Moonta Mines

State heritage area: guidelines for development

Government of South Australia

Department for Environment and Water

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Moonta Mines State Heritage Area - DEW # 13975
SHA declared in 1984
The information in these Guidelines is advisory, to assist you in understanding the policies and processes for development in the State Heritage Area. It is recommended that you seek professional advice or contact the relevant State Heritage Adviser at the Department for Environment and Water (DEW) regarding any specific enquiries or for further assistance concerning the use and development of land. Being properly prepared can save you time and money in the long run.

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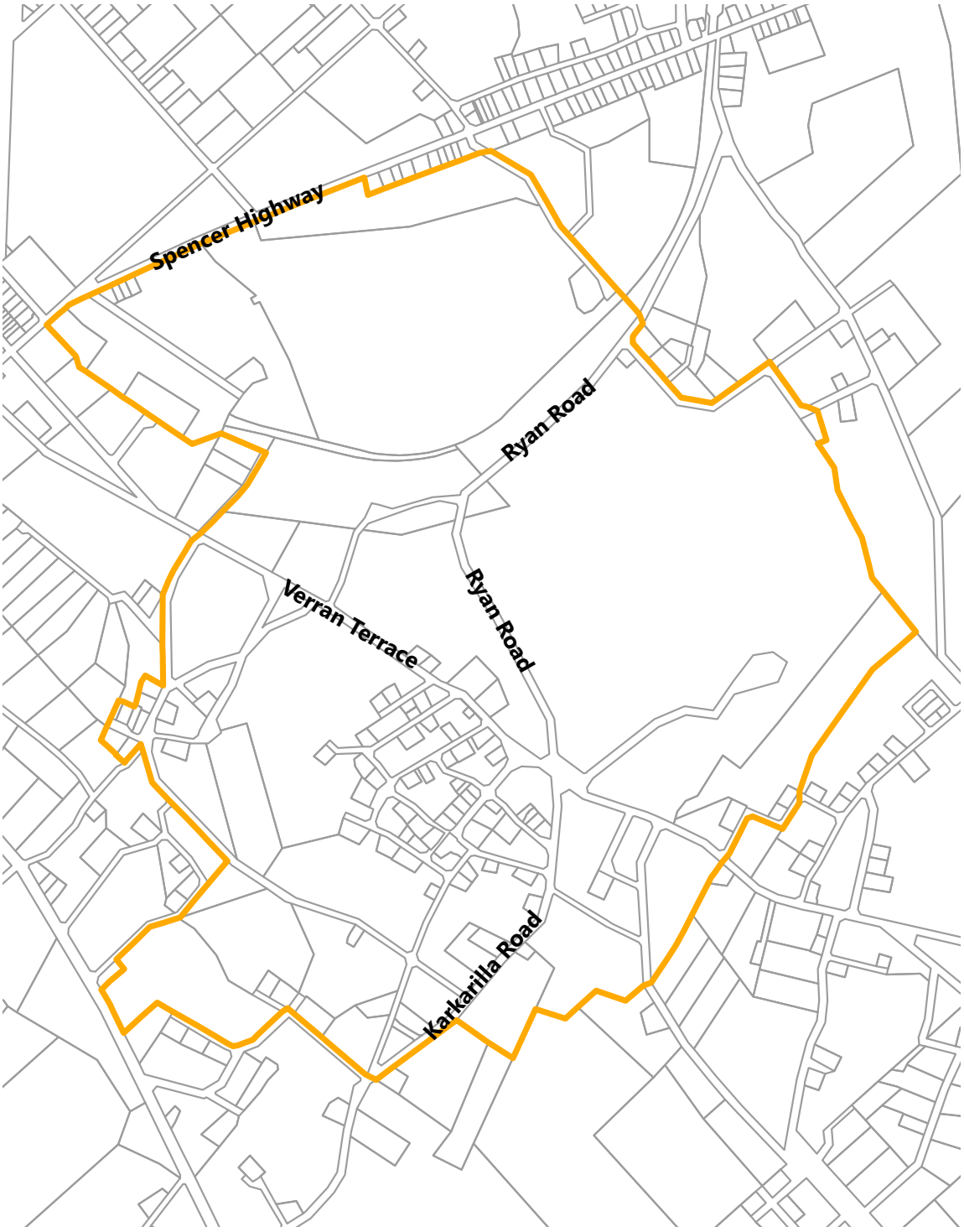

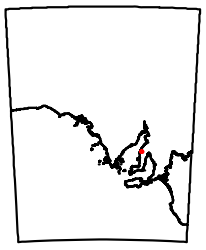

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1. Introduction

1.1 Moonta Mines State Heritage Area

The historic settlement of Moonta is located 165km northwest of Adelaide and 20m above sea level. It is part of the region known as the 'Copper Triangle', which includes the towns of Kadina and Wallaroo. Designated a State Heritage Area, it encompasses mining-related sites and railway structures. Development in the Moonta Mines area should conserve and protect the historical and cultural significance of Moonta.

State Heritage Areas are subject to special protection due to their cultural significance to South Australia. Moonta Mines is recognised for its significance in the history and development of South Australia's mining history. The area is also of significance to Australians of Cornish origin, for which it is part of a proposed serial nomination for World Heritage listing.

1.2 Purpose of Guidelines

These guidelines have been prepared to assist property owners who wish to carry out changes to places within the State Heritage Area. The guidelines identify the heritage significance of the area and provide guidance in relation to:

- When development proposals are required for approval
- How to conserve, maintain and repair historic buildings, structures and ruins
- Appropriate alterations and additions to historic buildings and structures
- Site and location of new development
- Change of use.

The Development Guidelines are a reference document, and all development proposals will be assessed on their merits through the development approval process.

1.3 Getting Approval

Where changes within the Moonta Mines State Heritage Area involve actions that constitute 'development' a statutory approval against the planning and building rules is required. An application for approval of development in or affecting the Moonta Mines are lodged with the District Council of the Copper Coast. Note that exemptions that might apply elsewhere do not apply in the State Heritage Area.

For State Heritage Areas, 'development' as defined by the Development Act includes:

- Land division
- Change of use
- New construction
- Demolition, removal, conversion, alterations, additions and painting
- Signage
- Any other work that could materially affect the heritage value of the State Heritage Area

All development applications in the State Heritage Area that are lodged with Council will then be referred to Heritage South Australia in the Department for Environment and Water (DEW) for heritage assessment.

A checklist to guide you in preparing documents for a Development Application can also be found on the DEW website.

1.4 Seeking Heritage Advice

Getting the right advice on conservation methods is essential to preserving the heritage values of a place. Initial conservation and development advice can be obtained from heritage architects in Heritage South Australia or by contacting the Council.

For more detailed advice in relation to conservation issues, design advice for alterations and additions, property owners may wish to contact a suitably qualified heritage consultant. An experienced heritage consultant can help you plan the works and prepare the necessary documents required for approvals.

There are also various publications that are designed to assist property owners in planning conservation works and preparing a development proposal. They include:

- SA Guide to Developing State Heritage Places
- Heritage Impact Statement Guidelines for State Heritage Places

2. History and Significance

2.1 History

Copper was discovered at Moonta Mines in 1861, and the Moonta Mining Company commenced production there the following year. The government town of Moonta was surveyed in 1863 and the community divided into two, with the business and professional community living in the surveyed town, while the miners and their families built an informally laid out township of small pug and limestone cottages around the mines, with their own chapels and other community infrastructure. They called this township Moonta Mines to distinguish it from the official town.

