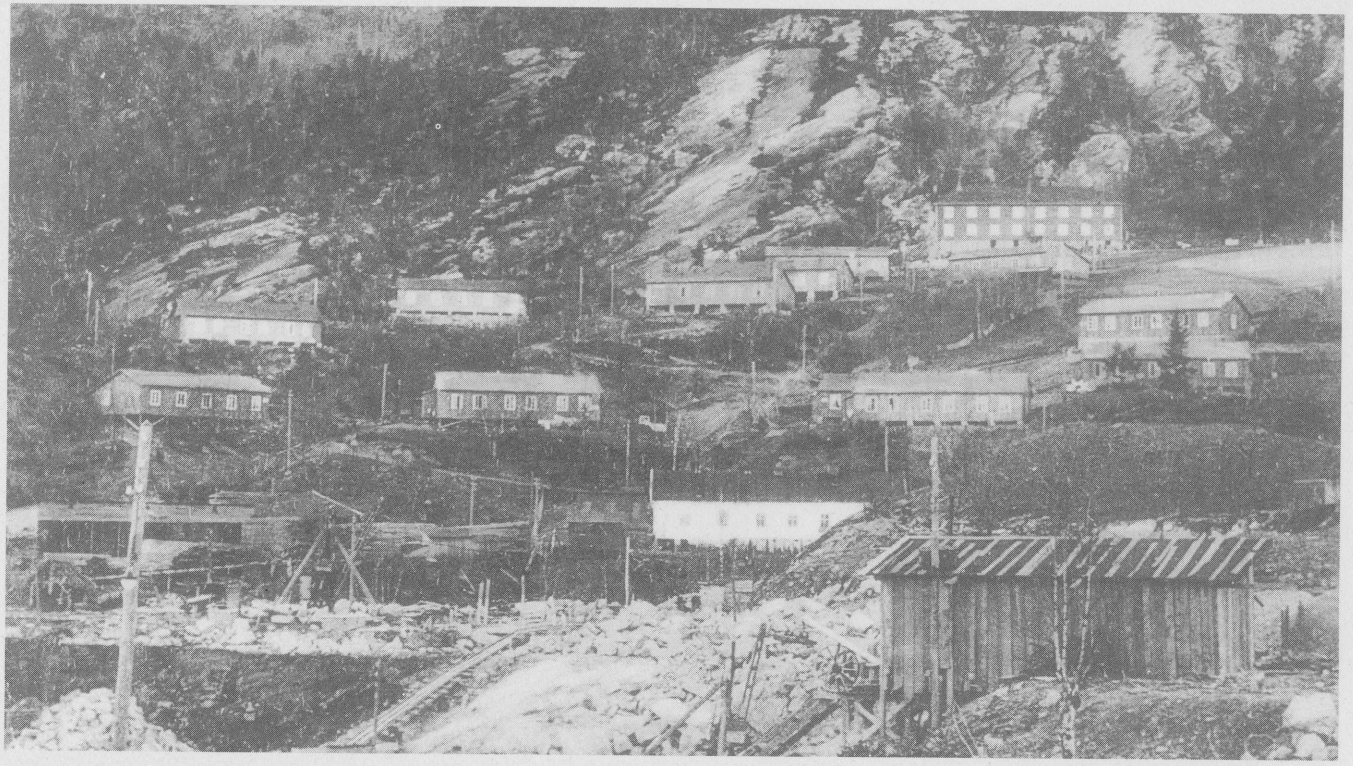
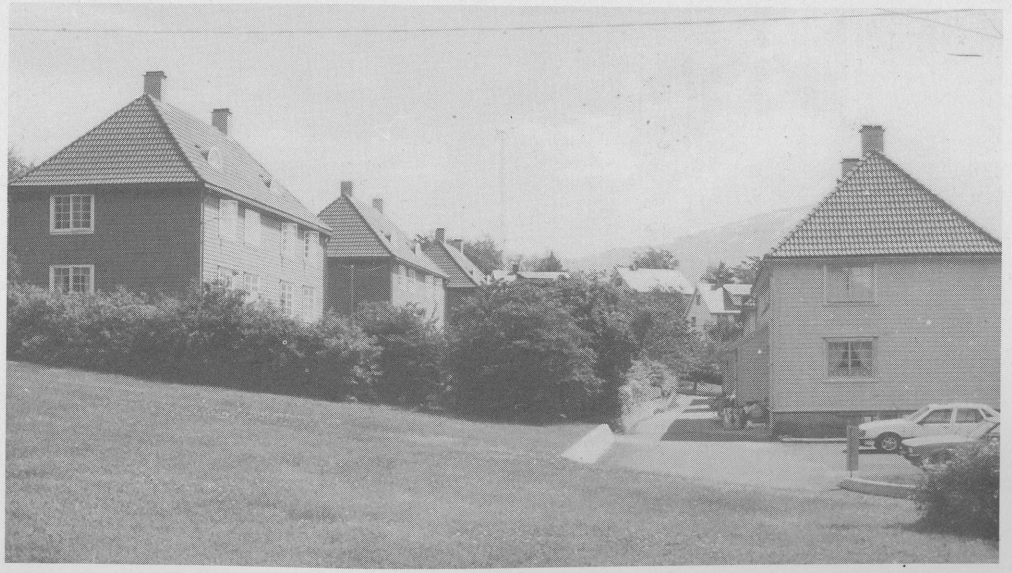
Ålvik - buildings full of life and tradition, important to preserve for the future

Since the industrial community was first established around 1910 there have been few changes in the buildings in Ålvik.
While the area was being transformed from a small farming community into a modern industrial community there was a short period when Ålvik was characterized by workmen's huts and building equipment. There are few traces of this today.
Most of the houses in the area known as "The town" were built between 1910 and 1936. Compared with town planning today, which is often a conglomerate of different styles of building, Ålvik appears as a homogenous unit.

