

Architecture as Tourist Attraction

Broadening the concept of 'Terroir' as a Design Methodology

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Abstract

This Master's Degree Project explores the contemporary winery's interest in tourism and consequently, the implications this may have on its design. It further makes the claim that architecture can exist as a tourist attraction without having to revert to the "Disneyfication" of the built form as so many wineries choose to do. With this in mind, the project addresses the public's new-found interest in the world of wine, or 'Wine Tourism', from both tourism and production perspectives. Consequently, it takes a critical look at contemporary winery designs (typically built with no sense of authenticity and regionalism) through the interpretation of the concept of 'Terroir' and its architectural equivalent of 'Place'.

The first section of this document assesses the dichotomy of production and tourism which most of today's wineries must resolve. The second section explores potential solutions derived from concepts put forth by Dr. Donald Getz, a Tourism and Hospitality Management Professor at the University of Calgary. His research into 'Wine Tourism' has suggested that wineries take a pro-active role in the development of touristic attractions to subsidize retail sales. The third section establishes the context for this project as well as introduces the concept of 'terroir'.

Referred to as the metaphysics of wine making, 'terroir' is the sum of all individual components that may affect a particular place, and as such, makes an argument for exclusivity. It suggests that just as wine gets its distinct quality from its 'terroir' so too should architecture. Understanding 'terroir', for that reason, is essential to the design of any architectural work, since the influences that manifest themselves in the soil and surroundings are critical elements to the development of both wine and architecture.

The fourth section fulfills the practical nature of this thesis; the design of a winery for the Okanagan Valley. The subsequent intervention, a synthesis of three independent programmes, creates a dialectical relationship between its agrarian setting, regional vernacular and topographical influences. Adopting the concept of 'terroir', the design creates an architectural language rooted in regionalism, which in itself becomes an attraction. The form and function of this building addresses both tourism and production concerns while accommodating a gravity flow wine making process. The proposed winery is therefore conceived of as a place in which the agrarian landscape and architecture mesh to create a spatial and sensory experience for the tourist, without disrupting production.

Key Words & Phrases

- Architecture
- Attraction
- Circulation
- Context
- Gravitational Winery
- Place
- Regionalism
- Representation
- Sensory Experience
- Site
- Terroir
- Tourism
- Wine
- Wine Tourism



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“ It is amazing that,out of all of the agricultural and industrial applications, no other single entity is more visited than a winery. This is because winemaking is more than an agricultural and industrial application of technology. It is an art form. “
(Ziraldo, 1995)



To Ainsley,
(the love of my life)



Architecture as Tourist Attraction

Broadening the concept of 'Terroir' as a Design Methodology

Viticulture is the most expressive of all agricultural industries. Not only does it involve considerations of climate and soil, the availability of water and threat of disease, local and regional methods of cultivating the vine and widely varying harvesting practices; the geography of viticulture also extends to the development of distinct cultural landscapes and perpetuation of regional traditions. (de Blij, 1983)

"If you leave grapes alone, they'll make wine by themselves" (Oz Clarke, 1995)

According to Paul Clark (1997), curator of the British Columbia Wine Museum, the world of wine has expanded dramatically since its discovery nearly sixty-five thousand years ago. Until a century or two ago, wine only came from a handful of countries: France, Portugal, Spain, Germany and the United States. The world of wine used to be pretty simple. Winemaking was almost parochial, where its recipes were restricted to a wealthy landowner's estate. A winemaker would be unlikely to know much about the wine styles from over the next range of hills, let alone from over the barrier of country and continent.

Within the span of two generations almost all aspects within the wine industry have changed. Innovations in communication and travel have opened up new wine regions, refined methods of making wine, enabled vintners to share information with each other, while simultaneously making wine and wineries accessible to the general public. As the public's interest grows in the world of wine, so does their curiosity of where their favorite wines originate

Introduction

from. Visits to local vineyards and wineries have increased over the past decade, giving wineries considerable potential as destination attractions. While de Blij (1997) argues that the cultural landscape of viticulture 'gives identity to a region', it also creates 'an appealing environment' for consumers to escape the urban centres and that is partly why wine regions around the world attract endless streams of visitors. This escapism has been coined "Wine Tourism (Getz 1997; Mcionis, 1998; Dodds, 1996).

The world of wine, like everything else in the world, is constantly changing. In most of the world's wine region, high competition and an abundance of small wineries has forced them to attract visitors and make on-site sales for survivability. However, the structures which house the wines have not been designed to accommodate this increase in unproductive traffic. Vintners who have accepted the realities of wine tourism, tend to rebuild

their wineries using imagery of Seventeenth or Eighteenth Century vernacular, or what wine tourism critics refer to as the “Disneyfication” of wineries for tourism’s sake.

In addition to being competitive as tourist destinations, wineries are also re-discovering the merits of old production methods. The process of using gravity instead of pumps has been argued to be a superior method of production while maintaining the quality of the wine. Vintners understands that this manufacturing method will set themselves apart from their competition, not only in terms of wine quality but equally important, as a tourist attraction. Inniskillin Wineries, of Niagara-on-the-Lake, is one such grower who is seeking to implement this process, and as such, will act as the hypothetical client for this Master’s Degree Project.

This project will explore the reasons why wineries are interested in tourism, and subsequently, the implications for a gravitational winery design. It will furthermore make the claim that an architecture rooted in its ‘terroir’ creates an argument for exclusivity thereby creating a foundation for a regional architecture. If successfully done, the resultant built form, as an independent entity, will exist as a tourist attraction.

What is wine tourism?

Ross Dowling of Edith Cowan University in Perth, Western Australia, writes while both the wine and tourism industries have been with us for centuries, he believes that wine tourism too has been around for a very long time. Just as tourism to natural areas has recently been refocussed and repackaged as ecotourism, it is contended that broad scale visits to wine regions are now being reinvented as wine tourism.

Hall and Macionis (1998), state that wine tourism is ‘visitations to vineyards, wineries, wine festivals and wine shows for which grape wine tasting and/or experiencing the attributes of a grape wine region are the prime motivating factors for visitors’.



(Figure 1) - Chateau des Charmes, Niagara-on-the-Lake, Ont. - No “royalty” Here....

Assessing The Problem

Dr. Donald Getz, a Tourism and Hospitality Management keynote expert on wine tourism from the University of Calgary, has suggested that today’s wineries are the core attraction in wine tourism. Even though many are not built or managed as attractions, there is increasing recognition that wine tourism works to the benefit of most wineries and they are adapting to this market. Some, especially small, boutique wineries in emerging or non-traditional wine producing regions, are heavily or entirely dependant on visitors for their existence (Cambourne, 1998). A few major wineries have been built as, or are becoming hallmarks or centrepieces for, wine tourism in their regions. Getz further states that others are being created or are evolving into integrated estates that function as self-contained tourist destinations.

Getz (1998) further suggests that the key to the supply side of wine tourism is to develop a *successful winery attraction*. Characteristics include education, presentation and location. On the demand side successful wine tourism is dependent on market segmentation, that is, attracting the wine tourist.

“Just a tourism to natural areas has recently been refocussed and repackaged as ecotourism,...broad scale visits to wine regions are now being reinvented as wine tourism”

Getz continues by saying that a key point to emerge is that wine tourism is not just about tourists drinking wine on vineyards. Rather, wineries attract a whole host of different visitors, the majority of whom visit wine regions for their rural charm and ambience rather than the possibility of drinking wine. He also found that visitors to wine regions tend to be of mature age, are affluent, and are seeking an informative experience involving touring, dining, buying arts and crafts, and visiting working wineries. “For many the actual purchase of wine at the cellar door is merely an added bonus (Getz, 1998)”. Paul Clark, (1997) of the British Columbia Wine Museum, simply states that a winery projects two things to the tourist; “A winery provide an escape from the daily grind of city life” and that a (winery) casts “images of romance, status and wealth reinforcing the lifestyle (or ‘good life’) image that wine creates or enhances.” It is these elements and not really the wines that draw the tourists to the wineries. “To capture the tourist market”, Clark adds, “wineries should reflect that perceived stature through its built form”.

In the past few years there has been an unprecedented boom in wineries and winery design and as such owners are striving, through architecture, to make statements about themselves, their lives and their wines without reverting to the literal.

With recent increases in tourism interests in the wine industry, many, if not most of the wineries were never conceived or built to sustain the extra burden associated with wine tourism. Winery owners who understand the importance of the tourist trade as a mean for financial viability tend to bite their lips to accommodate tourists within the production facility. However, wineries who do not plan for unproductive traffic find tourism cumbersome. More recent and successful wineries who foresaw the benefits of tourism, have reverted to an architecture of imagery, where its architecture tends to be reflected by a characteristic appearance of seventeenth or eighteenth Century European vernacular rather than local, regional and topographical influences.

So how does one go about developing the successful winery attraction? After all, a winemaker can only push the envelope on, say, Chardonnay’s taste and flavour so far.



There are many choices available to wineries when it comes to attracting and serving visitors. Architecture is an area where both private and corporate winery owners have put their stamp on the Okanagan Valley. Like winemaking, architecture is deeply connected to the mastery of inspiration and creativity. Both are very site specific, reflect the personality of its owner(s) and ultimately, both affect the senses in pleasurable ways.

Getz asked the question;

“Why are wineries interested in Tourism?” Dodd (1995) summarized the various reasons for wineries to cater to visitors:

- Allows people to try a new product
- Can build brand loyalty
- Increased profit margins
- Provides additional sales outlet
- Yields marketing intelligence
- Allows for consumer education

Getz suggests that successful wine tourism destinations include authentic regional architecture, cultural and heritage attractions, interpretation of the region, winemaking and wines, tours within the region, and festivals and events with a wine theme. All of the above must be integrated to provide visitors with a unique ‘experience’.

Getz (1997) concluded that in most of the world's regions, high competition and an abundance of small wineries has forced [wineries] to attract visitors and make on-site sales. Getz's research quotes;

Saunders (1996) that Canadian grape growers have discovered they are in the tourism business.

As noted by Dodd and Bigotte (1997), the majority of American wineries rely primarily on tourism for survival, reflecting both their inability to market widely and the fact that profit margins are highest at the source.

Getz quotes Folwell and Grassel (1989) who found that many wineries in New York and Washington state, wineries relied almost exclusively on direct sales for viability.

Boddy (1998) reported to Getz that in British Columbia, the average winery gets about 18 cents gross revenue from a bottle for wine sold in the provincial liquor stores, as opposed to \$5.98 CDN for the same bottle sold at the cellar door.

Even where direct sales are not of great importance, many wineries try to educate visitors and by doing so, hope to get market intelligence, feedback and consequently loyal customers. Getz points out that a few wineries, like Robert Mondavi, are primarily concerned with education since product sales are quite successful in retail outlets.

Christian McIntosh (1997), in Wine Business Monthly, recommends that “it is no longer enough to simply greet your guests and pour the wine - people have become more wine-savvy and often demand know-how from tasting room staff. Ultimately, as Dodds and Bigotte (1997) discovered, tourists revel at the chances of trying the wine or meet the winemaker prior to making the purchase.

Essentially, wine tourism involves more than just visiting wineries and vineyards. The 1998 First Australian Wine Tourism Conference (FAWTC) identified by survey respondents the following motivating factors in visitation to a wine region and winery: total experience, quality of

Wine Tourism

“...19.1% embrace the architecture...”
(FAWTC, 1998)

wine, unique setting, interaction with the winemaker and reputation.

The ‘total experience’, identified as a motivating factor by 41.2% of respondents (FAWTC, 1998), is the culmination of a number of unique experiences: the ambience, the atmosphere, the surrounding environment. To a lesser extent, but quite still relevant, was the opportunity to ‘meet the maker’ and interact in the vineyard setting. Similar factors were identified in regards to what attracts visitors to wineries. It is more than just wines and the opportunity to sample and purchase at the cellar door that attracts visitors to wineries. The FAWTC found that the obvious, 30.9% of people were there due to the quality of the wines, but surprisingly, 19.1% of respondents said it was the ambience and mystique of a winery, embracing the architecture, uniqueness, facilities and surroundings which were viewed as important motivational factors.

Getz has discovered through his visits to numerous wineries, case studies and limited available literature that there is no single, winning strategy or formula for designing an ideal tourist oriented winery. In fact diversity is encouraged, as is adherence to regional architectural styles and traditions (Getz, 1998).

Some wineries are so small that guests literally meet the owners upon entering a 'minimal facility' whereas other offer restaurants, art collections, car collections, museums, retail facilities and overnight accommodations to create major tourist attractions.

It is not just buildings and artifacts that are of interest, although many cultural and industrial tourists will take a special interest in these things regardless of any major interest in wine. But vineyards, grape varieties and viticultural practices are also important for conservation and interpretation. There might also be scientific value in these historic elements, such as the use of gravity in wine making, or disease-fighting experiments. (Getz, 1998)



(Figure 3) Entry Signage at Cedar Creek Winery, Kelowna, 1999



(Figure 4) Entry at Mission Hill Winery, Kelowna, 1999



(Figure 5) Harvest at Inniskillin Winery, Niagara-on-the-Lake, 1998

Developing the Successful Winery Attraction

Based on conversations with several of Kelowna's winery owners, they have categorized tourists who visit their wineries in four groups mentioned below:

- *The Retail Dash:* Visitors drive up only to purchase product and then departs.
- *The Five Minute tour:* Visitors are only there for tastings, may or may not purchase product
- *The Typical Tour:* Typically 50 minutes, Interpretation of region, full sensory tour of facility, tasting, chance to purchase product.
- *The Outing:* Family oriented outing. May stay for complete afternoon. May involve evening function, or outdoor concert.

Very little research has been done on creating a successful visitor attraction guidelines for wineries. However Australia's National Wine Tourism Strategy conducted a survey in which respondents identified traits to make winery design more appealing from a tourism perspective.

• Access and Visibility

A winery in a good location, near a major thoroughfare, is highly recommended since it increases the possibility of tourism. Since wineries are responsible for their own marketing, experience has taught wineowners to use any methods possible to draw tourism.

• The Entry

Getz warns about the needed attention given to first impressions. That is, proper signage, clear parking designation, short walks from the tour buses or cars. Gentle walks along the vineyards can be a very pleasant entry method. Coaches require separate parking requirements. "Bad parking facilities, with long walks over rough or wet surfaces, do not make for an enjoyable wine tourism experience" (Getz, 1998).

- **Internal Access**

Getz mentioned that the flow of visitors has to be planned, both to facilitate their desired activities (i.e. get to the tasting room, take a tour, use the washroom, etc.) and to manage crowds. Visitor flow can be mapped and analyzed for problems like congestion points and crush areas. The tours offer the challenge, with the risks associated with taking people into production and equipment areas, plus the comfort of guests which might be affected by moisture, temperature, noise and odours.

- **Site orientation**

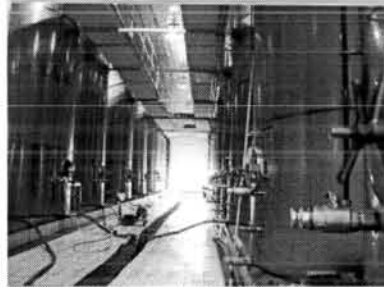
Obviously this is an obvious trait in designing any structure to enhance the tourist experience.

- **Theme**

Some wineries are architectural masterpiece and are in themselves the attraction, however this is done with name recognition; Micheal Graves at Clos Pegase and Herzog and Desmeurons at Dominicus. The wine competes for centre stage. More traditional buildings have appeal to tourists, especially if their historical and cultural authenticity is evident (Getz, 1998).

- **Reception and Direction**

There are no right or wrong answer says Getz, as long as it makes a favourable impression. Respondents stated that the immediacy in being greeted rated highest.



(Figure 6) Fermentation Room, Inniskillin Winery, Niagara-on-the-Lake, 1998

- **Tasting Rooms**

Designed as a central feature, it should maximize visitor enjoyment, while maintaining access to educational and retail components of the winery.

- **Internal Function Areas**

Today's wineries are fast becoming the rural answer to local community centres. Getz (1998) states that wineries make attractive function venues. Examples include meetings, dinners, seminars, or cooking classes. Seperate rooms can be constructed for private tastings and dinners, large banquets or even wedding receptions.

- **Outdoor Event Spaces**

Getz discovered through his travels that many wineries host their own outdoor events or participate in regional festivals. The most common outdoor event seems to be concerts, picnics and other food events.



(Figure 7) Vineyard, Robert Mondavi Winery, Napa Valley, California, 1998

- **Food Services & Catering**

Other than the 'destination restaurant', wineries may need to be equiped with a minimum of a refrigerator with prepared snack and beverages other than wine. The range includes having a snack bar, restaurant, catering facilities.

- **Other Retail Space**

It is well known that visitors tend to spend more than locals, and for that reason, wineries may develop their own specialty line with a wine theme, while others adopt a country or ethnic theme. Typical retail items other than wine include; souvenirs of the winery, specialty items associated with food (books, glasses, etc.), local produce, travel literature, clothing (usually with the logo of the winery), up-market goods unrelated to wine or to the winery (Getz, 1998).



