



REGISTER OF HERITAGE PLACES ASSESSMENT DOCUMENTATION

11. ASSESSMENT OF CULTURAL HERITAGE SIGNIFICANCE

The criteria adopted by the Heritage Council in September, 1991 have been used to determine the cultural heritage significance of the place.

11.1 AESTHETIC VALUE

The mast of *Wireless Hill Park* is remembered as a highly visible and prominent landmark in its vast amphitheatre, both by day and with its lighting at night, for the fifty years following its completion until decommissioned in 1967. From vantage points around the same amphitheatre today, *Wireless Hill Park* forms the basis of a highly valued area of urban bushland at the zone interface of the recreation reserve of the Swan River, and as a landscape element contrasting with the built up areas adjoining. (Criteria 1.3 & 1.4)

11.2 HISTORIC VALUE

Radio telecommunications provided one of the important links between Australia and the rest of the world at a time when these links were significant to a relatively small community in one of the most remote cities in the world.

The station was used continuously between 1912 and 1967 as the main coastal radio communications centre for the State. In 1926, it became a feeder station for international radiograms and from 1943 it was used as an alternative station for international shortwave radio messages. (Criterion 2.1)

The station has played a part in the development of commercial radio broadcasting and experimental shortwave radio as well as functioning as a communications vehicle for state government instrumentalities and marine safety. *Wireless Hill Park* was the Western Australian component of a network of five main radio telecommunication stations in Australia participating in international, national, statewide and regional radio communications and broadcasting. The station has strong associations with important developments in wireless telegraphy and broadcasting in Australia and with the development of Amalgamated Wireless Australia (AWA) and the Overseas Telecommunications Commission (OTC). Importance accrues to the facility for its association with the founding phase of technological development of international and national radio communication, developments which have had a significant role in human occupation and evolution of the State and the Nation. (Criterion 2.2)

Although only marked by the concrete base structure today, the mast at *Wireless Hill Park* was the tallest man made and rigged structure in the metropolitan area of Perth for much of the period the station was commissioned. The station today is a marker of the skills of the operators and

the achievement of the construction, development and maintenance of the technical equipment for fifty five years. (Criterion 2.4)

11.3 SCIENTIFIC VALUE

Wireless Hill Park is of potential significance as a source of information and a site for research for future generations, of the planning, layout and design of a radio telecommunications station. In addition, the station has the potential to demonstrate the physical characteristics of buildings, structures and equipment associated with commercial radio broadcasting, experimental shortwave radio, and the part played by radio in marine and shipping safety. (Criteria 3.1 & 3.3)

11.4 SOCIAL VALUE

Wireless Hill Park is held in high esteem not only by the local community but also by the personnel and their families associated with the running of the facility at all hours of the day and night, in all weather conditions. The station facilities as markers at *Wireless Hill Park* are important for their close association with the personnel and the families associated with the running of the facility, with radio station 6PR, Amalgamated Wireless Australia and the Overseas Telecommunications Commission. (Criteria 4.1 & 4.2)

Wireless Hill Park was recognised by the Institution of Engineers in 1994 for its significant contribution to telecommunication links between Australia and the rest of the world. (Criteria 4.1)

12. DEGREE OF SIGNIFICANCE

12.1 RARITY

Wireless Hill Park contained all of the elements of a working radio communications station resulting from the nascent overseas development of the technology through subsequent improvements, through adjustments due to war and ensuing peace, and eventual phasing out due to advancing developments in replacement communications technology. It is one of only five such facilities in Australia. (Criterion 5.2)

12.2 REPRESENTATIVENESS

Wireless Hill Park retains either the elements, or the matrix in which the element existed while the station was operational, of a working radio communications station. The place retains sufficient heritage fabric to remain a fine example of a radio communications station. (Criterion 6.2)

12.3 CONDITION

The overall condition in 1996 of the remaining built elements of the station is good and the fabric is generally well maintained.

12.4 INTEGRITY

The original layout of the wireless station is intact, although the highly visible aerials and masts, together with the equipment and setting detail, have been removed. The place retains a moderate degree of integrity.

12.5 AUTHENTICITY

The remnant built fabric is basically in its original state. The place retains a moderate degree of authenticity.

13. SUPPORTING EVIDENCE

The documentary and physical evidence has been compiled by John Pidgeon and David Kelsall, Architects. The documentary evidence has been augmented by information supplied by Bruce James, Chairman, Engineering Heritage Panel WA Division, The Institution of Engineers, Australia.

