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ABSTRACT

During the Man in the North (MIN) conference on community development, held at Inuvik in 1970, one of the most important issues for the northern native people is the community center. The report is a study of a northern community center done by a team of 3 architects and their Inuit associate. The report discusses an approach to assure, in the planning of a native center, the full participation of the people concerned by identifying their needs, aspirations, and objectives. The MIN Reviewing Committee recommended that the smallest integral unit of the project be offered to the Inuit for construction on a free time scale. Construction should be at Saglouc, Canada, or wherever suitable, and the Inuit should be able to decide on the facilities to go into the center. The content covers Saglouc by: (1) a study of the settlement; (2) an analysis of data and standards; and (3) the proposal for a community center. The appendixes include 69 tables and figures. (FF)

Man in the North Technical Paper

Saglouc: Community Center Study

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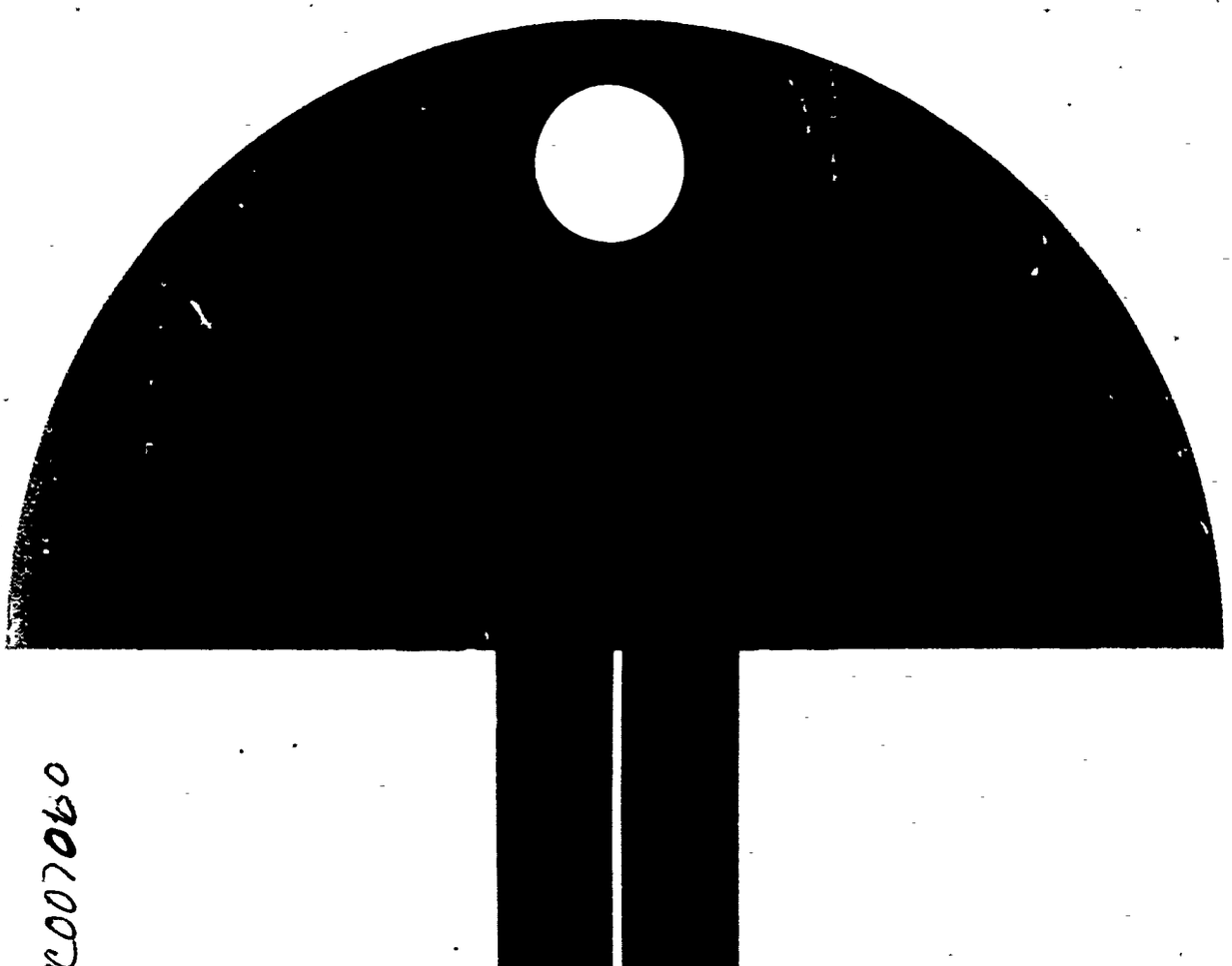

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SAGLOUC:

COMMUNITY CENTER STUDY

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Jacques Desbiens
Robert Langlais
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a report of the Task Force on
community centers, sponsored by
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on community development in the North

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SAGLOUC:

COMMUNITY CENTER STUDY

FOREWORD

During the MIN conference on Community Development, held at Inuvik in 1970, one of the issues identified as most important by the northern native people was the question of community centers. Such centers, located in the North, would make it possible for local northern native communities to plan, organize, and use their leisure time in the way they felt it should be used.

In the Canadian North, some centers do exist where people can view films, organize dances, and participate in group activities. But where they exist, these facilities are most often the property of the government or of an agency that is not controlled or directed by the community. Also, the "cultural" activities in these facilities often are directed in the patterns of the southern dominant society, which are not necessarily those which promote the most fruitful involvement of the local people; in fact, these activities generally do not tend to favor the people's active participation in what concerns the use of their leisure time.

The Eskimos had their own traditional ways of spending their leisure time and, in view of their small numbers in any given place, they could organize themselves to meet their needs for group recreation. With the advent of government administrations, they have been forced into considerably larger communities, where organization of their leisure time is more complicated and more demanding. A good community center in each local community of the Canadian North could provide the northern Eskimos and Indians with a significant and continuing opportunity to use their leisure time in their own rhythm, according to their own decisions, and in full ownership of the facilities. They would such use a center not only for entertainment, but also for educational purposes in the broadest sense. This was made quite clear at the MIN Inuvik Conference. It can be expected that well-designed community centers in the North would serve a fundamental requirement of the northern native people in their present and future situation: they would permit them to select, use, and fully control the various technical and cultural media they must have if they are to take the major part in deciding on their own evolution process.

The report which follows is the result of a study made on the subject of a northern community center done by a team composed of three young architects and their Inuit associate: Phillippe Barrette, Jacques Desbiens, Robert Langlais, and Arnaituk Tarkirk. It discusses a approach to assure, in the planning of a community center for a northern native community, the full participation of the people concerned in identifying their needs, their aspirations, and their objectives. The first characteristic of such an approach, reflected by the MIN team's approach to their work, is discussion with the people concerned, discussion that gives the people enough time to express themselves and come to a consensus.

The three architects spent four months in Saglouc, with their Inuit associate, a native of that community; Saglouc is situated in northern Quebec on the Hudson Strait. The four then came back to Quebec City where they drew up the preliminary plans for the community center.[1]

Basing themselves on the report, the MIN Reviewing Committee at their last meeting on the project recommended that (given funding) the smallest integral unit of the project be offered to the Inuit for construction, on a very free time scale. The construction, the Committee further recommended, should be at Saglouc or wherever suitable; the Inuit should have absolute freedom to determine whether or not they want the center, and if construction was then to go forward, the Inuit should be able to decide on the facilities to go into the center.

In other words: the implementation of the approach foreseen in this report, the construction itself in its various steps, and the management of the center should be handled by the Inuit themselves, with the financial and technical support of the sponsoring organization. It is hoped that the Arctic Institute of North America will find itself in a position to play that sponsoring role.

I want to thank these four people for their most interesting work, and also those people who so kindly accepted to review their work and make recommendations for future steps.

Eric Gourdeau
Director
Man in the North Project

1. These plans can be obtained from the Arctic Institute of North America, 3458 Redpath Street, Montreal 109, Quebec. Also, the original French-language version of the report can be read at the Institute.

SAGLOUC:

COMMUNITY CENTER STUDY

INTRODUCTION

Origin of the project. In August 1970, Eric Gourdeau met with us at his office in Quebec to talk about a new research project, Man in the North (MIN). MIN was initiated by the Arctic Institute of North America in 1969 and housed in its Montreal office; Mr. Gourdeau was Director of MIN. One of MIN's research projects was community development in the North, including education, health, communications, transportation, and community planning. This last was to develop into our project: to design a community center in and for an Eskimo settlement.

We prepared a work plan with two main points: first, adopting Eric Gourdeau's idea, we agreed that we had to live in an Eskimo milieu in order to arrive at the design of a community center; second, to design the center we agreed to use a method of analysis which we had developed. This two-point plan was accepted by the Arctic Institute of North America, and the necessary steps were taken to arrange for our stay in Saglouc in New Quebec. The settlement of Saglouc presents some interesting characteristics: it is a village of average size (360 Eskimos); it is the most important settlement on Hudson Strait; it is not completely organized from the point of view of services; its social evolution has been under observation for more than ten years; finally and most important, Saglouc is about to "take off" in terms of development. There was also, for us, the essential advantage of available lodging. Our departure was set for 13 October 1970.

"Community center." Cultural centers, sports centers, or even commercial centers are called community centers. What they have in common is that they offer a multitude of services under the same roof. If the work "community" in community center is stressed, two factors stand out. First, the complex to be built must be the result of a group need; the people must think about their rights, about their aspirations as a group, and by collective decision become involved in producing the community center. Second, this center should be a stimulus to awaken the collective consciousness and to provoke development of the community. The Eskimos' social, economic, and cultural evolution requires an input from the outside world. Considering these points, and that the outside world plans for and involves the participation of the Eskimos, a community center becomes possible, even essential, in order that the Eskimo involvement and participation exist meaningfully.

Work plan. We planned our first month in Saglouc as an orientation period, during which we established the contacts needed to organize our work, and recruited an Eskimo associate. The next three months we spent analysing the information we had gathered daily. Finally, in February and March 1971, we worked on data synthesis and the design of the community center.

One of our priorities in this study was to gather all data that would contribute in any way to our knowledge of the environment. We are convinced that familiarity with an environment allows a more precise definition of needs, and so leads to a more adequate solution.

We organized our life-style accordingly. As much as possible, we tried to participate in the activities of the settlement, to listen to the people, and to establish human contacts. We tried to elicit suggestions through discussion. At the same time, we sifted both the information gathered and our own observations, proceeding by feedback and group discussions. Another of our convictions is that no work can be done without an instrument of control. We wanted to give ourselves and anyone else using the same information a way of evaluating our work.

The study itself is in three parts. The first, "Saglouc: Study of the Settlement," will report the observations and information gathered during our stay in Saglouc, and will give our conclusions. In the second part, "Saglouc: Analysis," we will outline the study's restrictions. In the last section, "Saglouc: Proposal for a Community Center," we shall propose a possible community center for Saglouc.

A. SAGLOUC: STUDY OF THE SETTLEMENT

1. THE ENVIRONMENT

This first part outlines conditions peculiar to Saglouc, in the different areas relevant to the proposed community center. In addition, we want to give the "feel" of this Eskimo village, which will modify in some cases the interpretation of a condition, and in others must influence our analysis. We shall mention various events which are difficult to take into consideration in the analysis, but which contribute to a feeling of continuity and add a lively note to the study of the environment.

We shall try to give a picture of this Eskimo settlement which was our home for three months. We shall indicate, for each event, how we got the information: whether it was from our own observations, from Eskimos' opinions, from information provided by the Kabloonas (white men), or from our opinions after the event. We shall at times permit ourselves to anticipate the analysis by implying conclusions or by stating principles, so that transition from event to analysis to interpretation can be easily understood. We shall give a general outline of the situation as we understood it. The following outlines will deal with Saglouc's economy, sociology, climate, and the techniques of construction and communications.

General observations. Travelling to Saglouc by peterhead (a fishing boat used by the Eskimos), you come on the village hidden in a cove, near one of the many headlands which project into the bay. The impression of remoteness is intensified whenever you go out far enough to see the whole village (Fig. 1); the isolation seems even greater during freeze-up when no planes can land. There is real excitement when the first planes do land, seven miles south of Saglouc. A long line of snowmobiles and sleds quickly gets organized to meet the plane, betraying Saglouc's urgent need to reestablish contact with the outside world. An important topic in conversation is weather conditions and communication by radio: the whole process of contact with the outside depends on a chain of events, each relying on

the other. If the weather is good, radio communication is easy and the plane can come. If the smallest link does not function, contact cannot be made and you must wait for next week's flight.

As you approach the shore, you can make out the buildings on the shore-line and you can guess, according to their shape and position, the history of Saglouc's establishment. First, to the left, on the bank of a little stream there are the four or five buildings of the Hudson's Bay Company. Next is the house and the church of the Anglican Mission. Next is Quebec House and the adjoining hanger, which were built about five years ago. On the right you see the buildings of the Catholic Mission and further, at the very end of the village, there is the nursing station and the nurse's house.

The Kabloonas occupy an L-shaped area along the bay and the bank of the river (including the federal government's buildings, the two schools, and the oil and gas reservoirs). All the services that the Kabloonas offer are situated in this area. The Eskimos have constructed their cooperative and the snowmobile repair shop just at the edge of this L, between the Eskimo and the non-Eskimo areas (Fig. 2). The rest of the land area is occupied by Eskimo houses of various shapes and sizes, more or less aligned according to streets.

This division of the land into two zones is reflected on two levels. First, the early Kabloona settlers occupied the best-situated lands; these now form a continuous block. (The Eskimos obtained houses later, leaving the igloos they had constructed a short distance away but relatively close to the missions, trading posts, and Hudson's Bay Company.) Second, excluding daily contacts which the Kabloonas, because of their jobs, have with the Eskimos, their social life is in effect separate from that of the autochthons. To a great extent, the Kabloonas transplant their way of life from the South. Their houses are like those in the South, their meals differ only slightly from what they are accustomed to in the South, and their social gatherings follow the same patterns evident below the fiftieth parallel. Even if the young Eskimos sometimes participate in activities with the Kabloonas, in general the Eskimos follow a way of life well suited to their needs, in spite of the consumer products which the white civilization has brought them. Few newcomers can be accepted wholly into the world of the Eskimos, strongly bound as they are by language, by close friendships, and by their traditional activities.

Once we were settled in Saglouc, we began to familiarize ourselves with our surroundings. The form and position of the buildings became clear; we began to see the different routes that people took as they went to the Hudson's Bay store, to the cooperative, to the offices of the federal administrator, or to church; little by little we met the people. The Eskimos are accustomed to seeing Kabloonas arrive and leave. They came to visit us out of curiosity. The young people came first in little groups, and the older ones followed more timidly. We met the other Kabloonas who live in Saglouc, and identified their various functions and the various degrees of influence which they exerted. Eventually we were able to evaluate the nature of the contacts which exist between the Eskimos

and the Kabloonas, or within each group.

Our new presence was sufficient in itself to provoke different degrees of mutual questioning and understanding. This attempt at mutual understanding characterizes life in the North: in order not to feel isolated from the outside world, people try to cultivate personal relations with other individuals. This process is made up of understandings and misunderstandings, adjustments and frictions. The Eskimo seems to have developed effective social mechanisms in his contacts with others; the North is his natural environment and he is adapted to it. But the Kabloona does not always succeed in surmounting his feelings of isolation: in conversation he often makes reference to the South, to which he will return shortly; he considers his stay temporary, and it is from this view-point that he regulates his contacts with others.

The Eskimos present a certain homogeneity produced by time; the Kabloonas, at least, consider the Eskimos as a homogeneous group. All the Eskimos have the same knowledge of activities and of events in their civilization; when they speak about the hunt, snow, life, and time, the Eskimos all reflect the assurance of people adapted to their environment. The Kabloonas, on the contrary, cannot hide from the autochthonous people the ambiguity of their presence in the North. They bring all the complexity of their institutions and of their civilization. There are Englishmen, Frenchmen, and other nationalities; there are Anglicans, Catholics, and people of other faiths; there is the federal system and the provincial system. The conflicts which arise from this ambiguity are apparent to the Eskimos.

A whole range of relations between the two ethnic groups has developed, relations which stem from the Kabloonas' relative isolation from each other and the Eskimos' unity in spite of everything. We defined five types of Kabloona behavior vis-à-vis the Eskimos; each Kabloona exhibits these five behavior patterns in varying degrees The first and by far the oldest pattern is the Kabloona as missionary, bringing to the autochthon the culture of the white man, whether from the religious or political point of view, or from the point of view of language. Second, there are the Kabloonas who come to perform a public function among the Eskimos, as in fact almost all the Euro-Americans do at some level or other. Third, there are the Kabloonas who are employed in their usual, that is southern, capacity, but in the Eskimo environment. The fourth type is the adventurer in a new world which he wishes to discover. The fifth type, quite new, is the "animator" confronting the autochthons with social animation projects. This animation can be part of any function which brings him to the North. These different forms of behavior are the multiple image of a latent and diversified colonialism.

The Eskimo, confronted with these various types, responds accordingly: he is the welfare case with the administration, the spirit with the missionary, the customer with the manager of the Hudson's Bay Company, the student with the teacher, and so on. The Eskimos do not associate all with the same Kabloonas; depending on their aspirations, their interest, or their sympathies, they go to visit one or another Kabloona.

After several months the Eskimos were accustomed to our presence, and we had fitted into the daily routine of the village. The presence of the white man and his institutions is not new to the Eskimos; it is a past and present phenomenon. But this presence serves to underline the northern isolation of the Eskimos; conscious of their own possibilities, they now look beyond the Kabloona presence. Someone has already said that the Eskimos are "primitive" in their technology only as it compares with ours. Contemporary technological civilization is not the exclusive property of the white man; we have come to it by necessity. The Eskimo comes to it in the same way. Faced with their isolation, the Eskimos have regrouped themselves as a cultural, economic, and political entity; they use modern instruments to realize their objectives. At the forefront of these modern instruments, the community center encourages movement toward modern technological civilization. Furthermore, such a center permits the Eskimos - and this is the principle object of this study - to control the speed with which technological innovations make contact with their cultural aspirations.

2. ECONOMY

The first specific aspect of our project which required information was the economy. We shall describe an Eskimo village such as Saglouc in relation to the general situation in other settlements, then we shall study three points of economic interest: administration, the cooperative, and work. We shall conclude by giving an economic perspective of northern development.

The economic situation. From a traditional economy of hunting and fishing, the Eskimo changed first to a trading economy as the agents of the white society settled on the coast, then to a salaried work economy closely dependent on the white man.

In their hunting and fishing economy, the Eskimos were independent: in "food, clothing, and shelter...he was completely self-supporting. He was free and independent, master of his own fate... as far as any living creature can be master of its fate in this our imperfect and ever-changing world."[1] The first contacts with strangers were with the whalers and the early explorers searching for furs. The Eskimos became accustomed to contacts with these people, particularly since their capabilities as hunters brought them esteem and money. The best hunters remained the best, for their own profit and for that of the traders. It is easily understandable that customs advantageous to both parties developed; on the one hand the newcomers followed the Eskimos in their hunting movements, and on the other hand the latter organized their expeditions within easy reach of trading posts. The French company, Reveillon Frères, came to Saglouc around 1900, profiting from the seasonal migrations of the Eskimos and from their settlement near the trading post. Fur trading became a matter of survival for Eskimos hunters because of the money they made on fox, bear, and seal pelts now needed to buy Kabloona goods they could no longer do without. The company also employed Eskimos as clerks and interpreters. When the Reveillon company closed its doors in 1936

(having lost its principal client, Russia, in 1917), many Eskimos were reduced to poverty. (The place name Salluit implies "the place-where-the-people-are-thin." Some Eskimos still remember those lean years and have not forgotten the men who let them die of hunger.)

Nonetheless, from then on the Eskimos were locked into dependence on the outsiders who could provide the consumer goods to which they had become accustomed. The arrival of the Hudson's Bay Company was thus a great boon. The Eskimos continued to stay around this provider, bringing the Company fox and seal skins which they hunted with their traditional skill. The commercialization of Eskimo carving is another example of a traditional skill exploited. The Eskimos made objects which they needed every day, such as seal-oil lamps and instruments for working skins. When they found that these objects were saleable, they increased their production in order to exchange them for consumer goods brought to them by the strangers.

With the coming of more Kabloonas, the well-being of the Eskimos improved. From the economic point of view, this showed up as more consumerism, and growth in the number of salaried workers in the service of the new arrivals. The Eskimo, accustomed to a severe and spare way of life, became aware of material abundance.

The federal government began administration of the Eskimos in Saglouc in 1957, providing them with homes, medical help, equipment, and municipal services; above all, welfare was almost automatic. Government input is now a virtual necessity for this population whose growth has been accelerated by new conditions of health, food, and hygiene. The Eskimos cannot supply their needs by hunting and fishing, or by the small number of jobs available. The provincial government arrived in 1964, and somewhat increased salaries, employment, and all sorts of pensions which are disguised welfare. The Eskimos depend on the government. In the present situation there appear to be only two possible solutions: continued dependence and consequent disintegration of the Eskimo society, or the development of a new Eskimo society assimilating the new conditions of life ("obligatory civilization," Robert Gessain calls it[2]) and the development of the North. From the economic point of view, the two ways imply enormous public investments; the second, however, may allow the birth of an autonomous economic entity.

Administration. Some economic conditions depend upon administration or the method of organization and control of investments, production, and consumption in Saglouc. Most of the money spent by Eskimos comes from government subsidies. The only exceptions are the salaries paid by the mining companies in the surrounding area or by the Hudson's Bay Company, and the revenues from hunting and trapping.

The stages of the economic "circuit" which exists in Saglouc is shown in Fig. 3. There are several parts to the economic pattern. The first part covers individual revenues, money which is earned personally by individuals. The Department of Indian Affairs and Northern Development, by direct subsidy, supplies individuals with money which they could not earn otherwise. It is a way of controlling each person's income. Revenue earned by regular or occasional

employees in Saglouc, or by workers outside, is easy enough to estimate. For one thing, the incomes of salaried workers are higher than the average. The money and food that the Eskimos get from occasional hunting, carving, or sewing cannot be checked, and most of the time their welfare is not decreased because of it. The government of Quebec, through its agents in Saglouc, gives about a dozen monthly pensions to widows, disabled people, blind people, and so on, as well as family allowances. This money is added to individual revenues.

The second part involves collective revenues, that is to say money which is invested in the community. The housing service, for example, is subsidized completely by the Department of Indian Affairs and Northern Development, also involved in shipping materials north, and which pays the few construction workers who come from the South (four in 1970). Construction provides temporary work for five or six Eskimos.

The Eskimos must pay rent on their houses. The rental rates are divided into three groups which take into consideration individual earnings. But rent cannot be considered as a real expense because the individual does not pay the real cost of his lodgings (construction, maintenance), but only a portion. For the majority of families, rent money comes from the welfare that government pays them. (There are several exceptions to this rule; some Eskimos who have a higher income have been able to buy their house and they see to its maintenance.) The government tends to standardize the housing system which includes rent and certain auxiliary expenses such as electricity, water, oil and gas. Certain owners of houses prefer to resell their houses to the government in order to profit from the standardized rent.

In summary, it is evident that the housing service is a subsidy of the federal government to the community of Saglouc; if one subtracts from the total cost of construction and maintenance of Eskimo houses the whole amount paid as rent, one obtains the actual cost of this public service.