In the 1870s there were approximately 5000 people living in the mine community, which straggled north to join up with the villages of North Yelta around the separate Yelta mine, and Cross Roads where the Wallaroo and Kadina roads met. There was no piped water supply before the 1880s, and the Moonta Mines community suffered terribly from infectious disease in the early decades. For much of the late 19th century, Moonta Mines was one of Australia's largest and most profitable mining operations. The biggest deposit, Elders Lode, ran north-south through the middle of the Moonta Mines community.

The mines closed in 1923, and most of the mine plant was sold or broken up for scrap. Only the two largest stone engine houses remained. The community rapidly shrank in size, and most of the cottages were demolished or fell into ruin. The cementation works continued production until 1943, salvaging copper from the waste heaps and providing employment for a small workforce. What remains on the site today is a small representative sample of the large industrial complex which filled the landscape from 1862 until 1923, industry and residences side by side in a way that was characteristic of the 19th century mining industry.

2.2 Significance

The 1984 declaration of the Moonta Mines State Heritage Area recognised the town's significant links with many important episodes in the history and development of South Australia's role in Australia's copper mining industry. The Moonta Mines area has a significant association with Cornish culture in South Australia.

The Moonta Mines State Heritage Area encompasses the site of one of the largest commercial enterprises in colonial South Australia, which generated vast wealth from the sale of copper ore. The opening of the copper mines led to a rapid influx of skilled miners and other artisans from Cornwall. Cornish methods were applied in construction, design, labour organisation and the mine works. The families settled in familiar village patterns around the mines, and retained their traditions and religious beliefs.

For a time, exports of copper surpassed those of wheat, and Moonta had the largest urban population outside of Metropolitan Adelaide. Considerable remnants of the mining venture remain, illustrating many aspects of the rich history of copper mining and processing within South Australia.

2.3 Character and Setting

Important to the charm and distinguishing features of Moonta Mines is the overall 'townscape'. While individual buildings and places have historic merit and their own appreciable characteristics, it is the town's layout, location and type of buildings that contribute to its mining and Cornish character.

The rugged visual setting and the small and simply designed buildings are reflective of the early settlement of South Australia, and reveal the hardships faced by early settlers.

Surviving within the Moonta Mines State Heritage Area are many buildings and places that illustrate the historical themes that dominate the town's past and contribute to its heritage significance. A number of these are also on the State Heritage Register as individual places. These include:

- Hughes Pump House and Stack (1865)
- Moonta Railway Station
- Miners cottage and Fence (circa 1860)
- Moonta Mines Model School Museum (1865)
- Moonta Mines Model Sunday School (1865)
- Moonta Mines Uniting Church and Hall (1865)

Climate

Moonta is a coastal town situated approximately 20m above sea level, 4km inland from the north western edge of the Yorke Peninsula. The Spencer Gulf is located directly west of the town. Moonta exists in a semi-arid location, above Goyder's Line. The Moonta Mines State Heritage Area is located immediately south-east of the township.

The area is characterised by a Mediterranean climate, with mild wet winters and dry warm summers. The summer months can be hot (over 40ºC), but largely variable in temperature. Though droughts occur, Moonta has an average rainfall of 389mm per annum. The rainfall, although irregular, is dependable and not affected by *El Nino* events as much as towns along Eastern Australia. The highest monthly rainfalls occur in conjunction with the winter months of June, July and August.

Average maximum temperatures recorded for each month range from 15.4 – 30.5ºC, and average minimum temperatures from 6.0 – 16.1ºC. The average number of days over 30ºC in January is 15. At their extremes temperatures can range from over 45ºC in summer to a low of -2ºC in the winter months.

Development in the Moonta Mines State Heritage Area needs to address certain climatic factors associated with the region. Further provisions should be made for adequate water collection, insulation, and protection from the sun and wind.

Topography, Geology and Soils

The soils of the Moonta Mines State Heritage Area are unique and important in that the significance of the town is largely due to the area's geology. The geology of the area is an example of anomalous copper in transported sediment that reflects the presence of mineralisation in weathered crystalline basement buried beneath.

The Moonta Subdomain forms the southern part of the Olympic Cu-Au province on the eastern margin of the Gawler Craton, and underlies most of the Yorke Peninsula and Spencer Gulf. The Moonta Subdomain basement is highly prospective for iron oxide-Cu-Au mineralisation associated with the Hiltaba magmatic event. However, outcrop of these basement rocks is limited almost entirely to narrow coastal exposures. The majority of the prospective basement is concealed by up to 100 metres of Neoproterozoic to Quaternary sediments.

The soil within the State Heritage Area of Moonta Mines is largely made up from calcareous earths. This type of soil has gradational texture profiles that are calcareous throughout. They have indistinct horizons and are typified by the brownish sandy and loamy soils of the Mallee. Calcium carbonate (lime) may range up to 10% in surface soils and 60% in subsoil. Some lime is hardened to calcrete (sheet limestone) or may be stony. The soils are easy to cultivate and their productivity for cereals in the agricultural regions has been greatly enhanced through the application of fertilisers and the use of medic pasture leys. Surface soils are neutral to alkaline, and subsoil is strongly alkaline.

Professional/engineering advice should be sought to encourage appropriate and structurally sound development.

Vegetation

Indigenous vegetation in the Northern Yorke Peninsula is adapted to soil and climatic conditions.

The Moonta Mines area is surrounded by Mallee and largely consists of gently undulating plain with low dunes, bounded along the coastline by a complex of active dunes and former lagoons. The plains and inland dunes have mixed grassland and open parkland used for rotation cereal cropping and livestock grazing. The low scrubland of the depressions is used for livestock grazing, as is the heath-covered portion of the coastal dunes.

The open Mallee grows in the 250-500mm rainfall zone on calcareous and infertile sandy soils. These areas are dominated by multi-stemmed *Eucalyptus* species and, depending on rainfall and soil type, have an under storey of sclerophyll or chenopod shrubs and hummock grasses. The Mallee areas were first used for low intensity sheep grazing, mainly on the grassy openings which were scattered through the scrub. However, since the 1880s and the development of dry land farming techniques, vast areas have been cleared for cereal growing.

3. Conservation of Historic Structures

3.1 Conservation, Maintenance and Repair

The first step in conserving a building is to learn as much about the building as possible. Who lived there and how the place was used? Are there any old photographs in the local history collection? Research and analysis of the building allows the heritage value (cultural significance) of the place as a whole and of each particular part to be better understood. The heritage value will guide what repair work can or should be done and which work is most urgent.

Historic photographs, early rates records, certificates of title, local publications and heritage survey information can be of assistance in learning about the history of a place. Your Local Council or local historical society may have a local history collection to assist in researching. There are also online research tools, such as Trove and the Australian Dictionary of Biography.

Historical information, along with the physical appearance of the building, its built fabric, layout, former uses, its inhabitants and changes over time, provide an understanding of the place and how it evolved, so that informed decisions can be made about how to approach the conservation process. Even surface finishes can have heritage value: some early building timbers were hand sawn in a local sawpit. Each saw mark that remains clearly visible tells part of the story of the place. Overzealous restoration can inadvertently destroy the qualities of the place.

Structural safety is always the first priority, but keeping water out and away is essential for all buildings. Other risks to your building like fire or termites should also be considered and actively managed.

Before starting any work on older buildings, you should identify and address any hazards such as asbestos containing materials and lead paint. Almost all old paints contained lead. They present no risk while the paint is sound and is not disturbed. Lead is released into the environment when paint flakes off, is dry sanded, burnt off or is otherwise disturbed. All hazardous materials must be carefully and properly handled and disposed of to protect you, your family and the environment.

