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VITICULTURE AT MT MAJURA VINEYARD: A CASE STUDY OF AN ECONOMIC ENTERPRISE


Abstract
Success for an economic enterprise depends on understanding spatial patterns and trends. The wine industry is no exception and relies on understanding why vigneron in the Canberra District wine region talk about the concept of Liquid Geography.

Introduction
Locating a vineyard is all about geography. With demand for Australian wines growing in the late 1980's, vigneron Dr Edward Riek identified a patch of land with an alluring combination of rock types, soils, drainage, aspect, slope and climate on the eastern slopes of Mount Majura, 11 kilometres east of Canberra.

In 1988 Riek and land owner Mrs Dinny Killen planted pinor noir, chardonnay and cabernet franc/merlot vines on a hectare of land later known as Dinny’s Block. These pioneering vines were the beginning of Mount Majura Vineyard (MMV) as the first vineyard in the Australian Capital Territory.

Student Activities:
Map Interpretation and Research
1. State the absolute location of Mount Majura Vineyard (MMV).
2. Describe the relative location of MMV.
3. Calculate the distance from the MMV winery to Canberra international Airport. Also refer to Fig 6.
4. Identify a variety of cultural features that contribute to the location of MMV.
5. Research the distance from MMV to Cooma along the Monaro Highway.
6. Identify examples of micro and meso climatic variations in the context of a vineyard.

Figure 1: Location of Mount Majura Vineyard
Source: Julia Freeman, 2017

Figure 2: Dinny’s Block named after land owner Mrs Dinny Killen
Source: Julia Freeman, 2016
The nature of the economic enterprise

MMV was established as an economic enterprise as a response to increased demand for Australian wines which Kym Anderson, a wine analyst from Adelaide University, attributes to the low value of the Australian dollar at the time.

“The most recent boom began in 1986 with a steady increase in exports to take advantage of the historically low value of the Australian dollar, which was due to a sharp fall in prices of Australia’s coal, grain and other primary export products.” (Anderson, 2015)

Majura Valley was used for grazing sheep but more intensive agriculture such as viticulture can be a more profitable. Wines can vary greatly in quality and price so WWV chooses to specialise in high quality wines that express the geographic character of their small patch of land in the Majura Valley. Terroir is the flavour imparted to a wine from its biophysical environment – the soil, micro-biome, macro-climate, aspect, hydro-dynamics, chemical composition and more.

Dr Frank van de Loo, a vigneron and winemaker for MMV sought to discover wine growing regions like the Majura Valley. Ribera del Duero in northern Spain was identified using a Geographical Information Systems (GIS) and long term climatological records as having similar site characteristics. Regions were found with similar altitude, effects of continentality, cool temperatures and soil and the grape varieties identified. This geographic knowledge helped inform future choices of grape varieties suitable for MMV.

Location Factors

Traditionally wine grapes are grown in mid-latitudes but with global temperatures rising, wine grapes are extending their latitudinal and altitudinal range. The Majura Valley has cold winters and long dry summers as do other sites within the homo-clime such as Ribera del Duero.

<table>
<thead>
<tr>
<th>Month</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
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<tbody>
<tr>
<td>Mean max</td>
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<td>31</td>
<td>30</td>
<td>28</td>
<td>27</td>
<td>16</td>
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<td>11</td>
<td>13</td>
<td>16</td>
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</tr>
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<td>51</td>
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<td>44</td>
<td>40</td>
<td>41</td>
<td>40</td>
<td>40</td>
<td>52</td>
<td>52</td>
<td>54</td>
</tr>
</tbody>
</table>

Figure 5: Averaged climate data for Canberra Airport

Source: Bureau of Meteorology data extracted and collated by Julia Freeman, 2017
Viticulturalists require a variety of scales of climate data. Data from a meteorological station at Canberra Airport within the Majura Valley provides regional data. Microclimatic data such as the temperatures at various heights within the rows of vines is also important and needs to be monitored by the viticulturalist. The frequency and duration of extreme weather events is increasing nationally and globally.

**Student Activities:**

1. Define the term homo-clime using examples.
2. Identify the season which has the highest precipitation.
3. Calculate the average annual precipitation.
   (Hint: The total of each monthly average)
4. Calculate the percentage of precipitation the wettest season.
5. Access the Bureau of Meteorology (BOM) website. Using data for Canberra Airport, determine:
   - annual total hours of sunshine,
   - three different extreme weather events,
   - latitude, longitude and altitude.