A second service includes all the activities that one might call municipal; this the Department of Indian Affairs and Northern Development provides. Water service, garbage removal, maintenance of buildings, storage of frozen food, the public laundry, and most important of all the generation of electrical energy are included. The oil and gas service is a case worth noting. Shell Oil, which owns huge reservoirs on the bay, has a contract with the cooperative for the distribution of oil and other fuels. Shell sells the gasoline to the cooperative which makes a profit of one cent on each gallon of gas retailed. The cooperative employs one man full-time to distribute oil and gas with a tank-truck which belongs to the federal government. But he can buy the fuel from Shell for thirty cents off the regular price per gallon, so, he buys all the fuel himself and resells it to the cooperative at the regular price. The cooperative still makes its one cent profit on the sale to private people. But a gallon of gas has diminished in cost by thirty cents for one individual. The federal government at some level absorbs the thirty cents which the user does not pay. One must also note that the tankers which bring the fuel to Saglouc belong to the

federal government.

The cost of education (at any level) and health is entirely assumed by the governments.

The government of Quebec will give $500 to Eskimos for a well-defined project. Last year the Eskimos organized a skidoo repair shop, and with this $500 subsidy bought a soldering tool. This is an example of the best kind of investment in the community, because it introduces a supporting administration, Quebec, and an administration of control, the Eskimo Council; the Eskimos have therefore been able, by their elected administration, to make a decision about the collective use of an investment.

A third part of the economic "circuit" is the total expenditures made by individuals in spare time. Since public services are subsidized by the federal or Quebec government, the Eskimo has nothing more to buy than food and clothes for his family and the tools necessary for his work. (One cannot consider gambling as an expense because some Eskimos - the winners - make a fairly good additional revenue. This does not prevent some of them from asking for additional welfare money after having lost at gambling, and finding themselves refused.)

A fourth part of the economic pattern is the process by and places in which money is invested, spent, or saved. The only two places in Saglouc where it is possible to spend money are the Hudson's Bay Company and the Eskimo cooperative. It would be interesting to study in detail the budgets of these two organizations, but complete information is not available (Tables 1,2).

In the economic process, the administration invests in public services on one hand but on the other, its subsidies to individuals are in fact a blanket investment in food and other consumer goods. The administration puts consumer goods at the disposal of the community in the same way as it gives them houses and heating. The administration at Saglouc, as in all other Eskimo villages, is the only economic agent. It is quite possible, as we discuss later, that the administration will be unified in the near future; we must bear this in mind when we mention public spending to be incurred by the establishment of a community center.

The Eskimo cooperative. There exist two types of economic development for the Canadian Arctic. There are long-term plans which include the exploitation of mines or of hydro-electric resources and which would influence the development of large regions. There are also Eskimo cooperatives which serve to develop local communities.[3] Cooperatives have existed in Eskimo villages in New Quebec since 1959; they became a federation in 1967. Although the Saglouc cooperative had difficulties getting started, around 1964, on 15 May 1967 it began to operate. It is interesting to see how the cooperative fits in both economically and culturally. Traditionally the Eskimo hunters shared all of the products of their hunt. When they became money earners, they no longer shared this money and the economic balance of the community was disrupted; the weak members or poor hunters could no longer count on their share of the food nor did they have any money to buy food. The cooperative way of production

and consumption allows individuals to draw a profit from their hunt and to benefit from the opportunity to buy at the cooperative store: "The Eskimos did not seem to care what particular activity the cooperative was set up for; they wanted to run movies, to get fish for the commercial market, to buy foods and store them in the government freezer for consumption in hard times, and to run a general store in competition with the Hudson's Bay Company."[4]

The cooperative at Saglouc has benefited for a long time from subsidies from the Quebec government. The building which houses the store and the warehouse was provided by Quebec; the provincial agent organized a loan for the first purchases in 1967; Quebec subsidized the formation of the Federation of Cooperatives of New Quebec. This latter organization looks after budget imbalances and deficits incurred by the local cooperatives.

The cooperative at Saglouc at present is facing major difficulties. Foodstuffs do not constitute an important part of its sales, but it has a revenue from the sale of petroleum products (as mentioned above). It exports a large quantity of carvings, however, the soapstone which is used for carving is quite rare and the cooperative must get it at great expense. It also exports a small quantity of handicrafts (sewing) for which it receives the raw materials, as pre-cut pieces, and which it gives out on contract to the women of the village. But considering the cost of transportation these revenues cannot assure economic stability for the cooperative.

At the present, the Saglouc cooperative is facing a problem of non-participation at several levels. The Eskimos in practice do not buy at the cooperative store which offers fewer goods at higher cost than the Hudson's Bay Company. And the Eskimos do not sell the products of the hunt or their carvings only to the cooperative. The cooperative does not encourage projects which could start economic development for Saglouc. The problem is the cost of participation.

Apprenticeship in economics and administrative techniques requires a certain time; if the cooperative at Saglouc is in a slowdown, it is still tied in with the Federation of Cooperatives which as a whole is producing satisfactory results.

Work. The labor situation is intimately related to the economic process. We shall limit ourselves to giving some statistics (Table 2); a more detailed analysis of the working population is given below. We classified the population according to occupation, and we show the different working groups and the number of people in each.

The first group covers regular employees of various organizations in Saglouc. It is coded RMW (regular male worker) and RFW (regular female worker). Second are part-time workers in Saglouc or in neighboring mining centers, and coded MPTW (male part-time worker) and FPTW (female part-time worker). The third is composed of people who work outside Saglouc, in the South or in other settlements. They are coded MWO (male working outside) and FWO (female working outside). The fourth group is composed of men who live almost exclusively by hunting. They are coded H (Hunter). The fifth includes people who have a regular job at the Eskimo cooperative. They are coded ESK (Eskimo). It must be noted that the second group includes also those

students who have summer jobs at Deception Bay or Raglan Lake. The figures presented in Table 2 are variable because of the great mobility of workers.

Regional development. The evolution of the economic process in each Eskimo community depends on Eskimo cooperatives or on the economic development of the region. In terms of investments and therefore of incentives, the second is by far the most important, in order for the Eskimo community to become responsible for its own economic development to all its members; a surplus of employment often means disguised welfare money. Therefore it is at the regional level that Eskimos must find sources of the necessary economic activities.

What are the economic prospects of the Saglouc region? "The day when the populated strip which is presently our country becomes industrialized and saturated, the Canadian North will become, it is generally felt, the Far West of the twenty-first century, but a Far West technically, scientifically, methodically, organized and planned. Iron, copper, nickel, asbestos, uranium, petroleum, and even gold having become so laughably useless, justifies from now on the project of developing mid-Canada and mid-Quebec including the construction of railways, roads, cities, ports, treatment plants, in spaces which await man right into the Arctic regions."[5] In the Ungava Peninsula this development has already started with the Asbestos Hill Mine and the port of Deception Bay, fifty miles from Saglouc, which will begin operations in Spring 1972. Another mine at Raglan Lake will also open in Spring 1972. Other mines will open on the line which runs from Maricourt to Smith Island, and all the interior of the Ungava will constitute an important mining center (Fig. 4). The mining industry will stimulate the creation of hundreds of jobs in secondary and tertiary industries, and will bring new people into the Ungava. This movement is irreversible: "in view of the coming mine development the chances are very great for populating New Quebec."[6]

The Eskimos of the region must reckon with this new phenomenon. Those in Saglouc have already recognized the potential in jobs available at nearby mines. During our stay in Saglouc we often heard rumors to the effect that Asbestos Company was going to build houses at Deception Bay for the use of Eskimos who would like to live there with their families. What is certain is that the mining company is very well disposed toward the Eskimos of Saglouc, and it is offering them jobs while taking into account their migration patterns.

The control of their immediate future therefore becomes urgent for the Eskimos of Saglouc if they wish to be heard in regional planning. They must awaken to their development, understand how it proceeds, organize basic ideas before major decisions are taken at the regional level. The more the communities acquire an understanding of and a sureness in their evolution, the more they will be taken into account in the politics of economic development. Caution must be exercised to avoid the creation of other Rankin Inlets. Development must not be only a temporary goldmine for Saglouc.

3. POPULATION

Facts concerning the composition and the evolution of the population of Saglouc are essential in order to understand the social behavior of the community, to evaluate its needs, to foresee its aspirations, and to find out who benefits from a community center.

The composition of the population. Saglouc has a population of 360 Eskimos divided into 56 households, and a floating population of non-Eskimos which varies between 20 and 30 people. We identified a number of sub-groups, and the characteristics which define them. The division of the population according to age is one characteristic and here five groups, men and women, were established: children of pre-school age, born after 30 September 1964; a school-age group from 6 to 15; young people 16 to 25, almost all of whom are studying outside; the adult group, 26 to 49 years, which includes most of the family couples; and finally a group of older people, 50 years or more.

Next we divided the population according to its civil status. First there are those people who are in charge of children and who are designated by F and M, for father and mother. The single mothers, numerous in Saglouc, are also designated by M. Next there are those persons who live as couples but do not have children; they are designated as CO. The others are not designated; they include unmarried people without children as well as widows who are no longer responsible for a child under 16 years of age. This classification indicates activities which are undertaken by married people in charge of children or couples. It serves also to evaluate their degree of mobility in Saglouc. Thirdly, we have separated people according to their occupation.

Table 3 shows the different groups and their corresponding symbols. The groups show a similarity of activities and behavior.

With the help of this classification we constructed as precisely as possible a picture indicating the distribution of people according to activities and according to time. This gives us a complete idea of the movements of people in the Saglouc area and in time. This classification will be of great use in precisely establishing certain criteria for inclusion of activities in the community center, for example, the degree of responsibility assumed by the Eskimos for their community development or their needs concerning some proposed activities.

Evolution of the population. Figure 5 shows the pyramid of ages for Saglouc's population, December 1970. The stages vary by five years. This pyramid presents the same characteristics as Graburn does in Eskimos Without Igloos.[7] The proportion of children under the age of five years is 21.7% compared to 19% in 1964. The rate of natural growth is around 35 or 40 births per 1,000, a sizeable decrease in the infant mortality rate during the past six years.

The migratory fluctuation of the past years has not greatly changed the total population. The families which went to Cape Dorset or elsewhere have come back to Saglouc. The balance of migrations is even slightly in favor of Saglouc. It is remarkable

that the demographic forecast established by Graburn has proven itself correct: he foresaw a population of 350 individuals for 1970 and we counted 359 people at the end of the year. In counting on an average rate of increase of 35 per 1,000, it is probable that in five years Saglouc will have between 430 and 450 individuals, excluding of course possible migration due to changes in work.

We shall end with several remarks concerning distribution by age groups. This will give an idea of the importance of the groups who will use the community center, and will necessarily influence the type of activities for which the center will be used. First, more than one-fifth (21.7%) of individuals are of pre-school age; more than 30% are between 5 and 15 years old, and are therefore in grade school. If one includes 20 students outside, one sees that the school population is more than one-third of the total. This percentage will be considerably increased in the next few years by the children who will enter primary school and kindergarten, and also by the increasing number of students who will continue their studies at Poste-de-la-Baleine and elsewhere. Second, 70% of the population is 25 years old or less. This percentage corresponds approximately to the number of people who have had or who will definitely have contacts with the South, who now participate actively in the process of acculturation, and who will soon constitute the new Eskimo people. Third, there are more than 70 men between 15 and 50 years who will be the potential work force for the neighboring mining centers. They could be a determining factor in the evolution of Saglouc in the next five or ten years. Finally, the number of households being formed by people between 20 and 30 years old is diminishing. These people, especially men, retain a certain freedom which characterizes the new generation. Furthermore, the statistics on live births in the past five years confirm this fact: 60% have mothers between 20 and 30 years; in many cases these mothers are not married. Even if they have children, young people take time before they become definite couples.

4. THE COMMUNITY

Community, a definition. Three forms of Eskimo community have been distinguished: the organized camp, the "flexible conglomeration," and the settlement.[8] Saglouc fits into this last category. For a number of years now, Saglouc has attained a certain degree of socio-economic stability. At the same time the organization of this community enjoys a great flexibility, "a lack of rigidity and value associated with conventional ways of doing things."[9] Flexibility is defined as "a relaxed mode of procedure and tolerant attitudes towards demands of living."[10] In the case of Saglouc, evidence of this stability is contained in the very notion of settlement, a place where people live permanently. However, this means a very flexible form of sedentary life. Prolonged stays outside the village are frequent and varied in their motivation: hunting, fishing, work, study, visiting, and so on.

The change from a nomadic to a sedentary life, to which Saglouc owes its present stability, is the direct result of our civilization

which, by the intervention of governments and of several private agencies, has brought to this settlement a range of facilities and services which have in turn created new needs for the Eskimos, encouraging them to live in the village. An increasing number of Eskimos can now find work there or in the surrounding area.

The organization of the community. The first form of organization which existed in Saglouc was the socio-economic ties which grouped the individuals into five large family clans.[11,12] The first three clans are family groups, the Kaitak, the Tayarak, and the Papitatok, which formed competitive economic units. Each of these groups possessed a peterhead and operated it for a profit, by the resourcefulness and work of all members of the group. A fourth group was formed by several families newly arrived from Ivujivik (80 miles west of Saglouc), who lived together in a more or less cohesive fashion. The last group contained other families who came from elsewhere and who did not form a real economic unit.

The chiefs of these clans enjoyed unquestioned authority. The relative importance of the different chiefs depended on the revenue of their clan and consequently on the degree of well-being and the material possessions which distinguished them: "The highest ranking Eskimo in the community is probably that person who has the highest income and who gains it as an entrepreneur. Where this is feasible, such as in those places where sea-mammal hunting with peterheads or other large boats is profitable, the boat-owner is probably the highest-ranking Eskimo in the group. His position is enhanced if he also lives in the settlement and is regarded by the Kabloonas as the spokesman and leader of this group. Such appears to be the case in Sugluk and Povungnituk."[13] We limit ourselves here to underlining several characteristics of these clans which still exist in Saglouc's present social organization.[14]

At the center of the Eskimo community we find the second level of organization, the family. This unit becomes more and more important as the clans' influence weakens: "If it is possible to speak of a basic unit in any society...the household is such a unit for the eastern Eskimo. Most activities of both men and women take place for or in the household. Nevertheless, many of its functions are variously fulfilled for its members by other households in the local group, and even its membership may change from time to time."[15]

Marriage before the law is not an essential condition for a household to be recognized. According to circumstances, a newly-formed couple can choose to live with the parents of either individual, or establish their own house. In Saglouc in 1970, 56 households variously formed shared the 49 housing units available. Of these households, 28 are a single unit of father, mother, and children. Other households are made up of the mother cell plus a second which varies considerably in its composition. Often a married child lives with his parents, his spouse, and their children. In other cases it is a parent, his/her son, daughter, mother-in-law, and so on, who live in the household. Each family head sees as much as possible to the needs of its members. However when a man is unlucky at hunting

or at fishing, he can always count on the help of another family head who is more fortunate. Also one frequently sees the mother of a family, who is less skillful, ask help from a better seamstress.

The phenomenon of adoption is another example of flexibility in the composition of households. Adoption is wide-spread in Saglouc: out of a total of 200 children less than 16 years old, 30% are adopted (59/141); among the latter, 17 have been adopted by their grand-parents, 12 by the father, 2 by unmarried people, and 28 have been accepted by another couple among the relatives. These adoptions happen most frequently in the case of umarrried mothers or mothers sick at childbirth: "Death, sterility, or old age need not be reasons in this society for a couple to lack children in the area. In most cases, a child is adopted because the adopting couple want a child rather than because the child does not have a home." In the 49 houses at Saglouc, 31 include adopted children.

Marriage takes the form of permanent monogamy. Aside from one registered case of polygamy in the past, all the couples follow the defined model. Monogamy is in fact best adapted to the constraints imposed by the environment. The complementary notion contained in the division of tasks between the man and the woman will never be so true as in the North. This monogamy is perhaps the most important factor in guaranteeing the survival of the Eskimo to this date, and will continue to be as long as the Eskimo gets his living from the natural environment: "a man cannot live without a sewer-cook-boot-softener, and each woman must have a hunter-trapper."[17] However, certain observations made during our stay in Saglouc lead us to believe that Eskimo communities are undergoing a series of changes which will modify the character of this monogamy. Though traditionally the formation of couples happens around the age of 16 or 17, we noticed that most young people of marriageable age are not married. Schooling and the new opportunity for work have contributed to eliminating the dependence of the young person on his environment. Marriage which once was essential to survival is losing its raison d'être. Many young Eskimo men and women have lost the traditional skills necessary for successful hunting, fishing, igloo construction, carving, sewing, and so on; they have learned to read, to write, and to count but the jobs available for these young people who come out of school are rare and irregular. Young people who are in this situation are the majority; marriages in this group are rare.

The individual now can be a viable economic unit outside the family, and such individuals will become new factors in the community in the same way as the individual households supersede the clans.

From very large economic units with strong ties of inter-dependence among its members, social structures transform themselves into many small units in order to merge with households or individuals. These latter are dependent and self-sufficient in a society where work and welfare are available. With the disappearance of the clan structure, social leadership is separated from economic power. Leaders are economically weak and young households have a higher standard of living than the average, but they do not interest themselves in Eskimo affairs nor do they have influence in the community.

Leadership is evident at present in two recently created structures: the community council, and the cooperative. The Eskimo Council was formed in 1958 at the instigation of the federal administrator. It was composed of a president and two councillors; it did not have any authority or power as such. The first presidents were elected from among the most influential members of the clans. It is interesting to see how the transfer of leadership has occurred. The authority of the clan chiefs was assured until the death of the last great Tayarak chiefs in 1965; he was considered the best hunter of the Ungava in the first half of the twentieth century.[18] From 1962 to 1964, the leader of the Kaitak clan assumed the duties of the president of the council. In 1965, the president was a member of the Tayarak clan, the most important clan at that moment. But the authority conferred by the possession of a peterhead was limited to little groups which still earned a living from it. Today two peterheads are regularly in operation; they belong to two brothers, descendants of the Kaitak clan, and associated by marriage, one from the Tayarak clan and the other from the Papigatok clan. The most productive peterhead is co-owned by the chief of the Papigatok clan and a descendant of the Kaitak clan. The presidency of the council was returned in 1966 to the chief of the Kaitak clan, and in 1967, to a member of the Papigatok clan re-elected in 1970.

The first officers of the Eskimo cooperative were chosen among those who already exercised authority either in the Council or as a catechist in the church. Slowly, the young Eskimos, more educated and more aware of the economic mechanisms, are replacing the old people in directing the cooperative, but because of its newness, the cooperative of Saglouc has not completed the changeover. The founders of the Federation of Cooperatives singled out two Eskimos, who then were trained at Lévis in the methods of the cooperative movement. One of them returned to Saglouc to take charge of the cooperative of which he is still the manager, and the other was employed at Lévis to help train other Eskimos for the cooperatives. He died in November 1970. The first president (still in office) of the administrative council, like the manager, is a member of the Papigatok clan.

The people who presently occupy a place at the center of the Eskimo Council and of the cooperative's administration come from the traditional clans but no longer fill an important economic function. Among the ten men who direct these two organizations, four are descendants of the Papigatok clan (the chief of the Council and the manager of the cooperative), five are associated with the Tayarak clan (either by descent or by marriage), and one is associated with the old Kaitak clan. Four of these have a regular job, and two others work part-time, for Kabloona agencies. The present authority is therefore connected on the one hand to traditional clans and on the other to the salaried class. The men who have authority derive it from their capacity to consider present and future problems in relation to their impact on the entire community.

The Eskimo Council in principle wields all the civil and judicial powers which the federal administration turns over to it.

All the decisions which concern the application of administrative measures are also discussed in Council and submitted to the authorities. For example, a housing committee was formed for the allocation of new houses and for the improvement of general living conditions. The Council was instructed to appoint an Eskimo to fulfill the role of policeman at Saglouc. He never performed his role effectively, because he came into conflict with the other Eskimos; for the Eskimo, maintaining a good relationship with others is more important than the enforcement of the law (for example, making children obey an 11 o'clock curfew, telling Eskimos to keep their dogs chained, not to ride around on skidoos after 11 o'clock, etc.). The Council relinquished to the administration the duty of enforcing these laws.

The Council assumes a new leadership role when the presidents of the village councils meet together to solve problems at the regional level. They organize meetings in the South to submit their problems and their aspirations to the two governments.

Community facilities. Table 4 lists the various services and their features.

The Hudson's Bay Company offers the services of a grocery, hardware, clothing, and general store, a post office, a bank, and a transportation agency. The Eskimo can buy or order anything he wants; he can telegraph; he can open a savings account or borrow money; in sum it is an extension of a credit service.

Bell Canada, by an agreement with Quebec, offers two free regional channels by which the Eskimos can communicate with other settlements in the Ungava. In addition, there are two other channels relayed to Frobisher by which they can communicate with the outside.

The Catholic Mission includes a large hall where movies are shown and dances are held, and in another room are held bingos, ping-pong games, card games, and checkers; it also serves as the Catholic chapel.

The newly installed nursing station has all the equipment for general and emergency care.

The federal government owns a bath house and a freezer which are used by the Eskimos.

There are two schools in Saglouc. The federal school has three classrooms, the Quebec school has four classrooms including a kindergarten. Presently six classrooms are in use.

The community owns the cooperative building and a small storage building, the skidoo repair shop, and a small community hall.

The governments of Canada and of Quebec offer the Eskimos some administrative services.

5. THE WAY OF LIFE

The way of life in evolution. There is not a single way of Eskimo life but an evolving totality of ways of life, ranging from the most traditional to that of a consumer society. This range of behavior is evident in all aspects of daily life.

Acculturation groups. We grouped the people over sixteen years old

into four different categories. The first includes the Eskimos who live totally or almost like the Kabloonas. The second group are those who usually live in the southern fashion while at the same time keeping certain traditional attitudes. The third group includes the traditional Eskimos who have integrated into their behavior several elements of the Kabloona way of life. In the last group we have gathered the traditional Eskimos who have borrowed from Kabloona only the elements essential for their survival or for their well-being. We have made this classification in four different areas: work; use of the Kabloona language (English); utilization of their leisure time (more or less frequent contact with Kabloona); and lastly their way of living at home (greater or lesser use of Kabloona habits and commodities).

The first group comprises 17.6% of the population considered. Among 28 people 26 are young people under the age of 25 who have had a certain amount of education. Fourteen are still studying, 10 hold regular jobs in Saglouc, and 2 are not working at present. It includes also 2 people older than 25 who have had a regular job for 6 and 11 years. The second group includes 36 people, that is to say 22.6% of the population considered. Two are studying, one is working outside, 2 women have a regular job in Saglouc, 9 stay at home, 10 men have regular jobs, 11 work part-time (mostly at Deception Bay), one lives only from traditional activities. In only 5 cases the husband and wife are in the same category. The third group, by far the most important (75 persons), includes several young people but is distributed in most of the age groups, with a maximum of 19 people between the ages of 35 and 40, and several older people. The fourth group includes 20 people, mostly older than 50 years.

The people of the first group constitute a marginal class in Saglouc; most are there only for part of the year during the vacation period. They all speak English fluently, eat and dress like the Kabloonas, and meet the latter in their work as well as in their leisure time. We have had the most contact with this group in Saglouc, and have received most suggestions from them. They are more aware than the others of their problems and can see better the future needs of their community.

The people of the second group have in common with the first group an official position or a job in Saglouc, and by that fact alone they have a certain influence and economic power. They have however retained a liking for traditional activities (hunting and fishing) and a certain independence vis-à-vis the Kabloonas. In certain cases this independence is translated into mistrust of strangers. All the regular employees (except two) are in this group. These people, remarkably, can easily obtain permission to leave their work for several days in order to go hunting.

The people of the third group are Eskimos who have maintained all the traditional ways except those the Kabloonas have preempted. From the white man they have taken only a certain number of commodities which make their existence easier. Most of the married women are in this category, even if several husbands are in the two first groups. This is an indication of the slow acculturation of women.

The last group is composed mainly of people whom age has spared contact with the culture of the Kabloonas.

