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Recalling Yesterday, Predicting Tomorrow: 
Revisiting South Australian Conservation Practice in Heritage Mining Places- 
a Practical Guide for Malaysia 

Sub-theme: “Concept and Practice of the Heritage Conservation”

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Abstract

Mining started in South Australia in the early 1840s with the discovery of silver-lead ore at Glen Osmond in 1841 and later copper in Kapunda in 1842 and Burra in 1845; all these discoveries greatly contributed to South Australia’s economic development. South Australia entered the mining era at the time when the Cornish engine was at the peak of its development, and the horizontal engine was beginning its rise in popularity. These South Australian historic mining sites contain extensive extant evidence of technology, innovation and human endeavours that previously went into the mining activity. This paper seeks to critically review items for inclusion on the South Australian State Heritage Register, the character of mining heritage places, enforcement by legislation, interpretation of the heritage assessment and how these practices could guide Malaysia in recognizing industrial heritage as a significant part of its cultural heritage that needs to be conserved, restored and managed as a legacy for present and future generations.

Keywords: South Australian mining heritage, mining conservation; Australia mining heritage; Malaysian mining heritage
1.0 Introduction

South Australia entered the mining era at a time when the Cornish engine was at the peak of its development, and the horizontal engine was its beginning rise in popularity. Mining created a demand for labour, capital, equipment and supplies and often gave rise to new settlement sites (Pearson & McGowan 2000). These historic mining sites contain evidence of technology, innovation and human resources that went into the mining activity and enhanced Australia’s overall development. South Australia is known for its mining heritage of local and international importance, and its extensive tangible and intangible cultural heritage evidence that highlight its mining districts.

1.1 History of Mining in South Australia

Early evidence shows that South Australian mining was executed by the Aboriginal hundreds of years ago. Mining has been the backbone of the state’s economy and provided South Australian’s with a high standard of living, stimulated secondary industries and rescued it several times from severe economic depression. The earliest European mining era of South Australia started with the first discovery of minerals in 1838.

“There has been European settlement in Australia for more than fifty years before Australia had its first metal mine—the single drive of the two Cornishmen, dug into a flank of the foothills of the Mount Lofty Ranges, a few miles from the infant city of Adelaide” (Auhl & Marfleet 1988 pg.10)

“The Cornish influence during the formative years of the Colony was profound. Discovery and development of copper deposits in South Australia was timely since these coincided with decline of cooper and tin mines in Cornwall. Cornish miners in their thousands were drawn to the new opportunities offered through indentured migration schemes” (Johns 2002).

The Glen Osmond silver mine was the first mine to be operated after settlement in South Australia in 1841. According to Johns (2002), the Glen Osmond mine is situated only eight kilometres south-east of the Adelaide city centre. The extensive copper carbonates outcrops were also discovered in Kapunda in 1842, and later in the Burra Creek in 1845 that was of greater significance (Australasian Mining History Association n.d-a; Johns 2002; Primary Industries and Resources South Australia 1998). Johns also added “The Burra Burra Mines were to assure the Colony a period of unprecedented growth, prosperity and world renown—set to contribute a large portion of world copper output during the period 1845-1877”. Primary Industries and Resources South Australia (1998) reported, by the year 1850, South Australia “was the third largest copper producer in the world”. It also reported that in the same year, the exports of copper and lead were much greater than the export of wool and wheat (Australasian Mining History Association n.d-a). The spread copper mineralization from Burra then spread to Kadina in 1859.
and to Moonta in 1861 and smelters were erected in Wallaroo in 1861. These mining sites operated for more than 60 years and became known as the “Copper Triangle” situated in Northern Yorke Peninsula of the South Australia (Primary Industries and Resources South Australia 1998). The Australasian Mining History Association reported that Burra, Moonta and Kadina (Wallaroo Mines) were flooded with skilled Cornish miners who had immigrated to South Australia together with their mining technology with the hope of changing their fortune since mining activities have deceased back in their homeland. These mining areas are today known as the Australian Cornish mining heritage sites in South Australia (Drew n.d). The Glen Osmond, Kapunda, Burra, Moonta, Wallaroo and Blinman sites are part of South Australia’s rich mining districts. Long before the famous New South Wales and Victorian gold rushes, South Australian mines provided employment for thousands of men and even some women where the mineral production catered for both local and overseas markets.

