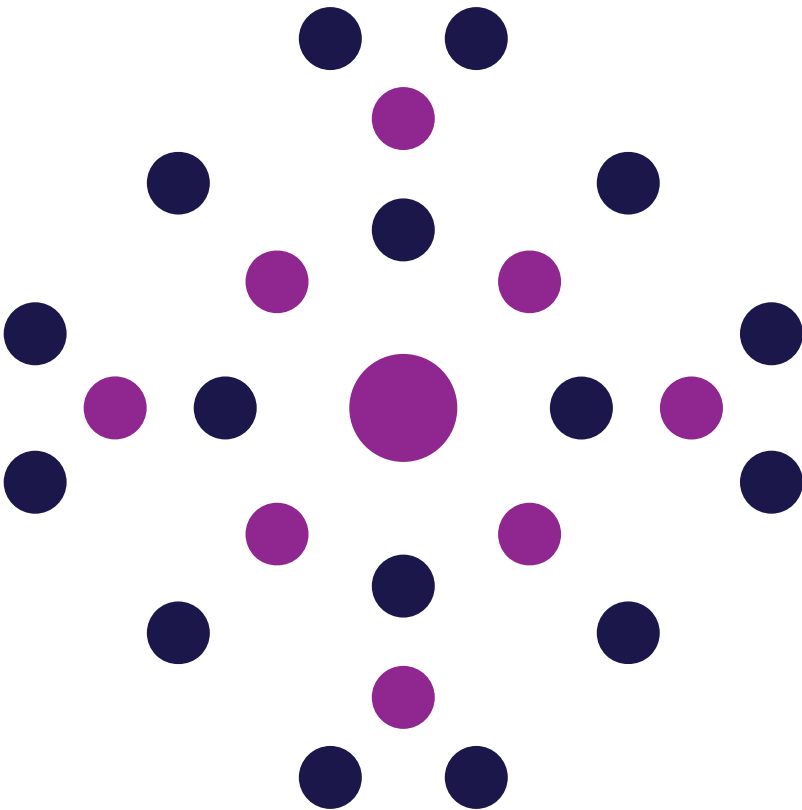


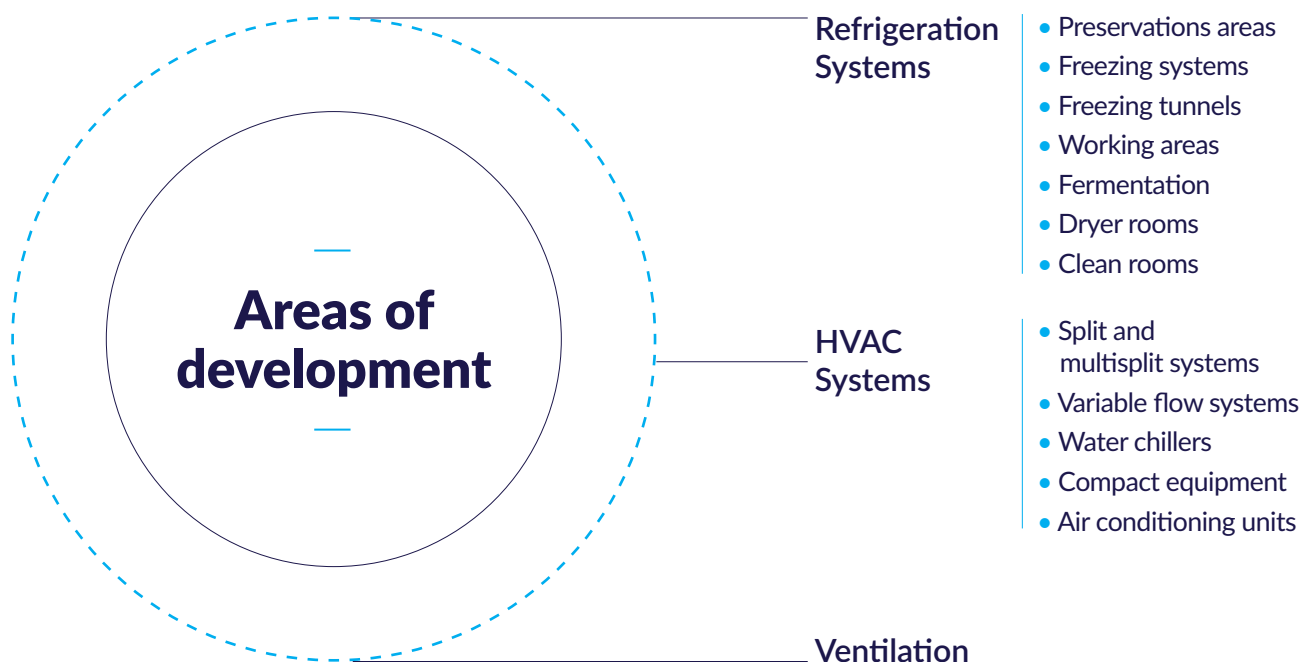
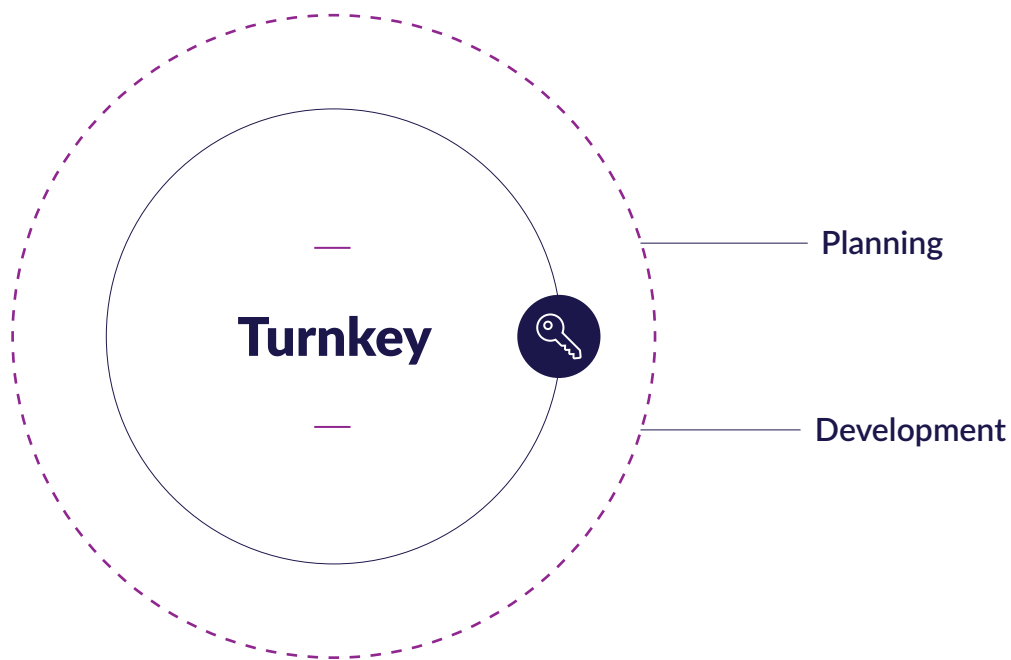
Fredlab



