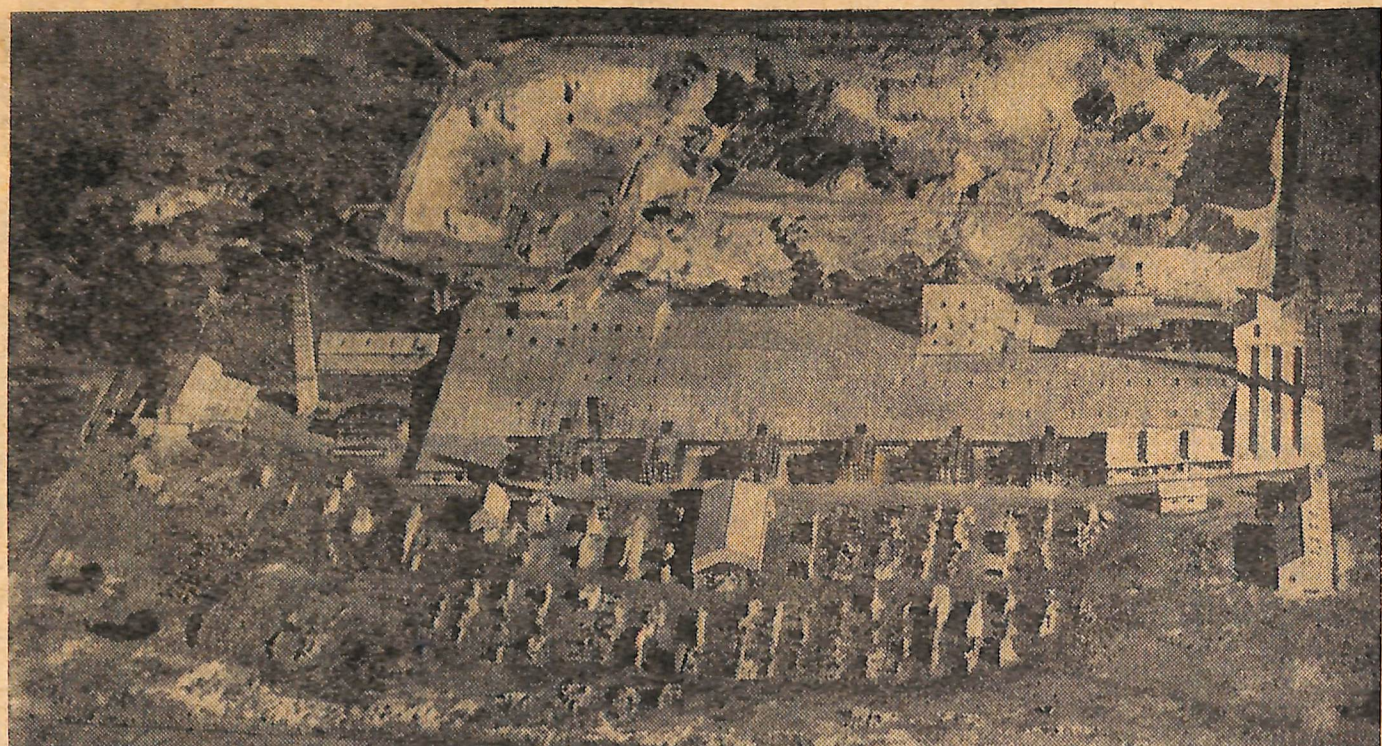


Firebricks are product of Dandenong



AN AERIAL PHOTO of the Ordish works taken before the erection of the tunnel kiln on the east side (left on picture) of the existing buildings and before the adjoining clay pit was abandoned.

The Ordish Firebrick Company's works on the north-east corner of Dandenong is not only the oldest local industry but, in many respects, is one of Australia's most important.

The major electric power stations, gas plants, public utilities, iron and steel foundries, glass works, chemical plants and brick and cement works in Victoria depend on the high-quality refractories produced in the Ordish kilns.

The company also had considerable interstate business and some overseas trade.

