

DENMARK

Søren Vadstrup

Stone buildings in Greenland 1830-1915

Greenland before 1830

The rough and not especially green coasts of Greenland have been populated since the stone age, 5000 years ago. But when the outlawed Icelandic farmer Erik the Red went to the south-western part of this nearby island to live there a thousand years ago, he found the country deserted of other people, so he and many other immigrating Icelanders could build their farms and villages where they liked. It was Erik the Red who named the country "Greenland", because, as he said, a pretty name is necessary to tempt other people to go there. Branded marketing is definitely not a new phenomenon.

This happened around 1000 AD, but by about 1450 this so-called Norse population of farmers and fishermen, living in quite big turf and stone-houses, seems to have left the country again, due to an extreme worsening of the climate and perhaps also to a struggle with a new inuit immigration. This partly nomadic hunters' culture was totally adapted to the climate and the other conditions in the country. Their houses, for instance, were built of driftwood, turf and stone, and heated with train oil and by means of the inmates themselves.

In 1721 a Danish-Norwegian attempt was made to find, rescue and re-Christianise these lost ancestors. An official expedition with a clergyman, tradespeople and military personnel went to the west coast of Greenland to mission and set up trade – and also to defend the time-honoured Danish supremacy against the Dutch and Spanish whalers. These sailors exploited the local population – who turned out not to be descendants of the Norse population, but kayak-hunting inuits.

The Danish remedy against the foreign intruders in Greenland was to establish small trade-posts and bases along the west coast. With this end in view, they introduced a Norwegian building technique of loghouses, boarded half timber houses and turf and stone houses. For practical reasons, loghouses and boarded half timber houses were primarily used, because they could be fully prefabricated in Denmark, shipped to Greenland and set up quickly on the spot by the crew, before the ship left again.

The local inuit population continued to build and live in their cheap, practical and comfortable turf and stone houses, but the Danish settlers regarded these houses as damp, dirty, and unhealthy. They refused to live in them. But for storehouses, fish oil plants, staples and workshops, the stone materials were regarded as a cheap and suitable material. However, it was only relatively late, after a hundred years of presence in the country, that the Danish settlers and their Greenlandic descendants learned to build "real" stone houses. And they learned it both from the Norsemen, who had disappeared long ago, and from the still existing local inuit building tradition.

So in a period of 85 years between 1830 and 1915, when Greenland was suffering an economic crisis because of the disappearance of the big whales and their profitable oil extraction from the coasts, about 130 stone houses, small and large, were erected in various locations along the coasts. But after this short

period, this building tradition, which would seem natural in a country "paved" with rocks and stones, died out again with a few exceptions.

The background for the expansion in 1830

The majority of the Danish settlements on the west coast of Greenland, still existing as the main towns in the country, were established during the years 1728-1775. The purpose was partly to Christianise the population, partly to sell and buy products. From 1775 to 1800 the Danish State concentrated a lot of efforts and economy on whaling, particularly in the North Greenland Inspectorate. Train oil was a major economic factor at that time, as it was used for house heating, street lights in the big European towns, for medicine, soap, lubricants etc. etc., so this business was expected to be very profitable. Despite enormous investments with 12 new settlements, with expensive log-houses, vessels, and posted whalers, it was a complete fiasco. In some places they only caught one single whale during these 25 years.

But what the Royal Greenland Trade and Whale Company did realize was that it was much easier and cheaper to *buy* the highly coveted blubber of seals, which the inuits were hunting and landing anyway, and utilise this for train oil by heating and pressing the blubber in local "oil-plants".

This, however, necessitated that the houses and settlements were moved from the isolated whaling stations to new trading stations, placed where most of the population lived. This could be done relatively easily in North Greenland, where the whalers' houses were loghouses, constructed of wood, but in Southern Greenland they had to think of something else, as there were no unused wooden houses, and no money. After the whaling failure, the coffers were empty.

Stone buildings in South Greenland from 1830-1915

In 1830 the Royal Greenland Trading Company decided to establish three new trade-posts in three different places in South Greenland, where the population was especially dense: Nanortalik (moved from a previous place), Sydprøven (the South Trial; today: Alluisup Paa) and Nordprøven (The North Trial; today: Narssaq).

The small new settlements needed a dwelling house for the posted "tradesman", a store house, a shop, and a small house for the bought blubber, sometimes also a bakery, a house for "burning" and "pressing" blubber to oil and a house for possible wintering crews.

At the beginning it was regarded as necessary to ship prefabricated wooden dwelling houses from Denmark as usual. This was done to Nanortalik and the South Trial, but presently it was clear that it was possible to build suitable houses, entirely made of local stone. A contributory factor to this was also that the



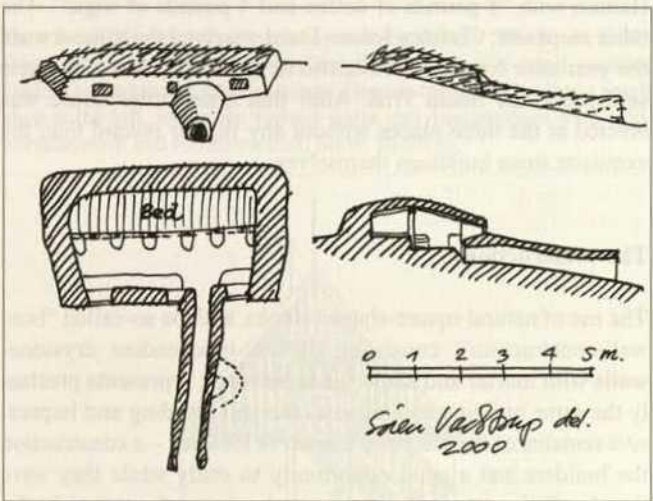
◁ It would be natural to find a lot of stone houses in a country like Greenland, paved with rocks and stones, but that is not the case. Only from a relatively short period, from 1830 to 1915, it is possible to find stone houses constructed of local, natural stones.