Notion of time. First we must choose a framework for our observations on the way of life. We believe that time is the required framework, and we will explain the notion of time as understood by the Eskimo in Saglouc. For the Eskimo before the advent of the Kabloona, there was no precise time set for precise activities. Time had importance only in that it imposed limits to survival activities: the period of darkness implied increased activity during daytime; periods of storm demanded the maximum utilization of good weather. The arrival of the Kabloona and his time-conscious civilization, however, imposed a certain obligatory schedule on the Eskimos' annual and daily cycle. The official organizations and the public services have working hours identical to those in the South. Religious services are at definite hours and a bell sounds to warn the Eskimos. Similarly the caretaker goes round the village in the morning with a bell to tell the children to go to school. These schedules have imposed at least one meal at a regular hour. The school children have a light lunch at noon at school. Regular employees stop at noon to go home to eat. As many workers as school children and housewives are accustomed to having a meal at noon, while generally there are no regular meals at which everyone eats together.

The notion of meals. Two typical foods eaten by the Eskimo are bannock (a sort of bread made of flour and lard), and tea. The women bake a batch of these buns at a time, and whenever anyone is hungry, he has some bannock with a cup of hot tea. When there is seal meat or fish the Eskimos gather and eat more extensive meals. Game is generally shared among large groups. When money is available, Eskimos vary their diet. At the Hudson's Bay store or at the cooperative they can buy most of the tinned goods which we find in the South. However, they do not buy frozen meat since they prefer seal.

All the equipment which is used for eating, like dishes, cutlery, tables and chairs, appear in the houses according to whether the people eat Kabloona food or traditional dishes. Some people of the first two groups we defined usually own a table and chairs, pots and dishes. Others have only several cups and pots; they eat sitting on beds, on skins, or on the floor. Parents and their children often disagree on the question of food. In one house to which we had been invited to share some frozen seal, the father explained to us that one his younger children did not like seal meat. While everyone sat on the floor to eat the seal, the boy ate bread and tinned meat. The father accepted this difference of taste with good grace and did not try to impose on his child the habit of eating seal meat. Several students told us that they buy their own food because the diet of their parents did not suit them any more; also, their parents expected them to get their own food.

The concept of a meal depends on diet and on kitchen equipment. The more varied the food, the more it requires different preparation and the more it demands an assortment of plates or dishes; finally,

it requires that the people eat at the same time. There is also a traditional notion of meals. After successful hunts the people gathered to eat raw seal or Arctic char; this custom is now disappearing. We had the opportunity to visit several houses and to eat with the people. We must admit that it is a good idea to have some tea and bannock when one meets with Eskimos; in spite of the nutritional poorness of this diet, the social function of a meal is fulfilled. When the Eskimos are hunting, their diet is composed of a quantity of bannock and tea which they take with them; they complete their meals with the game they get. If the expedition is more extensive, they also take canned food. The peterhead which brought us to Saglouc was coming back from a trip of at least ten days, and we noticed several tins of soup and other tinned foods bought at the cooperative.

Events. By referring again to Table 3 (enumeration by age groups), we shall see how the people use their time and the way the people live.

School holidays and holidays of regular employees fall at fixed times during the year. Certain seasonal jobs are concentrated in the summer and the fall, but the hunting and fishing seasons still dominate the annual rhythm for most Eskimos. Employers are aware that they must allow the Eskimos to take several days off to go hunting or trapping; this leniency is often a guarantee of better production and greater stability at work. From time to time certain Eskimos ask permission from the director of the school to take their sons hunting for several days. These young people become accustomed to the hunting life in spite of their immersion in the school environment. If one looks at the four categories mentioned above, one can easily see that the people of the first group follow a regular schedule, and that subjection to time decreases in the second, third, and last groups. And even if the Eskimos tend to conform to schedules during the day, the rest of their time is left to their own initiative.

The Eskimo conceives of a sequence of events with difficulty. He can remember exact events in the greatest detail but does not bother to relate them: "Chronological sequence is of no importance to Aivilik. They are interested in the event itself, not in its place with a related series of events. Neither antecedents or consequences are sought, for they are largely unconcerned with the causal or telic relationship between events or acts."19 The Kabloona has obliged the Eskimo to reckon with a series of events which he must grasp in order to understand his own evolution, for example, the Eskimo must become accustomed to keeping written or recorded reports of their meetings.

Weekly events. For young children of pre-school age the day is divided between games in the house and games outside. They amuse themselves with toys bought at the store but mostly with abandoned objects. Outside, they run around the village, on the shore of the bay and the river, or they amuse themselves with the turnstiles by the school. In winter, they slide on the hills around the village. During the summer and autumn they hunt lemmings mercilessly. They spend most of their time visiting Eskimos and white people, hoping to get some

biscuits. They participate in some community activities with the old people such as dances, cinema, or bingo. They also follow their parents to church. About ten of them have begun kindergarten and pre-school, which are taught in Eskimo. They are eager to go there and seem very interested in this new activity.

For children of school age, school occupies the main part of their activities. The caretaker makes a round of the village ringing a bell at about 8:30 in the morning, and the children hurry to school. At noon lunch is served and after half an hour of recreation they return to classes. During recreation they play ball games or simply childhood games. After school they go to the Hudson's Bay store or to the cooperative to buy candy and gum. The older ones buy cigarettes. In the evenings the activities are very limited. On Wednesdays there is a shooting practice which brings together about twenty young people. On Thursdays and on Fridays there are Guide and Scout meetings organized by the teachers and the Anglican minister. The Cubs and Brownies also have their meetings at the Anglican minister's.

The rest of the time the children improvise their own leisure pastimes: outdoor ballgames, floor hockey, cards, checkers, etc. Saturdays the young people hike in the neighboring mountains. The adolescent girls must help their mothers in the house and look after the children. School children participate actively in all the public activities. A new rule went into effect in January 1970 imposing an 11:00 p.m. curfew for children, and in spite of parents' carefree attitude, this point of discipline has been observed.

For the young Eskimo, school is the first break with his childhood activities, and he will discover the outside world at about sixteen. Between sixteen and twenty-five the Eskimo begins to diversify his activities and this phenomenon will be accentuated in the years to come.

When the men are at Saglouc their day begins toward the beginning of the afternoon. They do various work in the house or they go to pass time at the cooperative, at the Hudson's Bay store, or at the federal administrator's office. They make use of these days to prepare for hunting expeditions or trips to Deception Bay. This implies the repair of ski-doos, outboard motors, and hunting equipment. The four or five men in this group who have regular jobs must get up earlier and have meals at more regular hours. In the evenings the young people gather in the houses to listen to music, play cards for money, or to practice Eskimo games. In winter, riding on ski-doos begins towards ten or eleven o'clock; couples ride around the village or on Saglouc Bay. The gatherings in the houses often go on until morning, and married couples (six men between the ages of fifteen and twenty-five are married) are usually the center of these activities.

This group of young people is the initiator of all the leisure activities which concern the community. They have become accustomed in Churchill or in Poste-de-la-Baleine to organizing their leisure time. For several years these young people have organized dances in the hall of the Catholic Mission or in the little community center, and they present films through the agency of the cooperative to complement the program of films presented by the Catholic priest. Sever-

al students at Poste-de-la-Baleine formed an orchestra (two guitars and drums) and enliven the dances which the whole population of Saglouc likes. In November 1970, the young people formed a club of more than 60 members. They organized dances which take place every Friday and almost every day during the Christmas vacation. They plan to organize other activities such as lectures on different subjects, discussions, and so on.

Dances are the principal event of community leisure time. Toward 8:30 at night the children invade the dance-hall and begin their games, their races, and their dances. The young people arrive little by little: the girls stay for the evening; the boys arrive a few at a time with a disinterested air. A certain number of adults come with their small children to amuse themselves and to watch. The mothers carry their babies in their amaüti. The music starts: the children dance in little groups and are no worse at it than the older people; the young people dance also, the girls on one side and the boys on the other, and a few rare couples form. The adults join in and soon the hall is filled with the sound of the latest music. The people do not dance with a person of the other sex, they dance in a group with everyone. At the end of the evening everyone gets in place for a square-dance. The old forms of the dance are disappearing, and adults do not participate actively in these evenings of modern dances.

About ten boys are studying outside the community, and consequently do not participate in the activities of Saglouc; neither do those who work outside. Those who work at Deception Bay come back relatively frequently and their visits, like those of the students, are the occasion for celebration because of the liquor which the visitors bring and because of the increased participation in the Friday night dances.

Among the young girls of the same age group, twelve are married (consequently six of these are married to men older than twenty-five). The activities of the women are less varied than those of the men and are more traditional in terms of domestic work. Those who have children must look after them and help with housework if they do not have a house of their own. Only two or three couples in this group own a house; the others live with their family. Eight girls of this group have a regular job at Saglouc and two of these have a child which must be looked after by the grandmother. After a day of work these young women join groups in one house or other where several activities are regularly organized. Whether they are mothers or not they come dressed in the amaüti; those with babies bring them to the evening gatherings. Most of the girls of this age are still interested in sewing and handicrafts in which their mothers are experts.

Many of these girls have spent some time in the South, and they are quite aware of clothing styles. They know how to mix their traditional costumes with the ideas which they have learned in the South. The same phenomenon occurs for the boys, but it is less evident. Many of the new consumer objects are introduced to Saglouc by this group.

The group of adults from twenty-six to forty-nine includes most of the couples with families. With a few exceptions, the women confine their activities to that of mother of the family.

The men in this group have activities that go from salaried work to the traditional occupations of hunting and fishing. This age group is distributed over the four acculturation groups we defined; in every Eskimo between the ages of twenty-six and forty-nine (approximately) there exists an ambivalence when modern and traditional meet. There are also among this group nine men who work full-time at Saglouc (at the Hudson's Bay Company, for the Quebec government, for the federal administration, or for the cooperative). Their families follow a more regular schedule for meals and sleep. The members of these families also have a higher standard of living on the average and they identify with the white way of living. These people are much concerned with the maintenance of their house. They buy many of the consumer goods they find in the stores, and they must buy the food they do not get by hunting. (These couples often participate in community activities such as dances, films, or visiting.) About fifteen of the men work part-time, either on house construction in Saglouc or at Deception Bay. In order to fill in periods when hunting and fishing are poor or to bring additional, indispensable revenue they take on odd jobs.

When they are in Saglouc between a hunting expedition and a period of salaried work, the men are busy repairing their equipment, carving, buying provisions for their family, or wandering about the village. One is almost certain to find some of these people having a discussion at the cooperative. The women of this group spend their time with housework, visiting, shopping, and afternoon card games. Several women also carve. They do a lot of sewing for their families and also, on a more commercial basis, for the cooperative and for the Kabloonas. Five women have a more or less regular job at Saglouc (maintenance of the bath house, caretaker, cook).

For organized social activities, men and women do not participate together in the same leisure pastimes. Ordinarily the women gather in the evenings in one house and the men in another, either to play cards or to talk. The older people also participate in the same kind of activities. The old women do more handicrafts because they have kept the skills from a time when they used to sew from necessity. The men still have a lot of influence over traditional activities. They direct hunting expeditions as often as possible. At Saglouc they benefit from an old-age pension program and relief.

On Saturdays, a holiday for school children and workers, the Hudson's Bay Company is closed and activity in the village slows down. On Sundays the church is the center of all activities. There is a religious service at ten o'clock, Sunday school in the afternoon, and a service in the evening. The young people are taking part less and less in religious activities. The weekend is usually quite quiet and one sees very few people in the white zone. The Catholic priest shows films twice a week, on Tuesdays and on Saturdays (usually the film shown on Saturday is repeated on Tuesday). The cooperative also shows films, sometimes in the hall of the community center. The whole population participates in this activity; the shouting of children, the laughter and discussion of the others is mixed with the film's scenario. The young people make their comments and give their impres-

sion of the situation in the film. There are also less structured evenings on Sundays at the Catholic Mission; there one plays bingo, watches films or slides, and so on. Along with dances, films, and bingo -- the most striking manifestations of a borrowed culture -- visiting occupies the greatest part of the leisure time: "Aside from the traditional forms of recreation, the most important of which is visiting, the Eskimos have adopted verious new ones, from traders and other agents of civilization.... The interesting thing about these borrowed forms of recreation is that they have become less formal and more flexible although highly structured in their original patterns."[20] The Eskimos however have made these various activities theirs. They have made variations and modifications in all these activities, making them characteristic of Saglouc (for example, we noticed a difference between the square dances at Saglouc and those at Poste-de-la-Baleine).

Annual events. Very few events interrupt the weekly rhythm. The arrival of hunting expeditions by boat or by snowmobile, and especially the arrival of planes, gathers people outside. During the Christmas holidays the Eskimos organize five or six sporting events outside. There are snowmobile races on the bay, a soccer game, as well as other games. The main annual migration, apart from the seasonal wanderings of hunters and of the salaried workers, is the stay on Saglouc Island. This island is six miles from the village at the junction of Hudson Strait and the Bay of Saglouc. In May, if the weather is good, about a dozen families go off to set up their tents in order to be closer to the Strait for fishing and hunting. Slowly the people are abandoning this tradition. However, the young people continue to go to spend time on the island in the spring, and often new couples are formed there. Other families simply set up their tent for the summer because they find that their houses are poorly ventilated and too confining. Previously the Eskimos made use of this stay in tents to clean and repaint their houses.

The longer days which correspond to these spring wanderings result in some school being skipped and a relative disorganization of activities. Ball games continue late into the evening and begin again toward two o'clock in the morning when the sun rises. Children who spend practically the whole night outside cannot follow their classes attentively the next day, nor can adults be very efficient at their nine-to-five jobs.

Deviation from established patterns also results from the prolonged departures of families for their hunting expeditions or for a stay on Saglouc Island. Nowadays, one sees a definite conflict between the annual migration and the rhythms imposed by the Kabloonas, the last effectively excluding the first. In fact, the traditional sequence in which events happen for the Eskimos will be destroyed unless the programs imposed by the Kabloonas take into account that these rhythms are vitally important.

Cultural expression. Making tools and clothing was a condition of survival for the Eskimo nomad. Now, in a sedentary life based on the value of money, carving and sewing have become wage-earning jobs:

"the Eskimo economy has shifted from subsistence production to commodity production making it now largely a money economy.... Changes in Eskimo art show a marked analogy to the changes in economy and, in fact, reflect accurately the changing phases of culture."21

In Saglouc there are about fifteen carvers of whom two or three are really talented. Carving in Saglouc is of very good quality on the whole, and quite diversified. One of the Eskimos makes miniatures which express exactly the various movements of the Eskimo as seal hunter. Another tries to describe the rough facial features of the Eskimo marked by a hard and simple life. The people carve in their houses and stone dust gets everywhere; when the weather is good they prefer to carve outside. Most of the carvings are sold at the cooperative which sends them directly to Lévis; the Hudson's Bay Company buys a certain number which it sends to Winnipeg. It is also possible to buy carvings at the Saglouc cooperative.

The women sew for their families and also for other Eskimos and for the Kabloonas. The attention paid to the embroidery and to the fitting together of the material gives high quality to an attigi, to kamiks, and to other articles of clothing.

We also watched children drawing; their skill and sense of observation is remarkable.

From the musical point of view, the young Eskimos identify with musical styles from the South, and they listen a great deal to popular music. The young people who formed a band are quite good musicians but follow the styles of the South exactly; we have heard Eskimo songs rendered in the purest country-and-western style. The old songs which the hunters murmured on their expeditions are memories of the past; the old Eskimo legends only the old people still remember.

Their language is the last element of the Eskimo culture which resists change even if all communication with strangers must be in English (or in French). Anglicization is very strong but the Eskimos, among themselves, speak their own language, the only one which they really know.

6. COMMUNICATIONS

We have already mentioned the importance of communications in the North. First, the relative isolation of some settlements (like Saglouc) puts communications and transportation systems first among the factors to be considered in establishing or developing a settlement. Second, in regions which are about to be organized from the point of view of communications, the efficiency of these systems will stimulate all the other evolutionary factors and will give coherence to development. In eastern New Quebec, these systems already function and one really cannot speak about total isolation.

During freeze-up (mid-October to mid-December) and during break-up (June) transportation is particularly disorganized for the settlements on the Hudson Strait. For example, during our stay there was no regular flight between 12 October and 8 December. On 8, 16, and 19 December, planes landed on a lake in the mountains seven miles from Saglouc. We had to wait until 29 December for a plane to land on the Bay of Saglouc. Mail which had accumulated since October could not

be sent out before the end of January, and some letters took more than two months to arrive. Three times an airplane flew over Saglouc without being able to land because of the fog.

Communications by radio-telephone depend on atmospheric conditions. In Saglouc it is difficult to reach Poste-de-la-Baleine; sometimes you can reach Montreal via Frobisher Bay very easily, while Ivujivik, 100 miles from Saglouc, does not answer. Radio communications become essential when an airplane comes; sometimes a flight must be cancelled because of poor reception. For Saglouc, then, communications are a very important factor and the development of the village depends upon their improvement. (For further development of the importance of communications in the North, see the MIN technical papers, Communications Study, parts I and II by G.I. Kenney, published in 1971-72.)

Air transportation. Austin Airways serves the whole eastern coast of Hudson's Bay; its base is Timmins, Ontario. Its flights stop in Moosonee, Ontario, where mail for the North is picked up. There are three weekly flights by single-propeller plane between Moosonee and the settlements on James Bay. Two flights leave each week, alternately from Timmins and Moosonee, for Poste-de-la-Baleine, Inoucdjouac, and Povungnituk which are served by a year-round strip. One of these flights goes to Saglouc, and sometimes to Ivujivik and to Cape Dorset. These flights are made by Canso during the summer and by DC-3 during the winter. The settlements on Ungava Bay are linked once a week to Chimo by small private plane.

Nordair has two weekly flights from Montreal to Resolute Bay passing by Roberval, Schefferville, Chimo, and Frobisher. It also has two flights a week from Montreal to Poste-de-la-Baleine, but only one flight during the winter. There are no regular communications between Hudson Bay and Ungava Bay. To go from Maricourt to Saglouc, which are 160 miles apart, you must pass by Chimo which is linked from time to time with Poste-de-la-Baleine and from there go to Saglouc. On the other hand, a regular link will be established between Montreal and Deception Bay, passing by Chimo, with the opening of the Asbestos Hill and Raglan Lake mines. Then there will be three regular air links with Montreal which, practically, will not be affected by atmospheric conditions, and the regular route (two times a week) can be reorganized using small craft capable of landing on water, snow, or ice. For example, Povungnituk, Inoucdjouac, and the settlements on James Bay could be connected with Deception Bay, Koartak, Payne, Baie aux Feuilles, Port Nouveau-Québec; Killiniq could be linked with Chimo. Then it will be necessary to provide a link between Poste-de-la-Baleine and Chimo; the link between Chimo and Deception Bay is already planned.

The proximity of Frobisher is an important factor from the point of view of air transport. Frobisher is an important little town because of its influence on Dorset, Resolute, and other settlements in the High Arctic; in fact, it is one of the most important towns in the Northwest Territories. Recently there was talk, at a conference attended by countries involved in the development of the North,

of a regular flight -- perhaps once a month -- tying Copenhagen to Sonderstromfjord, Frobisher Bay, a central Canadian Arctic locale (Coral Harbour, Rankin Inlet, or Baker Lake), Yellowknife, Whitehorse, and Fairbanks.[22]

Maritime transport. Travel by ship is possible only during three to five summer months. The freighters of the Federal Department of Transport -- D.C. Howe, Montcalm, Radisson, Port Reverend, Crosby, McLean, Labrador, Era -- and tankers bring the annual provisions to the settlements of New Quebec. The Hudson's Bay Company owns its own ships which make the annual voyage, and some other chartered ships come occasionally. Only Chimo, Poste-de-la-Baleine, and Povungnituk are seaports; elsewhere unloading is done with the help of barges which are always in danger of slipping away at the slightest false move. Sea transport is entirely to the North; the ships return empty to the South. Considering the poor weather conditions, the cost of transport, which is more than $1 per cubic foot, is not surprising. Peterheads and motorboats are used mostly for hunting and fishing, and also for some local transportation between settlements. The three peterheads of Saglouc often travel to Ivujivik and Deception Bay, where several Eskimos work (Fig. 6).

Ground transportation. Ground transport is non-existent in New Quebec. The road to James Bay (from Quevillon to Fort Rupert) will soon be finished; this will be the first continuous link with the South by land. The railroad to Schefferville is only 275 miles from Fort Chimo; the one on the Ontario side goes to Moosonee, where the mail piles up. This is the sum of organized transportation. Some experiments have been made with snowmobile routes between the settlements; trips by ski-doo between Saglouc, Deception Bay, and Ivujivik are frequent. A report has been prepared, with a map showing the different routes that should be established on a permanent basis and in three stages. This plan is characterized by a large network of branches coming from the interior of the territory.[23] The first road links to be developed should follow the shore in short stretches, essential to a transportation network in a desert region subject to sudden changes in temperature. The major difficulty remains the deep river beds of certain rivers which would require construction of expensive bridges (Fig. 7).

Other methods of transportation. The conventional methods of transportation have a limited application in the North because of the infrastructure they require, and because of the inescapable seasonal interruptions. New forms of transportation must be considered to bridge the gap between actual possibilities and growing needs.

Air cushion vehicles have been suggested for northern transportation, and several experiments have been made in Churchill and in the Mackenzie District.[24] At present the cost is prohibitive and certain technical characteristics, like maintenance costs and the small radius of action, must be improved. This vehicle has the advantage of being able to move over any surface -- water, ice, snow, earth -- and it can travel by radar. It could become very effective for the transpor-

tation of passengers and merchandise on the coast of Hudson Strait and in the Bay of Ungava where settlements are relatively close one to the other. The cruising speed of one of these models is 70 miles per hour. Submarine freighter is another method of modern transportation which could solve the problem of the short navigation season. It can travel under ice and requires only an ice-free port at its destination so that it can surface there.

Telecommunications. From the point of view of telecommunications, Saglouc is overendowed. There are three fairly long-range radio-telephone systems that function in parallel. The official station of the Bell Telephone Company is operated by Bell's Quebec agent; two channels link in New Quebec. Sometimes it is not possible to reach Poste-de-la-Baleine for three or four weeks; but the other settlements can be reached regularly, depending on atmospheric conditions. Calls are free on these two channels, a service provided by the Quebec government. Most of the calls are made by Eskimos, and mostly to Povungnituk and Poste-de-la-Baleine. Two other channels link Frobisher Bay; from there it is possible to reach the rest of the world. The number of calls is growing considerably; from 164 in 1966 they increased to 248 in 1967, 356 in 1968, 379 in 1969, and 672 in 1970. The percentage of completed calls in relation to all calls made varies between 84% and 95%.

The federal government also owns a radio-telephone with a short beam which is used to call Ivujivik only; this settlement depends administratively on Saglouc. The Hudson's Bay Company owns a radio-telephone and a telegraph for its services. The first has a beam of 200 miles to the interior by which it communicates with the other company stores. This system also serves Austin Airways (the manager of the Hudson's Bay Company is also the agent for Austin Airways). The telegraph is a rapid and less costly method of sending messages. Primarily it is used for Hudson's Bay Company business, but the federal government as well as private individuals also use it. Communications are well organized, but instead of having three parallel systems, it would be better to increase the range of one single system.

Coordination of the different systems. Replanning the systems already in operation could considerably improve communications in New Quebec. Projects to continue the railroad from Schefferville to Chimo and the construction of a road from Abitibi to James Bay are possible in the near future. Chimo and Fort Rupert-Moosonee are the transfer points between surface transportation and other methods of transportation; the bulk of merchandise could be brought from the South to these two points and from there distributed to the settlements.