**Integral solutions
for pharmaceutical
manufacturing plants**

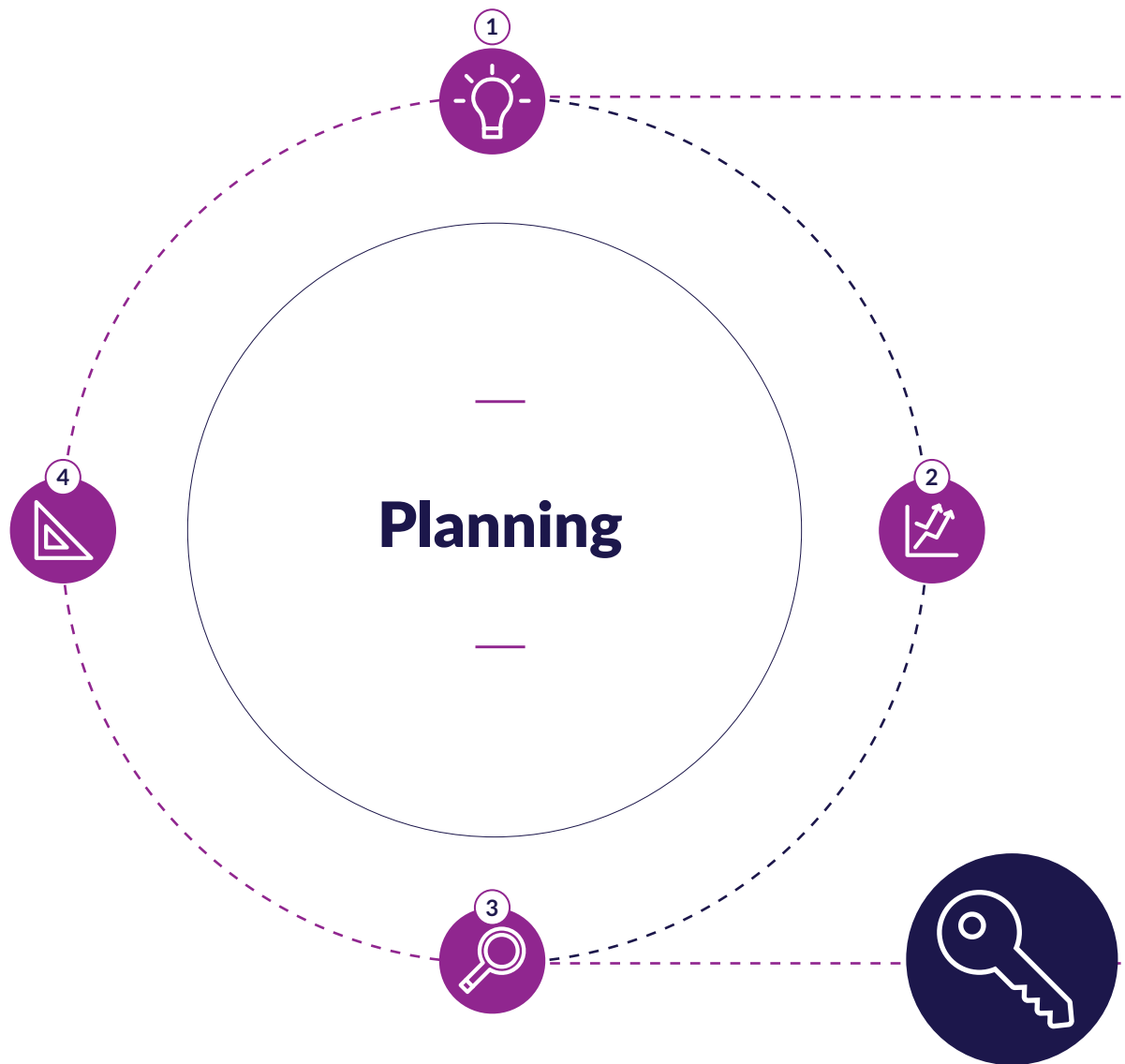
At **Fredlab** we are specialists
in the development of
turnkey projects for the
pharmaceutical, chemical,
cosmetic, veterinary,
biotechnology and
technological industries

Areas and type of products



Turnkey suppliers

Acting as main contractor



Planning

①

Basic design engineering

Development of basic engineering for the definition of the implementation of processes, equipment and working areas.

②

Risk analysis

Study of each of the risks of the processes in the geographical area of implementation to follow international and national regulations.