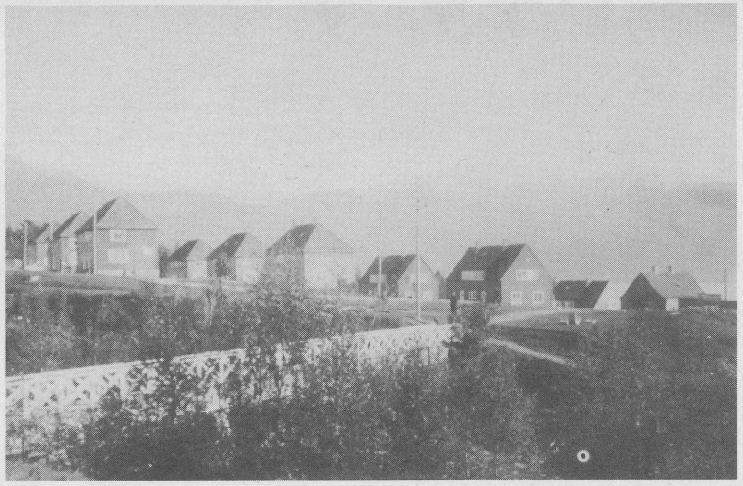


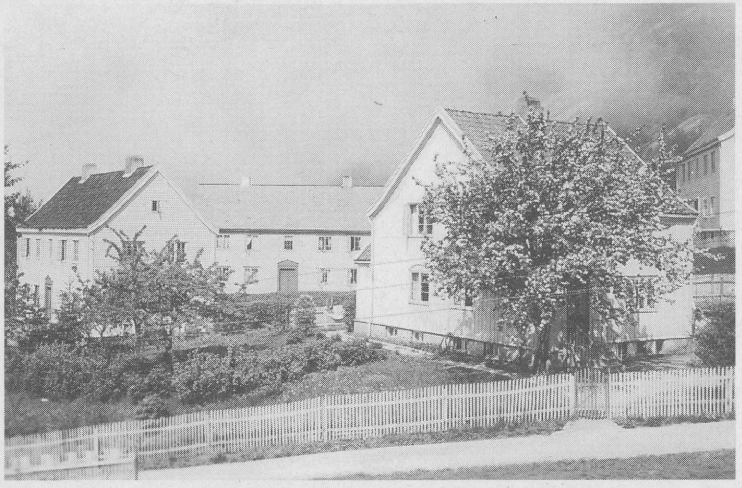
Photograph of "The town" in 1918



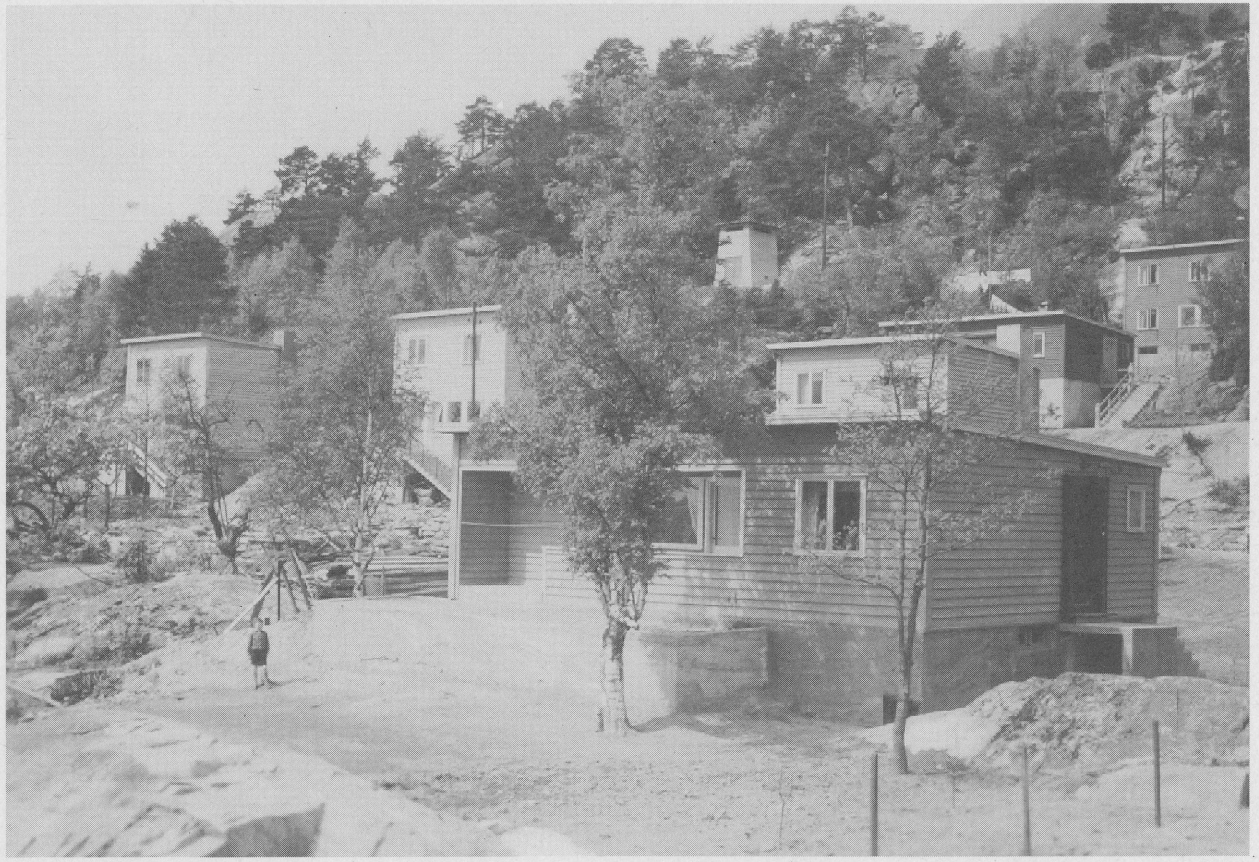
Photograph of the same place in 1993

Even though there are now few signs of the original farming community, some of the old farm buildings are still standing. These have all been well preserved. A well-known Norwegian architect from the early 1900s, Nicolai Beer of Kristiania, was commissioned to design the residential area in Ålvik. He designed many different types of house, most of them in the Neoclassical style incorporating some elements of Art Nouveau. Ten years later, the same architect also designed the "Own home" residential area east of "The town". These houses are all in the functional style. The difference between the two residential areas clearly expresses the upheaval of this period. The photographs show that large parts of "The town" have remained unchanged over the past 70 years. The county conservation officer has recommended that the original part of "The town" be protected, and the Kvam county council has drawn up separate plans to safeguard the area. In the opinion of the county conservation officer, these buildings represent a special epoch in Norwegian history.





