



## REGISTER OF HERITAGE PLACES - ASSESSMENT DOCUMENTATION

### 11. ASSESSMENT OF CULTURAL HERITAGE SIGNIFICANCE

The criteria adopted by the Heritage Council in November, 1996 have been used to determine the cultural heritage significance of the place.

#### 11.1 AESTHETIC VALUE \*

*Royal Hotel* exhibits a highly decorative facade and highly articulated roof-line contributing to an aesthetic character valued by the community. (Criterion 1.1)

*Royal Hotel* is a fine example of Victorian Second Empire style architecture. (Criterion 1.2)

*Royal Hotel* is sited on a prominent corner location on a major thoroughfare in the city. It is significant for its landmark quality. (Criterion 1.3)

*Royal Hotel* forms part of a significant precinct of late-nineteenth and early-twentieth century buildings in William, Wellington and Murray streets to the west of the central business district. (Criterion 1.4)

#### 11.2. HISTORIC VALUE

The progressive development of the hotel from a simple two-storey brick building facing Wellington Street in 1882 to the opulent Victorian Second Empire Style corner edifice in 1906 represents the rapid growth and development of Western Australia from 1880 to 1910 primarily as a result of the gold rushes. (Criterion 2.1)

The grand facade of *Royal Hotel* is a tangible reminder of the wealth and prosperity that occurred in Western Australia during the Gold Rush period. (Criterion 2.2)

*Royal Hotel* is significant for its development in association with the construction of the Fremantle to Guildford railway line. This siting also ensured economic success for the business. (Criterion 2.2)

*Royal Hotel* is significant for its association with the first Western Australian born and trained architect, Henry Trigg. Trigg was also instrumental in the formation of the Institute of Architects and designed many prominent buildings in the central Perth Area. (Criterion 2.3)

---

\* For consistency, all references to architectural style are taken from Apperly, Richard; Irving, Robert and Reynolds, Peter *A Pictorial Guide to Identifying Australian Architecture: Styles and Terms from 1788 to the Present*, Angus & Robertson, North Ryde, 1989.

Raine square has associations with Mrs Raine whose bequest resulted in the Raine Foundation which was a very significant contributor to the University of Western Australia. (Criterion 2.3)

### 11. 3. SCIENTIFIC VALUE

-----

### 11. 4. SOCIAL VALUE

Entry of the place in the National Trust's Classified List and the Register of the National Estate is indicative of the value placed on it by these heritage organisations. It is also valued by the community for its aesthetic character and prominent siting. (Criterion 4.1)

*Royal Hotel* contributes to the community's sense of place as it has operated on this site since 1882 and has been substantially in its present form since 1906. (Criterion 4.2)

## 12. DEGREE OF SIGNIFICANCE

### 12. 1. RARITY

*Royal Hotel* is one of only two buildings in Perth constructed in the Victorian Second Empire Style. (Criterion 5.1)

### 12. 2 REPRESENTATIVENESS

*Royal Hotel* is representative of a period of development of hotels in the northern portion of the city, especially on Wellington Street, immediately following the construction of the Fremantle to Guildford railway line. The expansion of *Royal Hotel* on the site in 1894 and 1906 represents the success of the hotel due to its location as well as the increased wealth and population of the state resulting from the gold boom. (Criterion 6.2)

### 12. 3 CONDITION

*Royal Hotel* is in a good condition externally and internally as a result of substantial renovation and upgrade works carried out during the development of Raine Square from 1984 to 1986, and from a high level of ongoing maintenance. Some spalling is evident on the western end of the Wellington Street wing and the awning roof has some areas of rust. These problems do not detract from the general presentation of the building.

### 12. 4 INTEGRITY

The original design intent of the exterior and upper floors of *Royal Hotel* is substantially intact and its current use for hotel accommodation purposes is compatible. It is unlikely that the ground floor areas and first floor function rooms would be able to be restored. Removal of the verandahs constructed during the 1906 additions and their replacement with an awning, which interrupts the balance of the facades, has also reduced the integrity of the place. *Royal Hotel* has a moderate to low degree of integrity.

### 12. 5 AUTHENTICITY

*Royal Hotel* has a moderate degree of authenticity. Externally, the building is substantially in its original state with the exception of the awning and the

ground floor facades. All other fenestration appears original in detail although some repairs were carried out in 1986. Internally, changes to the ground floor have removed most of the original detail. The fanlight and ceiling in the former dining room are the only evidence of the 1935 works. The fabric of the upper floors is reasonably intact.

