

Winter Houses of the Mackenzie Inuit

Figure 1. "The Siglit," as drawn by Emile Petitot. (Emile Petitot, *The Amerindians of the Canadian Northwest in the 19th Century, as seen by Emile Petitot*. Volume 1: *The Tchiglit Eskimos*, Donat Savoie, ed. [Mackenzie Delta Research Project 9, 1970])



For more than 4,000 years the Inuit and their ancestors have flourished throughout the broad reaches of the arctic landscape. One reason for their success has been their ability to devise forms of shelter well-suited to their lifestyle and to an environment which can be relatively benign in summer but harsh in winter. Traditionally, the more nomadic groups of Inuit favoured the use of transportable tents for summer dwellings, and for winter the use of the dome-shaped *iglu*, which can be constructed quickly from the most abundant natural material in the cold season, snow.¹ Yet in many parts of the Arctic the Inuit seldom used the snow *iglu*, building instead more substantial winter houses out of other materials.

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Figure 2. Excavated house remains at Gupuk.



Residence in permanent or semi-permanent winter villages in the Arctic has its roots in technological developments which appeared in the Bering Strait region more than 2,000 years ago. The practice spread farther north and then eastward into the Canadian Arctic within the last millennia. Houses were framed using driftwood, whalebone, or stone, depending on available materials. Despite this variation in materials, there were overall similarities in features which clearly related to the conservation of heat. All these dwellings were entered through tunnels dug below the floor level to prevent the lighter warm air inside the dwelling from escaping. Within the house, heat was generated either by an open fire or by a lamp, or *kudlik*, of pottery or stone in which sea mammal oil was burned. The *kudlik* also provided a source of light, which augmented a window covered with animal gut or a sheet of ice. Another common feature of these houses was raised benches along one or more walls, which elevated the occupants into a layer of warm air.

Insulation was provided by a number of means. The floors of the houses were dug below ground level, so there was less wall area exposed to outside air. Heat loss through conduction was minimized by a thick layer of sod enveloping the roof. An accumulation of falling snow on the roof provided an extra layer of insulation and reduced heat lost through infiltration between the roof's sod blocks. Ventilation was important for reducing the accumulation of water vapour and fumes within the house. Some winter houses had ventilation holes in their roofs which could be unplugged when the exchange of damp or stale air was necessary, and in some cases tunnel doors could be adjusted to bring in fresh air. Some builders made vapour barriers by fastening skins to the ceiling, which kept condensation from dripping onto the household contents.

One location where people lived in permanent winter villages until comparatively recent times is at the mouth of the Mackenzie River, the traditional home of a group of Inuit who refer to themselves as "Siglit" (figure 1). One of the most important sources of food in this area is the beluga whale, which enters the warm estuary of the Mackenzie River in large numbers in summer. The Siglit devised an effective hunting technique which involved driving the whales into shallow water where they could easily be seen and speared by hunters in kayaks. Enough meat, blubber, and oil was obtained during the summer whale hunt to last through most of the winter months, which the Siglit spent in villages adjacent to the whale hunting areas. At other times of the year they lived in tents or snow *iglus*, but the winter village, consisting of substantial houses constructed from driftwood and covered with sod, was considered to be the home base, and, indeed, different groups of Siglit were known by the name given to their villages. The late 1800s saw the arrival of Eurocanadian and American explorers, traders, missionaries, and whalers who brought with them the new goods and ideas that abruptly altered the Siglit's traditional lifestyles, and the diseases that ultimately devastated these communities.

For the past several years, the Prince of Wales Northern Heritage Centre has been excavating in several areas where shoreline erosion is erasing the remains of prehistoric Siglit villages. Our archaeological work was designed to salvage what we could of these rapidly-disappearing sites, and to learn how the Siglit lived when their traditional culture flourished.² One of our objectives was to discover more about how they built their houses.

1 See Peter Nabokov and Robert Easton, *Native American Architecture* (New York: Oxford University Press, 1989).

2 Charles D. Arnold, "Vanishing Villages of the Past: Rescue Archaeology in the Mackenzie Delta," *The Northern Review* 1 (1988): 40-58.