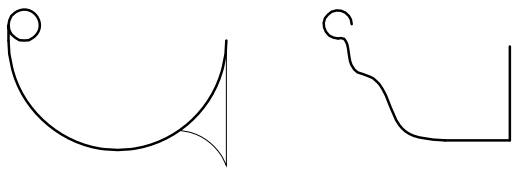
Suitably qualified heritage consultants can provide expert advice to guide the conservation of your place.

Roofing Repairs

Care of an old building starts with the roof. Check for leaks and ensure that roof timbers are sound. Roofs in the Moonta Mines State Heritage Area are invariably of corrugated galvanised iron, and repairs should be made using second hand, similar material (not Zincalume). Patchwork 'mending' is characteristic of many of the older buildings in Moonta Mines and is encouraged. Guttering and round down pipes should be galvanised iron and should match existing materials and styles. Retaining as much of the original building material as possible, for as long as possible, is best practice when conserving heritage buildings.

Zincalume is not suitable replacement for corrugated galvanised iron as the material does not dull in the Australian sun like galvanised iron does, and therefore it looks conspicuous in State Heritage Areas. Furthermore, the introduction of Zincalume as roofing material may further damage existing materials as they are not compatible with galvanised iron. Additionally, they can cause premature rusting with any direct contact to any existing lead flashings that may have been used.

Where there is evidence of an original gutter profile, the materials and style that existed should be replicated. Ideally, replacement gutters should have a half round or ogee profile and should be made of metal.



Half-round gutter Ogee Gutter

Appropriate Gutter Types

Corrugated iron roofs are to be replaced with identical materials. In some instances Colorbond may be considered in light of the difficulty involved in sourcing and transporting such materials, but only in consultation with the Heritage Adviser.

Masonry

Decay of pointing and stonework is most commonly due to rising damp, or leaking gutters and downpipes concentrating water to a particular point. It is vital to ensure all water is directed away from the building as a first step in order to allow for adequate conservation practices. The treatment of rising damp and investigation of the cause will require professional advice.

As the heritage buildings in Moonta generally do not have damp proof courses, pointing must be maintained to prevent deterioration of the walls. It is important that soft, lime-based mortars are used for re-pointing. Any mortar used should match the colour, texture and mixture of the original. Lime mortar is softer and more porous than stone and will absorb moisture more readily. Harder cement mortars will resist moisture absorption, hastening the decay of the stone. Use of lime-based mortar may lead to more frequent re-pointing (e.g. every 10 to 15 years), but its use is essential for the protection of stonework that is much more costly to replace.

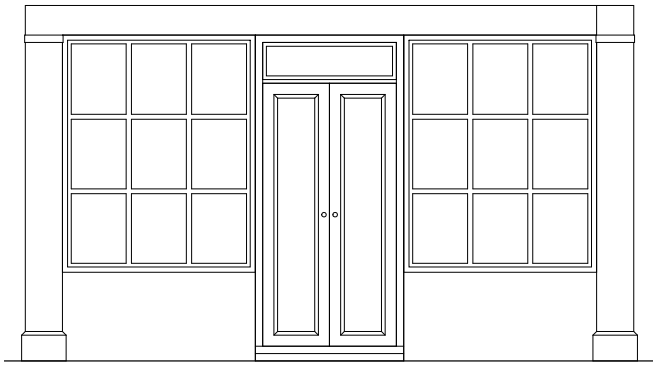
Where replacement materials are necessary, stone of a type and colour as close to the original as possible should be used. The masonry walls should not be damaged by paint removal, and sand blasting is not appropriate. Where there is evidence that the stonework was not originally exposed, stone walls should be rendered.

Walls of corrugated iron and weather board

The most common problems with corrugated iron and weather board walls are the decay of the supporting timber due to termite infestation. Replacement timbers should be treated against termites, and steel supporting structures may be appropriate in some cases. Weather boards should be maintained with regular painting and corroded corrugated iron patched using second-hand material.

Window and Door Reconstruction

The design of windows, doors and shopfronts is a good indicator of the age of a building, and originals should be retained wherever possible. If replacement is necessary it should match the original, as incorrect window and door replacements can significantly reduce the integrity of a building. Small windows and doorways that are 'vertically proportioned' (that is, narrower rather than wider) are an important feature of Moonta.

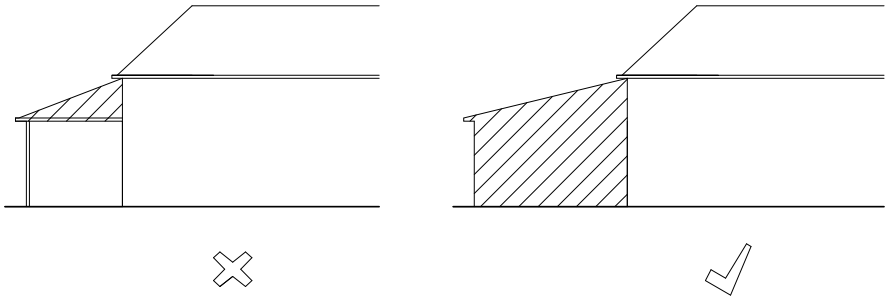


Timber Framed Shopfront

If repair is unavoidable replacement materials should be of timber to match the original frames and sashes in detailing and not be stripped back to the original timber, but painted.

Reconstruction and Additions

Reconstruction of demolished or collapsed parts of the building should follow the pattern of the original, but there may be opportunity to incorporate changes and extensions.



Form of Lean-to Additions and Verandah

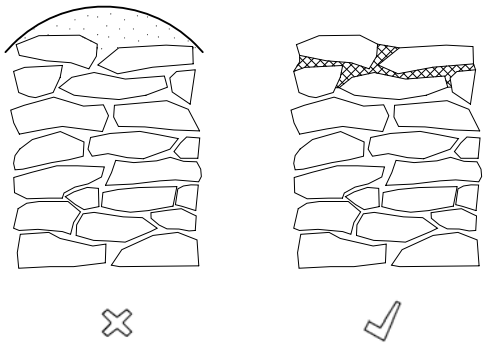
Additions to an existing building can form part of the overall conservation strategy by making the place more useable. They could take the form of a simple verandah, a new outbuilding or a relatively large lean-to extension.

3.2 Looking After Ruins

Within the Moonta Mines State Heritage Area there are many ruins which are often all that remains of small pug and pine-walled cottages. As Moonta Mines is a State Heritage Area these ruins are protected and work can only be carried out on them if it is supported by a development application. The following actions are important in looking after ruins:

Stabilisation: This involves conserving the structure as a historic site and usually involves re-pointing stonework (particularly areas affected by rising damp) and replacement of missing stones. This work is usually undertaken to make the site safe and ensure the building's survival for possible later use or interpretation.

Stabilising the tops of stonewalls and chimneys to prevent the penetration of rain.



Avoid capping over the top of the wall with mortar. As shown in the above diagram, the preferred approach is to re-point the joints to run water away and prevent its soaking into the core of the wall.

Conservation and ***Adaptation***: Depending on the nature of the ruin, it may be possible to undertake conservation and rehabilitation work and re-use the ruins in an innovative way, such as a tourist attraction or part of an outdoor museum display. Original fireplaces can also be used in the construction of new cottages.

It is important that stones and other original materials and artefacts are not removed from these sites, in order for such items to be available for interpretation and re-use.