The principal air network ties the North with large centers via Montreal. The Montreal-Roberval-Chimo-Frobisher route is already in operation. The flight Montreal-Poste-de-la-Baleine could pass by Fort Rupert-Moosonee, continue to Deception Bay and Frobisher. The regular connecting flights between Poste-de-la-Baleine and Chimo or Fort Rupert-Chimo and between Deception Bay and Chimo should be

established. The secondary network would serve all the settlements after Fort Rupert, Poste-de-la-Baleine, Deception Bay, and Chimo as we have already indicated above.

Ships could have their terminals at Rupert and at Chimo and make the trip two or three times a month between these two points, and so supply the settlements.

The experimental use at first and then regular use of new methods of transportation could be integrated into this system. Considering the factors of density, cost, distance, and time it would perhaps be advantageous to cover certain principal routes by rapid connections. Air cushion vehicles, helicopter, and short take-off and landing aircraft could tie the small settlements to the principal settlements.

The effects of the communications system. Efficiency of the communication system has a direct influence on northern economic development. One of the important factors in the cost of products coming to the North is the cost of transportation. The scope and initiation of projects must always consider unfavorable transportation conditions. Inefficient use of available transportation time means extra costs, because of storage, prolonged upkeep, premature depreciation, or poor selection of necessary products. Provisioning is also a problem. Products which come by boat must be ordered one or two years in advance. More than necessary is always ordered not to be inconvenienced by possible further delays, or to compensate for losses due to lengthy transportation. Transfer of personnel is also costly. Rarely can a person come to Saglouc by plane without at least two or three nights' stop-over. Expenditures for stop-overs are not assumed by the aviation companies, and therefore the governments must often pay the daily salary of an employee, pay for his stay at Poste-de-la-Baleine or elsewhere, as well as the paying his living allowance already in effect in Saglouc while a day's (or more) work is lost.

The transportation conditions do not help an administration which is based in Quebec City. The administrators direct the affairs of the community as well as they can, but they must depend on the means of transportation for personnel, matériel, and data. Eskimo employees have waited for weeks for their paychecks because of a late plane.

There is also a problem of turnover in Kabloona personnel, due in great part to poor communications. People must often wait weeks for their replacement or transfer. The same is true for matériel. During our stay in Saglouc, the tank truck which provides houses with water broke down, and more than two weeks went by before the needed spare part arrived. During that time, distribution of water was make-do, and people used melted snow or ice.

The importance of transportation is felt even more strongly in the cultural field. A living culture requires uninterrupted communication between the different centers of artistic, social, or political expression. So in spite of telephone communications between Saglouc and the neighboring settlements, the transmission of ideas remains quite limited. Community expression in Saglouc is turned in on itself; input like films only enlivens certain evenings without being a regular, continuous input to feed cultural expression. In the

case of films, regularly presented at the Catholic Mission and sometimes at the community hall depending on the regularity of airplanes, only old films shown on the circuit are available. Rapid sending and return required for recent films cannot be assured because of transportation delays. Efficient transportation would be a stimulus for a community center. In Saglouc and in New Quebec it would be very easy to improve the existing systems.

7. CLIMATE

The climate of northern Quebec is that of the tundra. The tundra stretches beyond the Ungava and Labrador peninsulas to the North in a line from Richmond Gulf to Hope's Advance. Vegetation is scarce, mostly low bushes, mosses, and lichens. Summer is short with the ever-present possibility of frost. The hottest month is August, the coldest, February. The ground is permafrost and the summer thaw results in many bogs and consequently in many insects. Winter is long and cold.

The annual average temperature is between 15° and 20° F. The absolute maximum and minimum temperatures are respectively 75° and -45°; the extreme temperature difference totals 120°. The average temperature of the hottest month remains below 50° and above 32°. Precipitation is not very abundant, between 10 to 20 inches; variability is in the order of 30%. Snowfall accumulation is 80 inches, and 55% of the total precipitation falls as snow. The percentage of time when there is sunlight in a day increases and decreases from one solstice to the other; in June it reaches 83.1%, and in December it is less than 25%.

Hourly average winds are 12.5 miles per hour. The maximum average winds reach 60 miles per hour. In summer and in January the winds remain constant at 12.5 miles per hour.

Saglouc is protected by mountains which surround it. The winds from the east, west, northwest, northeast, and south are light winds; they represent only 10.5% of the wind and 97% of the time are less than 20 miles per hour. These are mostly summer winds. In contrast, the winds from the north, south, and southwest are more frequent; these are winter winds. Their speed is often around 20 to 40 miles per hour. But the strongest are those from the south, sometimes more than 50 miles per hour. These are storm winds. In January and February winds are fewest; June is windiest.

8. TECHNICAL CONSIDERATIONS

Construction. During our stay in Saglouc we tried to observe on location the effect of phenomena which later we were able to study theoretically. We also looked closely at the organization of different mechanical systems. The construction of buildings and the operation of mechanical equipment is the subject of this section.

Construction in the North includes special difficulties which must be considered. Ground and climate conditions require adequate solutions from the point of view of construction design. First we shall try to describe soil and climatic conditions.

Nature of soil. The north coast of the Ungava is a region of permafrost whose thickness is between 500 and 1,000 feet.[25,26]

A soil cross-section can be divided into several well-defined layers. On the surface there is an active zone which freezes or thaws depending on the season. This zone is followed by permafrost, always frozen. Underneath this layer is ordinary soil. Sometimes islands of permafrost are found in active (unfrozen) zones, and are called "pereletok." Active islands or "talik" may be found in the layer of permafrost. These different zones are not perfectly horizontal, but they more or less are parallel to the surface of the ground. In addition, the topography itself and any changes made to the ground influence the thermal equilibrium below ground and modify the shape of the permafrost. In Saglouc, the active zone reaches an average of five feet. The ground is a mixture of gravel and earth, whose surface is covered with short grass. The water resulting from the summer thaw is more or less drained, depending upon the ground. The area to the west of the village is marshy while the northern side of the hills behind the village is well-drained by the river which flows east of the village. The surface of the ground becomes very muddy in summer on the paths and between the houses because of the thaw and because of heavy caterpillar vehicles. (Fig. 31 shows the distribution of these different zones in Saglouc.)

Climate conditions influencing construction. In addition to soil conditions, climatic characteristics are likely to influence construction. Structures must survive a temperature range of -50° to 80° F. This variation imposes definite conditions for insulation and ventilation. Sharp changes of up to 70° difference, in the same day or on two consecutive days, are possible, particularly in winter. The structures must also be able to withstand winds of at least 80 miles an hour. The rainy season is not long but structures must be sufficiently waterproof.

The climate conditions also influence the construction season. The days are longest in May, and in the next few months, the sunlight makes possible long days of work. The mild temperatures (between 20° and 70°) also facilitate construction. On the other hand, the summer months are the rainy periods, and in general it can be said that the construction period lasts for three months at most. And because the work depends on delivery of materials by ship, this period cannot start much before July.

Knowing what the physical restrictions are, we can discuss methods of construction. Particular attention should be paid to preliminary studies; knowledge of regional climatic and hydrological history, and of history of the local buildings, is very important. For Saglouc, we were able to consult the daily reports concerning the climate for the past four years. We were also able to talk with the workers who participated in construction programs in progress since 1958. Buildings had been shifting, because they had been put up without adequate study of the ground or sufficient knowledge of construction on permafrost. During the summer of 1970 it was necessary to move a storage building

because the foundations had been affected by movements of the underlying active zone. The powerhouse which is situated beside the old foundations of the storage building will have the same thing happen to it; it will have to be moved in the next year or so. This particular strip of ground is not good for construction unless one builds directly on the permafrost (Fig. 31). Photographic surveys should be made to find out the precise extent of the different ground zones. Rigorous planning of construction operations is of great importance, because the cost and permanence of construction depend on it.

Foundations. Given the ground conditions observed and the type of structures to be built, there are several possible types of foundations. For buildings designed for a ten-year life or less, either a gravel bed three to four feet thick, or beams laid on the ground and crossing the main beams of the house at right angles, or small wooden columns on footings supporting the main beams are suitable. For greater durability, these columns can be supported on concrete blocks or the beams supported on a series of concrete columns. These types of foundations all lay the construction on the surface of the ground and therefore submit it over a period of time to the movements of the active zone (Fig. 8). These are good for small structures at a lower price.

In this first method air always must be allowed to circulate between the ground and the floor of the house, in order to avoid changing the thermal equilibrium of the underlying soil.

For permanent structures of greater importance, foundations entering permafrost are usually used. The columns can be wood and rest on the uppermost layer of permafrost. Or they can be of reinforced concrete and penetrate the permafrost. Footings can be put under the columns. Sometimes a complete foundation is built on footings, or footings superimposed on rows of wooden blocks braced at right angles one against the other, and the interstices filled with sand. For more substantial constructions columns are sunk into the permafrost to a depth where the solidity of the frozen ground exceeds the pressure of the columns (Fig. 9). Another newer method is to construct on pilings. The principles are for the most part the same as for the preceeding method but the ground is completely open under the buildings.

Building layout. Three principal types of different arrangements of groups of buildings or parts of buildings can be discerned (Fig. 10). First there is a linear arrangement which is characterized by a series of buildings placed end-to-end and joined together at one end by small porches. In this arrangement we see that the different functions are related to one another and can pass from one to the other under cover. Buildings can be classified generally into three categories according to their relation to the ground. There is subterranean construction, embedded in permafrost; there is construction on the surface of the ground, with or without a join with the permafrost; and finally construction on pilings, with footings on permafrost (Fig. 11).

The second type are buildings which can be of very different forms, physically separate but all serving the same purpose. Northern

settlements use this type of organization. The third type of construction, bringing together multiple functions on several levels, is less common. The combination of the three types of foundations with the three types of organization cover all possible types of construction in the North. These nine possibilities will be very useful in the selection of a type of construction for a community center, and the articulation of the different functions determines this choice.

Construction design. Special attention must be paid to certain points of construction that depend directly on physical conditions. Fire protection, for example, is a problem which one cannot escape: it is almost impossible to put out a fire in the North because of the scarcity of water or the slowness of its distribution. Also, the use of paint and inflammable material is becoming more common. Care must be taken to isolate indispensable buildings (storage buildings, powerhouse) from other buildings. A pattern of dispersed or scattered buildings such as is found in all northern villages becomes a priority. Buildings laid out in a linear fashion require fire-walls at regular intervals. Thermal insulation must be well studied and a U-factor of 0.05 will be considered a maximum. It would be interesting to find materials which, in combination with snow, would make good insulators.

Buildings must be planned to resist winds of 150 miles per hour. Prefabricated elements are well-suited here because the quality of each element is controlled. Forms which are wind-resistent should be considered; above all, elements which project from the main bulk of the building are to be avoided.

The choice of a heating system should be the subject of detailed studies, from the point of view of cost as well as technical considerations. For example, a hot-air system with the possibility of a humidifier would be useful because it cannot be damaged by cold and does not depend upon an electrical system. For larger buildings, a central steam system is recommended; at Deception Bay the bunkhouses are equipped with such a heating system.

Construction details. We shall now give several construction details which we observed in Saglouc; these details illustrate the design solutions which are responses to definite technical restrictions. We saw several types of foundations in Saglouc. One is a bed of gravel and stone upon which rest beams of wood. A second is wooden columns on wooden footings with hooks tying together all the wooden forms of the footing. A third example is a lattice-work of wooden blocks resting on the ground; last is wood columns on a concrete footing. Most houses have a single floor resting on wooden beams (generally six inches by twelve inches). This floor is composed of a prefabricated wooden panel, rigid insulation one inch thick, and a layer of plywood board. The new houses which we saw being constructed have a double floor incorporating a hot-air heating system. It is composed of a prefabricated panel well insulated by a seven-inch layer of air, and the whole covered with a sheet of plywood supported by planks of two

inches by seven inches. This type of floor is very efficient if one compares it with the first example above, which is a cold floor. Most of the windows do not have opening sections and are quite small. A system of louvers is used for ventilation. The Eskimos complain that their houses are not well enough ventilated in the summer and that cold air gets in in the winter. We shall give several types of windows and of louvers (Fig. 12).

There are two types of heating systems using oil. First there is a furnace with an oil burner, and then there is an oil stove on which one can also cook. In the new houses there is also a central furnace with a system for distributing hot air around the periphery, via the double floor.

Finally, we show several entryways which we saw in Saglouc (Fig. 13).

Facilities in the settlement. We enumerate here all the technical facilities -- buildings, machines -- which presently exist in Saglouc. This is to enable us to propose a system of construction which will take into account facilities already there.

Saglouc has a garage (33 feet by 43 feet) which can take three vehicles and which is equipped with all the tools necessary for vehicle repair. There is also another smaller garage (28 feet by 30 feet) which can hold two vehicles. The powerhouse (23 feet by 34 feet) has two generators which provide all the electricity for the village.

The bath house (16 feet by 32 feet) contains three washing machines, one dryer, two showers (one for men, one for women), a water reservoir, and a hot water reservoir for used water. The latter is emptied outside when it is full and the water spills out and freezes around the bath house. This building is unfortunately too small at the present time.

A huge storage house (2400 square feet) allows extra material or surplus equipment to be stored. A freezer (12 feet by 36 feet) is fed by two electric fans; it is insufficient at the present time for the needs of the population. The water pump is installed on the river and covered by a small shelter. A ski-doo repair shop was organized during our stay in Saglouc. The building which used to be the powerhouse (24 feet by 18 feet) is now the plumbing shop, used mostly for the repair of stoves and furnaces. There are also two large oil reservoirs and the four little gas reservoirs near the bay (Fig. 13).

From the point of view of machinery, the federal government in Saglouc owns a Nodwell-type tank truck for water, two bulldozers (one of the TD-15 type and the other the TD-5 type), a muskeg-type truck for garbage, a Bombardier, a trailer on tracks, and a large sled (15 feet by 7 feet) on which they sometimes put a water tank. A raft (7 feet by 15 feet) is used as a dock during the summer season and another raft (15 feet by 25 feet) is used to unload cargo.

Electricity is distributed to almost all the houses from the central powerhouse. Water is brought to the houses by a tank truck which is filled up at the river. The distribution takes place two or three times a week according to the temperature. When the tank truck

broke down during our stay, for two weeks water was distributed by a tank mounted on a bulldozer-pulled sled. During the summer a rudimentary aqueduct is installed, and drinking water is circulated through pipes by means of pumps at several points in the village. The Eskimos get water at these points and not by distribution by truck to the home. The houses of Euro-Americans have the truck service in summer as they do in winter. It would be possible to install a permanent system of pipes if the water circulated continually and did not freeze. Garbage is put in metal barrels and piled up outside on a kind of raised platform. A truck goes every two weeks to pick it up and take it to a dump east of the village. This dump is a public health nuisance and an alternate solution for this problem should be found soon.

Improvements. Several jobs could be done immediately in Saglouc to improve the land and the layout of the village. Ground could be drained easily especially west of the village, and so make it suitable for construction. Equipment necessary for this is already available. The bay could be dredged for better canoe moorage and to facilitate cargo unloading.

We noticed that houses are often moved from one place to another in Saglouc. These moves are made quite easily: either one simply moves the houses from one place to another or one brings two houses together to make a larger one. During our stay we watched trailers being moved to set up the infirmary.

Conclusion. The community center is the physical framework which will allow the phenomenon of acculturation to take place.

First of all, as a setting the center contains a number of the instruments of acculturation. Two cultures, Euro-American and Eskimo, are present: the first is in full possession of the means necessary to achieve its ends; the other is looking for these same means. The contacts increase in both directions; the arrival of more and more people belonging to the first group happens at the same time as the shaking up of the second group's traditional framework. At a second stage there are many interactions between the members of the two cultural groups. (These interactions have been defined above, pp. 4-5.) At a third stage there is a mutual transfer from one culture to the other. The first group brings a lot of information: religion, education, work all contain a lot of new information for the second group, and technical innovations also transform their habits.

The contribution of the second group is less substantial than the counter-current, and above all it is generally poorly received and little considered by the first group which believes itself to be self-sufficient. However, the second group's contribution is rich; it includes a way of life, traditions, and a way of expression. In the case of the Eskimos their contribution is the techniques of survival in the North, their special social relations, and their handicrafts. There is also a mutual exchange in life style: the first group arrives with its thoughts marked by technology and by a great insistence on material comfort; the Eskimos bring their way

of thinking, more meditative and more in accord with the constraints imposed by the environment.

At a fourth stage we can discern the emergence of new phenomena. For the second group, technological contributions allow permanent communication with kinsmen living in other places. All their communities can know each other better. As a group they become conscious of their social and political life and begin to assume their responsibilities and to direct their collective future. As for the first group, it adapted technologically and psychologically to this chosen environment. At the same time this group questions the role imposed upon it by the "superior culture."

Finally a new culture, combining first and second groups, is established. This new culture continues to co-exist with that of the first group but gradually becomes an original culture. The present danger is the disappearance of the second group's culture without the emergence of the new culture, since the first group has a bulldozer effect on the second which has only begun to identify itself.

This is why a community center is essential for the passage of Eskimo culture to the new culture. Considering this, we can define which elements must be included in the community center in order that it act as a physical framework for the process of acculturation.

The first essential element is information. The community center must allow for a series of information channels and communications which the people can use. This information can take several concrete forms. For example, the Eskimos could see their immediate past in a museum, exhibitions, recordings of traditional music, and television programs which would show techniques of their life-style, such as in hunting or in constructing an igloo. They would become aware of their present and their future by films, theater, lectures, courses, recordings, broadcasts, books, prints, and so on, which express their cultural entity.

The second essential element is participation, made possible by different spaces and facilities where civic meetings, as well as social meetings, council meetings, group demonstrations, recording of broadcast tapes, and sports activities could be held.

The third essential element after participation is a reinforcement of cultural and social expression by new means and new motivations. This expression could find an outlet in handicrafts, dancing, the publication of a newspaper, and also by social and political action.

It is therefore essential that the community center constitute a nucleus which would include these three elements at least: means of information, means of participation, and means of cultural expression. These elements would be concretized in one or another of the examples given above, or any others appropriate. This nucleus would require, first of all, an audiovisual system which would be appropriate for initiating these three acculturating elements.

The physical framework of the community center should contain also a number of services inherent in our conception of it. These services are not acculturative but are part of the physical framework which contains the acculturating elements. The variety of these

services depends, inevitably, on local needs. For example, a radio-telephone, a kitchen, a dining room, a freezer, public showers, a laundry, administrative offices, and so on, would be included in a community center. These services would also increase contact between people; the services are outside the nuclear center but their inclusion would complement the process of acculturation, and they would be a very important contribution to the effectiveness of the community center.

In the case of Saglouc, several of these services and activities already exist. We shall try, when defining restrictions (below), to make the most use of facilities which now exist and which are suitable for the next few years. We would like to add that the construction of the community center could be an Eskimo enterprise; because of new technical developments, knowledge of northern conditions, and the effect of on-the-job training in this community project, they actually would be involved in acculturation.

B. SAGLOUC: ANALYSIS

9. ANALYSIS AND TREATMENT OF DATA

On examining the information we gathered during our stay in Saglouc and from our conversations with different people who were involved in one way or another in the development of the North, we think three areas of analysis are essential.

First of all, it seems necessary to analyze the different conditions which justify locating a community center in any given region and place. We thought that we should list all the conditions to be considered in settling on a place for an actual project. These conditions obviously involve economic and sociological factors, but basically they are oriented toward the design of a community center. In our case, the choice of Saglouc as a location was not the result of such an analysis; obviously we could not apply this method without having studied it. We nevertheless have shown what conditions in the Ungava Peninsula and in Saglouc would have served to justify such a choice.

The second area of analysis tries to determine the scope of the community center. After having chosen a location in a given region and considered local conditions, all the activities to take place in the community center should be determined. The expansion foreseen for Saglouc provided us with a scale for the size of the center and for other precise criteria, in order of priority, for the center's activities.

Lastly, we prepared an analysis of the physical conditions which would directly influence the design of the community center. A detailed study of the spaces to be planned and of the components to be used would allow us to work out and evaluate the design of the community center.

In the analysis it was necessary to use a method which would allow us to design the community center starting from well-defined restrictions. The results of observation and research cannot influence

design unless the conditions of and the variations on that influence are established. The terms we use are defined below; we then go on to give the process of analysis.

Performance: the degree to which a design conforms to a set of criteria
Performance-cost relationship: means of evaluating the relationship between the cost and performance of a design
Criteria: set of factors
Factor: set of constraints which influence the design
Mode of variation: relationship between the variation of design options, comparing the degree to which each option satisfies a set of constraints
Scale of variation: scale giving the unit of measurement and the magnitude of the variation
Score: numerical value in terms of the unit of variation
Weight: numerical value which we give to criteria and to factors to indicate their respective importance
Design: graphic representation of a formal physical response to a given program; in this case the response is the set of plans and drawings for the community center.

We evaluate the performance of the design by a set of criteria: that is, when a design or a design element responds more or less exactly to the criteria, we give it a score which depends upon the degree of design "fit." If necessary, we give each group of criteria a weight according to its importance in relation to other groups. Each group contains a number of criteria. A criterion encompasses all the factors which relate to a common subject (each factor can also be divided into subfactors). The factor or subfactor is the unit of analysis; it always implies a mode of variation, a scale of variation, and a score.

Through the modes of variation, a relationship between the different design elements and the degree to which each one responds to a set of constraints can be established. The scale of variation gives the relative and the absolute magnitude of this variation. The variation is given a score on a scoring scale. According to its response to constraints, a design element gets a score for each factor or subfactor. These factors also have a weight according to their importance within the criterion. The criteria also have a weight according to their importance within the group.

The score which each design factor gets is multiplied by the weight of the factor, to give the index score; the sum of the factors' index scores gives the score of the criterion. The criterion's score is multiplied by the weight of a criterion, giving the index score of a criterion; the sum of criteria index scores gives the score of the group of criteria. This score, multiplied by the weight of the group, gives the index score of the group; the sum of the index scores of the groups gives the total score. A design is evaluated on the basis of its total score, or by comparison with an optimal score defined by ourselves (Figs. 14,15).

Justification for choice of site. All the conditions which will help determine a site for a community center are listed below. These conditions could not be set up as analysis criteria as defined above, for several reasons. First, the nature of the conditions did not permit establishing precise curves which could be assigned number values and scored. Secondly, the fact that most of the conditions are projects planned but not yet executed required a very large margin of variation. Finally, the lack of information on most conditions prevents observation of their evolution over several years.

Regional considerations. There are certain social, economic, and other conditions which assure the stability and evolution of villages in a given region, and which show the degree of organizational evolution in the territory. If the regional structures are stable and their evolution constant, the villages profit; the stability and evolution of the villages then favor the introduction of a community center. It is evident that no community center project could be undertaken if stable village conditions are not assured. The region which we studied was that part of the Ungava Peninsula which stretches over the whole region north of La Rivière-à-la-Feuille.

The structure of the northern Quebec school board is one element in the future administrative totality of the Ungava. It permits contact between teachers and school administrators at the regional level; it also involves parents' groups. Becoming aware of their common problems, parents and teachers will be able to influence the administration. But above all the new school commission will initiate a system of adult education which will eventually allow the Eskimos to take over the administrative tools.

Integration of federal and provincial administrations, which is the order of the day, will polarize contacts between the administrators and their constituency. The Eskimos no longer will be disunified in their requests to and discussions with the administration, and so it will be possible to lay the groundwork for planning the territory with maximum Eskimo participation.

Municipal growth of the Ungava settlements is still in the planning stages; it will provide the autochthonous people with power leading to administrative responsibilities. Potential use and planning of villages are part of these responsibilities. Organizing the settlements into municipalities would make it possible to specialize them according to their particular nature, while taking into consideration the features of the whole region.

