



Albrigi is offering you his 30 years of technical evolution and experience, to improve your winery. Albrigi proposes you 8 new fermentation technologies that develop traditional methods to improve every phase of wine-making process, both for white and red grapes. Please do not hesitate to ask for any technical documentation.

**CALL US
DIRECTLY**

**Our engineers are
at your disposition**

**YOUR WINERY
DESIGNED BY US**



SERBATOI INOX - CUVES INOX - INOX BEHÄLTER - STAINLESS STEEL TANKS - TANQUES EN ACERO INOX



your winery designed by **US**

Since more than 30 years we have been studying fermentation process and designing innovative technologies to develop the natural processes of wine making in accordance with tradition and modern efficiency. We designed and realized the plants to produce the best wines. Our engineers are offering you their experience and knowledge to design the next great winery: **your** winery.

Preliminary visit

Our engineers will visit your company to know your needs and check available spaces, in order propose you the best structure and plant solutions meeting **your specific requirements**.



Consulting

The design is developed with an in-depth study of your requirements, in order to find solutions meaning quality, user friendliness, logistics optimization and rational use of spaces: the union between **right design** and **new technologies**.



Design

Thanks to our thirty years of experience, our engineers will be able to develop the right planning of your project since the design stage, which is a precondition for the installation of the latest **state of the art** technologies.



Manufacturing

We work the best steel with the best tools. Our qualified personnel will follow the development of your project in order to obtain an unique plant, **specifically made for you**.



your winery designed by **US**

THE NEW WINERY

GENERAL GUIDE LINES ABOUT FACILITIES AND TECHNOLOGIES OF THE WINERY OF THE PRESENT AND THE FUTURE

ALBRIGI TECNOLOGIE IS A PHILOSOPHY

For the last 30 years Albrigi Technologie has been designing and manufacturing wine-making systems for processing both small and large masses of wine, focusing specifically on the development of new technological solutions and on the relentless pursuit of the highest quality. To achieve this Albrigi has established an ongoing collaboration with wine-making experts, agronomists, university professors and, of course, the customers to find the most suitable methods for optimising each single grape type.

Albrigi Technologie offers its customers new fermentation technologies that complement natural and traditional wine-making processes with special emphasis on aspects such as organic production, energy and cost saving measures, and knowing how to make the best use of the internal spaces of a winery.

Today modern wineries can be designed to utilize cutting-edge, eco-sustainable technologies while fully respecting and enhancing the grape and developing traditional processing methods.

For this purpose Albrigi Technologie offers a comprehensive range of machinery and equipment (customizable options available) for every stage of the wine making process starting with the reception of the grapes at the winery, and including fermentation, conditioning, filtration and storage.

Albrigi Technologie systems offer the following 5 advantages:

- time saving (with our technologies the processing stages are fast and efficient),
- temperature control (our systems allow you to control the cold and hot conditioning of the must and wine masses),
- cleanliness (our easy-to-clean plants are eco-friendly as they can be sanitized with little or no cleaning agents),
- automation (use of highly technological systems help the enologist and winery technician perfect performance of the various operations by eliminating errors and loss of time),
- research and experimentation of the various wine-making processes (wines cannot be improved without experimentation and research into wine-making processes). The data (e.g. relating to cultivation of the vineyard, winery operations and the various types of wine produced) is collected and stored using our Archimede data management system, then analysed and transmitted to provide the operator with a record of the wine-making process used for the grapes from each separate vineyard.

Each vintage is unique, each grape variety has its own particular characteristics and properties. Therefore every winery needs a staff of expert technicians that have a thorough understanding of winemaking processes and the available equipment in order to bring out the best in their particular grapes. This ensures that even very large wineries with automated processing and computerised systems for huge masses of grapes are capable of producing top quality wines. On the other hand small to medium sized wineries that produce small or medium sized selected lots of grapes using customised or sophisticated fermentation processes, manage to obtain exclusive and very particular wines of unique taste and refined aromas and consequently to place top quality bottles on the market.

Albrigi's primary aim is to respond to the customer's needs, to understand the type of wine he wants to produce, to propose an ideal process designed specifically for his grapes by identifying the most appropriate equipment that is compatible with the available space, the cost, the time and the personnel engaged by the company during the grape harvest and the subsequent wine processing stage.

Obviously the best results are obtained when the company's wine-making expert has the time to personally follow all the wine-making stages (fermentation, filtration, storage, etc...) or when a PLC is installed in the winery to ensure that the machines punctually perform the required operations programmed by the technician; this means that the winery technician has only to check that all is proceeding according to the enologist's instructions. Unfortunately however, as we are well aware, during the hectic harvesting period the enologist does not have sufficient time to personally oversee the crucial wine-making stages such as pumping over, pigeage, rack-and-return etc. to make sure that they are carried out perfectly; the unexpected is always just around the corner to shift attention to other activities. Moreover, in the later part of the harvesting period, often the parameters of the grapes being processed tend to change according to the time, availability and energy of the people involved in the wine-making process; computer-controlled processes help prevent this situation by punctually adjusting and controlling the wine-making process parameters thereby delegating to staff the sole task of programming and management.

Top quality is like the vertex of a pyramid – you may reach it after a long, complex path made up of many small technological details and processing procedures that combined lead to the achievement of an excellent product.

Albrigi Technologie's primary objective has always been to propose ideas and concepts intended to improve the customer's product by designing and constructing systems that will lead them to the topmost point of the pyramid; otherwise our company, as it stands, would have no reason to exist. Every single day we strive to grow, know, understand and impart to our customers all the know-how that we have built up over thirty years in the business with the collaboration of laboratory technicians, agronomists, researchers, and above all our very own customers who have always provided the input that has stimulated us to produce very special systems.

In this light Albrigi has organized a technical staff capable of offering a comprehensive consultancy service for the design and construction of your winery, covering all aspects from the architectonic concept to the installation of plants and machinery, and encompassing the latest energy saving and renewable energy technologies.

Our modern, natural technologies for quality fermentation of red and white grapes

- A. The quality of the wine starts from the vineyard with the correct cultivation of the vines and making the best use of the natural resources such as soil, air, sun and water;
- B. Grape harvesting is an extremely delicate process whether the grapes are picked into crates, or bins on trailers;
- C. Handling of the grapes during transportation from vineyard to winery is important: time and a cool environment are crucial for the good preservation of the grapes during transit ;
- D. Grape cleaning and selection are fundamental for grading the grapes into first and second choice in order to differentiate production;
- E. Management of the destemming and crushing stages is important to ensure that the must and crushed grapes respond to your requirements;
- F. The fermentation stage must be examined and planned according to the type of grape to be processed (e.g. if hard or soft skin variety, if the grape gives more or less intense colour to the wine, etc...);
- G. We recommend a specific type of fermentor and a well-defined fermentation process for each grape variety;
- H. We separate white and red grape varieties;
- I. For white grapes without skins we recommend cryo-maceration, cold clarification, bâtonnage;
- L. We recommend 6 different technologies for the fermentation of red grapes with skins, depending on whether the skin is hard or soft, whether large or small masses are to be processed, how much height and width space is available, how much time is available to carry out all the operations. They are:
 - a. Rack and return
 - b. Rotating disk fermentor
 - c. Punching down
 - d. Cascade fermentation
 - e. Turbine
 - f. Submerged cap fermentation

Each fermentation process requires the implementation of a number of specific measures to ensure that the process is truly effective. Our experience in this regard and our technicians are at the complete disposal of customers, enologists and winery technicians to transfer the know-how we have accumulated over years of analyses, research and experimentation on many different grape varieties, and thanks to which we are capable of obtaining impressive yield and quality from each single process and type of fermentor.

Nowadays a company like ours, that aims to achieve the best quality, must ensure that customers have access to all available information to enable them to take full advantage of our systems and our equipment for the production of great wines in as short a time as possible, without wasting time and energy.