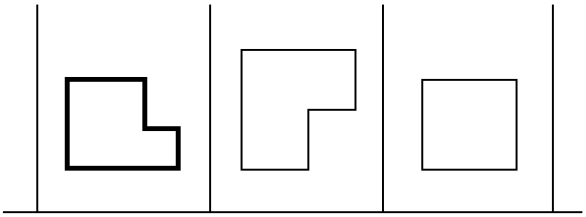
Professional advice should be sought for any work on ruins, particularly where a ruin has collapsed or been disturbed. Advice is available from Heritage South Australia, but can also be provided by professional heritage advisers and conservation architects.

4. Guidelines for New Development

4.1 Site and Location of New Development

The division or realignment of allotments is considered development, and requires development approval.

Moonta Mines has an open character, with most buildings located well within their site boundaries. New buildings should follow this pattern, and be positioned centrally between the boundaries and square with street frontages. Variations in site conditions, such as the location of ruins and topographic variations, may affect this general rule. Outbuildings were often built along the side or rear of boundaries, and well back from the street.



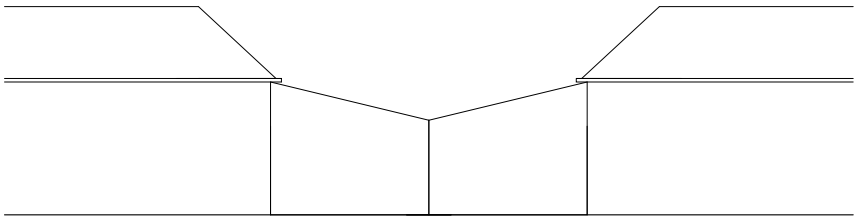
New Buildings to Follow Existing Site Layout Patterns

4.2 Scale and Form

Original buildings within Moonta Mines would have been simple in design and material, constructed using galvanised iron, wood or stone. Other than the town centre, the scale of original buildings was small. Even more substantial buildings in the centre were/are simple structures with uncomplicated detailing. There are no elaborate buildings with excessive finishes and detailing in Moonta Mines and new buildings should reflect and complement this characteristic.

Most cottages and dwellings in Moonta Mines are approximately 30-60m^2 in floor area. New buildings should be of a similar size to maintain character and consistency. If a large building is contemplated then the only appropriate place to locate it would be in the Moonta town centre, outside of the State Heritage Area.

A building with a larger floor area may be achieved by repeating the outline of a smaller unit, or collectively forming a group of smaller buildings linked by verandahs or lean-tos. This will maintain the small-scale pattern, while achieving a larger floor area.



Larger Building Masses Linked by Lean-to Structures

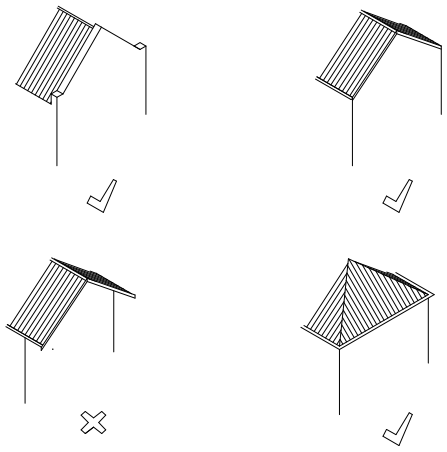
Scale

The scale of buildings in Moonta varies depending upon their original use. The Moonta Mines Model School and Moonta Mines Uniting Church have higher ceilings and steeper roofs, which add considerably to their apparent mass. The scale and bulk of the new work should not dominate the old.

Traditional Building Forms

Form

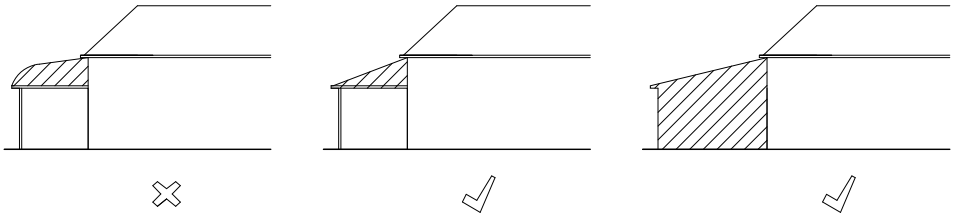
Roofs in Moonta Mines are as steeply pitched simple gable ended, with lean-to (skillion) and verandah extensions of a gentler pitch, or; lower pitched simple hipped roofs, also with lean-to and verandah extensions. Traditional roof forms and eave profiles should be retained to match existing styles. Out-buildings are generally smaller versions of these basic forms or have simple, low, mono pitched roofs.



Appropriate and Inappropriate Eave Details

4.3 Verandahs and Lean-tos

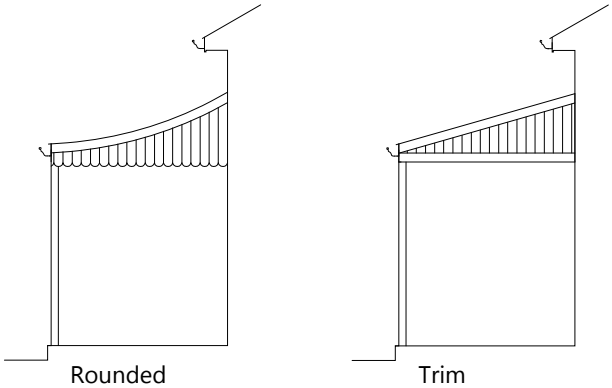
Verandahs and lean-tos in Moonta Mines are simple in design, with angled roof lines of a shallower pitch than the building to which they are attached. Elaborately designed, 'Bullnose', or 'Eyelash' style verandahs and decorative 'lace work' are not in keeping with the simple design of the older buildings and cottages in Moonta.



Inappropriate Bull-nose | Simple Roof Pitch | Lean-to Addition

Commonly all or part of the verandah is enclosed to form a lean-to. These additions should not have a floor area larger than the existing building. Where possible the natural slope of the ground can be used to gain ceiling height. The floor to ceiling heights of new additions should either match or be lower than the existing floor to ceiling heights of the building.

Verandahs, including posts and any decorative elements, should be reinstated to original or appropriate form and detailing. Decorative elements such as cast iron lacework are inappropriate.



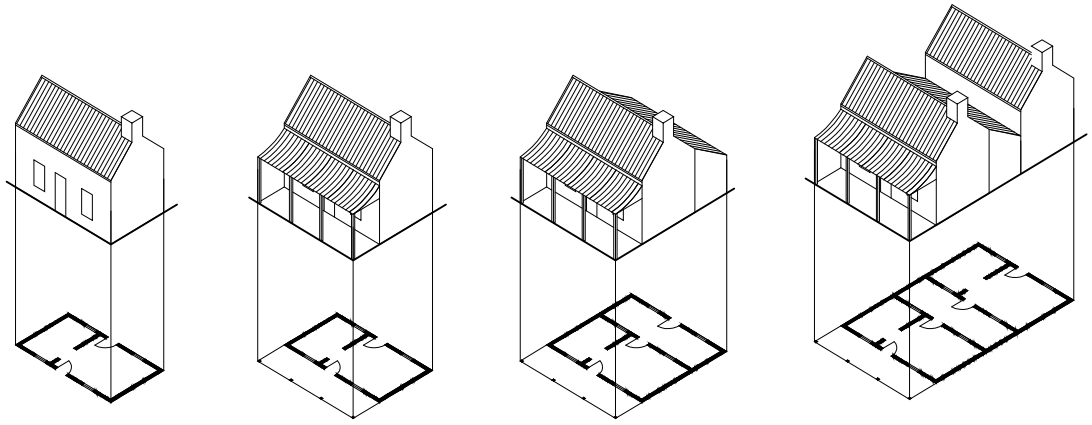
Rounded | Trim

Finish of Verandah Spandrels

4.4 Extensions

There are a considerable number of outbuildings and smaller structures associated with existing buildings and cottages within the Moonta Mines State Heritage Area.