Another possibility, suggested by different northern people, would be to transfer the seat of administration to the North (Poste-de-la-Baleine or Fort Chimo), which would involve present administrative personnel in the development of the North, integrate Eskimos little by little into the administration, and make transfer of responsibilities easier.

Economic conditions. Mining development is an essential element in

the evolution of the Ungava; asbestos and nickel resources are exploitable for the next forty years at least, and will attract capital and people to the region. Investments by government or private sources are also a stabilizing factor in the Ungava; these too are influenced by mining development.

The regional organization of Eskimo cooperatives also will be important to stability in the Ungava. Total production (of hunting, fishing, carving) could be collected at one point in the region and sold from there. In the same way a distribution center could be built in the region and serve the consumer cooperative.

The community center itself would be a stimulus for economic development, first because of the jobs it would create, and then by the revenue generated by activities such as tourism, guiding, and so on. (The organization of tourist activities would be most probably a small contribution from the economic point of view.) Well-planned organization of biological resources in the long run would be a condition for the region's stability; establishing a game preserve or raising foxes or other fur animals are examples. Last, handicrafts production would be a factor in Ungava's economic development.

Sociological conditions. Among the conditions for social evolution is the organization of medical services in the whole Ungava Peninsula. There is a hospital at Chimo, and nursing stations are being improved in each settlement.

Related to administration, but first among social preoccupations, is the structuring of the organizations which represent Indians and Eskimos' survival in the new socio-economic context. Governments have already begun developing policies in this direction; autochthonous agents are being trained to give their people information concerning new work opportunities.

Another aspect of the community center is its role as cultural stimulus in the framework of regional development. A program of courses, lectures, and other travelling cultural activities would be planned in order to increase the intensity of cultural life in the different settlements.

Conditions relating to transportation and communications. The opening of a regular transport route between Montreal, Chimo, Deception Bay, and Frobisher will complete the network of air transportation (Fig. 16). Studies of the development of surface transportation, principally by road or railway, foresee the possibility of Ungava linked to the rest of Quebec (Fig. 17). The fairly short distances between the different villages of the Ungava permit fairly easy development of a network of surface transportation.

New means of transportation between the settlements of the Ungava could be seen as the solution to irregular contact; the air cushion vehicle is the most likely of these new methods.

Bell Telephone Company projects foresee automatic telephone exchanges in each settlement. A television network from Frobisher is

also envisaged. The proximity of an important center like Frobisher to the Ungava Peninsula is in itself an important condition for development. The eventual organization of a radio station in which each settlement of the Ungava will participate will offer another stability factor to the human establishment there.

Choosing a location for the center. Once enough conditions make the establishment of one or more community centers at the regional level possible, it is then necessary to identify the settlements in which the community center(s) would be of most use. To do this we have three series of conditions by which to compare different settlements in a region. However, it is almost impossible to give precise statistics for these three groups of conditions, figures not being available or not existing at all. From the point of view of investment, for example, we know the government budgets for 1970 and 1971. However, these figures have but little significance in relation to a community center which requires a large capital investment. Either this capital would come via long-range planning by New Quebec, or in the form of special subsidies by governments or private organizations. We shall limit ourselves to discussing the different factors in an actual project for which it would be useful to have precise statistics.

Demographic considerations. By studying age distribution, keeping in mind the known rates of natural growth, the approximate composition of the population of Saglouc could be predicted. (A precise statistical study to this effect is being done by the Department of Indian Affairs and Northern Development.) It would be interesting also to have facts on the fluctuation of the Eskimo population for the last few years, and to know the motives for it. A supplementary report on the fluctuations of the white population for several years, both for the total population and by categories of occupation, would be useful. Such reports would indicate what groups of individuals would use a community center.

Sociological forecast. We shall attempt to project, as precisely as possible, the future work, education, and leisure time situation in Saglouc. The most complete possible statistics for work would help to establish the socio-economic profile of Saglouc, and would have implications for the community center; the relevant statistics are those concerning the increase in number of jobs, the percentage of the population that is active, and apprenticeship. Facts about leisure time (by age group), and the forecast of the needs of the people and their future participation in the activities of the community center, will be essential to the decision process.

It is easy to imagine the leisure-time situation five years hence, keeping in mind the composition of the population and the present leisure time (Table 3). Most children are fond of new activities; a large number of young people are more and more in touch with the outside through work, studies, and so on; adults are forced to stay in

the village more and more between the less frequent hunting expeditions: these people will ask for a variety of leisure pastimes which the community center should offer.

Since schooling is one of the principal phenomena in cultural change, it should be one of the priorities for the community center. Statistics on schooling and the possibilities for schooling would show a profile justifying a community center.

Economic forecast. Economic forecasts include projects that can modify the economic situation at the settlement level; budgets of existing organizations; and the curve production-consumption-reinvestment. Among the possible projects for Saglouc we have mentioned the improvement of facilities, the construction of new homes, and consequences (at the local level) of the development plan in New Quebec. With the help of the budgets of organizations already in Saglouc, one can draw a curve showing the relative weight of production, consumption, and reinvestment. The points of analysis which we have included would require a precise study, and the importance accorded to each of these points depends obviously on the possibility of comparing them to statistics from other settlements.

10. SCOPE OF THE COMMUNITY CENTER

This second field of analysis follows the choice of a location for building a community center. This must be fitted to the village chosen, in this case Saglouc. To do this we first established a group of criteria according to which it is possible to include this activity or that service in the community center. Secondly, we propose a study of the maximum use of existing structures in Saglouc.

Criteria for including activities and services in the community center. We have listed activities and services which might be contained in a community center, defined ten criteria which will be used to evaluate the relative importance of the different activities and services, and found out in what order of priority these can be included (Table 5). A definition of each criterion depends on the factors used to compare two activities, and by organizing the groups of factors, we have arrived at ten criteria. We have kept in mind, above all, human aspects which interact with the activities; 50% of the criteria concern these aspects. The others concern the economic, technical, and spatial aspects. The distribution proved to be correct, and it was not necessary to use correcting weights.

Investments for activities. The first criterion helps evaluate the cost of investment for the different activities. This cost does not include the construction of the building itself, but only the facilities which must be added in order to make a given activity possible. To get an idea of the sum of the initial investment for these different activities, we have detailed the activities and facilities required (Table 6). We then list the facilities with the approximate corresponding cost and the rate of occurrence of the different activities.

An activity is evaluated by the cost of the facility which it would require. The cost is divided by the number of activities which require this facility. An activity which has a high shared cost is much less favorable in relation to others (Fig. 18) with a low shared cost.

Personal expenditure. Certain activities or certain services may require individual expenditure for those who participate in these activities or who use these services. We have compared them in order to establish a scale which would favor activities which involve little or no personal expense. Personal expenditures are of two kinds: first, there is the cost of personal equipment necessary for a certain activity; next, there are the costs of using certain services. We have enumerated the activities which require these personal expenditures (Table 7), and we also give the approximate cost. In the case of commercial activities, we have indicated that they are commercial (Fig. 19 *level G*).

Space requirements. We tried to favor activities which have the smallest unit area (square feet per person). We have established a scale which favors these activities in descending order of area requirements (Fig. 20).

Degree of compatibility. The goal of this criterion is to favor the spatio-temporal correspondence between activities. We have defined the relation of compatibility between each activity in relation to all others. There are four relations of compatibility: A, between two activities which can take place at the same time in the same space; B, when two activities can take place in the same space at different times; C, when two activities can take place at the same time in different spaces; D, when two activities must necessarily happen in different spaces and at different times. For each link between two activities we give the order of priority of these four relations. These priorities can be acoustic, visual, psychological, functional, and so on. It is evident that this graph of compatibility will be very useful in analysis of factors most directly concerning the design.

Activities were selected for their general degree of compatibility. We attributed scores *7 to* 1 respectively to the relations A *To G*. We added the scores of the first priority for each activity. By comparing the different scores we can classify the activity by ascending order of the compatibility (Fig. 21).

Difficulties of accomodation. Different activities are compared according to the degree of difficulty in accomodating them. These activities have been classed in five categories according to whether the difficulties of accomodating them are excessive, great, average, minimal, or no difficulty. We have also kept in mind the fact that certain difficulties can be shared by several activities (Fig. 22).

Degree of acculturation. As the first human criterion, we tried to compare activities with each other according to the importance they have in the phenomenon of acculturation, that is the transition of a traditional culture to a new culture, precipitated by the permanent contact of two ethnic groups, in this case, Eskimo and Euro-American. In order to establish the importance of each activity from the point of view of acculturation, we considered two aspects. We asked ourselves whether an activity has or has not an origin in the traditional activities of the Eskimo (Table 8); we then established the degree of intercultural contact which each activity brings (Table 9). The degree of acculturation is the result of adding the sum of these two factors (Fig. 23).

Degree of communication. In this criterion, the importance of communication of the activities is evaluated. The first factor concerns the personal links established in each activity. We classified the activity according to the importance of the personal contact they bring about. We have multiplied these results by the weight 2 (Table 10). The second factor emphasizes the importance of the contents of the communication in each activity. We classed these according to the importance of the content, and weight 3 is given to this factor (Table 11). The last factor takes into account the number of people implied in a communication within each activity. The activities have been evaluated in direct relation to the number of people which they involve; weight 1 leaves the results unchanged (Table 12). We have added the three scores, and this gives us the result of the activities (Fig. 24).

Expressed need. Since the reason for our stay in Saglouc was to inquire as much as possible about the needs and desires of the people for a community center, it was normal that we should establish a criterion which would take into account these needs. For each activity, we considered the need for it as expressed by the people. Depending on whether the activity had not been asked for, had been asked for by an individual, by a sub-group, or by all the people of Saglouc, we rated it from 1 to 4 (Fig. 25).

Recognized need. Our stay in Saglouc permitted us in addition to become aware of necessary activities. Our Eskimo associate confirmed or negated our conclusions. We classed the activities in four categories according to the degree of necessity we recognized (Fig. 26).

Degree of responsibility. It will be very important to recognize, in a community center administered by Eskimos, the activities for which they would assume responsibility. We therefore evaluated the present degree of existing activity responsibility, and the degree of responsibility in the future for existing or proposed activities. We classified the activities in six categories according to increasing eventual Eskimo responsibility (Fig. 27).

New and existing facilities. To respond both to the constraints of locale and to criteria of inclusion of activities, we evolved a program which would allow the community center to be built including buildings already in Saglouc. We considered the list of included activities and reclassed them in four categories, according to whether they need a new facility, whether they could temporarily use an existing facility in good condition, or finally whether they could use either a new facility or an existing one. This gave us a list of facilities which we must consider for the community center (Table 13).

11. CRITERIA AND DESIGN STANDARDS

The third part of this analysis is in fact a predesign stage. All the elements which constitute the community center are either spaces abstractly defined or physical components of these spaces. We have defined a series of criteria which apply to spaces (at any level) and others which apply to the components. In the first case we explain in detail the factors which characterize the spaces, and in Table 10 ff. we give the performances of each space in comparison with the others. For the components, we limit ourselves to defining criteria which are constraints on each of the subcomponents.

Criteria for space. These are all the factors involved in the various activity spaces at the village level, at the community center level, or at the facility level. For each of these levels we considered questions of size, organization, and shape. It seems essential to analyze fully the question of space available, because it will be the physical expression of the phenomena observed in Saglouc. Facilities must correspond to precise needs, as defined above.

Facilities. For each activity included in the community center we have assigned a corresponding space (Table 14).

Criteria which will decide the choice of size for each space are four. The first factor concerns the objects necessary for a particular activity. The dimension of the objects and the distances between them are easily measured. The second factor concerns openings and access to the space. The dimension of doors, windows, stairs, and access to objects are given where necessary. Cases not listed follow the Building Code standards. The third factor is the dimensions and scales of surface area of the spaces. The optimal conditions and the units of variation are defined, taking into account the objects which are in the spaces and the possible variations of the surface area. Fourth, we give a scale for the surface area of storage space (Table 15).

We also established several criteria to regulate the spatial organization of facilities. A first factor here is the characteristics of walls. There must be some free wall surfaces, and the position of certain openings and the linear or discontinuous organization of walls must be controlled. A second factor is the internal mechanical network of the facilities. A third factor is characteristics and

location of objects (Table 16).

A final point concerning the facilities: several form considerations - sociological effects or design restrictions - should be studied to provide important details about the influence of the facilities' shape. We give some examples to show in what way this study could be conducted (Table 17).

The community center. Once the facilities are defined, it is necessary to give the criteria which will influence the construction of the community center from the point of view of size, spatial organization, and design considerations. The characteristics of facilities are defined by the objects they contain; in the same way the center will be defined by the facilities it includes.

Size. The scale of size for the community center was defined as follows. We added first the lower limits of the optimal area scale for each space (Table 15). This result (13,400 square feet) serves as a sub-optimal limit for the area scale for the community center. The upper limit (14,600 square feet) of area was obtained. The difference between these two numbers served as a unit of measurement. The minimal and maximal limit of the scale corresponds both to the lower and upper limits of the area scale and to a unit of measurement (1,200 square feet).

We evolved two scales of ground-level perimeters, according to whether the building is to have one level or more than one. The optimal limits were defined by using the limits of squared optimal areas, the square unit area being that which offered the best perimeter-surface relationship. From the perimeters we defined the total outside surface, the area which most affects the cost of construction (Table 18).

The size scales establish the order of optimal area at the facility level as well as at the community center level. There are hundreds of possible combinations of size; it was necessary to coordinate all of them in relation to a basic module of four inches (studies on modular coordination generally use this module size). We thought that the smallest convenient dimension would be 16 inches. We made a list of all the combinations of dimensions in multiples of 16 inches for each space. We looked at the rate of occurrence of each of these multiples, and two were retained: 2 feet 8 inches, and 4 feet. Most of the large dimensions are multiples of these. Appendix 1 gives the scale of preferred modular dimensions for all spaces. We also established a grid of 4 by 8 feet - 3 feet by 2 feet 8 inches = 8 feet - for the community center. The structural grid will follow these dimensions.

Spatial organization. The set of relationships which exist between facilities and the networks which serve them constitutes the spatial organization of the community center.

Keeping in mind Fig. 21, on the compatibility of activities, we

defined the relationships between facilities which include these activities. These are of four types. The first, (1), exists between two spaces which require the same area in the same facility; they are completely overlapping. The second relation (2) exists between two functions which use some of the same areas; they are partially overlapping. The third relation (3) exists between two functions which adjoin; they are juxtaposed. The fourth relation (4) exists between two functions which do not touch each other; they are separate. Appendix 2 gives the priority accorded to each of these relations for each combination of two spaces. According to the different priorities which we accord the four relations in each square of the chart, we obtained about 40 cases, represented by letters to simplify the reading of the chart.

We defined a second group of relations between types of communication which exist between facilities, in Appendix 3. Relation 1 implies a direct communication, totally open between two facilities; this is the case when two activity facilities are not separated by a fixed wall and are juxtaposed. Relation 2 implies a partially open direct communication between two facilities; this relation is a door. Relation 3 implies two activity facilities which are opposite each other and are completely open to a third facility which separates them; this is an indirect but totally open communication. The fourth relation implies two activity facilities which are opposite each other and which open partially (a door) on a third facility which separates them; this is an indirect, partially open communication. Relation 5 exists between two facilities which do not communicate between each other except by the intermediary of a hallway or another space which serves as a hallway. The combinations are represented by letters as in Appendix 2.

Three types of relations are defined regarding visual communications between facilities. Relation 1 is a complete visual opening between two facilities of activity. Relation 2 is a partial opening (window) between two facilities. We have simplified this in the same way as the two preceding charts; see Appendix 4.

Three types of relations from the point of view of communication of objects between two facilities are listed, according to whether the objects move directly from one place to another (by a wicket or an open counter), whether they circulate by an intermediary of another facility, or if they do not circulate. These relations are respectively 1, 2, and 3; see Appendix 5. We studied carefully the correspondence between the four groups of relations, and we eliminated the impossible cases; of 180 possible combinations, 41 have been retained.*

* These charts - Appendixes 1-12 - are not included in this report: their large size made it impossible to print them practically. They are available from the Institute's Montreal Office.

Several brief indications of constraints influencing the mechanical network are given in Table 19.

Form considerations. Several examples of conditions which could influence the form of the community center are enumerated in Table 20, namely, the influence of sun and wind on the orientation and form of the building.

Location. The site for the community center will be determined by the nature of the ground, by the availability of land, by proximity to existing buildings, and by climatic conditions.

We first considered soil conditions. We classed the different parts of the village according to whether they are suitable for immediate construction, require some site preparation, or are impossible to develop because of marshes or instability of the upper layer of soil (Figs. 28, 29). We studied the availability of land, analyzed the degree of permanence of buildings already in place, and determined three categories of land: available land, land occupied by structures easily moved, or land occupied by permanent structures (Fig. 30).

We also studied the spatial relationship between blocks of existing land and each of the activities to be included in the community center. This study permitted us to ascertain which zones contained the largest number of intersections of lines of proximity, and therefore most favorable for the construction of the community center. Table 21 gives the distances from the activities to each of the zones, and Fig. 31 locates the zones on the map of Saglouc.

The position of the community center will be influenced also by climate and by considerations of a visual order. For example, there must be sufficient separation between the community center and any rise of ground which might cause snow accumulation. Effective entrance-way protection against prevailing winds must also be assured. Concerning visibility, the structure must have a "low profile" in relation to existing structures.

Relations between levels. We defined criteria for the three levels of space that were studied. These constraints act on the three levels more or less simultaneously, and a decision taken at one level necessarily has implications for the two other levels. It is therefore necessary to understand the overall influence of constraints when thinking about the community center.

Criteria applied to components. A component is a constituent element of a building. We divided the building of the community center into four components: the structure, the enclosure, the equipment, and the partitions and furniture. These four components constitute the physical framework of the community center; they were found to respond effectively to the requirements of construction systematization, that

is, to performance control and to the application of modular coordination.

Since the actual building of the community center was not the immediate objective of this report, the study of a center at the components level must be the subject of a later report. We give a general outline of performance-cost criteria which will guide choice of materials and systems to apply to these components.

The component "structure" includes all the materials used to make the building rigid, to support it, and to give it resistance to mechanical constraints. This includes the structure of walls, floors, and roof (Table 22). The component "enclosure" is all the materials which make up the shell of the building; this includes the exterior cladding and the roofs (Table 23). The component "equipment" is all the equipment which will serve the community center, and it is divided into electrical equipment and mechanical equipment (Table 24). The component "partitions-furniture" covers all partitions and furniture in the community center (Table 25).

Conclusion and remarks on the analysis. From the information and the reflections of the first section, we tried to follow a method which allowed different people to discuss, work on, and study thoroughly the elements in question; that is why we divided the study into stages. At each stage we defined the elements, we did the analysis, and we drew conclusions in the form of a numerical or qualitative evaluation. The elements of the next stage depend on the conclusions of the preceding stage, and the process goes on this way until the final proposal. We used such a systems method in order to make each decision less subjective at any stage of the design. Because of the nature of the study in question, this method is an absolute necessity as far as we are concerned.

This study could be generalized and applied to all projects of social restructuring, involving a population which wants development. It therefore becomes necessary that the population participate in all the projects which concern it and that, as much as possible, it is a self-structuring project. To achieve this, the population in question must be able to use instruments with which the project can be realized. With this goal in mind, we defined at each stage the elements of the problem and the solutions which could be arrived at by any person who from the beginning understood the nature of the elements. The chain of decisions which we made depended on our perception and interpretation of the facts. It is easy to dispute each of these decisions; but one need only return to the point at which the decision was taken, to review the context and the constraints, to modify them and, if necessary, to rigorously apply in the following stages the new conclusions. For example, when we identified the priority of activities to be included in the center, our interpretations could be questioned. However, anyone else, simply from other convictions,

could take our criteria and modify them, either at the scale of evaluation or at the weight of evaluation. He could thus see the consequences of these modifications on the order of priority of activities. The framework of the analysis is unchanged, but the content varies according to the information introduced.

We shall briefly review the principal levels of decisions, in view of the participation of autochthonous people. A program of planning is begun which implies creating a certain number of community centers. Then, the regions capable of benefiting most from the program, and the villages for which the program is a priority, are determined, as in our first stage of analysis. The autochthons can participate in this analysis by working on the inventory of their environment and by defining their community objectives. A decision can then be made which aims at the application of this program to a certain region or to a certain village.

At the second stage, the scope of the project to be implemented is defined. All the criteria which we gave in our second field of analysis serve to emphasize the most feasible community needs. Here one takes for granted the total participation of the people involved, and who understand the environment and their situation. One arrives then at a precise program of construction, one which corresponds to the autochthons' needs. At a third stage, the hundreds of relations which we outlined will be sifted by the autochthons so that they can define the facilities which they wish to build. At the components level we emphasized a choice of material and construction systems which make use of local manpower.

Our analysis criteria have been presented in quite an abstract fashion. However, once the elements of each stage are defined, the execution of the analysis itself seems quite simple.

C. SAGLOUC: PROPOSAL FOR A COMMUNITY CENTER

The justification of a choice of location does not influence our proposal for reasons explained above, but our discussion of the scope of the community center defines the program of construction while taking into account the conditions of the location. This proposal is an application of criteria and design standards and it gives physical form to the analyses we have made so far.

We shall first discuss the location of the community center in the village of Saglouc. The land was chosen for its soil conditions. The slope of the ground ensures effective, natural drainage. This is an important point which we cannot neglect. Furthermore, this is a northern slope which means that the layer of permafrost will be stable (Fig. 29). This land is available for construction and therefore ready for planning (Fig. 30). Third, this zone meets the conditions for relations of proximity presented in Table 21 ff. The village expands each year, and the place chosen as the location for

the community center is in the direction of this expansion. The principal axis which goes from the fuel reservoirs, crosses the service zone, goes through the most important conglomeration of Eskimo houses, and continues to the zone where there is already a program of construction of new homes, will end at the community center. The exchanges and daily movements will therefore be stimulated, but opposite to its present direction. During the program of construction, the community center will rapidly become an important pole of attraction; the axis of services will be reinforced further. Other than these technical and functional aspects, the community center will enjoy an open view of Saglouc Bay as well as of other eye-pleasing views created by the river.

Concerning the community center itself: in the first stages of the design we systematically worked out all the relations explained above; however, the application of each of these imposed relations was physically impossible. We would have had to reorganize the requirements in order to preserve those which made the most links between facilities. It was possible, though, for us to superimpose several facilities and to preserve most of the relations while conforming to rigid standards.

We have established a first scheme which will show these requirements by circles and arrows. We have made them into a topological flowchart which served as a guide for the whole course of this stage of the design (Fig. 32). In this figure, the squares represent the facilities to be organized, and the lines the links between them. At this stage we can have different types of buildings. According to their position, facilities along with the large facility can combine to make smaller U-shapes, L-shapes, or juxtaposed rectangles. Also they can be on one or more levels (Figs. 33, 34).

We decided to retain the L-shapes. The long branch of the L, on a single floor, is joined to the principal volume. Other rectangular elements could be added from one side or other of the building and on both levels. It is therefore possible to imagine these elements as autonomous volumes joined together by stages during construction. The upper part of the L is the center for services and facilities and extends the functions of a large hall; it also includes the three elements essential to the process of acculturation.

We oriented the building in such a way as to present the least resistance possible to prevailing winds. The roof has no changes in level perpendicular to these winds, in order to avoid all accumulation of snow. The windows are placed in the west and east sides. The entrance-ways on the side of the weaker winds have been situated at a lower level so that the volume of hot air limits the entry of cold air. The shape of the whole building has a uniformity of surface; the walls are continuous. Raising the structure above the soil allows the free air circulation necessary for preserving permafrost stability. Continuous sweeping by winds for the most part prevents snowdrift

formation, and this open space creates protected zones outside.