13.1 DOCUMENTARY EVIDENCE

Perth Wireless Station at *Wireless Hill Park* was one of the first official radio stations approved for construction in Australia and the fifth to come into operation.¹ In September 1911, the Federal Government purchased the site from Bewick Moreing & Co. Development of the site commenced in 1912 and on 30 September that year, eighteen years after Marconi's first radio experiments, the Australian Post Master General's Department commissioned the station.²

Foundations, earthworks, roads and buildings were constructed for the Commonwealth authorities by the Public Works Department of Western Australia under the direction of Hillson Beasley. The complex comprised a group of four cottages at the north end of the site and three operations buildings at the south end of the site on the crest of a ridge. The cottages are believed to have initially accommodated the construction staff and later, the operational staff of the facility.³

The supply and installation of plant was undertaken by the Australian Wireless Company. Powered by a 60hp Gardiner engine driving a 50 cycle alternator, the original wireless equipment consisted of a crystal receiver using local galena ore and a 25kw quenched-spark long-wave transmitter connected to a guyed aerial mast 120 metres in height. The equipment was provided by the German company, Telefunken. Concrete beds for the mast and guy anchorages were constructed by the Public Works Department.⁴

Operations began under the control of the Postmaster General's Department. From 1912, the wireless operators transmitted from the Operator's Building. The station was used continuously between 1912 and 1967 as the main coastal radio communications centre for the State, and The Royal Australian Navy took control during World War One. Control returned to the PMG in 1920, passing to Amalgamated Wireless Australia in 1922, who installed valve transmitters.⁵ In 1926, it became a feeder station for international radiograms.⁶ In addition, a short wave experimental broadcasting station run by AWA shared the facilities with the commercial radio station 6PR from 1931 and the Police radio network. When the telegraph cable from Rottnest failed in July 1931, radiotelegraphic communication between the island and Perth

1 Letter B. James to Dr D.J. Fraser; 15 August 1994 (held by B. James)

2 Cullity, Michael *A History of Wireless Hill Melville: 1912-1967* (The author, Perth, 1993, Appendix 9, p.5.

3 Ibid., p. 31.

4 Commemorative Plaque Nomination; The Institution of Engineers WA Division, July 1994.

5 Cullity, Michael, *A History of Wireless Hill Melville: 1912-1967*, Appendix 9, p. 8.

6 Idem.

Wireless Station was substituted until cable repairs were completed in September.⁷

From 1942, the AWA experimental operation was removed and the remaining operators were all shifted into the Engine House which, when the generating machinery was removed, became the Main Transmitter Hall. Sandbag and bund protection was added to the operating building during World War Two, then the operating staff moved to Bassendean in 1943, where they were placed in a concrete bunker. In 1946, when these operators returned to Applecross, the former Operator's Room became offices. Control of the station was taken over by the Overseas Telecommunications Commission (OTC) in 1947, who moved the receiving equipment to Bassendean and the transmitter operators to the old Cable Station at Mosman Park. Two rhombic antennae were used for the NASA Space Mission communication in 1960, and the 120 metre mast was replaced with a shorter mast of 42metres in 1962.⁸

The development and uses of the original facilities of *Wireless Hill Park* mirrored the needs of the nation and the technological advancement in telecommunications immediately following its discovery until phased out by the burgeoning growth in communications traffic and the introduction of satellite communications. The facility was decommissioned in 1967 and the mast was dismantled.

Following protracted negotiations, the site and improvements passed to the City of Melville for community purposes in August 1969. An ambitious plan for development was produced, although only some elements of it have been implemented. Community groups now occupy the accommodation buildings and the Store with a museum in the Engine House. The site has been modified as a recreation facility with heritage and wildflower walks.

In 1994 *Wireless Hill Park* was recognised by the Institution of Engineers for its significant contribution to telecommunication links between Australia and the rest of the world.

13.2 PHYSICAL EVIDENCE

It is almost certain the site would have been selected for optimum radio performance. It is located about 8km south south west of Perth on rising ground along the southern edge of the Swan River estuary about 10km from the river mouth. The National Trust Exposition suggests the site may have been "laced" with copper wires and fully fenced. The *West Australian* reported in 1912 that the whole block was to be enclosed with a jarrah picket fence with large entrance gates from Fremantle Road (now Canning Highway). Evidenced by photographs, some sections of this work appear to have been completed.

⁷ Moynihan, John, *All the News in a Flash: Rottnest Communications 1829-1979* (Telecom Australia, Perth, 1988) pp. 128-130.

⁸ Commemorative Plaque Nomination; The Institution of Engineers WA Division, July 1994.

From the crest of the ridge on which the main improvements were built, to the southern extremity of the site, little modification of the bushland is evident.

The accommodation buildings comprise three red brick and marseilles pattern clay tile residences and single men's quarters (known as "the village") with rendered plinths. The group faces north west along the access lane which forms the spine of a precinct.

The first cottage is of interesting construction with tapered verandah columns although it is possible the columns are not original. It is believed this cottage housed the station manager. It has a more elaborate gable and chimney capping. The National Trust Exposition refers to Milton Boyce, a former architect with the Department of Works who recollected that the posts on the lowest cottage were replaced in 1942. The verandah columns of the quarters are square posts, the remaining cottages have tapered posts and are unremarkable otherwise.

The Operations Buildings comprise three major buildings grouped in a rigid manner along the crest of the ridge supporting the former radio mast.

