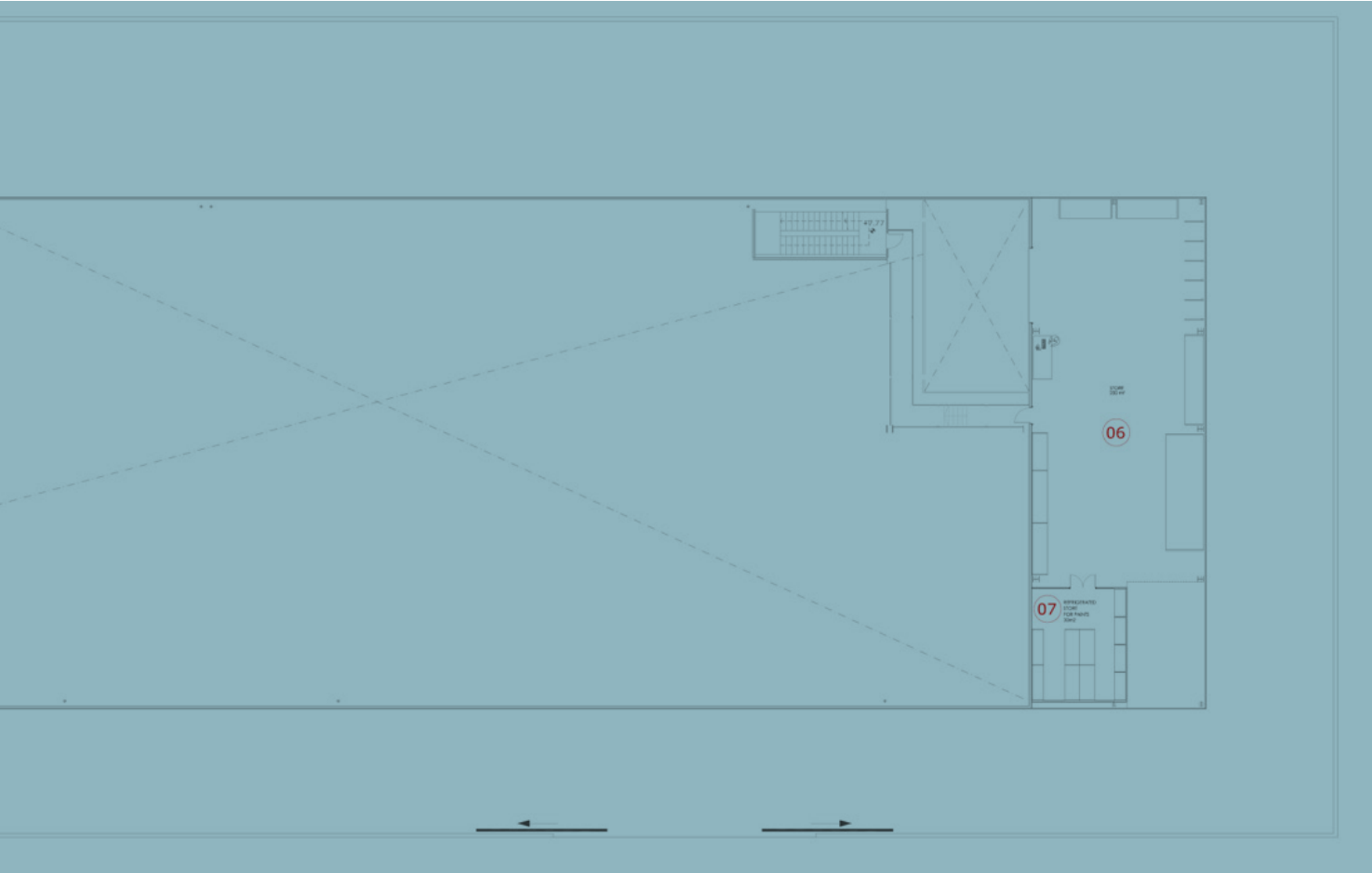
- Break room: area: 24.44 m²
- Conference room: 19.92 m²
- Reception: 25.64 m²
- Restrooms: for men, women and handicapped persons.
 - Men's restroom: 7.25 m²
 - Women's restroom: 8.18 m²
- Offices with restrooms: there are two offices with restrooms built.
 - Office 1: 40.17 m², equipped with a restroom measuring 5.13 m².
 - Office 2: 33.66 m², equipped with a restroom measuring 4.53m².
- Offices: there are three offices built.
 - Office 1: 24.52 m².
 - Office 2: 20.03 m².
 - Office 3: 19.86 m².

Work area: currently the area to place office workstations. Area: 63.43 m².