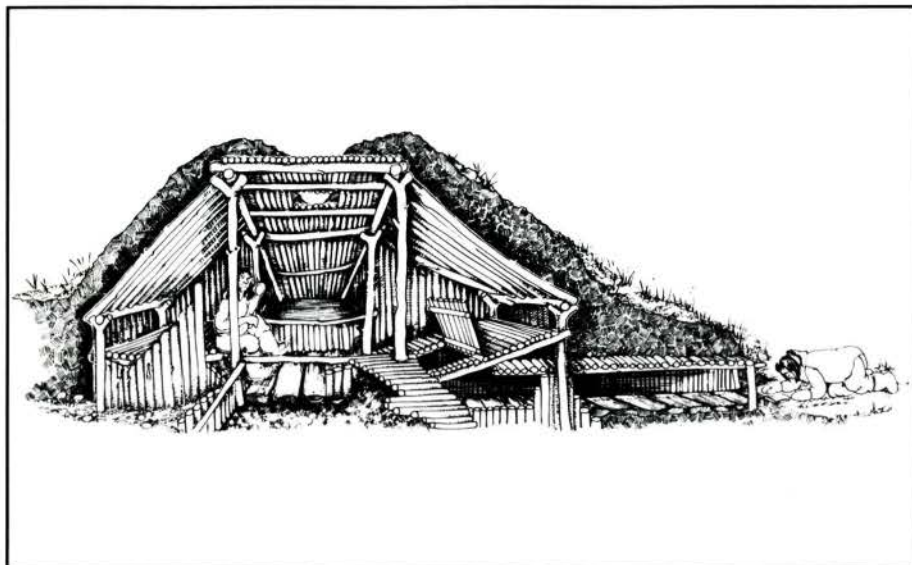


Figure 3. Artist's interpretation of a Siglit house, in sectional perspective. (Terrance Pamplin)

There are some formidable challenges to be confronted when investigating Siglit architecture from archaeological remains that are centuries old. By examining still partially-standing driftwood houses constructed early in the present century we know that the roof is usually the first part of the structure to collapse, followed by the support posts and wall timbers, which fall at their own rate. The collapsed structure then resembles pick-up sticks, presenting no obvious order. As time passes the timbers rot, making it even harder to unravel their original placement. On the positive side, floor areas covered with collapsed timbers and sod blocks fallen from the roof often become encased in permafrost, preserving that part of the dwelling much as it was when it collapsed (figure 2). For this reason, our architectural interpretations usually focus on internal arrangements as revealed by excavated house floors; fortunately, there are some excellent historical accounts which help us flesh out other architectural details.

One of the earliest of these accounts dates from 1865, when Father Emile Petitot, and Oblate missionary, visited a Siglit village. He wrote a description of the house of his host, the chief Noulloumallok:

The houses of the Chiglit are crudely constructed somewhat like cages. Four tree trunks, their roots up in the air, unless they happen to be forked, are forced into the ground. They hold four cross-beams arranged in a square which in turn supports a ceiling of cudgels lined up side by side. Thus a sort of huge table is formed, its centre occupied by the ice block skylight. Poles passing at a slant from the ground up to the edge of this table form the walls of this building. The poles are fastened at the top and consolidated with some large pieces of wood below. Mosses, lichens, clay, snow and slush are used to fill up the gaps in these primitive walls and with the last two an airtight sealing off of the structure is secured³

Petitot continued:

Each side of Noulloumallok's house thus formed an alcove furnished with a platform where one or two couples or families could settle down. Only the alcove in which the lamp stood was different. It sloped downwards and in its floor was the trap door covered with a piece of skin which served as an entrance.⁴

A passageway or porch leading into the house formed a cold trap, either by digging it into the ground, or if the house was built on the side of a hill, by extending it downslope. Ceilings were sometimes sharply angled to the backs of alcoves, where they rested on low walls, thus conserving heat by reducing the volume of air in the dwelling (figure 3). As far as we are aware, this "cruciform" style of house is peculiar to the Siglit, although it shares many architectural elements with Inuit dwellings in other parts of the Arctic.

Most of our archaeological work has been at Cache Point, the Pond site, and Gupuk, three villages which were occupied before the coming of Europeans. All are on the east coast of Richards Island, a large island at the mouth of the Mackenzie River (figure 4). Oral histories tell us that at least once in the past the Siglit had to move their villages downstream to deeper water when the river channel silted up, making it too shallow for beluga whales.⁵ Thus, we can expect that Cache Point is older than the Pond/Gupuk site area. Likewise, on geographic grounds, Pond is probably older than Gupuk, since river access to that site is now blocked by foreshore flats built by silt accumulation. These observations are confirmed by radiocarbon dates, which give us a more precise fix on their antiquity.

3 Emile Petitot, *Among the Chiglit Eskimos*, trans. Otto Höhn (Institute for Northern Studies, Occasional Publication 10, 1981), 36-37.

