Redevelopment in the Hunter Valley and Cowra Region - Balancing Priorities

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Hunter redevelopment experiences during the 1980s
During the 1970s there was feverish development of vineyards in the Hunter Valley. This took place not only on suitable sites, but in many occasions on unsuitable ground. By the early 1980s quite a few of these vineyards were partly abandoned. The vineyards were then purchased by other, more viable wine companies at 'fire sale' prices.

Wyndham Estate purchased such vineyards and we embarked on a redevelopment program. We were faced with the decision of what vineyard area to revamp and what to level. In most cases we did not have the luxury of past soil test results, crop records or, indeed, any records. In some cases the vineyard had been abandoned for several years and woodland regrowth had commenced. In some cases vines were infested with pests and half dead.

If we were to redevelop, the soil was a good place to start. If the soil was suitable both physically and chemically we proceeded. Sometimes we proceeded even if the soil was not deemed by the Department of Agriculture to be suitable for irrigation or vine growing, since, with the use of gypsum, lime, dolomite and other soil ameliorants we were able to resurrect poor soils that we normally would not have developed.

The variety of wine to be planted was then assessed in relation to soil. In the 1970s red varieties, especially Shiraz, were very much in vogue. They made up a large proportion of the abandoned vineyards, because red varieties were often planted on overly 'strong' soils and hence produced thin and unseelable wine. In the 1980s whites, especially Chardonnay, Semillon and Verdelho, were the desirable varieties to plant in the Hunter. The question for us was whether to pull out the vines or graft them to the desired variety. If the trellis system was to be maintained then vines could be removed by grab chain or cross bulldozing. However, much of the vineyard area was infested with nematodes, so all replanting required expensive rootstocks.

Experience showed us that Shiraz, Cabernet Sauvignon and Blanquette vines all grew and produced well in the infested soil environment, so there seemed to be no point in disturbing their root systems. The most cost-effective result with Chardonnay as a new variety was to graft onto Shiraz roots.

The vines were cut off with a chainsaw about 30 cm from the ground and left to grow for one season before grafting. This was important for two reasons:

1. It enabled us to tend and irrigate the vines and check their viability and virus levels. Suspect vines or those with borer were removed.
2. The one-year-old growth, resulting in mature canes in the ensuing winter was cut back to two spurs of one bud each in the correct position in relation to the trellis.

The growth from these one-year-old buds was green-grafted; it was very stable at the bud emergence position and very few shoots died through wind damage. When grafting onto shoots emerging from latent buds in old wood there is a very high percentage loss through wind damage.

The third question facing us was what to do with the trellis system. In some situations where treated pine had been used the posts were in good condition and did not require removal. However, in the main, poorly treated hardwood posts had been used and these had to be replaced. Most head assemblies were useless or inadequate at best. The opportunity to install efficient end assemblies was taken. Where required, intermediate posts were replaced by quality, treated pine posts 1.5-1.8 m out of the ground, which gave us the opportunity to choose various trellis systems at a later date.

Irrigation was a priority in all cases. Some vineyards planted in the 1970s were unirrigated and thus unproductive. Installation of irrigation using simple manual systems and utilizing a single 4 L turbulent flow dripper per vine reflected the late 1970s technology of the day. We are now assessing these irrigation systems further and upgrading them in the light of modern technology.

Where irrigation was present it was outdated. Other than changing the emitters to new turbulent flow drippers of 4 L per hour (or the hydraulics of the system allowed), the most important priority was not so much changing the system but changing the irrigation philosophy and techniques. Irrigation was only used as supplementary and usually turned off at Christmas. Even though the systems were primitive in today's terms, when used with water scheduling, budgets and soil moisture testing equipment, they were adequate at the time to result in sustained increase in production and quality.

Thus, understanding soil composition and using ameliorants, the technique of green-grafting in the field, better trellis systems and understanding irrigation requirements were simple tools whereby hundreds of derelict vineyard hectares were bought back into production. Since that period, profitable production has meant funds have become available for further upgrading of trellis and irrigation systems to sustain production into the future. This 'open option system' employed means we can now further fine-tune the vineyards to be equal to any new development.

New development at Cowra
For Orlando Wyndham, their involvement in the Cowra region has meant not redevelopment but new development. The compromises, juggling acts and short cuts of redevelopment were thought to be in the past. Here was a new and exciting area showing great promise. Site selection would be easier; a textbook site would be found. That may have been the case in the early 1800s, but most land these days is tied up and most landowners are not willing vendors. Choosing a top site on available land was then and is now a big problem.

