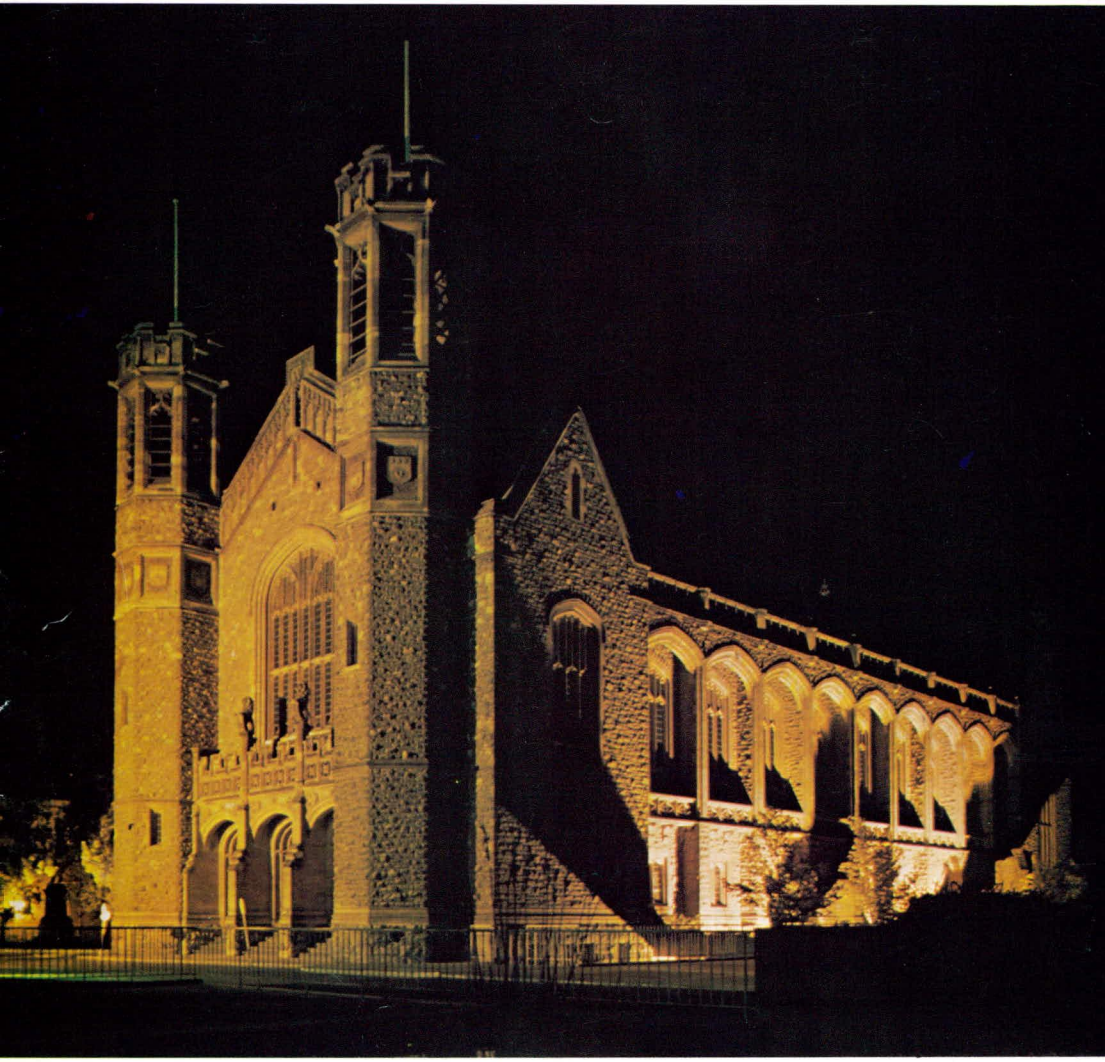
DEPARTMENT OF MINES AND ENERGY

BUILDING STONES OF SOUTH AUSTRALIA



MINERAL INFORMATION SERIES

INTRODUCTION

In a State notably deficient in local timbers, the early settlers turned to mineral substances, clay (for bricks) and stone for building purposes. The older buildings of the City of Adelaide, erected before the widespread use of steel and reinforced concrete, provide fine examples of the beauty and dignity of structural stone.

The use of building stone has changed over the past 30 to 60 years. In older city buildings, the masonry walls were necessarily thick and built of strong structural stone to support the upper floors. The present practice is to use a steel or concrete skeleton for multi-storied buildings with outer walls forming little more than a curtain wall supported on that frame. The outer wall is frequently of relatively thin stone panels, marble being popular for upper walls, while marbles, granites and other dark coloured stones capable of taking a high polish, are widely used for ground floor facings and interior work.

The use of structural stone was not confined to the city and stone has been a popular building material for houses in country areas, though perhaps clay bricks are now more readily obtainable. "Travertine" limestone has been widely used in country towns, farm buildings and in the older parts of Adelaide and North Adelaide. In the southeast, Gambier Limestone is still a popular building material, while the various "slates" in the vicinity of Adelaide and in the mid-north have been widely used in the past for building purposes both in metropolitan and country areas.

PROPERTIES OF BUILDING STONE

Stones suitable for building purposes vary widely in their physical properties and the following factors must be taken into consideration in the selection of the stone for a particular purpose:

- accessibility of deposits;
- resistance to climatic conditions of temperature and moisture (rain);
- strength and durability;
- ease of working and cost of preparing and fixing in position.