(Figure 8) Chardonnay, 1998

- **Departures**

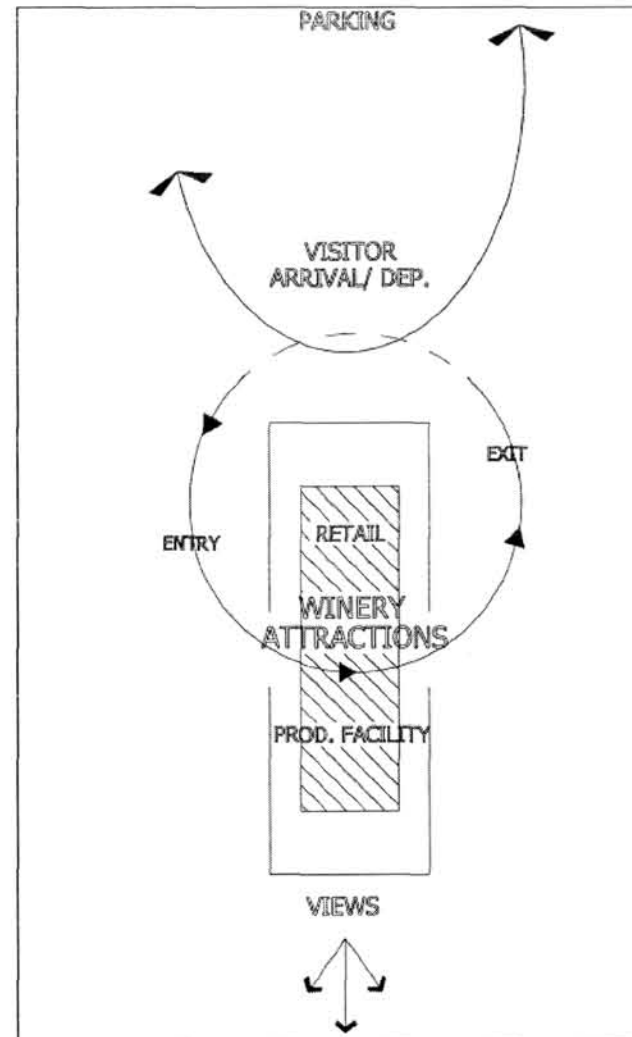
Getz stringently recommends that departure be separate from entrance. Separation avoids potential congestion and allows the winery to structure visits so that departures are made under optimal circumstances. Usually this means having the exits beyond the retailing area, but it can also allow for personal contact from staff.

- **Essential Services**

Every visitor facility must provide the essential services and amenities; washrooms, drinking water, comfort areas (seating, shade, etc.,) (Getz, 1998)

- **Picnic and Play Areas**

To be family-friendly, provision for visiting children is desirable. Picnic and play areas are inviting to travellers, and can lead to increased sales from retail outlets.



(Figure 9) Schematic Interpretation, macro scale, circulation patterns

As wineries became tourist attractions, particularly in the Napa Valley of California, there seemed to arise a competition for the most appealing or unique design. Some of the resulting facilities are not authentic in any way, nor are they going to have enduring visual appeal. (Getz, 1998)

As destination attractions, wineries are constantly reconfiguring general traffic patterns, on both a macro and micro scale, to accommodate their guests without crossing over into production routes. Preventing congestion points and crush areas allows the visitor a continuous experience without having to backtrack.

The diagram on the left is a schematic interpretation of general traffic patterns, on the macro scale, typically seen in Kelowna's seven wineries.

This interpretation of tourist driven requirements has inspired the configuration of two schematic loops intersecting at a drop-off area. The first loop takes into consideration vehicular traffic, and the second, pedestrian traffic.

This schematic diagram takes into consideration all disparate tourism traits and begins to suggest two dimensional forms which will eventually create the proposed winery.

Donald Getz (1998) has summarized Allegra and Gillette's 1997 tourism guide to the Napa Valley. Winery visitors potentially have many interests, not the least of which is a desire to learn about and taste the product.

Developing the Successful Winery Tour

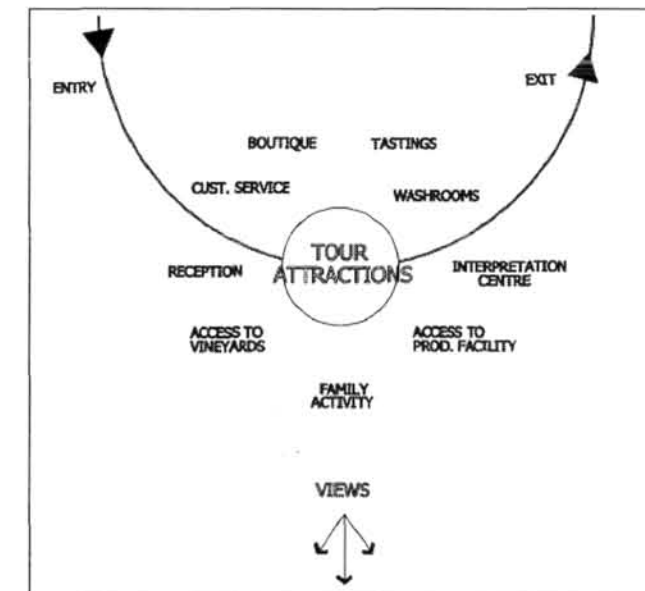
Other interests include:

- Wine making; varietals; viticulture
- Caves, cellars
- Barrels, Barrel Making, Oak.
- Food to eat and its links with wine
- Art, including sculptures, paintings, wine labels
- Architecture ; interiors
- Landscaping, gardens and views
- Personalities (meet the winemaker)
- History (of the area, winemaking, the family)
- Culture (of wine, the area)
- Organic Farming and wine production
- Bottling and bottles
- Marketing the wine (where to buy it, wine clubs)
- Wine themed related merchandise (shopping)
- Sensory stimulation (smell, taste, sound, feel)
- Romance (of wine and wine regions)
- Flora and Fauna; microbiology; pest control

A review of many winery guides and winery promotional materials, plus personal visits, suggest the following tour elements. Getz (1998) offers a list of possibilities from which the winery managers must select the appropriate blend to suit their environment, markets and goals.

- The tasting (before, during or after the tour; from vats and barrels)
- Providing views of actual operations
- Hands on experiences (picking the grapes)
- Meeting the owner, winemaker and other staff
- Receiving instruction (wine Making, cellaring, etc)
- Interpretation of history, processes, facilities
- Providing technical and economic information about wine making, the area, the industry.
- Sales pitch
- Wine and Food appreciation
- Photo opportunity

The diagram below reflects the circulation patterns at a micro level in which all tour elements are grouped as tour attractions. This allows all surrounding amenities to be in proximity to these elements, thereby making the winery tours successful and efficient.



(Figure 10) Schematic Interpretation, micro scale, circulation patterns

Costs and Benefits of Various Sales and Distribution Channels For Wineries

Reproduced, with permission, from Donald Getz's Book "Wine Tourism", (1995)

Direct Sales at Cellar Door Residents & Tourists..	Direct Sales to Wine Stores, Restaurant and Hotels.	Wholesale (Domestic and Export)	Mail-Order
<p style="text-align: right;">Costs:</p> <ul style="list-style-type: none"> -Capital for facilities -Special staffing and training -Participation in events and other promotions to market the winery and the destination - Possible interference with vineyard and winery operations, <p style="text-align: right;">Benefits:</p> <ul style="list-style-type: none"> - Higher profit margins - Can create brand loyalty - Allow database development for mail order sales - Market Intelligence - Enables consumer education - Save on advertizing and sales visit costs. 	<p style="text-align: right;">Costs:</p> <ul style="list-style-type: none"> -Sales visits (might require special sales staff) -Might require incentives to gain acceptance -Price discounting often required for volume sales. <p style="text-align: right;">Benefits:</p> <ul style="list-style-type: none"> - Higher volume sales - Wider distribution and awareness of products 	<p style="text-align: right;">Costs:</p> <ul style="list-style-type: none"> - Requires reliability in production volumes (potential for non-delivery) - Must ensure consistent high quality in products - Might require domestic and foreign sales trips - More sophisticated business management (professional staff) - Risk of dependence on specific markets or wholesalers. <p style="text-align: right;">Benefits:</p> <ul style="list-style-type: none"> - Highest possible sales potential - Widest exposure to product leading to brand development and extensions. 	<p style="text-align: right;">Costs:</p> <ul style="list-style-type: none"> -Maintain computer database -Regular mail-outs -Shipping costs - Discounts or reward programmes to loyal customers <p style="text-align: right;">Benefits:</p> <ul style="list-style-type: none"> - Can quickly expand from local to national to international sales - Higher volume sales - Larger purchases (usually by the case) - Fosters brand loyalty through relationship marketing.

A Look at Kelowna's Seven Wineries

Name.	Size		Attractions								Avg. # of Bus Tours Per Day		Avg. # of Tourists Per Day		Tour Consists Of;		Equipment										Environment					Source:																					
	Small	Medium	Large	Administration	Vineyard/ Farm	Prod. Facility (winery)	Restaurant/ Snack	Wine Shop/ Boutique	Gallery/ Collection	Interpretive Centre	Pic Nic/ Family Space	Less than 5	Less than 10	More than 10	Bus Tours; By Appointment Only	Less than 50	50 to 300	300 to 500	Duration, Avg. Tour	Vineyard/ Farm	Prod. Facility (Winery)	Restaurant/ Snack	Wine Shop/ Boutique	Gallery/ Collection	Interpretive Centre	Tasting	Other	Crusher/ Destemmer	Presses	Upright Fermenters	Robo Fermenters		Centrifuge	Pumps	Malo Lactic Fermentation	Barrels	Settling Tanks	Holding Tanks	Bottle Line	Organic Process	Recycle organic matter	Waste Treatment centre	Pump Station	Water Storage	Thermal Mass	Solar Energy							
Quail's Gate Estate Peak Time: July, Aug, Oct Wine Fest Down Time: Jan, Feb,	●			Employees	8	10	6	7	8		○	●			Yes	●			45 min.	●	●	●	●			●			1	3	6	7	1		●	●	●	●		●	●	●											Nancy Nourise, Cust. Service
Mission Hill Peak Time: June to Oct Wine Fest Down Time: Dec, Jan, Feb,		●		Employees	7	13	8		5	1	○	●		No		●			40 min.	○	APPOINT.		○			●			1	3	6	7	8		●		●	●		●	●	●									John Mayard Inventory Control		
Calona Wines Peak Time: June to Oct Wine Fest Down Time: Dec, Jan, Feb,			●	Employees	6	0	28		8	1		●		No		●			30 min.		●	●	●		●			○	●	●	●	●	●	●	●	●	●			●	●	○									Jay Barker Cust. Service		
Summerhill Estate Peak Time: June to Oct Wine Fest Down Time: Dec, Jan, Feb,		●		Employees	3	10	8	8	8		○	●		No		●			45 min.	○	●	●	●		●	Pyramid			●	●	●	●	●	●	●	●	●	●		●	●		●	○								Kyla Cipes, Cust. Service	
St' Hubertus Estate Peak Time: July, Aug, Oct Wine Fest Down Time: Jan, Feb,	●			Employees	2	3	3		2		○	●		No		●			30 min.	○	●	●			●				●	●	●		●	●	●	●	●		●		●											Noreen Fraser Cust. Service	
Cedar Creek Estate Peak Time: July, Aug, Oct Wine Fest Down Time: Dec, Jan, Feb,		●		Employees	5	12	7		5		●	●		Yes		●			40 min.	●	○	●	●		●				●	●	●	●	●	●	●	●	●	●		●	●		○								Denise McManus Inventory Control		
Gray Monk Estate Peak Time: June to Oct Wine Fest Down Time: Dec, Jan, Feb,		●		Employees	5	7	6	3	3		○	●		Yes		●			45 min.	○	●	○	●		●				●	●	●	●	●	●	●	●	●		●		●											Steven Heiss Inventory Control	



The Client

Inniskillin Wines

Niagara-on-the-Lake, Ontario
(Figure 11), Brae Burn Barn

The successes of Inniskillin Estate Winery is reflected by their growth and recognition worldwide. With three operational wineries spanning North America, Inniskillin Wines have offered their assistance by lending their name to the title of this design thesis as well as acting as client. The Inniskillin winery of Niagara-on-the-Lake is one such vineyard which has successfully synthesized production and tourism.

Founded in 1975, the name Inniskillin is Irish and derived from the famous Irish regiment, the Inniskilling Fusiliers, which served in North America in the war of 1812. Upon completion of his military service in the regiment, Colonel Cooper was allocated crown land which he named Inniskillin Farm.

The Inniskillin winery revolves around a major landmark; the Brae Burn Barn, an old barn with long, simple pitched roof and usual overhanging peaks. It houses the winery's boutique and visitor centre on the main floor and an art gallery on the upper floor. The barn and two other on the Larkin Farm to the south are, in fact, "prairie barns" and are thought by many to be designed by Frank Lloyd Wright, who designed the Larkin Building in nearby Buffalo, New York.

At Inniskillin, co-owners Donald Ziraldo and Karl Kaiser adopted Wright's philosophy of "organic architecture" and consequently made the surrounding structures "belong to the ground". Wright's bold marriage of natural form with modern creation is reflected in the Inniskillin philosophy of innovation inspired by tradition. (Ziraldo, 1995).

The Inniskillin Winery has successfully dealt with wine tourism, combining manufacturing components and tourism. In 1992 while building their new Barrel Aging Cellar, in recognition of growing visitation to the winery,

they mapped out a circulation pathway which brings the visitor to the periphery of the wine making process. Furthermore, they offer a self-guided tour of the premises during off-hours as well as a guided tours during peak times. The tour involves 20 stations, all of which are described and illustrated in Ziraldo's 1995 book entitled "anatomy of a winery".

Getz (1998) wrote that the main advantages of the self guided tour approach is that there is no need for extra tour staff and related administration, no need for visitors to schedule or book tours, and there is no direct interference with winery operations.

Getz continues by pointing out the disadvantages of such a touristic approach. One such drawback is that visitors might not get the full sensory experience of tours within the facility. The interpretive, entertainment and sales roles of the guide are also absent, and most problematic of all, it is potentially more difficult to establish a relationship with the visitor, thereby neglecting the opportunity to create brand loyalty.

The Intangibles

Establishing The Programme

There are several wineries which currently exist which specialize in and produce only one type of wine as a means of satisfying consumer demand for higher quality wines. These specialty-type products typically fetch higher unit prices per bottle, and as such, are attractive to those who seek to develop the 'ideal' wine.

By definition, the 'ideal' wine is the resolution of the Pinot Noir grape and Chardonnay grape to a level of exceptional excellence that those interested in this methodology cannot afford to 'dabble' in other varieties. The pinot Noir is the 'Rolls Royce' of red wines. This old, yet temperamental grape has long been admired for its superlative quality, and if done well, will fetch retail prices that will compensate for the supposed limited selection.

Robert Mondavi Wines, in California, has created such a winery. The new Opus One winery, completed in 1991, follows a gravity-flow design that put most of the vast edifice underground. The gravity-flow format means that the grapes are received on an upper level of the winery and the must (see Appendix 3 for terminology) flows

downward naturally into tanks without the need for pumping. Such gentle wine treatment is important to wine quality, according to Opus winemakers. The gravity-flow design requires twice the space of a conventional setup, but it avoids pumping of the must, which the Opus One winemakers consider a key quality factor. "Pinot Noir really taught us that the gentler you are with wine, the more supple and the more flowery it will be," explains Tim Mondavi (Wine Spectator, 1995).

Inniskillin's interest in reaching this consumer base has created the mandate for the programme and design of this winery. With three sources of capital to draw from, Inniskillin can afford to "put all their eggs in one basket" for the design and development of this proposed gravitational winery.

Allowing the process of wine making to become an attraction can add to the "total experience" (Getz, 1998) of a visitor to any winery, not only by offering a unique environment, but also by producing a better wine.

- **Gravitational winery**
- **Flexibility in Design**
- **Seperate Entry and Exit**
- **Interpretive Centre**
- **Catering Facility**
- **Thermal Mass**
- **Maximize Vistas**
- **Outdoor Event Spaces**
- **Reflects Quality of Inniskillin**

The Client

Inniskillin Wines @ Kelowna

The Winery; Production Facility

SPACES	AREA		ACCESS TO	NOTES
	SQ. METERS	SQ. FEET		
RECEIVING	18.5	200.0	Crushing	Accommodate 1000 Kilo. (1 Ton) Farm Truck
CRUSHING AREA	9.3	100.0	Visitors View	
UPRIGHT FERMENTERS 8	74.3	800.0	Visitors View	Top of Tank Below Free Juice Trough
ROTO FERMENTERS 2	18.5	200.0	N/A	Top of Tank Below Upright Ferm.
WINE PRESSES 3	18.5	200.0	Adj. to Ferm. (Red)	
			Adj. to Free Juice (White)	
MALO-LACT. FERM. (Tanks) 10	74.3	800.0	Adj. to Presses	
MALO-LACT. FERM. (Barrels) 75	140.0	1500.0	Dark, cool Place	
AGING (Barrels) 200	185.8	2000.0	Tourist Attraction	Caves or part of Tour
FILTERING (Tanks) 10	46.4	500.0	Before Holding Tanks	
HOLDING (Tanks) 2	18.5	200.0	Bottle line	
LABORATORY	46.4	500.0	Central	Adjacent to Elevator, common to All
STORAGE	37.0	400.0	Bottle Line	Case Goods/ Bottles & Supplies
BOTTLE LINE	55.7	600.0	Shipping/ Aging	No Visitors Allowed
SHIPPING/ RECEIVING	37.0	400.0	SW Corner of Bldg.	10' Overhead Doors
OFFICES	27.8	300.0	Shipping	Weigh Scale for product
SHOP	46.4	500.0	Vineyard/ Maintenance	Access to Maintenance and Mechanical
GARAGE	37.0	400.0	Vineyard/ Maintenance	
WASHROOMS	9.3	100.0	Staffroom/ Prod. Floor	Unisex x 2
STAFFROOM	18.5	200.0	8 Employees - Prod. Floor	Warm Kitchen Provisions
SUB-TOTAL	919.2	10400.0		

SPACES	AREA		ACCESS TO	NOTES
	SQ. METERS	SQ. FEET		
GENERAL OFFICE	46.4	500.0	Reception	5 Employees - Open c/w Cubicles
LAYOUT ROOM/ BOARDROOM	37.0	400.0	General Office	No need to repeat, lack of Use
WASHROOM	4.8	50.0	Central	Unisex
OFFICES 2	20.4	220.0	Central	Inventory Control & Proprietor
RECEPTION	13.9	150.0		1 Admin. Assist. Sits three Waiting Area
VESTIBULE	4.8	50.0		Air Barrier
STORAGE	92.9	1000.0	Link between Bldg	Basement.
SUB-TOTAL	220.2	2370.0		

