



WorleyParsons

resources & energy

EcoNomics™

Winery

Capability & Experience





Our passion for HSE excellence is integral to everything we do and is incorporated into all our work practices.

Outstanding performance in the areas of health, safety and the environment is a key business indicator which results in reduced operating costs, fewer lost working hours, increased productivity, lower staff turnover, better relationships with communities and the safeguarding of equipment and materials.

OneWay[™]
to zero harm



Introduction

WorleyParsons is the premier provider of design and construction services to the New Zealand wine industry. We have worked with some of the country’s leading wineries to deliver projects of international significance.

WorleyParsons team of specialist engineers and designers has a comprehensive working knowledge of wine making processes and techniques, resulting in effective and innovative technical solutions for winemaking.

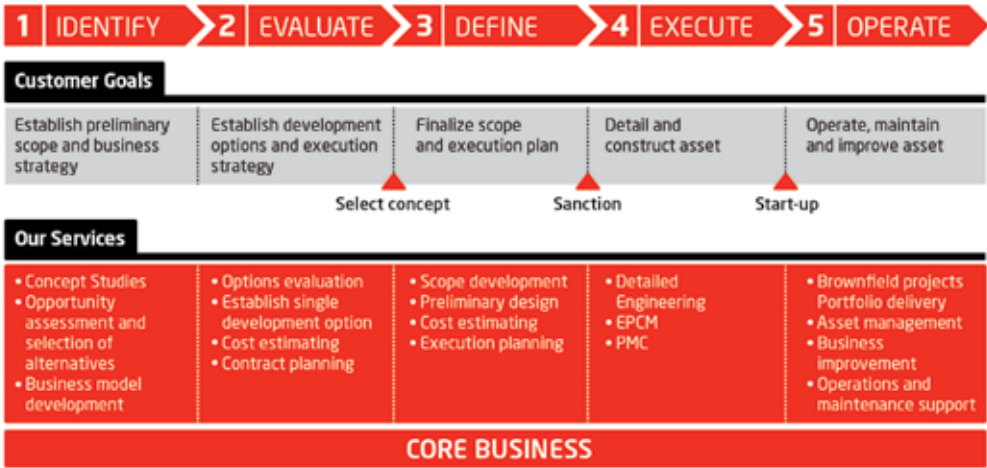
Our team has completed a wide range of winery projects ranging from the design and development of high profile, leading edge facilities through to implementing pragmatic production and maintenance related solutions into existing wineries.

Our services on these projects range from initial concept development and evaluation, detailed engineering and design, procurement and construction; through to maintenance and operations support.

Outstanding performance is the foundation on which customer satisfaction is built and the only true measure of success. Our continued success as a company is driven by finding innovative ways to deliver superior results on time and within budget.

Our people are committed to our performance focussed culture and are accustomed to working in an environment where we will risk our profit subject to achieving agreed customer objectives.

WORLEYPARSONS’ EXPERIENCE COVERS ALL FIVE PHASES OF THE ASSET LIFECYCLE



Wine industry specialists

Building a new winery is a major undertaking, there's a lot to consider, a lot of detail to resolve and ultimately a lot of money at stake. It is too important not to get it right.

WorleyParsons has a proven track record in all aspects of winery design and build, successfully implementing projects in wineries ranging from the boutique to the very large scale.

Designing a New Winery

The relationships between the owner, the winemaking team, the architect and the building contractor are critical in the design phase of a new winery. WorleyParsons brings a professional and structured approach to managing these interdependencies. A well thought-out and planned concept design that addresses the needs of all involved parties will reap rewards as the project moves into the execution phase.

Winemaking Brief

A thorough and detailed brief is an essential starting point for any project, large or small. A successful brief will act as a vital point of reference throughout the project, articulating the objectives in terms of the performance requirements of the completed facility and clearly identifying all of the relevant inputs and constraints. Developing the brief is often the first task of our engagement, bringing together the inputs of the winemaking team and the various other parties in a structured and coherent way.