Not the least important factor is its general acceptance by the public. Thus imported marbles have been used in the facing of various city buildings in recent years, where locally quarried marbles might have served equally well.

The durability of South Australian stones may be considered according to general type.

Slates

These are durable when fresh and unweathered - e.g. dark grey Mintaro Shale. Partially weathered and calcareous slates, formerly used in many smaller buildings of Adelaide and country areas, appear quite durable except near the ground, where they are liable to attack by salt damp, and consequent softening and exfoliation.

Limestones and Marbles

a. Kunkar ("Travertine"). As this has generally been used in rough or hammer-trimmed form, weathering effects are not especially noticeable although the stone is subject to salt damp attack near ground level.

b. Tertiary Limestones. Gambier Limestone is an exceedingly open textured bryozoal limestone, so soft that a nail may be driven into a block without splitting it. It hardens on exposure, giving good service when used in either sawn or hammer-dressed form.

Murray Bridge "freestone" is a finer grained, denser variety of bryozoal limestone, containing occasional large fossils. It has been used in a number of prominent city buildings e.g. National Gallery (1936).

c. Palaeozoic marbles and limestones. These are dense, usually crystalline, non-absorbent rocks of high quality. Pyrite crystals are occasionally present in the marbles, but rarely in sufficient quantity to be detrimental.

Sandstones

The siliceous aggregate comprising a sandstone may be regarded as indestructible, the principal weakness being in the matrix which cements the sand grains. Sandstones include freestones (split freely along and across the bedding), calcareous sandstones (carbonate cement), clayey or argillaceous sandstones and quartzite (with siliceous cement). Freestones are commonly feldspathic sandstones whose softness and workability are due to the breakdown of the feldspars. Freestones generally become harder and more durable as depth of quarrying increases.

Quartzites are exceedingly durable, but because of their hardness, may be difficult to work unless they break to suitable sizes along bedding and joint planes.

Igneous Rocks

Igneous rocks e.g. granite are the most durable form of dimension stone and are immune to chemical attack. They have been widely used in base courses of older buildings, and for facing of the ground floor frontages of newer structures in the city.

BUILDING STONE DEPOSITS

Slates

Flagstone is being produced at Mintaro and Wistow with minor quantities of walling and paving types from Willunga. The need to re-roof historically significant buildings has renewed interest in reopening the roofing slate quarries at Willunga and has extended the search for similar deposits in the Flinders Ranges. A variety of "slates" have been used for construction purposes in the past, including:

Tapley Hill slate - formerly worked for dimension stone in a number of quarries in the hills south of Adelaide for home construction, and as bluestone for base courses of large buildings e.g. St. Peters Cathedral. Numerous churches and other public buildings have been constructed of this material. It may be distinguished from Glen Osmond and Mitcham slates by its characteristic thin regular bedding, and by its cleavage.

Willunga slate - the Willunga quarries were the major source of roofing slates in Australia during the period 1840 to 1933.

Glen Osmond slate - has been used for all types of architectural work in older city buildings, the stone being characterised by its thick bedding.

Auburn slate - a thin bedded slate was quarried near Auburn for many years for use in that town and in Adelaide e.g. the base courses of the South Australian Institute of Technology (1901) and the National Gallery (east side). The stone exhibits the thin bedding characteristic of Tapley Hill slate, but since it splits readily along the bedding planes it is laid on its bedding. In contrast, Tapley Hill slate has a strong cleavage across the bedding and is therefore laid on the cleavage planes.

Mintaro slate - a widely used flagstone which has been quarried for many years for use as a paving stone and for billiard tables. Material formerly discarded as waste is now used in "crazy" garden paving and in thin slab slate walling.

Wistow slate - walling and paving stone is quarried from tabular schists of Cambrian age, 8 km southeast of Mt. Barker.

SUMMARY

Stratigraphic Position	Locality	Uses	Characteristic Features
Kanmantoo Group	Wistow	Flagstone	splits along schistosity
Tapley Hill Fm.	Willunga	Roofing	closely spaced slaty cleavage coincident with bedding.
	Tapley Hill	Dimension Stone	joint blocks
Mintaro Shale	Mintaro	Flagstone Billiard Table Tops	relatively widely spaced bedding planes
	Auburn	Dimension Stone	joint blocks laid on bedding planes.
Saddleworth Fm.	Glen Osmond	Dimension Stone	
	Tarlee	" "	

