CHANGES IN THE BRICK INDUSTRY

By G. Schaffer

(This is an abridged version of the address given by Mr. G. Schaffer, Managing Director of Calsil Limited, to the New South Wales Branch of the Society in Sydney on 17 March 1971.)

Introductory

It is an old home truth that there are only two certainties in life - one is "change", the other "death". The first of these will be the concern of this article. In particular, my objective is to deal at length with the reasons why I consider a change must come to the Brick Industry.

Spokesmen for the Clay Brick Manufacturers sometimes argue that their Industry has the great advantage of a 5,000 year history. However, it is my belief that technological change has paved the way for the production of new materials. There is a strong case for the use of bricks in buildings, but should these be made of clay, simply because the bricks made 5,000 years ago were made of this material? An analogy can be drawn with the use of the wheel. It has a longer tradition that the brick, and yet the wooden wheel has been replaced by the metal wheel. They are both round, but there the similarity stops. We can put up a comparable argument in favour of the wooden wheel, but it has slowly but surely been replaced by metal.

The sand lime brick is a product in its own right - with its own distinctive characteristics and attributes. It is a product of modern times for use in a modern age.

Historical Development

The first brick, or block, was made with mud and straw, and air-dried. The next was sand mixed with lime, and air-dried.

Marcus Vitruvius Pollio, the noted Roman builder who lived before Christ, mentioned in his book No. 7, that the ancient Greeks used building blocks made of sand - lime - water which were air-dried and lifted into position by 10 workers.

Very few building materials have developed as rapidly as the sand lime brick. Within 60 years, this has become a virile industry spread over the entire globe.

Scientists in previous centuries, excavating old Roman ruins were surprised at the strength of the mortar. Through research, they came to the conclusion that a mixture of lime, sand and water could produce a similar strength. It was known that a mixture of lime, sand and water became hard by drawing carbon monoxide from the air. Chemists found that Silicone dioxide of the quartz sand combined with lime and water under certain conditions, to create new materials. These were not formed under normal atmospheric conditions, but under steam pressure at high temperature.

The first sand lime brick factory was established in 1899 in Germany. At the beginning of this century, there were two sand lime brick factories here in Sydney, (one on the Botany Road, and one in Bondi), and another in Williamstown, (a suburb of Melbourne). In 1911, a factory was set up in Perth. I have traced the history of the factories in Botany and Perth. The first was erected and run by the State Government. To combat the inflationary trend at
the start of the Great War, price control was introduced. At this time, price control was designed to help the war efforts of the Nation, not for political purposes. It was determined that the price of bricks should be not more than 35/- per 1,000. This price suited the labour intensive clay brick industry, but the more mechanised sand lime brick industry had to close down. At that time, the production of sand lime bricks was more costly than that of the clay product.

There are houses on the Botany Road (Sydney) erected 60 years ago in sand lime bricks. The Government at that time must have had great confidence in their durability and strength, as it chose them for the security walls surrounding Sydney’s Long Bay Gaol. This wall still exists.

Early factories in Perth and Adelaide closed down for varying reasons, while another in Launceston is not any sort of guide as to how a modern sand-lime brick plant should operate.

Colortone in Frankston and Great Eastern Brickworks in Traralgon (both in Victoria), were established in the years 1948/49; they were followed in Perth in 1955 by my Company and Manx Pty. Ltd.

Calsil

Calsil Limited was established in 1955, and four out of the five present Board members are foundation Directors.

Ten years later we bought out the Colortone Brickworks in Victoria. Only three years later, when we were satisfied that our acquisition was successfully integrated into the Company, we built our first Brickworks in New South Wales at Kurnell, followed by another which we are just commissioning at Blacktown.

My board obviously realised that parallel with the erection of factories, we had to build up a suitable management. Both our Sydney works are managed by University qualified engineers. Our Manager for New South Wales is a University Honours graduate with long experience with one of Australia’s leading building material manufacturers. Two of our Sales Managers have tertiary education, and both our Manager for Victoria and Company Secretary are qualified Accountants. Our newly appointed Group Marketing Manager has a Ph.D and Master's degree in Economics.

At present, not only are we the leaders of the sand lime brick industry in Australia, but have also the largest sand lime brick production capacity in the World. We are not producing to our full capacity, but hope to reach it soon.

I should also mention here our Agreement with Krupp, West Germany, the manufacturer of our main plant. We were fortunate to negotiate an Agreement with Krupp giving us, until the end of 1973, the sole right to purchase their sand lime brick plant in Australia. Thus, Calsil has the advantage of being in a monopsonistic situation with the provision of new Krupp machinery in this country.

Although my Company is 16 years old, our plants are up-to-date. We have a very close association with a number of manufacturers throughout the World. We can claim that our plants at Jandakot, W.A., Frankston, Victoria, and Kurnell, N.S.W., are at least equal if not better than any available outside Australia, while our latest plant at Blacktown, N.S.W., has yet to be matched.