Only in this way can Albrigi Technologie be considered "ahead of its time" !



ing, Francesca Poli

INDEX

1. FACILITIES FOR THE WINERY	7
1.1 WASTE WATERS (EQUIPMENTS AND FLOOR WASHING WATERS, VINIFICATION WASTES)	
1.2 ELECTRIC SYSTEM	7
1.2.1 BARREL ROOM.....	7
1.2.2 “FRUTTAIO”	7
1.2.3 PRESSING ROOM.....	7
1.2.4 WEIGHING AND GRAPES SAMPLING.....	7
1.2.5 FERMENTATION ROOM: musts and pressed grapes treatment.....	7
1.2.6 WINE STORAGE ROOM: wine-working room	8
1.2.7 BOTTLING ROOM.....	8
1.2.8 EMPTY BOTTLES STORAGE.....	2 8
1.2.9 CARTONS, LABELS, CORKS, GLUES WAREHOUSE.....	8
1.2.10 FULL BOTTLES WAREHOUSE	8
1.2.11 ELECTRIC POWER ROOM	8
1.3 COOLING SYSTEM.....	9
1.4 CONDITIONING SYSTEM.....	9
1.5 HEATING SYSTEM (BOILER)	9
1.6 STEAM PRODUCTION SYSTEM (STEAM BOILER).....	9
1.7 WASHING SYSTEM.....	9
1.8 COMPRESSED AIR SYSTEM.....	9
1.9 NITROGEN GENERATOR.....	9
1.10 DRY ICE.....	9
1.11 WATER SYSTEM	9
1.12 HIGH PRESSURE WATER SYSTEM.....	9
1.13 HIGH PRESSURE PIPELINES FOR CLEANER.....	9
1.14 CO ₂ SUCTION.....	9
1.15 VIDEO SURVEILLANCE.....	10
1.16 FILTRATION ROOM.....	10
1.17 FIXED STAINLESS STEEL PIPELINES	10
1.18 DATA SYSTEM “ARCHIMEDE”	10

2. FACILITES FOR EACH DEPARTMENT	13
2.1 PRESSING ROOM:.....	13
2.2 FRUTTAIO:.....	13
2.3 FERMENTATION ROOM:.....	13
2.4 STORAGE ROOM:.....	13
2.5 BARREL ROOM:	13
2.6 TARTRATE STABILIZATION.....	13
2.7 FILTRATION:	13
2.8 EMPTY BOTTLES WAREHOUSE	13
2.9 BOTTLING ROOM:	13
2.10 FULL BOTTLES WAREHOUSE.....	13
2.11 CARTONS, LABELS, CORKS, GLUES WAREHOUSE.....	13



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1. FACILITIES FOR THE WINERY

1.1 WASTE WATERS (equipments and floor washing waters, vinification wastes)

- ducts, manholes and wells in every department;
- suction pumps for suction of waste waters from wells to the waste waters collecting tank;
- waste waters collecting tank (the tanks can be differentiated for each kind of product or waste);
- suction pumps for suction of waste waters to empty the collecting tank (e.g. to the tanktruck);
- electric system for suction pumps.

1.2 ELECTRIC SYSTEM

1.2.1 BARREL ROOM

- 1 electric panel every 20 m with 3 sockets (380 V, 220 V, 24 V), placed on the ways and in places free from the wooden barrels;
- led lighting system, to avoid introducing heating sources, with possibility of changing brightness and colour of the light (bright and strong light for working, dark and warm light for visits);
- emergency lighting system;
- suction system for CO₂ in the stagnation points of the barrel room, with automatic alarms station;
- suction pumps system for suction of waste waters from wells;
- data system with several connecting points;
- intercom system with several connecting points;
- electric system dedicated to micro-oxygenation system;
- fire extinguishing system;
- conditioning and humidification system to keep the right climate for the rest of wooden barrels (humidification and steaming).

1.2.2 “FRUTTAIO”

- 1 electric panel every 20 m with 3 sockets (380 V, 220 V, 24 V), placed on the passage ways and in places free from the boxes of grapes rest;
- led lighting system, to avoid introducing heating sources, with possibility of changing brightness and colour of the light (bright and strong light for working, dark and warm light for visits);
- emergency lighting system;
- automatic windows opening and closing;
- control station for hygrometric conditions and fanning;
- suction pumps system for suction of waste waters from wells;
- data system with several connecting points;
- intercom system with several connecting points;
- fire extinguishing system;
- air recirculation and drying system to dry up the grapes.

N.B.: Since the “Fruttaio” is a wide room, available for about 8 months a year, (if it’s not used as warehouse for empty boxes), it can be used as meeting-hall or dinig-hall; in this case you should arrange:

- wide stairs,
- toilettes,
- lifts,
- lighting system,
- emergency doors,
- air-heating/cooling system, designed for the right number of guests,
- fire extinguishing system, designed for the right number of guests ,
- wardrobe,
- kitchen,
- multimedia system,
- amplifier system,
- direction room,
- interpreters room,
- simultaneous translation circuit,
- etc.

1.2.3 PRESSING ROOM

- general electric panel, from which the fixed electric lines dedicated to pressing machines start (1 grapes collection tank, 1 grapes crusher, 1 marcs pump, 1 wine-press);
- neon lighting system to optimize visibility for workers;
- emergency lighting system;
- suction pumps system for suction of waste waters from wells;
- data system with several connecting points;
- intercom system with several connecting points;
- fire extinguishing system;
- earth system for every machine and tank.

1.2.4 WEIGHING AND GRAPES SAMPLING

- weighing management room;
- grapes sampling machine;
- data system;
- intercom system.

1.2.5 FERMENTATION ROOM: musts and pressed grapes treatment

- wall general electric power panel, from which fixed electric lines dedicated to fermentation tanks engines start (marc extractors, fixed pumps for fermentation tanks etc.);

- 1 electric panel every 20 m with 3 sockets (380 V, 220 V, 24 V), placed on the ways and in places free from tanks;
- suction system for CO₂ in the stagnation points of the fermentation room, with automatic signalling station;
- neon lighting system to optimize visibility for workers;
- emergency lighting system;
- fire extinguishing system;
- suction pumps system for suction of waste waters from wells;
- data system with several connecting points;
- intercom system with several connecting points;
- electric system for tank jackets conditioning (warm and cold) during the fermentation;
- micro and macro-oxygenation system;
- earth system for every machine and tank.

1.2.6 WINE STORAGE ROOM: wine-working room

- general electric power panel, from which fixed electric lines dedicated to wine fixed filters start;
- 1 electric panel every 20 m with 3 sockets (380 V, 220 V, 24 V), placed on the passage ways and in places free from tanks, dedicated to decanting pumps and mobile mass mixers;
- suction system for CO₂ in the stagnation points of the storage room, with automatic signalling station;
- neon lighting system to optimize visibility for workers;
- emergency lighting system;
- fire extinguishing system;
- suction pumps system for suction of waste waters from wells;
- data system with several connecting points;
- intercom system with several connecting points;
- electric system for tank jackets conditioning (warm and cold) during the storage of wine;
- earth system for every machine and tank.

1.2.7 BOTTLING ROOM

- wide cabinet general electric power panel, placed in an easily accessible place, with 10-15 fixed electric lines dedicated to bottling machines;
- 1 electric panel every 20 m with 3 sockets (380 V, 220 V, 24 V), placed on the ways and in places free from tanks, dedicated to pumps, cleaning machines etc.;
- neon lighting system to optimize visibility for workers;
- emergency lighting system;
- fire extinguishing system;
- suction pumps system for suction of waste waters from wells;
- data system with several connecting points;
- intercom system with several connecting points;
- conditioning system;
- air filtration system;
- automatic open/close system for doors, for the passage of forklifts;
- earth system for every machine and tank.

1.2.8 EMPTY BOTTLES STORAGE

- electric panels with 3 sockets (380 V, 220 V, 24 V);
- neon lighting system to optimize visibility for workers;

- emergency lighting system;
- data system with several connecting points;
- intercom system with several connecting points;
- fire extinguishing system;
- battery charger for forklifts (outdoor);
- automatic open/close system for doors, for the passage of forklifts;
- earth system for every machine.

1.2.9 CARTONS, LABELS, CORKS, GLUES WAREHOUSE

- electric panels with 3 sockets (380 V, 220 V, 24 V);
- neon lighting system to optimize visibility for workers;
- emergency lighting system;
- data system with several connecting points;
- intercom system with several connecting points;
- fire extinguishing system;
- air drying system;

1.2.10 FULL BOTTLES WAREHOUSE

- electric panels with 3 sockets (380 V, 220 V, 24 V);
- neon lighting system to optimize visibility for workers;
- emergency lighting system;
- data system with several connecting points;
- intercom system with several connecting points;
- fire extinguishing system;
- air conditioning and drying system (steady temperature 14°C);
- automatic open/close system for doors, for the passage of forklifts;
- electric lift;
- battery charger for forklifts (outdoor);

1.2.11 ELECTRIC POWER ROOM

- electric transformer and safety system;
- electric panels with 3 sockets (380 V, 220 V, 24 V);
- neon lighting system to optimize visibility for workers;
- emergency lighting system;
- data system with several connecting points;
- UPS (uninterrupted power supply) for computers network and PLC equipped machines;
- photovoltaic panels electric lines (inverter, batteries ...);
- 1 electric line for 1st underground floor;
- 1 electric line for 2nd underground floor;
- 1 electric line for fruttaiolo;
- 1 electric line for pressing room;
- 1 electric line for wine storage room;
- 1 electric line for fermentation room;
- 1 electric line for bottling room;
- 1 electric line for every floor lighting system;
- 1 electric line for emergency lighting;

- 1 electric line for waste water wells pump;
- 1 electric line for fire extinguishing system;
- 1 electric line for car parking lighting;
- 1 electric line for parc;
- 1 electric line for lifts;
- 1 electric line for house etc.;
- 1 electric line for offices;

1.3 COOLING SYSTEM

- storage room: tank jackets conditioning;
- fermentation room: warm/cool tank jackets conditioning;
- full bottles warehouse: air-conditioning and drying system;
- bottling room: air-conditioning;
- offices and house: air-conditioning.

1.4 CONDITIONING SYSTEM

THERMAL UNIT:

- water supplies;
- water autoclave pumps;
- water treatment;
- boiler;
- steam production facilities;
- compressed air system;
- nitrogen supply system;
- cooling unit;
- cleaning CIP;
- pressured water system.

1.5 HEATING SYSTEM (boiler)

- fermentation room: warm/cool tank jackets conditioning;
- bottling room: air-conditioning;
- offices and house: air-conditioning.
- wash water for tanks, machines, floors.