2.0 The Character of Mining Heritage Places

Pearson and McGowan (2000 pg.2) define mining heritage places are “the sites which minerals and other minerals of value were dug from the ground – they are mines. The broader context in which mining occurred and that other places, including whole landscapes, might in themselves be of heritage significance because of mining”. Drew defined mining heritage as sites with the “physical evidence of mining and processing activity” including mine workings, surface dumps, slag heaps, surface structures and settlement patterns. Pearson and McGowan added that these mining heritage sites contain features such as mullock and tailing dumps, equipment and machineries, hut sites, road and tramways, and dams and races. Australia ICOMOS described that cultural landscapes include designed landscapes, evolved landscapes and associative landscapes where by former mining areas are placed under the evolved landscape category. These evolved landscape are defines as “those that display a system of evolved land use in their form and features. They may be ‘relic’ such as former mining or rural landscapes. They may be ‘continuing’ such as modern active farms, vineyards, plantations or mines” (Australia ICOMOS n.d).

Ahmad and Jones (2013) state that “UNESCO through ICOMOS has acknowledged that historic mining landscapes are a part of our cultural landscapes which portray the interactions between human and nature embedding the continuity of human experience”. The American Society of Landscape Architects (ASLA)(n.d ) states that “mining landscapes have to be included as part of the human experience. Clearly, we don’t consider these as examples to propose for the future, but they certainly are testimonies of history”. The Burra Charter, authored by Australia ICOMOS (2000 pg.1) also describes that “Places of cultural significance enrich people’s lives, often providing a deep and inspirational sense of connection to community and landscape, to the past and to lived experiences. They are irreplaceable and precious.” These historic cultural landscapes are a legacy of presence and future generations.
3.0 Legislation

The South Australian Heritage Act 1978, the Australian Heritage Commission Act 1975, the South Australian Development Act 1993, the South Australian Heritage Places Act 1993 (amended 2005) and the guidelines of the Burra Charter of Australia ICOMOS are legislations and standards at either state and federal levels in Australia that ensure controls over designated areas and items of natural and cultural heritage significance (Federation of Australian Historical Societies Inc n.d; Johns 2002; McCarthy 1987).

The Federation of Australian Historical Societies Inc. emphasize that “The Heritage Places Act 1993 allows for the identification and protection of places and areas of heritage significance to the State. A State Heritage Place is a place entered in the SA Heritage Register or contained within an area established as a State Heritage Area. Once registered, State Heritage Places are protected under both the Heritage Places Act and the Development Act 1993.”

In the production of state Development Plans, the Development Act 1993 is used by local authorities to determine significant places with historical values that may correspond to South Australia’s identity. These identified places have to essentially represent results based upon proper investigation conducted and must at least meet one criteria from section 23(4) of the Development Act 1993 (Federation of Australian Historical Societies Inc n.d). The Burra Charter (Australia ICOMOS 2000), authored by Australia ICOMOS, states that Australia ICOMOS acts as a national and international link between public authorities, institutions and individuals involved in the study and conservation of all places of cultural significance. The Australian National Committee of ICOMOS (The International Council on Monuments and Sites) is a non-government national organization formed in 1976 and linked to the UNESCO (McCarthy 1987). The Charter highlights that “it was first adopted in 1979 at the historic South Australian mining town of Burra.”

4.0 Item for Inclusion on the State Heritage Register

There are 17 extensive state heritage areas of natural and cultural heritage significance in South Australia and each of these sites are able to portray outstanding character and uniqueness of local heritage values. “Local heritage areas, historic (conservation) zones and historic precincts are examples of regions recognized for their local heritage significance” (Department of Environment Water and Natural Resources 2012e). The State Heritage Register of South Australia contains monuments, mines sites, shipwrecks, cemeteries, buildings, significant geology, archaeological and paleontological as items to be consider on its Register. The Federation of Australian Historic Societies Inc. (n.d) has noted that there are
seven criteria for inclusion on the South Australia State Heritage Register for entry whereby a place has to essentially meet one criteria from the seven criteria listed as below:

**Criterion (a):** It demonstrates important aspects of the evolution or pattern of the State’s history.

**Criterion (b):** It has rare, uncommon or endangered qualities that are of cultural significance.

**Criterion (c):** It may yield information that will contribute to an understanding of the State’s history, including its natural history.

