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BUILDING IN THE ARCTIC

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Source: *Ekistics*, SEPTEMBER 1960, Vol. 10, No. 59 (SEPTEMBER 1960), pp. 152-155

Published by: Athens Center of Ekistics

Stable URL: <https://www.jstor.org/stable/43621410>

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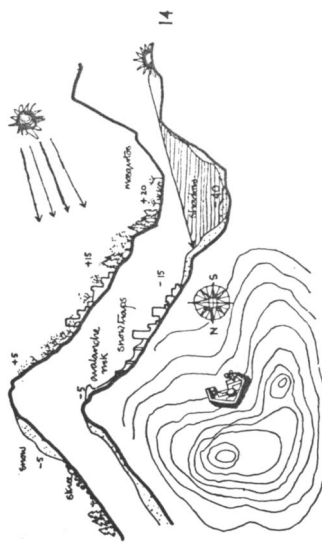
Erskine, Ralph

**BUILDING IN THE ARCTIC**

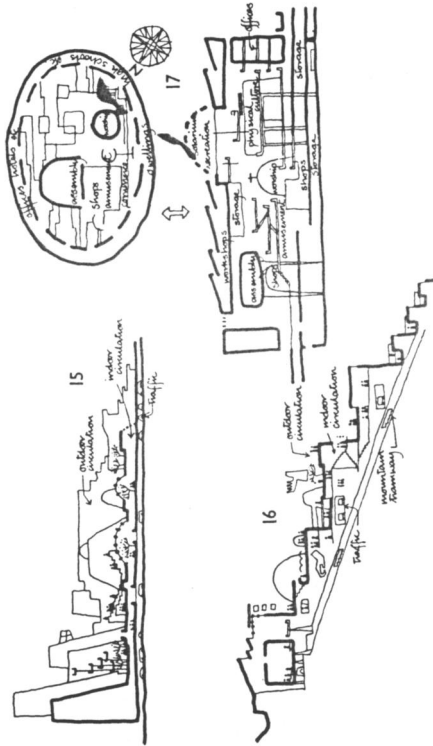
"Architectural Design," May 1960. Pages 194-197. Illustrations.

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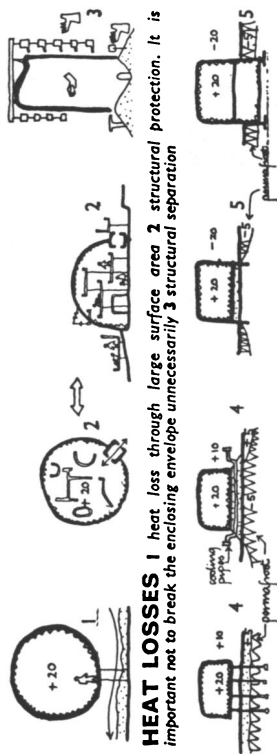
1. Ralph Erskine, an Englishman working in Sweden, has summarized many of the criteria necessary for satisfactory human habitation in the far north. Similar criteria have been evolved for the design of towns in other parts of the arctic. See EKISTICS HIB-GA 48 (October 1959), pp. 245-252 and HIB-GA 40 (February 1959), pp. 143-144.
2. The arctic, a sea surrounded by land, can be divided into two zones: the arctic zone proper, consisting of polar sea and the partly glaciated islands, like Greenland, where snow and ice never disappear; and the sub-arctic zone, a great circumpolar region stretching from the polar sea to well south of the tree line where it merges into the cold temperate zone.
3. The sub-arctic is growing rapidly in importance. Below the tundra lie deposits of iron, nickel, copper, lead, gold, radium, asbestos and oil, whilst above it fly the new polar airways. Added to this, it has become one of the most important strategic areas. These new activities are introducing more and more permanent settlers to the zone. They move from populous areas to small towns in an isolated land and expect those amenities they previously enjoyed. Towns cannot borrow from neighbouring cities, but must be self-sufficient in every sphere. Usually when settlers move to a new country they attempt to recreate their old homes. In the sub-arctic this can never be successful, and modern man, like the Eskimo before him, must use his resources to arrive, by analysis and synthesis, at an indigenous culture.
4. The essentials of this human and physical situation make necessary the realization of the violence and the drama of contrasts and a restatement of the protective function of buildings and towns.
  - a. The warmth, the brilliant light and the teeming life of summer; the cold, dark sterility of winter; each creates a protection need.
  - b. The consequent changes in human spirits and the rhythmic changes in social life, from the extrovert of summer to the introvert of winter.
  - c. The geographical isolation in an extensive and often wild nature and the resultant impact of a human milieu. Wild nature is ubiquitous and the human is the exception (the opposite of the 'man-made' world of the temperate zone): everything man-made needs protection and intensification.