### 13. SUPPORTING EVIDENCE

The documentary evidence has been compiled by Helen Burgess, Historian. The physical evidence has been compiled by Alice Steedman, Architect.

#### 13.1 DOCUMENTARY EVIDENCE

*Royal Hotel* is located at 531 Wellington Street (cnr William Street), Perth on portions of Perth Town Lots V21 and V22. The hotel was originally built in 1882 by contractor, Mr Britten, for Mr G. W. Dent.<sup>1</sup> However, substantial additions were made to the hotel in 1894 and in 1906, when the Hotel was given the Victorian Second Empire style building it has today.

*Royal Hotel* was constructed during a period of great change in central Perth, firstly due to the railway and secondly, the gold boom. From 1879-81 the railway linking Perth with Fremantle and Guildford was constructed along a line of former swampland immediately to the north of the central city. Associated with this was the construction of the Perth Railway Station on Wellington Street which commenced in 1879. The first stage of construction was completed by 1885. These events brought about an increase in commercial and building activity in the city, but it was the various discoveries of gold in Western Australia from 1886 to 1896 which saw the economy and population of the state boom.<sup>2</sup>

During the period just before and during the gold boom years, a whole new range of private buildings began to emerge and their architecture was a celebration of the discovery of gold and the prosperity of the state. Hotels were no exception. The need for new and substantial hotels in the city at this time which could provide quality accommodation, particularly since the opening of the railway, and the increase in visitors to the city, had been expressed on several occasions in the local press:

First class hotel accommodation has not been readily attainable in the city. In some towns of the colony the hotels, which are of more modern construction, are far more comfortable and better furnished. In the city the hotels for the most part are very old buildings; the Devonshire Arms, for instance, which has now been closed, has had an existence of about fifty years; other buildings have been enlarged, or been added to, but there has been an absence of design necessary to a comfortable modern hotel.<sup>3</sup>

*Royal Hotel* was built in response to this need, taking full advantage of the opening of the Perth Railway Station, and the growth in wealth and population. The erection of this new hotel was noted in the local paper:

Two fine buildings are now being constructed contiguous to the Perth railway station. They will contain upwards of twenty rooms each, and are intended for

---

<sup>1</sup> *Inquirer and Commercial News* 31 May 1882, p.3.

<sup>2</sup> Seddon, George and Ravine, David A *City and its Setting: Images of Perth, Western Australia* Fremantle 1986, p.118; Pitt Morrison, M. and White, J. (eds) *Western Towns and Buildings* UWA Press, Nedlands, 1979, p.49.

<sup>3</sup> *Inquirer and Commercial News* 4 October 1882, p.5.

hotel accommodation. The building near the public pound is being erected by Mr Britten for Mr Dent, and will be occupied by Mr Foster of the Temperance Hotel.<sup>4</sup>

George William Dent, born 17 April 1839, was the son of Thomas and Eliza Dent, owners of 'The Happy Emigrant' hotel (c. 1830) in Barrack Street. He married Ellen Turner in 1862 and had 4 children. He was a clerk at the Commissariat Store of the Convict Establishment from 1862 to 1877 and later became paymaster of the Imperial Pensioners Force. Dent built his house at 42 Mount Street known as 'Riverina', which was demolished in 1950.<sup>5</sup>

On 23 August 1882, a notice appeared in the *Inquirer and Commercial News* announcing the intention of James Charles Foster to apply for a Publican's General License at the next Licensing Meeting, which he successfully obtained. The hotel at this time contained five sitting rooms and ten bedrooms '... exclusive of seven other compartments rented from Mr G. W. Dent, not now licensed or occupied, but proposed to be licensed under the sign or name of the "Royal Hotel".'<sup>6</sup>

The Royal Hotel was completed and opened by 2 October 1882, and was a welcome addition to the city:

The two hotels, built near the railway station, the Royal and the Wellington, will meet a want that has long been felt, besides affording extra accommodation that has become necessary since the opening of the railway. They are both good houses, and in each case the landlords are experienced caterers for the public.<sup>7</sup>