**Criterion (d):** It is an outstanding representative of a particular class of places of cultural significance.

**Criterion (e):** It demonstrates a high degree of creative, aesthetic or technical accomplishment or is an outstanding representative of particular construction techniques or design characteristics.

**Criterion (f):** It has strong cultural or spiritual associations for the community or a group within it.

**Criterion (g):** It has a special association with the life or work of a person or organisation or an event of historical importance

4.1 Burra and Moonta Mines: The Australian Cornish Mining Heritage Sites

“Much remains to capture the atmosphere of this early mining era. The dry South Australian climate has helped to preserve stone buildings and chimneys, deep mine shafts and tunnels, tailing heaps and slag dumps” (Australasian Mining History Association n.d-b)

The Burra mines historic site is situated on the west flank of Burra Creek and is approximately 160km north of Adelaide (Department of Environment Water and Natural Resources 2012b). The fame of the mining era transmitted by copper mining in Burra in 1845 is of outstanding to the cultural heritage significance to South Australia and can still be viewed today by generations when they visit this heritage site. The surviving townships that were built in the nineteenth century offer great opportunities for tourism activities. The designated State Heritage Area covers the Burra Township and the Burra North township that includes “churches, cemeteries, railway structure, historic mining buildings and mines and dwelling. Burra is recognized as a State Heritage Area because of the town’s significant links with mining in the history and development of South Australia” (Department of Environment Water and Natural Resources 2012b).

As reported by the Department of Environment, Water and Natural Resources (2012a), the Burra Mines Historic Sites were nominated as a designated State Heritage Place on 24th July 1980 and comprises 11 sites of mining heritage significance. These 11 sites include the Ore Sorting Floor (1870), the Mine Manager’s Dwelling and Office (1849), the Graves Pump House (1868), the Winding House (1861), the Cornish Crusher Chimney (1874), the Welsh Haulage Engine Chimney (1876), the Powder Magazine (1847), the Engine/Crusher House (1870), the South Australian Mining Association Store
man's Residence, Yard and Walls (1847), the Morphett's Pump House (1856) and Peacock's Chimney (1857). The Morphett's Engine House, which was reconstructed in 1986 as part of the mining conservation program, has been used as museum and serves as the main gateway and access to the open cut area and miners tunnel.

Figure 1: Morphett's Engine House and Winding house, Burra Mine, SA  
Source: author, 2013

Figure 2: Mining pond (open cut copper mine)  
Burra Mine, SA.  
Source: author, 2013

Figure 3: Dressing Tower which was built in 1870, Burra Mine, SA  
Source: author, 2013

Figure 4: View towards Ore Sorting Floor and Morphett's Engine House, Burra Mine, SA  
Source: author, 2013

The expansion of mining activities and knowledge in Burra spread to Kadina in 1859 and down to Moonta and Wallaroo in 1861 with discovery of copper carbonates deposits. Wallaroo grew to host a smelter in 1861 and in later years Kadina, Moonta and Wallaroo were collectively known as the ‘Cooper Triangle’ of the Northern Yorke Peninsula with mining continuing in this region until the early twentieth century. The Department of Environment, Water and Natural Resource (2012d) describe Moonta as the largest colonial mining enterprise in South Australia that has a well-knit of Cornish culture and lifestyle.
Geographically, Moonta is situated 165km north west of Adelaide and is located in the Upper Yorke Peninsula. "These mines were worked by skilled Cornish miners and the area became known as the Australia’s Little Cornwall" (Primary Industries and Resources South Australia 1998).

The Moonta mines increased South Australia’s economy in 1861 and was established just when workers were migrating to the Victorian goldfields due to decline of copper ore production and Victorian gold fever. "By 1870 the population of Moonta was second only to Adelaide. Nearly 5,000 tons of ore, worth more than £67,000, was produced in the first year of operation. In 1876 the Moonta Mining Company was the first company in Australia to pay £1 million in dividends" (Department of Environment Water and Natural Resources 2012c). The Department of Environment, Water and Natural Resources again emphasize that the "rapid influx of skilled miners and artisans from Cornwall" was due to the expansion of mining in this region known as the ‘Little Cornwall’ and these families "settled in familiar village patterns" and practiced the same traditions and religions.