Drawing of four of the seven stone buildings in Nanortalik in South Greenland with the delayed, prefabricated wooden dwelling house from 1832 in the background. From the left the bakery from 1840, the winter house for the ship crews, built in 1848, a goat stable from 1840 and the cooper's shop, built in 1848. Before the ships were equipped with marine engines, and also later, it often happened that they could not return to Denmark in the autumn/winter because of drifting icebergs. For this purpose special houses for the crews to stay in during the winter were built. The only way of transporting the valuable seal blubber or train oil was in wooden barrels. Therefore every larger trade post had a cooper and a cooper's shop to make these indispensable wooden barrels. Drawing: Søren Vadstrup.

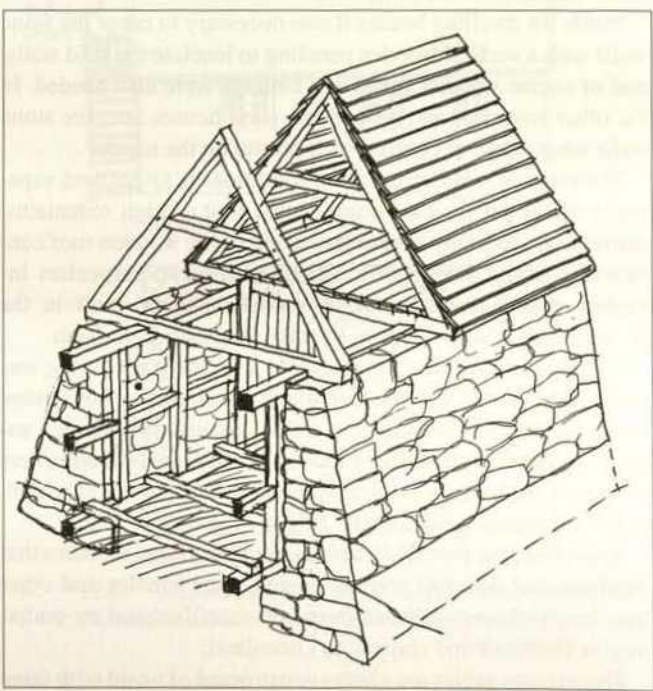
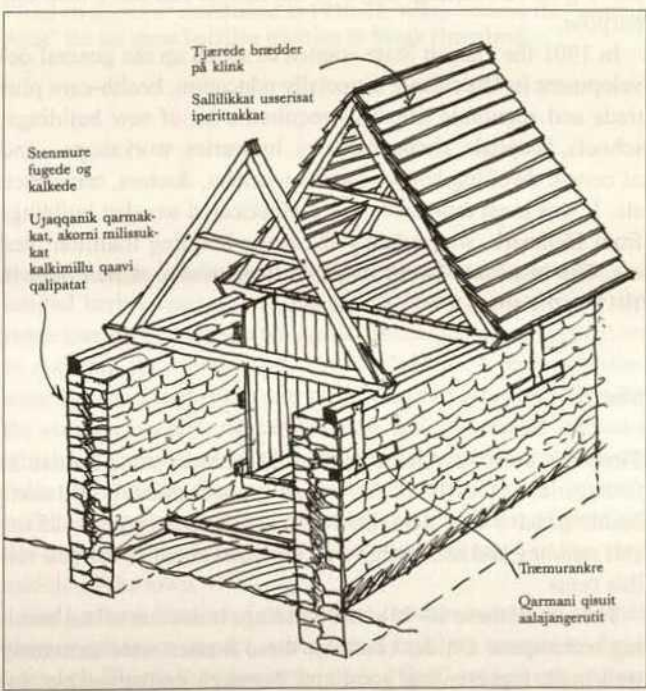
Because of its enormous size compared with Denmark, Greenland was from the beginning divided into two parts, with two separate administrations: The Northern Inspectorate and the Southern Inspectorate. It is interesting that the construction techniques of the locally built stone houses, erected from 1830 to 1915 in the northern and the southern parts of the country, are entirely different, with hardly any parallels.

a. In the South Greenland stone houses from the period between 1830 to 1925 the roof is carried by 60 cm-thick stone walls. The roof construction is secured to the stone walls by two dovetail-locked wooden anchors, fastened to the lengthwise head beam, under the rafters. In this construction, there are many parallels to the medieval Norse stone house, which can be studied from many ruins in South Greenland.

b. In the North Greenland stone houses from the period between 1830 to 1915 the roof is carried entirely by an interior wood construction with hardly any connection to the massive stone walls. In this construction, there are many parallels to the traditional inuit turf and stone house, which in 1830 was still used and inhabited by the local inuit population. Like in these, there is no carrying capacity on the outer walls. Drawings: Søren Vadstrup.



Traditional inuit turf house, here constructed with load-bearing ceiling-posts and purlines. Other types have a wooden construction inside along the turf walls, which has given inspiration to the construction of the North Greenland stone buildings. After measurements from 1828/29 by W.A. Graah.



Company chose to use native-born Greenlanders as local "tradesmen".

We know in detail how the decision to build the first stone houses was reached. On the one hand the fact that the wooden houses for the three new settlements were delayed for two years, and on the other hand that the big grass plain at the North Trial (Narssaq) had been used as settlements for the Norse farmers in the Middle Ages and was therefore full of ruins from their big stone houses, "with lots of good building stones" as the carpenters Hans Jacob Hansen and Christen Jensen Lund afterwards recounted, was decisive for the construction of the first stone house. Work was much easier than expected, so the house could therefore be finished and inhabited in the same year.

The Chief Inspector for the South-Greenland Inspectorate, who visited the house in 1831, was so pleased with the result that without hesitation he rewarded the master carpenter Hans Jacob Hansen with "8 pounds of coffee and 4 pounds of sugar". The other carpenter, Christen Jensen Lund, received the same reward the year after for constructing two new stone houses at the new settlement, the South Trial. After that house after house was erected at the three places without any further reward than the exquisite stone buildings themselves.