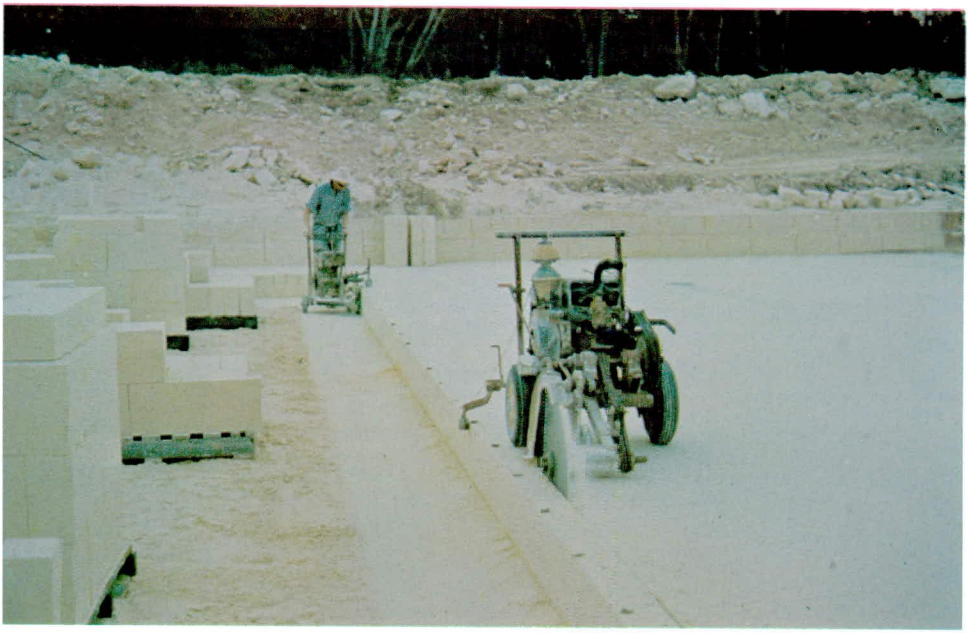
Limestones and Marbles

Kunkar ("Travertine") is a superficial Pleistocene limestone widely distributed in South Australia. Though rarely exceeding a few feet in thickness it has, because of its ready availability, been extensively used in country towns for dwellings, public buildings, and for farm buildings throughout the southeast, the Murray Basin, Yorke Peninsula and Eyre Peninsula. It is used in rough hammer-trimmed form, requiring a considerable proportion of mortar.

In the early days of the settlement of Adelaide, siliceous fossiliferous sandstone was quarried in the bank of the River Torrens near Government House at the site of the Torrens Parade Ground. This Hallett Cove Sandstone (formerly "Adelaide Limestone") was used in construction of Holy Trinity Church, North Terrace (1840) and in the old Legislative Council building (1857).

Of the Tertiary fossiliferous limestones, the best known is the Gambier Limestone. There are extensive deposits of this high grade bryozoal limestone in the southeast, extending from near Tantanoola southerly to the coast and southeasterly to the Victorian border. It constitutes enormous deposits of readily accessible and easily recoverable stone over large areas and exceeding 150 metres in thickness in the Mt. Gambier region, where it is generally mantled by only thin overburden.

Black Hill Norite quarry
Quarrying method is by pattern drilling, followed by wedging



Mount Gambier Limestone
Quarrying method is by slabbing with circular saws.

CHANGES IN BUILDING STYLES AND

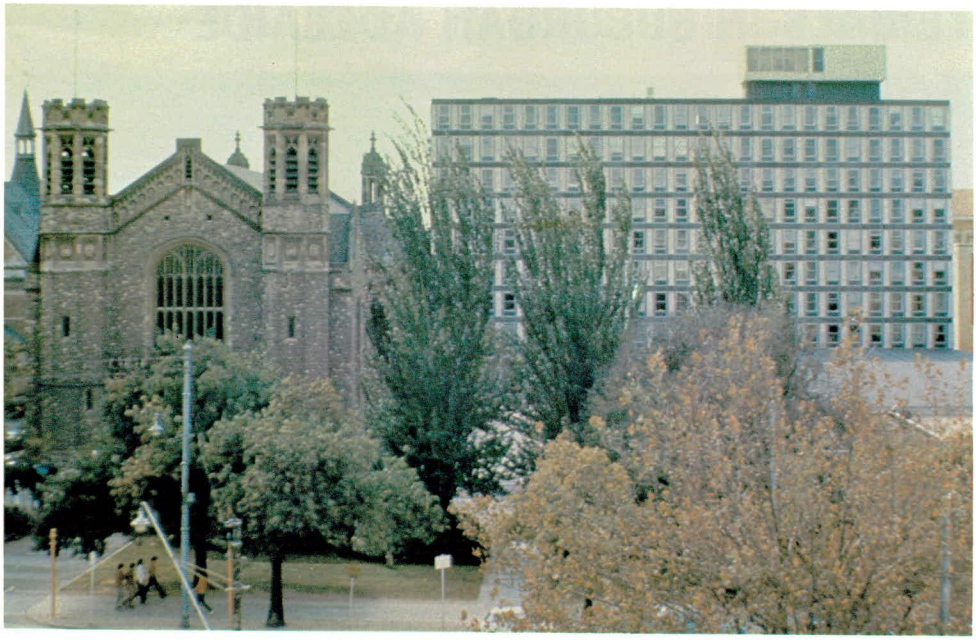
Dimension Slate, Dry Creek or Glen Osmond
Mainly used from 1870 to 1910.