Hours of sunshine, minimum temperatures, wind speed and direction and humidity, temperature stratification within the vines and cold air drainage are all critical to the health of the vines and grapes. Within the vineyard there are variations in slope, aspect, hours of sunlight and wind exposure. Different grape varieties have different levels of tolerance to weather conditions.

Vines are planted on the steeper slopes of land owned by MMV. To protect against frosts vines are planted in rows that run downslope rather than across the slope. This allows colder, denser air to flow past and beyond the vines. Dinny’s Block is the only block where vines have been planted along the contour line whereas on Pines, Rock and North Blocks the rows of vines run downslope.

**Geology and soils**

MMV’s site is particularly suitable as a vineyard because of a patch of rock identified on a geology map which showed both rhyolite from the Ainslie Volcanics, and limestone. This combination of rocks has created a soil which is different to that of the surrounding area and great for growing wine grapes.

Deep ripping of rock and soil on the property was necessary to allow roots to penetrate deeply to prevent dehydration. Many rocks, particularly from Rock Block were also cleared to allow grape vines to establish.
Hydrology
Limestone dissolves and creates aquifers to provide excellent groundwater needed by deep rooted vines. Vines are watered from a bore downslope from the vineyard and pumped uphill. Water is fed through a dripper system with emitters spaced at 75mm intervals along the trellis. The rainfall at MMV is highly variable. Even though the average annual rainfall is 614mm pa; some years there is as little as 250mm while others have over 800mm necessitating between 0.2 and 2.5 megalitres of water from irrigation per hectare of vines.

The water supply is licensed by the Australian Capital Territory government and allocations are regularly reviewed.

Biome
The original biome of the area was altered by sheep grazing in the valley since 1830. Eucalypt woodland was cleared and the grassland biome altered. A pine plantation in the south and oak trees north of the property contribute insects and pollen which interact with the soil, water and plants in the vineyard.

MMV now ferments most of their wines with indigenous microflora present on grapes and equipment from the vineyard rather than using commercial yeast from external sources. This is part of a genomic study with the AWRI (Australian Wine Research Institute) to identify species and range of microbes present in ferments from different vineyards and winegrowing regions.

Ecological Dimensions
Activities in the vineyard change depending on variability of weather each year and the tasks are staged depending of the grape variety and macro-climate of each block. At WWV frosts can be a challenge if they come early.

<table>
<thead>
<tr>
<th>Season</th>
<th>Month</th>
<th>Stage</th>
<th>Jobs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spring</td>
<td>September</td>
<td>Bud burst</td>
<td>pruning</td>
</tr>
<tr>
<td></td>
<td>October</td>
<td>rapid growth</td>
<td>weed control</td>
</tr>
<tr>
<td></td>
<td>November</td>
<td>flowering</td>
<td></td>
</tr>
<tr>
<td>Summer</td>
<td>December</td>
<td>grapes setting</td>
<td>watering begins</td>
</tr>
<tr>
<td></td>
<td>January</td>
<td>bunch closure</td>
<td>netting starts/</td>
</tr>
<tr>
<td></td>
<td>February</td>
<td>veraison</td>
<td>watering stops</td>
</tr>
<tr>
<td>Autumn</td>
<td>March</td>
<td>Veraison</td>
<td>hand picking begins</td>
</tr>
<tr>
<td></td>
<td>April</td>
<td>frossts</td>
<td>late harvest wine</td>
</tr>
<tr>
<td></td>
<td>May</td>
<td></td>
<td>making begins</td>
</tr>
<tr>
<td>Winter</td>
<td>June</td>
<td>leaf fall</td>
<td>training young vines</td>
</tr>
<tr>
<td></td>
<td>July</td>
<td>dormant vines</td>
<td>grafting</td>
</tr>
<tr>
<td></td>
<td>August</td>
<td></td>
<td>pruning</td>
</tr>
</tbody>
</table>

Figure 7: Annual Cycle of Activity at MMV Source: Julia Freeman, 2006

Veraison is the second phase of ripening when red varieties change colour and acid levels in the grape decline and change to sugar as grapes soften. Shiraz grapes are picked in early April from the sunnier north western slopes while varieties such as graciano, touriga, mondeuse are picked later in April. White wine grapes such as riesling and pinot gris are grown on the slopes with a south-easterly aspect to protect them against too much sun exposure and high temperatures and dry northerly winds. Typically these are picked earlier in Autumn.