The external design and appearance of the original building should not be compromised by any extension or outbuilding. An extension to an existing building may not be appropriate where this would detract from the original quality of the building and the heritage qualities of the town. The extensions should complement the original house and be sympathetic to the style of the original building.



Two room cottage | Front verandah added | Add rear skillion | Rear addition

Appropriate Forms of Additions

The scale and bulk of the new work should not dominate the old. The extensions should be similar in scale to the original building.

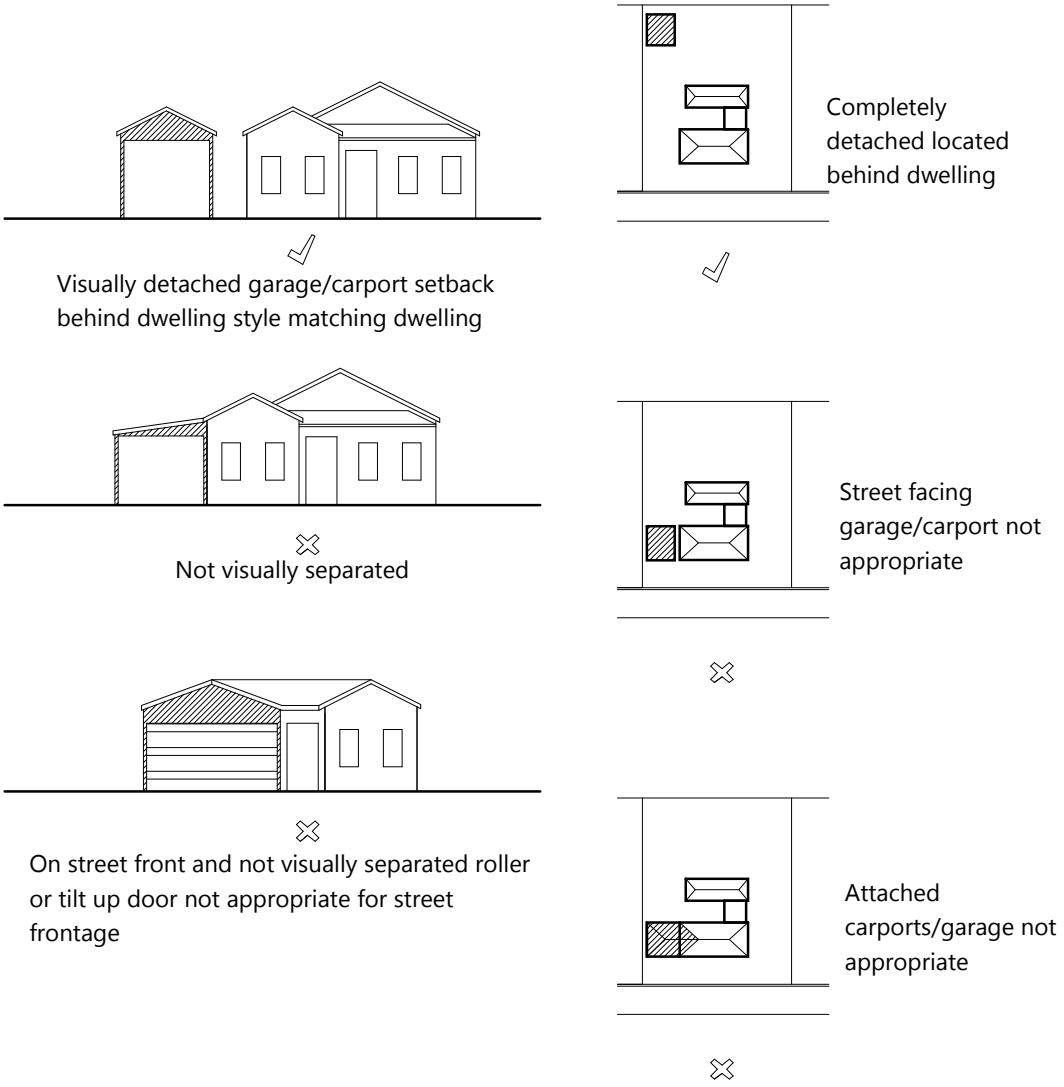
Extensions should respect the existing building form – the most important elements are the roof, type and pitch, the verandah and spacing of support posts and proportions of windows and other openings.

Roof form and pitch and overhang should closely resemble, or match, the existing building. Size and proportion of existing openings should be reflected in the new work. Detailing of the original building can be reflected by the detailing on the new section, but there should be a clear visual distinction between old and new.

4.5 Carports, Garages and Sheds

These buildings are usually smaller versions of the cottages they serve, or small, low mono pitched structures. Buildings with gable ends should generally have a roof pitch the same as the main building. Prefabricated sheds and garages commonly have low roof pitches, and therefore a steeper pitch of corrugated galvanised iron must be specified.

Carports, garages and other outbuildings should be designed to complement the original house and located so that they do not conflict with the appearance of adjacent buildings. The shape and pitch of the roof, the use of corrugated iron, and such details as gables, gutter trim and ridge capping and colour scheme should not conflict with the appearance of adjacent buildings.



Appropriate Locations for Garages or Carports

4.6 Materials, Finishes and Colours

Where possible, original colour schemes should be established to achieve an accurate restoration of a building. Colour schemes should be appropriate for the building and should generally be based on archival or physical evidence, or known principles for selection of historic colours.

Façades were generally unpainted stone or slate-work, frequently rendered in a stone or biscuit colour.

Heritage colour charts provide an appropriate range of colours for early buildings.

Joinery was commonly painted in Indian Red, Rich Brown, Light Stone, Light Brown, and in later buildings Brunswick Green was used.

Roofs were generally unpainted. Slate Grey and Ferric Red are appropriate colours, and less commonly used were Norfolk Green and Light Stone.

There is no restriction to the use of materials inside new buildings.

Type of work	Preferred form & materials	To be avoided
External roofing	• Corrugated galvanised iron • Second hand corrugated sheeting • Colorbond (negotiable)	• Steel sheeting in profiles other than corrugated • Bull nose verandas • Zincalume sheeting • Concrete or clay roof tiles
Exterior walls	• Corrugated galvanised iron • Stone that matches existing • Timber weather boards • Lime wash to stone or rough plaster • Pug and pine construction	• Steel sheeting in profiles other than corrugated • Bricks or blocks • Fibre cement sheeting • (except for extensions / small areas) • Cement render
Exterior painting	• Dark browns, greens or grey • Unfinished timbers • Light colours (for extensions) • Lime wash	• Harsh whites • Metallic paints • Acrylic paints on masonry and window frames • Painting on unpainted masonry
External doors and windows	• Braced batten doors, new or re-used • Four panelled timber framed doors where appropriate, new or re-used • Simple screen doors, timber framed, with woven fly-wire and timber beads • Timber framed windows, vertically proportioned (taller and narrower)	• Large doors & windows • Elaborate designs and styles • Sliding doors • Aluminium screen doors • Aluminium window frames • Horizontally proportioned windows
Gutters and down-pipes	• 'Ogee' and 'D' gutters • 'Half-round' gutters • Round, galvanised iron down-pipes	• Square, profiled gutters • Elaborately styled gutters • Zincalume • Colorbond
Verandah posts and timbers	• Native pine (if available for verandah posts) • Square timber posts • Round steel posts • Internal steel frames where appropriate (for termite protection)	• Finials and cast iron lace work • Concrete posts • Turned timber posts
Verandah floors	• Flagstones • Timber boards • Unfinished (natural ground)	• Ceramic tiles