The construction

The use of natural square-shaped stones, and the so-called "box-wall-construction", consisting of two independent drystone-walls with mortar and stone fill-in between, represents precisely the same building technique as the still standing and impressive remains of the medieval church of Hvalsey – a construction the builders had a good opportunity to study while they were "stealing" the stones from the nearby ruins. So not only the Norse settlers' building technique, but also many of their stones were reused.

Probably as a "new" thing in 1830, they chose to cover the stonewalls with lime plaster and afterwards lime-wash the surface in white, yellow or red colors. No attempt was made to smooth down the surface; it was left to expose the uneven and rustic character of the stonewalls.

Inside the dwelling houses it was necessary to cover the stone walls with a vertical wooden paneling to insulate the cold walls, and of course wooden floors and ceilings were also needed. In the other stone houses, workshops, store houses etc., the stone walls were rough or covered with plaster on the inside.

The extreme weather and wind conditions in Greenland, especially on the unprotected coasts at the foot of high mountains, demand an especially secure anchoring of the wooden roof construction to the stone walls. Therefore the two carpenters invented special dovetail-locked wooden anchors, built in the stone masonry, which proved to solve this special problem.

That this constructive precaution is absolutely necessary, was shown as late as in 1978 in Nanortalik, when the roof of a stone house from 1839 blew off in a storm, because the wooden anchors had been unthinkingly attached to the gables and rafters and not to the lengthwise head beam under the rafters, therefore only securing the gable itself.

Apart from the first stone houses, we know from accounts that windows and doors as well as hinges, door handles and other iron furniture were ordered from and manufactured by craftsmen in Denmark and shipped to Greenland.

The triangle gables are always constructed of wood with three

different facings: clapboards, boards with beadings and one-on-two planking. Again the surface is painted in strong colors. An outside staircase at the gable leads to a room in the loft – often a shop or a store room.

Today the roofs of the stone houses are covered with shingles, but were previously boarded with clinker-boards and treated with wooden tar.

The development

From 1830 to 1850 the stone building tradition was limited to the southern part of South Greenland, more precisely to the Julianes-Haab District, where no fewer than nine new trade posts were established, all supplied with two or more new stone houses. At the same time in the main town of the District, Julianehaab, three new stone houses and in the three first Trial settlements from 1830 about nine new stone houses were built, thus altogether 30 stone houses during these first 20 years.

After 1850 the stone building traditions spread north to the rest of the South-Greenland Inspectorate, especially to the main towns of Frederikshaab (Pamiut), Godthaab (Nuuk – now the capital of Greenland), Sukkertoppen (Maniitsoq) and Holsteinsborg (Sisimiut).

The most productive period was between 1850 and 1870 when 37 stone buildings were erected in South Greenland. Among these are 9 store houses, 6 dwelling houses, 6 shops, 5 train oil plants, 2 workshops, 4 schools, 4 small chapels, 1 church and 1 hospital.

Especially in the Sukkertoppen District the stone houses became a characteristic feature, with their bright, luminous white, yellow or red lime colors – both the publicly built houses, of which there were 20 in all, as well as a lot of the privately built stone houses.

Among the total amount of about 100 stone houses in South Greenland there were 23 store houses, mostly for seal train, 12 workshops, 12 dwelling houses, 4 houses for ship crews in the winter, 13 shops, 5 train oil plants, 4 houses for storing gunpowder, 5 schools, 15 small chapels, 1 larger church, 5 hospitals and 1 archive building. Some of the houses had more than one purpose.

In 1901 the Danish State wanted to speed up the general development in Greenland, especially education, health-care plus trade and economic life. This required a lot of new buildings: schools, hospitals, shops, bakeries, breweries, workshops – and of course dwelling houses for the teachers, doctors, tradesmen etc. It was most rational to use prefabricated wooden buildings from Denmark, so gradually the stone building tradition died out. The last stone house in this manner was a church built in 1915 in the small town of Atammik.

Status

Time has been very hard on the old historic stone houses in Greenland. At least 60 of the originally approximately 100 stone buildings have been demolished during the last 50 years. 25 are still standing and reasonably well kept, and about 15 are still visible ruins.

The loss of these 60-75 stone buildings is not due to bad building techniques. On the contrary, these houses were extremely well built, representing good and thorough craftsmanship. In-



Map of Greenland, showing the Julianehaab District with the three "Trial-trade-posts" established in 1830-32, which became the "starting point" for the stone building tradition in South Greenland.

stead the huge development pressure in the town centers and the limited harbor spaces have led to the destruction of many old stone houses, as they are too small, inconvenient and expensive to maintain for modern use. Very few decision-makers understand the special qualities and significance of these buildings for the cultural history and architectural environment of the town which has been entrusted to their care. Especially the main town Julianehaab, today Qaqortoq, has lost 17 of the original 24 stone buildings, among them one of the biggest and finest of them all, the impressive and forceful "White Store House" in the very middle of the town.