Aesthetics and Architecture

As a highly visible structure, a winery can create a strong expression of the brand through its architecture and overall aesthetics. Our experience shows that the process functionality and desired capacity of the winery (initial and future) should lead the design. We work with customers to develop the building blocks of the winery and arrange them in an ergonomic and flow efficient way. This then forms the basis of the architect's brief, enabling the development of a coherent overall aesthetic that will meet the owner's expectations of both form and function.

Capital Cost Estimating

Accurate capital cost estimates are an essential tool in defining the scope of a project and controlling costs during construction. WorleyParsons is continually working in all aspects of winery construction, including upgrades, and is therefore uniquely placed to develop reliable cost forecasts through each phase of a project.

Project Management and Construction

WorleyParsons is one of the largest construction companies in the New Zealand process industry market. Our multi-industry experience enables us to bring together the tools, people and skills to exceed the expectations of our customers in the wine industry. We consistently deliver outstanding results within tight schedules and budgets.



Woollaston Estates Fermentor

CUSTOMER WOOLLASTON ESTATES
LOCATION NELSON

Woollaston Estates approached WorleyParsons to develop a modern version of the classical French styled concrete fermentor. This was successfully achieved by integrating stainless steel liners into pre-cast concrete structures.



Delegat's Wine Estate Control System

CUSTOMER DELEGAT'S
LOCATION MARLBOROUGH, NZ

Delegat's new Marlborough winery is capable of receiving in excess of 1,600 tonnes per day of premium fruit. WorleyParsons designed a centralised control system with high levels of automation, allowing the winemakers to focus on yields, press cuts and juice quality, rather than the logistical aspects of processing a continuous stream of product.

Fruit receival and processing

WorleyParsons understands the various means by which grapes can be delivered and the associated processing requirements. We have an in-depth knowledge of the capabilities and constraints of the available equipment.

A fit for purpose fruit receival operation is a fundamental component of any winery. The design of this area can drive the layout of the entire facility.

Receival Area

Developing the optimal configuration of the receival bin and associated ramp or pit is an important step, not only in the design of the fruit receival area, but often the entire winery layout. WorleyParsons can quickly put together options using ramps or pits, tipping or fixed bins and alternative traffic layouts to provide the best solution for a given site.

Fruit Processing

Selecting the main fruit processing equipment for the winery can involve a complex set of decisions. WorleyParsons has worked with all of the main equipment manufacturers and is well positioned to advise the winemaking team on their procurement of destemmers, must pumps, must and juice chillers and presses.

We are also able to assist with modelling potential daily fruit receival profiles to achieve the optimal configuration of equipment and capacities.

Marc Conveyors

There are a number of systems available for the conveyance of marc, including belt conveyors, drag chain conveyors, conventional augers and centreless augers. Our specialists can advise on which technology or combination of technologies will best suit a given application and budget, and then prepare a detailed specification or design to deliver the system.

Centralised Control

Significant opportunities exist to centralise and automate the control of much of the equipment in the fruit receival operation, allowing more effective management of this area. WorleyParsons can assist with implementation from basic systems for the receival bins, destemmers, must pumps and marc conveyors through to the full automation of must delivery systems, juice balance tank level control and data collection from the weighbridge and presses.

Fermentation and cellaring

One of the most important winemaking tools is the ability to control temperatures at each production stage.

WorleyParsons has the expertise to determine the appropriate equipment, specification and designs to deliver the winemaker's required performance. WorleyParsons does not use "rule of thumb" for such critical equipment decisions - they are seldom adequate in a competitive production environment.

Tank Design

WorleyParsons has considerable in-house expertise in wine tank design, both in terms of thermal (heat transfer and insulation) and seismic (strength) design.