The manufacturing of sand lime bricks is not a secret or patented process. It is obvious from the history of this industry in Australia that it involves more than just raising capital and establishing a factory with the first plant offered.
The Product

The claims that can be made for the sand lime brick are as follows:

(a) **Structure:** - It consists of a clean sand mixed with lime, which is antiseptic. Hence, it is a clean brick, free from efflorescence.

(b) **Strength:** - It is weakest when produced, but becomes progressively stronger with the passage of time. This is obvious if you consider that the sand lime brick is sand stone produced by mankind, affected by time in the same way as is natural stone.

(c) **Regular shape:** - It does not change its shape during manufacture and is available, therefore, to very close tolerances.

(d) **Colour:** - Its natural colour, off-white, tends to brighten its surrounding. Apart from a pleasing appearance, it reflects the sun, a Major factor in a hot climate.

(e) **Scope:** - It can be produced in various sizes, shapes and colours, thus giving a lot of scope to the architect in design.

Despite the tremendous technological progress during the last 5,000 years, man has not come up with a better building unit than brick. The brick is regaining its popularity lost to the various prefabricated panels. Developments such as - the curtain wall structures, (with their falling window panels), the Ronan Point disaster, (where load bearing panels were used), and now the more favourable attitude of engineers towards the bricks in calculating and designing load bearing walls - should lead to an increased demand for bricks. It is only recently that the public generally, and authorities in particular, have become conscious of the necessity to improve sound proofing. Thin walls, by not giving privacy, breed neurotics. Hence, there is a necessity for thicker walls, which means more bricks.

Last, but not least, I should also point out that a number of timber houses are still being built in Australia, a type of building which is rapidly going out of existence. Price-wise, there is, at present, a negligible difference, but looking at the matter from the stand-point of the National economy, there is a valid enough case to stop the import of timber for wall studs and cladding - an additional demand for bricks.

Future of the Industry

The cost of establishing a sand lime brick works is considerably lower than that of a clay brick factory. You will recall the announcement concerning the proposed erection of our plant at Blacktown. The Cost of this factory, which has a planned output capacity of 1.3 to 1.5 million bricks per week, has been given at $2,500,000. The other day a leading clay brick manufacturer announced the erection of a new plant with an output of 1.5 million bricks per week at a cost of $7,000,000, three times greater than the capital outlay for Blacktown.

The sand lime brick industry has the inherent flexibility to adjust itself to economic fluctuations. It is capital-intensive and any cutback in demand does not necessitate large layoffs of labour. Production can be reduced to meet changed conditions, and then increased to rated output without incurring heavy costs. By contrast, the clay brick manufacturer has to retrench a large number of employees and, when conditions improve, he has to meet the high cost of repairing and refiring of kilns.

The main advantages of the sand lime brick industry can be summarized as follows:
(i) It can reduce its output at short notice without any detrimental effect to the plant, and

(ii) It can undersell the clay brick.

As in all industries, some of the principal conditions for success in the brick industry are:

(i) Availability of abundant supplies of satisfactory priced raw materials,

(ii) Compatibility with the environment in which it is situated, and

(iii) Closeness to its markets.

Australia is sometimes referred to as the "land of sand and sorrow". The white sand lime brick, which blends so readily with the Australian blue skies, should be sufficient reason for the development of the sand lime brick industry and acceptance of white bricks.

Until the advent, during the last 15 years, of the stationary vertical press, calcium silicate brick manufacturers could hardly compete successfully with the well entrenched clay brick industry. Today, there are more sand lime bricks sold in West Germany than clay bricks. They are evenly sharing the market in the Scandinavian countries, over 20% of the bricks sold in Holland are sand lime bricks, while calcium silicate bricks predominate in Russia.

With regard to Australia, Government statistics indicate that while there has been a decrease in production of Clay bricks of 4% in the latter half of 1970, sand lime brick production has risen by 37% during this period.

Conclusion

We, in Calsil, believe that we are only at the early stage of our growth. We are pioneering an industry very suitable to the Australian environment. We have been fortunate to ensure the sole use in Australia for the most advanced sand lime brick plant in the World. By prudent, conscientious and expert management, we have achieved our present position. As has been the experience in other countries, we believe that our share of the market must increase. By the end of this financial year, we will have a capacity to produce 10% of the total Australian brick demand. 3/5th of our capacity will be in Sydney, and this is not a coincidence. We came to Sydney because Sydney wanted white bricks.

Our marketing policy is, and will continue to be, fair. But, if challenged, we will fight. We are here to stay and the clay brick manufacturers must learn to live with us.

REVIEWS

THE GREAT SLUMP - Capitalism in Crisis 1929-33

By G. Rees (Weidenfeld & Nicolson) 1970

There is almost an aura of masochism in the number of recent books and articles on the era of the Great Depression. However they are generally balanced and subjective and may help us to avoid making the same errors again.

This book concentrates on the worst period of the slump, from the U.S. stock market crash of 1929 to the German assumption of power by A. Hitler in 1933. The beginnings of the cataclysm stretched back to the aftermath of