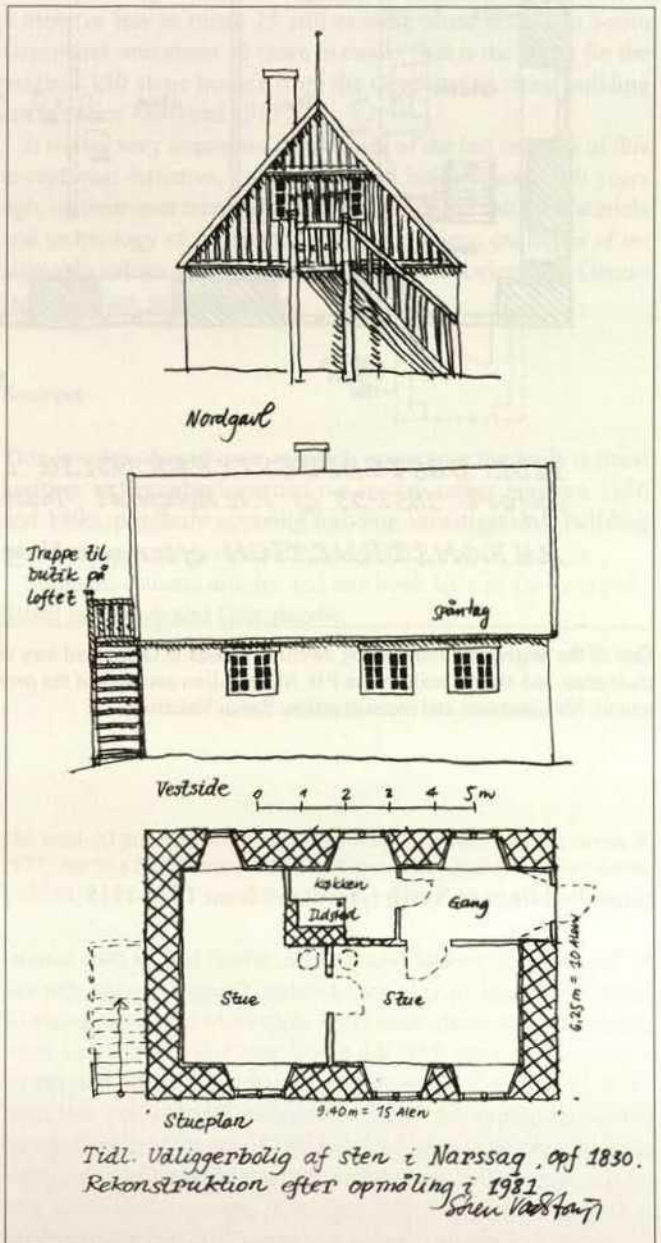
Only where modern development for one reason or another has not made an impact, some intact building ensembles have been left. This is the case in the three "first" settlements, where

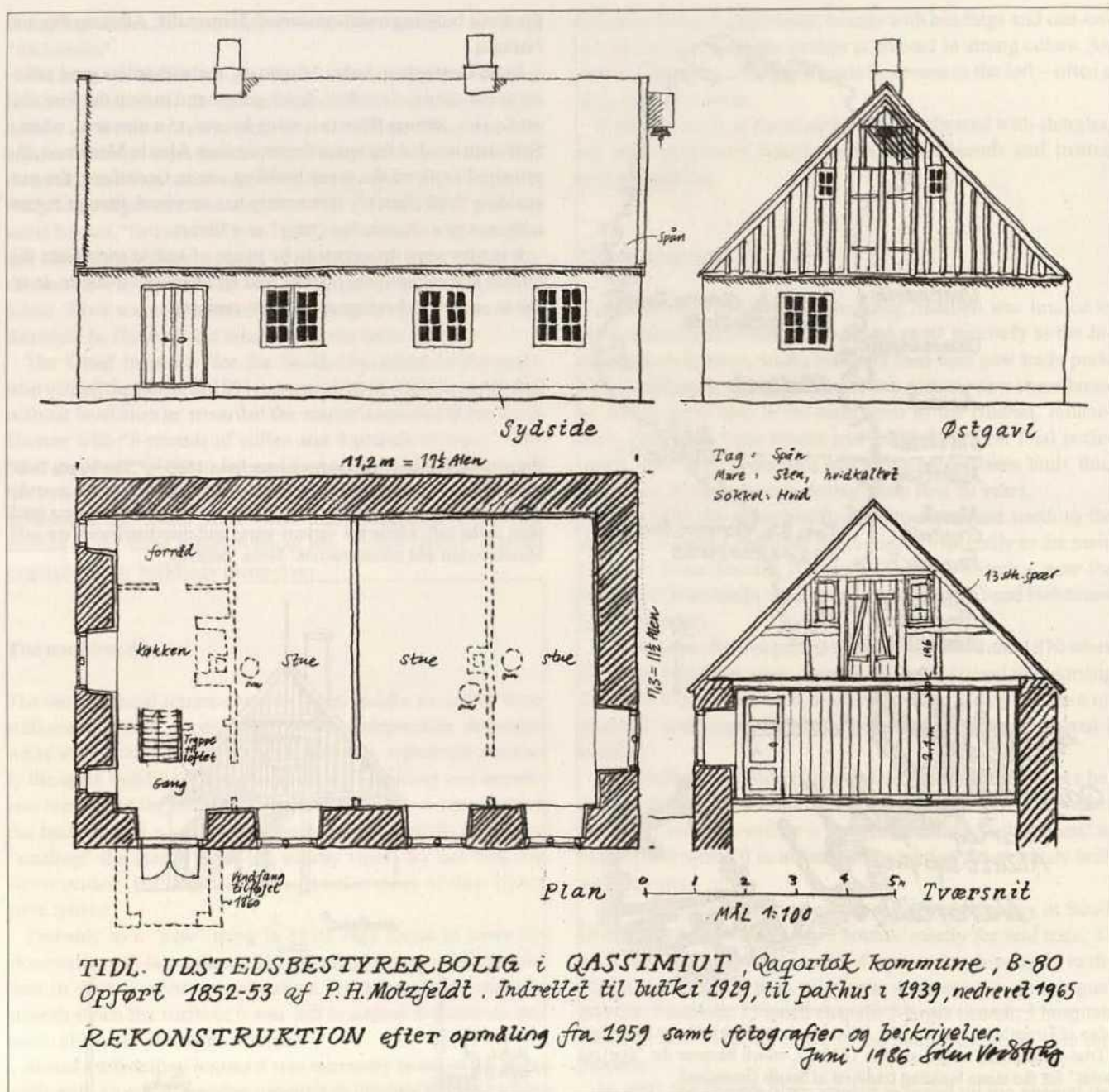
the stone building tradition started: Nanortalik, Alluisup Paa and Narssaq.

In Sukkertoppen, today Maniitsoq, the authorities gave priority to the needs of modern development and moved the four oldest houses, among them two stone houses, to a new area, when a fish plant needed the space for expansion. Also in Maniitsoq, the principal work of the stone building era in Greenland, the outstanding "old church", fortunately has survived, though regrettably not as a church, but "only" as a library.