The Client

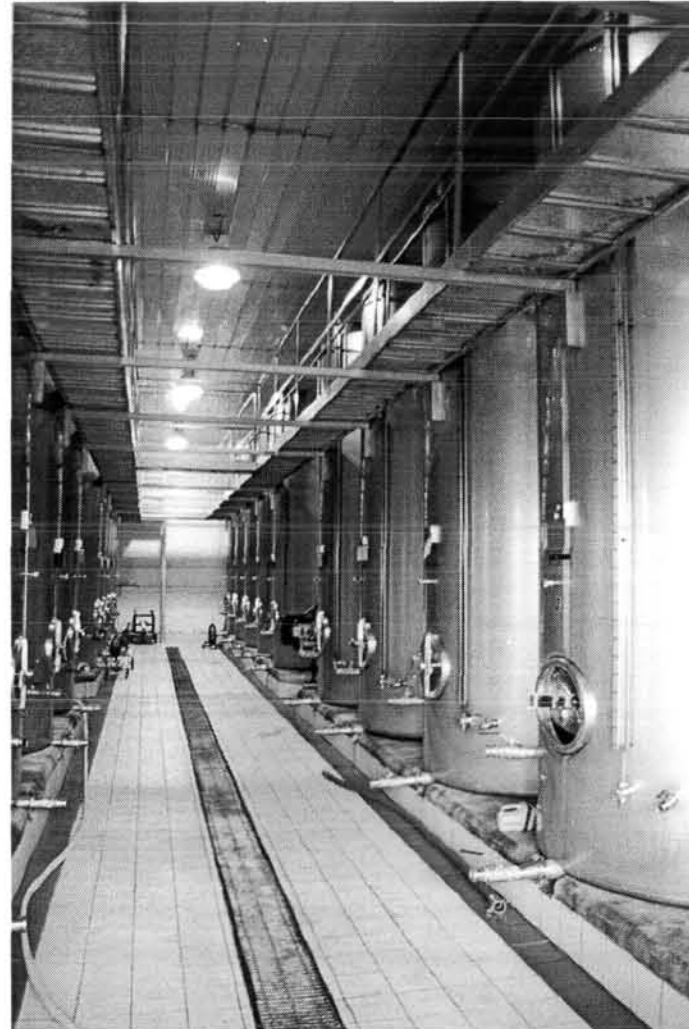
Inniskillin Wines @ Kelowna

The Winery; Tourism & Administration

SPACES	AREA		ACCESS TO	NOTES
	SQ. METERS	SQ. FEET		
RECEPTION	70.0	750.0	Entry	Ability to Accommodate 70 visitors
			Wine Shop	
			Interpretation Centre	
			Washrooms	
			Circulation/ Tour Routes	
			Exit	
				Flexibility in Design
WINE SHOP/ BOUTIQUE	125.0	1350.0	Entry	
			Reception	Peak: 70% of Floor Area
			Washrooms	Off Season: 35% of Floor Area
			Exits	
INTERPRETATIVE CENTRE	125.0	1350.0	Reception	Flexibility in Design
			Wineshop	Peak: 20% of Floor Area
			Washrooms	Off Season: 60% of Floor Area
			Circulation/ Tour Routes	Catered Space/ Wine Clubs/ Unveiling of new wines
			Production Facility	* May be used as Gallery/ Exhibit space
			Vineyard	
			Crush Area	
			Views	
			Entry	
WASHROOMS	Womens	20.0	200.0	Womens 4 W.C., 1 Hand. W.C., 4 Sinks
	Mens	20.0	200.0	Mens 2 W.C., 1 Hand. W.C., 3 Urinals, 4 Sinks
			Wine Shop	
			Interpretation Centre	
			Vicinity of Tastings	
			Circulation/ Tour Routes	
			Exit	
SUB-TOTAL	360.0	4210.0		

The final programme for the Inniskillin winery in Kelowna has been derived from the background research of the seven surrounding wineries. It will consist of the following :

- Size: Medium , 1500 sq. Metres (15000 sq. Ft.)
With a minimum of 25 acres of production vineyard to qualify it for a VQA designation.
- Staff
 - Administration - 5
 - Vineyard/ Farm -10
 - Production Facility - 9
 - Catering - Per Function Basis
 - Wine Shop/ Boutique - 5
 - Gallery/ Exhibition - Per Function Basis
 - Interpretive Centre - 2
 - Family/ Picnic Area - 1
- Average Number of Buses expected per day - 10 or more: No appointments necessary
- Average Number of Tourists expected per day - 400 or more: Duration of tour - 50 minutes
- Tour consists of
 - Vineyard/ Farm
 - Interpretation of wine/ region
 - Production Facility
 - Tasting Room
 - Gallery/ Collection
 - Wine Shop



(Figure 12) View of Malo-Lactic Fermenters at Inniskillin Wineries, Ont.

Programme

A winery is a marriage of production and tourism. Great wineries have the ability to separate both production and tourism routes while maintaining the essence of the winery. Since most, if not all, wineries sell a good percentage of their stock on site (wine boutique), tourism is essential to the survival of the winery. Therefore, architecture adds value to both the production and sale of wines, as well as making it a destination attraction.

Lobby

Seperate entry and exit to avoid congestion.
Big enough to accommodate groups of 50 or more at one time. Access to Amenities, Tasting Room, Interpretative Centre, and Retail.

Interpretive Centre

Necessity in the promotion of the winery, the process of winemaking, and how the winery is original and distinct.

This is important because the production of wine is seasonal, and the highlights of crushing and fermentation may take as little as a month to complete. The remaining period of time, the wine ages quietly inside the vats, casks and later bottles.

The purpose of the Interpretative Centre is primarily for education, and becomes the vessel for tourists to meet the wine maker. In this room, the winemaker offers 'How to' hints on wine making processes. As popularity in home wine making is growing, this serves as a medium for communication between maker and amateur.

This room must be flexible in design; able to accomodate private functions or convert in extra retail, gallery or extra tasting room. Make allowance for kitchenette (plates, glasses, cutlery) in the event of a catered function

Access to Facilities, Lobby, Crush area, View to operations below, Tasting Room, and Retail.

Tasting Room

The place where the Degustation will take place. Links to the natural world.

The purpose of this room is for obvious reasons. An extention to the Interpretative Centre, this room should be designed with major traffic flow patterns in mind. The winemaker will show guest how to prune vines as this room will be decorated with vines.

Access to Facilities, Lobby, Interpretative Centre, Serving Bar, Beginning/ end of tours, and Retail.

Retail Boutique

The Retail component of this programme should be located in such a way to address the four types of tourism. Should also be located before exit. Flexibility in ability to set different displays and snacks during special functions. May serve as an extention to interpretative centre as well as expand the lobby.

Access to facilities, Entrance/ exit, Interpretative Centre, Tasting Room, Beginning/ end of tours.

Facilities

Ability to handle 80 guest at one time. Complete with appropriate handicap facilities.

Room Descriptions

Tours

Sensory. The tour should support the process of wine making. In this case, gravity is a major attraction and the tour should reflect the ascention/ descending typically found in a gravity-flow winery. Provide for nodes for interpretation during tours. These nodes should be removed from the general traffic routes.

Smell, sight, touch, feel, hearing of the process is very important.

Outdoor Amenities

Allow a big enough outdoor area for Picnics, and large enough to accomodate large groups.

Edge Condition

“...there are no two places in the world that have the same terroir...it becomes an argument of exclusivity...”

Sight Lines

Vistas

The Concept of ‘Terroir’



(Figure 13) New Vines, Yakima Valley, Washington, 1998

Landscapes

Terroir (ter-wahr), a French word derived from ‘Territoire’ (territory) and ‘Terre’ (earth) is at its most simplest ‘soil’. However, to the wine community, it is the underlying foundation which holds that each site has a unique flavor due to the uniqueness of its geography, geology, climate and biological influences. It refers to all of the elements that go into making superior wine: soil, subsoil, microclimate, precipitation, drainage of both air and water, temperature, elevation of the land, tilt of the land towards the sun, and prevailing winds. The wine becomes greater than the sum of its parts when all these elements combine in just the right way.

Pandell, (1999) simply stated, “terroir” refers to the obvious, that every vineyard (and for that matter, every vine) exists in a unique environment. It is therefore impossible for a wine such as Mouton-Rothchild to be produced elsewhere in the Medoc region of France, or the world, because there is no other place in the world that has the same “Terroir” as Mouton. “Terroir becomes an argument of exclusivity” (Pandell, 1999)

Nature

Place

Axis

Context

Vernacular

Of all the arts, architecture is most capable of dealing with the particulars of situation - with place".
(J. Patkau, 1994)

Broadening the Concept of 'Terroir'

Does Architecture have an equivalent to 'terroir'?

In the context of a winery, where the product and the architecture are both man made, an architecture dictated by its terroir may be understood as an unbroken link to the natural world, and therefore its architecture becomes an argument for exclusivity. More specifically, it lays down the guiding principles for a regional architecture.

Some of the historical architectural theories are aware of the way in which our understanding is shaped by our contextual surrounding — by the conventions and traditions, the forms and structures that surround us and give shape to our local environments. This proposed 'regional' terroir then abandons the modernist search for a universal language, or 'ideal' language, and instead attempts to realize that forms are interpreted differently based upon the context in which they are heard. This term has been coined by many theorist as 'regionalism' (Frampton, 1995)

Regionalism as a strategy then becomes the broader task of expanding our native building languages and contextual vocabularies. Instead of presuming that there is some core identity to be preserved, 'regionalism' as a design methodology is rooted in its specific place, nature, history, utilizes high-quality construction, and vernacular traditions.



(Figure 14) Example of Regional Building Vernacular, Kelowna, 1999

Regionalism is, at best, an expression of contemporary architectural values rooted in local building traditions. It brief, it takes into consideration the following;

- **Context**
- **Topography**
- **Vernacular Influences**
- **Environmental Considerations**
- **Regional Building Materials**
- **Programme**
- **Client's needs**

Just as wine gets its distinct qualities from its 'terroir', then, so too should architecture.

Adopting 'Terroir' as a Design Methodology

Building in nature, as a successful intervention, requires that its architecture be specific to one area, or more specifically, to its 'terroir'.

Unlike historical architectural theory, such as classicism and modernism, which are based on 'ideals' or 'ideal types', terroir as a design methodology searches for a medium where architecture is not separate from nature but becomes an extension of it.

At best, an architecture of terroir mirrors regionalism in that it attempts to create an unpretentious architecture that would be responsive to the real world — to climate, to human needs, and to the construction process itself. Understanding 'terroir', for that reason, is essential to the design of any structure, since the influences that manifest themselves in the soil and surroundings are critical elements to the development of any architectural form.

An architecture of 'terroir' supplements regionalism by further attempting to develop a language of urban design that integrates different scales — the building, site, city and region.

An architecture of terroir also encourages a sense of limits, creating places that are at the human scale and consequently, acknowledges physical and sensory boundaries. Utilizing the human as the unit of scale, the building can avoid monumentality.

An architecture of terroir differentiates itself from regionalism by adopting the premise of 'organic' growth as the driving force behind any design. It argues that site conditions allow for the development of the built form while allowing both the programme and client's needs to be manifested within that form. It allows the building to become part of the landscape; without dominating it.

"If habitation and the environment are so intimately bound, caught in a mutual flux of influence, then any site can only be understood as both a natural and cultural construct. That is, just as natural forces exist and work on our artifacts, buildings and cities over time, we, extended by the possibilities of technology, affect nature in a profound way. Culturally embedded ideas of the natural, the public imagination of the land, frame our perception and readings of any site. Many readings are possible, but only certain ones are acknowledged. "Nature" cannot be viewed as an unconditional point of reference, but must be perceived as a set of possible realities. (J. Patkau, quoted from Micheal van Bakel 1995)

Frank Lloyd Wright chose a word with similar parameters as 'terroir' to describe his architecture; "organic architecture", and he first used the term in a public address in 1894:

"Let your home to grow easily from its site and shape it to symphatize with the surroundings if Nature is manifest there, and if not, try and be as quiet, substantial, and organic as she would have been if she had the chance"

Pheiffer (1993) described Wright as a student of nature and of the philosophical principles underlying the fabric of nature, he used the precepts of organic growth to inspire architecture. He likened the flow of form from root to stem to blossom to fruit as a valuable lesson in building construction. This sense of the whole, indivisible and integral, he described as an "architecture that develops from within outward in harmony with the conditions of its being as distinguished from one that is applied from without".

Wright defined 'Organic Architecture' as architecture that is appropriate to time, appropriate to Man, and appropriate to place (Pheiffer, 1993). These three concepts characterized his work throughout his career. The development of these three themes was constant in Wright's life, no one progressing without the other two. That was how he judged the significance of his work: all parts related to the whole as the whole is related to the parts, an organic entity (Pheiffer, 1993).

Inniskillin's philosophy of innovation inspired by tradition is based on Frank Lloyd Wright's writings.

'Organic' Growth

APPROPRIATE TO TIME

By "appropriate to time", Frank Lloyd Wright meant a building should belong to the era in which it was created. A twentieth century building, for example, should not imitate a seventeenth century building. Buildings of the past, Wright argued, addressed the lifestyles, social patterns, and conditions that are no longer applicable in modern times (Pheiffer, 1993).

APPROPRIATE TO MAN

By "appropriate to Man" Wright meant that a building's first mission is to serve people (Hoffmann, 1995). In that respect, Wright planned his structures with the human as the unit of measure. Furthermore, he consented to the notion that the reality of the building is the space which is to be lived in and not the walls and ceilings (Pheiffer, 1993).

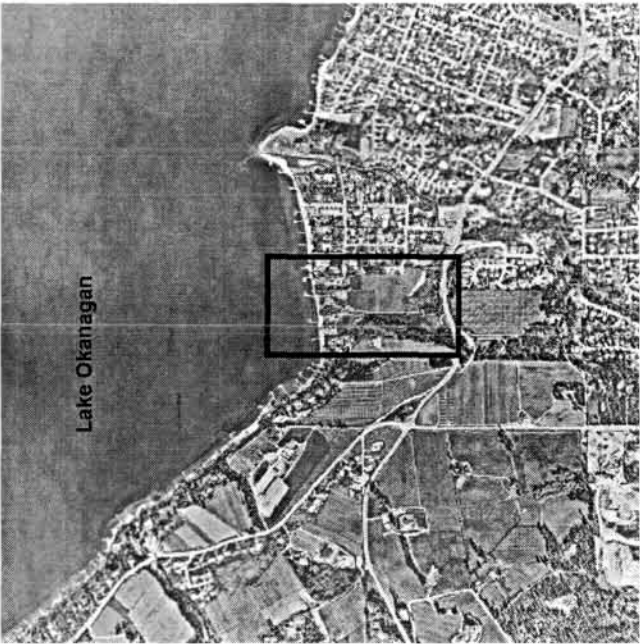
APPROPRIATE TO PLACE

Wright defined a building as being "appropriate to place" if it is in harmony with its natural setting, with the landscape, wherever possible taking advantage of natural features (Hoffmann, 1995). What put Wright at the forefront of his time was called "environmental planning". Specifically, Wright made his buildings conducive to the geography of the region by raising the living plates above what was coined the "prairie floor" as to afford a view of the surrounding vistas (Pheiffer, 1993).

Wine tourism is also closely linked to the experience of a sense of place in which all the senses come into play (Johnson, 1997)

The site for this project was selected due to its geography and soil composition. Choices were made in narrowing 'unwanted' characteristics found in the seven other surrounding wineries; difficult access, lack of parking, remote locations, all "contra-indicative of a successful place".

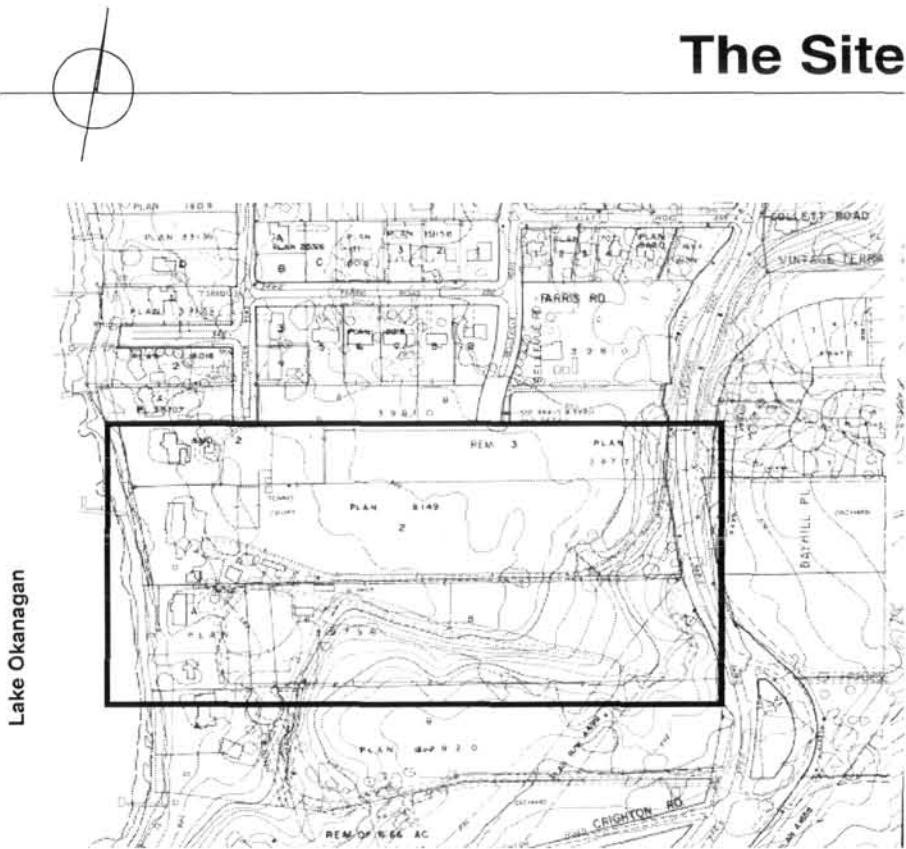
The site fulfills many of the tourism components needed to create a successful attraction; vicinity to downtown Kelowna, sightlines for both incoming and outgoing traffic and breathtaking vistas.



(Figure 15) Municipal Map of Kelowna; The Mission District



(Figure 16)



(Figure 17) Mission District of Kelowna; Bordered by Lake Okanagan to the west, Lakeshore Drive to the East



(Figure 18) Panorama of site. Fence line defines existing roadway.