4.7 Fencing and Landscaping

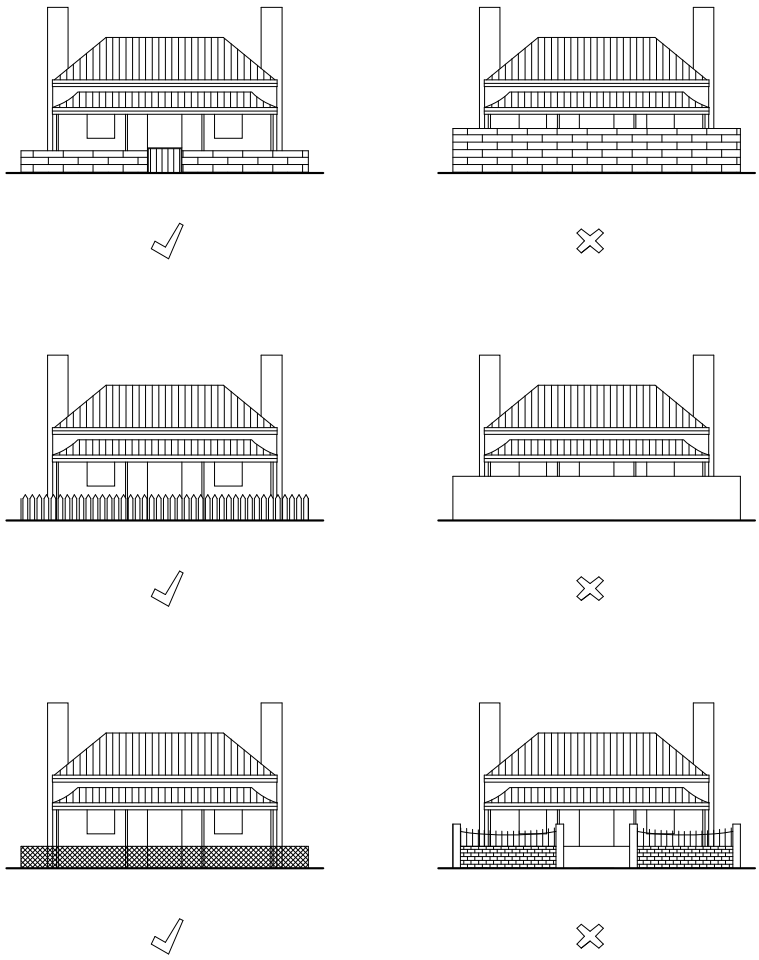
Fencing

The gentle, hilly landscape framed by picket, stick and timber post fencing is a feature of the town. This minimal fencing style contributes to the open character of the township.

Stick fencing was original to many miners' cottages and consists of small 'sticks' woven between wires. Typically the sticks were approximately 2.5cm in diameter. A good example can be seen around the National Trust operated Miners Cottage.

Picket and recycled timber post fencing is encouraged. Preferably, the timber posts should be of recycled native pine. And in instances where fencing may need repairing individual posts should be replaced rather an entire new fence. Gates should be made to an open and simple design, constructed in timber or picket finishes.

Stone walling (dry stone wall) and the reconstruction of existing stone walls is appropriate in some locations. Brick walls or cyclone fences are inappropriate.



Landscaping

Mallee vegetation, unsealed roads and a lack of commercial signs and solid fencing are all integral to the character of the Moonta Mines State Heritage Area.

Planting

Any garden will be slow to establish, but winter planting, drip irrigation and mulch will assist early growth. As some plants may not survive opportunities for replanting should be factored in to any plans.

Given the lack of introduced vegetation, planting and landscaping using indigenous plants is encouraged. Vegetation can also be cleverly used to screen and enhance buildings, for example modern structures and outbuildings such as septic and rainwater tanks and sheds.

Stylised gardens and non-indigenous plantings are not in keeping with the 'rugged' character of the township, or the character of the surrounding landscape. Often, plant beds can be seen surrounded by stones with mulch consisting of local twigs and leaves.

Guidance should be sought for planting trees and tall shrubs close to buildings. Generally, trees should be planted their mature height away from buildings.

Planting of self-sufficient fruit and vegetables would have occurred in the original settlement of Moonta Mines, and therefore can be in keeping with the town's historic character. Use of pots close to buildings would be appropriate.

For further advice contact Heritage South Australia.

Driveways and paths

Driveways and paths servicing cottages should be simple and unsealed. Due to the fragility of the area, paths and roads should be defined by following vegetation growth. Paths and driveways should also be designed, contoured and located to minimise dust and erosion.

Compacted gravel surfaces are encouraged; however, care should be taken to ensure that such surfaces allow for adequate drainage and away from built structures.

4.8 Outbuildings and Other Structures

Pumps, septic tank covers and small sheds

Installations such as water pumps and septic tank systems should be concealed, preferably with traditional iron sheeting or stone, or behind vegetation. Small constructions can be made of traditional iron sheeting or stonework.

Windmills, wind generators and rainwater tanks

Windmills, wind generators and rainwater tanks are characteristic features of the townscape and their use is encouraged where appropriate. Rainwater tanks, other than corrugated galvanised iron, should be unobtrusively located, concealed with planting and finished in darker neutral colours. Smaller sized rainwater tanks are preferred. If greater capacity is required, clusters of small tanks are preferable to large tanks.

Simply designed windmills of timber and/or steel construction are preferable.

Transportable Buildings

Though there is no objection to the use of transportable buildings within Moonta Mines, they must conform to the standards set for other new building work. This precludes many of the 'off the shelf' transportable buildings, and also those of a type located in settlements such as Moonta township and Moonta Bay. Small cottages in Moonta Mines could easily be replicated in a transportable form as described in these guidelines.

Features to consider include:

- Appropriate roof pitch
- Angled, simply styled verandas
- Natural timber finishes are preferred
- Size comparable to existing cottages; ($30m^2$ - $60m^2$)
- Appropriate exterior materials & finishes
- Vertically proportioned, small timber windows

4.9 Signage

A distinguishing feature of Moonta Mines is the lack of signs. Retaining this feature of the township is desirable, and where possible signs should be small and kept to minimum.

Whether for advertising, tourist information or heritage interpretation, all signs erected in the Moonta Mines State Heritage Area require development approval. It is recommended that Heritage South Australia be contacted prior to the lodgement of a Development Application for a sign. In this case, conservation and design advice can be given at an early stage, thereby limiting delays in the process once an application for development approval is lodged.

