

THAMES SCHOOL OF MINES

Established in 1885, the Thames School of Mines survived until 1954. In its heyday, this was the largest mining school in New Zealand, and for almost 70 years it specialised in practical scientific and industry focused education.

DEMAND FOR SCHOOLS OF MINES IN NEW ZEALAND

Within a year of gold being discovered the Thames goldfield reportedly had a population as high as 18,000 in 1868. The Government had negotiated with the Maori owners to allow prospecting rights, so miners flocked to Thames in search of fortune. Thames Borough became an important commercial centre for the mines of the wider Hauraki region, which included those in the Coromandel Peninsula, and the Ohinemuri area, such as Karangahake and Waihi. Thames itself was full of mine entrances and the incessant din of stamper batteries crushing ore into a fine powder.

From the 1860s quartz reef gold mining in Otago and the Hauraki region required ore to be crushed in order for gold to be recovered. There were many levels of technical competence required for this work. Therefore, in 1872 the University of Otago appointed Professor James Black to teach chemistry and mineralogy, and a few years later established a formal School of Mines in 1878 in Dunedin.

William Larnach, Minister of Mines (1885-1887), saw the need for further schools around New Zealand. As such, in 1885 Black toured New Zealand mining centres, giving lectures to miners about scientific methods for gold recovery, as well as advocating for more schools to be set up. These lectures were undoubtedly successful because soon 29 schools had been established.

One of these was the Thames School of Mines. It was on 18 November 1885 that Black, and other University of Otago staff, arrived in Thames to give their lectures on mining techniques and outline a proposal for establishing the Thames School of Mines. Black reported: *"I delivered a lecture on the mineral wealth of the Thames and advocated as strongly as I could the formation of a strong school of mines for that district."* There was an overwhelming response from the people of Thames who raised £254 within five days to help establish the School.

THAMES SCHOOL OF MINES, 1885-1954

ESTABLISHING THE SCHOOL

The first director of the School was Alexander Montgomery, and he oversaw classes when they began in their temporary location, Gresham Hall, on 25 January 1886.

The permanent site chosen for the School had been given to the Wesleyan Church in 1868 by local Maori for the specific purpose of building a Church and Sunday school. In the mid to late 19th century there were two Methodist churches in Thames. However, by 1885 a reduction in population meant that only one church was needed in the town. Therefore, the Cochrane Street site was sold by the Church Trustees to the Thames School of Mines, despite this being counter to the original intention for the gifted land.

Tenders were soon called for a permanent building to house the school, and the earliest classes on site took place in the former Sunday school building. The newly elected School of Mines committee also built a brick smelting house with three furnaces and re-plied and re-roofed the old Sunday school building.

PRACTICAL STUDIES IN SCIENCE AND INDUSTRY

In 1887 headmasters of local schools were invited to choose scholars who would benefit from lectures at the School of Mines. At this time the first girls attended the school. By 1890 the School had 32 pupils during each term, with 51 students attending Saturday classes.

From its earliest days, the School of Mines had a particularly close relationship with Thames High School. Headmaster Adams was keen to move the high school away from strictly scholarly activities, towards a more industry-based focus. He saw Thames School of Mines as highly complementary to his educational philosophy and encouraged students to advance their studies there.

However, it was not only those in Thames who benefited from the School. Branch schools were later established in Coromandel, Waihi, Karangahake and Wairongomai. The school's director Alexander Montgomery provided lessons at these branches over four months of the year.

An idea of the specialist education the School offered can be gauged from the subjects it offered. The 1901 subjects of instruction were: Mathematics, Mining and Applied Mechanics, Ventilation and Explosives, Hauling and Winding, Pumping and Pit Work, Land and Mine Surveying, Metallurgy of Gold and Silver, Practical Assaying (both wet and dry), Practical Chemistry, Theoretical Chemistry, General and Mining Geology, Mineralogy and Blowpipe Analysis, Mechanical Drawing, Practical Astronomy, Physics, and Petrology.

Why was the Thames School of Mines an attractive educational option for science and industry minded students? The School became important locally because it prepared students for the Government mine manager, battery superintendent, engine driver, and licensed assayer, certificates. The Council of the School of Mines could also grant certificates to students who had proved their efficiency in any subjects taught at the School.

In its early years the School offered classes, but there were no examinations until 1893. The 1892 Mining Act meant that mine managers were required to have worked in a mine for three years and to have passed the Mine Managers Examination. Study at the Thames School of Mines enabled students to achieve this over a three year course. External examiners were based in Wellington and appointed by the Government.

From 1894 a Diploma in Mining Engineering was offered, requiring a further year of study, to those who gained a first class certificate as a mine manager. Additional courses and subjects were established for this certificate. Therefore, during the 1890s when most other mining schools closed, the Thames School remained popular with students who came from all over New Zealand, attracted by its good reputation for preparing students for formal qualifications.