1. The Operator's Building (now a caretaker's residence):

This was designed to a residential scale and initially comprised three rooms arrayed in a generally north south axis with a verandah on the east. The verandah had small rooms at both ends, an office at the south and a store at the north end. The southern room of the main rooms, possibly known as the High Tension Room, was originally fitted with a 25 watt Telefunken quenched spark transmitter. The receiver, the switchboard controlling the power to the transmitter and the operating staff were housed in the room at the northern end of the structure. With the phasing-in of valve type transmitters in the 1920s it is possible the partition walls were removed, the whole space being dedicated to operators. In any event, oral evidence suggests the operators, or perhaps some of them, moved out in 1943 to a receiving station at Bassendean, most likely for strategic purposes. In 1946, the operating staff were moved back to the Transmitter Hall now in the Engine House at Applecross. The former Operators Room became the Office, the original office at the south end of the verandah being converted to a shower and toilet.

Comparison of 1912 and 1945 photographs indicate the finials were removed from the gables prior to 1945. Although the practice is common in re-roofing procedures, it is also likely as a wartime measure to facilitate the deployment of camouflage.

In 1972, the building was converted to a Caretaker's Residence by the installation of lightweight partitions, thereby subdividing the former space into three. A number of openings and channels for services were closed up in the process. The building has cavity walls with cut and struck joints of red pressed brick and a roof of marseilles pattern terra cotta coloured tiles. The walls have since been rendered and painted and a car port has been added at the southern end. A fibro fence separates the building from the remains of the Tower Base

nearby to the west. The ceiling in the main rooms remains tongued and grooved timber.

2. The Engine House (now the Museum):

The plan of the Engine Room is almost square with the Battery Room along the east wall and a Control? Room along part of the west wall. A red brick toilet and ante room is located a short distance from the main structure to the east. The Engine Room building has been extended at some time with fibrous cement clad timber framed additions in the south western corner.

The building has cavity walls with cut and struck joints of red pressed brick. Openings have flat arched heads and a number of special bricks have been incorporated into the design such as bullnosed bricks up the reveal linings. Arrays of white porcelain aerial insulators project from the north and south walls. The roof is two pitch with Marseilles pattern clay tiles of a darker hue than the other two buildings on the site. The roof pitch changes over the flanking rooms to achieve a higher internal space. A glazed clerestory roof monitor with timber joinery surmounts the greater length of the ridge. The ridge is supported on three timber roof trusses and the ceiling is tongued and grooved timber boarding on the rake. The floor is concrete with the remains of sumps, engine beds and service channels now infilled to provide a carpeted level floor.

The National Trust Exposition refers to pictures depicting a Gardner power unit, possibly a diesel engine. In any event, all rotating machinery was removed from the Engine House to the Store in 1942.

The Battery Room has doors with flanking louvred ventilation panels in the south wall. Further ventilation was provided by three roof vents. Sheet lead tanking on the floor was removed in 1942.

The fibrous cement clad extension room is believed to have contained the *Fordson* auxiliary electric generating set.

The condition of the building is good although the industrial ambience of the internal space evident from photographs of the 1920s and 1930s has been diminished by the interim redecoration.

3. The Store -(now Toilets and a Meeting Room):

The Store is believed to have been built a little later than the others in the group, but displays evidence of roof ventilation indicating the building may have been the fuel storage for the power unit. The building was subsequently used to house the commercial broadcastin station and the Police transmitter from 1931. The short wave experimental station run by AWA was closed at the outbreak of World War II, and the transmitters were shifted into the Main Transmitter Hall in the Engine House during 1942. The *Fordson* auxiliary power unit was relocated in the Store; this was changed later to a *Blackstone* unit.

Following the commencement of the Shire's incumbency, the building has been modified and extended and now accommodates public toilets, a meeting room and facilities for the State Emergency Services as a command post.

The Towers and other bases:

A steel radio mast 120 metres high set on a concrete base, guyed to three concrete anchor blocks, surmounted the site. The central base had three concrete struts supporting the steelwork of the mast and a metal pin is set into the centre of the base. The base is said to be embedded 4.5 metres into the ground (*The West Australian* 22 July, 1922). The base is still extant, set close alongside the Operators Building.

The three concrete anchor blocks are reported to weigh around 200 tons (204 tonnes) each. They each have a hollow aperture pointing to the tower base, as the sloping exit for the guy wires. The attachment mechanism of the guy to the base is no longer evident and is covered by new paving. The towers have each been modified for use as public lookouts. Recent brick structures around the bases accommodate stairs and landings. Green coloured paint has been applied to reduce the visual impact of the towers on the landscape.

Air Raid Shelter:

No evidence of this has been obtained.

Toilet:

Still extant, constructed in red brick with a single closet and hand basin cubicle alongside.

Radio Stations:

Commercial Station 6PR, commenced broadcasting in 1931. VK 6ME commenced in July 1931 as an experimental shortwave broadcasting station operated by AWA, closed down at the commencement of World War 2. also VK-1, a Police transmitter. Radio 6PR and VK-6ME were shifted into the Main Transmitter Hall in 1942.

All of the buildings erected on the site have good quality yet economically used materials incorporated into the building with maximum utility and minimum embellishment. There is, therefore, the appearance of engineering expediency rather than discernible architectural style.

The overall condition of the remaining built elements of the station is good and the fabric is well maintained.

13.3 REFERENCES

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