It is now very important to be aware of and to appreciate this unique and exceptional historic and architectural treasure, in order to secure and safeguard the last remains.

Hans Jacob Hansen's first stone house from 1830 in "The North Trial" (Now: Narssaq). Inside the dwelling house there is a small corridor leading to the kitchen and two rooms. Outside the ladder leads to a small shop at the loft, where the various wares and merchandises were sold. Measurement and reconstruction: Søren Vadstrup.





One of the largest and finest stone dwelling houses in Greenland torn down in 1974 was the tradesman's house in Qassimiut, built in 1852-53. The tradesman and master builder was P.H. Motzfeldt, an ancestor of the present prime minister of Greenland, Jonathan Motzfeldt, who was born in Qassimiut. Measurement and reconstruction: Søren Vadstrup.

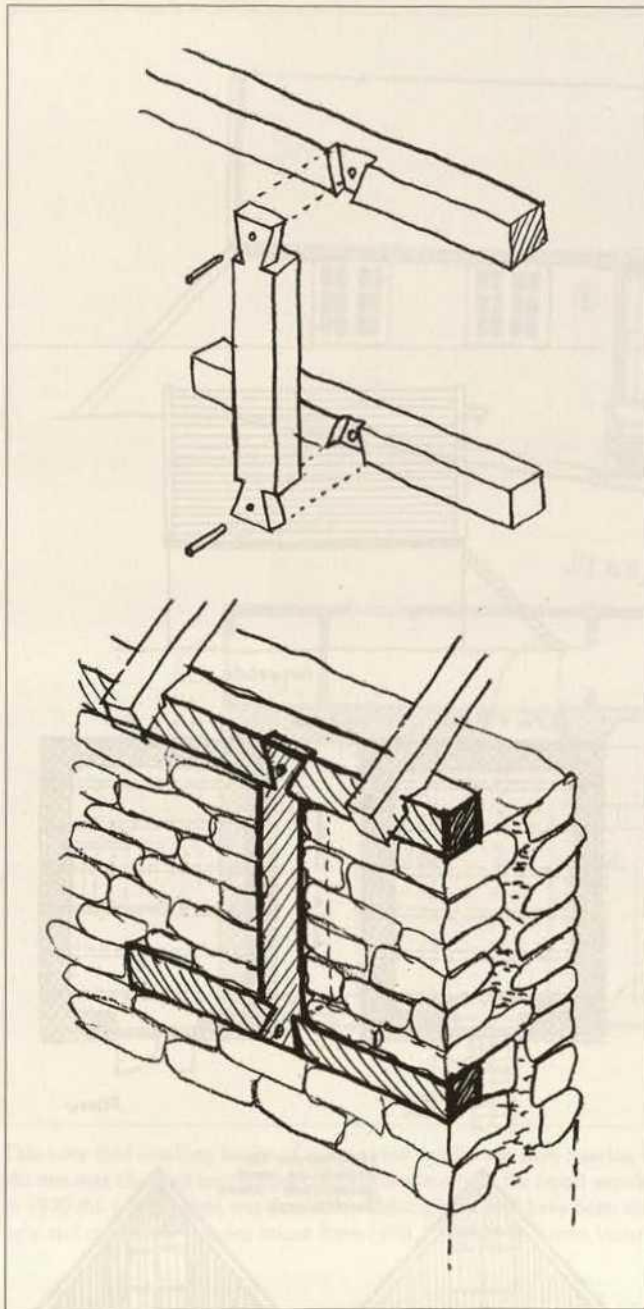
Stone buildings in North Greenland from 1830-1915

In the North Greenland Inspectorate, which had its own administration situated in Godhavn (Today: Qeqertarsuaq), the expansion of new small trade posts after 1830 led to the re-use of the wooden houses from the abandoned whaling stations from 1775-1800. But here also creative craftsmen built a number of new stone houses for shops, workshops, store houses and train oil plants. As there were no medieval Norse ruins to be inspired by, they copied the construction of the traditional inuit houses.

As mentioned above, the traditional inuit dwelling house was constructed of driftwood, turf and stone. The turf material can-

not be load-bearing, as it will constantly shrink and sink, so the nearly flat roof of laths, covered with turf and made weather-proof with seal-skins, is carried by a rather flimsy interior construction of driftwood. Here there were various types, either with the carrying capacity in the middle with ceiling posts and purlines as a wood-construction inside along the turf walls.

A special detail is the low entrance without a door, but with a kind of open "cold-lock". The roof also had a ventilation hole which could be opened when draught air was needed. Turf houses were quite dark. Apart from small holes, closed with a thin membrane of intestine which could give some light, no glass-windows were used before about 1890.



Special dovetail-locked wooden anchors, securing the lengthwise head beam under the rafters to the stone walls, and thus preventing the wooden roof construction from blowing off in the very windy climate. Drawing: Søren Vadstrup.

Because of the slight dimensions and the humid conditions, and probably also due to a lack of interest, none of these traditional turf houses have survived in Greenland until today. Some of the local museums have made new copies, but with modern materials, just to show what they looked like.

The construction of the North Greenlandic stone house

Only about 10 still existing stone houses, out of the originally 15 erected in North Greenland from 1830-1915, show authentic evidence of this old construction, made by local builders. But in-

stead of turf and stone, the walls here are constructed entirely of solid stone, and even with the same slanting walls as if they were made of turf. Despite the fact that the stone walls can easily carry any roof-weight without sinking one inch, the roof is still carried by an interior construction of wood, just like some of the traditional Greenlandic turf-houses.

The roofs of the stone houses are of course not flat but 40-45 degrees, in many cases covered with gray slate, which, in connection with the often "uncovered" rustic stone walls, creates a very solid and impressive "all stone look". The few windows are placed very deeply in the walls and are therefore dark looking, which also gives these houses a specially rough and unapproachable architectural expression.

In North Greenland the stone houses are mostly used as store houses for train, or train oil plants, workshops or shops.