COMPOSITES FIRST FLOOR



1. OFFICES
2. CANTEEN
3. WOMEN'S LOCKER ROOM
4. MEN'S LOCKER ROOM
5. SYSTEMS MAINTENANCE DEPARTMENT
6. CLIMATE-CONTROLLED WAREHOUSE
7. PAINT STORE



FIRST FLOOR DESCRIPTION

01 OFFICES

- Built area: 499.00 m²
- Elevator with access to all floors.
- Centralized air conditioning installation in all areas.
- Network installation in the entire floor.

Capacities

Restrooms: for men, women and handicapped persons.

Men's restroom: 7.29 m²

Women's restroom: 7.71 m²

Conference room: 25.54 m²

Work area: 375.25 m² area currently designated to production, quality and engineering offices.

02 CANTEEN

- Area: 82.53 m²
- Utilities: electrical, air conditioning, lighting and water installations.

Area currently designated as a canteen for the employees, complete with all the necessary facilities that its purpose requires.

03 WOMEN'S LOCKER ROOM

- Area: 90,63 m²
- Utilities: electrical, lighting and hot- and cold-water installations.

Area currently designated as the women's locker room for the employees, complete with all the facilities that its purpose requires.

04 MEN'S LOCKER ROOM

- Area: 89.47 m²
- Utilities: electrical, lighting and hot- and cold-water installations.

Area currently designated as the men's locker room for the employees, complete with all the facilities that its purpose requires.

05 SYSTEMS MAINTENANCE DEPARTMENT

- Area: 82,02 m²
- Utilities: electrical, network, air conditioning and lighting installations.

06 CLIMATE - CONTROLLED WAREHOUSE

- Area: 250,00 m²
- Utilities: electrical, lighting and air conditioning (3 x 6 Kw) installations.
- Area currently designated for raw material storage.