Grafting is done when the vigneron wants to change the variety of grapes. Some varieties produce a better root system and often less robust varieties are grafted onto more robust root stock. At MMV when Frank van der Loo decided to change to growing more Tempranillo (or Tinto Fino as it is called in Spain) then new shoots were grafted into the original Pinot Noir plants.

Sustainability
When the eight owners of Mount Majura Wines (ACT) Pty Ltd took over MMV in 1999, the area under vines was expanded to 9.3 hectares. New vines were planted, trellised and irrigation infrastructure expanded. The cost was between $50-60,000 per hectare and therefore needs to be a long-term proposition and sustainable.

Soil, being a valuable and scarce resource, needs to be protected. When lines were being deep ripped to plant new root stock, Frank was careful to ensure that the tyne of the ripper was lifted each twenty metres and then dropped back into the ground a metre further along to prevent the creation of an erosion channel. MMV is on relatively steep land which is beneficial for cold air.
drainage but is makes the slope more susceptible to soil erosion.

MMV use an Italian tractor designed for vineyards and steep country. The lightweight tractor has big tyres to minimise soil compaction. Avoiding driving through the vineyard during wet weather also reduces damage to soil structure because a vineyard is a long-term investment.

Pesticide, herbicide and fungicide use at MMV is limited to minimise the effect on the environment. Generally, because of the relative isolation of MMV from other vineyards there is less exposure to pests and fungi that affect grape quality and yield.

Visitors who want to walk around the vineyard are asked to wear gumboots supplied or spray the soles of their shoes with 70% ethanol to prevent the spread of phylloxera which exists in some parts of New South Wales and Victoria but not in the Canberra District wine region.

**Student Activities:**

Graph drawing and sustainability

16. Create a circular graph showing the cycle of activities at MMV.

17. Identify and describe the measures taken at MMV to improve the sustainability of the enterprise.

Weeds between the vines mown and an under-vine slasher used to reduce the need for herbicide and to prevent soil erosion. Clippings are used to mulch under the vines to enrich the soil with organic matter. Even a small amount of erosion each year is too much over the lifespan of a vineyard. When vines are replanted or grafted some herbicide is needed while the vines are less robust. Glycosphate is used once in winter to limit weed growth while Basta has replaced ‘spray seed’ because it is more specific and kills fewer biological organisms.

MMV uses a system of integrated pest management which relies on improving the balance of beneficial pests overcoming the deleterious pests such as bud mites and rust mites.

To minimise the need for fungicide to control downy mildew, powdery mildew and botrytis the vines are trellised using pairs of foliage wires above and below the main growth of leaves and bunches of grapes. These wires are moved through the growing season to spread the canopy to allow greater penetration of sunlight and more airflow.

**Linkages and Flows**

In 2006 an on-site winery was completed. Previously wine was made offsite. A mobile bottler was used and then bottles of wine were stored in warehouse space in Queanbeyan. This involved a lot of travel and was inefficient.

Most of the wine making equipment was imported from Italy while the oak casks are from France. Tanks our sourced from local suppliers in Cooma, NSW.
De-stemming and crushing can now begin while harvesting of other grape varieties is still happening.

Creating top quality white wine depends on minimising oxidation. This is achieved through hand picking and reducing travel time to enhance grape quality. Wine quality is optimised through temperature controlled storage insulated using two layers of Colorbond steel with 100mm thick Styrofoam between. The temperature fluctuates between about 12 to 18 °C throughout the year.

The proximity of MMV to Canberra International Airport allows opportunities for international marketing.

Global Changes

The wine market is affected by fluctuations in volume, variety and quality of wine. Small wine growers like MMV aim to supply a niche market. In the case of MMV they aim to produce high quality wines that reflect the terroir of their site.

The current market for wine is dominated by Baby Boomers, however, future trends are being affected by the tastes of younger wine drinkers.

Some of the changes forecast for wine consumption over the forthcoming years include:

- Demand for luxury wines is expected to increase for established wine brands.
- Boxed wine is becoming more acceptable to consume at home and drink casually.
- Consumers are becoming more interested in boutique wines.
- Light reds, sparkling and rose varieties are experiencing an increased demand.
- Less affluent Millennials (21 to 37 year olds) are increasing their demand for wine.
- Millennials are influenced by labelling, and peer acceptance for wine choice.
- Wine-loyal Baby Boomers will have less money to spend on wine when they retire.
- Farm labour costs are increasing.
- To change grape varieties being grown to meet changing wine consumption patterns is comparatively slow process for any vineyard.