We followed the scales of dimensions which we established (Table 18); in effect, our process of design presupposes the constant return to dimensional standards. (In the same fashion, the module studies in Appendix 1 serve as guides to assure modular coordination.)

In situating the machinery room at the lower level we have been able to concentrate the network of plumbing and heating. This network is horizontally located in the space between the floors (four feet deep), which allows the free passage of terminals and at the same time assures a warm floor. We limited to the minimum the surface reserved for traffic. All the spaces are served at an incomplete level or at a semi-level by two blocks of vertical traffic.

We shall now describe the facilities included in the community center. The dimension of each of these facilities is, or is very close to, the optimum, at the same time respecting the internal details (Table 15 ff.). One enters by porches (58) on the ground level; these are continuations of vertical traffic (63). A notice board (2) was foreseen for the landing at 0.5 level. The 1.0 level is occupied by the machinery room (54) as well as by two facilities which will serve as studios. In the rest of the building, this becomes the four-foot-high crawl space for mechanical systems.

At the 1.5 level there are cloakrooms (57) on the traffic landings, which open into the large multipurpose hall (44). This facility includes all activities which need space. It is at the same time a gymnasium (37, 43, 44), a cinema (31), theatre (25) or performances hall (22), a hall for dances (10), lectures (8), bingo (17), or civic meetings (15). In fact it is the village meeting place. One of the landings continues to make a vestibule (55) which serves the laundry (34), the administration space (51), and the darkroom (48). From there traffic (59) flows to the kitchen (23), the social-meeting room (5), and the handicrafts room (7). In the laundry we have included four washing machine-dryers, sinks, ironing boards, and a large table for folding laundry. Besides the office, the administration room includes a closet for cleaning equipment. The darkroom is conceived for limited use. Other than the usual apparatus the kitchen is supplied with two food cupboards, one of which is refrigerated. It can serve either the large multipurpose room or the social meeting room which is also planned for meal service. The handicrafts room is divided into three studios: sewing (7a), graphic arts (7b), and carvings (7c). A double opening has been planned to permit easy moving of materials from the large multipurpose room into the handicrafts room.

At the 2.0 level the dressing rooms (61), toilets (56), and public showers (33) are aligned. A secondary traffic area (59) joins the two stairways; giving out onto this hallway is the children's playroom (4). Two of the walls are cupboards (67 and 69). One section of four-foot space beneath this room has been arranged to store

sports equipment (66), chairs (64), and tables (68). The wall immediately adjacent to the large multipurpose room can be lowered by sections for a length of 24 feet to make a stage apron; the children's playroom will then become the stage.

The landing at the 2.5 level opens out onto the roof of the laundry.

At the 3.0 level we organized all the facilities necessary for audiovisual equipment; there are the recording studio (50), the projection booth (62), the space reserved for the information center (40). This latter includes a series of cubicles where one can listen to information programs and music on tapes or videotapes (20). Also, there are several library shelves, a reading room that can become either a classroom or a cinema, and a proposed office as well as a museum corner (42). The projection booth has the advantage of being able to be used also from the side of the multipurpose room as well as from the cinematheque side. It also includes the storage and the audiovisual equipment controls (70). On this level we also placed the Council office and meeting room (3). A mineographing room (16) connects this room and the information center.

APPENDIX 1

TABLES

TABLE 1

WELFARE STATISTICS FOR SAGLOUC

Welfare recipients	$250	$250-499	$500-749	$750-999	$1,000-1,999
1. Families receiving youth and family allowances	30	19	4		
2. Persons receiving a guaranteed income allowance				2	3
3. Needy mothers		1	1		3
4. Persons receiving pensions for the blind				5	
5. Persons receiving old age pension				5	
6. Persons receiving disability pensions				1	
7a. Single persons receiving welfare	8	2			
7b. Families receiving family allowance	19	17	2		
7c. Persons dependent on 7b	87	103	14		
7d. Total, 7a, 7b, 7c	114	122	16		
8. Persons receiving other assistance	3				

TABLE 2

SAGLOUC PEOPLE WITH AN INCOME

Type of employment	Persons employed						Persons dependant on	Sub-total
	A. Young		B. Adult		C. Old		A, B, C	
	F	M	F	M	F	M		
RW	8						2	
		3					1	
			2				11	
				7			38	
						2	11	
						22	63	85
PTW	2							
		13					8	
			4				2	
				15			77	
						3	18	
						37	105	142
OW	1							
		2					1	
						3	1	4
H				4			19	
						4	10	
						8	29	37
ESK		1						
				2			13	
						3	13	
TOTAL						73	211	284

TABLE 3

CLASSIFICATION BY GROUP

Symbol	Interpretation	Number
PSG	pre-school girl	45
PSB	pre-school boy	39
PRG	primary school girl	49
PRB	primary school boy	41
PRB-OS	primary school boy - outside student	1
YG	young girl (15-25 years old)	7
YG-PTW	young girl, part-time work	3
YG-OS	young girl, outside student	6
YG-OW	young girl, outside work	1
YG-RW	young girl, regular work	5
YG-Ch-RW	young girl, mother, regular work	2
YG-Ch	young girl, mother	8
YM	young man	9
YM-OS	young man, outside student	10
YM-OW	young man, outside work	1
YM-PTW	young man, part-time work	10
YM-C	young man, couple	2
YM-C-PTW	young man, couple, part-time work	2
W	woman (26-49 years old)	1
W-Ch	woman, with dependent (1-15 years old)	33
W-Ch-RW	woman, with dependent, regular work	1
W-Ch-PTW	woman, with dependent, part-time work	2
M	man (26-49 years old)	8
M-RW	man, regular work	1
M-OW	man, outside work	3
M-C-PTW	man, couple, part-time work	7
M-C-RW	man, couple, regular work	6
M-C-Coop	man, couple, Eskimo cooperative work	2
M-C-H	man, couple, hunter	3
M-C	man, couple	9
OW	older woman (over 50)	5
OW-Ch	older woman, dependent	11
OM	older man (over 50)	3
OM-H	older man, hunter	1
OM-C-H	older man, couple, hunter	1
OM-C-PTW	older man, couple, part-time work	3
OM-C-RW	older man, couple, regular work	1
OM-C	older man, couple	5

TABLE 4

ORGANIZED COMMUNITY SERVICES

Organization	Public service (sq.ft.)	Storage (sq.ft.)	Housing (sq.ft.)	Total (sq.ft.)	Land area (sq.ft.)
Hudson's Bay Company	1,440	2,807	1,368	5,615	107,750
Anglican Church	960	192	1,152	2,304	47,500
Quebec government	150	408	975	1,533	21,000
Catholic church	1,680	1,978	1,800	5,458	60,200
Nursing station	1,728		576	2,304	34,100
DIAND	3,965	2,367	3,446	9,778	150,000
Quebec school	2,310	2,310	544	5,164	30,000
Federal school	1,728	384	3.152	5,264	30,000
Bell Telephone					53,300
Shell Oil					26,600
Eskimos	1,736	336	21,274	23,346	
Vacant or other	1,272		3,054	4,326	
				27,672	590,400
Total	16,972	10,782	37,341	65,095	1,150,850

TABLE 5

COMMUNITY CENTER: ACTIVITIES AND SERVICES

No.	Activity or service	No.	Activity or service	No.	Activity or service
1	ping-pong	26	outdoor games for children	51	banking service
2	billiards	27	dancing	52	general store
3	table shuffle board	28	indoor games for children	53	gas station
4	bingo	29	scouts	54	machine shop
5	cards, chess, checkers	30	socials	55	woodworking shop
6	water sports	31	screenings	56	medical care
7	physical fitness	32	book room	57	outside warehouse
8	gymnastics	33	recording studio	58	food storage
9	yoga	34	handicrafts	59	inside warehouse
10	judo	35	meetings	60	transients' resident
11	karate	36	exhibitions	61	old peoples' meetings
12	fencing	37	museum	62	caretaker
13	shooting	38	theater	63	reception
14	boxing	39	film library	64	travel agent
15	wrestling	40	miscellaneous	65	skate sharpening
16	bowling	41	music room	66	garage (vehicle storage)
17	water polo	42	music practice	67	public baths
18	indoor ball games	43	courses	68	communications
19	ski racks	44	printing, photocopying	69	drinks
20	skating, skaters' dressing room	45	laundry	70	information
21	storage for hunting equipment	46	meal service	71	council meetings
22	outdoor ball games	47	dining area	72	public administration
23	hockey	48	post office	73	religious services
24	curling	49	hairdressing (men and women)	74	civic meeting
25	storage for track and field equipment	50	repair shop	75	darkroom

TABLE 6

EQUIPMENT

No.	Equipment	Activities using the equipment
1	tables	1,2,3,4,5,27,28,29,31,32,34,38, 40,41,43,47,50,70
2	storage	all
3	chairs	4,5,16,17,18,20,27,28,29,30,31, 32,33,34,35,38,39,40,41,42,47, 48,49,64,68,70,71,72,73,74
4	pool	6,17
5	cloakrooms	all
6	showers	6,7,8,9,10,11,12,14,15,17,18,20, 22,23,25
7	dryer	as above
8	weight-training equipment	7
9	arena	14,15
10	bowling	16
11	permanent fixed equipment for games	all games
12	rink	20,23
13	curling equipment	24
14	outside games for children	26
15	sound systems	20,22,34,35,36,38,40,41,42,43,46, 73,74
16	film projection equipment	31
17	library materials	32
18	counter	47,50,52,54,55,71,72
19	radio equipment	33,68
20	sewing equipment	34
21	graphics materials	34
22	art supplies	34
23	plumbing spare parts	6,17,34,38,40,45,49,54,55,67,69,46
24	audio-visual equipment	34,35,36,37,42
25	lighting system spare parts	35,36,37,38,40
26	woodworking equipment	38,40,55
27	cinémathèque equipment	39
28	music room equipment	41
29	copying equipment	44
30	office equipment	44,53,54,55,62,71,72,73
31	laundry equipment	45
32	kitchen equipment	46
33	post office boxes	48
34	hairdressing equipment	49
35	workbenches	54,55
36	bank furniture	51
37	tanks	53
38	pump	53
39	machinery	54
40	refrigeration equipment	58
41	sharpening equipment	65
42	notice board	70
43	darkroom equipment	75

TABLE 7

PERSONAL EXPENSES FOR ACTIVITIES OR SERVICES

No.	Equipment or expense	No.	Equipment or expense
5	individual table games	24	brooms
6	towels, bathing suits	27	admission fee
7	track suits and shoes	29	Scout clothes and equipment
8	track suits and shoes	31	admission fee
9	track suits and shoes	42	musical instruments
10	judo clothes	47	upkeep
11	karate clothes	49	upkeep
14	boxing trunks	50	upkeep
15	wrestling trunks	53	upkeep
16	bowling shoes	54	upkeep
17	towels, bathing suits	55	upkeep
18	track suits and shoes	57	space rental
19	ski equipment	58	space rental
20	skates	59	space rental
22	track suits and shoes	75	upkeep
23	hockey equipment		

TABLE 8

ACCULTURATION

Origins of activities and services								
No.	Traditional	Non-traditional	No.	Traditional	Non-traditional	No.	Traditional	Non-traditional
1	x	x	26	x		51		x
2		x	27	x		52		x
3		x	28	x		53		x
4		x	29		x	54		x
5	x		30	x		55	x	
6		x	31		x	56		x
7	x		32	x		57		x
8	x		33		x	58	x	
9		x	34	x		59		x
10		x	35		x	60	x	
11		x	36		x	61	x	
12		x	37		x	62		x
13	x		38	x		63		x
14		x	39		x	64		x
15	x		40	x		65		x
16		x	41		x	66		x
17		x	42		x	67		x
18	x		43		x	68	x	
19		x	44		x	69		x
20		x	45	x		70		x
21	x		46	x		71	x	
22	x		47	x		72		x
23		x	48		x	73	x	
24		x	49		x	74	x	
25	x		50		x	75		x

TABLE 9

ACCULTURATION

Activities or services promoting intercultural contact												
No.	do	might	do not	No.	do	might	do not	No.	do	might	do not
1		x		26	x			51	x		
2		x		27	x			52	x		
3		x		28	x			53	x		
4	x			29		x		54	x		
5	x			30	x			55	x		
6			x	31	x			56	x		
7		x		32	x			57	x		
8		x		33		x		58	x		
9			x	34	x			59		x	
10			x	35	x			60		x	
11			x	36		x		61	x		
12			x	37		x		62		x	
13	x			38		x		63		x	
14		x		39		x		64	x		
15	x			40		x		65		x	
16		x		41	x			66			x
17			x	42		x		67	x		
18	x			43	x			68	x		
19			x	44	x			69			x
20		x		45	x			70	x		
21	x			56	x			71	x		
22	x			47	x			72	x		
23		x		48	x			73		x	
24		x		49			x	74	x		
25	x			50		x		75	x		

TABLE 10

VALUE OF PERSONAL CONTACTS IN ACTIVITIES

Activity No.	Degree of importance 6 5 4 3 2 1	Activity No.	Degree of importance 6 5 4 3 2 1	Activity No.	Degree of importance 6 5 4 3 2 1
1	x	26	x	51	x
2	x	27	x	52	x
3	x	28	x	53	x
4	x	29	x	54	x
5	x	30	x	55	x
6	x	31	x	56	x
7	x	32	x	57	x
8	x	33	x	58	x
9	x	34	x	59	x
10	x	35	x	60	x
11	x	36	x	61	x
12	x	37	x	62	x
13	x	38	x	63	x
14	x	39	x	64	x
15	x	40	x	65	x
16	x	41	x	66	x
17	x	42	x	67	x
18	x	43	x	68	x
19	x	44	x	69	x
20	x	45	x	70	x
21	x	46	x	71	x
22	x	47	x	72	x
23	x	48	x	73	x
24	x	49	x	74	x
25	x	50	x	75	x

TABLE 11

VALUE OF COMMUNICATION IN ACTIVITIES

Activity No.	Degree of importance 6 5 4 3 2 1	Activity No.	Degree of importance 6 5 4 3 2 1	Activity No.	Degree of importance 6 5 4 3 2 1
1	x	26	x	51	x
2	x	27	x	52	x
3	x	28	x	53	x
4	x	29	x	54	x
5	x	30	x	55	x
6	x	31	x	56	x
7	x	32	x	57	x
8	x	33	x	58	x
9	x	34	x	59	x
10	x	35	x	60	x
11	x	36	x	61	x
12	x	37	x	62	x
13	x	38	x	63	x
14	x	39	x	64	x
15	x	40	x	65	x
16	x	41	x	66	x
17	x	42	x	67	x
18	x	43	x	68	x
19	x	44	x	69	x
20	x	45	x	70	x
21	x	46	x	71	x
22	x	47	x	72	x
23	x	48	x	73	x
24	x	49	x	74	x
25	x	50	x	75	x

TABLE 12

COMMUNICATION: NUMBER OF PEOPLE IN ACTIVITIES

Activity	Degree of importance			
No.	Nil	2-4 persons	10-20 persons	over 25 persons
1		x		
2		x		
3		x		
4				x
5			x	
6			x	
7			x	
8			x	
9			x	
10			x	
11			x	
12		x		
13		x		
14		x		
15		x		
16		x		
17			x	
18			x	
19		x		
20			x	
21		x		
22			x	
23			x	
24		x		
25		x		
26			x	
27				x
28			x	
29			x	
30				x
31				x
32	x			
33		x		
34			x	
35				x
36		x		
37		x		
38				x

TABLE 12 (continued)

Activity	Degree of importance			
No.	Nil	2-4 persons	10-20 persons	over 25 persons
39	x			
40				x
41			x	
42		x		
43			x	
44		x		
45			x	
46		x		
47			x	
48		x		
49		x		
50		x		
51		x		
52			x	
53		x		
54		x		
55		x		
56		x		
57	x			
58	x			
59	x			
60		x		
61			x	
62		x		
63		x		
64		x		
65		x		
66	x			
67			x	
68			x	
69			x	
70		x		
71			x	
72		x		
73				x
74				x
75		x		

TABLE 13

DISTRIBUTION OF ACTIVITIES IN PRESENT OR PLANNED LOCALES

Activity No.	Locale	Description
1	exists	any vacant building with suitable space
2	new	no special space needed, only insofar as it is a function of meeting-places
3	new	no convenient meeting hall exists
4	new	no adequate locale exists
5	new	no adequate locale exists
6	new	should be grouped with other similar activities
7	new	special fixed equipment needed
8	neutral	could use the Catholic Mission or the center planned
9	new	no adequate space at present
10	new	existing space not satisfactory
11	exists	could use the school
12	neutral	could use the nursing station or the center planned
13	new	must be centralized
14	planned	a house, specially adapted, could be used
15	new	no adequate locale exists
16	new	needs concentrated services
17	new	no existing space big enough
18	planned	could use existing space but should be part of the center planned
19	exists	service presently guaranteed
20	new	needs grouped equipment
21	exists	service guaranteed
22	new	inadequate space at present
23	new	no equipment adequate to the demand
24	neutral	could use present or planned locales
25	new	inadequate space at present
26	new	should be centralized
27	new	should be centralized
28	new	no convenient locales at present
29	planned	could use present space but should be part of center planned
30	planned	present freezer adequate, but still need to be expanded
31	new	no fully adequate locales at present
32	exists	service guaranteed
33	new	present service completely inadequate
34	new	present service completely inadequate
35	exists	an existing building could be converted

TABLE 13 (continued)

Activity No.	Locale	Description
36	planned	could use a converted building but should be part of the center planned
37	new	should be centralized
38	exists	converted building
39	planned	could continue in the school but should be part of the center planned
40	new	none at present
41	exists	locale exists
42	new	no adequate locale
43	new	no adequate locale
44	new	present locale inadequate
45	exists	exists at present
46	exists	could use available locale
47	exists	could use available rooms
48	new	needs special equipment
49	neutral	exists at present but could be annexed to the planned center's machine shop
50	new	needs special equipment
51	new	would be necessary in the planned center
52	planned	could use existing locales but should eventually be part of the planned center
53	exists	could use existing locales

TABLE 14

LOCALES OF SELECTED ACTIVITIES

*	**	
1	22	storage space for hunting and fishing gear
2	71	billboard space
3	72	Council (meeting hall and offices)
4	29	childrens' playroom
5	31	meeting hall (limited space)
6	23	storage for outdoor games
7	35	studio (sculpture, sewing, painting, drawing, print-making, etc.
8	36	conference room
9	5	table-games room (120 people): chess, checkers, cards, etc.
10	28	dance hall
11	44	lecture hall
12	57	public health clinic
13	27	storage for childrens' outdoor games
14	62	meeting room for older people
15	75	civic meeting hall (100 persons)
16	45	duplicating equipment room
17	4	bingo room
18	37	exhibition hall
19	49	post office
20	42	music room
21	69	radio-telephone room
22	41	theater (large)
23	47	kitchen
24	74	church meeting room
25	39	theater (small)
26	26	storage for olympic games equipment
27	14	storage for shooting gear
28	48	dining hall (limited)
29	2	billiard hall
30	59	freezer
31	32	cinema
32	65	travel agency
33	68	public showers
34	46	laundry
35	21	skating rink
36	1	ping-pong room
37	16	wrestling

* The number on the left indicates the activity chosen, the number on the right indicates the activity before being chosen.

** Please Note Correction — In the second column each number over 10 should be decreased by 1: 22 becomes 21, 71 becomes 70, etc.

TABLE 14 (continued)

38	50	hairdresser, barber
39	30	scout meeting room
40	33	Informathèque (reading, video-tape, music, museum, movies, etc./
41	66	skate-sharpening shop
42	38	museum
43	8	physical-fitness room
44	8	gym
45	52	bank
46	25	storage for curling equipment
47	61	guest rooms
48	76	darkroom
49	55	machine shop
50	34	recording studio
51	63	administration office
52	73	public administration office
53	64	entrance hall
54		machine shop
55		vestibule
56		bathrooms
57		cloakrooms
58		porch
59		traffic
61		dressing rooms
62		projection booth
63		stairs
64		chair storage
65		stage storage
66		wrestling mat storage
67		storage for 9 and 17
68		table storage
69		games storage
70		audio-visual equipment storage

TABLE 15

DIMENSIONS

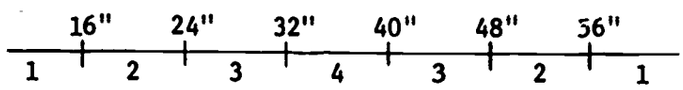
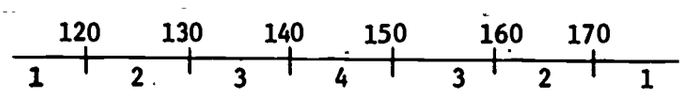
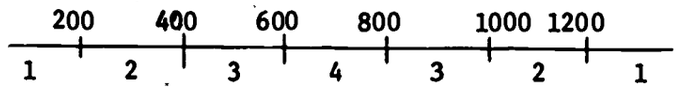
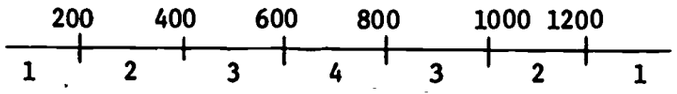
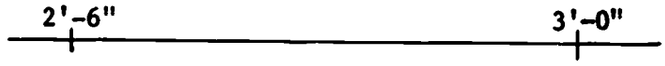
	Item	Scale
2	shelving (width)	
3	table (width)	
	(length)	5'-0" 7'-6"
8	balconies (surface ft^2)	
9	tables (width)	
17	tables (width)	2'-6" 3'-0"
22	stage (surface ft^2)	
25	stage (surface ft^2)	
28	tables (width)	

TABLE 15

DIMENSIONS

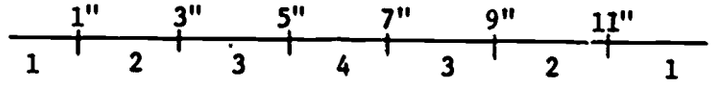
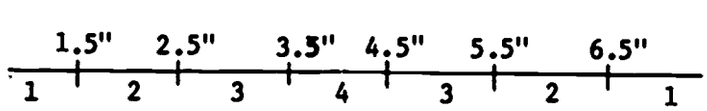
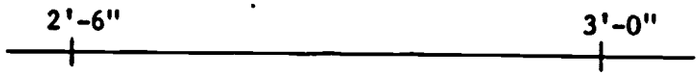
	Item	Scale
1	outboard motors (distance between motors)	
	(distance between rows of motors)	
3	table (distance table-to-wall)	
	(distance table-to-traffic)	4'-6" 5'-6"
9	tables (distance between tables)	2'-0"
	(distance between rows of tables)	3'-0"
	(distance between wall and table)	1'-0"
17	tables (distance between tables)	2'-0"
	(distance between rows of tables)	3'-0"
	(distance between wall and table)	1'-0"
19	lockers (distance off floor)	2'-6"

TABLE 15

DIMENSIONS

	Item	Scale
19	lockers (distance between lockers and counters)	3'-0"
28	desk-chairs (distance between two)	2'-0"
	(distance between rows)	3'-0"
	(distance to wall)	1'-0"
29	table (clearance around)	6'-0"
36	table (clearance on sides)	3'-0"
	(clearance on ends)	5'-0"
37	carpets (clearance around)	5'-0"
40	shelves (distance between rows)	4'-10"

TABLE 15

DIMENSIONS

	Opening or access	Characteristics
6	doors	open completely
7	windows	4 feet from floor, maximum daylight
11	windows	daylight to students' left
31	doors	access to projection booth from outside the hall
44	windows	high windows or no windows
49	door	allows ski-doo to pass
55	door	4' 6" wide
58	door	4' 6" wide
59	stairs	steps and landings 4 feet wide minimum