1.6 STEAM PRODUCTION SYSTEM (steam boiler)

In the following departments:

- storage room: tanks and floor washing;
- fermentation room: tanks and floor washing;
- filtration room: machines and floor washing;
- bottling room: machines and floor washing;
- humidification in barrel room with spray injector.

1.7 WASHING SYSTEM

- washing CIP connected to the hot water low pressure or high pressure circuit.

1.8 COMPRESSED AIR SYSTEM

- micro and macro oxygenation;
- pressing room;
- bottling room (for every machine);
- pneumatic valve control for liquids transfer;
- biological depuration system.

1.9 NITROGEN GENERATOR

In the following departments:

- barrel room: for wine decanting;
- storage room: to inactitanke wine tanks and wine decanting;
- pressing room: to decant musts and pressed grapes in inactive atmosphere;
- bottling room: for decanting, filtering and inactitankion of full bottles;
- filtration: for wine transfer.

1.10 DRY ICE

- to keep cool grapes picked with grape-gatherer machine from the vineyard to the winery

1.11 WATER SYSTEM

- pipelines for cool filtered water;
- pipelines for hot filtered wash water;

1.12 HIGH PRESSURE WATER SYSTEM

- water compressor for production of cool or hot high pressure water;

1.13 HIGH PRESSURE PIPELINES FOR CLEANER

- pipelines for high pressure hot wash water;
- pipelines for high pressure cool wash water;

1.14 CO₂ SUCTION

In the following departments:

- fermentation room;



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- pressing room;
- storage room.

1.15 VIDEO SURVEILLANCE

- thief-proof and accesses control outdoor cameras (high definition digital cameras, with motion/noise detection system and automatic recording start, with remote control via internet, with infrared night lighting);
- indoor cameras in each department for inspection and thief-proof control;
- NAS recording with automatic overwriting.

1.16 FILTRATION ROOM

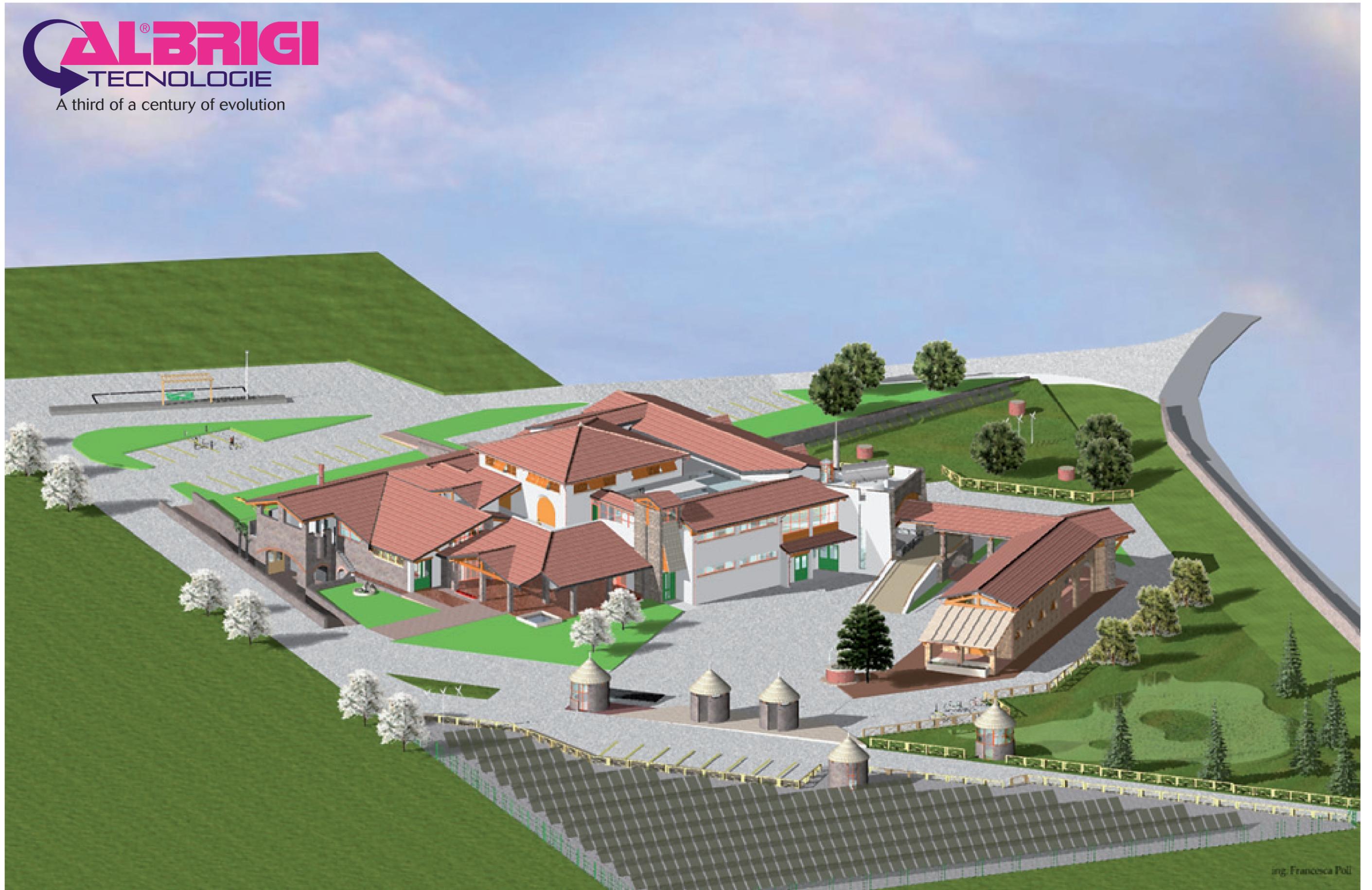
- warm water;
- cold water;
- nitrogen.

1.17 FIXED STAINLESS STEEL PIPELINES

- warm water;
- cold water;
- nitrogen.

1.18 DATA SYSTEM “ARCHIMEDE”

- trough “Archimede” you can control the activities in each department and winemaking process;
- data monitoring stations and data managing panels for workers are installed in each department (office, fruttai, barrel room, vineyard, fermentation room etc.);
- Archimede can process and manage many different datas, listed in detail in the following features card.



2. FACILITIES FOR EACH DEPARTMENT

2.1 PRESSING ROOM:

- power supply;
- hot water;
- cold water;
- high pressure hot water
- high pressure cold water;
- nitrogen;
- waste waters collecting ducts;
- grape-stalk discharge;
- marcs storage;
- CO₂ suction;
- compressed air;
- data system;
- stainless steel pipelines for marcs and musts decanting.

2.2 FRUTTAIO:

- power supply;
- hot water;
- cold water;
- high pressure hot water
- high pressure cold water;
- air drying system;
- air conditioning;
- waste waters collecting ducts;
- data system;
- ducts for grapes transfer to the pressing room;

2.3 FERMENTATION ROOM:

- power supply;
- hot water;
- cold water;
- high pressure hot water
- high pressure cold water;
- steam;
- waste waters collecting ducts;

- grape-stalk discharge;
- lees discharge;
- CO₂ suction;
- compressed air;
- cold water for tank jackets;
- hot water for tank jackets;
- grape-stone regeneration;
- data system;
- micro and macro-oxygenation system;
- stainless steel pipelines for marcs and musts decanting.

2.4 STORAGE ROOM:

- power supply;
- hot water;
- cold water;
- high pressure hot water
- high pressure cold water;
- steam;
- nitrogen;
- waste waters collecting ducts;
- grape-stalk discharge;
- CO₂ suction;
- compressed air;
- cold water for tank jackets;
- hot water for tank jackets;
- data system;
- micro and macro-oxygenation system;
- stainless steel pipelines for wines decanting.

2.5 BARREL ROOM:

- power supply;
- hot water;
- cold water;
- high pressure hot water
- high pressure cold water;
- steam;
- nitrogen;

- humidification;
- air conditioning;
- waste waters collecting ducts;
- grape-stalk discharge;
- CO₂ suction;
- compressed air;
- data system;
- micro and macro-oxygenation system;
- stainless steel pipelines for wines decanting.

2.6 TARTRATE STABILIZATION

- power supply;
- hot water;
- cold water;
- high pressure hot water
- high pressure cold water;
- steam;
- nitrogen;
- waste waters collecting ducts;
- grape-stalk discharge;
- glycol liquid at -10°C for tartrate stabilization;
- data system;
- stainless steel pipelines for wines decanting.

2.7 FILTRATION:

- power supply;
- hot water;
- cold water;
- high pressure hot water
- high pressure cold water;
- steam;
- nitrogen;
- waste waters collecting ducts;
- discharge of filtration wastes;
- compressed air;
- data system;
- stainless steel pipelines for wines decanting.