To graft new varieties and establish new processes and wine making techniques requires several years of planning.

Student Activities:

Survey and trends

18. Survey your family and friends to discover their wine preferences.

19. Assess the validity of the forecasts listed in this article.

20. Create a two-column table and list the forecast changes that could affect MMV positively and negatively.

21. Recommend a change MMV could use to increase their profit over the next decade.
Further Reading

Canberra Wine Growing Region: Liquid Geography

Canberra Grapes: The Viticultural Society of the Canberra District Incorporated
http://canberragrapes.net.au/the-canberra-district

Liquid Geography: Geography of Vine and Wine by D. R. Green
http://slideplayer.com/presentation/10636215/

Bureau of Meteorology

Smart R: Creating an Australian Vega Sicilia
May/June 2008 Vol 23 No 3 Wine Industry Journal
www.winebiz.com.au

Appendices

Appendix 1
Published in Adelaide by
University of Adelaide Press
The University of Adelaide
Level 14, 115 Grenfell Street
South Australia 5005
press@adelaide.edu.au
www.adelaide.edu.au/press

The University of Adelaide Press publishes externally refereed scholarly books by staff of the University of Adelaide. It aims to maximise access to the University’s best research by publishing works through the internet as free downloads and for sale as high quality printed volumes.

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For the full Cataloguing-in-Publication data please contact the National Library of Australia:
cip@nla.gov.au

ISBN (paperback) 978-1-925261-08-0
ISBN (ebook) 978-1-925261-09-7

Cover image: iStockphoto

Inside cover image: © 2014 Dragan Radocaj, Pindarie cellar door and homestead

Cover design: Emma Spoehr

Project coordinator: Julia Keller

Paperback printed by Griffin Press, South Australia
This article focuses on examining some of the dimensions associated with the phrase culture of place in relation to a case study of Sydney, a large city in the developed world.

Sydney (absolute location 33°51’ S, 151° 12’ E) lies within a bowl-shaped area drained by the Nepean-Hawkesbury River system that flows into Sydney Harbour and that forms the northern border of the CBD. To the south lies the Georges River that empties into Botany Bay. Dissected sandstone plateaus occur to the north and south of Sydney Harbour. The Sydney Basin has its western margin at the foot of the Blue Mountains, while the eastern boundary is the Tasman Sea.

The City of Sydney covers an area of 27kms², while Metropolitan or Greater Sydney sprawls over 12,368 kms² and Pyrmont is 1km² in area.

**Key terms**

**Culture** refers to the traditions handed down from one generation to another. It includes food, religious beliefs, clothing, music, art, language, history, architecture (building design) and the use or creation of public space (commons). For example, public parks, pedestrian plazas (Martin Place, Sydney or Federation Square, Melbourne or Trafalgar Square, London).

**Place** within Geography, refers to the physical (biotic and abiotic) and human characteristics of a location.

**Culture of Place**

**Culture of place** refers to the physical or spatial location and extent of an area and how this area has been changed over time by a combination of on-going natural forces and human activities. Culture of place is the result of the continuing interplay between political, physical, economic, social and technological forces that occur over time. So, while people hand down traditions from one generation to another, peoples’ attitudes, including that of Government, are responsible for changing the appearance of the physical environment over time.

Although the physical environment may initially constrain the development of an area, the technological means exist, when combined with the political, social and economic will, to alter the shape of the environment. For example, land clearing and the excavation of sandstone for the development of port facilities around Sydney Cove, Walsh and Cockle Bays – see figures 1 and 2.

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**Figure 1: Macquarie’s Sydney**

Source: https://s-media-cache-ak0.pinimg.com/originals/c4/b2/9c/c4b29c66420ff308eb775cf2fe57343b.jpg

**Figure 2: Map extract of Sydney Cove to Walsh Bay and the changes to the coastline and streets**

Source: http://www.voommaps.com/maps/gregorys_1934/01-02.html

Culture of place involves static (fixed) and dynamic elements (see figure 3 below). Static elements include; the age of an area / suburb; land use and road patterns, architectural styles, public space (parks, pedestrian plazas or shared connecting paths for cyclists and joggers) which reflect the historic developments and / or current Council zoning laws; Dynamic components involve noise, energy, lifestyles, colour and vitality which can be influenced by use of the area by cultural groups or when streets are temporarily closed off for street stalls.
or markets. There may be temporary land use changes to accommodate a specific activity such as the running of the Sydney to Surf or to ‘seal-off’ roads to accommodate the Commonwealth Heads of Government Meetings – CHOGM.