On 18 October 1882, an advertisement for the newly opened *Royal Hotel* appeared, formally announcing that this '... first class family hotel' was now open for business, and that 'every comfort and convenience have been studied, and travellers will be afforded all the advantages of a well-conducted English Hotel'.<sup>8</sup> A photograph of *Royal Hotel* from the 1880s shows the hotel as a two-storey brick building facing Wellington Street with a two-storey verandah over the footpath, arched entrances and 12-pane double hung sash windows on both floors.<sup>9</sup>

Although most hotels thrived during the gold boom years in Western Australia, those well situated, such as *Royal Hotel*, did particularly well:

Hotels flourished in central locations either with a river view, such as the Palace Hotel (1895), close to the station, like Royal Hotel (1882), or at strategic locations at entrances to the central city, like the Great Western Hotel (c.1895).<sup>10</sup>

Foster held the license for *Royal Hotel* until 1893, when it was transferred to John Joseph McDonnell and then to Frederick Schruth who became the proprietor of *Royal Hotel* in 1894.<sup>11</sup> Schruth immediately set about having

---

4 *ibid*, 31 May 1882. The other hotel referred to is the Wellington.

5 Public Records Office file MN1217, Acc 3716A, Items 334-337; Stannage, C.T. *The People of Perth*, Perth City Council, Perth, Western Australia, 1979, pp. 72-73, describes the tragic experience of the Dent family in the Swan River Colony.

6 *Inquirer and Commercial News* 23 August 1882, p.2.

7 *ibid*, 4 October 1882, p.5.

8 *ibid*, 18 October 1882, p.3.

9 Battye Library, Pictorial Collection, 2498B/1, c. 1880s.

10 Pitt Morrison, M. and White, J. (eds) *op. cit.*, p.267.

11 *Police Gazette* 4 January 1893, p.8, and 3 January 1894, p.4; Public Records Office file AN17/PER, Acc 3294, Item 21, 1893, Perth Local Courts, Liquor Licenses.

several improvements made to the hotel. These were completed by September 1894 and their completion was marked by an official reception.<sup>12</sup>

A photograph taken in 1897 shows *Royal Hotel* as a grand two-storey brick building with rendered dressings facing William Street. The building has three steeply pitched mansard roofs topped with iron balustrades and finials, dormer windows, and, what appears to be, a roof-top deck also edged with iron railing. There are no verandahs or awnings to the front of the building; however; a timber verandah extends from the 1882 building on Wellington Street across the northern end of the newly constructed portion of *Royal Hotel*.<sup>13</sup>

It is not known who designed the original hotel, however; Henry Stirling Trigg designed the 1894 addition. The first Western Australian born and trained architect, Trigg was articled to T. H. J. Browne (expiree architect/engineer) and practised in Sydney for several years before returning to Perth in 1885. He was later instrumental in the formation of the Institute of Architects.<sup>14</sup> Other buildings in Perth designed by Trigg include: *Trinity Church* (Congregational) St George's Terrace (1877/1894); *Daily News*, St George's Terrace (1903 - demolished); *Commercial Union Insurance Company*, St George's Terrace; *Governor Broome Hotel*, cnr William and Roe streets (c1896 - demolished); *Goldfields Club Hotel*, cnr Wellington and Pier streets (c1896).<sup>15</sup>

From 1895 to 1900, the license for *Royal Hotel* changed from Schruth to T. J. Howe and then William Arnold Grenike, but in the middle of 1901, it transferred again to Schruth, who entered into a lease agreement with George Dent for a period of five years.<sup>16</sup> In June 1905, the lease was transferred to William Henry Jones.<sup>17</sup>

In 1906, extensive additions and alterations were carried out to the hotel to the design of Hobbs Smith and Forbes Architects. The contract went to G. Liebe, and by May, the works were reported to be well under way.<sup>18</sup>

In 1913, a photograph of *Royal Hotel* as it would have looked after the 1906 works appeared in Battye's *Cyclopaedia of Western Australia History*. The building is shown extending around the corner and along Wellington Street in the same detail as Trigg's 1894 design. Two-storey verandahs with iron lace-work extend across the William and Wellington street facades. The description given by Battye is as follows:

The hotel contains 53 bedrooms, with three reception rooms on the first floor and smokerooms and dining-room on the ground floor. The furnishings are elaborate and in good taste ... The house is fitted with the most modern conveniences, among other

---

12 *The West Australian* 10 September 1894, p.6. Unfortunately, no details of the works carried out to the Hotel were mentioned in the article, nor were details located in any previous or subsequent newspaper articles.