2.8 EMPTY BOTTLES WAREHOUSE

- power supply;
- data system;

2.9 BOTTLING ROOM:

- power supply;
- hot water;
- cold water;
- high pressure hot water
- high pressure cold water;
- steam;
- air conditioning;
- air filtration;
- nitrogen;
- waste waters collecting ducts;
- compressed air;
- data system;

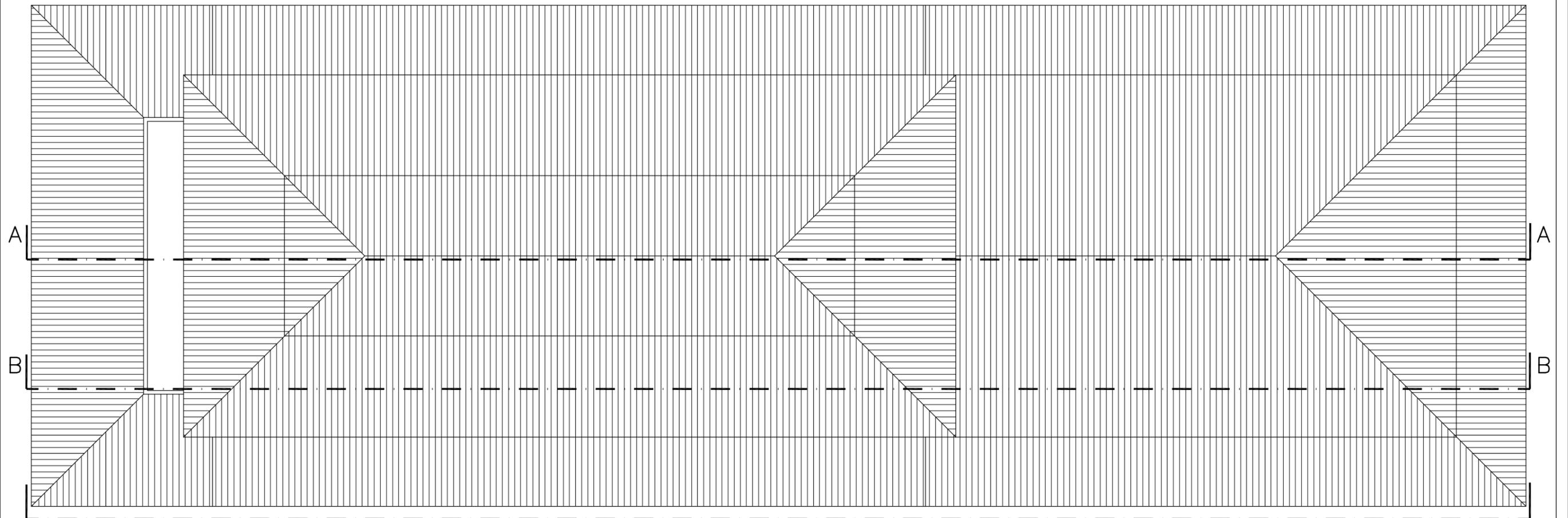
2.10 FULL BOTTLES WAREHOUSE

- power supply;
- air conditioning and drying;
- data system;

2.11 CARTONS, LABELS, CORKS, GLUES WAREHOUSE

- power supply;
- air conditioning and drying;
- data system;

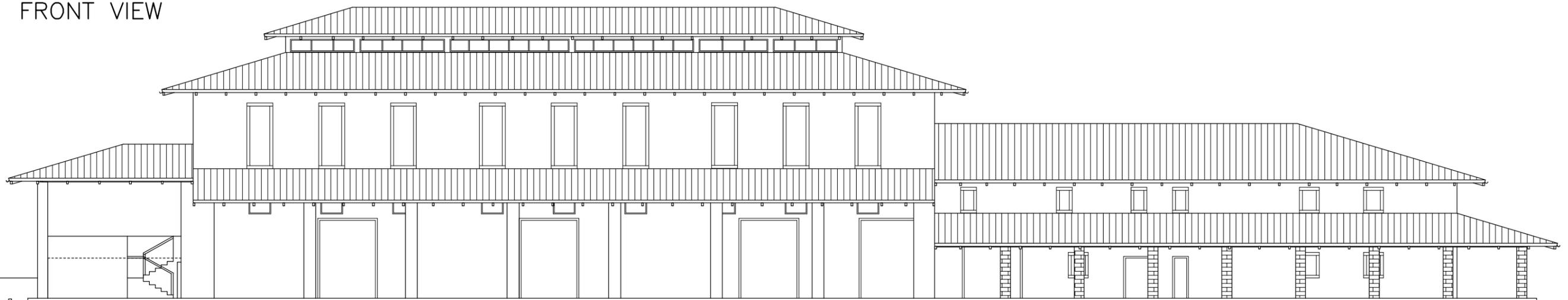
ROOF PLAN



FRONT VIEW

FRONT VIEW

FRONT VIEW



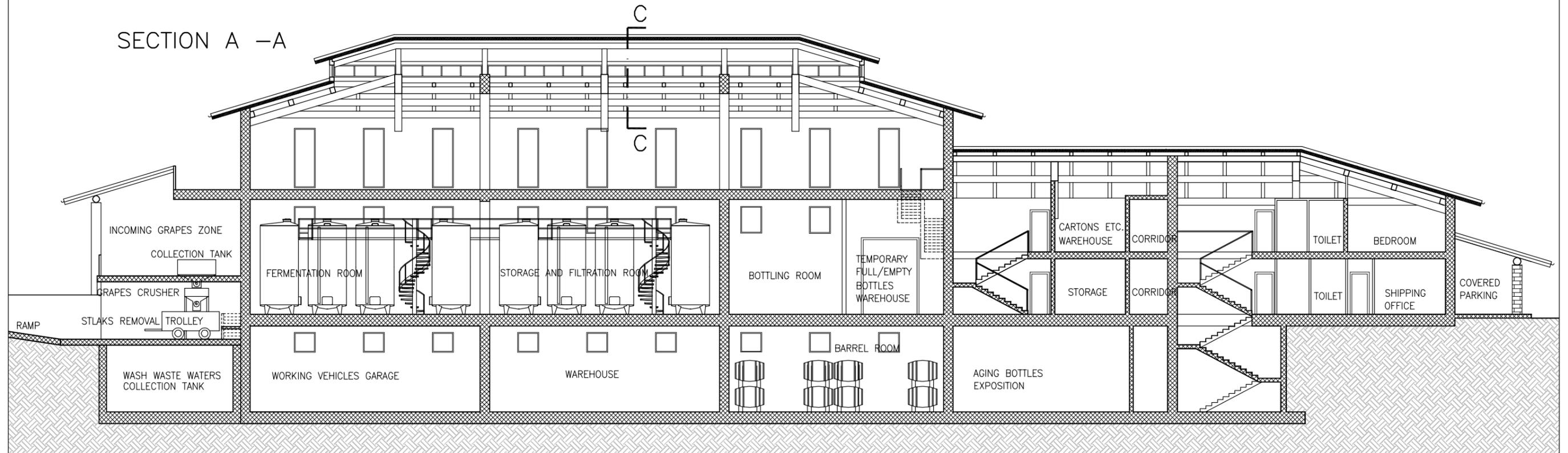
PROGETTO-DESIGN
WINERY FOR GRAPES DRYING, WINE-MAKING,
WINE AGING IN BARRELS, BOTTLING AND WINE SELLING

DESCRIZIONE-DESCRIPTION
PIANTA COPERTURA

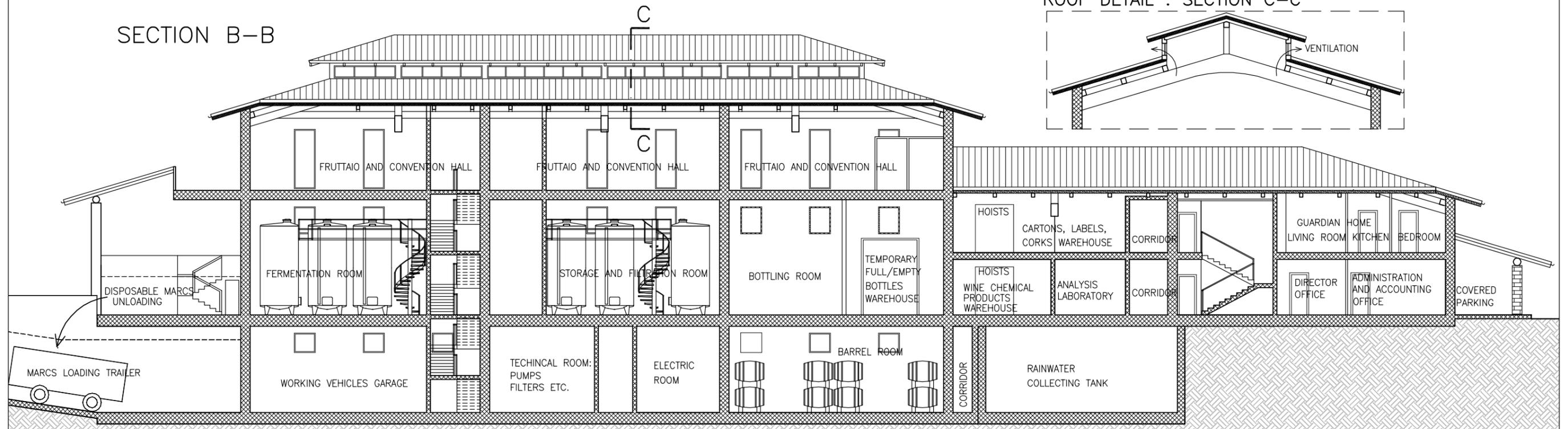
ALBRIGI S.R.L.	CODICE-CODE	T-6	SCALA-SCALE	1:200
	REV.	0	DATA-DATE	FEB-2011

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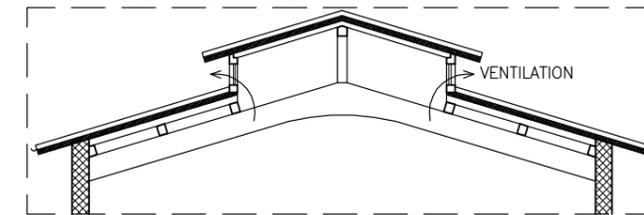
SECTION A -A