**MICROCLIMATE 14** due to low angle of sun radiation, microclimate is of utmost importance. Sketch shows siting with protection against midnight sun, wind, snowdrift, extreme temperatures, shadowing and mosquitos. A sloping site gives more intensive radiation, a view over nature and lack of north elevations

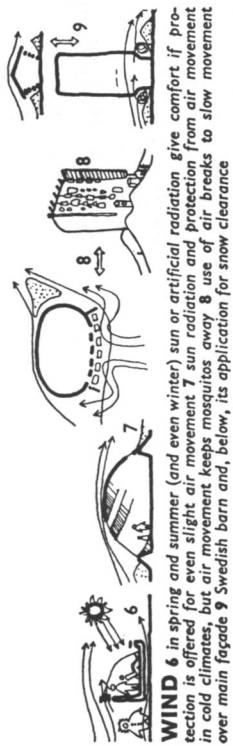


**AGGREGATION** varying functions move together for mutual protection 15 flat site 16 sloping site 17 grouping of various functions with motor and mechanical transport at lowest level and open and protected pedestrian levels above

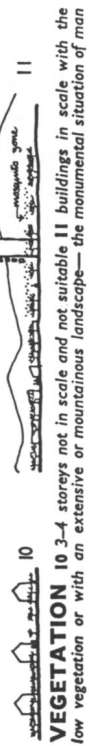


**HEAT LOSSES 1** heat loss through large surface area 2 structural protection. It is important not to break the enclosing envelope unnecessarily 3 structural separation

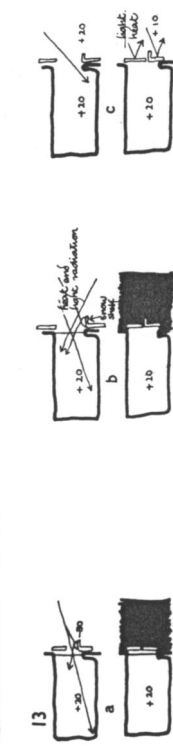
**FROST 5** winter 4 summer



**WIND 6** in spring and summer (and even winter) sun or artificial radiation give comfort if protection is offered for even slight air movement 7 sun radiation and protection from air movement in cold climates, but air movement keeps mosquitos away 8 use of air breaks to slow movement over main facade 9 Swedish barn and, below, its application for snow clearance



**VEGETATION 10** 3-4 storeys not in scale and not suitable 11 buildings in scale with the low vegetation or with an extensive or mountainous landscape—the monumental situation of man



**SUNLIGHT 12** a winter b summer c summer night 13 the need for a variable window: examples day and night a winter b equinoxes c summer