13 Battye Library, Pictorial Collection, 3314B/75.

14 Kimberley, W. B. *History of Western Australia: A narrative of her past, together with biographies of her leading men* Victoria, 1897, p.111; Pitt Morrison, Margaret 'Immigrant Architects in Western Australia 1885-1905' 1983, p.14; Public Records Office file MN1217, Acc 3733A, Items 228-231.

15 *ibid.*

16 *Police Gazette* 10 April 1901, p.132; Certificate of Title Vol. 281, Fol. 25, 1 January 1901; Battye Library, Pictorial Collection, 3314B/75.

17 Certificate of Title Vol. 281, Fol. 25, lease 102/05, 12 June 1905; Battye, J. S. *Cyclopaedia of Western Australian History* (facsimile ed.) Carlisle, WA, Hesperian Press, 1985, p.763.

18 *Building and Construction Journal* 24 March 1906, p.22; 7 April 1906, p.21; 12 May 1906, p.19.

advantages hot and cold water being always obtainable, and the yard has been completely covered with granolithic pavement ... There are three bars, and only the best liquors are kept in stock.<sup>19</sup>

In 1915, George Dent died and probate of his will was granted to Ellen Dent (widow), Cecil Dent (son) and Charlotte Elizabeth Moullin (daughter). Ellen Dent died in 1917 and the property (a portion of Town Lot V21) was equally divided between Cecil and Charlotte and the hotel continued to be leased by W. H. Jones.<sup>20</sup>

In 1925, the property was sold to The Swan Brewery Company Limited.<sup>21</sup> In 1928, The Swan Brewery Company purchased a strip of adjacent land on Wellington Street from Sarah Elizabeth McCarthy for service access.<sup>22</sup>

In 1935, tenders were advertised by Hobbs, Forbes and Partners for further alterations and additions to the hotel, the contract being won by F. B. Sandwell & Son for £2,446.<sup>23</sup> The extent of these works is unclear. The hotel was being managed by Mrs Maude Ethel Coombes at this time, who had held the lease since 1926.<sup>24</sup>

In 1948, land to the south of *Royal Hotel* on William Street was purchased by Metropolitan Properties Pty. Ltd. This company also purchased a portion of the adjacent Lot V22 on Wellington Street from the estate of Sarah Elizabeth McCarthy in 1948 and a further portion of Lot V22 from a South Australian pastoralist, Mageed Rasheed, in 1955.<sup>25</sup>

In 1961 and 1962, respectively, *Royal Hotel* and the land belonging to Metropolitan Properties Pty Ltd was transferred to the University of Western Australia.<sup>26</sup> The University also acquired all other properties bounded by Wellington, Murray and Queen streets and which included two other hotels, the Wentworth (1926) and the former Bohemia (1879). This resulted in *Royal Hotel* becoming part of group of properties making up the endowment of the University's Raine Medical Research Foundation, all income from the hotels going towards medical research.

In 1962, the verandahs were removed from *Royal Hotel* at the request of the City of Perth and an awning constructed. In 1975, the National Trust classified *Royal Hotel* and in 1983 it was entered into the Register of the National Estate.

The hotel was earmarked for demolition in 1980 as the cost of its upkeep was believed to have been prohibitive and thus having an adverse effect on the amount of money available for the Raine Foundation's research.<sup>27</sup>

In 1983, a fire damaged *Royal Hotel* although by this time a decision had been made to retain the hotel and all the other existing buildings held by the University. Plans were drawn up for the redevelopment of the site by the architectural firm Hames Sharley.

---

19 Battye, J.S. op. cit., p.763.

20 Certificate of Title Vol. 281, Fol. 25, 20 August 1915.

21 Certificate of Title Vol. 854, Fol. 65, 22 September 1925.

22 Certificates of Title Vol. 960, Fol. 59 and Vol. 1000, Fol. 396.

23 *Building and Construction Journal* 6 September 1935.

24 Certificate of Title Vol. 854, Fol. 67, 18 January 1926.

25 Certificates of Title Vol. 1000, Fol. 391 and Vol. 744, Fol. 165.

26 Certificates of Title Vol. 1036, Fol. 27 and Vol. 1109, Fol. 584, 1 August 1962. The Title does not state whether this transfer involved a sale or bequest.