③

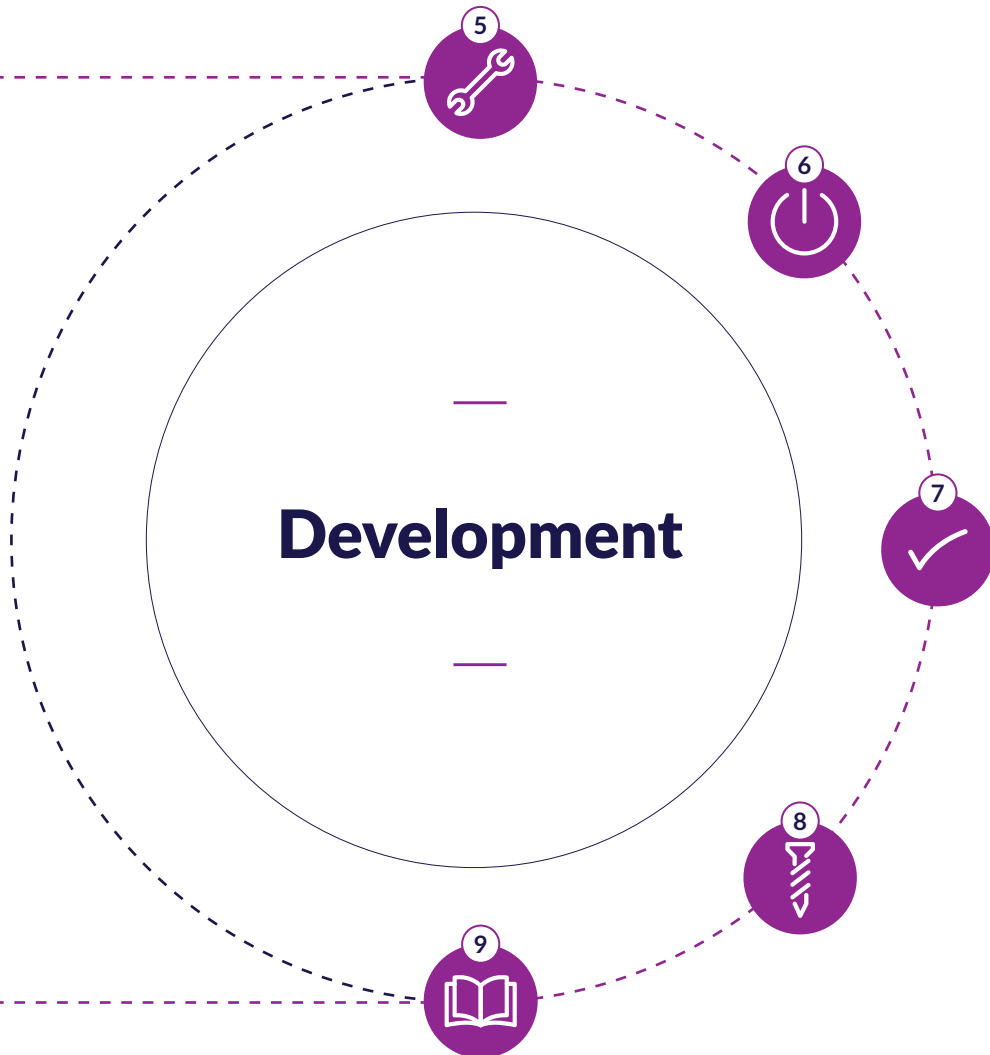
Detailed engineering

Delivery of data room sheets, bill of quantities, technical memory and construction detail drawings of all areas defined..

④

Project management

Definition of all phases of the project with its execution times validated along with the client. Project management including in all works a Project Manager from Fredlab.



Development

5

Installation

Each of the project blocks will have a different installation team and always coordinated by our Project manager.

6

Start-up

Start-ups are always done with Fredvic teams and our Project manager supervision. Until all SAT and OQs are completed, the commissioning is not completed.

7

Validation Master Plan

All pharmaceutical areas require that our teams provide together with the client a Master Plan in which delivery of the URS, DQ, FAT, SAT, IQ and OQ is established.

8

Maintenance and After-sales

Fredlab offers all its customers different maintenance plans, which can be managed telematically through SCADA installations or through on-site visit schedules.