Sandstone from the Mount Lofty Ranges.
Mainly used from 1910 to 1940

MATERIALS IN SUBURBAN ADELAIDE

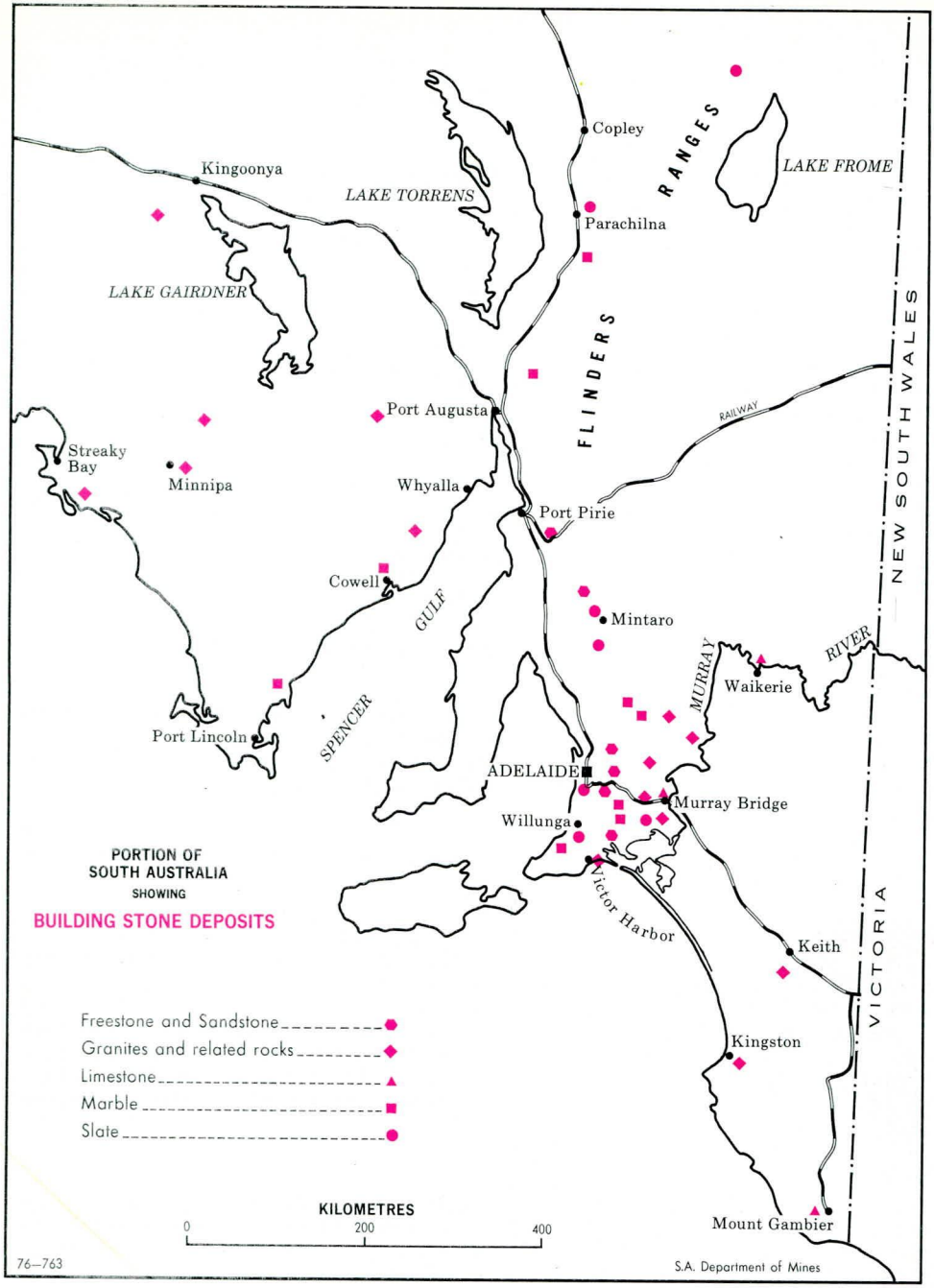
Mount Gambier Limestone
Mainly used from 1940 to 1960 (Widely used today in the South-East)

Kapunda and Brinkworth Freestones
Used from 1960 onwards.



Bonython Hall, left and Napier Building, right, Adelaide University, showing contrast in methods of construction and design.

Close up of Kapunda Freestone, showing unusual exotic textures and patterns that can be obtained.


Copley
RANGES
LAKE FROME
Kingoonya
LAKE TORRENS
Parachilna
LAKE GAIRDNER
FLINDERS
NEW SOUTH WALES
RAILWAY
Port Augusta
Streaky Bay
Minnipa
Whyalla
Port Pirie
Cowell
GULF
Mintaro
MURRAY
RIVER
Waikerie
SPENCER
Port Lincoln
ADELAIDE
Murray Bridge
Willunga
Victor Harbor
Keith
VICTORIA
Kingston
Mount Gambier
PORTION OF SOUTH AUSTRALIA
SHOWING
BUILDING STONE DEPOSITS
Freestone and Sandstone
Granites and related rocks
Limestone
Marble
Slate
KILOMETRES
0
200
400
76—763
S.A. Department of Mines

The stone is white or ivory coloured, extremely porous and uniformly even textured, containing up to 50 percent pore space. It is easily quarried and sawn, making it an attractive building material for house construction, for which it has been worked for over 100 years. Most of the quarries are in the vicinity of Mt. Gambier, the best quality stone being obtained in the hundred of Blanche.

The stone is used in sawn blocks or rock-faced, the former being more common because of ease of preparation.

Tertiary limestones outcrop in the cliffs of the River Murray downstream from Overland Corner to beyond Murray Bridge. They have been quarried for building purposes at Overland Corner (Morgan Limestone) and at Murray Bridge (Mannum Formation); sandy varieties have been worked at other localities along the Murray. The Murray Bridge "freestone", a fine grained dense and durable limestone, has been used in a number of prominent city structures e.g. the National Gallery (1936), Bonython Hall (1933) and some of the superstructure of St. Peter's Cathedral (completed 1901).