In the course of just a few years Ålvik became one of the many industrial areas which sprang up overnight. Compared with similar projects today, it would be difficult to find one of the same quality as Ålvik. Architect Beer planned "The town" as a single entity, which makes it particularly vulnerable to change.



We wish you all
a Merry Christmas and Happy New Year

Odd Husmo

BJØLVEFOSSEN

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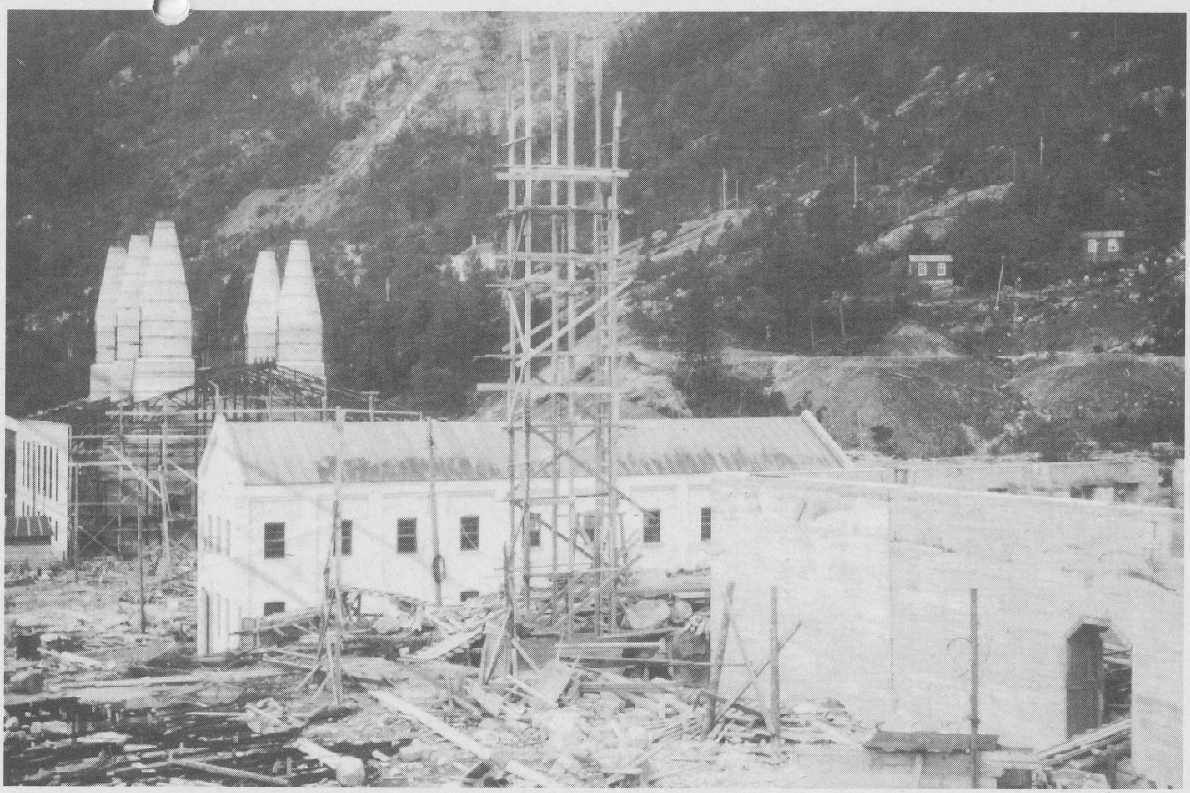
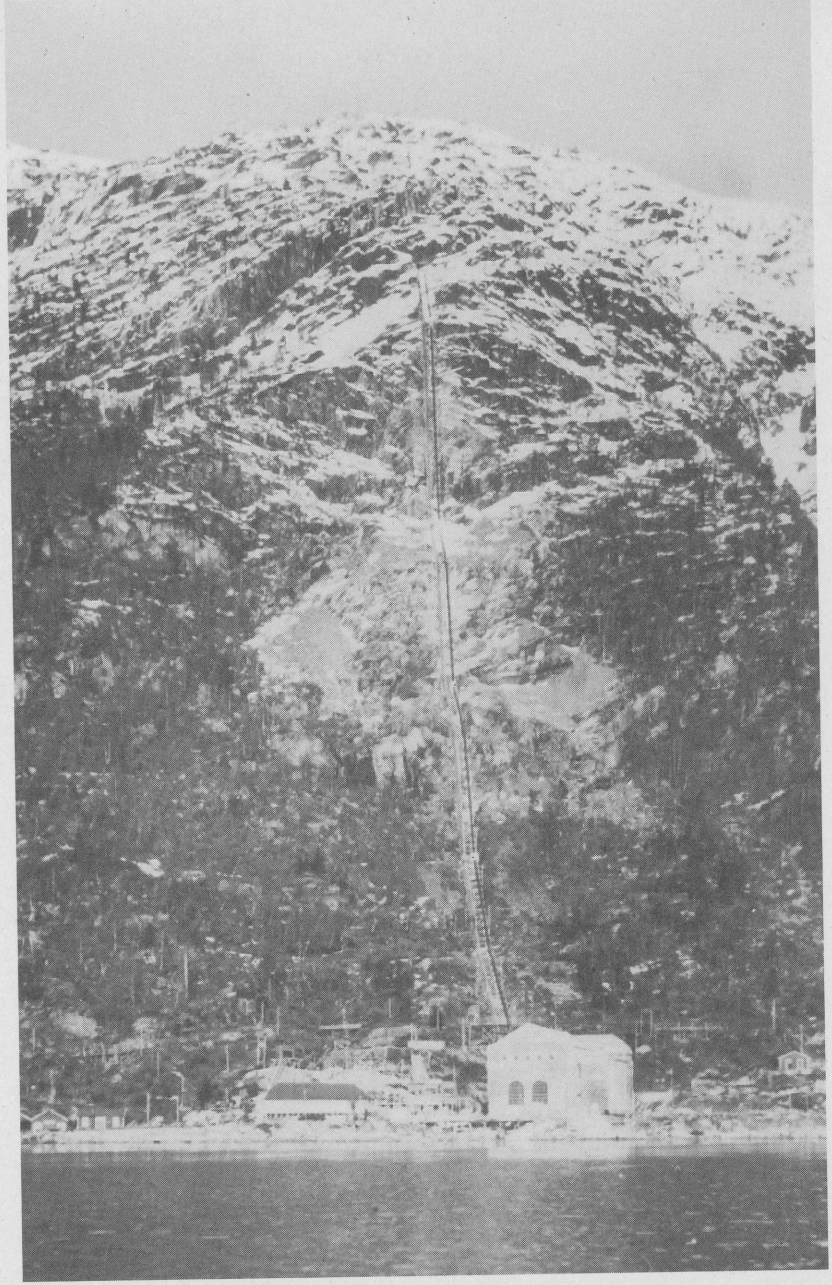
At the turn of the century Ålvik was a typical small farming community beside Hardanger fjord. Situated between the fjord and the high mountains were five medium-sized farms plus a few smaller ones. The agricultural census in 1907 records that there were about 75 acres of cultivated land, 114 acres of uncultivated land, 984 acres of coastal and forest land, 1100 fruit trees, 47 acres of unproductive land and 38 acres of arable land in Indre Ålvik. This fjordside community had 74 inhabitants. Archaeological finds show that the area has been inhabited since the bronze age. The area had no means of communication with the outside world except by boat across the fjord or mountain paths.