The sizes can be quite big. The largest stone house in Greenland, a train-oil plant situated in Umanaq, is 14 x 30,5 metres.

General status

10 still existing stone buildings in North Greenland, plus about 5 more or less in ruins, 25 still existing stone houses in South Greenland, and about 15 more in ruins: That is the status for the original 130 stone houses from the Greenlandic stone building era between 1830 and 1915.

It is now very important to take care of the last remains of this exceptional initiative, created by local builders over 100 years ago, on their own terms and with the use of the natural materials and technology of the country. They are unique examples of inalienable values and bearers of identity in a society like Greenland – in fact, in any society.

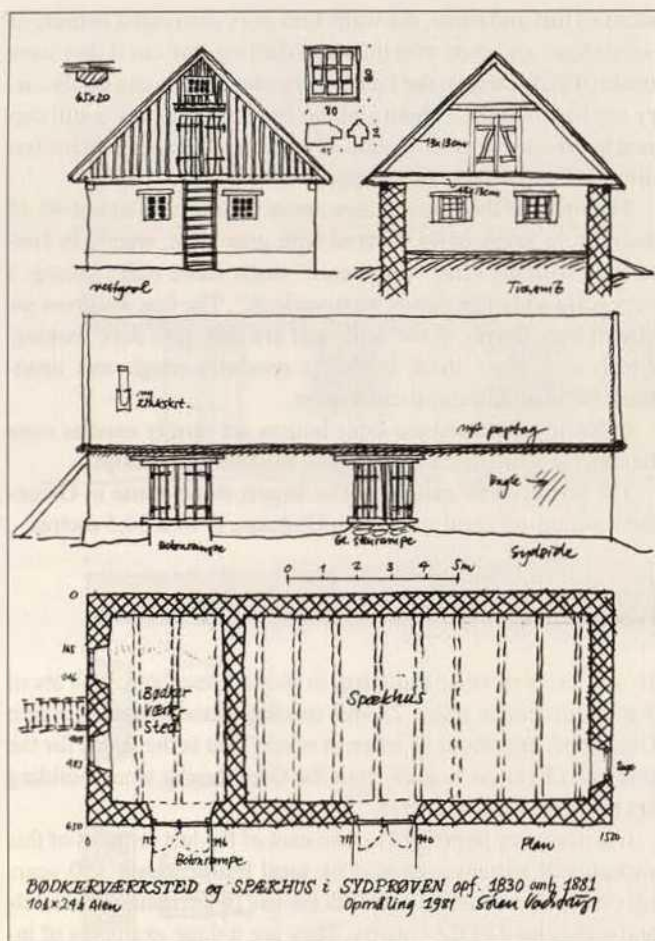
Sources

This article is based on a research project on the built cultural heritage in Greenland, carried out by the author between 1976 and 1996, primarily covering building investigations, building measurements, archive material and other written sources.

Some provisional articles and one book have so far been published in Danish and Greenlandic.

The train-oil plant in Nanortalik, where the roof blew off in a storm in 1978, due to a faulty construction of the wooden anchors. Photo: Søren Vadstrup.

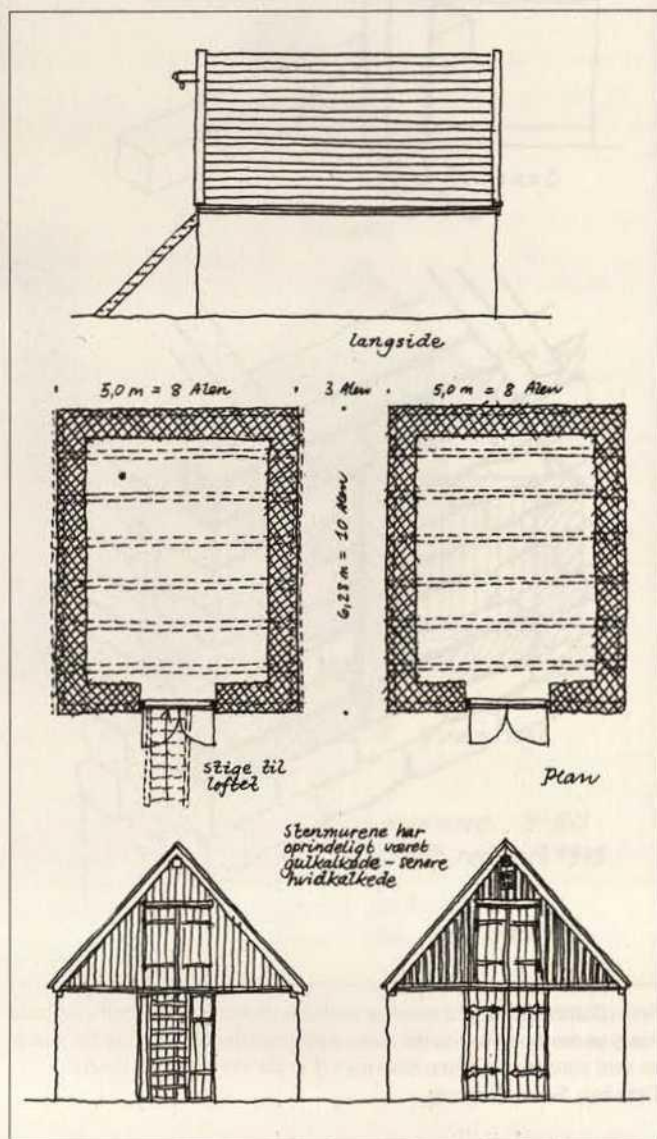




The first stone house in Alluitsup Paa ("The South Trial") was this train house from 1830, enlarged in 1881 with a small coopers' shop. The house still exists, but the coopers' shop was closed down long ago. Measurement: Søren Vadstrup.