Archaeocyathid bioherms (reefs composed of extinct life forms similar to corals) of the Lower Cambrian constitute important limestone formations which provide sources of monumental and ornamental stone within 100 km of Adelaide.The most important are the white, pink and grey marbles of Angaston, Kapunda, Macclesfield and Paris Creek which have been used in construction and for monumental work in Adelaide e.g. Kapunda marble in the walls and columns of Parliament House (1939) and in the State War Memorial (1931); Angaston pink in thin facing slabs in the C.M.L. Building, King William Street; Paris Creek seawave in the Town Hall foyer; Macclesfield pink and grey marble in CentennialPark Crematorium.

Marbles with pleasing appearance occur elsewhere but have been little used e.g. yellow-green Cowell marble and the Brownlow and Sellick Hill marbles. Reddish, dolomitic marble of the Nuccaleena Formation and the underlying siltstone have been quarried at Warren Gorge since 1962 for use in terrazzo and exposed aggregate panels.

Other marbles are known but have not been utilized; many of these compare favourably with imported marbles.

Sandstones

Sandstones in shades of white, brown and purple are plentiful in the Mount Lofty Ranges near Adelaide and have yielded a number of useful building stones. Among the best known are the Mt. Lofty, Basket Range, Carey Gully and Mt. Barker freestones and the Aldgate and Tea Tree Gully sandstones. They have been widely used in the past for large city buildings and for small home construction. Tea Tree Gully sandstone was used in the Adelaide Town Hall (1863), the General Post Office (1867) and the Supreme Court Building, Victoria Square (1869).

Granites

Granites and similar igneous rocks are very durable and are used for base courses and for facings of a number of city buildings. Quarries operating at present include Black Hill ("Imperial black"), Sedan ("Sienna"), Kingston (blue-grey) and Calca, near Streaky Bay ("S.A. Rose Red").

Granites were formerly quarried at Murray Bridge, Swanport, Monarto, Palmer and Victor Harbor. Other granites are known in more remote locations e.g. the Midgee and Minnipa granites and the Gawler Range Porphyry on Eyre Peninsula,

and the Mount Monster (Keith) porphyry. Use is made of the Black Hill tonalite in many Adelaide buildings,e.g. the M.L.C. building in Victoria Square and Hotel Australia, North Adelaide. Granites are commonly used in base courses e.g. Parliament House (West Island), Savings Bank of South Australia (Murray Bridge), South African War Memorial (Murray Bridge).

Though the quantity of South Australian building stone used annually is not great (49 000 tonnes in 1974), and its value small ($490 000) compared with many other mineral products, in quality it is equal to the best from interstate and overseas.

STONES USED IN SOME PROMINENT CITY BUILDINGS

- PARLIAMENT HOUSE (Completed 1939)
  Kapunda Grey Marble
  Victor Harbor (West Is.) Granite
  (Base Courses only)

- OLD LEGISLATIVE COUNCIL BUILDING (1857)
  Hallett Cove Sandstone
  (formerly "Adelaide Limestone")

- NATIONAL GALLERY (1936)
  Murray Bridge Freestone
  Auburn Slates
  (bases - east side only)

- ELDER CONSERVATORIUM (1898)
  Aldgate Sandstone
  Mintaro Slate (steps)
  Murray Bridge Freestone (columns)

- BONYTHON HALL (1933)
  Murray Bridge Freestone
  Mintaro Slate (steps)
  Willunga Slate (roof)

- C.M.L. BUILDING - Pirie St. and King William St.
  Angaston Pink Marble (Exterior)
  Dromana Adamellite (Vic.)
  Harcourt Granodiorite (Vic.)
  Travertine (Chiaro) Italy (Foyer)

- BANK OF N.S.W. BUILDING - King William St. (1940)
  Waikerie Limestone
  Ramco Limestone
  Dromana Adamellite (ground floor)

- SAVINGS BANK OF SOUTH AUSTRALIA - King William St.
  Waikerie Sandstone
  Murray Bridge Granite (Ground Floor base course and steps)

- CENTENNIAL PARK CREMATORIUM
  Macclesfield Marble (Pink and grey)

- ADVERTISER BUILDING - King William St.
  White Carrara Marble (Italy)
  Swedish Red Granite (Ground Floor)

- DAVID JONES - Rundle Street
  White Carrara Marble (Italy)
  Moncervetto Grey Marble (Italy)
  Black Hill Tonalite, S. Aust. (ground floor)

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COVER PHOTO: BONYTHON HALL, ADELAIDE UNIVERSITY.

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S.A. Department of Mines and Geological Survey

MINERAL INFORMATION SERIES

INTRODUCTION

In a State notably deficient in local timbers, the early settlers turned to mineral substances, clay (for bricks) and stone for building purposes. The older buildings of the City of Adelaide, erected before the widespread use of steel and reinforced concrete, provide some fine examples of the beauty and dignity of structural stone.

The usage of building stone has changed over the past 30 to 40 years. In the older city buildings, the masonry walls were necessarily thick, built of strong structural stone to support the upper floors. The present practice is the use of a steel or concrete skeleton for multi-storied buildings with their outer walls forming little more than a curtain wall supported on that frame. The outer wall is frequently of relatively thin stone panels, marble being popular for upper walls, while marbles, granites and other darker stones capable of taking a high polish, are widely used for ground floor facings and interior work.

The usage of structural stone was not confined to Adelaide. Stone has long been a popular building material for houses in country areas, though perhaps clay bricks are now more readily obtainable. "Travertine" limestone has been widely used for country towns and farm buildings, and a great deal was used in the older parts of Adelaide and North Adelaide. In the southeast, Gambier Limestone is still a very popular building material, while the various slates in the vicinity of Adelaide and in the mid north have been widely used in the past for building purposes both in metropolitan and country areas.