	Item	Critical space
9	Table storage	4'-0" (minimum width)
11		9'-6" (maximum height)
22		20'-0" (minimum height)
25		20'-0" (minimum height)
29		18'-8" (minimum height)
37	Storage	2'-8" (minimum width) 26'-0" (minimum length)
44		42'-0" (minimum width) 74'-0" (minimum length) 20'-0" (minimum length)
59		4'-0" (minimum width) 8'-0" (maximum width)

TABLE 15

DIMENSIONS

	Item	Critical dimensions
1	outboard motors	30" x 24" x 48" (height)
9	tables	3'-6" x 3'-6"
	desk-chairs	5'-6" x 5'-6"
17	tables	3'-6" x 3'-6"
	desk-chairs	5'-6" x 5'-6"
19	lockers	4" x 5" x 16" (depth) maximum 7 rows
	wicket	30"(width)
22	stage	4'(maximum height)
23	work-table	2' or 3' x 8' x 3'(height)
	kitchen equipment	3 modules of 32" x 24" x 3'(height)
	sink	32" x 24" x 3'(height)
	freezer	5'(minimum width)
25	stage	4'(maximum height)
28	desk-chairs	5'-6" x 5'-6"
29	table	6'-8" x 12'-8"
31	screen	14'(minimum width) 8/11 of the width (height)
	projector	5' x 7' x 7'(height)
32	counter	2' x 8'
33	showers	3'-6" x 3'-6"
	dressing rooms	3'-6" x 3'-6"
34	ironing boards	54" x 15"
	ironing space	4'-7" x 6' x 0"
	work-space for washer and dryer	5'-2" x 5'-6"
36	table	5'-9' or 4'-8'
	clearance	3' or 4' on the sides 5' or 7' on the ends
37	carpets	24' x 24'
40	shelves	30'(maximum length, no interruption) 18'(maximum length, no interruption if dead-end)
44	lockers	12" x 12"
48	counters	2'(width)
56	cupboards	2'-8" x 4'-8"

TABLE 15

DIMENSIONS

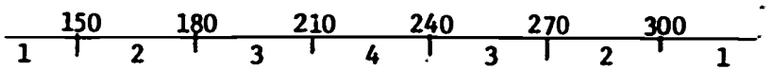
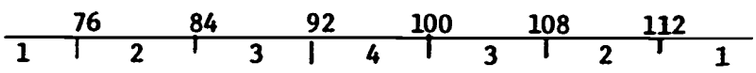
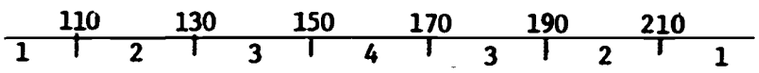
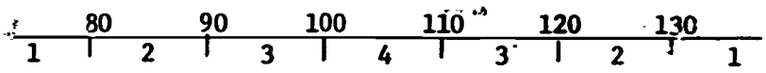
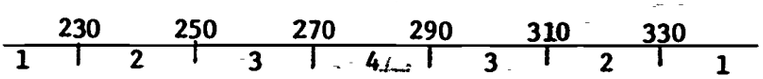
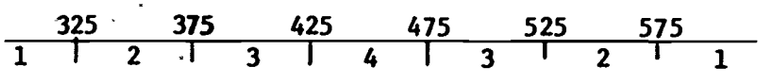
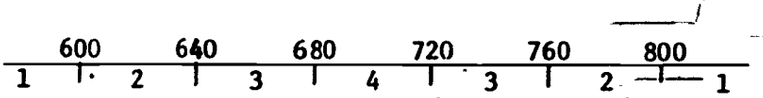
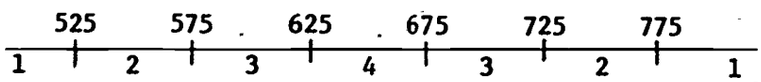
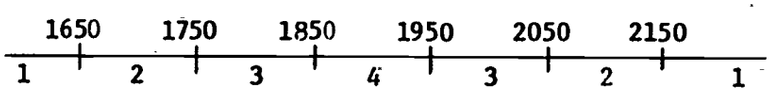
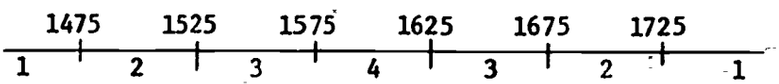
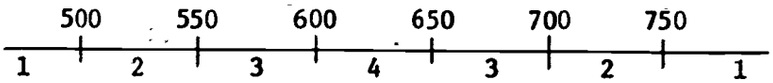
	Scales of locale surface
1	
2	
3 Hall	
Office	
4	
5	
7	
8	
9	
10	
11	

TABLE 15

DIMENSIONS

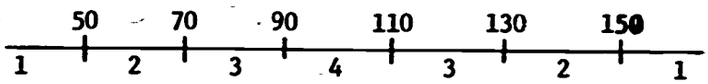
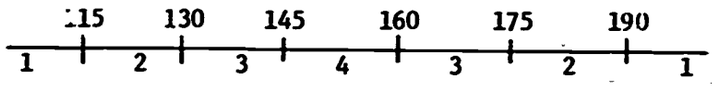
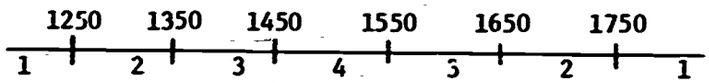
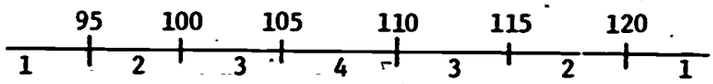
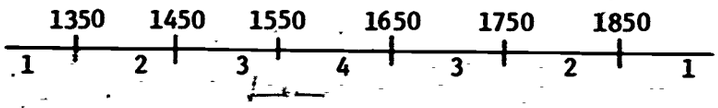
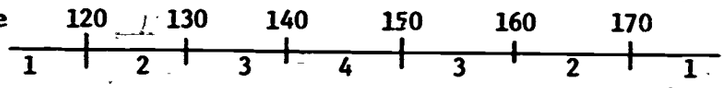
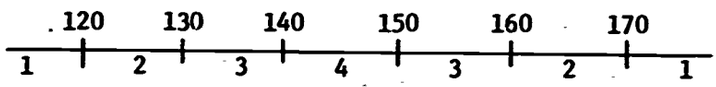
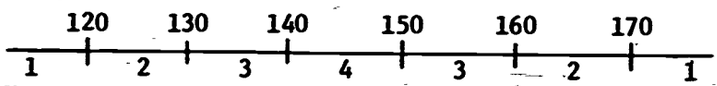
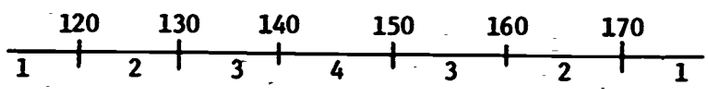
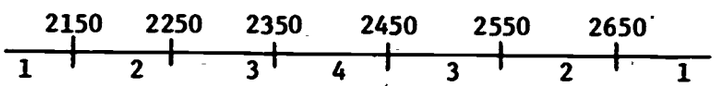
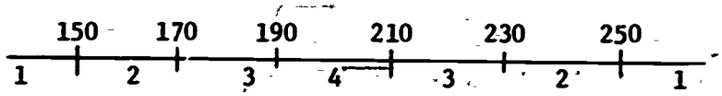
	Scale of locale surface
12 if special locale	
14	
15	
16	
17	
18 if special locale	
19	
20	
21	
22	
23	

TABLE 15

DIMENSIONS

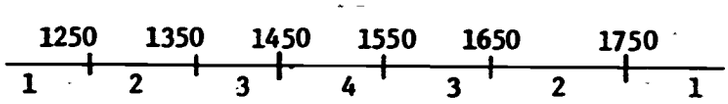
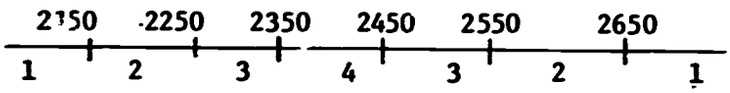
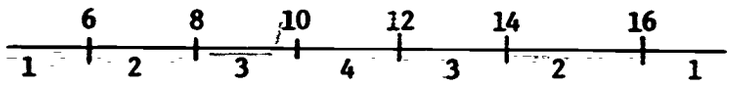
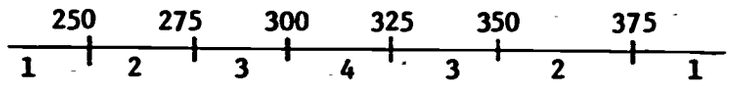
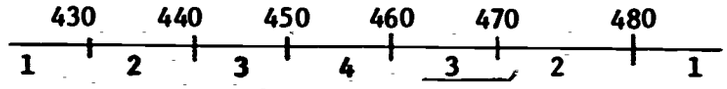
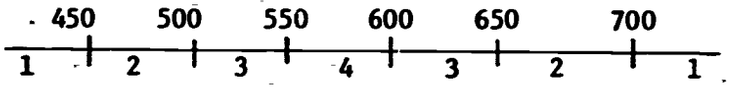
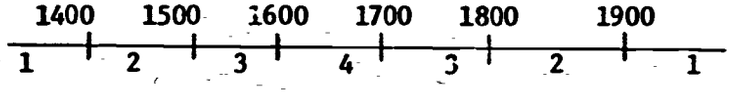
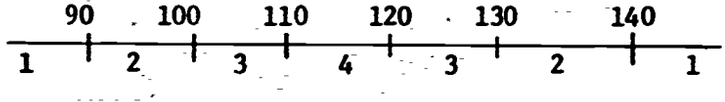
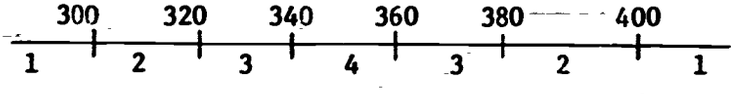
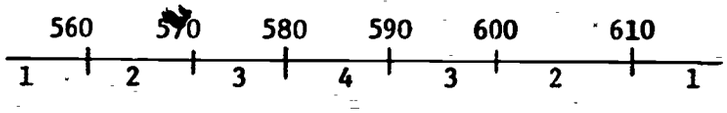
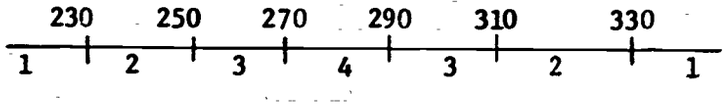
Scale of locale surface	
24	
25	
26	
28	
29	
30	
31	
32	
33	
34	
35	

TABLE 15

DIMENSIONS

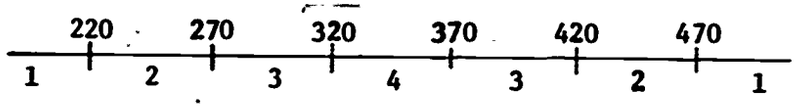
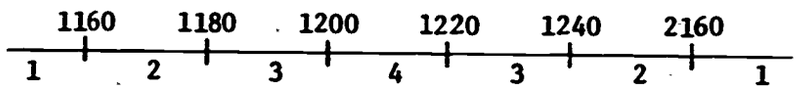
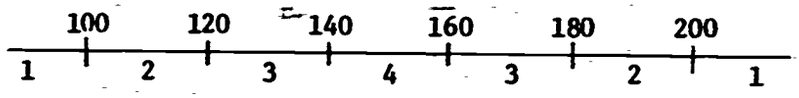
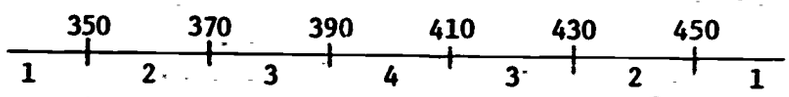
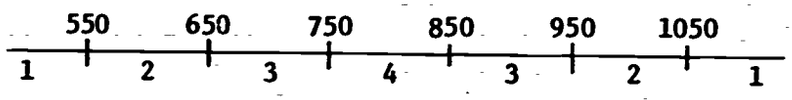
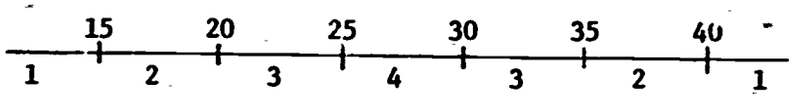
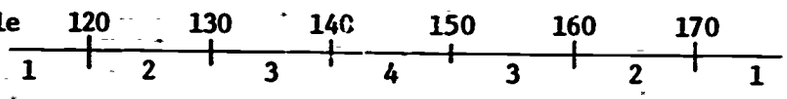
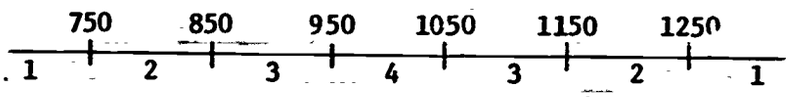
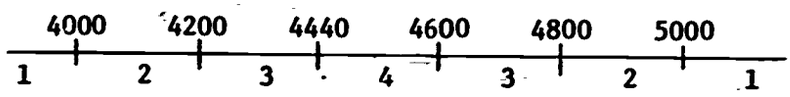
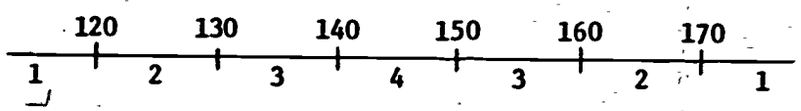
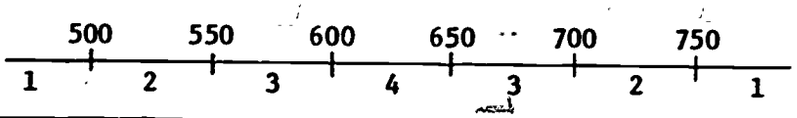
	Scale of locale surface
36	
37	
38	
39	
40	
41	
42 if special locale	
43	
44	
45	
47	

TABLE 15

DIMENSIONS

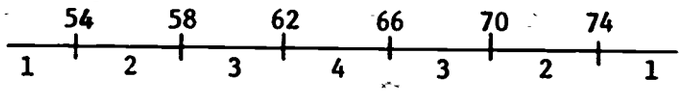
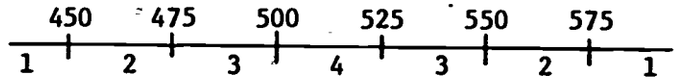
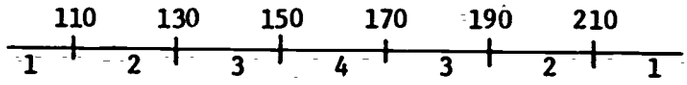
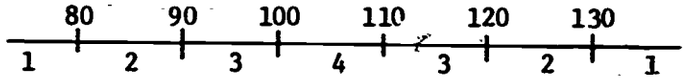
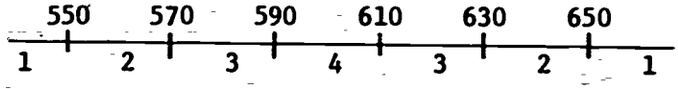
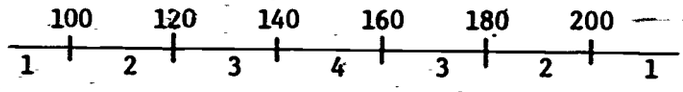
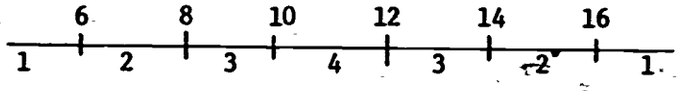
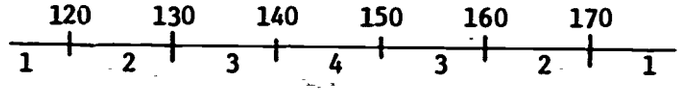
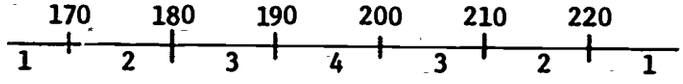
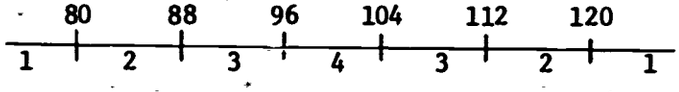
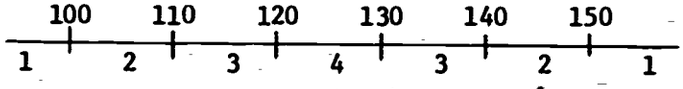
	Scale of locale surface
48	
49	
50	
51	
52	
53	
54 Percent of total surface	
55	
56	
57	
58	

TABLE 15

DIMENSIONS

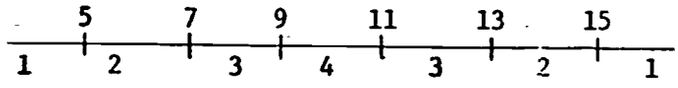
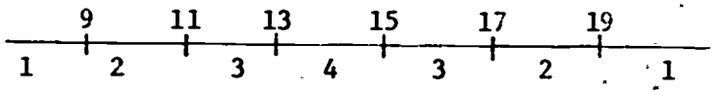
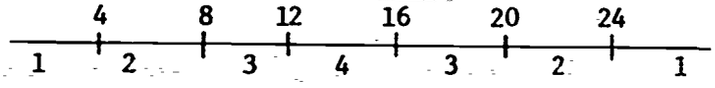
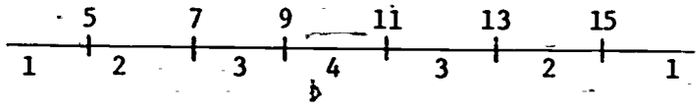
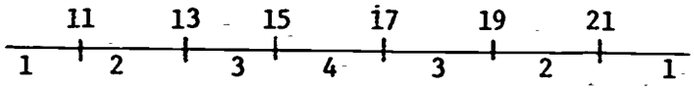
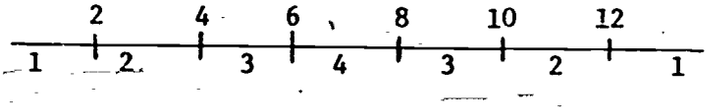
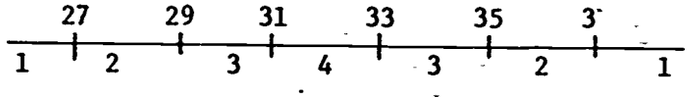
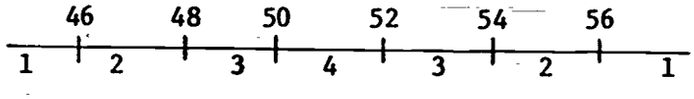
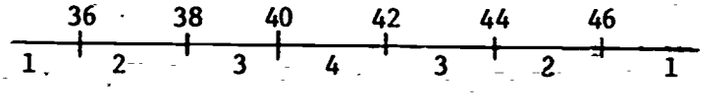
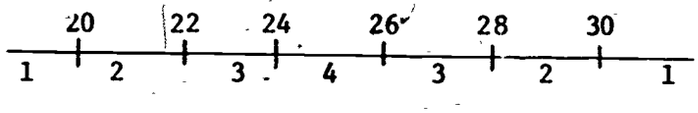
		Scale of storage surface
4	Percent of locale's surface	
5	Chair storage: percent	
6		
7	Percent	
8	Audio-visual storage	
9		
	Table storage (30)	
	Chair storage (120)	
10	Chair storage (120)	
	Audio-visual storage musical instruments	

TABLE 15

DIMENSIONS

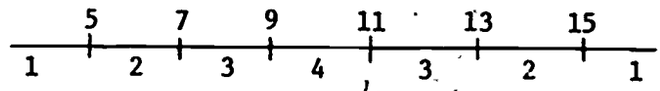
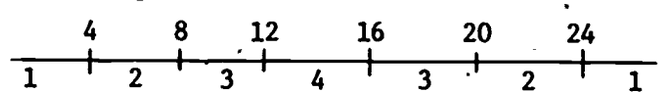
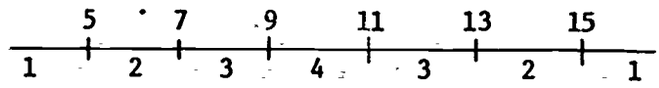
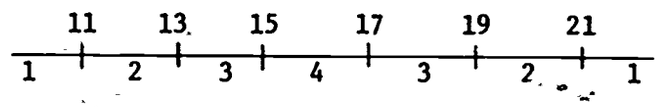
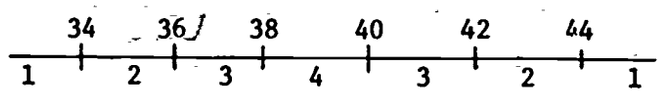
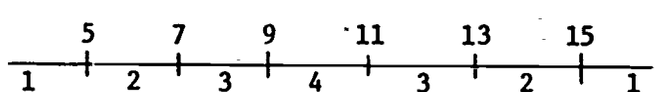
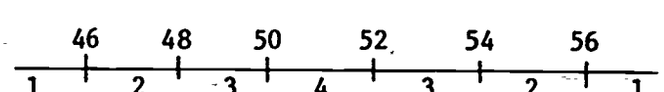
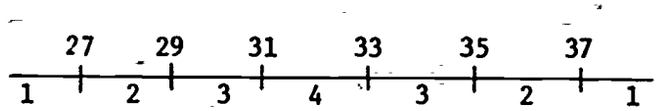
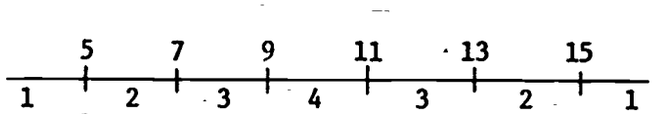
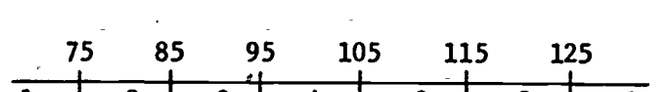
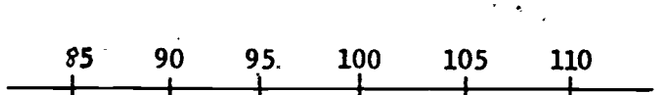
		Scale of storage surface
11	Percent	
13		
14	Percent	
15	Audio-visual storage	
	Chair storage	
16	Percent	
17	Chair storage (100)	
	Table storage (30)	
18	Percent	
22	Chairs (300)	
	Stage storage	