Illustration 10

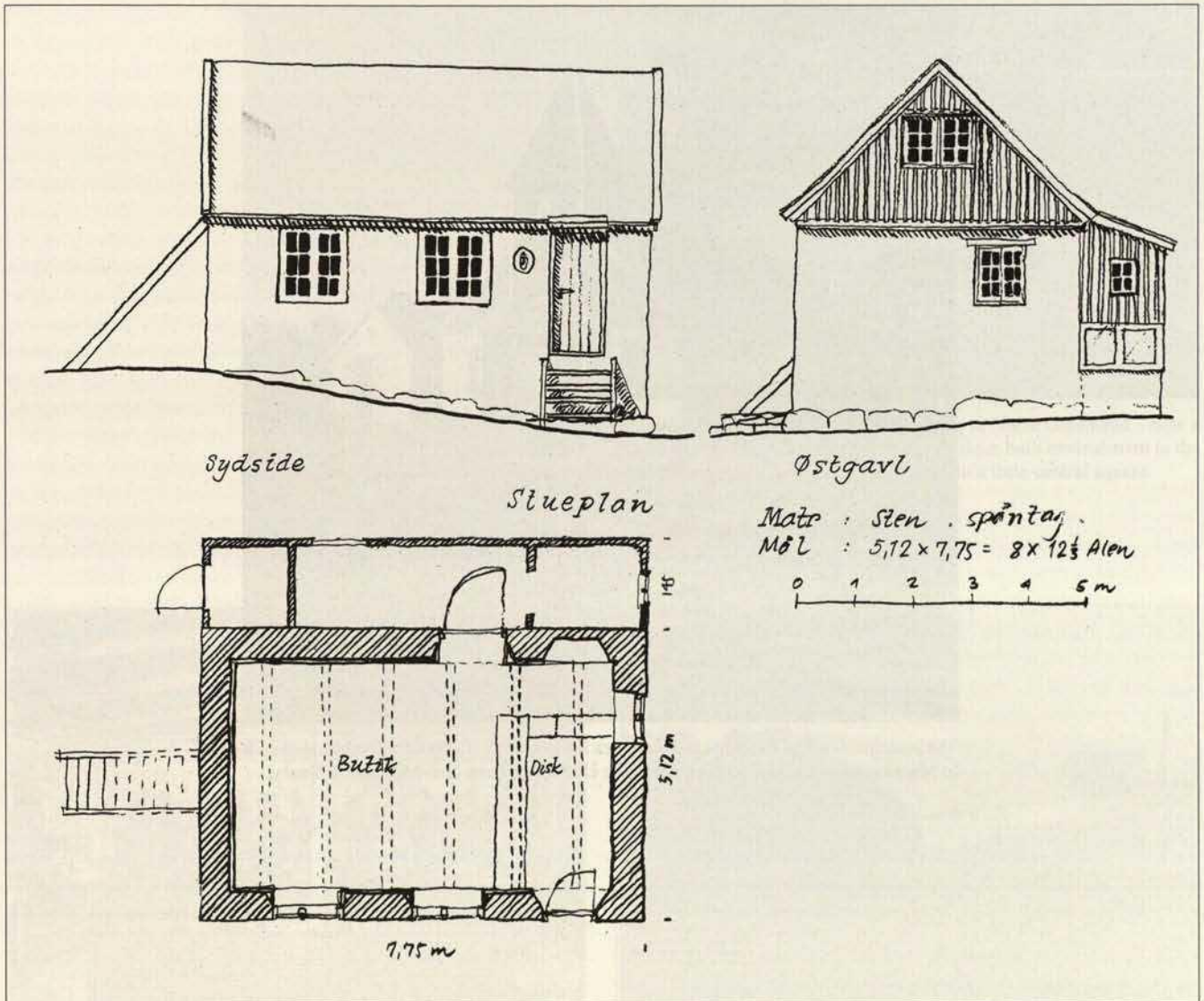
The old smithy in Qaqortoq (Julianaabaab), built in 1871, enlarged in 1940 and used today as the local museum. Photo: Søren Vadstrup.



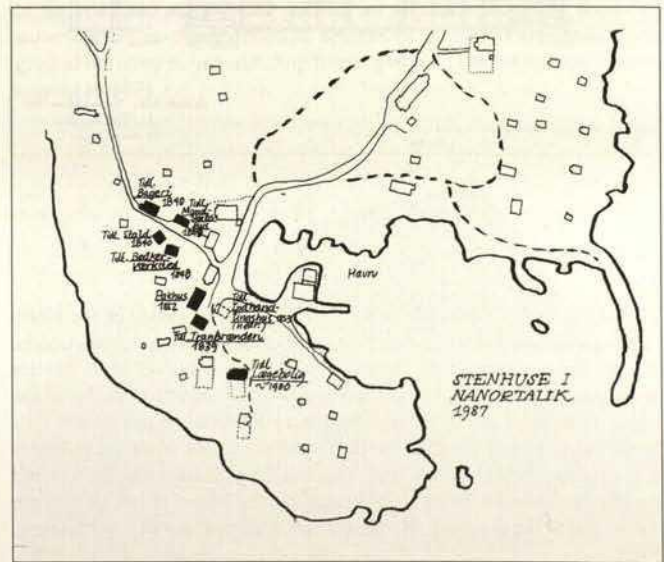
Reconstruction of the original appearance of the two twin stone houses in Atammik, built within seven years and app. 2 meters distance in 1890 and 1897.

The oldest, to the left, was originally the train house with a small shop in the loft.

The younger, to the right, was a store house for the Danish goods to be sold in the shop. It was quite common to keep the wares to be bought and sold in two different store houses, to prevent mixing. In the 1920s the two stone houses were joined together.