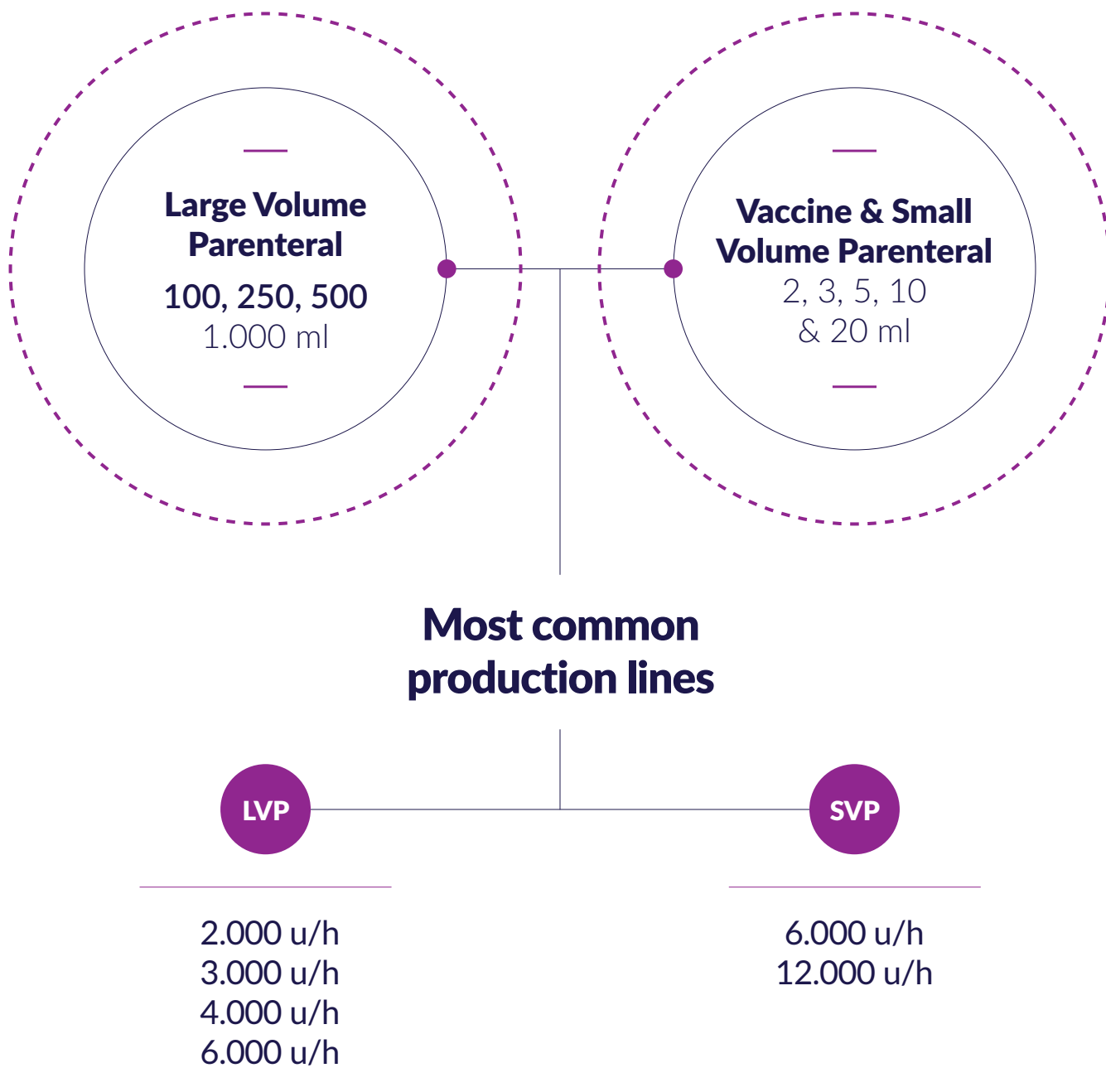
9

Training

Our project includes complete training for the personnel who will manage the plant in order to guarantee the proper operation of the system.