27 *Living Today* September 1976, p.5.

Their [Hames Sharley's] solution was a multi-faceted one - the keystone being the rehabilitation of the hotels to two and three star level and the direction of the pedestrian traffic from the city through the site to the Perth Bus Station.<sup>28</sup>

The works took place in 1984 and the entire place was renamed Raine Square.

Work proposed finally to *Royal Hotel* involved minimum refurbishment to the facades except as essential for repair, alterations at ground level and changes to the facade and street awning for the entrance to the arcade and the retail outlets along the William Street frontage. An arcade was constructed to link the street frontage to the piazza at the rear. Rear of building [has been] refurbished.<sup>29</sup>

The redeveloped site was officially opened on 4 June 1986. The majority of the ground floor area of the Royal Hotel was converted to retail tenancies and all evidence of the previous use, layout and detail of the original bars, lounge, reception, kitchen and toilets that existed in this area was removed. The development of Raine Square did, however, stop further deterioration of the remaining fabric of the hotel through restoration and renovation and establishment of a financially viable balance of retail and accommodation uses.

*Royal Hotel* still operates as two-star accommodation. The former dining room is used for office space.

### 13. 2 PHYSICAL EVIDENCE

*Royal Hotel* is located on the south-west corner of William and Wellington Streets in the City of Perth. The hotel forms part of a commercial development called Raine Square, which includes all the buildings and open spaces in the eastern half of the block bounded by Wellington, William, Murray and Queen streets.

The railway line and bus-station are located on the northern side of Wellington Street directly opposite the hotel. A pedestrian bridge links the bus station and Northbridge entertainment district with the central shopping and business district of Perth via a plaza in the centre of Raine Square. The historic *Horseshoe Bridge* and *Perth Railway Station* are located to the north-east of the hotel.

The buildings which form part of the Raine Square development are generally of similar scale and detail, being two to three-storeys in rendered and painted brickwork and dressings. Although not originally intended as such, common colours, finishes, verandah and balustrade details used in the development give it a certain homogeneity.

*Royal Hotel* is designed in the Victorian Second Empire style<sup>30</sup> with a steeply pitched mansard roof forming seven turrets at roughly equal spacings along the two street elevations of the hotel. The turrets are topped with wrought iron balustrades and finials. The two-storey high brick walls are rendered and painted. Fenestration includes attached pilasters, belted columns, drip moulds and keystones over arched windows, and dentils below the cornice. Decorative masonry surrounds to the attic level's dormer windows extend from the parapets of the street facades. The building is essentially L-shaped

---

<sup>28</sup> *Confederation Report* August 1986, p.12 in HCWA file P 2148.

<sup>29</sup> Ball, J., Kelsall, D. & Pidgeon, J. 'Statewide Survey of Hotels 1829-1939, Southern Region, Western Australia' Vol. 1, 1997, 001H17-2148.

<sup>30</sup> Apperly, Richard; Irving, Robert and Reynolds, Peter *A Pictorial Guide to Identifying Australian Architecture: Styles and Terms from 1788 to the Present*, Angus & Robertson, North Ryde, 1989, pp. 68-69.

with a smaller wing projecting from the Wellington Street wing into the centre of the Raine Square plaza. The exterior of the building is in good condition.

The ground level on the William Street elevation contains retail tenancies and an opening has been made through the building under the prominent central bay of the facade to access the plaza in the centre of the complex. The main entry to the hotel is located on Wellington Street, as is access to a rear service courtyard. The main entry has glass panelled double doors with sidelights and highlight and has a carved architrave and timber pediment above the door. A cantilever awning runs the length of both street facades.

The western end of the Wellington Street wing is unpainted brickwork. Spalling of brickwork and mortar is evident across part of the facade. There is also evidence of previous repairs, re-pointing and rebuilding of some of this elevation.

The laneway to the service courtyard leads beneath the first floor of the hotel and has a ripple iron ceiling. The walls are unpainted brickwork and a large corbelled archway can be seen from within the lane. The arch has been bricked in to the level of the awning. There is evidence of fire damage to the brickwork and ceiling.

