



Our Armillary Sundial



The idea for a sundial in our playground came in 2003 after our Principal, Mr Coote, saw a large sundial in the Herb Garden of the Royal Botanical Gardens, Sydney. The student council thought it would be interesting, so we contacted Mr Ian Innes of the Royal Botanical Gardens and Domain Trust. Mr Innes gave us the name of the company who constructed it. We then contacted Margaret Folkard and John Ward of Sundials Australia at 3 Bedford Street, Kensington Park, Adelaide, and placed an order for a smaller sundial suitable for our grounds.



The raw casing was completed by The Art Foundry in Victoria to Sundial Australia's design then finished back in their workshop in Adelaide.

Our sundial is called an armillary sundial and is made from silicon bronze. It is strong, hard and has a great resistance to corrosion.

Armillary spheres, which look like open globes, have the hour band fixed in the plane of the equator; the gnomon, the rod that casts the shadow, takes the form of a shaft set diagonally - the angle being determined by the latitude the armillary sphere is located.

Armillary sundials work according to the earth's rotation.

The principle is simple. As the Earth rotates on its axis, the sun appears to move across the sky. As the Earth rotates the shadow of the gnomon (Greek for Know) will move across the hour band of the armillary sundial. The shadow moves 15 degrees every hour. You read the time by reading from the middle of the shadow.



Armillary sundials date from 1500 B.C or before. They are an ancient method of telling time. The oldest known was constructed in Egypt around 1500 B.C.

The Romans perfected the armillary sundial we know today. They are called armillary from the latin "arma" for bracelet. The Romans were also among the first to use them in gardens. When the Roman Empire collapsed in the 5th century, monasteries preserved Roman horticultural practices as well as their garden armillary sundials.

During the 14th–16th centuries, armillary sundials of every description were produced. In addition to marking hours and minutes, some armillary sundials recorded the date, and seasons.

By the 18th century, though, increasingly efficient mechanical clocks began to supersede shadow-chasing armillary sundials. Still, the French railway regulated its clocks by armillary sundials until the end of the 19th century.



The inside of Sundials Australia's workshop. The large blue model top centre is the mold for the large sundial in the Royal Botanical Gardens, Sydney.

A plaque for the sundial is mounted on the plinth. The inscription on the plaque "Now is Yesterday's Tomorrow," comes from a sundial on St Mary's Church, East Leak, Nottinghamshire, England.

There was some confusion over the inscriptions origins so John Ward of Sundials Australia asked his sister Anne and brother-in-law Dennis, who live in England, if they could visit the church and check it out. We received the following e-mail.

The Historical Society from East Leak showed them the stone sundial which was originally attached to the brick porch at the front of the church. As far as I can gather, the sundial was removed from this porch in 1896 and put high up on another wall.

Best wishes from Marg Folkard and John Ward.

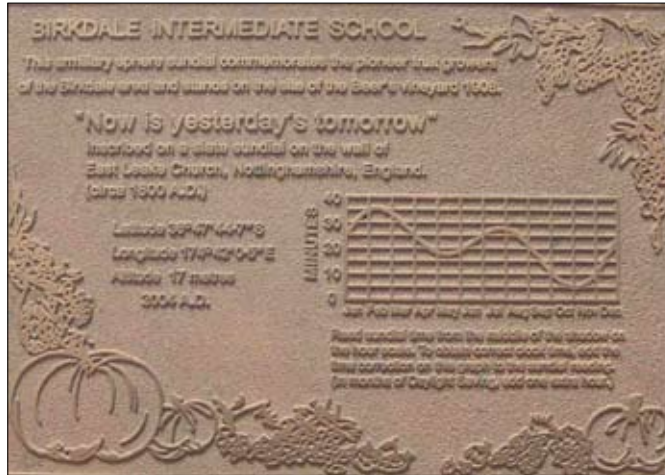
Unfortunately the sundial and its inscription could not be dated exactly so we settled on the date of circa 1800 AD.



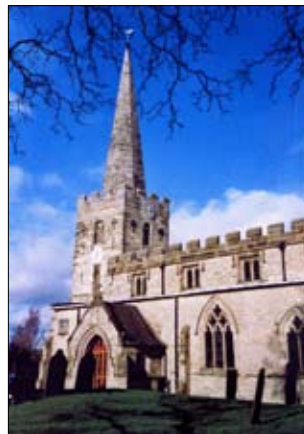
Our sundial in the workshop of Sundials Australia in Adelaide 2003.

Talking to a local historian Mr Glad Durham and Mr Peter Beer, grandson of Margaret and Henry Beer, the people who owned the land when the school was built it was decided to dedicate the sundial to the

pioneer fruit growers of the Birkdale area, in particular, the Beer family. Margaret and Henry Beer were market gardeners and orchardists. The Beer family owned 7.7 hectares. It was a block of land in two sections, bounded by Tiri Tiri Road and Birkdale Road. The land was the beginning of two streams, there were two gullies, (These were all bulldozed away when he school was built.)



The plaque was designed by Mrs Glenda Bradley an ex-Birkdale Intermediate teacher (Miss Schulz 1974 -75). The sketch was sent to Australia to be cast in bronze.



St Mary's Church, East Leak, Nottinghamshire, England

Henry terraced the sides of the two gullies and planted grape vines. He grew small Isabella grapes and produced red wine. In 1908 he produced 2.5 thousand gallons of wine. He sold the wine in a little shop up from the Birkenhead Wharf. The wine label was Beers Wine.

Another link with our school's history is our science cup which is awarded annually to the student who has shown an understanding of scientific thought and procedures. The cup was donated in 1968 by the Birkdale Fruit Growers Association.

The plaque has grape vines on it to remember the wine growing and pumpkins as this area of our grounds in which the sundial is located was planted in pumpkins during World War Two. These were sent to the American army camps to feed the soldiers who were resting here in Auckland before moving out to the battlefields of the Pacific.

The plinth for mounting the sundial was supplied by Auckland Stonemasons Ltd to the dimensions sent to us by Sundials Australia. The stonemasons had the plinth made in China and sent out ready to be installed. The plinth is made from Chinese andersite, a volcanic rock similar to basalt.

The sundial was then mounted and aligned so a correct time reading would be given.

The school had a special unveiling ceremony in 2010. Mr Eric Jackson, the inventor of the astronomical instrument Pipehenge and long time adviser to our school on astronomy matters, was asked to perform the ceremony along with Peter Beer who talked about the history of the area. Helium filled balloons were released as the sundial was unveiled.