Standard manufacturing plant

Ex. Injectable plant





Succes case

Serum plant

HVAC & Clean Rooms



Sterilization Area



Filling Area



Mixing and dispensing areas

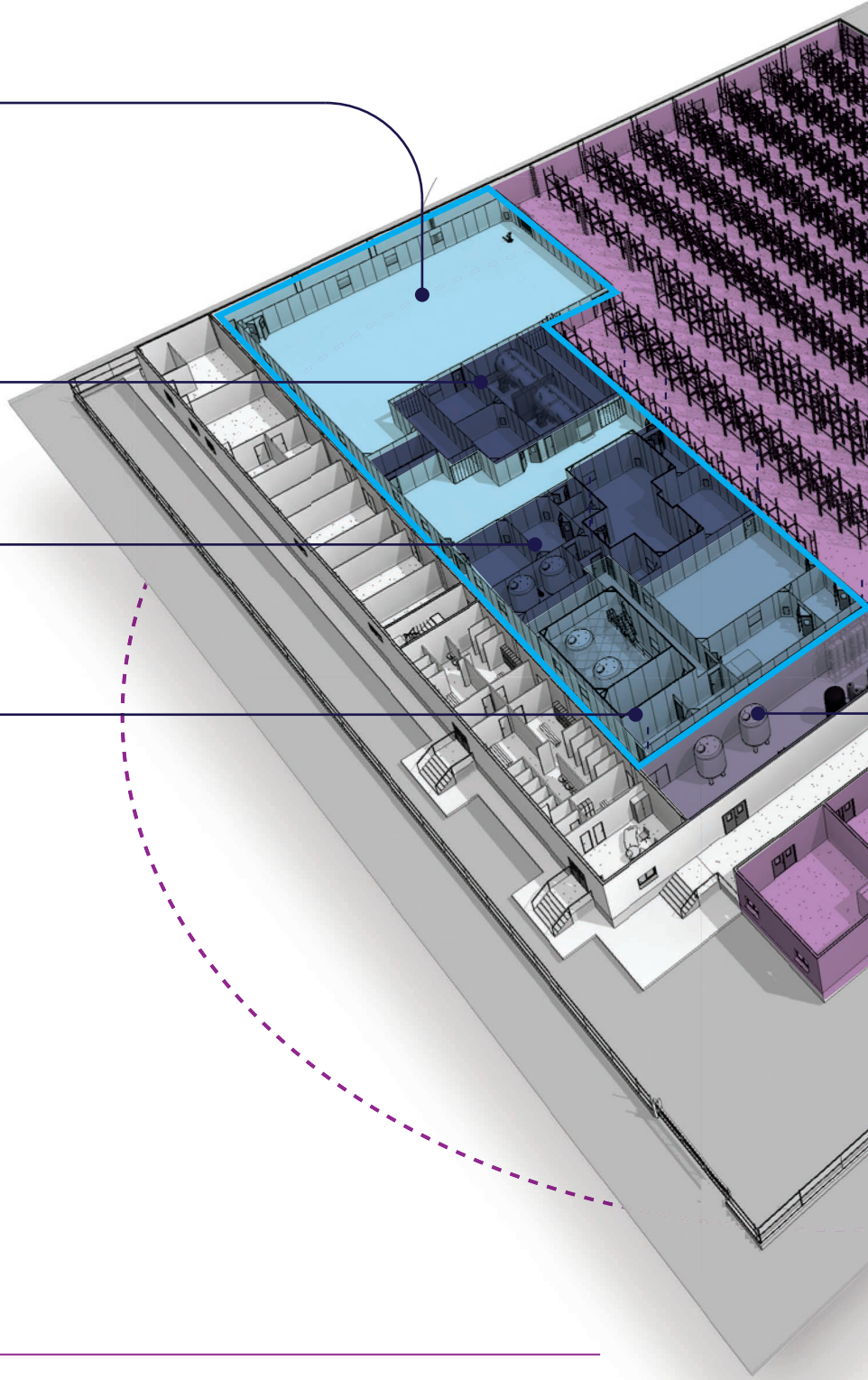


1

4


3

2

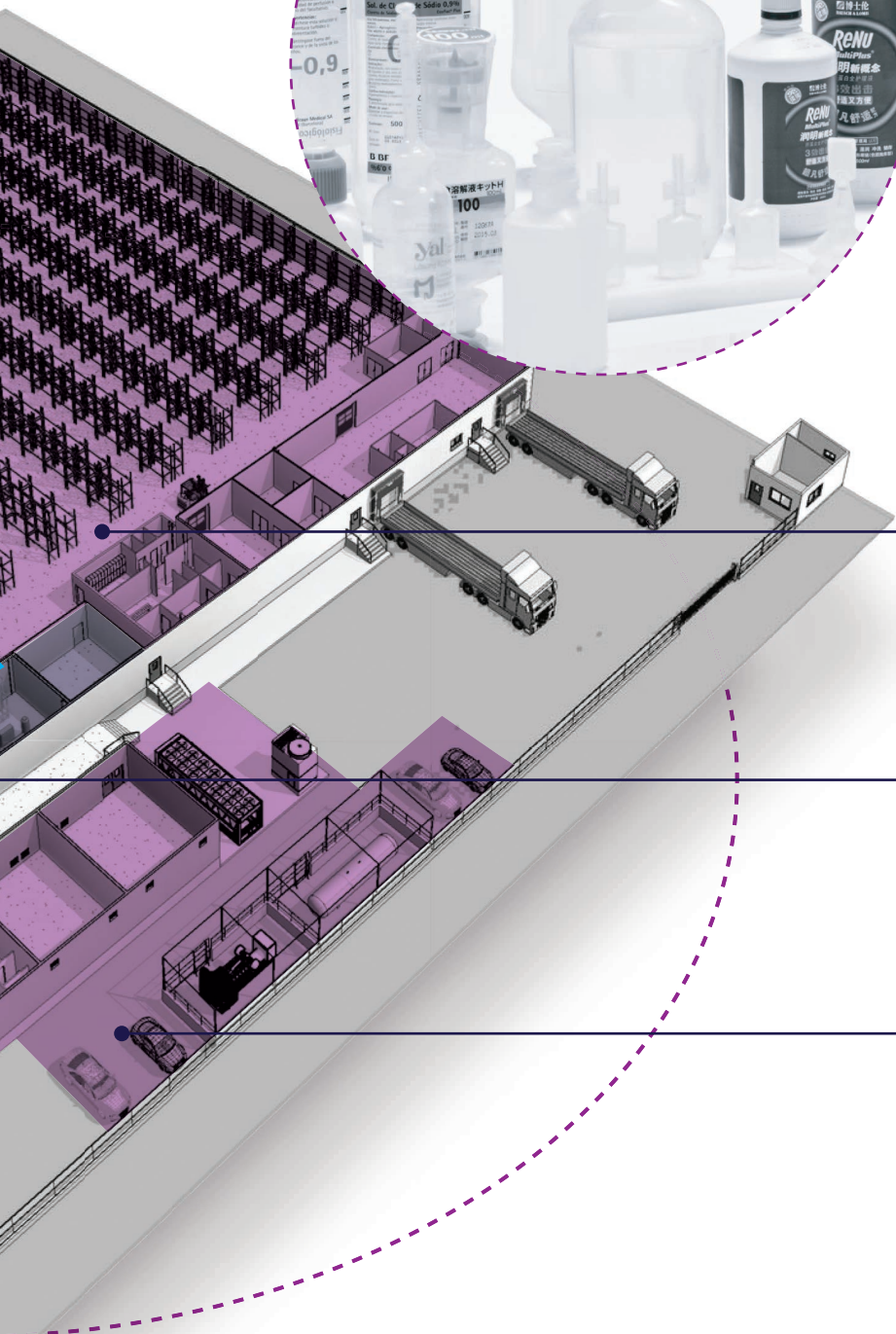


Key

 HVAC Area

 Process in each area
(Look at Flow Diagram Process)

Final product



7 Warehouse

- PM SM FP E
- R Q RA RM

6 Water Plant

- D RO

5 Utilities Area

- PL

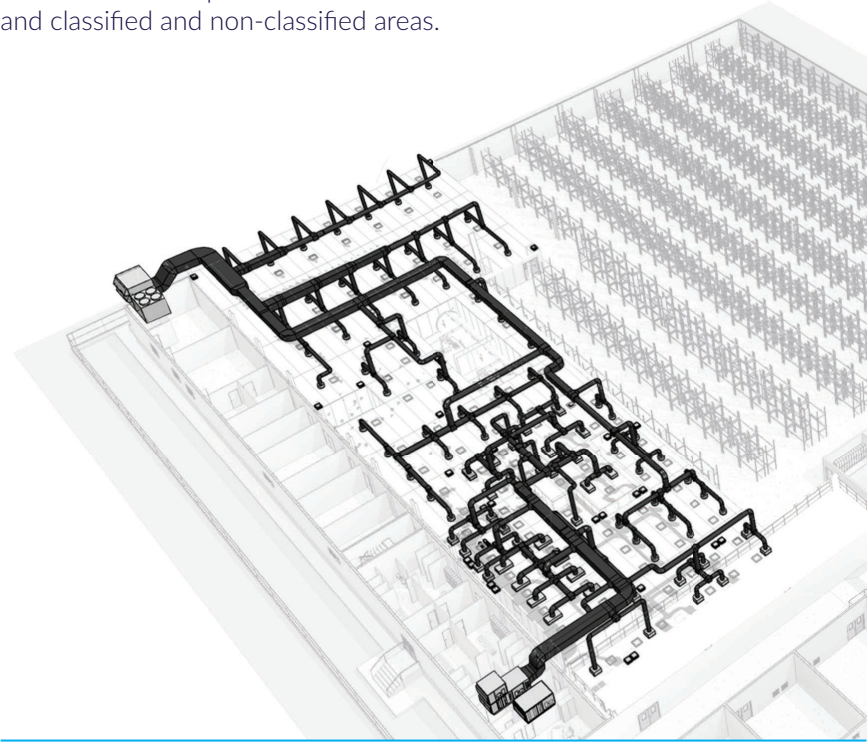




HVAC & Clean Rooms



Distribution of all production areas and classified and non-classified areas.