A refractory, broadly speaking, is any material that can be heated slowly to 1500-deg. C. (2732-deg. F.) without showing obvious signs of fusion. The refractories of today are essentially heat-resistant clay and mineral products whose prime function is to provide the structure of, or linings for, furnaces that heat, melt and generate.

Virtually every processed material of modern civilisation—iron, steel, oil, glass, fabrics, chemicals, generated power—owes its existence in workable form to the products of the refractories industry which probably ranks second to agriculture in basic necessity.

The Ordish Firebrick Company, which is Victoria's largest producer of firebricks and refractories, was established by W. P. Ordish in 1894. In 1919 it was bought by the late J. Stewart, and it is now a wholly owned subsidiary of Newbold General Refractories, of Mayfield, near Newcastle.

During the early days of manu-

facture, clay was obtained from a pit adjacent to the works in Stud Rd. The clay was won by digging with pick and shovel, and loaded into skips or trucks which were pulled up from the pit by a winch.

During and after the Second World War, as a result of increasing demand for fireclay products, the works required about 400 tons of clay per week to maintain full production and were finding it difficult to obtain anything like this quantity from their Dandenong pit.

Several of the company's main customers, such as the State Electricity Commission of Victoria, the Electricity Commission of New South Wales, the Victorian Railways and other public utilities, were concerned about the supply position of firebricks and refractories and it was considered that, although a substantial increase of production had already been achieved, the output would need to be doubled to safeguard construction programmes for urgently required new power stations and other essential plants.

In 1949 the Victorian Mines Department was asked by the Ordish Company to assess the remaining clay reserves in the vicinity of the works at Dandenong and to investigate possibilities of alternative sources of fireclay.

The department drilled the company's property at Stud Rd. and proved that, for practical purposes, this deposit was all but worked out. Although large quantities of good quality clay was still at the bottom of the pit, it would be too costly to win this clay because of its great depth below the surface and the difficulties caused by water seepage.

The Mines Department went farther afield in the search for suitable clay and investigated a property close to the South Yarra Fire Brick Company's pit at Hallam, four miles from the Ordish Company's works at Dandenong.

Many bores were put down at Hallam, samples were tested and the results submitted to the Ordish Company. These tests proved so favorable that the company, in 1951, bought this property from which it has since been able to satisfy its entire requirements of clay.

The department's discovery was made at a time when the shortage of raw fireclay for the works was so grave that vital industries in several States faced stoppages.

Clay is won from the Ordish Company's pit at Hallam by means of an excavator and delivered to the storage in tip trucks.

Originally clay supplies were delivered from the old pit at Stud Rd. direct to the grinding pans on a day-to-day basis. As the business grew, separate clay storage space had to be provided and subsequently a storage shed holding 3500 cubic yards was built. Another storage shed holding 12,500 cubic yards of clay was added in 1956.

Refractories are produced from ground clay either by hand-moulding or hydraulic press.

The Ordish Company makes between 10,000 and 12,000 different shapes and sizes of firebricks.

All moulds are preserved permanently as they may be used from time to time for repairs and replacements to the original installations.

Firebricks and shapes are burnt either in a modern oil-fired tunnel kiln or in the older-type briquette-fired, down-draught kilns.

Bricks and shapes passing through the tunnel kiln require only 45 hours for drying and 98 hours for burning; a total of six days, compared with approximately 25 to 28 days (including about seven days' drying) in the case of the down-draught kilns.

The 212-ft. long tunnel kiln has a capacity of 250 tons of high-grade firebricks per week.

As soon as the firebricks have been formed by the brick machines, the bricks are set on kiln cars on which they remain throughout the drying and burning process.

The kiln cars are first moved through a 90-ft. long dryer which has a time cycle of 45 hours. After leaving the dryer, the cars are moved to the kiln proper. As the cars move through the kiln the temperature becomes progressively hotter until it reaches a limit of 1380 degs. Centigrade near the middle of the kiln after which the temperature decreases.

The total time of travelling through the tunnel is 98 hours.