Brickwork to rear elevations of the building has been painted and new steel-framed cantilevered verandahs have been constructed on the west elevations of the William Street wing and the short wing extending into the plaza. Small timber framed dormer windows are also located on the west and south elevations of the mansard roof.

The lobby of the hotel is quite small. It has a grand jarrah staircase with an elaborate turned newel post and turned balustrades on the eastern side, and a small timber reception counter and entrance to the former dining room on the western side. A door adjacent to the reception counter leads to the plaza.

The former dining room has a coffered plaster ceiling in Art-deco style with surface mounted fluorescent strip lighting. Facing Wellington Street are two large arched leadlight windows, the central portions of which have been boarded over where the awning runs across the exterior of the facade. Obscure glazed double doors from the lobby have a leadlight fanlight in Art-deco style. Two small rooms constructed in Gyprock clad stud framed partitioning, intrude into the southern side of the former dining room.

The first and second (attic) floors have central corridors with rooms to each side. An additional staircase is located approximately half way along the William Street wing. It is constructed of jarrah in similar detail to the main stair, only less grand. The flight leading to the ground floor has been removed. Two periods of construction are evident in the different finishes in the corridors in the William Street wing. On the first floor, the skirting height and detail changes either side of an archway in the corridor. On the attic level reeded timber panelling to dado height is evident to the southern end of the corridor.

The rooms are of varying sizes offering single, double, twin, and family accommodation - some with cooking facilities and ensuite bathrooms. Shared toilet facilities are located on the western side of the William Street wing and adjacent to the main staircase. Only four rooms were inspected as others



were occupied by hotel guests. It is believed these are reasonably representative of the standard of rooms throughout the hotel.<sup>31</sup>

Of these, all bedrooms are carpeted and bathrooms are tiled. The rooms have timber skirtings and architraves and timber framed windows, although both vary in detail throughout the building. Rooms on the attic level have plasterboard ceilings with a small square profile cornice or with no cornice. Walls on the second floor are generally lath and plaster and lined on the rake of the mansard roof. Rooms on the first floor generally have hard plaster walls and deep coved cornices. No original door furniture or light fittings are evident. Windows and window furniture are generally original; however, most doors appear to be reproduction items. All finishes and fixtures are in a good condition.

A portion of the basement is accessible via a narrow timber staircase located in the central rear wing of the hotel. The basement area provides staff facilities and access to a plant room. Finishes include painted face brickwork, carpeted floors and flush plaster ceilings.

### 13.3 COMPARATIVE INFORMATION

Buildings in the Victorian Second Empire style are not common in Western Australia despite the statement in Apperly et al that R. R. Jewell and G. T. Poole were the key practitioners of the style.<sup>32</sup>

The former General Post Office, which forms the St George's Terrace facade of the *Central Government Offices*, designed by Poole, is the only other example in this style.<sup>33</sup>

The Victorian Second Empire style is similar in many respects to Victorian Free Classical. Both styles reflect a prosperous society, with richly ornamented facades expressing trabeated construction. The major distinguishing feature of the Victorian Second Empire style is the extension of decoration to the roofline, usually in masonry surrounds to dormer windows and iron crested steeply pitched mansard roofs. Decoration of the facade is often more carefully placed than in Free Classical where classical motifs from a variety of sources are often mixed on one facade (eg *York Hotel*, Hannan Street, Kalgoorlie).<sup>34</sup>

Victorian and Federation Free Classical styles are commonly found throughout Western Australia being the predominant style of the gold rush period.

The *Royal Hotel* is therefore a rare example of the Victorian Second Empire style.

### 13.4 REFERENCES

No key references.

---

<sup>31</sup> The former function rooms on the first floor to the west of the main stair have also been made into accommodation. These rooms were occupied and could not be inspected although hotel staff indicated that the finishes were the same as other rooms.

<sup>32</sup> Apperly et. al., op. cit., p. 69.

<sup>33</sup> Oldham, R. & J., G. T. Poole: Architect of the Golden Years 1885-1897, Western Heritage Part 2, UWA Press, Nedlands, 1980. No other buildings are illustrated in the Victorian Empire style.

<sup>34</sup> Apperly, et. al., op. cit., pp. 56-9; 68-9; Hocking Planning and Architecture, 'Municipal Inventory for the City of Kalgoorlie-Boulder', October 1995.

## **13.5 FURTHER RESEARCH**

-----