4 *Ibid.*

5 Vihjalmur Stefansson, "The Stefansson-Anderson Expedition: Preliminary Ethnological Report," *Anthropological Papers of American Museum of Natural History* 14 (1919).

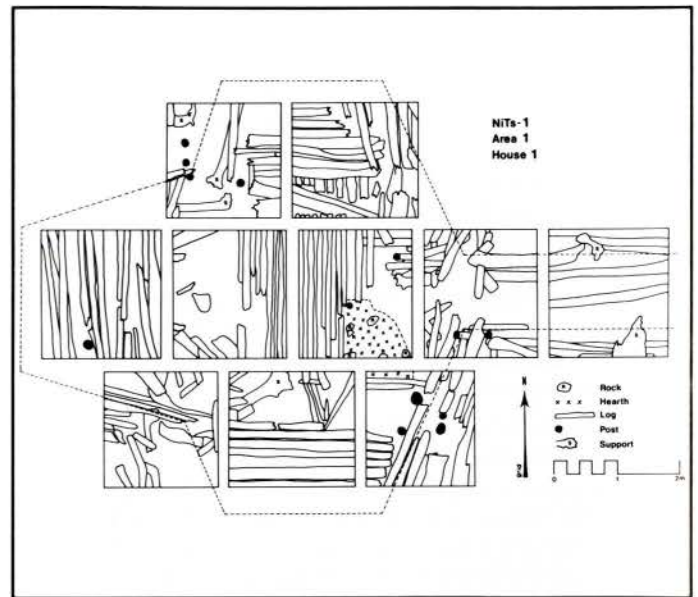
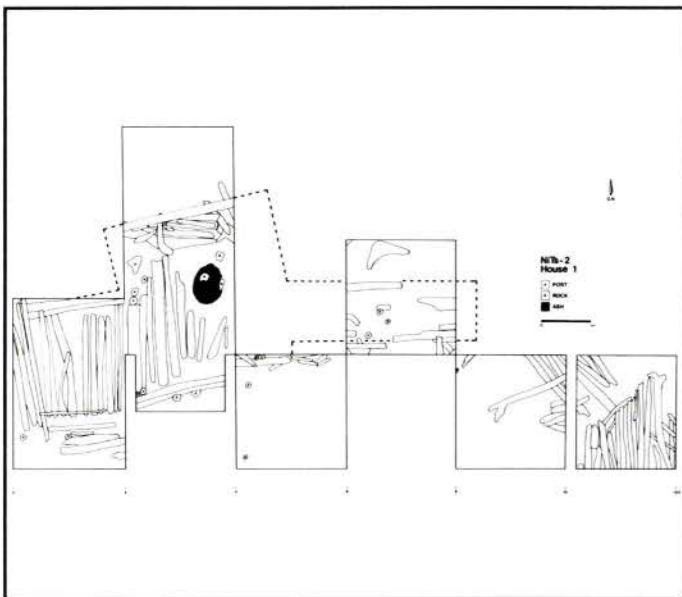
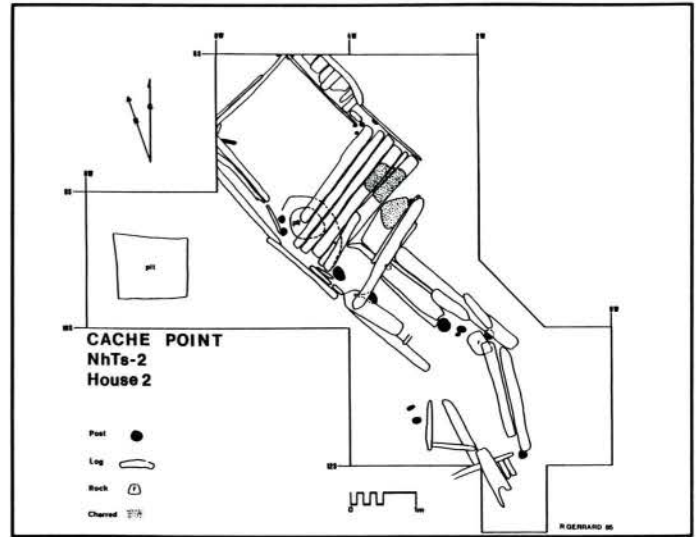
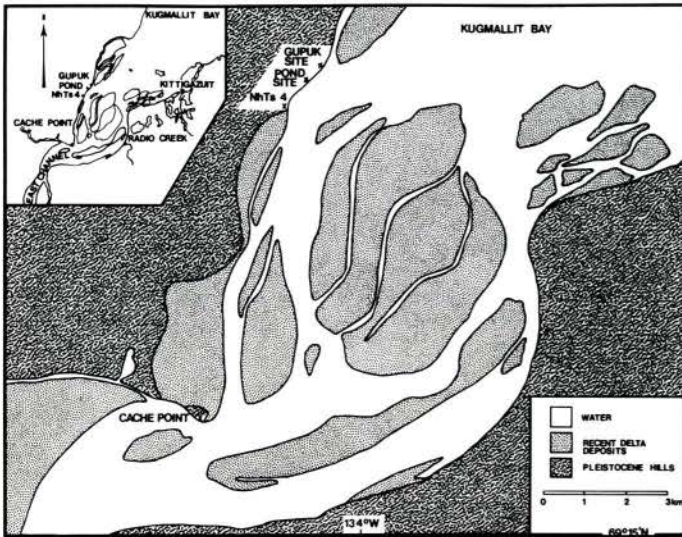