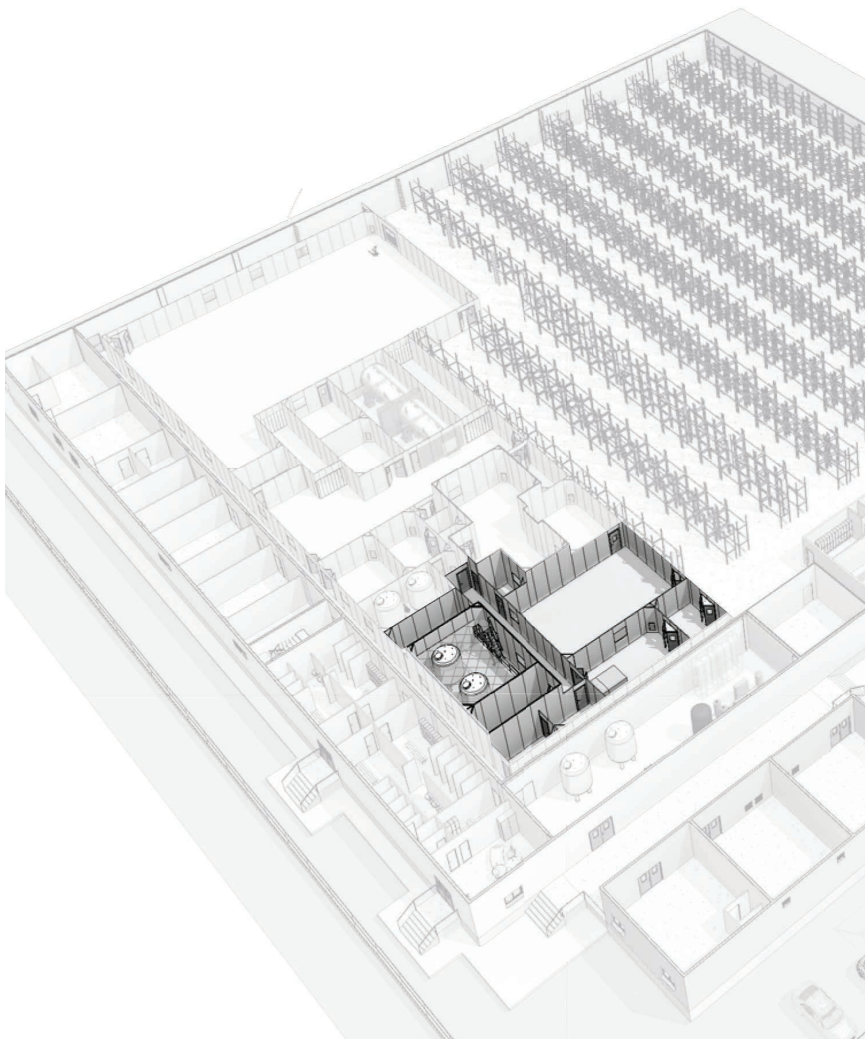
Mixing and dispensing areas



Area where APIs are weighed with excipients in order to obtain the medicine.

Area where medicines are mixed and manufactured:

- Intravenous
- Medicines
- Injectable
- Ophthalmic
- Eye drops
- Nose drops







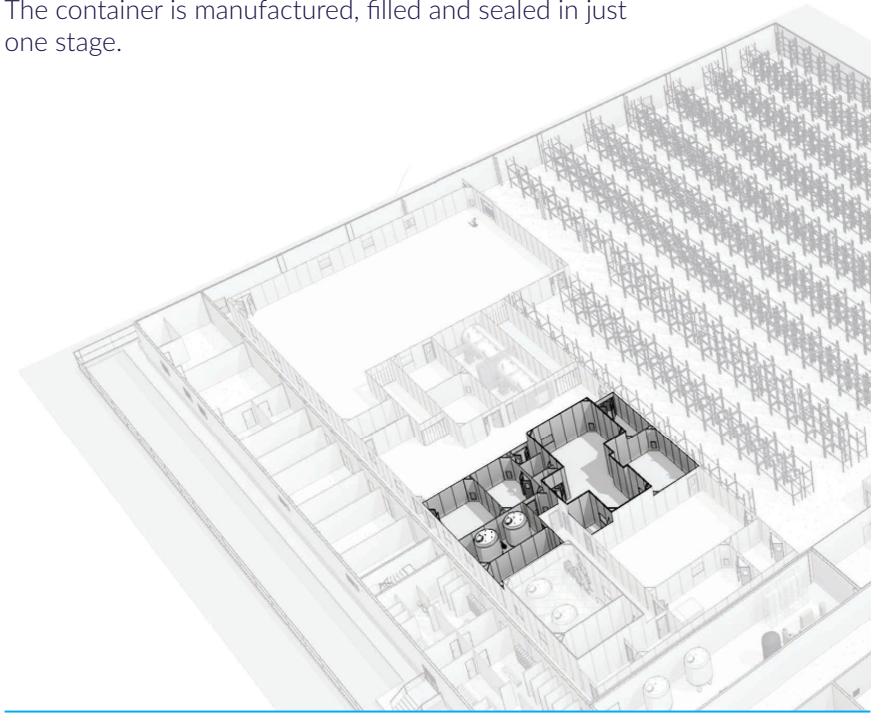


Filling Area

FA

Area where the mixed injectable liquid is filled inside a container.

The container is manufactured, filled and sealed in just one stage.