2. The operation of the urban dynamics of change (e.g. suburbanisation, decentralisation, urban decay, urban renewal (including gentrification), spatial exclusion and urban villages) also influence static elements of culture of place that can influence the dynamic aspects of culture of place.

Figure 16, an extract from Macquarie’s Sydney 1810-1823, reveals how the relatively undisturbed landscape of Sydney Cove changed within a period of approximately twenty years as a result of human activity. Note the distinctive street grid pattern, to the south of Sydney Cove, while the area between the ‘Rocks’ and the Dawes Point peninsula has (more) irregularly shaped roads that reflects the difference in topography between the area north of The Rocks and the area south of present day Circular Quay (Sydney Cove).

Approximately one hundred and twenty years later, the shape of the coastline between Sydney Cove and Walsh Bay had been modified / altered to reflect the development of finger wharves that accommodated the change from wind to steam and subsequently, diesel-powered shipping (see figure 27, 1934 Gregory’s map extract). The street pattern, a static element, had also been extended between 1810 and 1934 as seen in figures 18 and 29. For example, Argyle Street now links Sydney Cove with Cockle Bay.

With the completion of Victoria Barracks in Paddington in the 1840’s, gradual residential in-filling occurred between the current Hyde Park, College St, Surry Hills and present day Bondi Junction. The effect of the NSW gold rushes in the 1850’s resulted in the development of an increasingly high-end shopping and commercial area and was re-named Oxford Street in 1875 after its London retailing counterpart.

The latter decades of the nineteenth century saw an abundance of banks, retail outlets, tanneries, iron foundries, breweries, building suppliers and clothing factories located in between the suburbs of Surry Hills, Paddington and Bondi. Some businesses thrived, while others declined. This was particularly so for those engaged in manufacturing, or those firms that polluted the air and / or water – the tanneries and iron foundries, in particular. This deindustrialisation was not limited to part of the eastern suburbs, but included Sydney’s industrial river-front suburbs, such as Pyrmont and Ultimo. The changing culture of place that resulted from the urban decay and subsequent urban renewal

Factors and Processes influencing Culture of Place

1. Physical location and characteristics of an area (site) e.g. rivers, a harbour, by a lake, at elevation (in a basin or valley) may influence the characteristics of an area and the subsequent development of a settlement.

Sydney Harbour was chosen in preference to Botany Bay as its landforms provided shelter from strong winds; it has deep-water access and (had) a reliable water source. The topography of the southern shore was more favourable when compared to the more rugged northern hinterland of Sydney Harbour.

Figure 2: Examples of static and dynamic elements associated with Culture of Place

The more dynamic aspects of culture of place are also affected by and reflect different waves of migration. Waves of immigrants have individual and cumulative impacts. Individually, the impact of specific migrant groups can be seen in places of worship, social clubs, community radio stations and newspapers, place names, multi-lingual signs, music, theatre, food, dress or fashion and in literature. The cumulative impacts of migration have resulted in Sydney becoming a multicultural city. There are distinct pockets (enclaves) of people from either similar backgrounds (countries and / or religious practices) associated with different cultural practices.

Culture of place has a number of elements. The following is intended to stimulate discussion about ‘what’ elements or ‘things’ constitute culture of place. It is not intended to be an exhaustive or definitive discourse.
3. Migration.

Incremental increases in population over time, from migration, can give rise to concentrations of identifiable groupings of people.

In the case of Sydney, the greatest concentration of Jewry occurs in the Eastern suburbs - see figure 4\textsuperscript{10}, while many Vietnamese are concentrated in and around Cabramatta with Muslims being located in Auburn and Granville.

\textbf{Figure 4: Jewish Population Distribution}

Source: Extract from Map 4, Jewish Population Distribution, Eastern Suburbs and City (enumerated), page 12, in THE JEWISH POPULATION OF NEW SOUTH WALES Key findings from the 2011 Census Dr. David Graham.