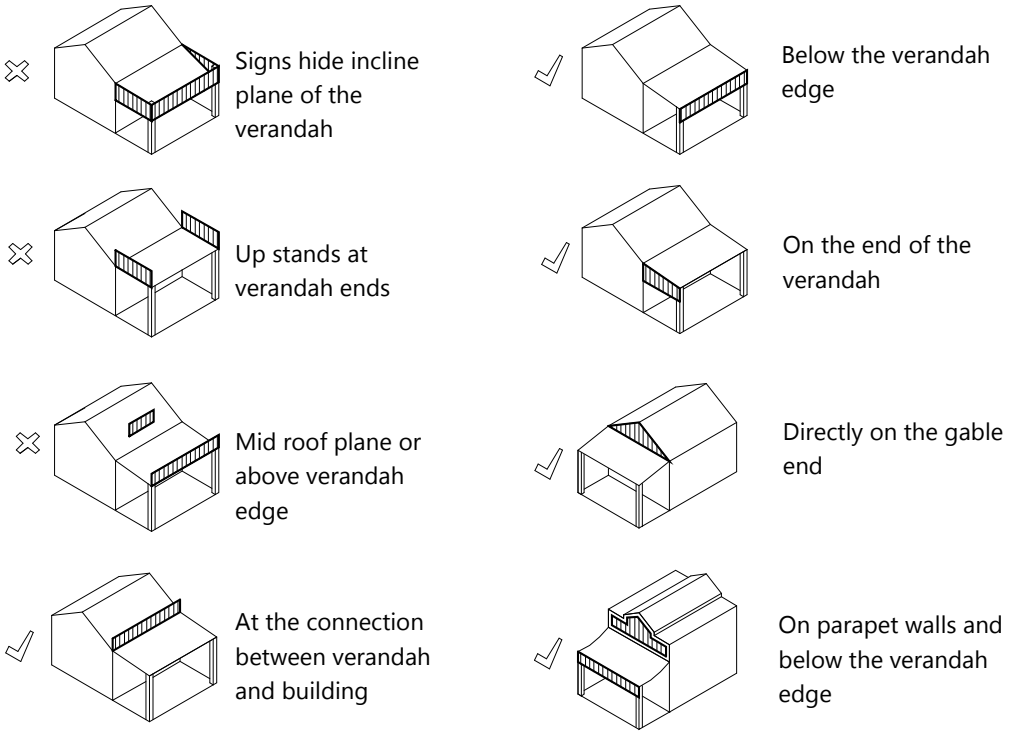
Advertising

If a retail outlet is established, new signs should be designed to complement the historic features of the building and township. Any new signs proposed should be in keeping with the setting, scale and character of the immediate area. The placement of brightly coloured and illuminated signs is discouraged, along with large signs exhibiting elaborate lettering and design details.

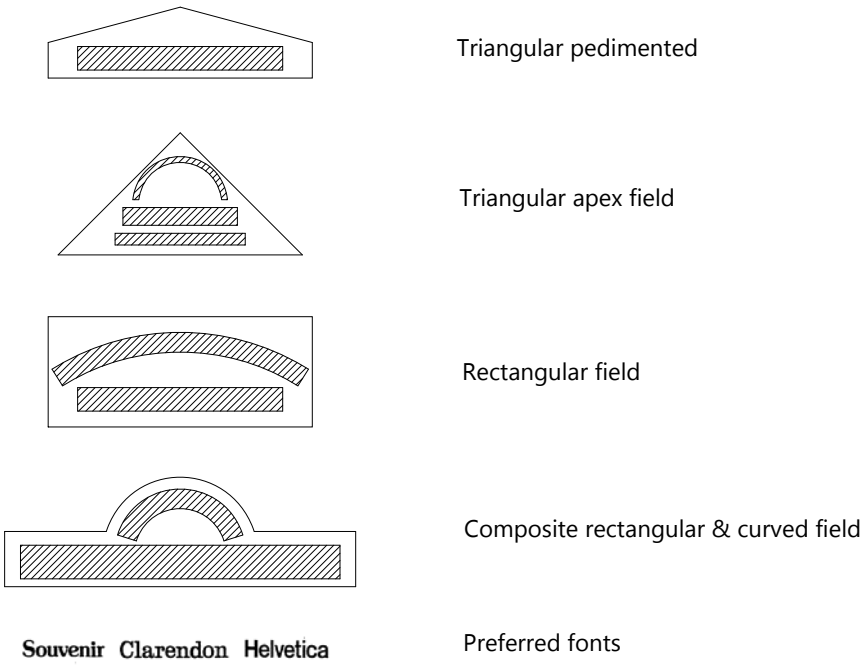
Signs should be designed to complement the building. Preferred sign locations, lettering styles and colours are those which were traditionally used in the 19th century.

Signs may be painted or fixed flat to existing parapets, veranda fascias, veranda ends or veranda posts, providing they do not obscure the structure.

Signs should be either below the roof level, hung from below the veranda fascias, or painted on the shopfront. Lettering should be traditional, well-proportioned serif or sans serif styles. Colours should be based on the heritage range of external colours. Neon and illuminated box signs are considered inappropriate, painted signs are preferred.



The following signs and fonts are considered more appropriate for advertising signs within the Moonta Mines State Heritage Area:



I*nterpretative signs*

Well-designed plaques and interpretative signs telling the history of the Moonta Mines State Heritage Area, or explaining historic features are encouraged. The development of a general conservation ethic by providing information about the town and its past to visitors is a positive step towards the promotion of the heritage value of the Moonta Mines State Heritage Area.

Road signs

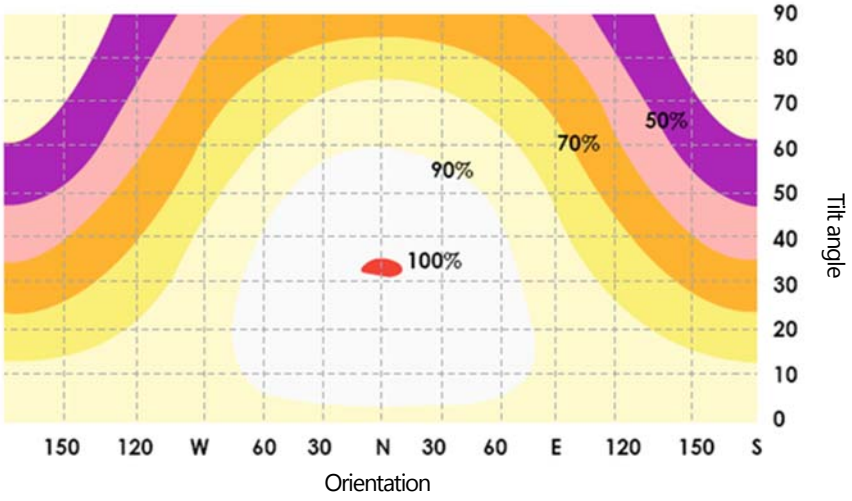
One of Moonta Mine's characteristics is the lack of road signs and the introduction and design of new signs should be carefully considered. Well-located interpretive signs could serve a dual purpose of providing directional as well as historical information.

4.10 Solar Panels, Satellite Dishes and Air Conditioners

Buildings within State Heritage Areas can be adapted to include new services and technologies, including solar technologies, and often this can be done with little or no impact on the historic character of the area.

To minimise the visual impact to the streetscape, it is desirable to mount solar panels where they are not visible. This is easily achieved on roof planes facing away from the street or on additions and outbuildings located behind the dwelling.

Placement may pose a problem for dwellings with north-facing main elevations, but solar panels can be effective on east and west faces. The diagram below demonstrates the effectiveness for a range of orientations and tilt angles for Adelaide's latitude.



Solar panel tilt, orientation and output variation. Source: www.yourhome.gov.au 2010

Solar panels should be:

- Located on roof planes of the dwelling not visible from the street and sited below the ridge
- Located on sheds, carports, garages or pergolas, where possible, or
- Where there are no roof planes of the dwelling that meet the above criteria, panels on a side roof may be supportable where they are:
    - Well setback from the street and preferably screened by a neighbouring structure or building,
    - A small percentage of the overall roof plane,
    - Located as far as practical on the lower part of the roof,
    - Arranged neatly in a symmetrical group with a margin of visible roof edge around the group**.**

If these guiding principles are followed, the installation of solar panels will have a minimal impact to the historic character of an individual property, neighbours' amenity, the streetscape and overall historic character of the Moonta Mines SHA.