However, all good things come to those who wait, and we were able to secure a property with all the key factors of an excellent site:

1. High percentage (240 ha out of 280 ha) of suitable land on excellent site.
2. T he major area (90%) of the site has well drained, red-brown non calcic soil with moderate fertility, while 10% is fertile riverine alluvial soil.
3. Close to water of excellent quality on a controlled flow river, offering high security, transferrable licences.
4. Sloping ground with good air drainage.
5. Climate suited to the wine styles to be produced, i.e. moderate and evenly spread rainfall with a warm climate involving cool nights in the summer growing season.

All the various options then had to be considered and decisions made. Firstly, the vineyard design was a decision in balancing the key factors of design: soil conservation, soil types in relation to irrigation zoning, easy working and cost efficient block sizes and configuration, north/south alignment and aesthetic appeal. All these factors are important in our own right. However, the first two, soil conservation and soil types, have the highest priority, so the Soil Conservation Service of NSW had a major input into the design of Richmond Grove Cowra. Row slopes of 2–3% and waterway drainage were designed to cope with heavy summer thunderstorm rains. That decision has served the vineyard well, since we have experienced two extremely wet years after planting, and in 1992 we suffered two 1-in-500 year storms one month apart. Had soil conservation not been our highest priority the vineyard would have been severely damaged.

In the vineyard and irrigation design we had to include row and vine spacings. Our first preference was for moderately close plantings of 2.5–2.75 m rows. However, we had to balance this preference against being able to use equipment sourced from our other NSW vineyards, which have wider (3.3–3.4 m) spacings. Eventually we chose 3.3 m row spacings.

Irrigation design was much easier than I had experienced when redeveloping vineyards. In Cowra we had a river frontage and a vineyard designed so that almost any irrigation design could be used. The river itself was our first source of options. The river levels seemed to fluctuate greatly and the river often flowed dirty. I decided in the end to use submersible pumps and to pump river water into holding and settling dams, from where it is pumped a second time through filters to the vineyard. This system has worked very well as we can pump at all times.

In the vineyard we needed the ability to cover all options. Hot spells around January could require > 200 L per vine per week. Could we apply this amount in say three irrigations in 1, 2 or 4 waterings. The sloping terrain meant some type of pressure compensation had to be designed into the system. Instead of being concerned with the potential failure of pressure compensating emitters, we opted to install pressure regulating valves at each row rise.

In the four years since planting, all scenarios that we planned to cover by various options have occurred. Any lesser a system would have resulted in potential crop reduction.

I wish that the question of trellising was a simple, yes-or-no matter. The question of type, materials, etc. is undoubtedly the most complex and difficult decision in vineyard development. We decided not to make a hard and fast decision early, but to install a simple trellis system that gives us the ability to later launch into more complex and canopy management systems. It is interesting to note that varieties have behaved differently, and in most cases will be trellised and managed differently to the methods we might have chosen in the first instance. By having posts 1.6–1.8 m out of the ground, with a vine crown 1.1 m high, we can keep our options open and install systems ranging from Scott-Henry and Smart-Dyson to minimal pruning. We never stop learning about and experimenting with canopy management and trellising, so keeping all the options open is critical.

Finally, I would like to comment on variety choices. Cowra has come to be famous for its Chardonnay and while there are pundits who want only Chardonnay grown there, why not Semillon, Verdelho, Shiraz, Cabernet Sauvignon and Merlot? We chose Chardonnay as our main variety, however the decision to plant these other varieties (and more) has proven successful. This broad option taken when developing our first Cowra vineyard now means that future development will include 3 to 4 varieties that have stood out among the 10 originally planted.

In both redevelopment in the Hunter and development in Cowra by Orlando Wyldeham in the last 11 years, the key point in balancing the various priorities has always been flexibility, so that options are both open and expanded.

In conclusion, the Australian wine industry is on the verge of another period of expanded vineyard development involving up to 15,000 ha. One point I would like to emphasize is that we must not make the same mistakes in the 1990s that were made in the past. It is the responsibility of all presently in the industry to make sure that they, and new comers:

1. Choose vineyard sites wisely using broad consultation.
2. Design and install vineyards that will be sustainable.
3. Plant appropriate varieties.
4. Fully understand the financial requirements of development and maintenance, as well as the inherent dangers to crops and returns.

Let us all ensure that the vineyard development of the 1990s does not turn out to be the vineyard abandonment of the next century.