\textbf{The growth of Sydney’s Jewish Community}\textsuperscript{11}

Initially 16 Jewish convicts arrived with the First Fleet. As the number of settlers continued to increase, a section of Devonshire Street Cemetery, where Central Station stands today, was consecrated as Jewish (1832). Further increases in the Jewish people resulted in the construction of the Great Synagogue in Elizabeth St, opposite Hyde Park, in 1878.

By the early 1920’s, 23% of Sydney’s Jewry were living in the Eastern Suburbs. Jewish Day Schools were established, (mainly in the Eastern suburbs) such as Moriah College, in 1942 and Masada in 1966. In 2001, Reddam House was established in Bondi. Specialised shops that sold kosher food\textsuperscript{15} (see figure 5) and garments were also established within the Eastern Suburbs.

\textbf{Pyrmont – a case study of urban renewal and changing culture of place.}

There is a temporal setting or context when discussing culture of place.

Pyrmont\textsuperscript{13} (see figure 6) approximately 2kms west of Sydney’s CBD, has an absolute location of 33° 52’ S, 151° 38’ E.

\textbf{Figure 5: Krinskys, Bondi Road}

Photo: J.de Botton

The population of Jewish people has continued to increase. In 2011, 45,718 Jewish people lived in NSW (ABS Census). Of these 96% lived in Sydney with 49% of these living in the Eastern suburbs\textsuperscript{12}.

From the first grant of land in 1795, this peninsula has seen farming, cattle yards, residential development and industry. By 1870 the southern and south-western portions of Cockle Bay, now Darling Harbour, had been reclaimed and a railway line and goods yard had been established. Locational advantages included deep-water berths, a growing rail network and proximity to the administrative and financial centre of the city. In 1876, Colonial Sugar Refining (CSR) commenced operations producing sugar, molasses (see figure 7\textsuperscript{14} and the names of specific buildings associated with these activities) and

\textbf{Figure 6: Location Map, Pyrmont Peninsula.}
syrup. Between 1883 and 1936 approximately twenty wool stores were constructed to take advantage of the integrated rail, warehousing and port facilities.

Figure 7: Extract from City Building Surveyor’s Detail Sheets, ca 1956, showing section of the CSR site in Pyrmont


By 1900, over 30,000 people lived and worked in this key industrial centre of Sydney, many in noisy, smelly and dirty conditions. They lived in medium density terrace homes, many on narrow streets such as Harvey St or Bowman Street. Walking was the main mode of transport. The City Building Surveyor’s Detail Sheet c1956 identifies some vacant land but no dedicated green space that is present in Pyrmont today (compare figures 7\textsuperscript{15} and 8\textsuperscript{16} with figures 9\textsuperscript{17} and 10\textsuperscript{18}). Recreational opportunities included street games such as cricket or going to one of the many pubs, after work, for example, the Quarryman’s Hotel or (possibly) swimming at the Pyrmont baths, which was on Elizabeth Bay\textsuperscript{19} (see figure 8).

Figure 8: Note the Pyrmont baths

During Pyrmont’s industrial age c1870 to 1980, various noises were evident; the use of mechanical cargo hoists, ships claxons, the generation of power and the banging of metal at CSR’s Engineer’s workshops. Smells, associated with this industrial nature, came from making of sugar, distillation of rum and air pollution, predominantly caused by the burning of coal to provide electricity. Coal ash / dust carried by wind to neighbouring suburbs such as Rozelle and Balmain, settled on laundry requiring clothes to be re-washed–Author, personal recollection.

The (urban) decline of the Pyrmont-Ultimo area occurred as a result of the combined effects of the 1929-33 Depression, the impacts of WW2 and advances in transportation, production and communications technologies. The growth in car ownership and rapid development of the trucking (transport) industry, saw the demise of trams, the growth in sealed roads and the suburban development of Sydney.

Advances in road transport, such as semi-trailers that could carry containers, enabled firms to become footloose (not tied to any particular location). Suburban sites, such as Wetherill Park, twenty-five kilometres west of Pyrmont, had better roads and sites that were larger, cheaper, flatter and far more attractive than the narrower streets of older, inner suburbs like Pyrmont and Ultimo. These attributes that encourage or push people and firms away from the city centre are called centrifugal forces.
Closure of industry (deindustrialisation) began in Pyrmont and Ultimo in the late 1920’s. The Ultimo Powerhouse closed in 1963 due to the phasing out of Sydney’s trams, and, in the 1970s, the wool trade shifted to the purpose-built Wool Stores at Yennora, a suburb twenty kilometres west of Pyrmont. Clothing and footwear factories closed as production relocated to the low-cost nations of South-East Asia, while other industries closed because the cost of replacing old manufacturing technology, in the same space, was prohibitively expensive. Closures also occurred because of stronger State environmental laws associated with air and water pollution. CSR, the last major industry in the area, ceased operating in 1992.