Satellite dishes and aerials should be discreetly sited to have little or no visual impact from the public realm. Ground-mounted locations with concealment planting or roof planes at the rear of buildings are likely to be the best locations.

Air conditioning units associated with historic buildings should be discreetly sited, so as to have little or no visual impact from the public realm. They should be concealed behind roof lines or located out of site on the ground. Pipework should never be installed externally on a wall visible from the street.

4.11 Public Realm

Open Space and Common Areas

The original layout for the Moonta Mines allows for open space and common areas. As such, the treatment of such areas today should reflect Moonta's historic character – siting, vegetation etc.

4.12 Services and Infrastructure

The overall planning and development of infrastructure within Moonta is beyond the scope of these guidelines, but is nevertheless paramount when conserving the historic features of the town. This section provides some insight into the preferred options for infrastructure development in the Moonta Mines State Heritage Area. Essentially, a common-sense duty of care towards the town's heritage should guide any development affecting the overall appearance of Moonta.

Electricity

The installation of power lines and Stobie poles in Moonta Mines significantly detracts from its historical character; therefore, power lines should be underground wherever possible.

Residents of Moonta Mines are encouraged to use solar power. (See Section 5.6)

Water Supply

Water collection in Moonta Mines is the responsibility of each landowner, and is sourced either from bores or by the collection of rainwater.

Any new rainwater tanks, pumps and windmills in Moonta require development approval. The development of these structures in a manner complementary to the historic character of the township is discussed in Section 5.5 of these Guidelines.

Rainwater tanks should be circular corrugated metal structures, ideally of galvanised finish. Some Colorbond colours are acceptable. Corrugate plastic tanks should not be used.

There are requirements and guidelines to follow when establishing new underground water supplies. More information on underground water supplies and rainwater tanks may be obtained by contacting DEW Water Licensing, regarding application for a licence to drill a bore and Health SA for advice on the drinking water quality.

Effluent disposal

In considering effluent disposal within Moonta Mines, the following points should be taken into account; it is important to ascertain a suitable system that is least likely to impact on existing groundwater supplies and the environment. Contact Health SA or the Copper Coast Council for advice.

Road works and footpaths

Compacted and gravelled roads should represent the extent of formalised roadways in Moonta Mines. If it is intended to bituminise or seal roads, then careful consideration should be given to the overall impact of such works on the appearance and aesthetics of the townscape.

Rubbish collection

There is a rubbish dump located at 83 Moonta Wallaroo Road on the north eastern edge of the town.

Future disposal and possible recycling needs for the community of Moonta should be addressed as part of overall management of the township. The management of the existing rubbish area, and the possible siting of any future collection and disposal areas, should be fully considered for their aesthetic impacts.

Disused building materials should not be discarded, but reused in new construction or repairs.

Visitors should be encouraged to take rubbish with them when they leave the Moonta Mines area.

4.13 Archaeology

When undertaking new work that disturbs the ground in the State heritage area, consideration should be given to the potential for archaeological deposits to be revealed. Uncovering the footings of a forgotten building or well can be an exciting discovery and important part of the history of the place.

If you propose to excavate or disturb any place, you may need to obtain a permit under the *Heritage Places Act 1993* if you know or have reasonable cause to suspect that the works will or are likely to result in the discovery, damage or removal of archaeological artefacts of heritage significance. Also, if works uncover an archaeological artefact of heritage significance you must notify the South Australian Heritage Council within the period specified in the *Heritage Places Regulations 2005*. For more information on the archaeological potential of your place, contact Heritage South Australia.

Aboriginal Archaeology

Aboriginal heritage and culture is important to Aboriginal people and communities. Aboriginal sites, objects and remains are protected under the *Aboriginal Heritage Act 1988*. Certain landforms are more likely to contain evidence of Aboriginal occupation, such as areas within 2km of coasts and major waterways, areas within 100m of creek banks and lakes, parklands and road verges, and sand dunes.

If you propose to excavate land in South Australia that may uncover an Aboriginal site, approval may be required under the Act. If works uncover Aboriginal sites, objects and remains, the discovery must be reported to the Minister for Aboriginal Affairs and Reconciliation as soon as practicable.

Professional advice may be required from a suitably qualified archaeologist to assist in determining if works are likely to impact on a site, object or remain of Aboriginal importance, and the identification of such matters if uncovered during works.

5. Contacts and Resources

Department for Environment and Water (DEW)

Contact Heritage South Australia in DEW for advice on heritage conservation, historical archaeology, grant funding for State Heritage Places and further information regarding the Moonta Mines State Heritage Area.

There are various publications on the DEW website, many which can be downloaded for free, such as 'Maintenance and Repair of Older Buildings in South Australia' and 'Salt Attack and Rising Damp: A Guide to Salt Damp in Historic and Older Buildings'.

Phone: (08) 8124 4960

Email: DEWHeritage@sa.gov.au

Website: www.environment.sa.gov.au

Copper Coast Council

Contact the District Council of Copper Coast for information on how to lodge a development application, and advice on fees, timeframes, documentation requirements and what constitutes 'development' in Moonta Mines.

Phone: (08) 8828 1200

Email: info@coppercoast.sa.gov.au

Website: www.coppercoast.sa.gov.au

Other Useful Publications

Aird, G. & Klaassen, N. (1984*), Moonta: The Town That Will Not Die*.

Aird, G. (1984), *Moonta Trails: A Guide to Walking And Driving Tours Of Moonta*.

Brock, P. (1985), *Yura and Udnyu: A History of the Adnyamathanha of the North Flinders Ranges*, Wakefield Press, Netley.

Davies, M.E., Twidale, C.R.E. & Tyler, M.J. (eds) (1996*), Natural History of the Flinders Ranges*, Royal Society of South Australia, No. 7.

Donovan & Associates and Austral Archaeology (1995), *Flinders Ranges Heritage Survey, Volume 1* '*Survey Overview*', *Volume 6* '*Towns*', South Australian DENR, SA Government.

Flatt, M. (1981), *Moonta: A Survey of Significant Structures and Guidelines*, National Estate Report, South Australian Department of Environment and Planning, Government of SA.

Hull, I.K. (1973), The Rise and Fall of Moonta: a settlement study.

Mincham, H. (1983), *The Story of the Flinders Ranges*, Rigby, Adelaide.

Payne, E.L. (1974), *Moonta- Six Miles*, Rigby, Adelaide

6. Glossary of Conservation Terms

The following terms used in this guideline are taken from *The Burra Charter: The* Australia ICOMOS Charter for Places of Cultural Significance (1999).

Adaptation means modifying a place to suit the existing use or a proposed use.

Compatible use means a use which respects the cultural significance of a place. Such a use involves no, or minimal, impact on cultural significance.

Conservation means all the processes of looking after a place so as to retain its cultural significance.

Maintenance means the continuous protective care of the fabric and setting of a place, and is to be distinguished from repair. Repair involves restoration or reconstruction.

Preservation means maintaining the fabric of a place in its existing state and retarding deterioration.

Reconstruction means returning a place to a known earlier state and is distinguished from restoration by the introduction of new material into the fabric.

Restoration means returning the existing fabric of a place to a known earlier state by removing accretions or by reassembling existing components without the introduction of new material.

Setting means the area around a place, which may include the visual catchment.

Use means the functions of a place, as well as the activities and practices that may occur at the place.

For further information please contact:

Department for Environment and Water phone information line (08) 8204 1910, or see SA White Pages for your local Department for Environment and Water Natural Resource office.

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Communications Manager
Department for Environment and Water
GPO Box 1047 Adelaide SA 5001

Government of South Australia
Department for Environment and Water