PROPERTIES OF BUILDING STONE

Stones suitable for building purposes vary widely in their physical properties, so that a number of factors must be taken into consideration in the selection of the stone for a particular purpose. The principal factors are - accessibility of deposits; resistance to climatic conditions of temperature; moisture (rain); strength and durability; ease of working and cost of preparing and fixing in position. Not the least important factor in the usage of an otherwise suitable stone is its general acceptance by the public. Thus imported marbles have been used in the facing of various city buildings in recent years, where there is little doubt that locally quarried marbles would have served equally well.

The durability of South Australian stones may be considered according to general type.

Slates. These are durable when fresh and completely unweathered - such as dark grey Mintaro flagstone or Tapleys Hill slate. The partially weathered and calcareous slates formerly used in many smaller buildings of Adelaide and country areas appear quite durable except near the ground, where they are liable to attack by salt damp, and consequent softening and exfoliation.

Limestones and Marbles

a. Kunkar ("Travertine") - As this has generally been used in rough or hammer trimmed form, weathering effects are not especially noticeable. The stone is subject to salt damp attack near ground level.

b. Tertiary Limestones - Gambier Limestone is an exceedingly open textured bryozoal limestone, so soft that a nail may be driven into it without splitting the block. It hardens on exposure, giving very good service when used in either sawn or rock face form.

Murray Bridge "freestone" is a finer grained, denser facies of bryozoal limestone, containing occasional large fossils. It has been used in a number of prominent city buildings and has given good service.

c. Palaeozoic marbles and limestones. These are dense, usually crystalline, non-absorbent rocks of high quality as building stones. Pyrite crystals are occasionally present in the marbles, but rarely in sufficient quantity to be detrimental.

Sandstones

The siliceous aggregate comprising a sandstone may be

regarded as indestructible, the source of possible weakness being in the matrix. Sandstones may be roughly classified as

a. Freestone
b. Calcareous sandstones
c. Clayey or argillaceous sandstones
d. Quartzites, with siliceous cement

Freestone is usually a felspathic sandstone, its softness and workability being due to the breakdown of the felspars. Freestones become harder and more durable as depth of quarrying increases.

Quartzites are exceedingly durable, but because of their hardness, are difficult to use unless they break to useful sizes along bedding and joint planes.

Granites and other igneous rocks are the most durable form of dimension stone, immune to chemical attack. They have been widely used in base courses of the older buildings, and for facing of the ground floor frontages of the newer city structures.

BUILDING STONE DEPOSITS

Slates

Only one slate deposit of note is being worked at present, at Mintaro. However, quite a variety of slates have been used for construction purposes in the past. These include

Tapley Hill Slates - formerly worked in a number of quarries in the hills just south of Adelaide. The slate is characteristically very regularly bedded, about 20 to 30 beds to the inch, which stand out quite distinctly. It was formerly used for home construction, while as fresh undecomposed bluestone for base courses of large buildings such as St. Peters Cathedral and portion of the University of Adelaide; and in the southern and eastern walls of the Government Printing Office, King William Road. Numerous churches and other public buildings have been constructed of this material, which may be distinguished from Glen Osmond and Mitcham slates by its characteristic thin bedding, and from the Auburn slate by its cleavage.

Willunga slates - the quarries, south of the town, were formerly used to produce roofing slates, for which it was well suited. This type of roofing having been superseded by galvanised iron and terra cotta tiles, the quarries have long been idle.

Glen Osmond slates have been used for all types of architectural work in the older city buildings, the stone being characterised by its thick bedding. (In distinction from the slates of Tapley Hill and Auburn slates, which are thin bedded).

ST. PETERS CATHEDRAL (Completed 1901)
Tea Tree Gully Sandstone and
Murray Bridge Freestone
Victor Harbour Granite (steps)
Tapley Hill Slate (base courses).

Auburn Slates - a thin bedded slate was quarried near Auburn for many years. The stone was used for the town of Auburn and for several well known buildings in Adelaide, including the base courses of the South Australian Institute of Technology (1901) and the National Gallery - East side only - and several other city buildings. The stone exhibits the thin bedding characteristic of Tapley Hill Slate, but splits readily along the bedding planes and so is built into a wall on its bedding. In contrast, Tapley Hill Slates have a strong cleavage across the bedding and are usually seen laid on the cleavage planes.

South Australia is particularly noted for its Mintaro "slate" or flagstone, which has been quarried for many years for use as a paving stone, and is the only slate still worked. While flagstone is still prepared for various uses, the former waste material is now used in crazy garden paving and in thin slab slate walling.

Limestones and Marbles

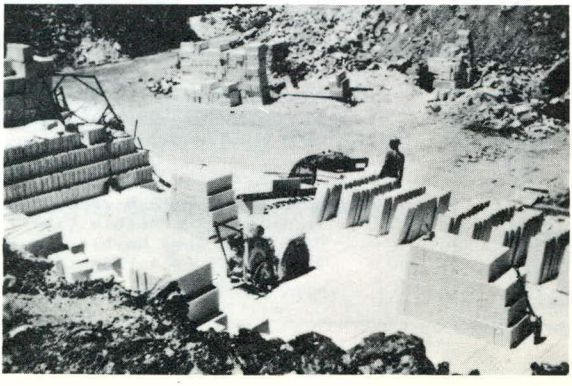
Kunkar ("Travertine") is a superficial Pleistocene limestone deposit, very widely distributed in South Australia. Though rarely occurring in a layer exceeding a few feet in thickness it has, because of its ready availability, been very extensively used in country towns for dwellings and public buildings, and for farm buildings. It is used in rough hammer trimmed form, requiring a considerable proportion of mortar. Since the lime of the mortar is itself derived from the kunkar, this feature is not important.