SECTION B-B



ROOF DETAIL : SECTION C-C



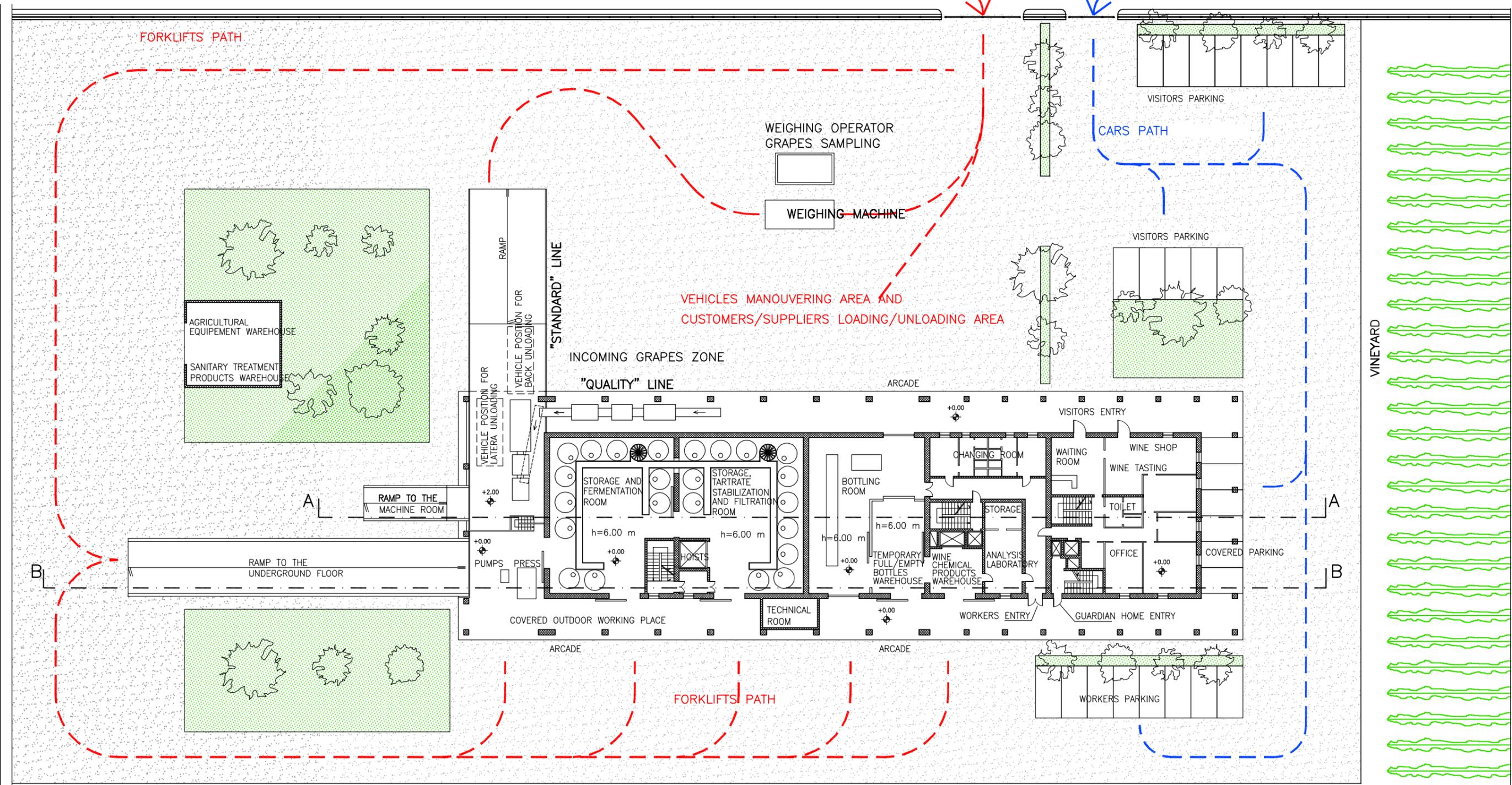
PROGETTO-DESIGN
**WINERY FOR GRAPES DRYING, WINE-MAKING,
 WINE AGING IN BARRELS, BOTTLING AND WINE SELLING**

DESCRIZIONE-DESCRIPTION
SEZIONI

ALBRIGI S.R.L.	CODICE-CODE	T-7	SCALA-SCALE	1:200
	REV.	0	DATA-DATE	FEB-2011

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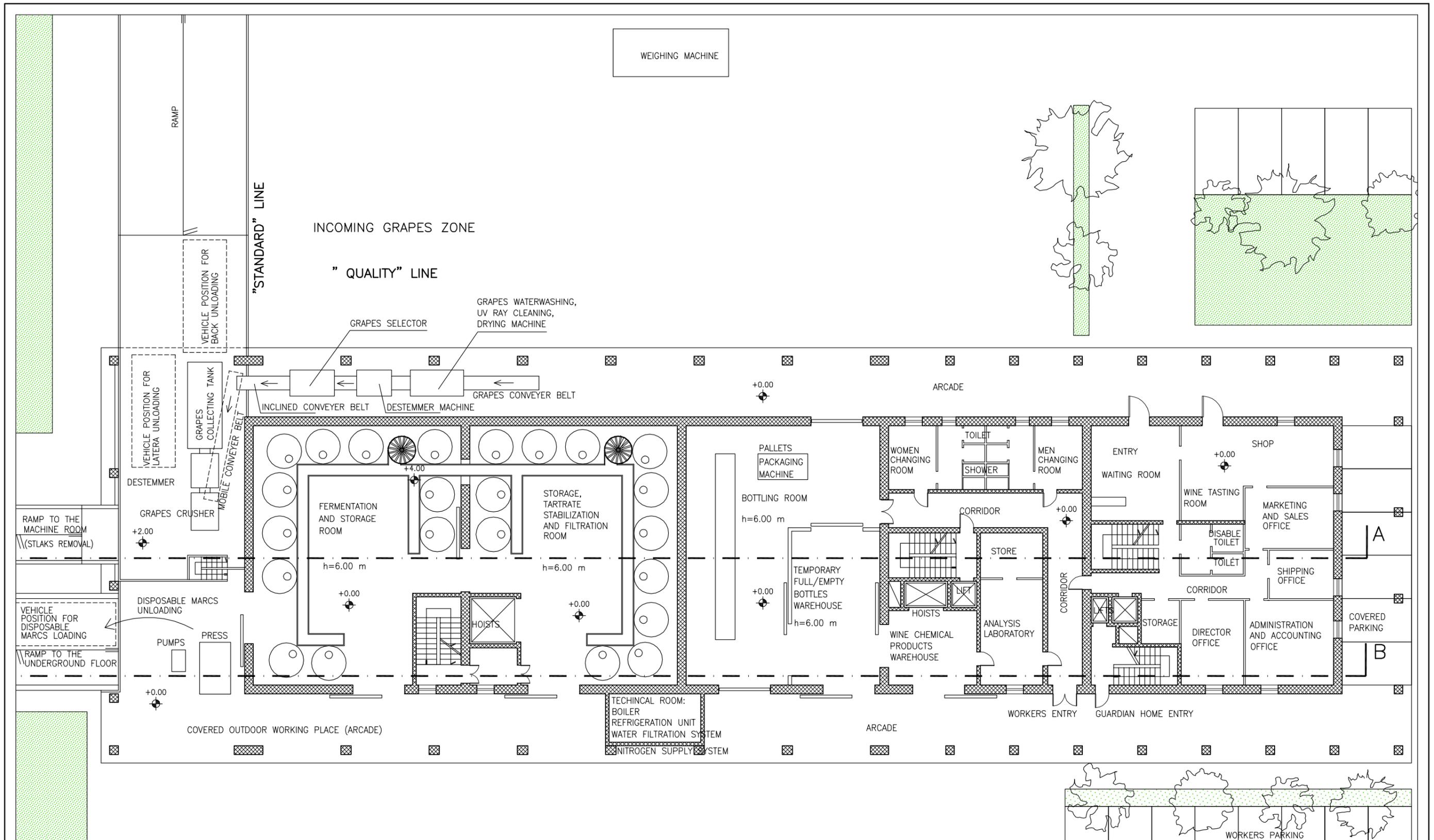
GROUND FLOOR GENERAL PLAN