(Figure 19) Access to Site;

This twenty-nine Hectares (72 acres) site, located off the Southern edge of Lake Okanagan in the Mission District of Kelowna, was once a 'growers or production vineyard. It has been abandoned due to erosion and shrinking economic. Its dormancy makes the site suitable for resurrection.

The site has a radically changing topography, moving from gentle rolling hills to the North to a steep escarpment to the South, giving the winery an open panorama of lake and sky.

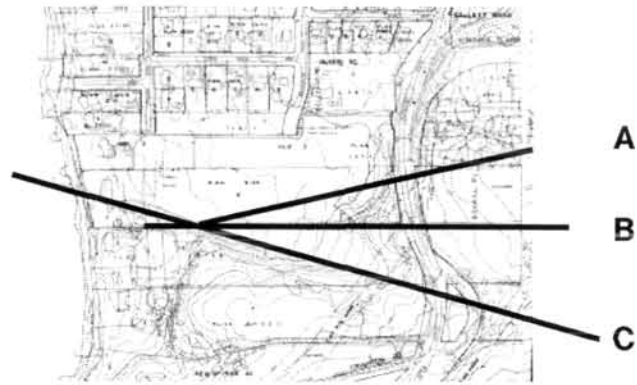
The following page illustrates the site influences that are accentuated in the design of the proposed winery.

The Site



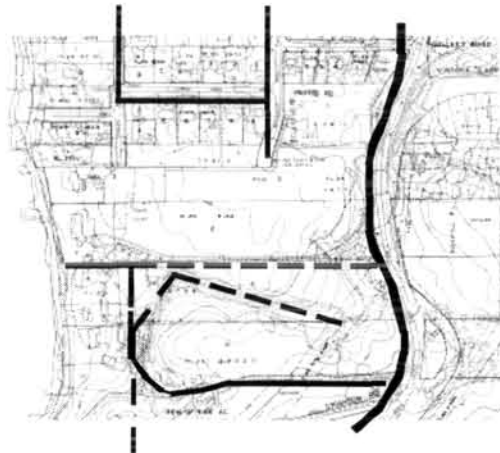
(Figure 20) Access to Site; Axis B, road runs East - West

The Sensory Site



- A) Existing Vineyard Axis
- B) Main Road way within Site
- C) Toe of Slope

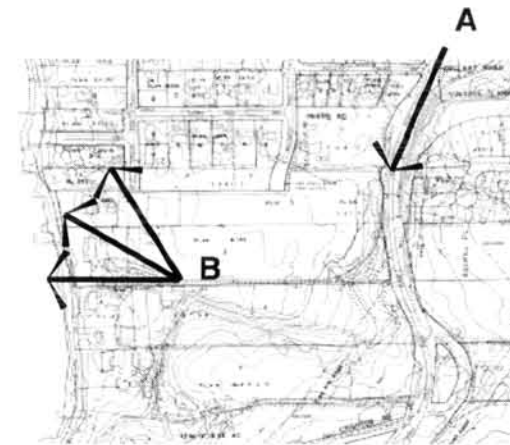
Existing Edge conditions



- Discontinued Roadways
- Major Thoroughfare
- Secondary Active Roads

Circulation Patterns

Influences



- A) View of Site from Lakeshore Drive
- B) View of Lake Okanagan,

View Sheds

The Sensory Site

For architecture to exist successfully, it must therefore relate to its 'terroir'.

In agricultural, or more specifically, viticultural terms, 'place' or 'terroir' exists, giving the vines and subsequently the wines, a unique and independent characteristic unmatched anywhere else in the world. With that in mind, careful examination of the character, on both the macro and micro scale, of the given place must be made to derive an **"accurate interpretation of the relationships woven between the many forces there"** (Ando, 1991). Tadao Ando (1991) has stated that "place exists for architecture as a priori. Every form of architectural activity develops on the foundation of place. Place lies first before us as an object to be read by architecture. And it is architecture that extracts the latent power of place and then radiates it out again as new potential".

THE CLIMATE

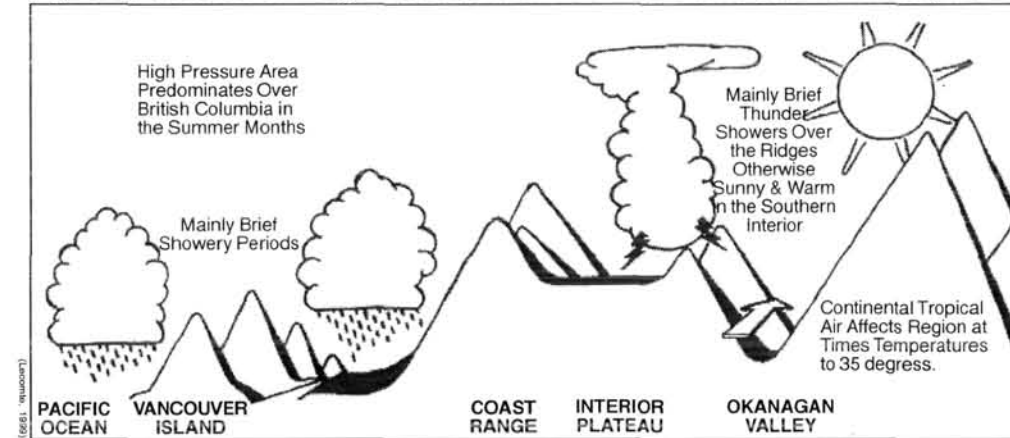
In the Okanagan there are primarily two weather patterns; those with snow and those without. "The climate in the Okanagan is governed by the region's location in lee at the Coastal Mountain Range (LeComte, 1998)". Lecomte continues by stating that the surrounding mountains, with peaks of over 2,450 meters (8,000 feet), are extremely effective in removing the precipitating westerly winds through the orographic lifting of air mass,

resulting in a wet, mild climate, west coast range (See Figure 11).

In the winter months, the predominantly westerly upper air flow contains weak weather systems which produce light rain or snow in the Okanagan Valley. Summer months are dry and warm with precipitation usually in the form of brief showers or thunderstorms. June is the wettest month, while July, August, and September are usually dominated by a high pressure ridge which produces warm and dry continental air when modified (Lecomte, 1999).

The Climate

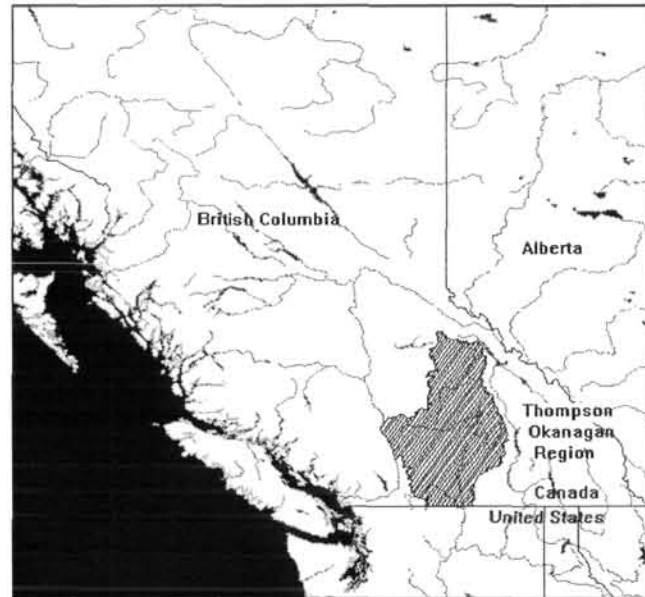
(Figure 21) Cross-Section through British Columbia: The Climate - Pacific Ocean to the Rocky Mountains



The degree day theory assumes that plant growth commences at a particular base temperature. It has been determined, for grapes, that growth begins at a mean temperature of 10°C (Lecomte, 1999). The accumulation of growing degrees days throughout the growing season above 10°C base permits the assessment of grape growing potential in a region.

In the Okanagan Valley, a general increase in growing degree days occurs at about 100 metres (330 feet) above the valley bottom (Lecomte, 1999). Below this elevation, the number of growing degree days is affected by cooler air temperatures occurring near Valley floor, a result of cool air pooling.

Autumn freezes are a very important factor with respect to grape-growing in the Okanagan and Similkameen Valleys. A temperature of -1°C at vine height will kill actively growing grape leaves. Leaf kill prevents further accumulations of sugar within the leaves and delays the maturity of the grapevines, making them more susceptible to winter cold. Three to four weeks are needed between the harvest and first autumn freeze. Steps can be taken to prevent these problems; it is important not to overcrop or over-nutrient. As well, one must water vines minimally right after the picking, and when there is a chance of frost.



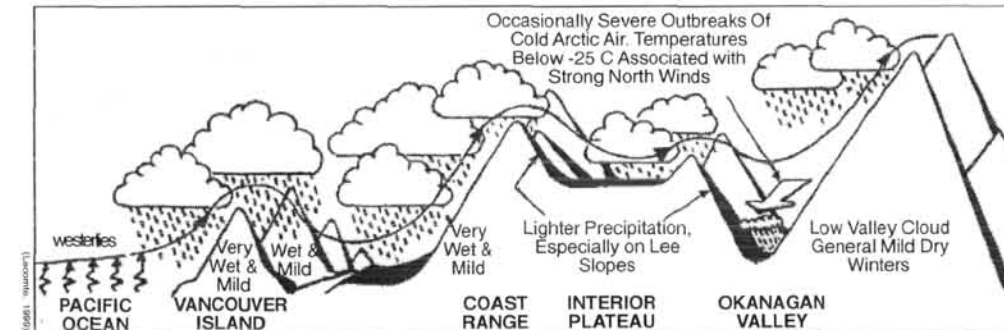
(Figure 23) Provincial Map of British Columbia; The Okanagan Valley

The Sensory Site

The Oxford Dictionary defines soil as the upper weathered portion of the earth's crust and serves as a habitat for plants and animal (Oxford, 1998). Most soils in the Okanagan have developed under semi-arid climates and conditions in a grassland or dry forest type of environment. (Lecomte, 1999). As noted on figure 11 and 12, the area has low rain fall and high summer temperature that result in high rates of water loss from both soil and plant. This restrict tree growth, limits soil leaching and leads to an accumulation of products from decomposed grasses in the topsoil (Lecomte, 1999). The resultant organic enriched soils (Cernotens) have formed in the Okanagan Valley.

The Freeze

(Figure 22) Cross-Section through British Columbia: The Freeze - Pacific Ocean to the Rocky Mountains



Lake Okanagan influence the soil and creates microclimates which moderates temperatures throughout the year. Ziraldo, (1995) states that intense sunlight and minimal rainfall allow grapes to ripen to their full maturity, while cool nights help them retain high acidity.

Geological tests made by the City of Kelowna (1987) discovered that the sediments throughout the Okanagan Valley are composed of "stone and free gravel, moderately and well sorted fine sand, silt and clay"

Design Intent

The design intent was to develop an architectural language appropriate for this typology; a winery. Within the site context, the winery was conceived as a focusing tool (a marketing strategy for tourism) and a container, both derived by the juxtaposition of the characteristics evident within the site. At each opportunity in the design, choices were made to emphasize this, rather than to mimic or resort to the literal.

The winery has three essential functions relating it to the art of making wine. These are the production and storage of the wine, the interpretation of this production within an intellectual and cultural context, and its presentation in both a sensory and architectural manner. Outside of these essential programmatic elements, are the further requirements for the building to express itself as an artistic, educational and entertainment facility.

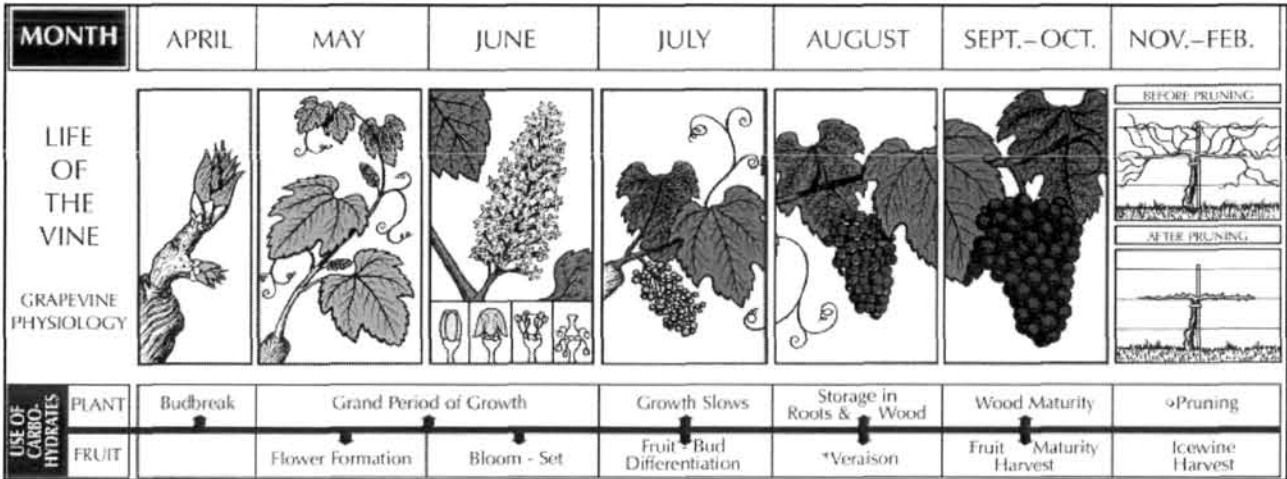
In the design of this building these functions are accentuated by engaging the tourist in sensory and spatial relationships with the agrarian landscape, culture and architecture.

Conceptual Parti

The conceptual idea in the design of the winery is derived by the organic premise that all plants have circadian rhythms. Biologists speak of plant cycles in terms of 'circadian rhythms' (from the Latin *circa*, 'about', and *dies*, 'day') as being inherent within all organisms. It is

through this physiology, or growth cycle, that the form of the winery manifests itself. The programmes are arranged around the idea that the life of the vine is cyclical, and as such, becomes the fundamental tool for the arrangement of programmatic elements.

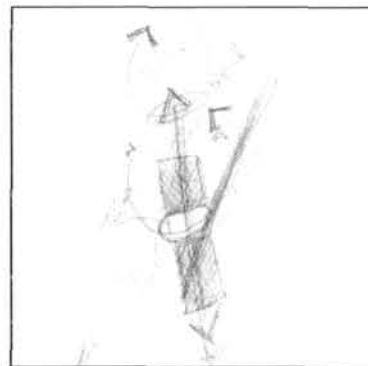
The Design



(Figure 24) The physiology of the vine. Reproduced, with permission, from Inniskillin Winery's Book, "Anatomy of a Winery", (1995)



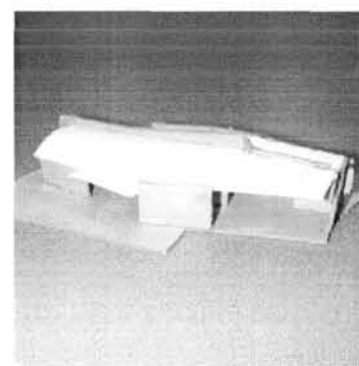
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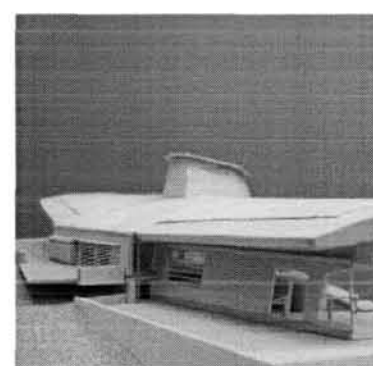
Concept