In the 1960’s, new transportation technology (container ships, semi-trailers) along with the use of roll-on roll-off (Ro-Ro) shipping meant the existing finger wharves at Pyrmont could not accommodate the new, much larger container and cargo ships which moved to longshore wharves of the Container Terminal at Sydney’s Botany Bay. The narrow streets of Pyrmont and Ultimo also constrained the movement of the longer semi-trailers. Changes in transport and production technologies also saw the re-location of shops and businesses to the suburbs. By the mid-1970’s urban decay was widespread and the population of Pyrmont declined from approximately 30,000 in 1900 to 5,000 in 1954 and 1,590 in 1981.

First wave gentrification of Pyrmont started to occur in the 1980’s as people, tired of commuting from the suburbs to the city for work, or retirees seeking a change in lifestyle, moved to Pyrmont and Ultimo to be closer to the cultural life of Sydney, for example, the Opera House on Bennelong Point. Urban renewal included extensive investment in public infrastructure of Darling Harbour and the creation of a tourist precinct to the south-east of Pyrmont in preparation for the Bicentennial in 1988. Centripetal forces, are those forces or reasons that entice / encourage people to move closer to the city.

The demographic characteristics of Pyrmont also changed. A 1996 Sydney Morning Herald article (Paolo Totaro) indicated that in 1991, 16% of Pyrmont residents had a university degree and 10.3% were engaged in manufacturing. By 1996, 27% had a university degree, 4.3% worked in manufacturing, 23.2% worked in finance, property and business and 11% in communications. Fifteen years later, 46.3% had a university degree, 3.4% worked in manufacturing, 18% in the Professional and Scientific services, Finance and financial services accounted for 15.1% with employment in Accommodation and Food services accounting for 9.3%. Within 20 years, Blue collar and manual work had been supplanted by white collar workers who worked in the new knowledge economy – see figure 11.

Data from the 2011 Census also reveals that there has been a slight reduction in the percentage of people born in the UK from 7% in 2001 to 6.5% in 2011. For those born in China, the figures indicate a rise from 4.4% to 6.5%, with the third largest group, those born in South Korea, also increasing from 2.4% to 3%.

A second wave of gentrification came with the redevelopment of the former industrial site of CSR as part of a joint Private-Public Partnership or PPP which reflected a new policy of urban consolidation. In 1992, government land was sold to private developers (Lend Lease) who were required to provide public infrastructure such as parks, playgrounds and foreshore walkways to support a residential population of 20,000 by approx. 2020 to be accommodated in medium and high density housing. (as seen in figure 10). The effects of this urban consolidation policy, can be seen along many of Sydney’s major arterial roads and near major railway stations such as Parramatta, Strathfield, Chatswood and Hornsby.

Medium density two and three storey terrace homes that once occupied Point St were demolished and replaced by the four storey Point Apartments that have views to either Johnston’s Bay, the Harbour Bridge or Darling Harbour from Giba and Pirrama Parks (see figures 9 and 10). These view corridors were established to help minimise the sense of density inside the peninsula and to recognise the change in nature of the area from an industrial to a mixed-use precinct involving a significantly expanded residential population that have different recreational opportunities when compared to the residents who occupied this area in the 1950’s.

The provision of green spaces, which vary in size from pocket parks, like those opposite the Quarryman’s Hotel, to the expansive 12,000 metre squared Pirrama and Waterfront Parks that lie on the northern sections of the peninsula, have been constructed as linked green spaces. Linked green spaces are those that connect other waterfront suburbs to each other. For example, a shared 14km foreshore walkway / cycle way connects Rushcutters Bay with Blackwattle Bay.

This second-wave gentrification changed the look / the aesthetics of the area. For example, the use of green space, see figure 9, the types of industry (see figure 11) and housing (density) - see figures 10.
Changes in place names also occurred. The names assigned to apartment buildings reflect the industrial heritage and/or remember prominent people of the era; for example, the Distillery, on Bowman St - see figure 731; Stonecutter’s, after the workers in the sandstone quarries; and The Elizabeth, see figure 1232, the latter being named after the wife of John Macarthur.