In the early days of the settlement of Adelaide, a siliceous fossiliferous sandstone was quarried in the bank of the River Torrens near Government House. The former quarries have long been filled and all trace lost, but some of this Hallett Cove Sandstone (formerly "Adelaide Limestone") can be seen in the walls of Holy Trinity Church, North Terrace (1840) and in the old Legislative Council buildings (1857).

Of the Tertiary fossiliferous limestones, the best known is the Gambier Limestone. There are extensive deposits of this high grade bryozoal limestone in the southeast, extending from near Tantanoola southerly to the coast and southeasterly to the Victorian border. The Gambier Limestone constitutes enormous deposits of economically accessible and easily recoverable stone over large areas and exceeding 500 ft. in thickness in the Mt. Gambier region, where it is generally mantled by only thin overburden.

The stone is white or ivory coloured, extremely porous and uniformly even textured, containing up to 50 per cent pore space. It is easily quarried and sawn, making it an attractive building material for house construction, for which it has been worked for over 100 years. Most of the quarries are in the vicinity of Mt. Gambier, the best quality stone being obtained in the Hundred of Blanche.

The stone is used both in sawn blocks or rock faced, the former being more common because of ease of preparation.



General view of Limestone quarry, Mt. Gambier

Tertiary limestones also occur in the cliffs of the River Murray from Overland Corner downstream to beyond Murray Bridge. They have been quarried for building purposes at Overland Corner (Morgan Limestone) and at Murray Bridge (Mannum Formation). Sandy varieties have been worked also at various other localities along the Murray. The Murray Bridge "Freestone", a fine grained dense and durable limestone, has been used in a number of prominent city structures such as Education Building, Flinders Street (1912) the National Gallery (1936), Bonython Hall (1933) and the superstructure of St. Peters Cathedral (completed 1901).

Archaeocyathinae reefs of the Lower Cambrian constitute important limestone formations in the Adelaide Geosyncline, which provide sources of monumental and ornamental stone within 60 miles of Adelaide. The most important of the deposits exploited are the white, pink and grey marbles of Angaston, Kapunda, Macclesfield and Paris Creek.

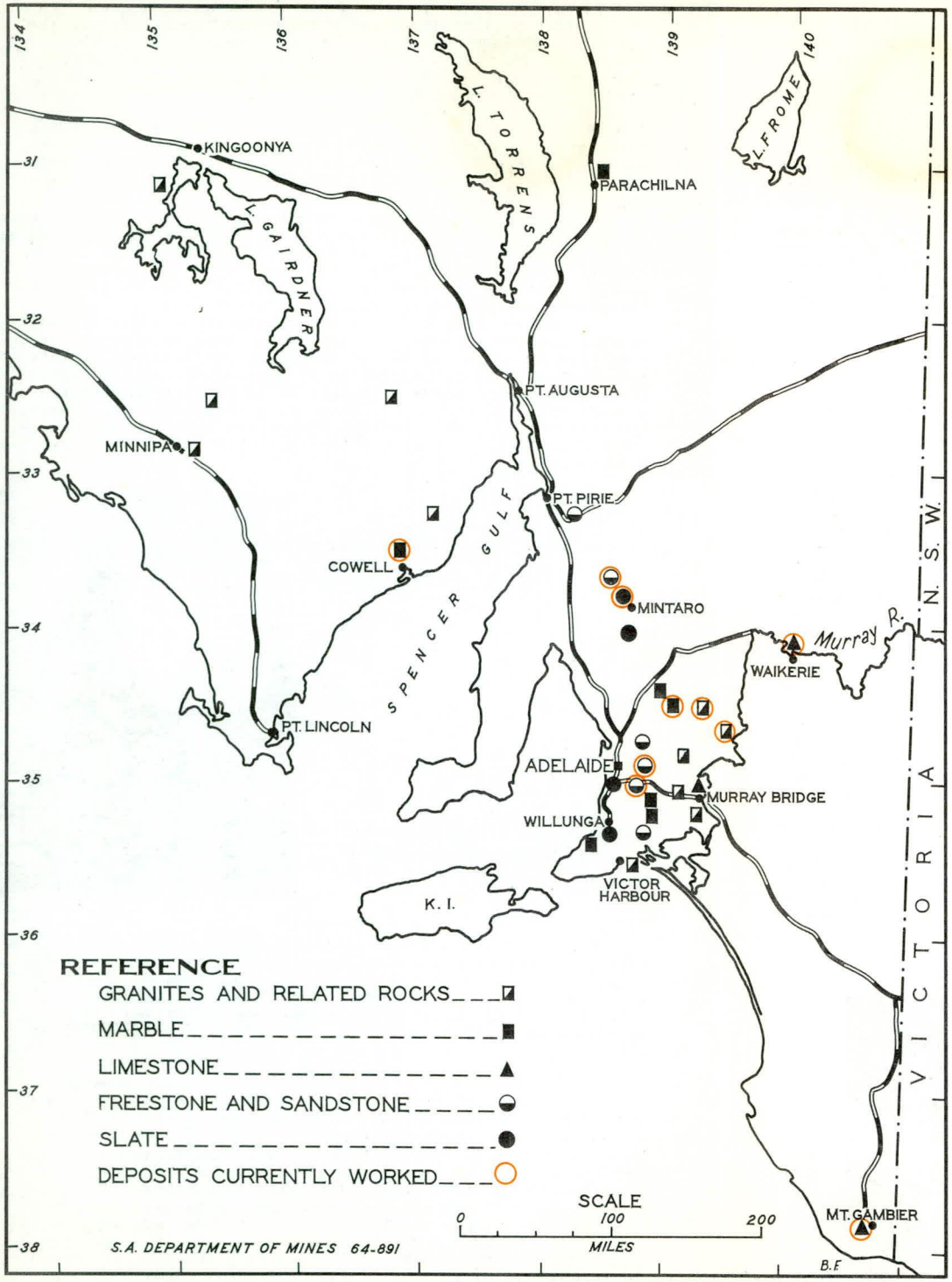
All these localities have yielded stone for building and for monumental work in Adelaide. Cambrian marbles have been used in large blocks in the walls and columns of Parliament House (1939) and in the State War Memorial (erected 1931) - both of Kapunda Marble, also in relatively thin facing slabs in the C.M.L. Building, King William Street (Angaston pink marble), the Town Hall foyer (Paris Creek seawave), Centennial Park Crematorium (Macclesfield pinks and grey marble) and others.