Vernacular



Development

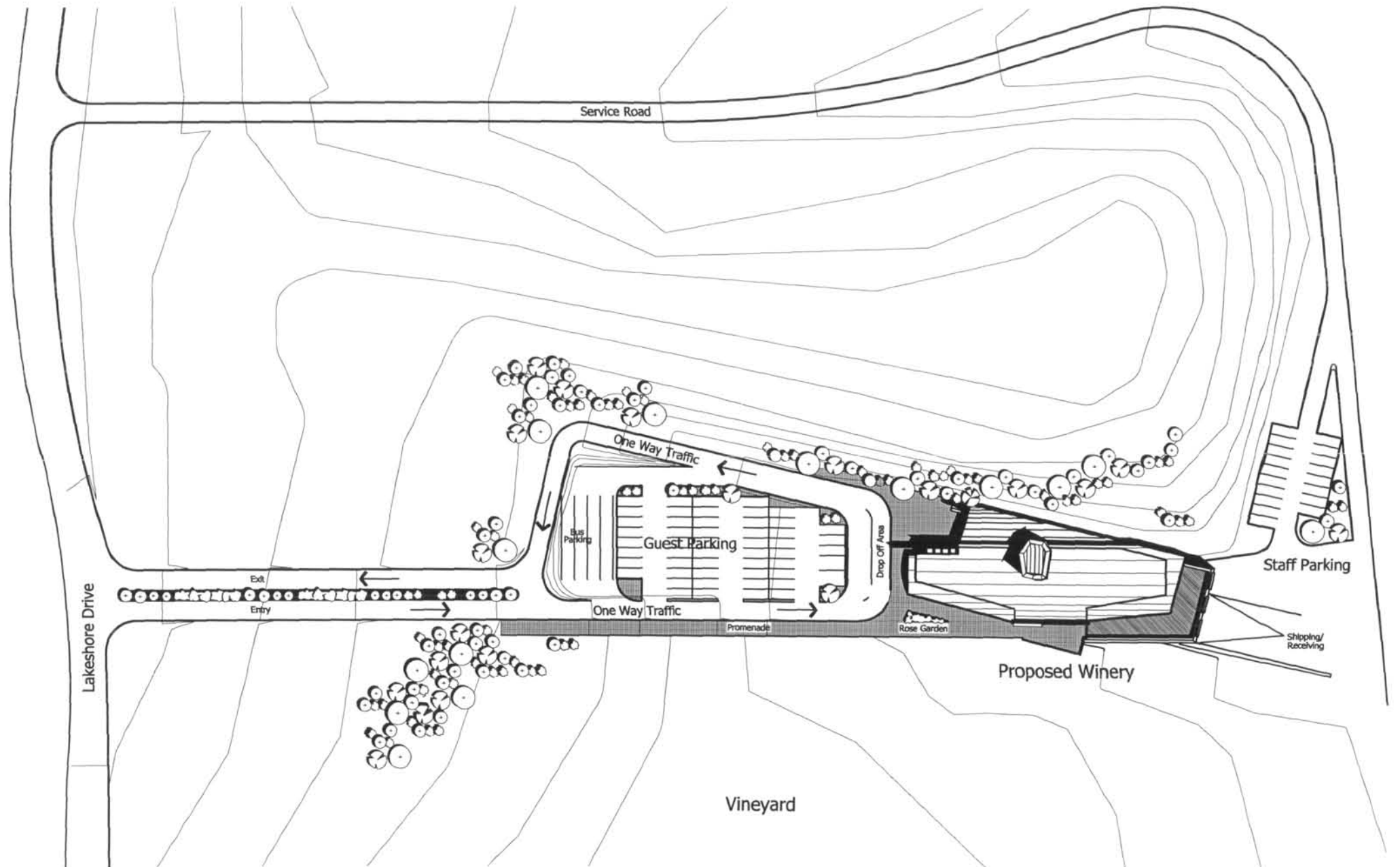


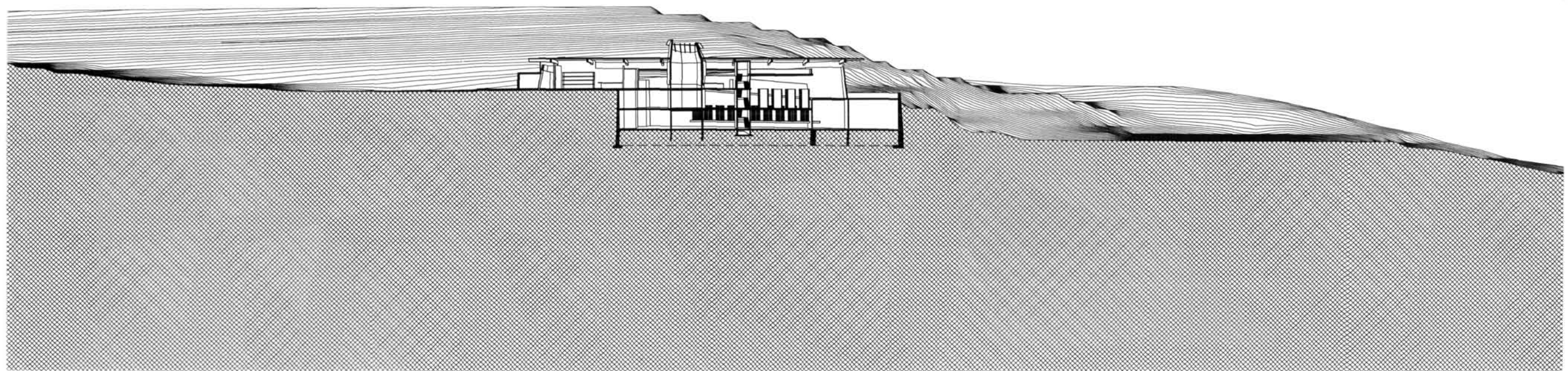
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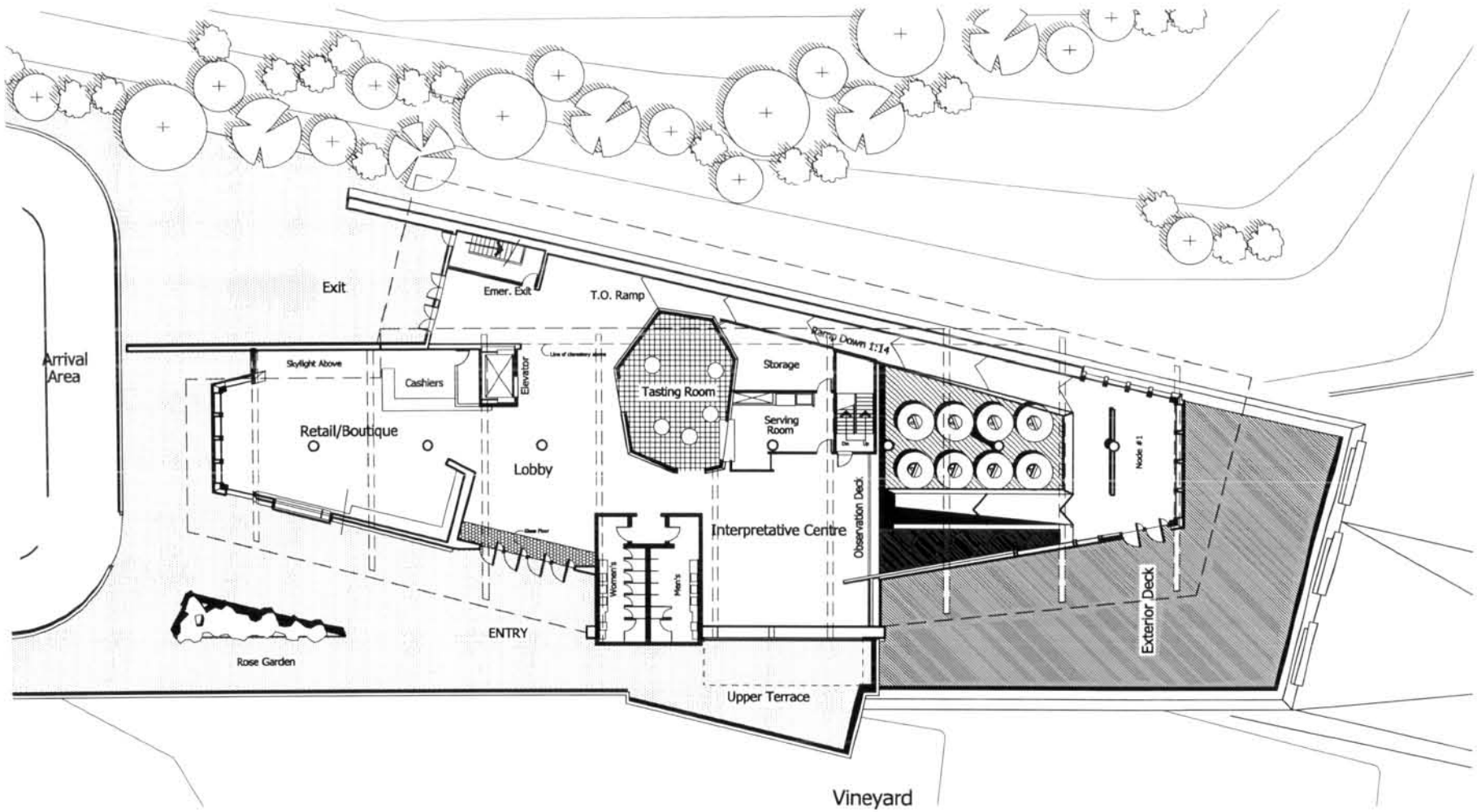
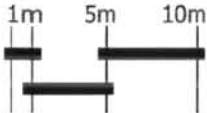
INNISKILLIN WINERY, SITE PLAN





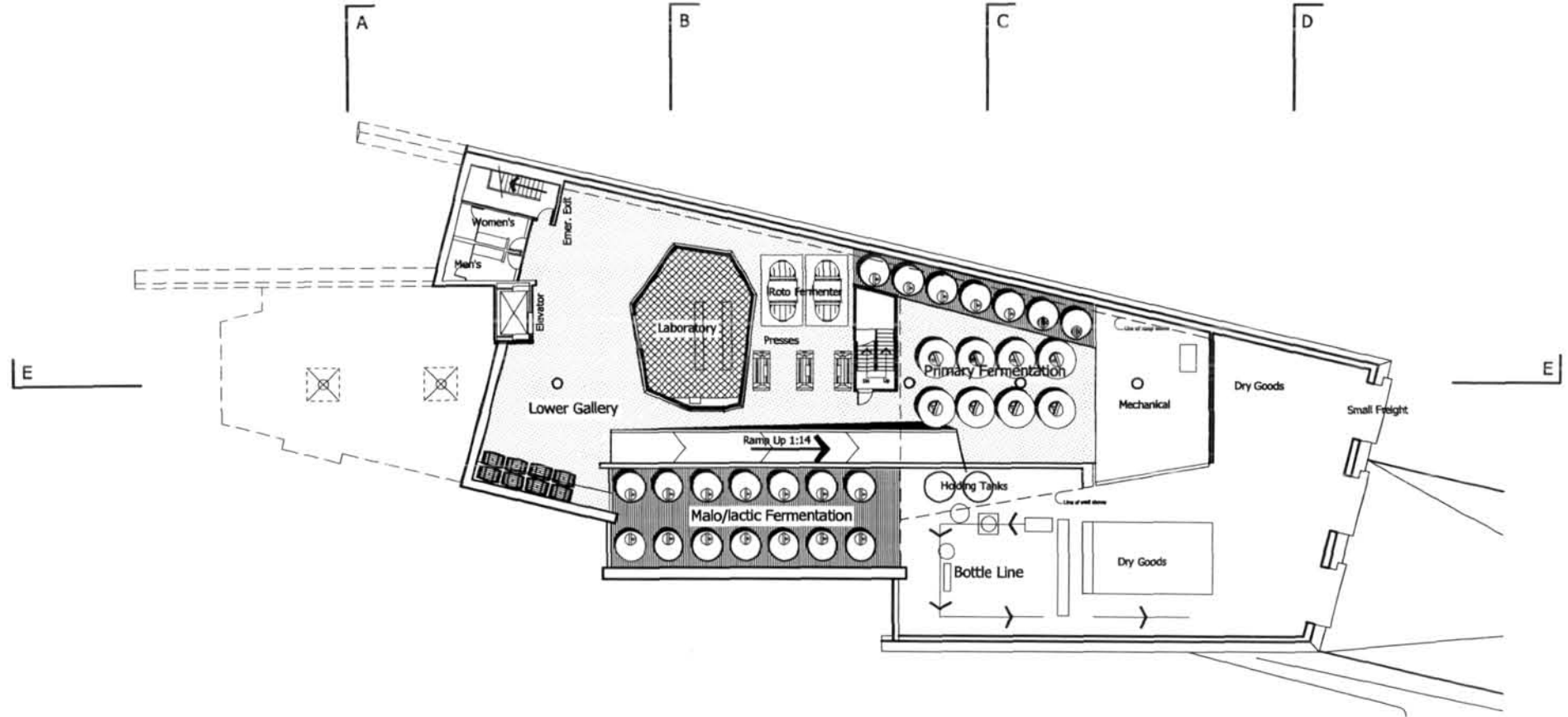
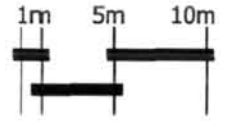


INNISKILLIN WINERY, MAIN FLOOR PLAN

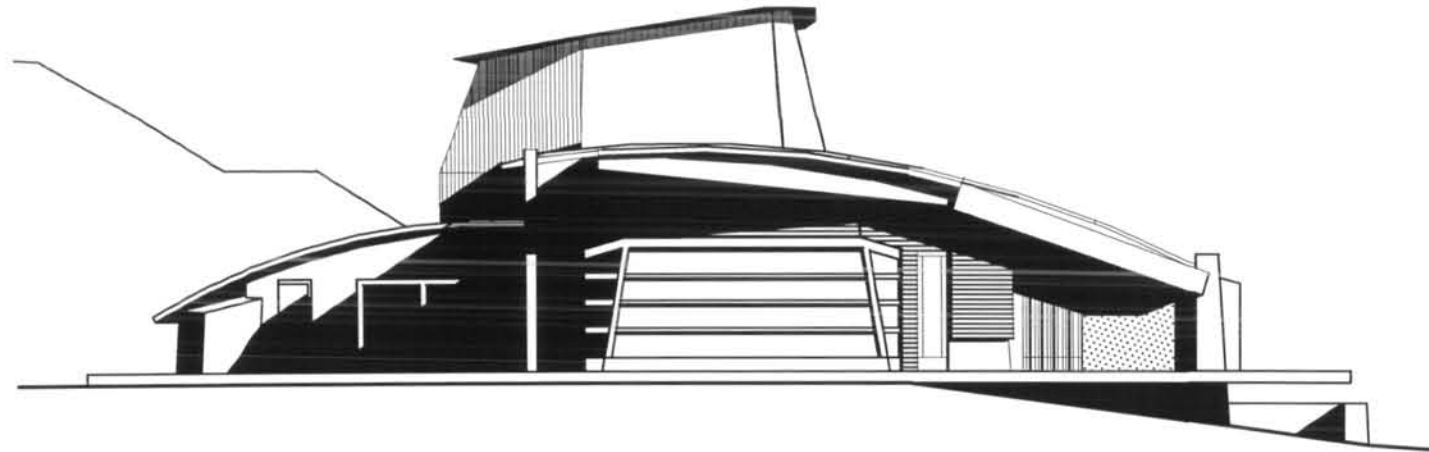
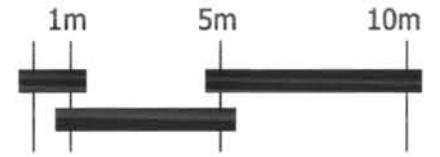
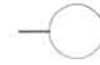




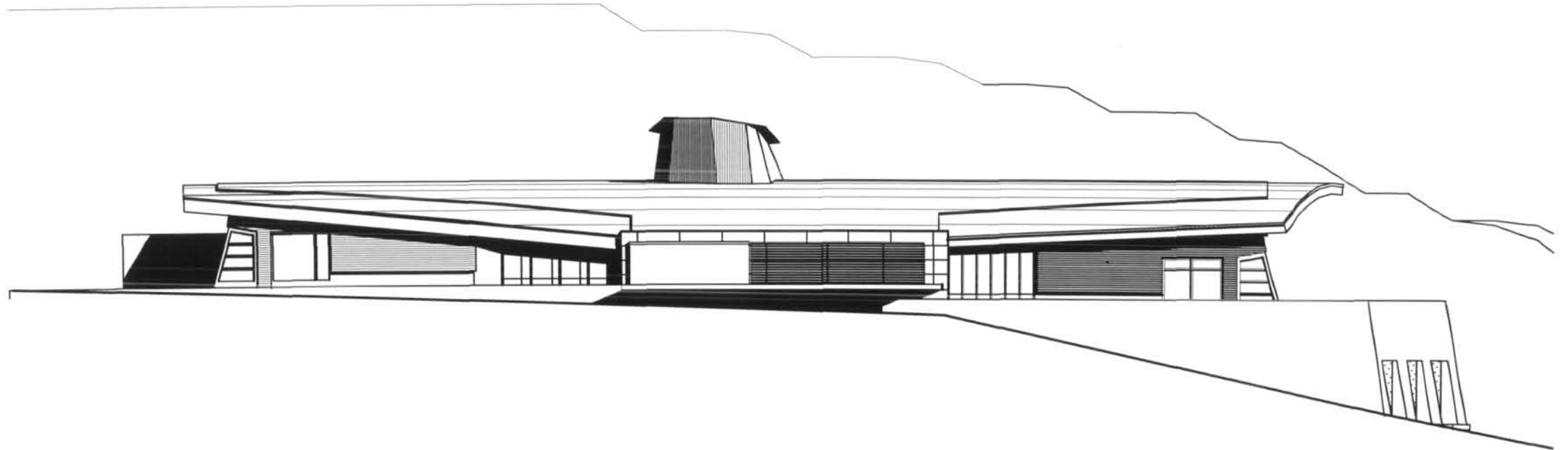
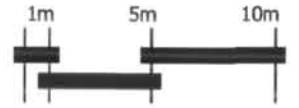
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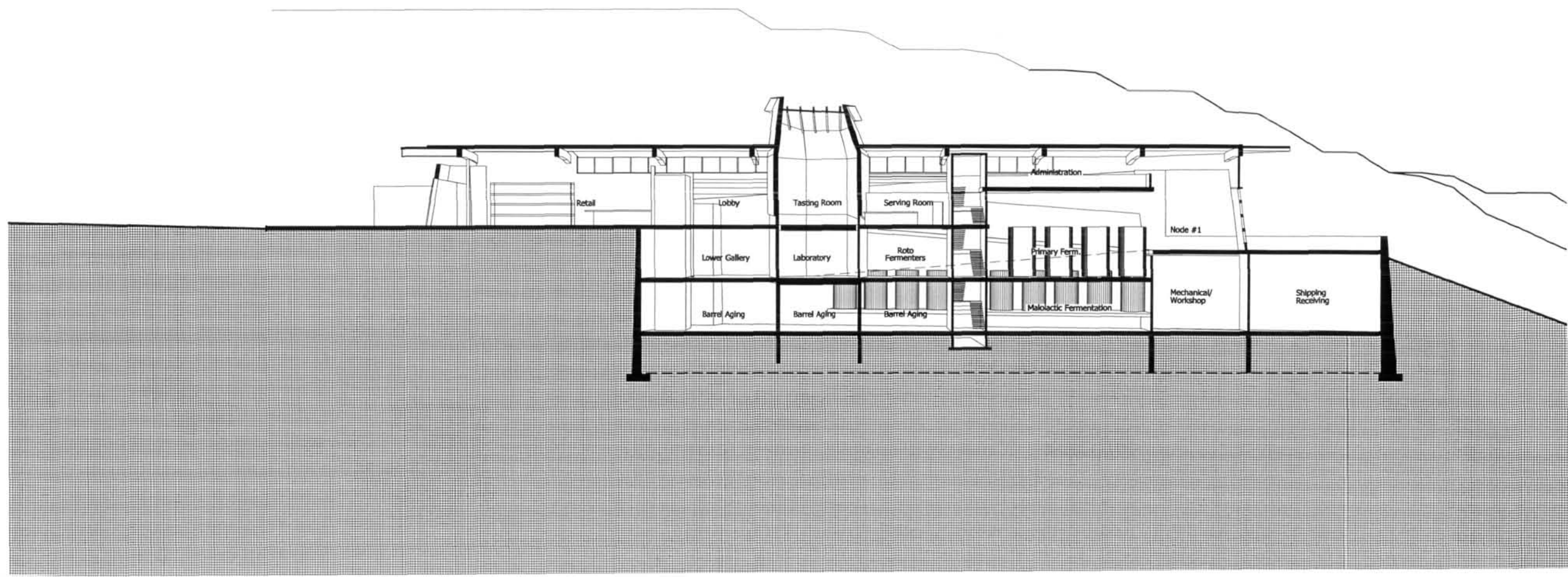
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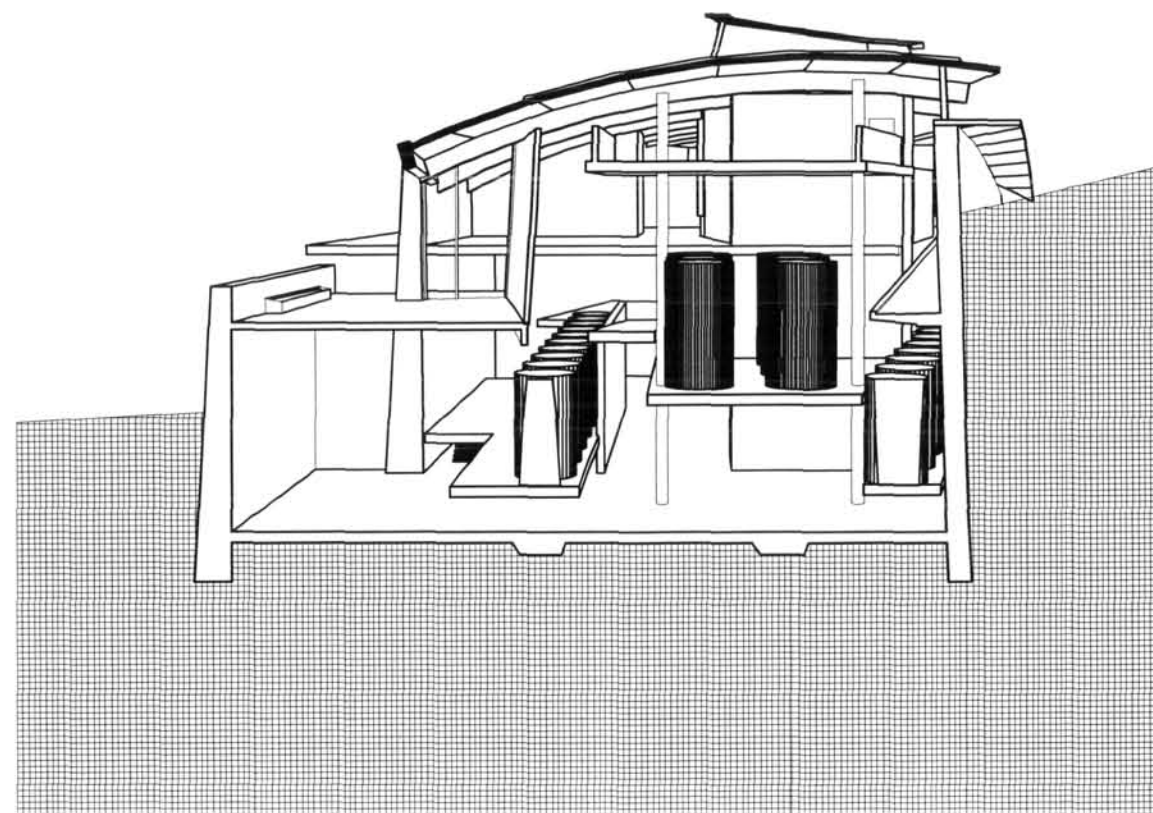
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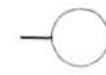