PROGETTO-DESIGN
WINERY FOR GRAPES DRYING, WINE-MAKING,
WINE AGING IN BARRELS, BOTTLING AND WINE SELLING

DESCRIZIONE-DESCRIPTION
PIANTA GENERALE PIANO TERRA

ALBRIGI S.R.L.	CODICE-CODE	T-1	SCALA-SCALE	-
	REV.	0	DATA-DATE	FEB-2011

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GROUND FLOOR PLAN
ELEVATION +0.00m

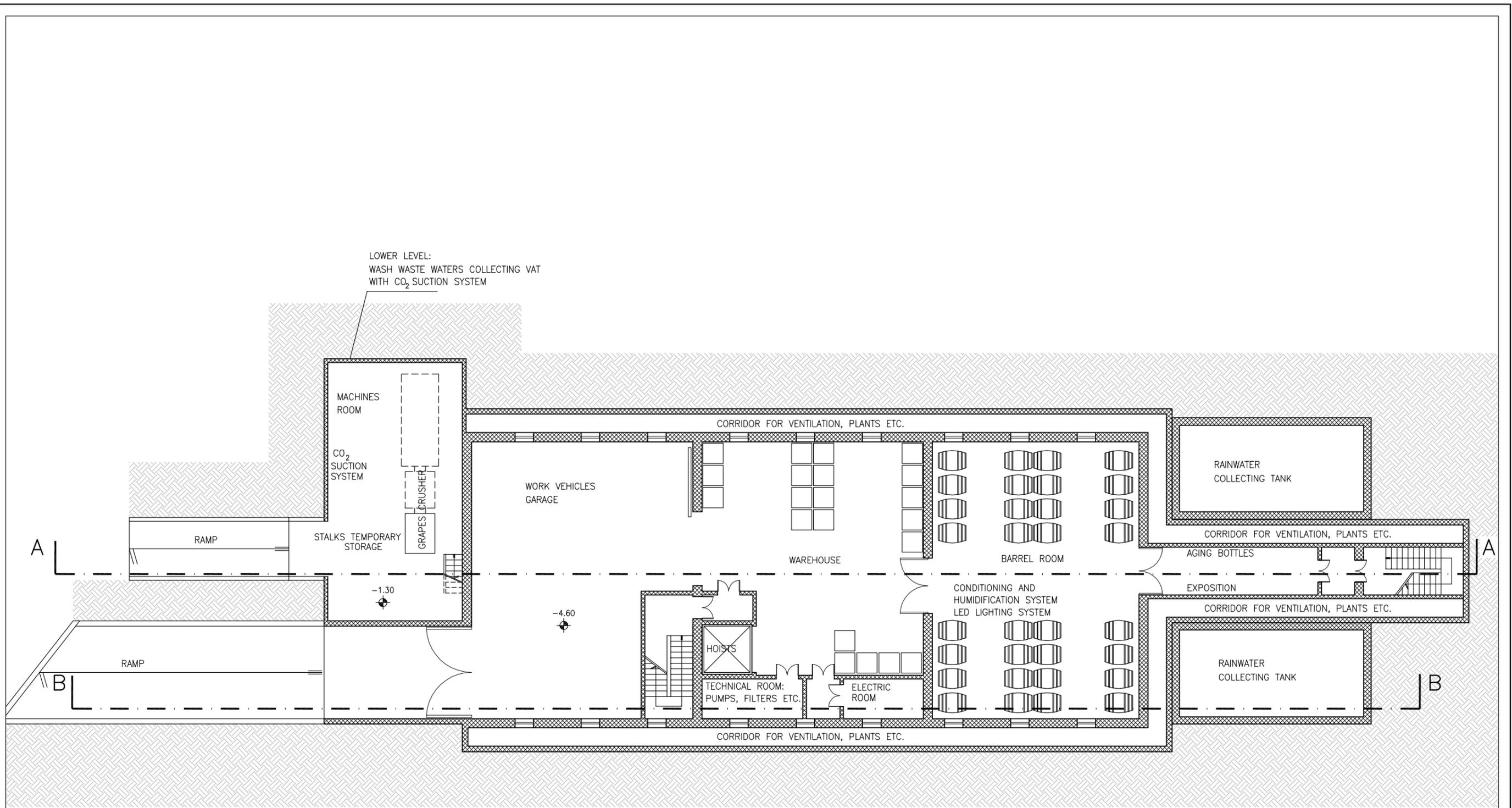


PROGETTO—DESIGN
WINERY FOR GRAPES DRYING, WINE-MAKING,
WINE AGING IN BARRELS, BOTTLING AND WINE SELLING

DESCRIZIONE—DESCRIPTION
PIANTA PIANO TERRA

ALBRIGI S.R.L.	CODICE—CODE	T-2	SCALA—SCALE	1:200
	REV.	0	DATA—DATE	FEB—2011

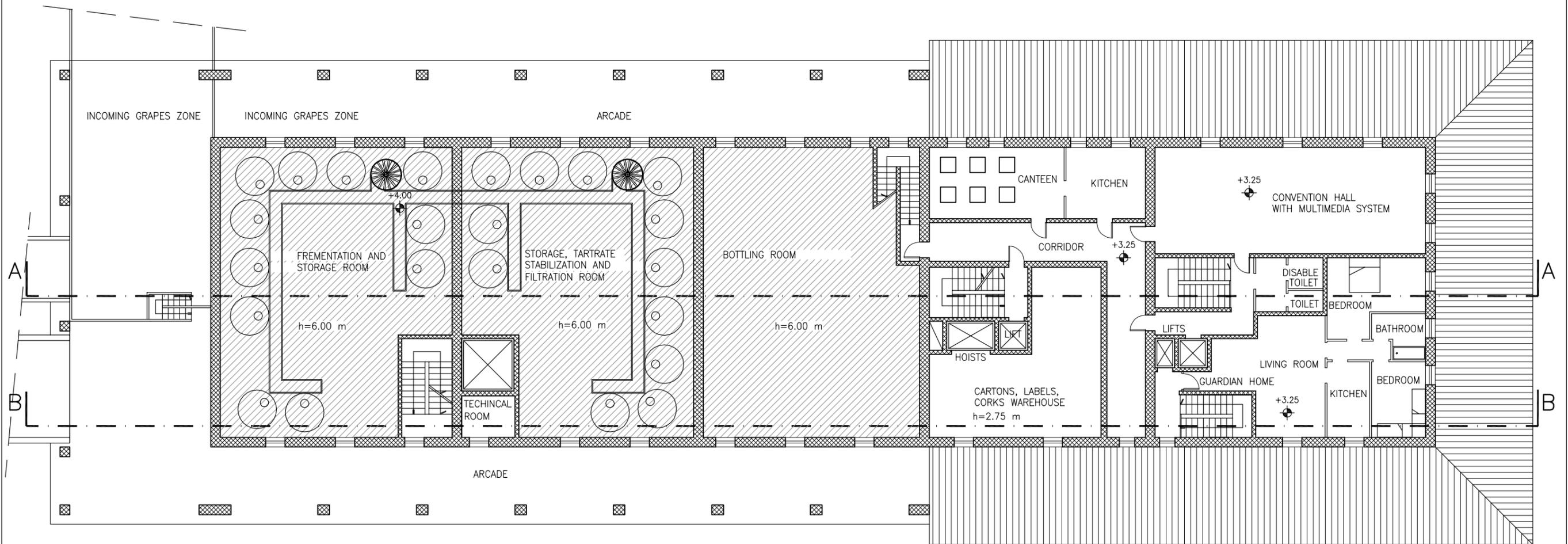
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UNDERGROUND FLOOR PLAN
ELEVATION -4.60m



PROGETTO-DESIGN WINERY FOR GRAPES DRYING, WINE-MAKING, WINE AGING IN BARRELS, BOTTLING AND WINE SELLING		
DESCRIZIONE-DESCRIPTION UNDERGROUND FLOOR PLAN		
	CODICE-CODE T-3	SCALA-SCALE 1:200
	REV. 0	DATA-DATE FEB-2011
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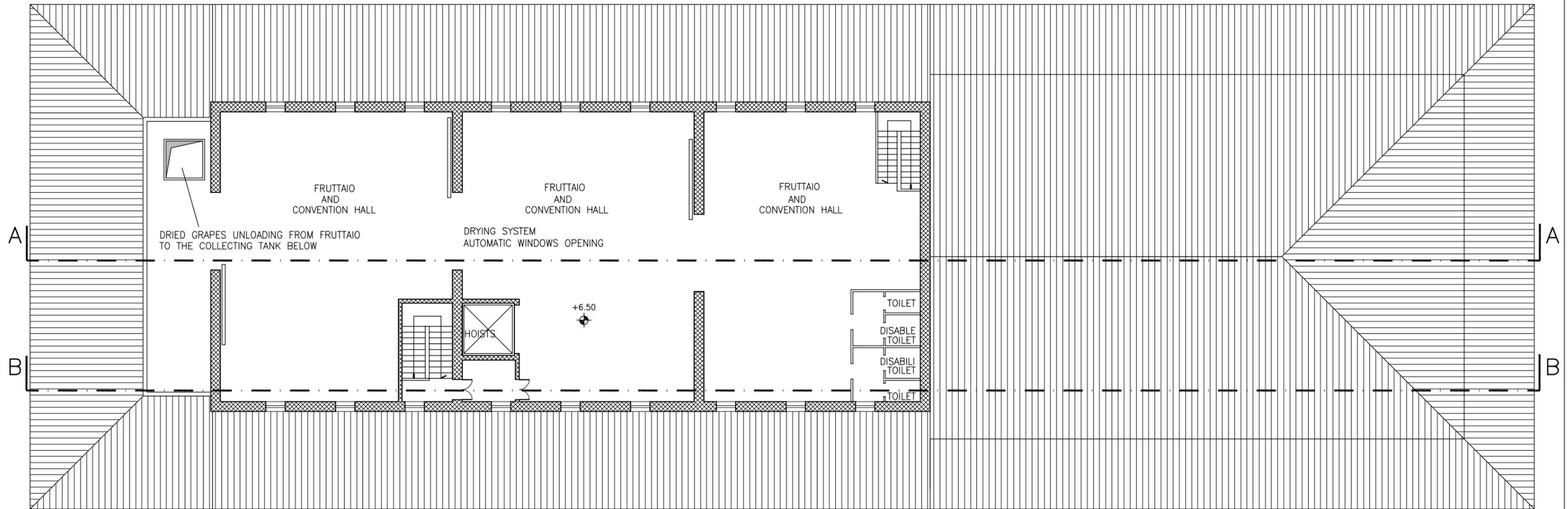