However, by 1910 student numbers dwindled as mining returns diminished and mines were closed. By this time the Hauraki Plains had been drained and new blocks of farmland became available. Adapting to this change, the School began to offer a class in milk testing. Later, in 1928, agricultural classes were offered to farmers to improve their technical knowledge of chemistry and fertilizers.

It was around this time that large local engineering companies, A & G Price and Charles Judd Ltd, were rapidly growing, making industrial machinery such as railway locomotives wagons. It was at the suggestion of Messrs Price and Judd that the School of Mines added machine shop practice in 1926. When combined with classes in Mechanical Drawing, and Mathematics and Electricity, this prepared students who wished to enter local foundries and garages.

In 1931 the mining industry had a boost motivated by a Government scheme where unemployed workers could access loans if they went into mining. Initially 45 men were involved in this scheme at Thames where they could get assays done at the School of Mines. This number soon increased to several hundred, but was not sustained for long.

During World War Two, the war effort was supported by the School who provided free tuition to all servicemen, and allowed the home guard to use its facilities. As Soda Lime, used in mining rescue for coal mines, became unobtainable during the war years, the School of Mines worked a manufacturing plant which boosted their income.

TEACHING FACILITIES

Thames School of Mines was different from its other New Zealand counterparts because it had an experimental plant and battery room for crushing ore. From an engineering point of view, the experimental room was an important part of the school's activities for both student and fee paying industry users. The presence of mercury amalgamation, chlorination and cyaniding plants in the School, equalled those processes actually employed by the mining industry. Therefore, the Thames School of Mines gave students unparalleled practical experience.

This equipment also provided opportunities to make advances in processes through experimentation, which the mining industry viewed as an important service. Process and machine modifications could be implemented within industry, at least locally, because the School was the author of those changes and teachers of the student body. It is conceivable that the influence of individuals on the Thames School of Mines Board, especially businessmen like Alfred and George Price, was a major driver of the educative direction, the establishment of the experimental plant, and the on-going expansion of the School.

An important addition, opened in 1901, was the Mineralogical Museum which displayed the substantial collection of mineral specimens that had been collected since 1870. With Mines Department help, the building was started in 1899, and fitted out in 1900, allowing the samples to be labelled and set out in glass cases in time for the opening.

The School continued to expand by installing models of new technologies, such as crushing machinery and the MacArthur Forrest Cyanide process (also known as the Cassell process). By the early 20th century electricity was becoming an important new technology in mining. This was recognised by the Thames School of Mines, and in 1903 a dynamo house was added to the west side of the battery room, and tuition in the science of electricity was also expanded.

LIFE AFTER THE THAMES SCHOOL OF MINES

In 1924 the Mines Department, who had supported the school since its inception, threatened the School with closure. They finally relented and provided money for much needed repairs to the buildings. However, by the late 1940s the School of Mines Council had become increasingly dysfunctional, and the Mines Department

again raised its concerns. The severity of the situation resulted in no replacement director being sort when Hugh Crawford retired. Therefore, the School closed in 1954.

Thames Borough Council, the new owners of the former School, did not know what to do with the buildings and equipment. The Mayor at the time felt that the buildings were useless and that demolition was a sensible solution. However, in 1959 the Borough fire-proofed the buildings in order for a leaseholder, South Pacific Mines Company of Vancouver, to take over the buildings. An employee, Alistair Isdale, continued to keep the Mineralogical Museum open to visitors. Isdale was passionate about the history of Thames and carried out much voluntary work at the former School.

In 1971 another mining company, Australias Central Pacific, again saved the School buildings from demolition by leasing them. In 1976 the Council decided to demolish the battery room, which motivated the New Zealand Historic Places Trust (NZHPT) to provide funds to ensure its preservation. A few years later, in 1979 the NZHPT purchased the Thames School of Mines. Over the next ten years teams of volunteers worked hard to keep the Museum open to the public and to maintain the buildings. The Thames School of Mines is a Category I historic place on the NZHPT Register.

Report by John La Roche, August 2012

REFERENCES

Mines Department New Zealand, *Thames School of Mines Syllabus of Lectures & Instruction*, Government Printer, Wellington, 1901 (Courtesy Thames School of Mines)

Tania Mace, Ngati Maru Rununga and Matthews & Matthews Architects Ltd, 'Thames School of Mines Conservation Plan,' Draft 2006

ACKNOWLEDGMENTS

In preparing this information the author made extensive use of the 'Thames School of Mines Conservation Plan' by Tania Mace, Ngati Maru Rununga and Matthews and Matthews Architects Ltd. He would also like to thank Jane Matthews, John Isdale and Russell Skeet, who have all provided helpful comments.