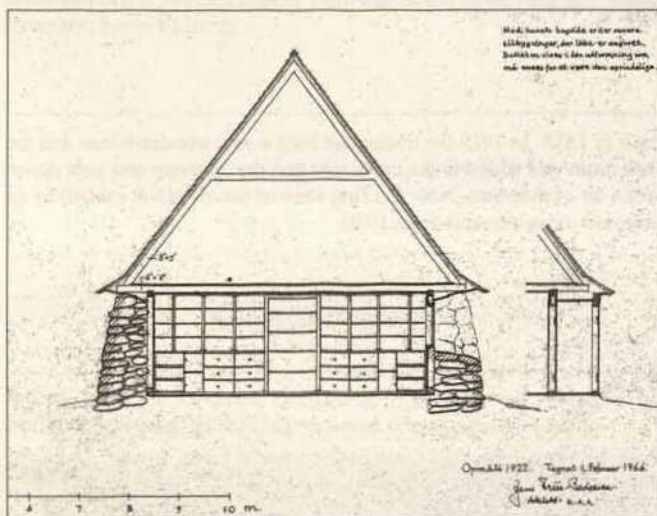
This very fine dwelling house of stone at the small trade post Saarloq was built in 1853. In 1928 the tradesman built a new wooden house and the old one was changed into a shop, and at the same time the small wooden stock room was added to the north side and the chimney was torn down. In 1970 the whole house was torn down although it could have been reused for a lot of purposes. Now, the first view of the village is spoiled by an ugly and charmless wooden house from 1970. Drawing by Søren Vadstrup after old measurements from 1970.



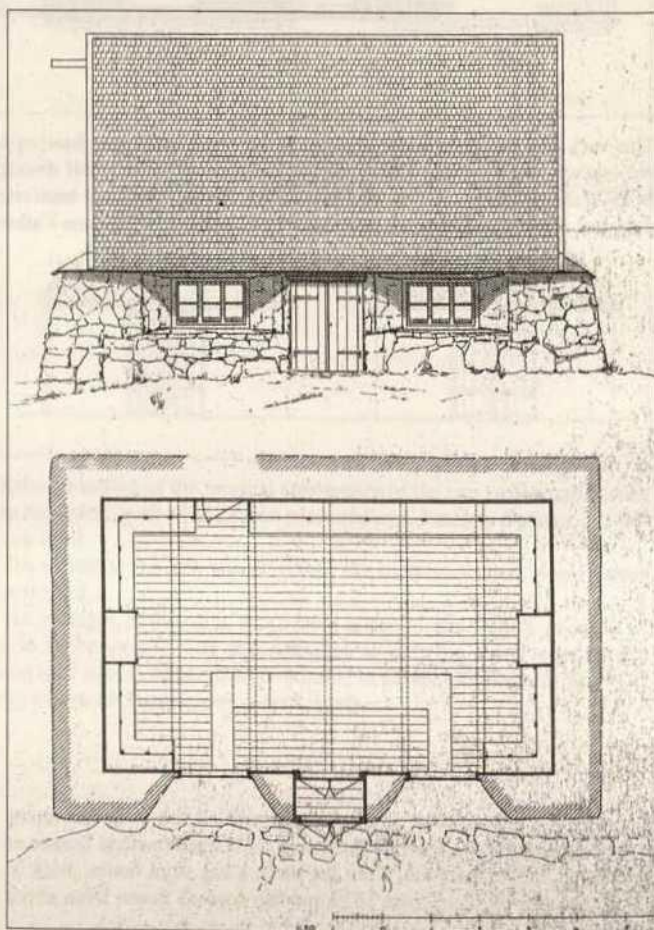
Map of "The old harbour" in Nanortalik with all the seven surviving stone houses in black. Apart from the four most western stone houses as mentioned above, there are, from the west, a big store house, built in 1852, the train oil plant from 1839 and the doctor's house from about 1900.



The principal work of the stone building area in Greenland is undoubtedly the big church in Maniitsoq (formerly Sukkertoppen). The church has been converted into a library.

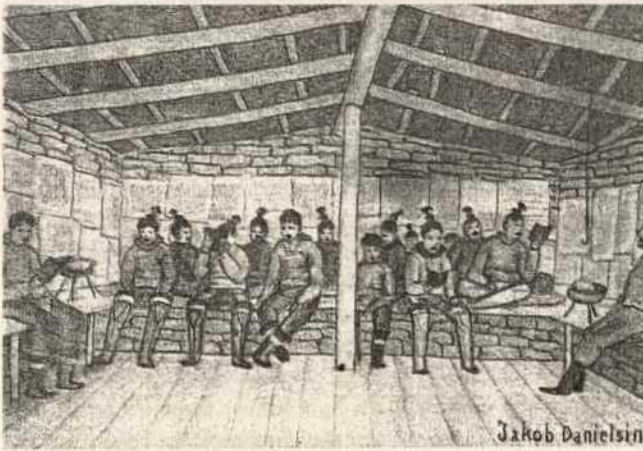


The old shop in Upernavik, erected in 1864. An example of the North Greenlandic stone building tradition, where the bearing construction, despite the extremely solid outer walls of stone, consists of an interior wood construction. The loft is used as a store room, although due to the rather large span of the beams there were limits as to the weight they could carry. Inside the shop the few windows create quite a dark atmosphere, so kerosene lamps are necessary all day. The typical shelves and drawer furniture are fortunately still kept in the house, although they are out of use at the moment. Measurement: Architect Jens Friis-Pedersen, 1928.





This old stone train house in Uummannaq in North Greenland – now a store house – is an important part of the unique built environment in the city center as it forms one of the “walls” in a little central square.



Cross-section showing the interior of a traditional Inuit turf house, drawn by the Greenlandic painter Jacob Danielsen (1888-1938) in 1900. This house, he writes, was old-fashioned without any wood inside, but large, good skins hung on the walls as hangings and there were thick reindeer skins on the settle so that the house was comfortable. The blubber lamp could easily and quickly warm it up.



The former train oil plant and train house in Uummannaq is, with its 14 x 30,5 metres, the largest stone house in North Greenland.

Some of the old Greenlandic stone houses are situated in abandoned settlements, where they suffer from oblivion and neglect. Big holes in the roof and stone walls portend an approaching death. Here two stone houses in the abandoned settlement of Narssalik, in the foreground the store house and shop from 1895, and behind the train house, erected in 1871.