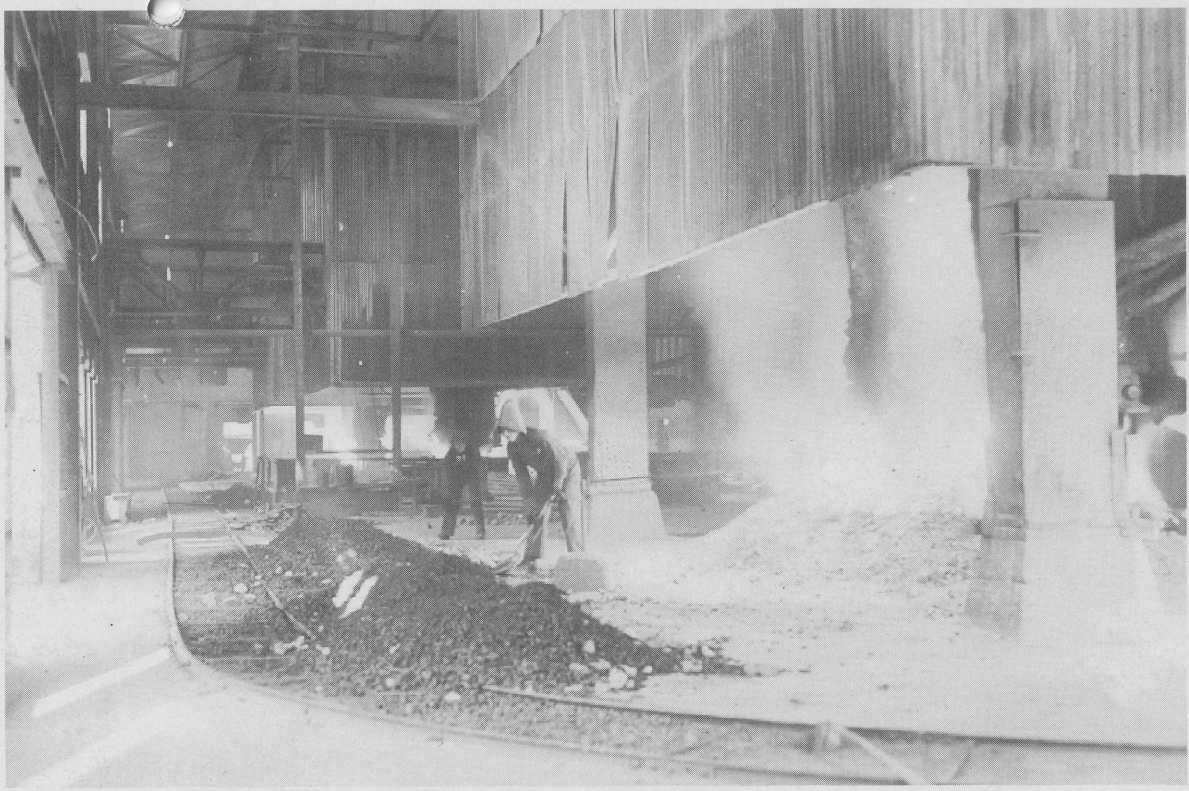
Communications were greatly improved once steamer routes were established in Hardanger fjord. In 1892, most of the farmhouses were burnt to the ground in a big fire resulting in a relatively large number of new houses in the area at the turn of the century. The local farmers were known to be enterprising and far-sighted. One of them, Endre Amundsen Aalvik, even travelled to Scotland to study sheep-breeding. The first horse-drawn reapers and rakes in the Hardanger area were bought by one of the farmers from Ålvik. Then, heavy industry arrived and turned all the old traditions upside down.