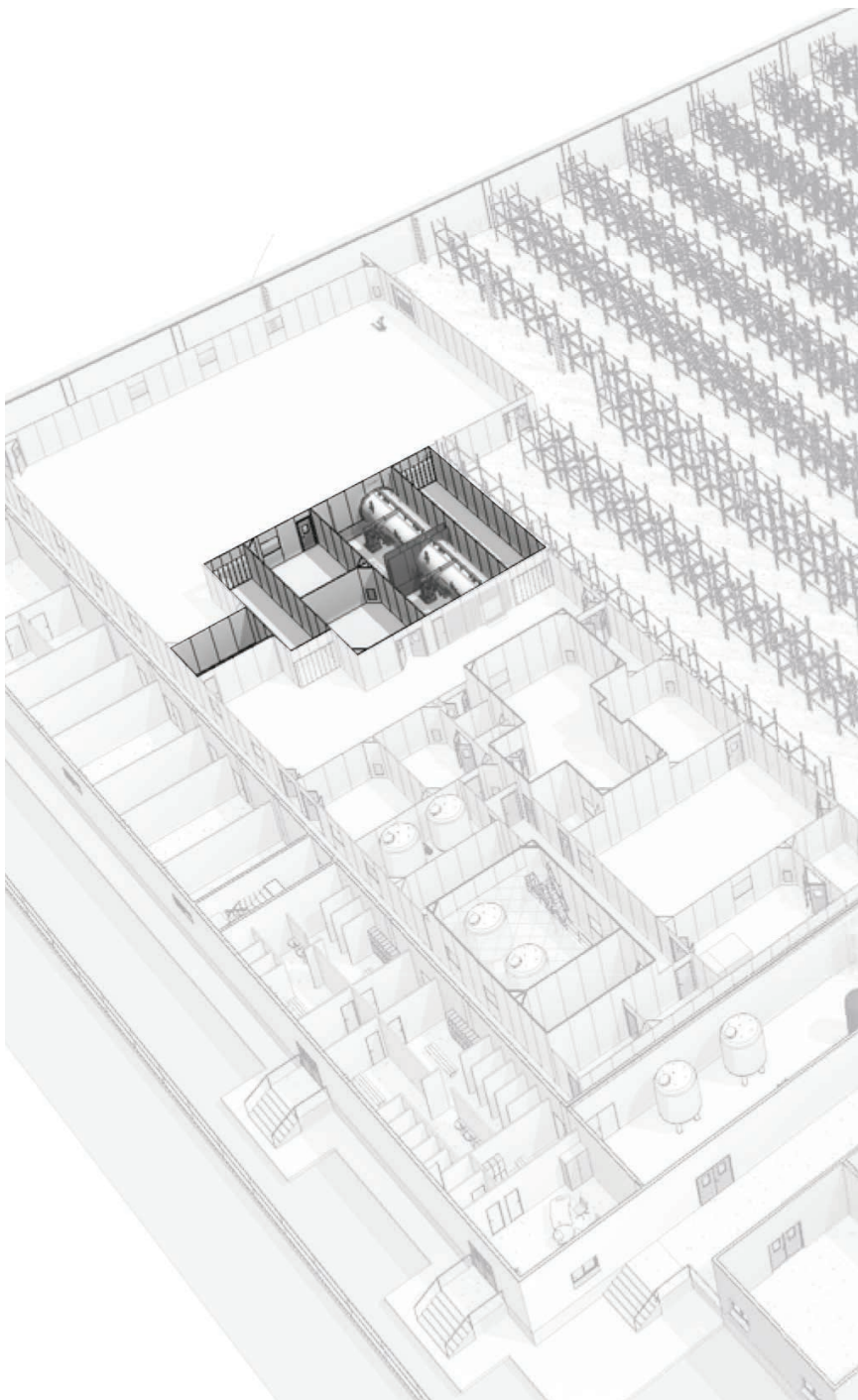


Sterilization Area

A

Area where final products are sterilized in autoclaves.

A set of trolleys are loaded in a holding area after the filling, another set is sterilized and a final set is being used on the secondary area.



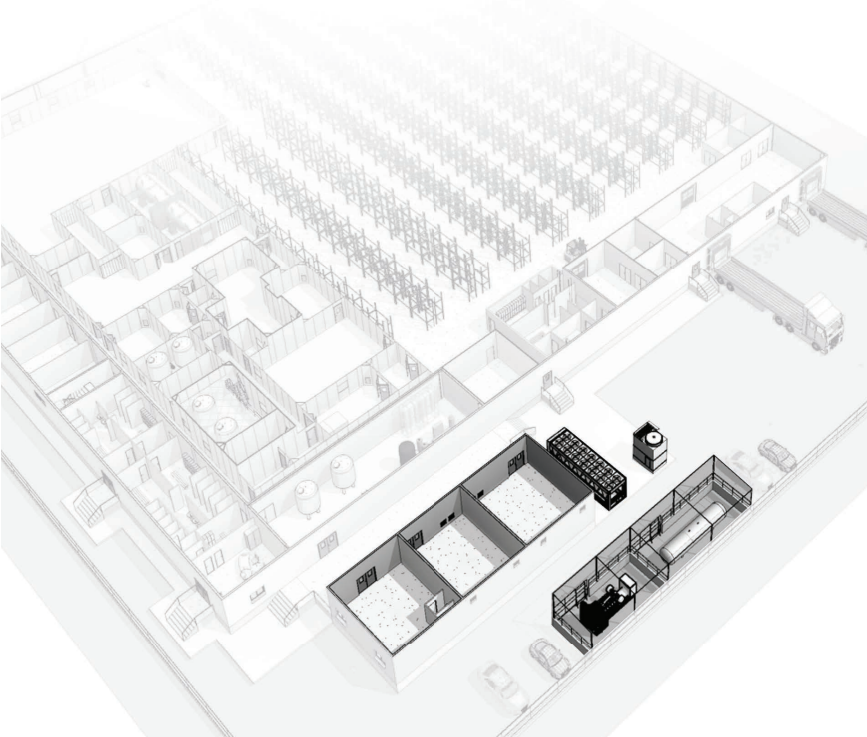




Utilities Area

D RO

Area where compressed air, industrial steam, chilled and cold water and electricity are produced.