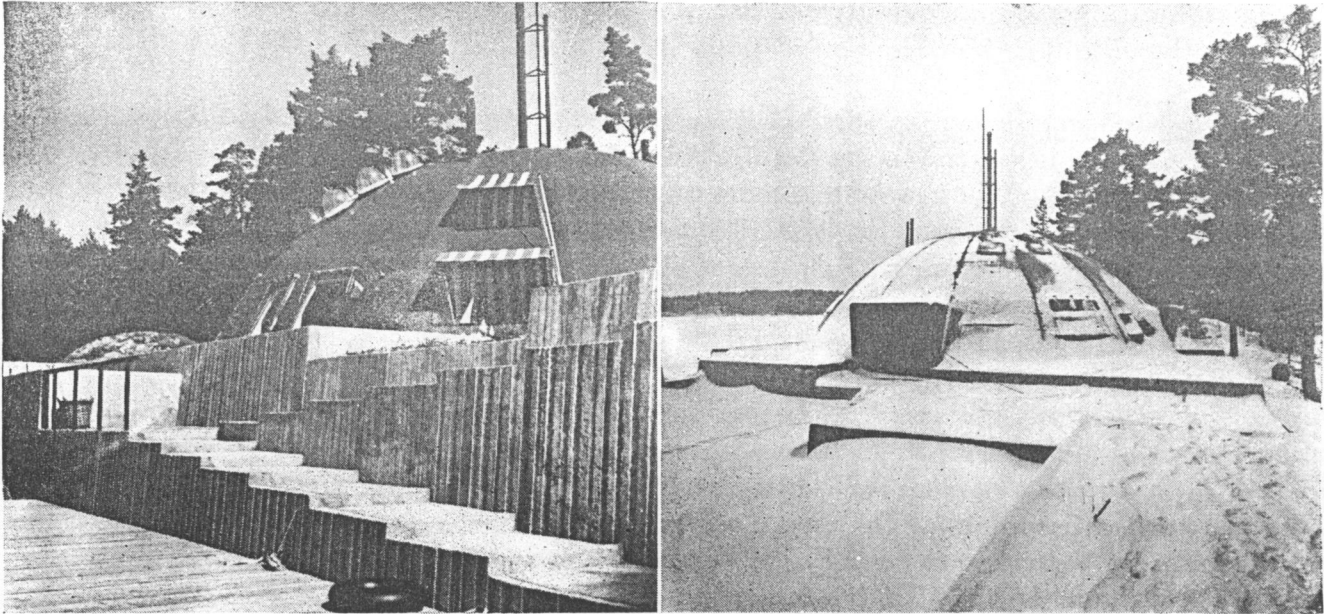
- d. The contrasts between the experience 'indoors' and the experience 'outdoors' during the larger part of the year: more than anywhere else the enclosing envelope becomes a separator, with the existence of space continuity as a relatively indirect experience.

5. The traditional 'Frontier Town.'

- a. Isolation and extreme conditions create tensions.
- b. Personal relationships are especially important and often difficult.
- c. The frontiersman and hunter type who is attracted to the communities, is not a good town dweller.
- d. Communities tend to be of frontier type with a population flux, and are neither functionally, nor humanly satisfying.
- e. This situation tends to lead to imitations of 'home country' conditions.
- f. Such limitations are always inferior to the original, and emotionally and culturally unsatisfying.

6. The New Towns. Northern towns must become free of the 'colonial' attitude and base their own culture on their own way of life. They should, due to their isolation, be made more attractive and genuine than their equivalent in more southerly latitudes. They should be intensive communities with possibilities for varied activities, since neighbour towns are distant. They should cluster to form a human milieu in the desert: the green town belongs to regions where vegetation is friendly, where the stone town appears hostile. Here nature is dominant and everything 'human' the exception, which needs to be intensified and protected. Within the human milieu there should be formal planting with exotic vegetation--such as apple trees. From it there should be views over the surrounding landscape, as there will be many indoor workers. There should be well-heated and lighted communications, piazzas and gardens, covered for bad weather, but able to be open in good weather. They should be planned to offer easy human contacts, but also personal freedom and privacy. Even more than others they should be based on technical rationalization and standardization, as building costs are enormous; but such standardization should offer a maximum of human choice--rational or irrational.

7. It is possible to widen the grammar of sub-arctic life, but to sustain the threads of contact with the south. The sub-arctic dweller should not become even more isolated by an over-emphasis of the exceptional of his existence. The changes in the structure of his town and society should help him to live with instead of against his environment. It should become easier for him to find satisfaction.



Experimental villa at Lisö which incorporates much of the theory of Arctic building described on the previous pages. At left, summer and (right) winter aspects