As a special type of lightweight firebricks, the Ordish Company manufactures a hot face insulation brick. It is made from standard Ordish fireclay to which combustible material such as sawdust, brown coal dust, etc., has been added. This combustible material burns out leaving a cellular, lightweight brick called Orcell which has a service temperature of 1350 deg. Centigrade and an apparent density of about 75 lb. per cubic foot compared with 120 lb. per cubic foot for the standard firebrick.

The company also makes a Diatom brick, using diatomaceous earth and combustible material in a similar way as in the manufacture of the Orcell brick; however, the Diatom brick has an apparent density of only 32 to 48 lb. per cubic foot depending on service requirements.

When used correctly, Diatom and Orcell bricks bring about a considerable saving in fuel costs.

In addition to standard fireclay bricks with 26 per cent. of alumina, the company also manufactures a brick containing 36 per cent. alumina and for special purposes a bauxite brick containing 70 per cent. of alumina.

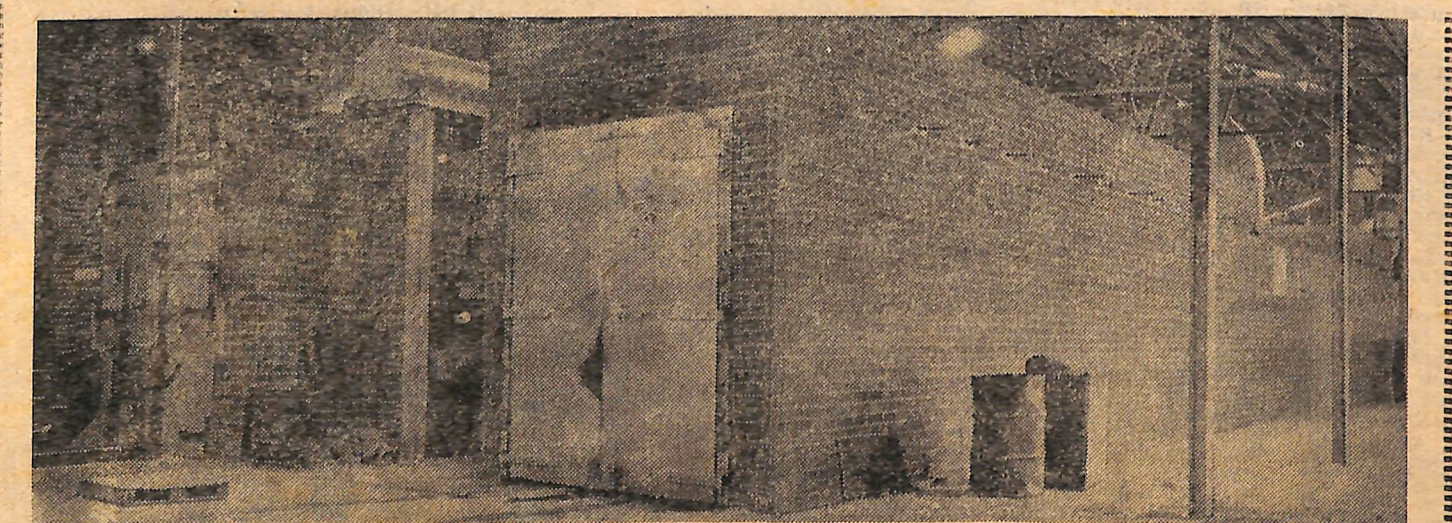
Research is continually being carried out and has resulted in the development of new products which the company now markets.

The old clay pit on the company's property at Stud Rd. is now being used by Dandenong Council for garbage disposal. In this manner the pit will be filled, then levelled and rehabilitated.

This is a typical example of how worked-out quarry sites can be utilised and the land once more reclaimed.



BRICKS at the Ordish works are stacked on a tunnel car before entering the dryer and tunnel kiln. Spaces between bricks allow free flow of hot air. The frame serves as a load limit.



TOTAL VIEW of the dryer and tunnel kiln; on the left, hydraulic mechanism for moving cars through tunnel kiln.