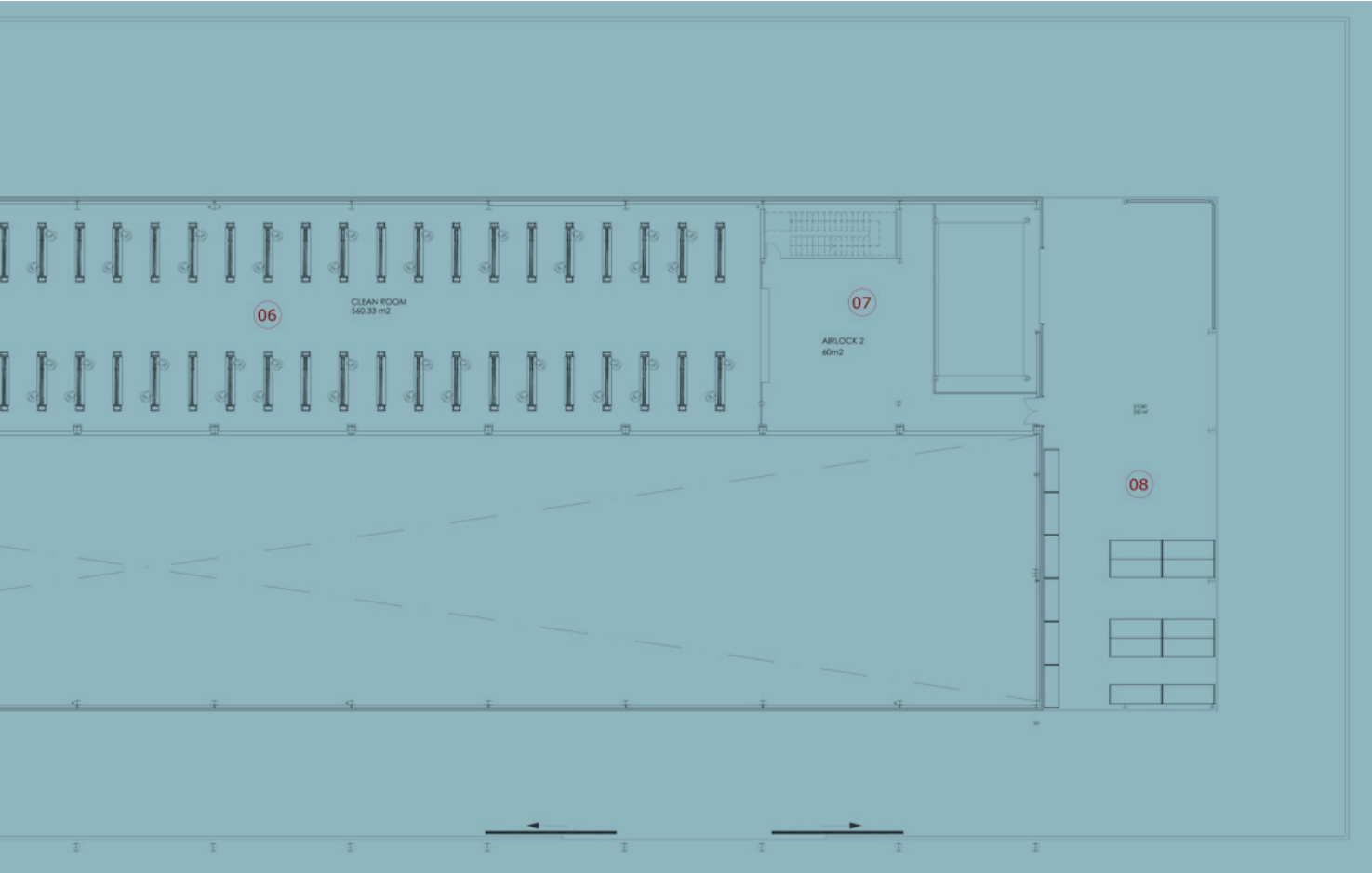
07 PAINT STORE

- Area: 30.00 m²
- Utilities: electrical, lighting and air conditioning (6Kw) installations.
- Area currently designated for paint storage.

COMPOSITES SECOND FLOOR



1. **OFFICES**
2. **CUTTING ROOM**
3. **METAL-METAL ROOM**
4. **LOCK 1**
5. **REFRIGERATION CHAMBER (COLD STORAGE)**
6. **CLEAN ROOM**
7. **LOCK 2**
8. **STORE**
9. **AIR-CONDITIONING UNITS FOR CUTTING, METAL-METAL & CLEAN ROOMS**



SECOND FLOOR DESCRIPTION

01 OFFICES

- Built area: 499.00 m²
- Elevator with access to all floors.

Capacities

Restrooms: for men, women and handicapped persons.

Men's restroom: 7.29 m²

Women's restroom: 7.71 m²

Work area: 407.16 m² area currently designated for storage and documentation filing.

02 CUTTING ROOM

- Area: 150.00 m²
- Utilities: electrical, lighting, air conditioning, vacuum and compressed air installations.
- Manufacturing: Area designated to the cutting of the ply that will later form a part, SOFITEC has a numerical control (CNC) machine.
- Facility certified with aeronautic certification.
- Interior environmental conditions:
 - Maximum temperature: 24°C
 - Maximum relative humidity at 24°C: 45%
 - Minimum relative humidity at 24°C: 25%
 - Minimum temperature: 18°C
 - Maximum relative humidity at 18°C: 60%
 - Minimum relative humidity at 18°C: 35%
 - Minimum overpressure in the room: 0.5 mm.
 - Particle control for particles larger than 0,5 µ. Maximum permissible concentration is 29300 particles/m³
 - Ventilation level: 8-10 changes/hour

Ply cut machine not included. The current machine has special characteristics that allow for high performance through long production runs. There are much more affordable machines on the market (costing 50% of the current machine's value) with sufficient technical characteristics for training and entrepreneurial ventures.

03 METAL-METAL ROOM

- Area: 110,00 m²
- Utilities: electrical, lighting, air conditioning and vacuum installations.
- Manufacturing: Area designated for the manufacturing of composite material products.
- Facility certified with aeronautic certification.
- Interior environmental conditions:
 - Maximum temperature: 24°C
 - Maximum relative humidity at 24°C: 45%
 - Minimum relative humidity at 24°C: 25%
 - Minimum temperature: 18°C
 - Maximum relative humidity at 18°C: 60%
 - Minimum relative humidity at 18°C: 35%
 - Minimum overpressure in the room: 0.5 mm.
 - Particle control for particles larger than 0,5 µ. Maximum permissible concentration is 29300 particles/m³
 - Ventilation level: 8-10 changes/hour

04 LOCK 1

- Area: 60.00 m²
- Utilities: electrical and lighting installations.
- Access point for the production rooms, whose primary purpose is to compensate the overpressure in the adjacent rooms.

05 REFRIGERATION CHAMBER (COLD STORAGE)

- Area: 40.00 m²
- Dimensions: 6,20 x 3,90 x 3,50 m
- Facility certified with aeronautic certification.

05 REFRIGERATION CHAMBER (COLD STORAGE)

- Area: 40.00 m²
- Dimensions: 6,20 x 3,90 x 3,50 m
- Facility certified with aeronautic certification.