FIRST FLOOR PLAN : MEETING ROOM AND GUARDIAN HOME
ELEVATION +3.25m



PROGETTO—DESIGN		
WINERY FOR GRAPES DRYING, WINE—MAKING, WINE AGING IN BARRELS, BOTTLING AND WINE SELLING		
DESCRIZIONE—DESCRIPTION		
PIANTA PIANO PRIMO (ABITATIVO)		
ALBRIGI S.R.L.	CODICE—CODE	SCALA—SCALE
	REV.	DATA—DATE
	T-4	1:200
	0	FEB—2011

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FIRST FLOOR PLAN : FRUTTAIO
ELEVATION +6.50m



PROGETTO-DESIGN		
WINERY FOR GRAPES DRYING, WINE-MAKING, WINE AGING IN BARRELS, BOTTLING AND WINE SELLING		
DESCRIZIONE-DESCRIPTION		
PIANTA PIANO PRIMO (PRODUTTIVO)		
ALBRIGI S.R.L.	CODICE-CODE	T-5
	REV.	0
SCALA-SCALE	1:200	
DATA-DATE	FEB-2011	
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TECHNOLOGIES AND FACILITIES FOR THE NEW ECO-FRIENDLY WINE INDUSTRY

Albrigi Technologie, thanks to the experience acquired with its engineers and consultants, proposes the **best technical solutions for the new eco-friendly vine cultivation and wine industry**.

Albrigi proposes to its customers the state of the art winery, with the best structural and technological solutions, coming from the historical tradition of wine-making and looking at the future for a production of highest quality, efficiency and respect of the environment.

The idea consists in an **integrated system**, energetically efficient for the present and the next future. The preconditions are created since the **design** of the winery – i.e. the shape and the orientation of the building - which is going to work with precise seasonal strategies, taking advantage of natural energy sources and aiming in particular at the internal efficiency of the system.

The need to reduce as much as possible the production costs and the environmental impact leads to the use of **renewable energy sources** – like solar, geothermal, wind energy abundant in nature – and a set of solutions that involves every phase of the production. This starts from a **proper management of the vineyard and the winery**, with the construction of energy efficient buildings, the installation of specific energy-saving equipment (i.e. fermentation system, filtration without waste of flours or panels), the re-use of thermal energy and waste products. The **re-use** regards the heat exchangers, that can take advantage from thermal energy lost from the plants or the wine-making processes, the treatment of washing waste waters (re-used for irrigation), the biomasses obtained from agricultural activities (chipped branches and grapes stalks), products and additives of wine-making process.

This innovation is developed in accordance with in-depth studies on eco-friendly growth, made by public and private companies, universities and research institutes. Albrigi Technologies, working together with leading companies worldwide, propose to its customers the state of the art solutions in terms of product optimization.

The optimization of an efficient energy strategy is based on a strength integration of technological systems and the building that contains them. The **energy balance of sustainable system** depends on the right choice of specific design features and eco-friendly materials: it is advantageous, for example, to use natural lighting, to air-condition the rooms in summer or winter using geothermal system (possibly with drill arranged in the foundation piles), to collect rain waters, to provide buildings of efficient envelopes like double skin, radiant systems and using natural ventilation.

It is therefore essential to develop **a right work plan since the design stage**, both for the construction of a new winery or the renovation of an existing one or part of it, modernizing installations or tools.

For this purpose Albrigi Technologies created its own staff of experts in the different fields, which beyond consulting activities is able to study, design, construct and test installations and applications meeting the requirements of different customers. We have the know-how. The coordinator of our project is Mrs. **Francesca Poli** from Verona.

*

In the **following prospect** and notes you can find a summary of the **evolution of the new eco-friendly productive cycle** in the large survey of available technologies – referred to vineyards cultivation, installations, treatment and re-use of working wastes – finalized to productive and environmental quality.

ENERGY SAVING AND RE-USE OF PRODUCTS

'FERTIRRIGATION'

This innovative way of fertilizing the vineyard consists in the distribution of fertilizers through irrigation water (with drip irrigation or sub irrigation); increasing the effectiveness of treatment, this method can save significant amounts of fertilizers, bringing economic and environmental benefits.

A further saving can be achieved by washing wine-making machines and pipelines with low or no amount of chemical products, in order to re-use washing waste water (within the parameters of the law).

VINEYARD DATA COLLECTION

In order to plan proper vineyard sanitary treatments, even considering the specific kind of treatment, it is essential to know in real time temperature and humidity in the vineyard. The control unit FAR SYSTEM detects and transmits the data continuously via GSM to the management system Archimede Albrigi, which archives data and sends the information to the operator.

INTEGRATED PEST MANAGEMENT AND ORGANIC FARMING

This is the new ecological philosophy aiming to reduce or eliminate as far as possible the use of pesticides harmful for the environment, promoting organic farming; the effectiveness of organic farming highly depends on the extension of territory involved in the practice and recently has been widely applied in many regions.

WIND ENERGY

The new mini or micro wind turbines, which are small and have low visual impact, produce electricity with higher efficiency than traditional wind turbines, because they can take advantage also from air turbulence.

ECO-FRIENDLY WORK VEHICLES

Work vehicles with Euro 5 or electrical engines reduce pollution in the vineyard and are widely used abroad.

ALBRIGI ARCHIMEDE

Albrigi's "Archimede" system, expandable and customizable, allows to manage and control every wine-making process and every machine, even through remote control: activities in the country (vineyard map, phytosanitaries treatments management etc.), wine-making plants in the winery (tank conditioning, fermentators programming, washing management etc.), wine-making and storage rooms (temperature and humidity control in the barrel room, ventilation in "fruttai" etc.), energy saving systems (geothermal drills and heating pumps, lighting, solar panels and photovoltaic panels etc.), so that the systems features and product quality can be optimized.

SUNLIGHT CONCENTRATOR MIRRORS

This technology (that can achieve several hundreds degrees temperatures by concentrating sunlight on a tube placed on the focal line of the curved mirrors) is really suitable to the winery because it provides hot water and steam with small plants, much smaller than traditional solar panels, and consequently with low visual impact.

3RD GENERATION PHOTOVOLTAIC PANELS.

According to the news, new cheap photovoltaic panels are being developed, with significantly higher efficiency compared to the traditional ones (up to 40%); at a parity of energy production, the necessary surface of panels is much lower than traditional panels, with obvious economic, managing and visual impact advantages.

SOLAR PANEL FOR WARM WATER

Besides the well known warm water production, solar panel, combined with new technologies, can be used to produce cold water. Kloben company produces special heat exchangers that can transform thermal energy in refrigerating energy, what is necessary in the cellar for fermentation tanks conditioning, storage rooms, office or residential areas conditioning.

HEATING PUMP

This is a largely developed technology, that uses heat and cold energy from the ground or from deep underground waters, through geothermal drills and heat exchangers working with air or water. Power supply for the heating pump can provided by solar panels, reducing pollution. As this are very silent machines, noise is definitively reduced.

BIOMASS BURNERS

Biomass burner is at this time evidently useful to produce hot water (for washing, rooms heating, fermentation tanks conditioning) and steam, what is necessary to sterilize filtration equipments, tanks, pumps and bottling machines.

ECO-FRIENDLY ARCHITECTURE

The target is ecosystem preservation, eliminating or reducing as much as possible, the impact of productive activities on the environment. Design takes up to energy self-sufficient buildings - with low polluting emissions - which are able to exploit natural sources and renewable energies.

FRUTTAIO

In the fruttai, where are concentrated large quantities of grapes for drying, is often necessary to integrate natural ventilation with mechanical ventilation and drying systems, managed by an automatic control unit which detects and selects the right parameters for proper dry of grapes and automatically opens or closes windows.

BARREL ROOM

Traditional barrel rooms, with clay floor and breathable walls, are built to maintain naturally the ideal humidity and temperature for barrels rest. Due to the modern sanitary standards imposed by law - which require cleanable, non breathable, floor and walls coatings - barrel rooms need now special equipments for air conditions detection, which are able to manage specific air-conditioning systems and keep the right humidity and temperature for barrels rest.