ADELAIDE TOWN HALL (1863)
Tea Tree Gully Sandstone
(Front and clock tower).
Paris Creek Seawave Marble
(Foyer).

Some unusual marbles with pleasing appearance occur elsewhere but have not been utilised; these include the serpentine marble of Cowell (Eyre Peninsula) and Archaeocyathinae limestone of the Flinders Ranges (Parachilna etc.) Other marbles are known but have not been utilised. Physically, many of these would compare favourably with imported marbles.

Sandstones

Sandstones are plentiful in the Mt. Lofty Ranges near Adelaide, and have yielded a number of useful building stones. Among the best known are the Mt. Lofty, Basket Range, Carey Gully and Mt. Barker freestones and the Aldgate, Tea Tree Gully, Waikerie and Finniss River sandstones. These and others have been widely used in the past, both for large city buildings and for small home construction. Tea Tree Gully sandstone has been used in the Adelaide Town Hall (1863), the General Post Office (1867) and the Supreme Court Building, Victoria Square (1869). The Elder Conservatorium is constructed largely of Aldgate Sandstone (1898). Basket Range, Carey Gully and Mt. Barker sandstones are popular for house construction in the metropolitan area.



Portion of S.A. showing Building (Dimension) Stone Deposits

SOME PROMINENT CITY BUILDINGS AND THE STONES USED IN THEM

- PARLIAMENT HOUSE (Completed 1939)
  Kapunda Grey Marble
  Victor Harbour Granite
  (Base Courses only).

- OLD LEGISLATIVE COUNCIL BUILDING (1857)
  Hallett Cove Sandstone
  (formerly "Adelaide Limestone")

- NATIONAL GALLERY (1936)
  Murray Bridge Freestone
  Auburn Slates
  (bases - east side only).

- ELDER CONSERVATORIUM (1898)
  Aldgate Sandstone

- BONYTHON HALL (1933)
  Murray Bridge Freestone
  Mintaro Slate (steps).

- C.M.L. BUILDING
  - Pirie St. and King William St.
  Angaston Pink Marble (Exterior)
  Dramana Adamellite (Vic.)
  Harcourt Granodiorite (Vic.)
  Travertine (Ramono Chiava) Italy
  (Foyer).

- BANK OF N.S.W. BUILDING,
  King William St. (1940)
  Waikerie Sandstone
  Dramana Adamellite (Vic.)
  (Ground floor)

- SAVINGS BANK OF SOUTH AUSTRALIA
  - King William St.
  Waikerie Sandstone
  Murray Bridge Granite (Ground Floor).

- CENTENNIAL PARK CREMATORIUM
  Macclesfield Marble (Pink and grey).

- ADVERTISER BUILDING - King William St.
  White Carrara Marble (Italy)
  Swedish Red Granite (Ground Floor).

- DAVID JONES - Rundle Street
  White Carrara Marble (Italy)
  Cippolina Grey Marble (Italy)
  Black Hill (S.A.) Tonalite -
  (Ground Floor).

Granites

Granites and similar igneous rocks are very durable and are used for base courses and for facings of a number of city buildings. Granites have been quarried as required from Murray Bridge, Swanport, Black Hill, Monarto, Palmer and Victor Harbour. Other granites in more remote locations are known - these include the Midgee and Minnipa granites and the Gawler Range Porphyry on Eyre Peninsula, and the Mount Monster (Keith) porphyry. Good use is made of the Black Hill tonalite in many Adelaide buildings, e.g. the M.L.C. building in Victoria Square and the Hotel Australia, North Adelaide. Buildings in which granites have been used in base courses include Parliament House (West Island Granite), Savings Bank of South Australia (Murray Bridge Granite), South African War Memorial (Murray Bridge red granite) and the State War Memorial, (grey granite).

Though the quantity of South Australian building stone used annually is not great (25,000 tons in 1963), and its value small (£110,000) compared with many other mineral products, its quality is equal to the best from interstate and overseas.

October, 1964.

Black Hill Granite quarry. Note close spacing of drill holes.

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