With the development of waterfalls for the production of hydro-electricity in the last century, it soon became clear that the waterfall in Ytre Ålvik and the Bjølvefossen watercourse could be used in this way. Development rights for the water were awarded in 1883, and a public limited company formed in 1905. Construction work was started on the mountain, but it did not progress further. However, on August 18th 1915 the Norwegian Parliament started to give licences for the development of waterfalls and construction work really got under way in Ålvik. The power plant with its dam, pipeline and power station were built between 1915 and 1918, and a factory with two furnaces, five lime kilns and other necessary equipment for producing calcium carbide were built beside the fjord. Carbide production started in 1918, and plans were made to further refine the carbide into cyanamide and much of the necessary factory equipment was purchased. However, the end of World War I in 1918 with the resulting depression, a strike at the Ålvik factory and a pipe rupture which put the power plant out of action for a long period, all resulted in carbide production being closed down. When the damage to the power plant had been repaired, an agreement was made to supply energy to Bergen Lysverker. In 1928, ferrosilicon production started up using the existing carbide furnaces.

During the first construction period in 1915 - 1918, three 10.7 MVA generators, a dam with a regulating height of 3 meters, a tunnel up to the top and a pipeline with one pipe running down to the power station were installed. The fall-height was about 870 meters. The plant was completed and ready for production at the end of 1918. After the start of ferrosilicon production in 1928, the building of more furnaces and the start of ferrochrome production in 1934, there was an increasing need for energy. Energy production was increased from 1937 by installing a fourth generator of 22 MVA, by installing a new pipe to the pipeline and a new dam with a regulating height of 18 meters. The major development of the factory area from the mid 1950s onwards also increased the need for energy. The 25 MW transmission line from BKK became operational in 1959. The catchment area was significantly extended after major construction work was carried out on the mountain from 1968 - 1972. A 48 MVA generator was installed to replace the oldest ones. The average annual production is 350 million kW/hr. 2/3 of the plant reverted to the State in accordance with the 1981 licencing law. The licence for the remaining 1/3 runs out in 2006.