Construction features

- PIR Panels (Polyisocyanurate, meet Euroclass flammability Bs2d0), for walls and ceilings.
 - Finish: Interior and exterior 0,5 mm color band around profiles.
 - Panel thickness: 150 mm.
 - Freezer chamber floor insulation with polyisocyanurate sheets (PIR), and checkerboard type aluminum sheets.
 - Door:
 - Sliding refrigerator door. Dimensions 2,500 x 1,500 mm
 - Application: -20°C
 - Insulation: Injected polyurethane.
 - Curtain of PVC strips
 - Refrigeration facilities
 - Compressor:
 - CE approved device
 - Compressor brand: BITZER
 - Compressor type: Semi-hermetic piston
 - Coolant: R 507 A
 - Compressor power: 7.5 CV x 2 = 15 CV
 - Model: 4CVS-6.2Y
 - Condenser:
 - CE approved device
 - Condenser brand: ECO
 - Condenser type: Axial
 - Design according to the extreme conditions of the area (tropicalized)
 - Evaporators (2 units):
 - CE approved device
 - Brand: ECO
 - Model: CTE-209L8 ED
 - Type: Cubic
 - Defrost: Electric
 - Units: 2
- Electronic expansion valves. The injection of the coolant into the evaporator is carried out using the electronic expansion valve, which allows for the following improvements:
- Total utilization of the evaporators
 - Improved utilization of the exterior conditions when these are favorable
 - Better system regulation
 - A significant energy savings (approx. 25%)

06 CLEAN ROOM

- Area: 560.33 m²
- Utilities: electrical, lighting, air conditioning and compressed air and vacuum installations.
- Manufacturing: Area designated to the manufacturing of composite material products.
- Facility certified with aeronautic certification.
- Interior environmental conditions:
 - Maximum temperature: 24°C
 - Maximum relative humidity at 24°C: 45%
 - Minimum relative humidity at 24°C: 25%
 - Minimum temperature: 18°C
 - Maximum relative humidity at 18°C: 60%
 - Minimum relative humidity at 18°C: 35%
 - Minimum overpressure in the room: 0.5 mm.
 - Particle control for particles larger than 0,5 µ. Maximum permissible concentration is 29300 particles/m³
 - Ventilation level: 8-10 changes/hour

07 LOCK 2

- Area: 60.00 m²
- Utilities: Electrical, lighting and compressed air installations.
- Access point for the service lift, and whose primary purpose is to compensate the overpressure in the adjacent rooms.

08 STORE

- Area: 250.00 m²
- Utilities: electrical and lighting installations.
- Area currently designated for storage of raw materials and finished products.

09 AIR-CONDITIONING UNITS FOR CUTTING, METAL-METAL AND CLEAN ROOMS

Air conditioners

Installation of four (4) air treatment units, one for each cutting room and two for the clean room, with the following primary technical characteristics:

Type of unit..... Horizontal exterior mounting.

Structural profiling..... Made from aluminum.

Panels..... Sandwich in rigid polyurethane, exterior in pre-lacquered galvanized steel and interior in galvanized.

Four water coolers – cold only

Installation of four (4) water cooling machines of the ONLY COLD type, one for each of the previously defined treatment units.

These will be only in case of high humidity, to dehumidify.

Four water coolers – heat

Installation of four (4) water cooling machines with HEAT pump, one for each of the previously defined treatment units.

Depending on demand, they will be in cold or hot mode.

Water ducts

Installation of water supply and return pipes from each of the eight (8) hot/cold water generators, to their corresponding air conditioners.

These pipes have been made with black Steel stretched without welding, according to DIN 2440 and in accordance with the technical specifications of the installation, and the necessary diameters for the proper operation of the facilities.

The insulation of the pipes is made from Armaflex resistant to weathering, as well as the set of supports, auxiliary elements, valves and accessories necessary for the correct assembly of the corresponding pipes, as well as four (4) regulation and thermal-hygrometric control systems, which allow remote communication via Ethernet.

In the eight circuits corresponding to each cooler, an additional tank is installed to increase the inertia of the system, according to the manufacturer's recommendations. These tanks will be depending on the installation 100 and 200 liters, their primary characteristics include their insulation and galvanized interior treatment.

For perfect temperature regulation, a three-way valve has been inserted, which is controlled by the temperature of the return to the cooling machine, and if it detects that there is no demand for cooling or heating, that is no demand, it opens and bypasses the conditioner.

Air distribution ducts

Includes the network of air distribution ducts (impulsion and return) from each air treatment unit to its corresponding room.

Additionally, each impulsion conduit has a series of electric resistance batteries inserted, one for each air treatment unit, finned battery with interior hopper connection. Its operation will be infrequent, only to support the heat pump, when this is insufficient.

Panel and electrical installation

Include the electrical panels and control systems of our teams, individually assigned in each case by rooms.

The electrical interconnection between our elements has been carried out by means of wiring under tube or tray, as well as the auxiliary elements and accessories necessary for the correct installation of all the elements.

The power supply to coolers and heat pumps is also included from our electrical panel.