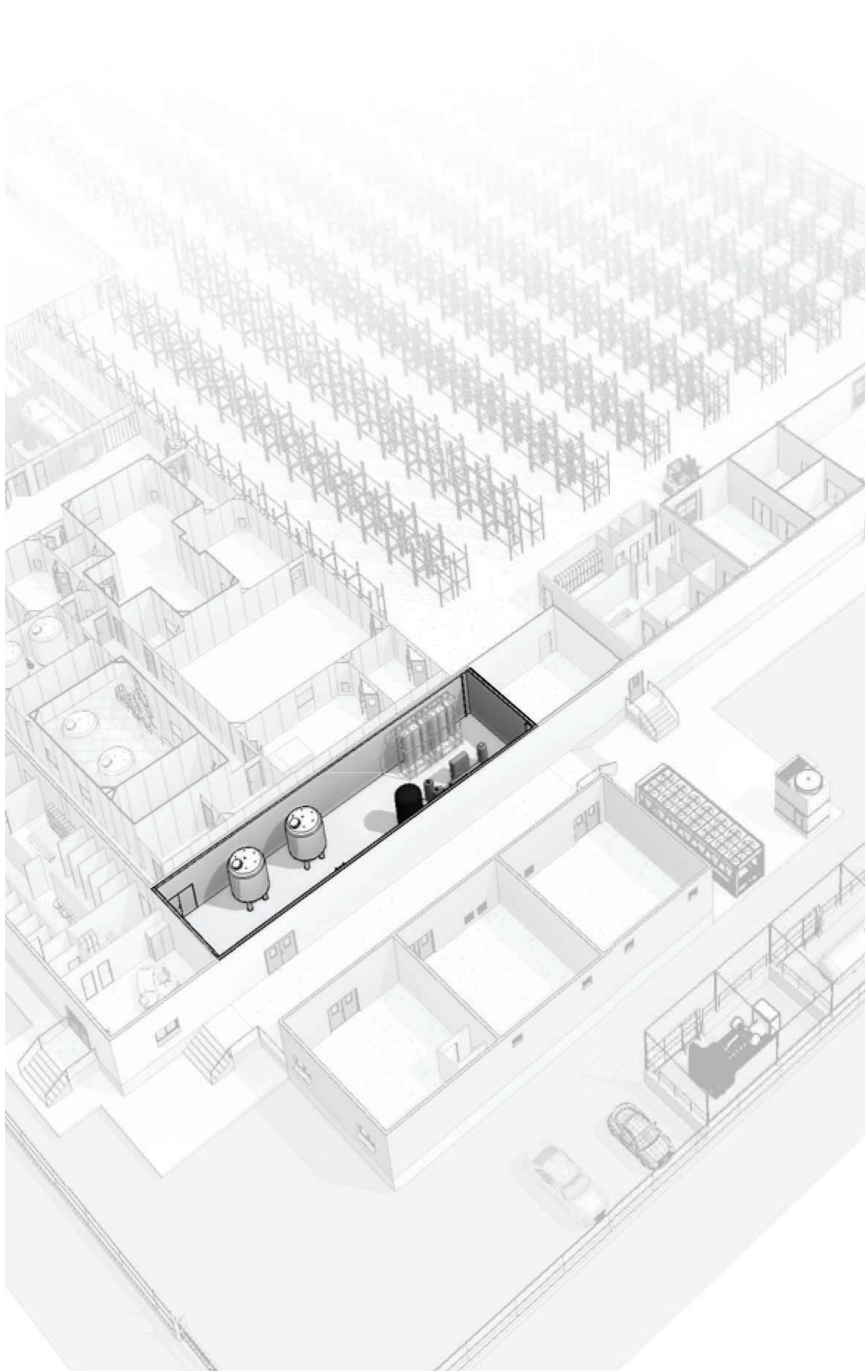


Water Plant



Area where potable water is treated and after a pretreatment and passed later to RO/EDI units that produced purified water.

Second stage is a distiller, which will produce water for injection and clean steam.

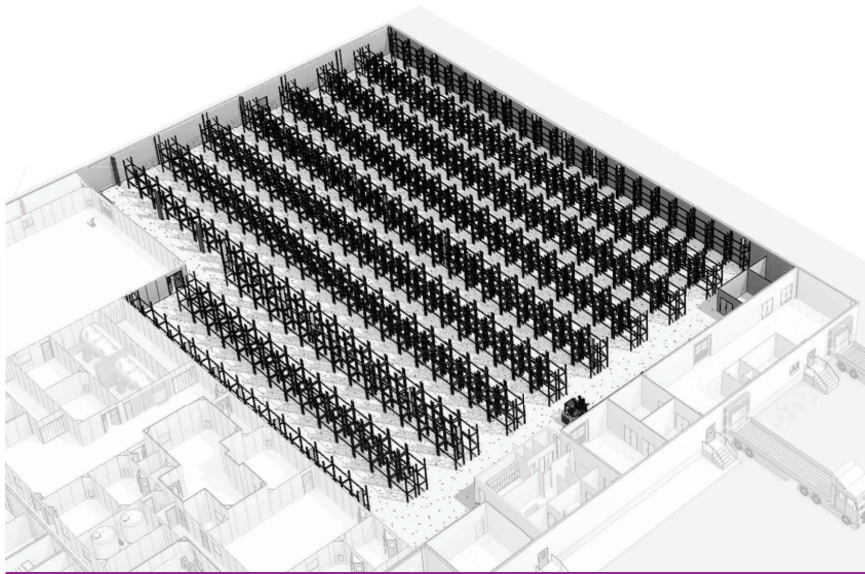




Warehouse



Development of basic engineering for the definition of the implementation of processes, equipment and working areas.



Connected to you

Industry 4.0 means that physical distance ceases to be a barrier.

The cutting-edge technology that we apply to each area of our work, remote management, continuous monitoring and a team always online allow us to offer immediate solutions in the development, installation and maintenance of any project regardless of the distance where it has been installed.