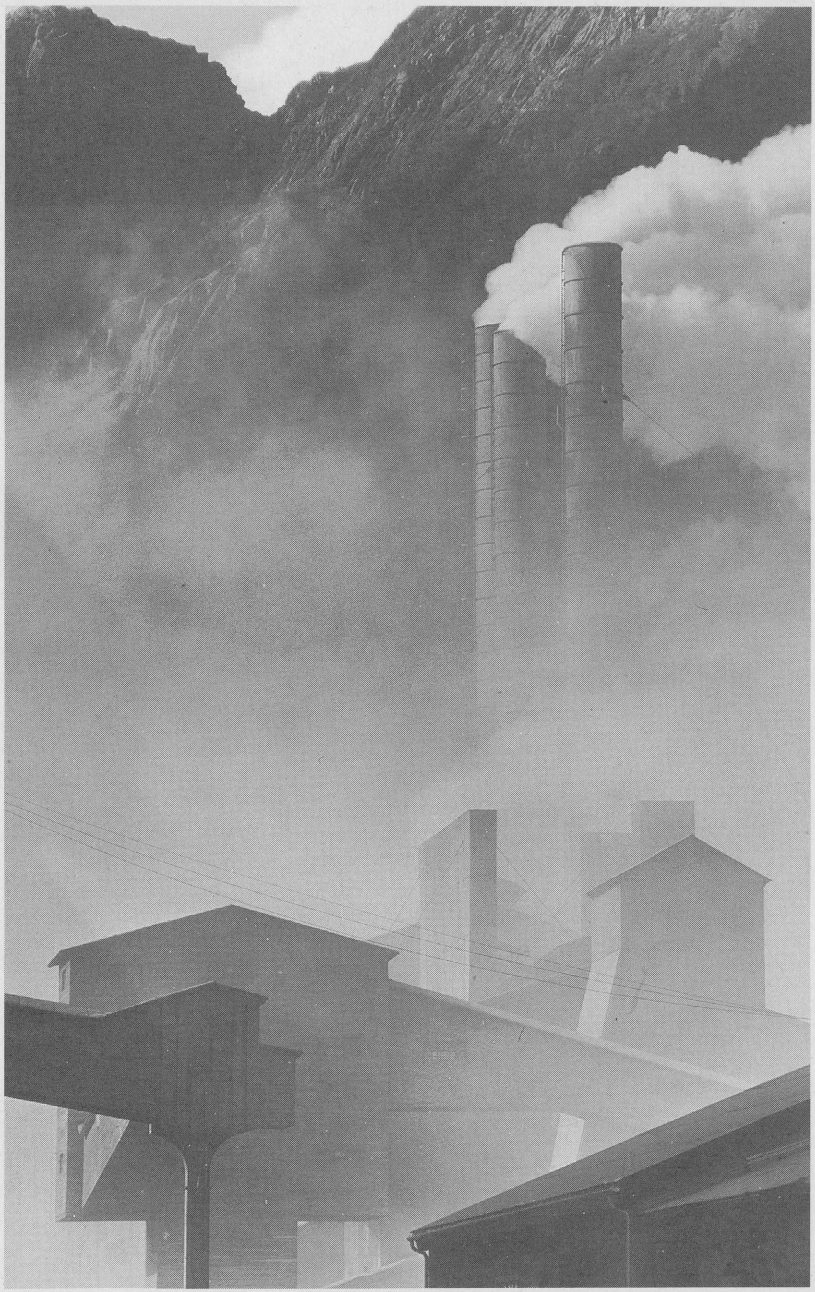


The photograph shows the modified carbide furnaces which were used to produce ferrosilicon in 1928. They were both manually charged and stoked. Three more FeSi furnaces were built in time, more or less the same as these. The two original carbide furnaces were replaced by modern 7500 kW Elkem furnaces at the end of the 1940s, and charging and stoking was automated. After the new ferrochrome plant was completed, a new 15 MW FeSi furnace was commissioned in 1959. FeSi production was finally extended by a new 20 MW furnace in 1964. These were both of Demag design. In recent years, the four FeSi furnaces have been extensively modified and upgraded to incorporate computer technology for furnace operation. Total furnace capacity is currently 59,000 kW producing 59,000 tons of FeSi per annum. For several reasons, ferrochrome production closed down in 1983, but one of the furnaces was modified for refining FeSi products. The plant's product spectrum now consists of FeSi and FeSi-based alloys, the most important of which is FeSi-Magnesium. In addition, the company also has two smaller induction furnaces which are used to produce special alloys.

This aerial photograph shows the factory at the end of the 1940s before the major reconstruction work was carried out. Raw materials were stored on the west side of the furnace halls, mostly in the open air. Once the new furnaces were commissioned, the existing raw materials plant was no longer satisfactory. A whole new raw materials plant with extensions to the harbour area was designed and started in the early 1950s. This plant was built to cover the needs of the planned extension and modernization of the plant. Capacity at the docks was further increased when the harbour was later automated with conveyor belts to transport raw materials to the furnace silos. About 230,000 tons of raw materials are used per annum when the smelting plant is fully operational. These consist mainly of quartz, coal/coke, iron pellets/oxide scale, scrap iron and magnesium, of which quartz accounts for 110,000 tons per annum. When FeSi production first started, the company had its own quartz quarry in Ålvik. After this closed down, quartz was supplied from a quarry in Fykesundet. The company later acquired its own quarry in Kvalvik across the fjord from Ålvik. This quarry has now been closed down because the quartz was not up to standard, and quartz is now purchased from Tana in Finnmark and from Sweden. Coal/coke was traditionally imported to Ålvik from Europe, but now comes all the way from China.