Indigenous heritage of the area is recognised in names of apartment blocks and street names; the Cadigal and Cadigal Avenue, with a portion of Jones Bay Road being renamed Pirrama Road in 1995.

The adaptive reuse of buildings (see figures 1233) highlights the importance attached to the industrial and maritime heritage of the Pyrmont-Ultimo area. As the purpose of the landuse has changed, so too have its uses. There is a significant difference between swimming in the Pyrmont baths (see figure 834) and the Ian Thorpe Aquatic Centre!

Conclusion

The vitality of Pyrmont has changed substantially since its industrial heyday, not only in terms of its architecture but its streetscape (landuse, building height, the provision of green space), noise, colour, street life and lifestyles. The architecture of its buildings are different in terms of size and use; some have been adaptively re-used for commerce and housing, while others have been demolished to be replaced by new structures to accommodate the new post-industrial knowledge-based economy (Nokia / Google / Fairfax Media). Some streetscapes include the use of green space, shared paths, cycle-ways and al-fresco dining. Elsewhere, streets have been ‘greened’ in terms of the planting of trees to soften the harshness of the streetscape and to modify the microclimate. The atmosphere and water are cleaner in 2017 than in the 19th and early 20th centuries, while the noises and ‘aromas’ of this area today are more likely to be of Arabica beans and cooling coastal breezes than of rum and molasses. The colours of buildings are in some places very different today when compared to yesteryear, while in others, the use of heritage colours is mandated. The composition of the population has changed not only in terms of their country of origin and languages spoken, but in terms of the substantively different recreational and work opportunities that exist in the 21st century when compared to the 19th and 20th centuries.

It is my hope that this article has provided a framework around which you and your students can consider those elements that constitute the (changing) culture of place in relation to their case study of a large city in the developed world.

Acknowledgements

I would like to thank Mr R. Crighton, Head of Geography, Knox Grammar School for his comments and willingness to review this article.

Student Activities:

1. Distinguish between static and dynamic elements of culture of place using examples in your answer.

2. For any area of a large city in the developed world, construct a table to show the elements of the culture of place of the area.

3. Why might the culture of place for areas within a city be different?

4. Suggest reasons why cultural enclaves develop within a city.

5. Construct a timeline to show the changes that have occurred in the social and economic character of Pyrmont over time. Explain how the changes identified have impacted on different elements of culture of place.

6. To what extent is the environment an important factor affecting culture of place? Support your answer with examples.
7. How might the presence of tourists affect the culture of place in a large city in the developed world?

8. Discuss the extent to which culture of place affects the livability of an area of a city.

9. Why might different groups of people have different perceptions of an area’s culture of place?

10. Discuss how recent developments in an area with which you are familiar have affected or will affect the culture of place.

11. Outline ONE primary and ONE secondary geographical method that could be used to assist in identifying elements of an area’s culture of place.

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4. Figure 1 Macquarie’s Sydney 1810-1823 (Map Extract of Sydney Cove and Cockle Bay). 2016. Web. 16 Dec. 2016.


7. Ibid.


12. Figure 5 – de Botton, Joseph. Krinskys Kosher Supermarket, Bondi St, Bondi. 15 December, 2016.


16. Ibid.

17. Figure 8 - Phoenix Group Co. CSR Refinery. 2015. Web. 17 Dec. 2016. Note the location of the Pyrmont Baths, centre-right of this image.

18. 1Figure 9 - “Pyrmont, Bays and Harbours (View from Cliff top and Giba Park)”. Sydney - City and Suburbs.


20. Figure 8 – op.cit.


26. Figure 10. op.cit.

27. Figure 9 - op.cit.

28. Figure 10 - op.cit.

29. Figure 9 – op.cit.

30. Figure 11 – op.cit.

31. Figure 10 – op.cit.

32. Figure 7 – op.cit.

33. Figure 12 – Photo. de Botton, Joseph. The Elizabeth, Harris St, Pyrmont. May 2008

34. Figure 12 – ibid.

35. Figure 8 – op.cit.

Editor: Anne Holland

www.warringalpublications.com.au

Email: warringalpublications@edassist.com.au

Phone: (03) 8678 1118

Fax: (03) 8678 1118

PO Box 299, Richmond, VIC 3121