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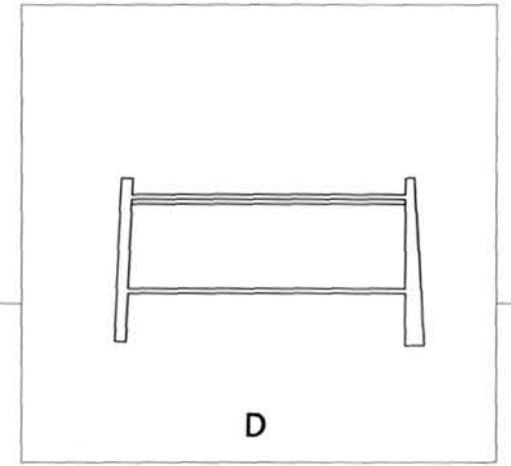
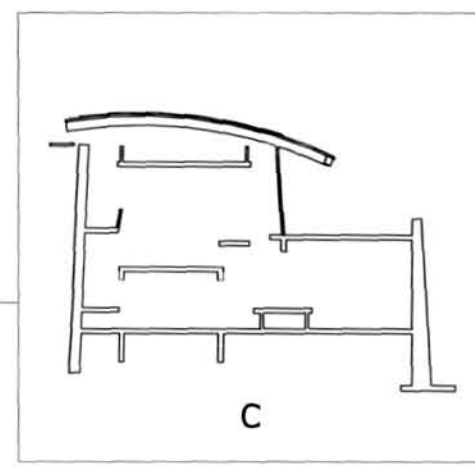
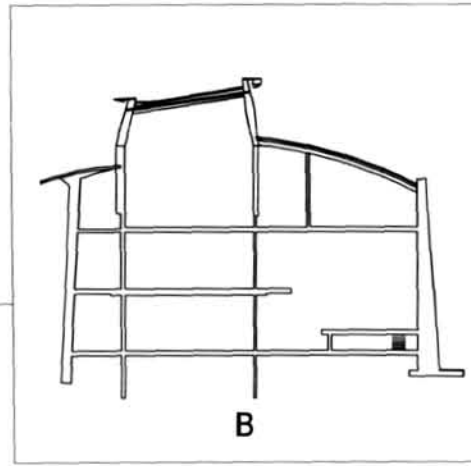
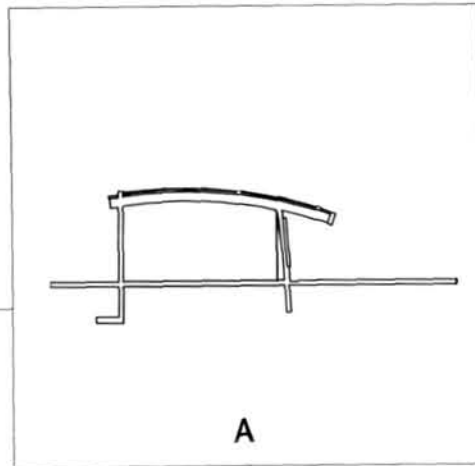


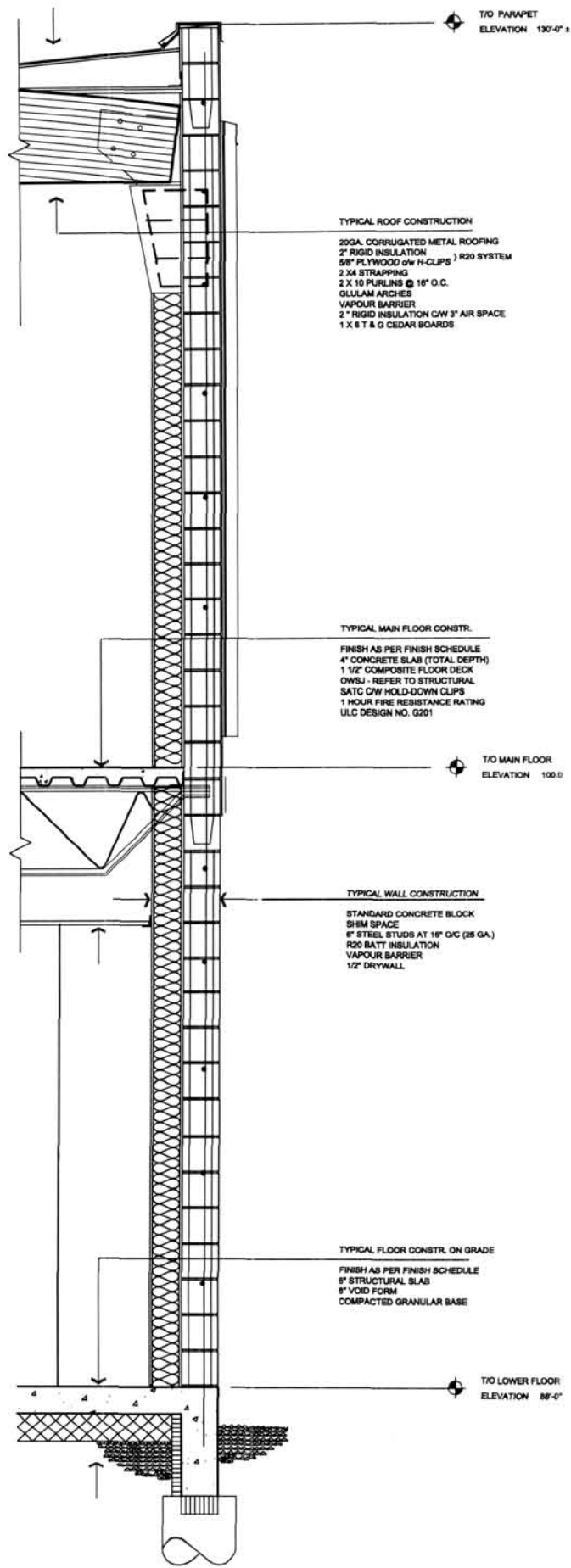
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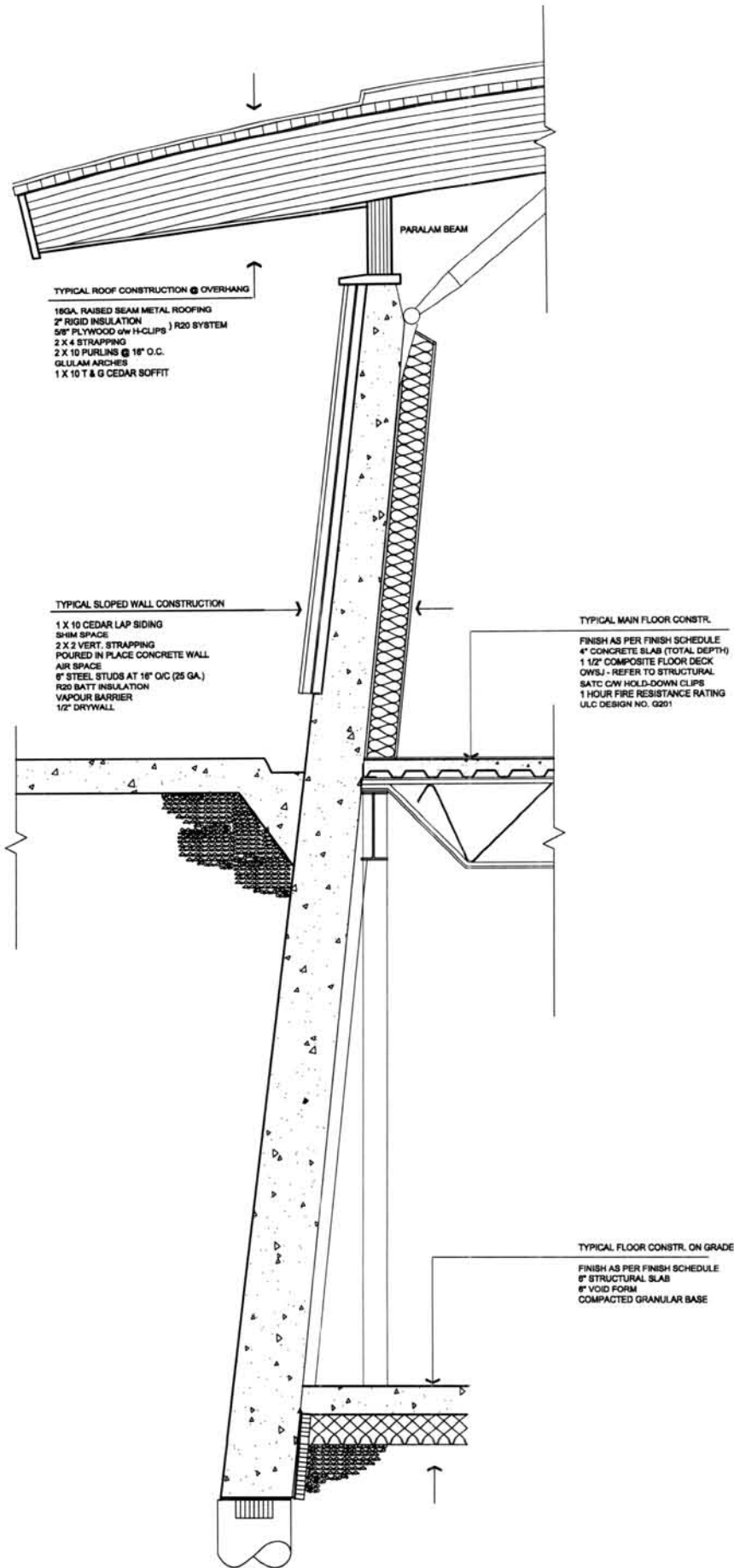


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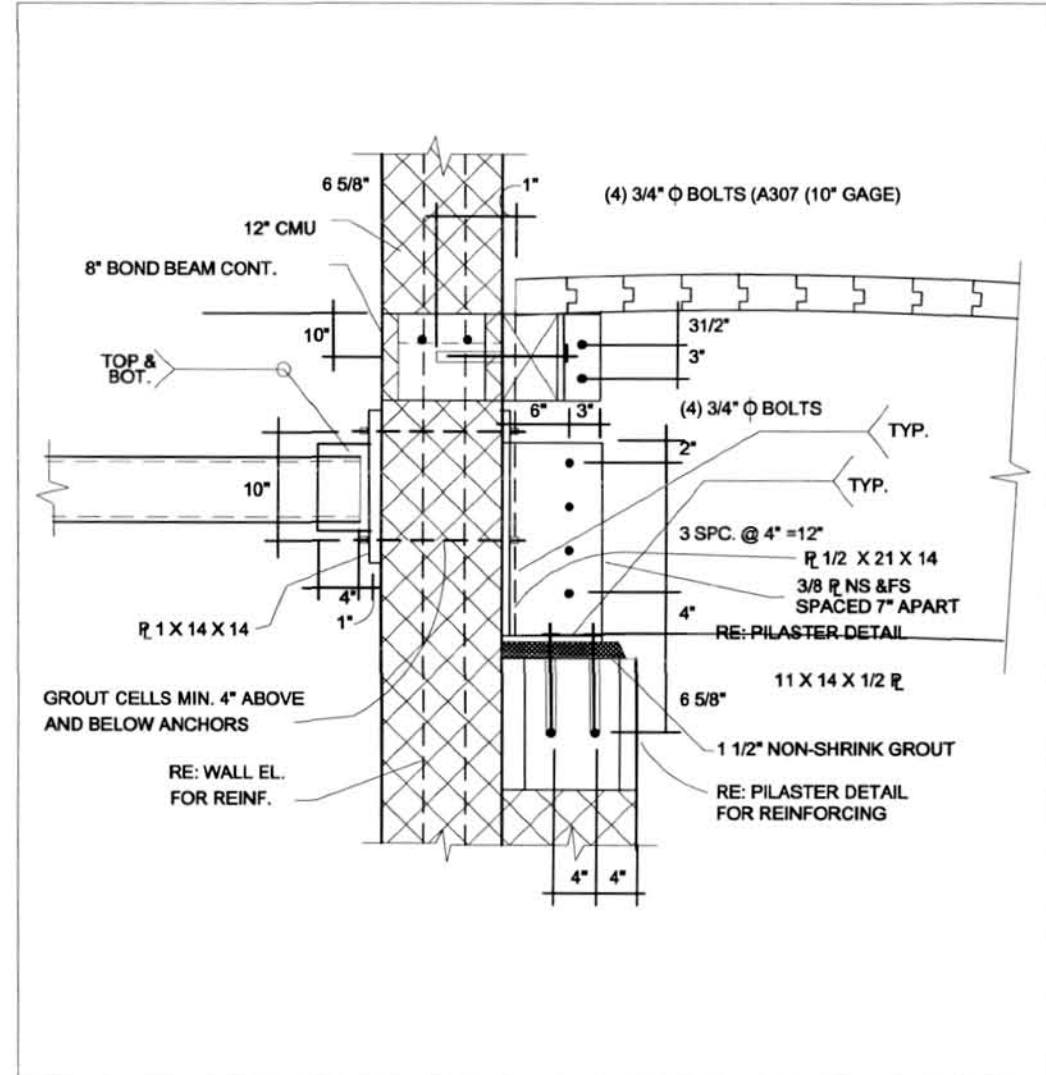