Figure 4 (top left). Location of archaeological sites in the outer Mackenzie Delta.

Figure 5 (top right). Floor plan of house at Cache Point. (Richard Stromberg, "The 1984 Excavations at Cache Point," MS on file at the Prince of Wales Northern Heritage Centre, Yellowknife, 1985)

Figure 6 (bottom left). Floor plan of house at the Pond site.

Figure 7 (bottom right). Floor plan of house at Gupuk.

The Cache Point houses were probably built between 700 and 800 years ago. Its residents took advantage of the abundant driftwood which lines the banks of the Mackenzie River to build their winter houses. The six houses which were excavated were quite small, measuring only about 2 m by 3 m. At the front the floor was covered with logs, which had been charred by a fireplace built on a pad of soil (figure 5). The sleeping area was not elevated, nor covered with logs; instead, the bare floor was probably covered with caribou robes. Remnants of upright driftwood logs give us some idea of where support posts had been situated. Part of a wall built of vertically-standing logs was found preserved, and others lining the entranceway indicate that the entrance was partially dug into the ground, with low walls and a roof extending above ground level.

The architectural style at the Pond site, which postdates Cache Point by a century or two, is less clear, as we have done less work at this site. The two houses excavated, if representative of others at the site, indicate a shift in house style. The houses continued to be framed with driftwood, and had a partially-underground entranceway and an interior fireplace (figure 6). The main floor was a little over 3 m by 3 m, and was covered by logs. The primary difference, when compared to the houses at Cache Point, was the addition of a raised sleeping bench, covered with logs, in an alcove at the back of the dwelling.

Gupuk was occupied as recently as the early 1800s, but people probably lived there as early as 400 to 500 years ago. The four houses excavated at Gupuk are larger than at the earlier sites. Although the basic construction techniques appear to be similar, the Gupuk houses incorporated three alcoves with raised benches, giving the houses the distinctive

cruciform shape described by Petitot (figure 7).

Looking at the archaeological evidence, we find that the earliest Siglit people lived in winter houses which, at Cache Point, were characterized by small size and an absence of raised sleeping platforms—features not unlike those found in houses used by their close relatives in adjacent parts of the Arctic. Later, as shown at the Pond site, houses were somewhat larger and included an alcove and an elevated sleeping platform. And more recently still, as revealed at Gupuk, houses had three alcoves with raised sleeping platforms. Based on analogy with historical information, these latter cruciform houses probably indicate a shift to multi-family dwellings.

One question intrigues us: Why did changes in the styles and sizes of the houses occur? One fairly obvious and pragmatic answer is that the changes represent developments in heat conservation. This is apparent with the adoption of raised sleeping benches, and even with the switch to multi-family dwellings, in which less fuel per individual would have been required to keep warm. But cultural changes usually involve several interwoven elements: thus, the Gupuk houses, with their implied switch to multi-family living, also require an examination of social and economic factors. Perhaps hunting partners extended their relationships to communal living. Maybe a change in subsistence practice, such as a shift to communal hunting, yielded the surplus of food necessary for extended families to live together throughout the winter. Whatever the reasons for the changes in architecture, we also suspect that larger numbers of people living in cramped quarters over the long winter months must have required some new kinds of social control.

The contribution to our understanding of northern architecture made by the study of architecture at the Mackenzie Delta sites is significant. Not only does it show the kinds of changes leading to the distinctive forms of architecture characteristic of that area in the early historic period, it also alludes to important social changes which might not otherwise be detected. At this point we have no unequivocal answers to how or why those changes took place, but we do have the indications that adaptations were a constant part of Siglit culture.

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