ALBRIGI'S HIGHT CLEAN TANKS

Albrigi Technologie's tanks, thanks to a particular treatment of stainless steel that makes the inner surface completely free of bumps, can be cleaned with hot water or steam only, without chemical products; in this way you can reduce environmental pollution and re-use waste wash waters and regenerate cleaned tartaric acid for the next fermentation process.

GRAPES WASHING BEFORE CRUSHING

Grapes washing and drying before crushing eliminates residual impurities from the must.

INTEGRATED SYSTEMS FOR AIR CONDITIONING WITH FILTERED AIR

Room where alimentary products are treated need a heating-refreshing system with filtered sterile air. Using renewable energies you can use floors, walls and ceilings as heating exchangers for the heating system.

"ZERO KILOMETERS"

Reducing transportations and choosing, as far as possible, supplies and activities located near your company combines clear management advantages and a strong reduction of polluting emissions in the environment.

LIGHTING AND ENERGY SAVING

Led lighting technology perfectly fits with cellar needs, because led lamps have very much higher efficiency and life than the traditional ones, in addition to the possibility of varying light intensity and color. Led lamps are cool, and so ideal for rooms where you shouldn't introduce heating sources, like the barrel room.

WASTE COLLECTION

By separately collecting the differnt kinds of wastes or wine-making products, you can regenerate and re-use products that you are allowed to re-use, sparing money for companies specialized in wastes disposal.

REGENERATION OF BRANCHES AND GRAPE-STALKS

Branches and grape-stalks can be reused for heating production, upon chipping or pelletizing and storage in bins for automatic feeding of biomass burners.

REGENERATION OF WINE-MAKING PROCESS PRODUCTS

Washing the tanks with hot water, without chemical products, it is possible to regenerate cleaned products of wine-making process (grape-stalks, tartaric acid, grape-stones), which can be reused in the next fermentation process or in wine treatments. This is being studied at the University of Verona, by prof. Ferrarini.

COLLECTION AND FILTRATION OF CO2 AND NATURAL FERMENTATION AROMAS

Volatile substances produced during fermentation process can be collected and treated, reducing polluting emissions of CO2 (fixing it on special supports as a carbonate) and regenerating alcohol and natural aromas of the fermentation process, that can be re-used.

WASTE WATERS PHYTOPURIFICATION AND MEMBRANE BIOREACTORS PURIFICATION

Phytopurification and membrane bioreactors purification allows you to re-use waste waters, within parameters of law, for irrigation, 'fertirrigation', or to distribute sanitary treatments to the vines.

SYSTEMS TO BE INSTALLED FOR THE TEACHING AND PRODUCTION



PRODUCTION

QUALITY

COUNTRY

ENERGY

Detection station for temperature and humidity in the vineyard, and data transmission to the computerized management system, powered by a dedicated photovoltaic panel

Integrated pest management and organic farming

New micro wind turbines

Tractors and vans EURO 5 or electrical

Fertilization and irrigation: drip irrigation or subirrigation, even through reuse of treated waste waters of the winery

QUALITY

ENERGY

QUALITY

Sunlight concentrator mirrors for steam production

3rd generation photovoltaic panels: high efficiency (up to 40%)

Solar panels for water heating, special exchanger for cooling and tank conditioning

Geothermal drills with heating pump:

- ground-water system with horizontal drills
- ground-water system with vertical drills
- water-water system with well

Biomass burner (branches, grape-stalks) for steam production, to wash filters, pipes, pumps, bottling machine

Integrated condensing boiler

Total control and management of your winery and energy saving systems
ALBRIGI "ARCHIMEDE"

RECOVERY

CELLAR

ENVIRONMENT

Phytodepuration and reuse of winery waste waters

Depuration with diaphragm bioreactor and reuse of winery waste waters

Collection and filtration of CO₂ and natural aromas of fermentation process

Regeneration and reuse of grape-stalks, yeasts, tartaric acid and grape-stones

Regeneration of branches (chipped) and grape-stalks for heating production from biomasses

Waste collection

ENVIRONMENT

CELLAR

ENVIRONMENT

ALBRIGI HIGHT CLEAN Tanks: washing with hot water or steam only, without chemical products

ECO-FRIENDLY ARCHITECTURE: Eco-friendly buildings, Natural materials and supplies

FRUTTAIO: Automatic humidity and ventilation control, Automatic system to open/close windows, automatic fans start

BARREL ROOM: Automatic humidity and temperature control

Wash/dry machine for grapes (before pressing)

Filtered air or floor heating system

LIGHTING:

- lamps powered by photovoltaic dedicated panel
- cold led lamps



PRESENT: FEATURES FOR THE NEW WINE INDUSTRY AND ENVIRONMENTAL SUSTAINABILITY



ALBRIGI
TECNOLOGIE
A third of a century of evolution

SYSTEM FOR TOTAL MONITORING AND CONTROL OF CELLAR WINEMAKING EQUIPMENT

The Archimede system consists of a leading-edge electronic console that connects to each appliance that produces power and services in order to manage it and monitor it, such as a fermentation tank to be programmed. This elegant steel control board independently carries out a myriad of procedures, setting up even complex work cycles or independent work recipes for each appliance or stainless steel container. It can automatically manage and monitor a great number of procedures such as loading and weighing the grapes, heating and cooling the various fermentation or process phases, schedule automatic washing cycles, carry out plant reset functions and many other services as described below. The system can also be remote-controlled by sending SMS.

This is an open system that can be expanded to include new functions without having to replace the existing one. Each unit has a graphic display and a multifunction keyboard with push-buttons dedicated to each desired function.

Automation is basic because it achieves the highest processing quality levels by real-time measurements of process parameters, optimizing winemaking systems in function of the product being processed.

Sophisticated customized and exclusive supervision software makes it possible to customize and program all the many checks that need to be performed on existing equipment. You can also intervene immediately on each container or process equipment, directly from the console. The system can generate and recreate historical data, filing them for 10 years in a tabular and graphic format so that they can be compared with theoretical values and then interfacing these values with the system management.

And there's more: the system also monitors ambient parameters in the processing and storage areas so as to always keep temperature and humidity values at desired levels. And you can dialogue with the system from any point in the world, using a mobile phone or even using Skype, connecting directly to the system and making precise checks and variations in real time at the minimal cost of one SMS or one telephone call of just a few minutes.

The system can also implement "traceability". In this way the world becomes even smaller and, thanks to Archimede, everything is under control.

LIST OF SERVICES MONITORED IN THE COUNTRYSIDE

- Company map
- Vineyard map (grape selection)
- Genetics and wine archive
- Irrigation
- Management and programming of vineyard treatments
- Remote monitoring of outdoor atmospheric conditions in vineyards by radio
- Video monitoring of vineyards by radio and filing of data
- Pre-harvest
- Harvest
- Weighing
- Grape selection
- Management of motor vehicles in the vineyard
- Management of wells or irrigation systems with monitoring of water supplies

LIST OF THE MUST FERMENTATION AND PROCESSING PROCESSES IT MONITORS AND MANAGES

- Grape refrigeration
- Heat-treatment of musts and pressed grapes
- Cryomaceration (Criotank)
- Bâtonnage (Bâtontank)
- Processing of fine lees
- Pumping over
- Punching down (Monofolltank)
- Rotating blade (Volvotank)
- Submerged cap (Supertank)
- Cascade (Pluviatank)
- Pump over turbine (Turbotank)
- Mechanical délestage (Délestage)
- Carbonic maceration (Noveltank)
- Ice wine
- Cold clarification (Chiaritank)
- Cold malolactic
- Délestage (Délestage)

MONITORING AND MANAGEMENT OF PROCESSES AND SERVICES

- Management of supplier grapes
- Accounting management of grapes for passerillage raising
- Grape passerillage raising and climate control in the fruit warehouse
- Crushing - Pressing
- Monitoring, management and filing of fermentation data during the different phases
- General wine cellar management and control of the quantities of musts or wines in tanks or fermentation tanks
- Management of systems and equipment for pressing, filtering, pumps, racking, topping off
- Grape and wine refrigeration
- General wine cellar climate control
- Temperature and humidity management in the aging barrel cellar
- General heating
- CO2 suction from the wine cellar
- Air/nitrogen production
- Steam production
- Management of washing plant
- Management of bottling plant
- Label - carton - cork - bottle - cap - glue warehouse
- Monitoring of drain waters
- Management of lighting and ventilation in the wine cellar
- Operating costs
- Accounting and warehouse management - Suppliers
- Invoicing - Customer management - Transport management
- Marketing management - Agent management
- Event management
- General management of energy productionsystems in the wine cellar
- Monitoring of alternative energy sources
- Energy savings - Heat pumps, geothermal energy, photovoltaic panels, mirror screens - Data transmission - Burglar alarm -
- In-house security monitoring - Kidnapping alarm
- Satellite monitoring of services and measurements
- Plant alarm warned by mobile phone



ARCHIMEDE
minor wine

ARCHIMEDE
major wine



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EVERYTHING IS UNDER CONTROL



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Albrigi
means
fantasy

Picturetank
in your winery
with subject
of your choice



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Albrigi means highest quality

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