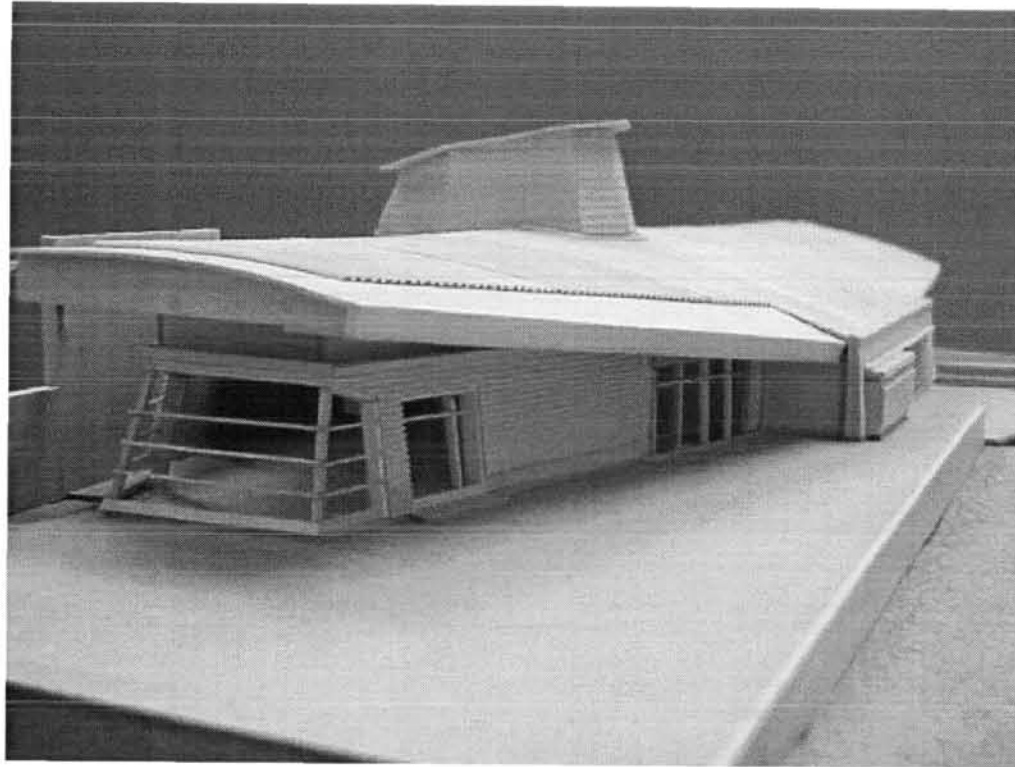


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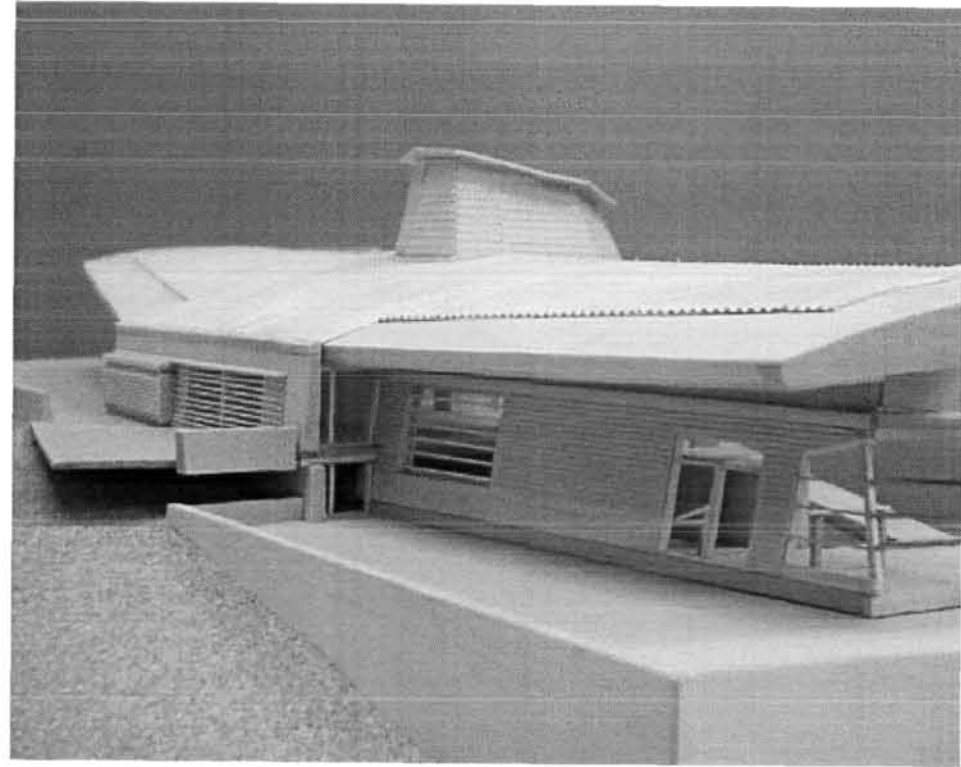


TYPICAL CONNECTION OF GLULAM TO MASONRY PILASTER





View of Model from the East.



View of Model from the Okanagan Lake.



The Massing

The building sits along the northern open edge of the steep embarkment, and houses all three programmes of tourism, administration and production.

As mentioned earlier, wineries are responsible for their own marketing and advertizing costs and as such, initiated the architectural intention to create a strong, bold 'marker' in the landscape. The challenge here however, was to aide the winery market itself by becoming visually prominent to the casual onlooker without overpowering the landscape behind it.

Though the building has a strong massing, the predominant emphasis is a spatial composition characterized by the non-formal arrangement of interior spaces. Underneath the canopy, spaces unfold as a series of inter-dependent relationships of solids and voids rather than the typical figure-ground composition of historical architectural theory.

The main floor of the winery is an open residual space, resulting from the relationship between the various programmatic elements. At its centre is the tasting room, centrally located to accommodate all tourism functions. Between it and the exterior walls exist all of the other amenities required to complete the programme. The tasting room shaft is the only vertical element which pierces the canopy and acts as 'arranger' to all of the other programmatic elements. It is the juxtaposition between these seperate parts which gives the winery its sense of completion or 'wholeness'.

The Construction and Material's Palette

The construction of the winery recalls the traditional building techniques of the region and reveal a simple hierarchy in building materials; the insulated metal seam roof is supported by heavy glu-lam arches which are tectonically connected to a structural grid of heavy timber post and beam construction. All of this superstructure sits on reinforced exposed concrete floor plates supported by a concrete foundation. The building is sculpted out of the ground by concrete retaining walls which define the periphery of the building. The floor plates are, wherever possible, punctured by skylights, allowing light to penetrate to the lower levels.

Under the broad eaves, the rest of the building is built as wood frame construction clad in stained cedar siding, which will naturally fade depending on its exposure to the elements. The exterior doors, window frames and handrails are clear anodized aluminum picking up the materiality of modern wine making equipment. Interior rooms which are bordered by programmatic elements are further defined by a change of materiality at the floor plane; bleached white oak in the retail/ boutique area and interpretative centre, glass floors in the tasting room and entry and ceramic tiles in the lobby and washrooms.

Access

Access to the winery is acheived by utilizing the defunct road (picture 21) which runs East- West. It ties-in perpendicularly to Lakeshore road thereby creating a major axial connection between the road, the building and Lake Okanagan.



(Figure 25) Vernacular Influence, The Okanagan Valley



(Figure 26) Vernacular Influence, The Okanagan Valley



(Figure 27) Vernacular Influence, The Okanagan Valley

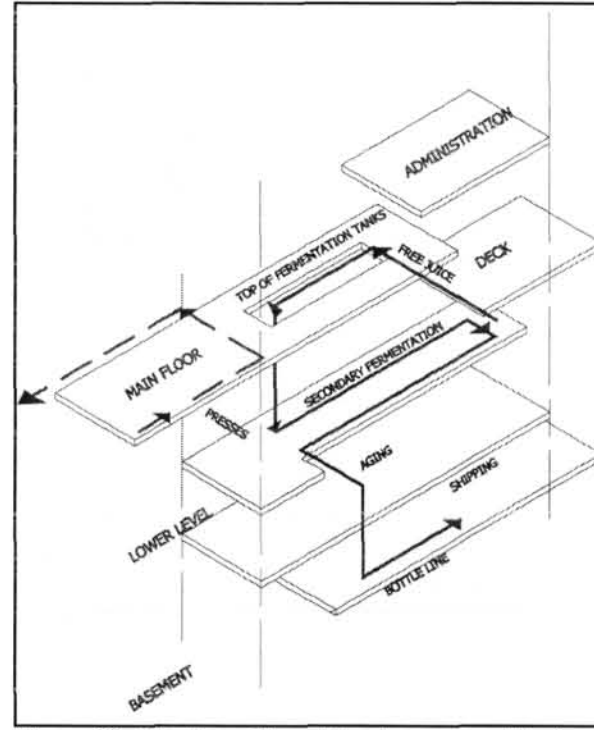
Visitors would approach from the East side, descending down a slight hill, to the drop-off area. This terminal point is simply an extension of the road into the building. The turn-off, the descent and the arrival point create a ceremonial procession recalling the romance experienced in wineries of the past.

Visitors would continue the procession by following the vineyard to their right and the building to the left. Those visitors wishing to walk among the vineyard are controlled by the promenade's handrail. This device allows visitors to experience the essence of walking amongst the vines while maintaining a separation as preferred by the client. Those wishing to enter the vineyard, with permission, would access the area via the upper terrace shown on the main floor plan. This upper terrace is flush to the grade, providing access into the vineyard.

Visitors who do not use the promenade would enter the winery under the compressive feel of the canopy, while experiencing a breathtaking vista which opens up to the Northwest. Upon entering, visitors are made aware that the winery is part of a greater whole, as they traverse a transparent threshold of glass which opens up to the floor below.

Circulation

The circulation routes are organized around the production of wine making. A series of ramps experientially help the visitor to understand the gravitational process of wine making. Tourists experience the gravitational process of wine making by travelling along these ramps, fulfilling



(Figure 26) Offsetting of floor plates to accommodate flow

A series of ramps experientially help the visitor understand the gravitational process of wine making.

both the horizontal and vertical aspects of travel. To further emphasise the sensory experience, the room temperature decreases as one descend lower into the production area.

Shipping and receiving occupy the lower western part of the building. Immediately along side of it is the bottle line which acts as divider between work in process and the finished product. Its roof structure act as the observatory, or deck, for the tourism component above.

The administrative component occupies the space above the first interpretative node. As the ramp descends away from the centre of the winery, it also allows for a floor plate to be inserted atop the primary fermentation tanks. Access to and from this office is done through the employee stair shaft.

The tour comprises of a greeting in the lobby and then a quick shuffle to the Interpretative centre. There, visitors will learn about the wine making process, how gravity actually affects this process, the interpretation of the region and history of the owners.

The Interpretative centre affords views to the crushing platform or upper terrace, to the fermentation below and to the surrounding vistas.

Access to the crushing platform (or upper terrace) is through overhead type garage doors, where the mass of the walls dissolve into a translucent, and on a hot day, becomes a transparent threshold to the vineyards.

Glimpses of the winemaking process is through the observatory. This platform informs the guests of the production facility below without literally having to enlist in a complete tour to get some understanding of process.

Adjacent to the interpretative centre is a kitchenette equipped with glassware, plates, dishwasher, etc. The purpose of this room is two fold; The first as a catering 'warm kitchen' in the event of a private function and the second as the wine serving room to the tasting room.

The Tour

Once the interpretation is completed, the tour commences by pivoting around the tasting room and down the primary ramp. (Depending on the time of day, the walls should be awashed of sunlight entering through the dislocation of the roof planes above).

As the tour progresses down the ramp, it passes the primary fermenters to the right, to an interpretation node or balcony. They view the fermentation from behind plexiglass panels. At this node, the visitors' perspective of the wine making process is completely different. Where at one time, they viewed the fermenting process from above, guests can now see past the tanks and below into the lower levels.

The interpretative node at the mid point of the ramp serves a dual purpose; It offers a place for further elaboration of the processes, as well as removing the tour group from the busy traffic path. It also serves as threshold to the exterior. It is from this turn- around- point, that the visitors

can enjoy the breathtaking vistas of Lake Okanagan to the west as the Coastal Range Mountains act as a backdrop.

As the tour resumes, visitors are brought down to the lower floor where the roto fermenters, wine presses, malolactic fermentation and barrel aging take place. Here, the senses are fully utilized while both natural and artificial light are seen refracted off the brilliance of the stainless steel tanks. A high moisture content in the air may be felt on the skin, and the yeasty, oaky smell of the fermenting wine would allow the visitor to interact with the wine making process on an unprecedented sensory level.

At this lower lobby, visitors would find the Laboratory, which occupies the same organic shaft as the tasting room above. There, staff sample, cultivate and analyze the wines to ensure proper quality. Its location is also central to the wine making process since each steps needs to be monitored as quality control. Natural light enters the laboratory by means of a glass roof (or glass floor in the tasting room).

The lower lobby is also the end of the interpretative tour, however, guests are now free to roam the surroundings to get a greater feel and appreciation of the facility.

Guests have three choices to return to the main floor; elevator, fire stairs or ascending via the ramp. In either cases, the rush is on to taste the selected vintage as the final stage of the tour.

The Tasting Room

As mentioned earlier, the tasting room is the only vertical element to pierce the canopy. It is also the only element to adopt an organic form. Within that form exists a skylight which articulates the changing characteristics of days and seasons by animating the natural light against the wall surfaces, further reinforcing the building's link to its natural setting. Inside the tasting room, a series of trellis panels are fastened to the walls and act as the structure for old vines to grow upon.

What kind of space inspires the 'palate'?

Programmatically, the tasting room needs only to contain a serving counter, tables and chairs. Its purpose, however extends to that of an interpretative centre, gallery space and special function room. As an extension to the interpretative centre, the tasting room offers a space where the winemaker meets the public and elaborates on viticultural issues, oenology hints and vine maintenance.

Poetically, this vertical space embraces the notion of organic growth as a cyclical process. In fact, this room becomes the vessel in which wine is tasted, praised and admired. Simply stated, an open bottle of wine signifies more than fulfilling a need for thirst, it signifies both a new beginning as well as the end of a cycle; from raw material to finished and fermented product. It is only appropriate then, that this element be rooted into the ground around which the resulting programmes, circulation, materiality and form arrange themselves.

The Organic Building

Exactly what makes the design of this building organic? The principles which have been identified as making a building an organic entity have suggested that the proposed winery be;

- Appropriate to Man
- Appropriate to Time
- Appropriate to Place
- Allow for the site influences to dictate form.
- Link to nature

The building is organic since it uses the human as the unit of scale. This, in turn, fulfills the primary concept of being 'appropriate to Man'. It does this by creating spaces, both interior and exterior, which relate to the user. Although the roof form creates a high interior volume, the programmatic elements beneath it assume a comfortable height within which visitors can relate.

The winery fulfills the notion of being 'appropriate to time' by utilizing current building methodologies rooted in vernacular traditions. It looks to a materials' palette and building techniques which are of their time, thus avoiding the pitfalls of replication and representation.

By adopting the concept of terroir, the winery further becomes appropriate to its place. By creating an architecture of terroir, which ultimately is an 'organic architecture', the argument is created for exclusivity. As such, the building could never exist on any site other than the one assigned here.

He likened the flow of form from root to stem to blossom to fruit as a valuable lesson in building construction. This sense of the whole, indivisible and integral, he described as an "architecture that develops from within outward in harmony with the conditions of its being as distinguished from one that is applied from without". (Pheiffer, 1993:14)

Corresponding with the principles of organic growth, the building should respond to the many variables affecting a site throughout the year. As outlined in the site influence sections, these include weather patterns, topographical formations, vistas and axes. As suggested by Frank Lloyd Wright, a building may further respond to its site if it is somehow *rooted* into the site. He did this by making the fireplace the central masonry feature in his designs.

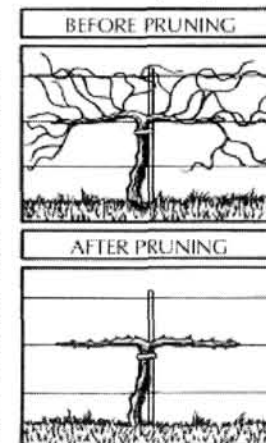
In the case of this winery, the analogy of the vine was used to create the fundamental basis in which the tasting room would become the core from which the programme would develop outwards.

The analogy of the vine may be carried further whereby the building may be considered to have its own annual circadian cycle. For example, in the winter months, acknowledging that most activities of winemaking are restricted to a minimum, the result is reduced tourist demand. As such, the essential elements necessary for the continued existence of

the winery may be contained within a central core. When applied to the design of the winery, this core contains the tasting room, retail boutique and interpretative centre. As spring arrives, the winery would blossom from within and activities would extend out from the core to the dormant areas of the winery. Staff increases and renewed activity by visitors would mark the beginning of a new growth period.

Compositionally, the entire structure is similar to the organic arrangement of the vine bearing fruit, in which the foliage provides protective cover to the underlying grapes while sustaining photosynthesis.

The roof form essentially attempts to provide a kind of protection to the arrangement of spaces beneath it. The curvature of the roof is thrust in amongst the trees and rocks, consequently becoming a distinct part of the natural world within this particular site. In contrast to the banality of stucco-laden and blandly detailed surrounding houses, the winery recalls patterns of vernacular building cues. Its curved and monolithic appearance is articulated by using a combination of corrugated metal panels and metal seam roofing, thereby resorting to the industrial language which echoes the informal barn and shed-type buildings apparent in the region (figure 21).



At its simplest, successful wine making is dependent on the principles of oxidation and aging. Architecture is bound by the same principles with regards to its links with nature.

The materials' palette for the exterior was chosen to reflect the numerous variables when making a quality wine. The changes that occur during a wine's aging process are enormously complex. The primary catalyst is the wine's gradual exposure to oxygen, which fuels the fermentation process, and gives the wine its flavour and alcohol content.

Aging on the other hand is the other agent which affects the character of the wine by aiding in the extraction of the flavour or tannins from the barrels.

It is through the physical contact of the skin that red wine acquires the colour, tannins and flavours that gives it its character (Ziraldó, 1995)

Since the design of this winery is rooted in its 'terroir', allowing the elements to affect the outward appearance of the winery seemed logical. Weathering is one such way a building's skin reacts to the environment, either through oxidation, exposure or staining.

The exterior cladding; cedar lap siding, hemlock trim and copper panels were chosen because of their dynamic ability to mark time through weathering. They become poetic vehicles which outwardly interpret the aging process of wine making within the winery. In contrast to the stagnant qualities of some of the aluminum and

stainless steel elements utilized within the winery, the structure will consistently change with time as will the natural setting around it.

By allowing the building to weather, it becomes a marker for time and acknowledges the product it manufactures. More importantly, it will eventually complete its own circadian cycle in that one day it will weather, rot, wear out, and finally return to the ground.

Within organic architecture, the building exist as its own entity. As such, the built form can never be altered, modified or built upon without it losing its wholeness as a dynamic form.

In the case of this winery, future growth has been considered from its conception, therefore eliminating the potential for add-on type expansion. If further expansion is needed, the winery would either have to relocate (with the new site conditions inspiring a new form), or an independent structure would need to be allocated, it too becoming an independent dynamic entity.

HVAC Considerations

Since temperature and oxygen are crucial elements in the making and aging of wine, they are also key components for the comfort of the users.