By detailing exact requirements, we can eliminate many of the risks and unknowns for tank fabricators, resulting in lower tank costs and a higher quality result. Owning the tank design also gives us greater flexibility in procurement, with the option of ordering identical tanks from different fabricators to realise benefits in both cost and schedule.

Fermentation Load Profiling

WorleyParsons is able to build seasonal refrigeration and heating models by taking into consideration the fruit receipt profile, the specific winemaking techniques and the ferment rates required by the winemaker. This profiling enables an accurate determination of required capacities for the heating and refrigeration plant.

Barrel Cellar Design

Achieving precise barrel cellar temperature and humidity control is a complex but critical task. WorleyParsons understands the many considerations that will affect the final performance of the cellar, for example, the construction materials, location, winemaking requirements, energy efficiency and the existing plant constraints (refrigeration and heating).

Of particular interest is the psychrometric performance of the cellar and how this affects wine losses relative to the resulting humidity.

WorleyParsons engineers consider all of these issues, together with the customer's budget, and then deliver the optimum bespoke design.

Wine Processing

There are many other steps in the winemaking process where WorleyParsons can offer expertise, not only with the specification and selection of equipment for new facilities, but also installations and integration into existing facilities. Areas of expertise include filtration, micro-oxidation, heat exchange, mobile plant and clean in place (CIP).



Craggy Range Load Profiling

CUSTOMER CRAGGY RANGE
LOCATION HASTINGS, NZ

WorleyParsons has built a detailed analytical model of Craggy Range's refrigeration and heating demand over the vintage period.

The plant and reticulation is matched to this load ensuring optimal performance without relying on over specification.



3D Modelling of Walkways & Tanks

CUSTOMER DELEGAT'S

LOCATION MARLBOROUGH, NZ

Delegat's had an exacting requirement both visually and operationally for their walkways and stairs. WorleyParsons use of 3D modelling resulted in an exceptional outcome in terms of quality, functionality and final installed cost.

Services and utilities

Services and utilities can account for a considerable proportion of a winery's total costs. The capacity and reliability of these assets is integral to the production process, particularly during the vintage period.

It is also important to take a longer term view; considering the costs over the life cycle, maintenance needs and future capacity requirements.

WorleyParsons is able to assist with the specification, design, procurement, installation, commissioning and maintenance of all winery services and utilities.

Refrigeration and Heating Plant

When specifying refrigeration and heating plant and their associated reticulated systems, a thorough cost-benefit analysis can help to determine the appropriate technology, energy source, configuration, development staging, expandability and interdependencies (e.g. heat recovery). This is often a complex analysis: a business driver of minimising capital costs will likely give a different outcome to one based on minimising operating costs. WorleyParsons has a thorough understanding of the technologies and analysis techniques and is able to give sound advice on appropriate systems for a given objective.

Walkways, Platforms and Stairs

The design of walkways, platforms and stairs can have a major impact on the ergonomics and aesthetics of a winery. WorleyParsons uses 3D design for easy visualisation and comparison of the various concept options. This not only ensures that the completed installation is integrated seamlessly into the building, tanks and equipment, but also that the highest level of fabrication quality is achieved.

Tank and Process Controls

There are many temperature and plant control system options open to the winemaker, from basic stand-alone tank temperature controls through to a full SCADA system. WorleyParsons can help to determine which option best suits a particular operation, on a cost and functionality basis.

Winery Wastewater

The effective and cost efficient collection, treatment and disposal of wastewater is a challenge for the majority of wineries. It not only involves expensive capital plant but can also have high costs associated with the supply of chemicals, maintenance requirements and the manpower necessary to keep the facility operational.

Wastewater treatment requirements are dependent on the available means of disposal and could simply involve screening and pH correction, or could extend to full biological treatment. WorleyParsons can determine the appropriate treatment levels and technologies, as well as deliver a solution through detailed design, construction and commissioning. We can also assist with any negotiations with Territorial and Regional Authorities during the consenting process.

WINERY

Capability & Experience

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