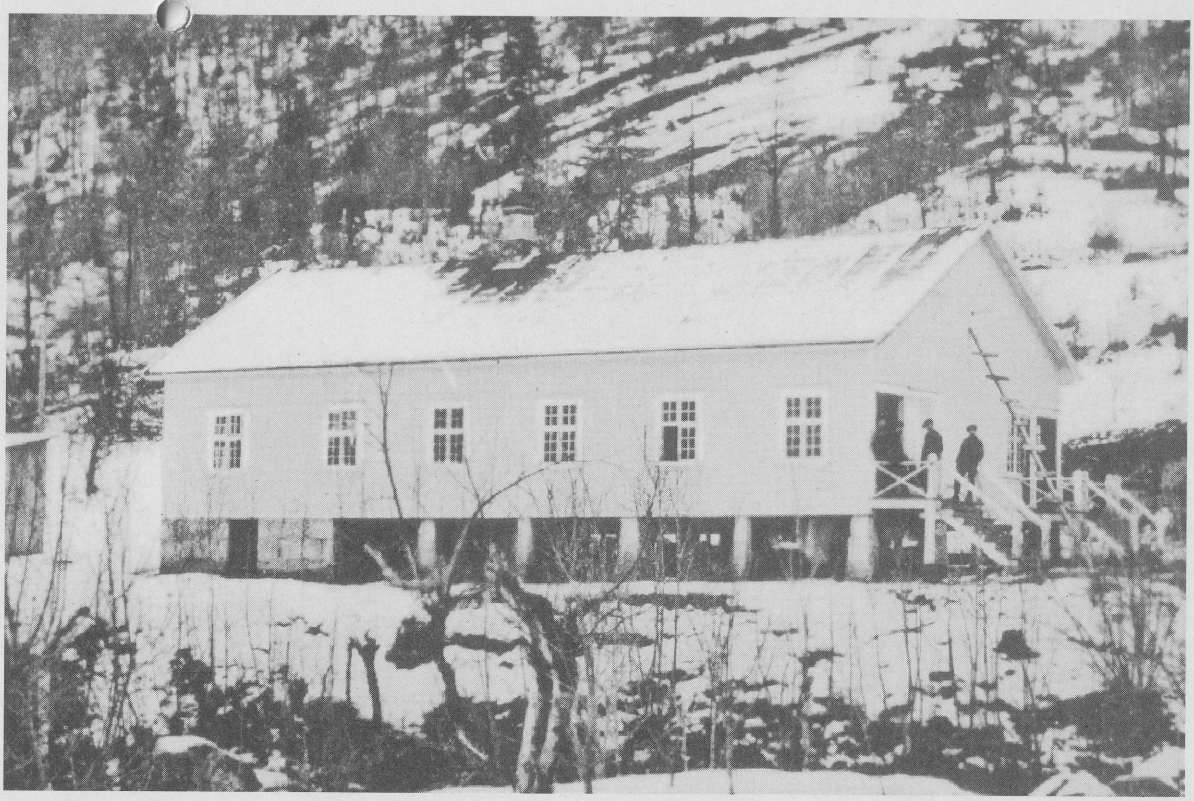
The "barrel truck" in the centre of this photograph of the factory from the mid 1950s, is on its way to the shipping quay with barrels of FeSi. In those days everything that was shipped was packed, usually in wooden barrels like those used for salting herrings. Before fork-lift trucks became generally used for transporting and loading, barrels were a suitable means of packaging as they were easy to roll from the packaging store to the quay and easy to stow on board ship. The company was an important customer for several local barrel factories for many decades. However, wooden barrels are now a thing of the past. Packaging materials today are specially suited to automated handling, where products are often reloaded several times before reaching the customer. Large loads of standard FeSi are usually shipped in bulk. 98% of the products are exported and used as alloys in the production of steel and foundry products such as car parts. Steel plants and foundries in Europe and Japan are among the largest customers, but the Middle Eastern, Far Eastern and eastern European countries are now beginning to extend their industry and this opens up new customer potential. The market today is highly competitive, both on price and volume. A high quality product is a decisive competitive factor, and Bjølvefossen has now been awarded ISO-9001 certification.

This photograph shows, as many will remember, the large amounts of smoke released from the chimneys, which then lay like a blanket over both the factory and the town. In 1975, the authorities introduced the Smoke Control licence for ferroalloys plants which required them to clean their emissions. At the same time, the Directorate of Labour Inspection demanded improved working conditions in the ferroalloys industry. The pollution control technology which was chosen to meet these demands also recovered electrical energy from the hot flue gases. This became extremely important at a time when access to further electrical energy was no longer available. Major reconstruction work and new building was started in 1977. More than NOK 200 million was invested in this work and it presented a great many technological challenges. Today, emissions are well within the limits set by the pollution control authorities, and 35 million kW/hr. of energy is recovered annually. The dust removed from the smoke is sold as Microsilica, which is used as an additive in cement requiring a high standard of quality. These substantial investments have also contributed to a radical improvement in the working environment in the plant.