The roof form takes into consideration the cross ventilation created by the upper terrace windows and the clerestory lighting on the south wall. The barrel shape of the roof creates a convex motion, circulating fresh air to the occupied zones. As the air warms, it rises upwards, escaping through the clerestory window opening.

Temperature is controlled in the production control area by the application of the thermal mass theory. Maintaining warm temperature is achieved through a periphery heating system linked to a boiler and chiller HVAC system located in the mechanical room on the lower level of the winery. Cooling on the main level is done through VAV cooling.

An air curtain segregates the main floor from the production areas and is located at the top of the ramp on the main floor level. This air curtain prevents odours which visitors may find offensive or hazardous from escaping the lower production levels. Once tourists pass through this air curtain, they are bombarded with the fabulous smells emitted by the wine making process. The smells vary with the seasons, further reinforcing the passage of time and seasons as marked within the building.

“All parts related to the whole as the whole is related to the parts, an organic entity...”



"Well, I'm enough of a wine expert to know that if the boat were sinking, there'd be several cases of this Bordeaux that would go into a lifeboat before you would."

Some wineries are indeed architectural masterpieces, attracting and rewarding visitors with a design concept that inspires aesthetic appreciation of the surroundings while simultaneously suggesting quality and sophistication of the wine. However in most cases, none have shown the ability to combine all individual elements that relate to its architectural terroir such as;

This project has been a criticism of the increasingly common practice among winery designers/ owners who have attempted to create their link with nature through the application of simplistic symbolic imagery, otherwise referred to as the 'disneyfication' of the built form, purely for the sake of tourism. This typology has long been fueled by romantic notions of wealth, success and perceptions of a higher quality of life, having become the basic premise in typical winery designs, ignoring the individuality of place. It has been through the example of this project that a sense of place has been extruded, while still maintaining the essence of the winery as a tourist destination.

Conclusion

The project has further suggested that architecture should look to its 'terroir' as the primary tool in the development of the built form, thus creating an argument for exclusivity. This argument, when interpreted within the wine making industry, holds that each site has unique characteristics due to the uniqueness of its geography, geology, climate and biological influences. The attempt here has been to manifest this ideology, where the built form becomes exclusive to its site, and thus makes the argument for a regional architecture.

The proposed winery therefore becomes an expression of contemporary architectural values and at the same time a celebration of Okanagan architecture.

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Gondola

Most grapes are hand harvested into boxes or bins and delivered to wineries in open containers called gondolas. This process is usually quality driven since prolonged contact of the juice and the stems and leaves can impart undesirable bitterness to the resulting wine.



Crusher

Grapes are conveyed to a de-stemmer/crusher where grape leaves and stems are removed and the grapes are crushed. The resultant mass of juice and skins is called the 'must'.



Upright Fermenter

Most red grapes go to the fermenter for primary fermentation (the conversion of sugar into alcohol and CO₂) while most white grapes are pressed prior to fermentation. Yeast is added to start fermentation. Option: Some white wines are fermented in small oak barrels.

Appendix A

A Brief Look At The Wine Making Process

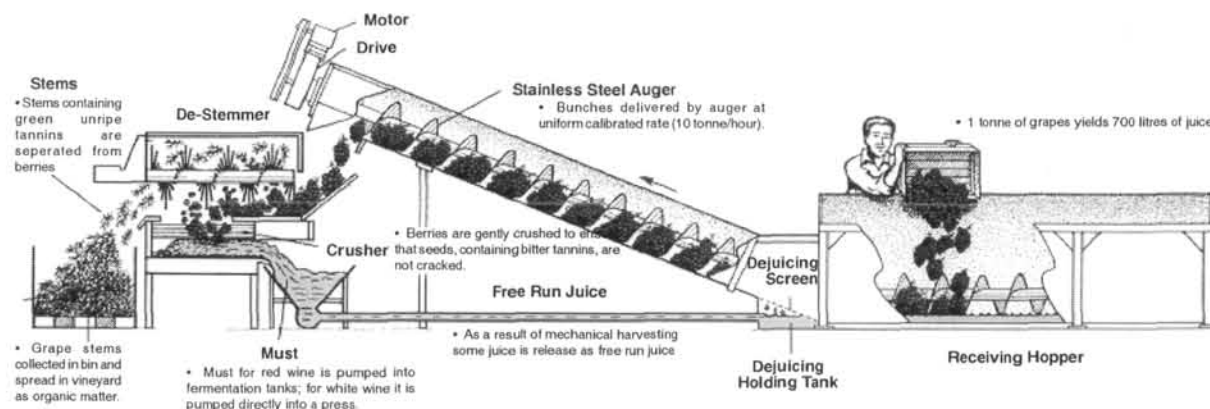
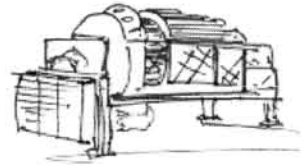


Image reproduced (with permission) from Inniskillin's Book "Anatomy of a Winery, 1995)



Wine Press

After fermentation is complete, red wines then go to the presses, to separate the wine from the skin, pulp and seeds. This is typically done with a pneumatic press which utilizes an inflatable bladder to gently press the must against the perforated wall of the cage. These perforations allow the wine to escape while preventing the pulp from continuing.



Malo-fermentation tank

After Fermentation, most wines are settled in large stainless steel tanks or oak barrels. 'Racking' is the process of transferring the juice from tank to tank, barrel to barrel, leaving unwanted sediment behind in each step.



Oak Barrel Aging

After settling, red wines and fuller bodied white wines are put into small oak barrels for further aging. In barrel aging there two aging functions. The first is the extraction of the tannins, vanilla, oak lactones and other phenolics, are extracted from the wood. The second is oxidation, where tannins, acids and other components of the wine react to the gradual exposure to oxygen through the grain of the wood.



Fining Tank

Fining is an ancient practice in which a material that aids clarification is added to the wine. Proteins and yeast cells are absorbed on fining agents such as bentonite (a type of clay formed mainly of montmorillonite) or gelatin.



Filter

Filtration is another ancient practice, and early filters consisted of rough cloth-covered screens through which the wine was poured. Modern filter pads are made of cellulose fibres of various porosities or consist of membrane filters, also in a range of porosities. The average pore size of some filters are 0.45 microns.



Bottle Line

After the wine is filtered, it makes its way to the bottling line. There it goes through several steps before it exits the back door and into the retail outlets or the winery's boutique upstairs.



Degustation

Finally, after the wine has been bottled, it may be aged in temperature controlled cellars, for further maturity, or enjoyed right away. The finished bottle of wine may now be appreciated not only for a beverage, but also as a work of art.



The Wine Making Process

On average it takes seven years for newly planted vines to mature to the point of producing quality grapes, and then it may take two or more years before the wines are ready to reach the shelves (Wine Spectator, 1990: 65). With modern technology, the lead-time between harvest and finished product can be reduced considerably to a matter of months. Once a vineyard has matured and a production facility available, a winery with just 400 acres of successful vineyard can support an investment of about twenty-five million (Wine Spectator, 1990: 66) As the grape ripens, it develops a 'bloom', a cloudy appearance on its skin, rather like the mist one makes

by breathing on a cool windowpane. The bloom is actually a fine waxy film covered with microscopic cells of wind-bourne wild yeasts and moulds (Clarke, 1997: personal conversation).

The ripe grapes are rushed from the vineyard to the winery and immediately crushed. The stems are removed at this stage. They contain a lot of tannins and, if left in, would make the wine bitter. The quantity of tannin in the pips (skin) is usually sufficient to make a flavourful wine. The remaining mass of juice, pulp, skins and seeds is called the 'must'. Treatment of the must at this stage determines, in many cases, the colour of the finished wine. In most grapes the colour is not in the juice but in

the skin. So at this stage, for white wines, the juice is pressed out of the must and fermented alone. For red wines, the entire must is fermented for several days, while the alcohol extracts the desired amount of pigment from the skins.

The sugar and acid content of the must is measured, and corrected, if necessary, through the wizardry of technology and chemistry. Clark, (1997) stated that winery managers have sometimes discarded a crop and its subsequent vintage because of weather damage. The winery would rather incur a loss than release a sub-standard product, which could ultimately affect a winery's reputation.

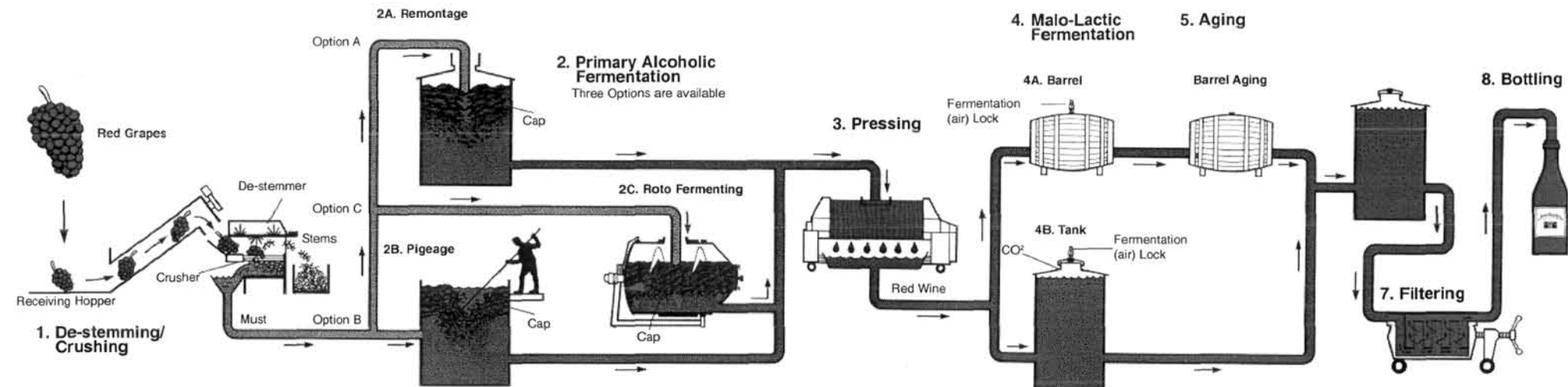


Image reproduced (with permission) from Inniskillin's Book "Anatomy of a Winery, 1995)

In the pre-scientific winemaking era, the must was allowed to start fermenting by itself. The wild yeasts on the skins would go to work, turning the grape sugar into alcohol. However this process was never constant. Early winemakers could never reproduce the same vintage because there was no knowing what kinds of yeasts existed of the grapes.

To eliminate risk of loss and to obtain a uniform product, A 'starter' yeast has been prepared in advance, by placing selected yeasts in a nutrient solution. When added to the must, it is already reproducing actively; it rapidly spreads through the entire volume of the must, and the primary fermentation begins, accompanied by the generation of carbon dioxide.

The rising bubbles of gas carry with them particles of skin and pulp that float on the surface, forming what is called the 'cap'. This cap must be broken up from time to time. If it is allowed to dry out, it forms a favourable breeding ground for spoilage bacteria (Seltman, 1957).

The primary fermentation generates considerable heat which is drawn off, if necessary, by circulating a refrigerant through coils running through the must, or by pumping the must through cooling coils (Amerine, 1965). For red wines, the temperature of the must be kept below 25 degrees Celsius, for white, below 15 degrees Celsius. When the violent fermentation subsides, the liquid is drawn off and the pulp is pressed to expel all the liquid it contains. The raw wine now goes into settling vats. There, while the slow, quiet, fermentation is proceeding, the coarser suspended solids slowly sink to the bottom of the containers.

The wine is 'racked', meaning siphoned into another vessel, leaving behind the sediment or 'lees'. This racking is repeated several times. This gentle disturbance produced by racking also helps to drive off carbon dioxide, and to add a little more oxygen, which assists the secondary or malo-lactic fermentation.

When all fermentation is finished, the wine may be treated with 'fining' agents which precipitate any remaining suspended matter (Zirald, 1995). Or the wine may be forced at high pressure through filters. Either way, the wine is clarified.

High quality red wines may then be aged in oak barrels for two or more years (Wine Spectator, 1992: 45). Cheap wine and white wines are not generally aged in oak, but bottled as soon as they are clear.

Good wines will be further aged in the bottles, reds up to ten years, whites up to five years. This occupancy of valuable storage space for a long period is an important element in the cost of good wines.



The history of making wine has not altered to much since its discovery six thousand years ago. While winemaking techniques have altered with evolution in understanding the fermentation process, the actual process has remained constant.

“Wine” narrowly defined is the product of fermenting fruit juice, usually of the vinefera grape. Generally, it has an alcoholic content of 7% to 14%. Further, this alcoholic content is only derived by fermentation and not by distillation. The process of fermenting is basically feeding sugars and nutrients to yeast, which then produces carbon dioxide and alcohol.

Since the process of making wine has remained unchanged, understanding the evolution of the vine may serve as more useful.

Vines are creeping plants which, if left to their own devices, will grow far and wide. In order to encourage them to produce fruit, and to enable work to be carried out in the vineyards, they need to be cut back and guided. In the late Nineteenth Century, a disease called phylloxera totally destroyed all European vineyards. This disease attacked the roots and killed the plants. It took many years for someone to discover a solution, which was to graft the former fruit bearing varieties onto a naturally resistant rootstock (Zirald, 1995: 18).

Like any other plant, photosynthesis is the process involved in transforming solar energy into growing power. In the case of wine grapes, leaving just enough leaves to ensure that photosynthesis takes place. This usually implies leaving only one or two shoots, cut short, on the plant when pruning.

*Viticulture is the agricultural term for the science of the vine.
Oenology on the other hand, is the craft of making wine.*

Appendix B

A Brief History of the Vine

Hybrids

All grape varieties belong to the genus *Vitis*, meaning vine. (Zirald, 1995). *Vitis vinefera* is derived from the Greek word for vine. (*Vitis* - vine, *vinefera* - wine bearing). The classic European species of vines whose origins date back to the Bible are known to originate from the region of Transcaucasia on the eastern shores of the Black Sea. (Zirald, 1995)

The original objective of crossing North American vines (*Vitis Riparia*) with European vines (*Vitis Vinefera*) was to develop a plant with a built-in resistance to the disease phylloxera but with European-tasting grapes. *Vitis Riparia* traditionally grow wild, often along riverbanks, are resistant to the harsher North American climate as well as resistant to phylloxera and fungus (mildew). These French hybrids, often-called direct producer formed a new generation of grapes for the Okanagan Valley (Zirald, 1995: 18).

Gravity

Historically, wineries were built on hillsides not for prestige as it now, but primarily to use the principles of gravity to ease with the transfer of liquids from stage to stage within the winemaking process. With the advent of modern technology, pumps have been used more frequently to transport the product from vat to vat, and there are those who believe that pumps are destructive to the ‘finish’ of the wine. In a process where the wine may be pumped up to four to five times during the settling or racking time, pumps seem to disturb the unfiltered settlement which winemakers associate with bitter tasting wines (Amerine, 1965). In all fairness to technology, wineries have compensated the settling with fining agent, filters, etc. which truly does not hurt the wine and are more cost effective.

However since the Pinot Noir is the “Rolls Royce” of wines, this project will use the principles of gravity to produce it.



Acid Blend: A Blend of (usually) tartaric and malic acids in crystal forms.

Aging: The term for the period of time a wine sits in either a tank, barrel, or bottle until it reaches full maturity.

Astringency: The effect that tannin has on the mouth; it causes the mouth to pucker and leaves a “dry” feeling in the mouth.

Balance: A tasting term, states whether the fruit, acid, wood flavors, etc, are in the right proportion.

Bentonite: A type of finely ground clay that is used as a clarifying agent. It is used at varying stages of the process, including at the beginning to provide something to which yeast can attach themselves to improve growth and help clear out solids from the primary fermentation.

Body: The weight of wine in your mouth. Alcohol seems to make a wine heavier.

Bouquet: A wine's aroma.

Cap: The vegetable matter and foam layer that forms on the top of the wine during the first few days of fermentation.

Clearing: Getting the wine to go clear by either fining, repeated racking or both.

Disneyfication: Any built form as a characteristic representation or re-creation of a literal typology.

Fermentation: The anaerobic (no oxygen) digestion of various organic compounds by microflora and microfauna. In wine making, yeasts are anaerobically digesting sugar, water and nutrients to produce alcohol.

Fining: The process of clarifying wine to remove any solids or floating/ suspended particles.

Finish: The taste that remains in your mouth after swallowing.

Fruity: A tasting term referring to the flavour of grapes, which can include flavours of berries, citrus, etc.

Lees: The solids that have fallen to the bottom of your fermentation vessel. Among much else, they contain live and dead yeast.

Malo-lactic Fermentation: The process in which lactic acids convert malic acid, resulting wines are soft in style, sometimes taste 'buttery'.

Must: The unfermented juice from freshly squeezed grapes. It can include the pulp, skins and seeds.

Oak: Wood used for barrels. Oaky refers to the flavours that using oak imparts on wine. Oak barrels can give a vanilla flavor to the wine.

Oxidized: A tasting term to describe stale or 'off' wines, caused by the exposure to air.

Palate: A tasting term referring to the feel and taste of wine in the mouth. 'Nose' refers to the smell.

Phylloxera: A vine disease caused by an aphid attacking the roots. Originally from America (where native vines are resistant) this disease has caused widespread global damage.

Residual Sugar: The amount of sugar left in a wine at bottling.

Short: A tasting term to denote a wine which does not remain on the palate after swallowing - see finish.

Soft: A tasting term to describe a wine with low acid and gentle tannins.

Spicy: A tasting term to describe flavors.

Tannin: A substance found in the skin of grapes, can be supplemented by oak tannins from barrels. A necessary component of wine that is to be aged.

Tartaric Acid: A naturally occurring acid, found in grape juice. White crystals of tartrate salts can sometimes be precipitated from wines when they are chilled; they are harmless and tasteless. Tartaric acid is important for providing acid balance in wine and creating good aging potential.

Yeast: A group of enzymes, which promote fermentation of grape juice. The 'dust' on a grape, known as the 'bloom' is wild yeast. Most wine makers prefer to use their own yeast strains.

Appendix C

A Glossary of Terms