In terms of cultural heritage significance, the Moonta mines were nominated as the State Heritage Area on 10th May 1984, four years after the same designation of Burra (Department of Environment Water and Natural Resources 2012c). The Moonta mines comprise of six heritage components and include former Hughes Pump House and Chimney, the former Moonta Railway Station, the Moonta Mines Uniting Church, fence and Sunday School building, the Moonta Mines Model Sunday School sites, the Miner’s Cottage and fence and the former Moonta Mines Model School (Department of Environment Water and Natural Resources 2012c).

Figure 5: The Moonta Mines heritage landscape
Source: (Department of Environment Water and Natural Resources 2012d)
5.0 Malaysian Scene: Mining Heritage Conservation

Mining in Malaysia commenced with tin mining production in the fifteenth century and later expanded its technology and production in the eighteenth century (Grieg 1924). The remnants of this former mining heritage can still be viewed especially in the Perak, Pahang and Selangor states of Peninsular Malaysia. Comparison to South Australia, mining heritage conservation in Malaysia is considered ‘young’ and the first mining conservation and restoration project started in 2008 with the restoration of Sungai Lembing underground tin mines. The first phase was completed in 2012 and is now opened for tourist visitation (Kuantan Municipal Council 2012). According to Kuantan Municipal Council, this underground tin mine was operated in 1888 until its closure in 1986 due to the collapsed of worlds tin market. The Municipal Council also claimed that this mine is "the deepest and longest underground mine in the world" and the Pahang state government has planned to develop this former tin mining area as a world heritage site.

The legislation relating to conservation in Malaysia includes Urban Development Corporation Act 1971 (Act 46), Antiquities Act 1976 (Act 168) (Replaced by National Heritage Act 2005), Local Government Act 1976 (Act 171), Town and Country Planning Act 1976 (Act 172), Federal Territory Planning Act 1982 (Act 267), Town and Country Planning Act 1995 (Revised) (Act A933), Melaka Enactment No.6 1988, Johore Enactment No.7 1988, National Heritage Act 2005 (Act 645) (Ahmad, AG 2009; Idrus, Khamidi & Sodangi 2010). The National Heritage Act 2005 (pg.16) defines cultural heritage as “tangible or intangible form of cultural property, structure or artefact and may include a heritage matter, object, item, artefact, formation structure, performance, dance, song, music that is pertinent to the historical or contemporary way of life of Malaysians, on or in land or underwater cultural heritage of
tangible form but excluding natural heritage” (Department of National Heritage 2005 pg.16). Since mining heritage is viewed from the cultural landscape perspective, poor definitions about cultural heritage with no specific terms used highlighting cultural landscape and mining heritage stand as deficiencies that differentiate South Australia from Malaysia in terms of their understanding and practise of mining heritage conservation.

6.0 Conclusion

The South Australian mining heritage is recognised in Australia as a fundamental legacy for present and future generations. It portrays national and state importance of cultural heritage significance that helps to understand of local history. Malaysia should learn from South Australia on the approach taken and also on avenues to review and updating terminologies as well as definitions throughout its legislative documents to enable mining heritage to be acknowledged as part of Malaysia’s heritage that could be conserved. The extant mining relics that still exist in some former tin-mining places in Malaysia can be found especially in Pahang, Selangor and Perak states. Initiatives taken by the state government of Pahang to restore the Sungai Lembing mines, and in Perak through Tanjung Tualang tin dredge area, demonstrate that mining heritage conservation is increasingly of importance at the state level. The Burra Charter (1999), authored by Australia ICOMOS, states that “Places of cultural significance enrich people’s lives, often providing a deep and inspirational sense of connection to community and landscape, to the past and to lived experiences.” These Malaysian cultural heritage significant places are scarce and irreplaceable and need this comparable attention and custodianship.

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REFERENCES

Ahmad, AG 2009, *Urban conservation in Malaysia: safeguarding cultural heritage*, University Sains Malaysia (USM).


Australia ICOMOS n.d, *Understanding Cultural Landscape*, Australia ICOMOS.


Drew, G, *Interpreting South Australia's mining heritage*, Primary Industries and Resources South Australia.


McCarthy, JP 1987, 'Conservation of South Australia's mining heritage', in J Selby (ed.), *South Australia Mining Heritage*, Department of Mines and Energy, South Australia.