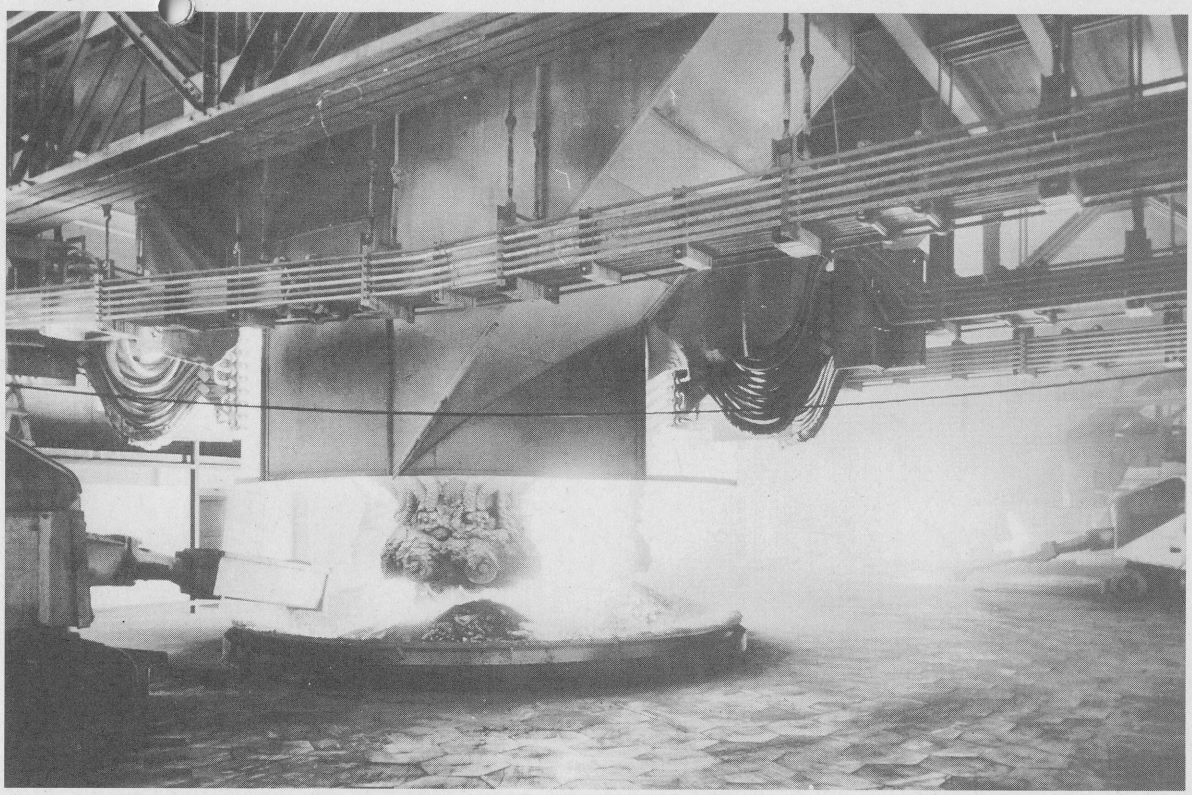


The photograph shows a complete shift - the "Ekås" shift -outside the furnace house. The photograph was taken at the end of the 1930s. Many people came to Ålvik, both from other parts of Norway and from abroad, during the construction period - 1200 at its peak. At the end of this period most of them moved on to other construction sites, but some were given jobs at the smelting plant and settled down in Ålvik. When production closed down, many of them left the area in search of new jobs. Some had become well established in Ålvik and stayed hoping that production at the plant would resume and provide work again. These, together with the local workers, formed the workforce for the following years. The number of employees increased as the plant was extended and it reached a peak of almost 600 in the early 1960s. With the exception of those working in the workshops, they were mainly unskilled workers. The company currently has 250 employees and there is an increasing demand for a high level of expertise. As a result, training has been given priority for several years. This, and a concentration on management development, has given positive results. Increased expertise allows employees to extend their areas of responsibility and take a greater part in the decision-making process.

For several years now, Aalvik Working Man's Association has expressed the wish that one of the typical worker's cottages in "The town" be preserved as a cultural monument. While the plans for "The Town" were being prepared, this idea was put to the county conservation officer and the local council's cultural department and both were in favour of it. The Hardanger Folk Museum was also in favour. When the company sold off houses to the employees, house 511 was given free of charge to Kvam county council with the proviso that it became part of the Kvam County Museum. The formal political resolution has now been passed and the Industrial Workers' Museum, as it is now known, has become a part of the Kvam County Museum, but with its own management and resolutions. The house has been externally renovated using job creation funds, and is now in very good condition according to the experts. The house consists of four small flats. In time, one of these flats will be equipped and furnished as a worker's home from the period 1916 - 1920 and another from the period 1950 -1960. A third flat may be used for exhibitions, such as to exhibit old photographs. The plan is now being processed by the county conservation officer, and the restoration work on the flats will take place in 1994 with the aid of the Hardanger Folk Museum. This also applies to the work with the photographic exhibition.



The photograph shows the canteen put up during the construction period. The building was later added to and is now better known as the Gymnasium. For many years the Gymnasium was a gathering place for local cultural events. Ålvik has always had a high level of cultural activity and a great many societies. Sport, singing and music have, and still do, played a prominent role. The fact that Ålvik had no road communications until 1937 strengthened its sense of unity and community. The proximity of the mountains and fjord has provided good opportunities for both summer and winter outdoor activities. The old workers' houses were small and offered few comforts. Since the war and even still today, building their own modern houses has been of high priority for many people. The communal spirit has helped many home-builders keep their costs low. After employees bought up the houses, many of them have been made both spacious and modern. A decreasing population and the departure of many young people in search of further education and work now characterizes the area, not least in making the societies' work more difficult. Thus, there is a strong commitment to maintain Ålvik's social activities to ensure that it remains a pleasant community to live in. The establishment of the Ålvik Industrial Park and the work to create new business in the area is starting to show results.



The photograph shows one of the two 7,500 kW Elkem furnaces commissioned at the beginning of the 1950s. They have been rebuilt and are still in operation. Elkem, originally Det Norske Aktieselskap for Elektrokemisk industri - Elektrokemisk a/s -, took over A/S Bjølvefossen as early as 1913. The aim of Elektrokemisk a/s was to encourage industrial schemes which could make use of hydro-electric power. This was the reason A/S Bjølvefossen continued as a separate operation. When A/S Bjølvefossen was refinanced around 1930, Elektrokemisk a/s sold its shares. Elkem became an owner once again in the middle of the 1980s and now owns 70% of the company. Today, Bjølvefossen's production and sales are both linked to Elkem. The same applies to a large extent to the purchase of raw materials, where buying in bulk can be cost-effective. Bjølvefossen also works closely with Elkem with regard to research and technology, areas in which the Elkem group has strong traditions. The open exchange of experience between plants is one of several positive results from this close cooperation - something which helps contribute to a raised level of expertise. Personnel development is also an area where Bjølvefossen has benefitted from Elkem.

The photograph shows the factory in winter in 1918. The first phase of the major construction work was completed and production had started. Plans for further development of the plant were ready to be implemented. However, this did not happen. Events quickly put an end to all the dreams and visions. And now, 75 years on, what is the company's future? Its basis and access to electrical energy is the same today as it was in 1918. The new factor is whether enough energy is available at prices which will allow the company to compete in the international market. The world will need ferroalloys in the foreseeable future. If the energy problem can be resolved satisfactorily, then Ålvik has at its disposal a relatively modern smelting plant, and employees with a high level of expertise for producing ferroalloys. The major challenge will lie in Ålvik's ability to change and adapt rapidly to the continually changing and increasing demands set by customers. An exciting challenge with which to face the new century!