TABLE 15

DIMENSIONS

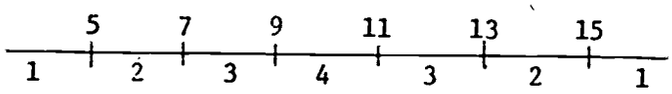
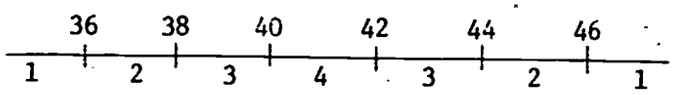
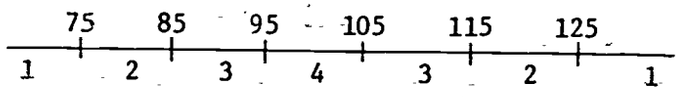
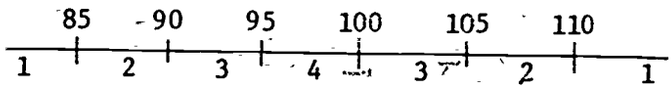
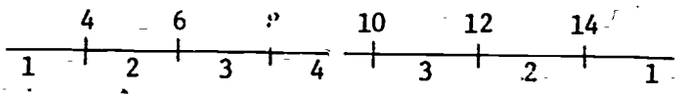
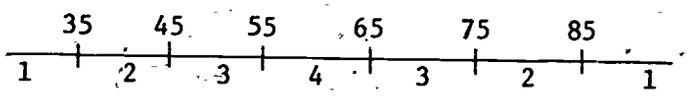
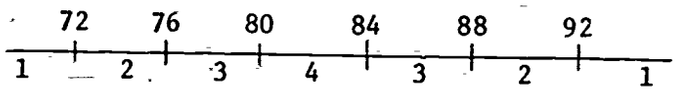
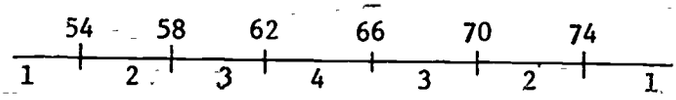
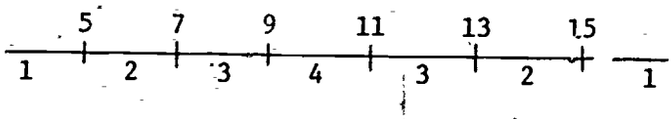
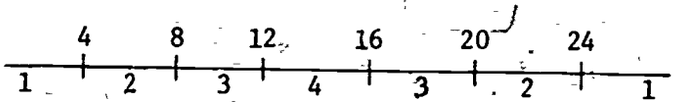
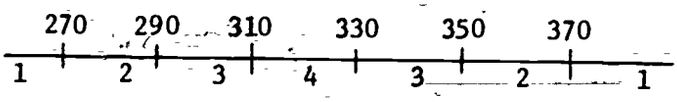
		Scale of storage surface
23		
24	Chair storage	
25	Chair storage (300)	
	Stage storage	
27		
31	Projection	
	Chair storage (220)	
32		
39	Percent	
44		
	Lockers	

TABLE 15

DIMENSIONS

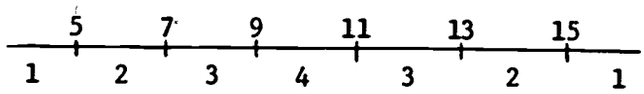
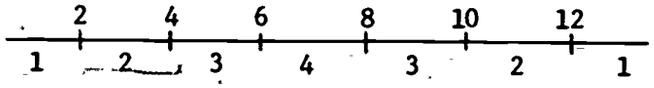
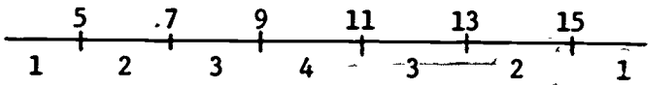
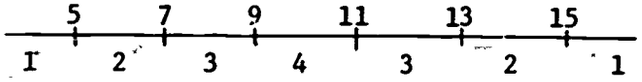
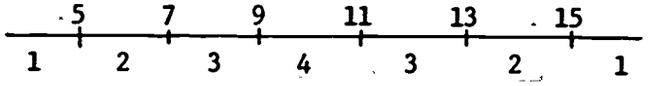
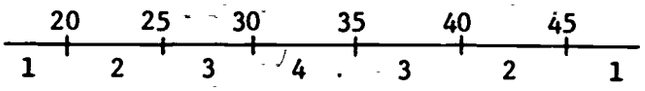
	Scale of storage surface
45 Percent	
46	
47 Percent	
49 Percent	
50 Percent	
51	

TABLE 16

SPATIAL ORGANIZATION

	Location of items
2	bulletin board at focus of traffic
4	storage height, objects designed for children
7	mobile and returnable equipment
8	movable platform
11	free space in front for audio-visual
18	movable exhibition objects
19	mailboxes and letter-chute accessible at all times
22	stage easily taken down and put up
23	avoids L-, U-, or dead-end counters
25	stage easily taken down and put up
28	tables and chairs storable
29	allows storage of balls and pins
30	space with and without lockers
31	330 angle of vision for the screen
40	equipment placed according to audio-visual usage
47	in relation to rooms
48	avoids L-, U-, or dead-end counters; arranged to form corridor
50	in relation to audio-visual usage
51	at focus of traffic
52	spaces easily modified
53	focus of traffic
54	focus of traffic
57	focus of traffic
58	different levels for porch and ajoining spaces; no doors face-to-face; no doors open to prevailing wind direction
59	doors should open on free space at head of stairs

TABLE 16 (continued)

	Walls
2	8' x 16' continuous wall
3	one wall facing a short end of the table to be a continuous wall door to be at intersection of two walls
4	continuous storage
6	linear organization
7	maximum continuous wall
11	door in front
39	maximum continuous wall
40	L-shape
44	continuous wall, no weak points

	Mechanical systems
4	warm floor
7	warm floor, flexible electric system
9	sound system
10	special electric system, sound system
11	mobile audio-visual equipment
15	sound and visual systems
18	flexible electric system
22	sound and lighting systems
23	water and ventilation systems
25	sound and lighting systems
31	ventilation
33	centralized mechanical system, a good distance from outside wall
34	centralized mechanical system, a good distance from outside wall
43	warm floor
44	electric equipment, protected against shock
48	good ventilation, water systems
56	machinery a good distance from outside wall

TABLE 17

FORM

	Design and psychological effects
2	bulletin board should attract the eye
3	clear line of vision to the outside when seated, rectangular shapes preferred
5	square shape best for meetings
8	acoustics must be provided for
20	acoustics must be provided for
29	artificial lighting on circumference of room
40	direct sun and reflection from snow to be avoided, allows for audio-visual carrels
42	movable glass display cases
44	diffused artificial lighting

TABLE 18

DIMENSIONS

	Scale						
1. Total floor space in community center (square feet x 100)	110	122	134	146	158	170	
	1	2	3	4	3	2	1
2. Total perimeter (feet)	420	440	469	480	500	520	
a. one storey	1	2	3	4	3	2	1
b. plus a second storey	350	362	374	386	398	410	
	1	2	3	4	3	2	1
3. Total outside exposed surface including roof and floor (square feet)	265	305	345	385	425	465	
a. one storey (x100)	1	2	3	4	3	2	1
b. plus a second storey (x100)	230	246	262	278	294	310	
	1	2	3	4	3	2	1

TABLE 19

MECHANICAL SYSTEM

	Mechanical network
Plumbing	equipment centralized no equipment to rest against outside wall reservoirs (water and fuel) to be accessible from outside allowance for used-water release
Heating	minimum distance for network equipment centralized
Electricity	point of entry and overall length of system should be studied plan for emergency system's location (a second generator)
Emergency	plan for fire-fighting equipment
Telephone	plan for installation

TABLE 20

CLIMATE

	Influence of climate
Wind	avoid large building surfaces perpendicular to prevailing winds (north and south) avoid concave shapes, or projecting shapes especially north-south plan for a flat roof or one slanted east-west build above ground level plan for natural ventilation in an east-west direction doors must open against prevailing winds
Sun	design elements to be conceived considering the angle and height of sun plan for north windows (diffuse light) make shadow areas (covered outside areas)

TABLE 21

DISTANCES*

Zone No.	Zone
1	Hudson's Bay Company store
2	Fuel reservoirs
3	Anglican mission
4	Québec administration
5	Catholic mission
6	Dispensary
7	Shore
8	Federal school
9	Québec school
10	Federal administration
11	Federal administrator's house
12	Old hangar
13	Warehouse
14	Garage
15	Freezer
16	Coop store
17	New Eskimo houses
18	Eskimo houses
19	Eskimo houses
21	New Eskimo houses
22	Cemetery
23	Water pump
24	Dump

* Analysis of distances of activities and zones follows on the next pages

TABLE 21

DISTANCES: ACTIVITIES TO ZONES*

Zones	Activity No.														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	C	A			A	A	B			C	C	B	A	B	C
2															
3		A						B		C	B	B		B	
4		A						B		B	B	B		B	
5		A						B		B	B	B		B	B
6		A						B		B	B	A		B	
7	B														
8		A	A	A				B		C	B	A			B
9		A		A				B		C	A	B	B		B
10		A	A					B		C	B	B	C	B	
11											C	C			
12										C					
13															
14															
15			B	B	B	B	B	B	B	B	B	B		B	B
16	A	A				B				C	C	B	B	B	B
17		A	A	A	B		B	B	B	A	B	C		B	B
18		C			B		B	B	B	B	B	B		B	B
19		C			B		B	B	B	B	B	B		B	B
20		C			B		B	B	B	B	B	B		B	B
21		C			B		B	B	B		B	B		B	B
22														C	
23															
24	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C

	Activity No.														
	16	17	18	1	20	21	22	23	24	25	26	27	28	29	30
1	B	C	C	A	B	B	B	B	C	B	A	A	B	C	B
2															
3		C	C	C	B	C	B	C	B	B			C	C	C
4		C	C	B	B	B	B	C		B			C	C	C
5		C	C	C	B	B	B	C	B	B			C	C	C
6		B	C	B	B	B	B	C		B			C	B	C
7															
8		C	C	B		C			B		B	B		C	
9		C	C	B		C			B		C	C		C	
10		B	C	B	B	B	B	C		B			C	B	C
11		C	C	C		C								C	
12			C												

TABLE 21

DISTANCES: ACTIVITIES TO ZONES*

Zones	Activity No. 16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
13			C					B					B		B
14	B		C												
15	B	B	B	B	B	C	B	B	B	B			B	B	B
16	B	B	B	A	B	B	B	B	B	B	B	B	B	B	B
17	B	A	B	B	B	B	B	B	B	B	B		B	A	B
18	B	B	B	C	B	B	B	B	B	B			B	B	B
19	B	B	B	C	B	B	B	B	B	B			B	B	B
20	B	B	B	C	B	B	B	B	B	B			B	B	B
21	B	B	B	C	B	B	B	B	B	B			B	B	B
22					C										
23								A							
24	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C

	Activity No. 31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
1	B	A			A	C	C	B	C		B	C			A
2															
3	B					C	C	C	C			C			C
4	B					C	C	C	B			C			B
5	B					C	C	C	B			C			C
6	B					B	B	C	B	B		C			B
7															
8		B			B	C	C		A	B		C	B	B	B
9		B			C	C	C		A	B		C	B	B	B
10	B	B				B	B	C	C			C			B
11		C				C	C					C			C
12									C			C			
13								B				C			
14												C			
15	B	B	B	B		B	B	B	B	B	B	B	B	B	B
16	B	A			B	B	B	B	C	B	B	B	C	C	A
17	B	B	B	B		A	A	B	A	B	B	B	B	B	B
18	B	C	B	B		B	B	B	B	B	B	B	B	B	C
19	B	C	B	B		B	B	B	B	B	B	B	B	B	C
20	B	C	B	B		B	B	B	B	B	B	B	B	B	C
21	B	C	B	B		B	B	B		B	B	B	B	B	C
22															
23			B	B											
24	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C

TABLE 21

DISTANCES: ACTIVITIES TO ZONES*

Zones	Activity No.											
	46	47	48	49	50	51	52	53	54	55	56	57
1	A	B	B	B								
2												
3		C	C									
4		C	C			B	A	B				
5		C	C									
6			C	B	B		B	B				
7												
8	B				A		B	B				
9	C	C			A		B	B				
10			C	C	B	B	A	B				
11												
12		B		A								
13			B	A								
14		B		A					A			
15		B	B	A	B	B	B		B	B	B	B
16	B	B	B	B	B	B	A	B			B	B
17		B	B	B	B	B	B	B		B	B	B
18		B	B	B	B	B	B	B		B	B	B
19		B	B	B	B	B	B	B		B	B	B
20		B	B	B	B	B	B	B		B	B	B
21		B	B	B	B	B	B	B		B	B	B
22												
23			A						A	B		
24	C	C	C	C	C	C	C	C	C	C	C	C

*Scoring:

A: 4 points; distance 0-100'
B: 3 points; distance 100-500'
C: 2 points; distance 500-1000'

TABLE 22

STRUCTURE

Specifications:	Size - span to vary in proportion to cost - depth of beam to vary in proportion to cost - height to vary in proportion to cost Assembling - man-hours to vary in proportion to cost - rate of use of local man-power - machine-hours to vary in proportion to cost - rate of use of local machinery - joints - flexibility Materials - weight to vary in proportion to cost - volume to vary in proportion to cost - cost per linear foot
Integrated with:	exterior shell equipment partitions-furniture

TABLE 23

EXTERIOR SHELL

Specifications	Size - units of exterior shell to vary in proportion to cost - percent of openings in exterior structural units to vary in relation to floor area (lighting) - percentage of openings in exterior structural units to vary in relation to floor area (ventilation) Assembling - man-hours to vary in proportion to cost - rate of use of local man-power - machine-hours to vary in proportion to cost - rate of use of local machinery - upkeep and repair - unit reusability - joints - flexibility Materials - resistance to lateral pressures - resistance to fire - heat insulation - sound insulation - dew-point
Integrated with:	structure equipment partitions-furniture

TABLE 24

EQUIPMENT

Electric equipment Specifications:	Size - distribution panel - distribution network - machine room Function - upkeep and repair - installation costs - flexibility Materials as usual
Mechanical equipment Specifications:	Size - a percentage of total cubic area Function - operations costs - installation costs - upkeep and repair - flexibility Materials as usual
Integrated with:	structure exterior shell partitions-furniture

TABLE 25

PARTITIONS-FURNITURE

Specifications:	Size - surface to vary in proportion to cost Assembling - man-hours to vary in proportion to cost - rate of use of local man-power - machine-hours to vary in proportion to cost - rate of use of local machinery - upkeep and repair - joints - mobility and flexibility Materials - acoustically treated - resistance to lateral pressure
Integrated with:	structure exterior shell equipment

APPENDIX 2

FIGURES

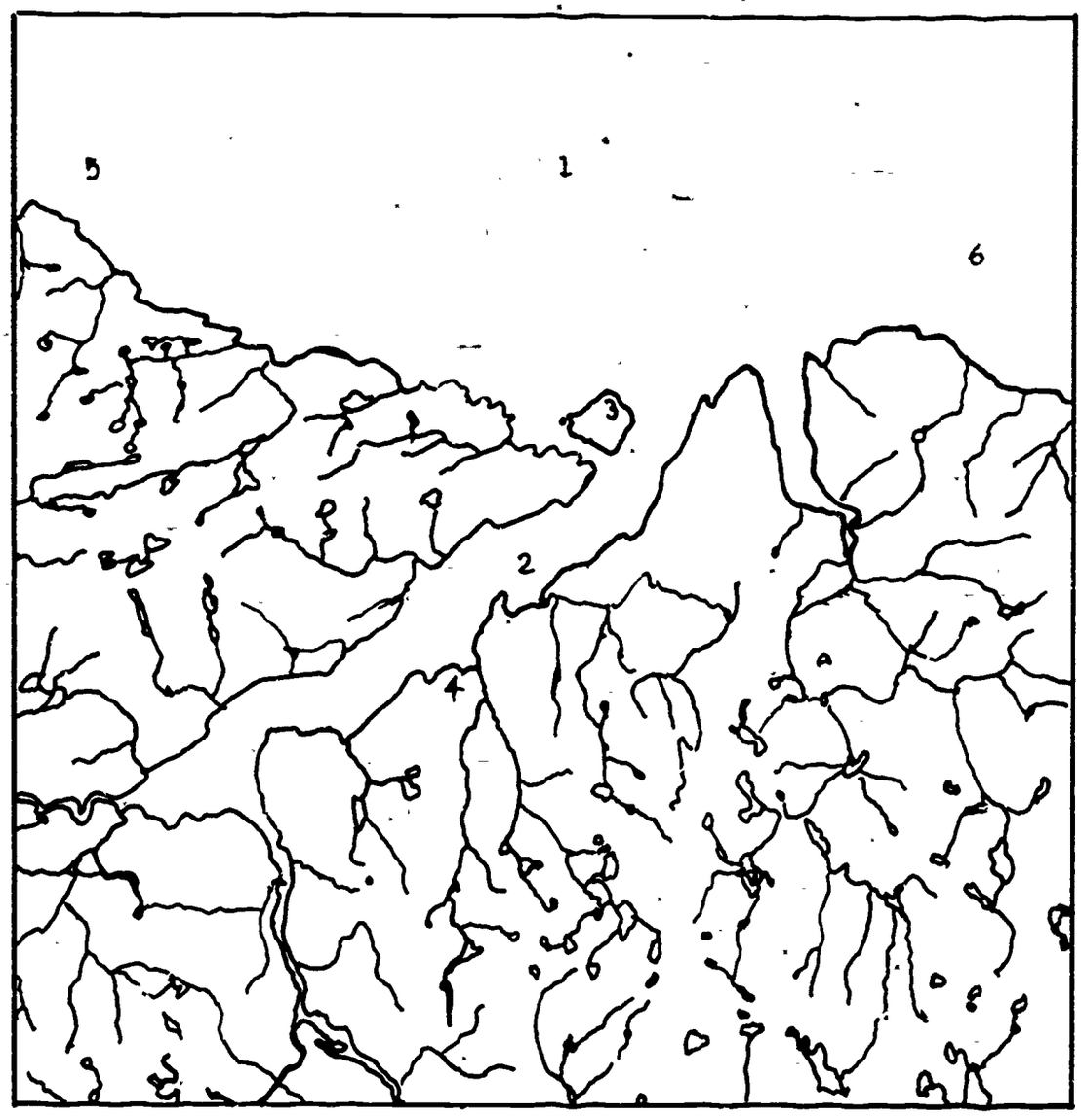


Fig. 1

Saglouc and environs

Scale: 1:250,000

1. Hudson Strait
2. Saglouc Bay
3. Saglouc Island
4. Saglouc
5. Toward Ivujivik
6. Toward Deception Bay

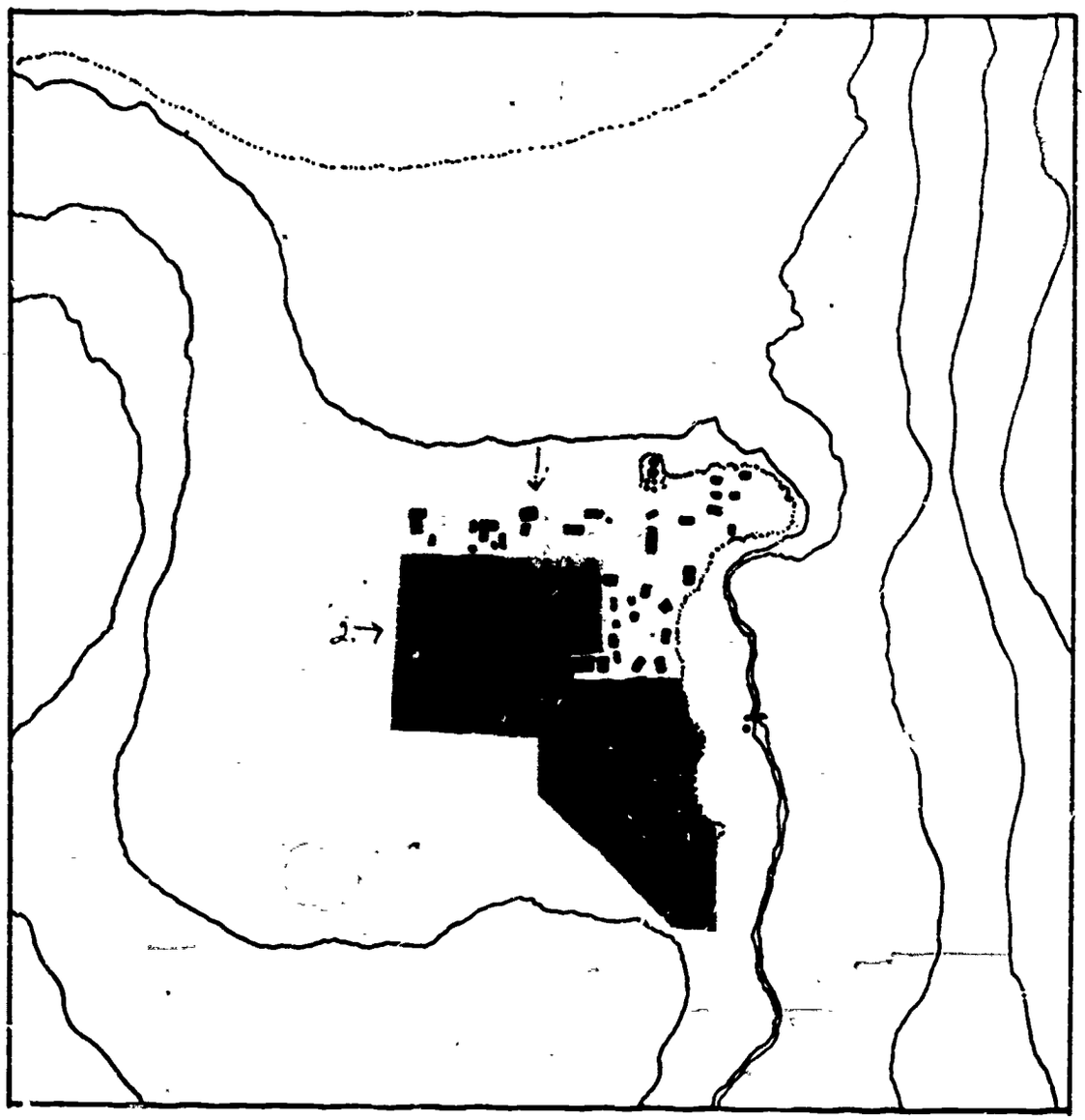


Fig. 2

Kabloona and Eskimo areas

Approximate scale: 1":750'

1. light grey: Kabloona area

2. dark grey: Eskimo area

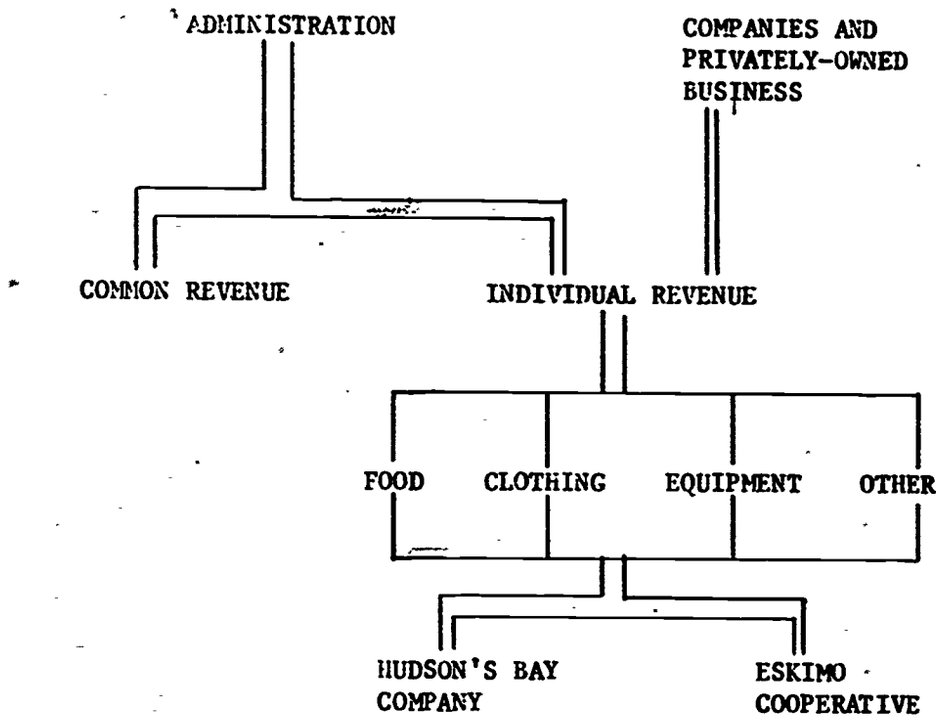


Fig. 3

Economic "circuit"

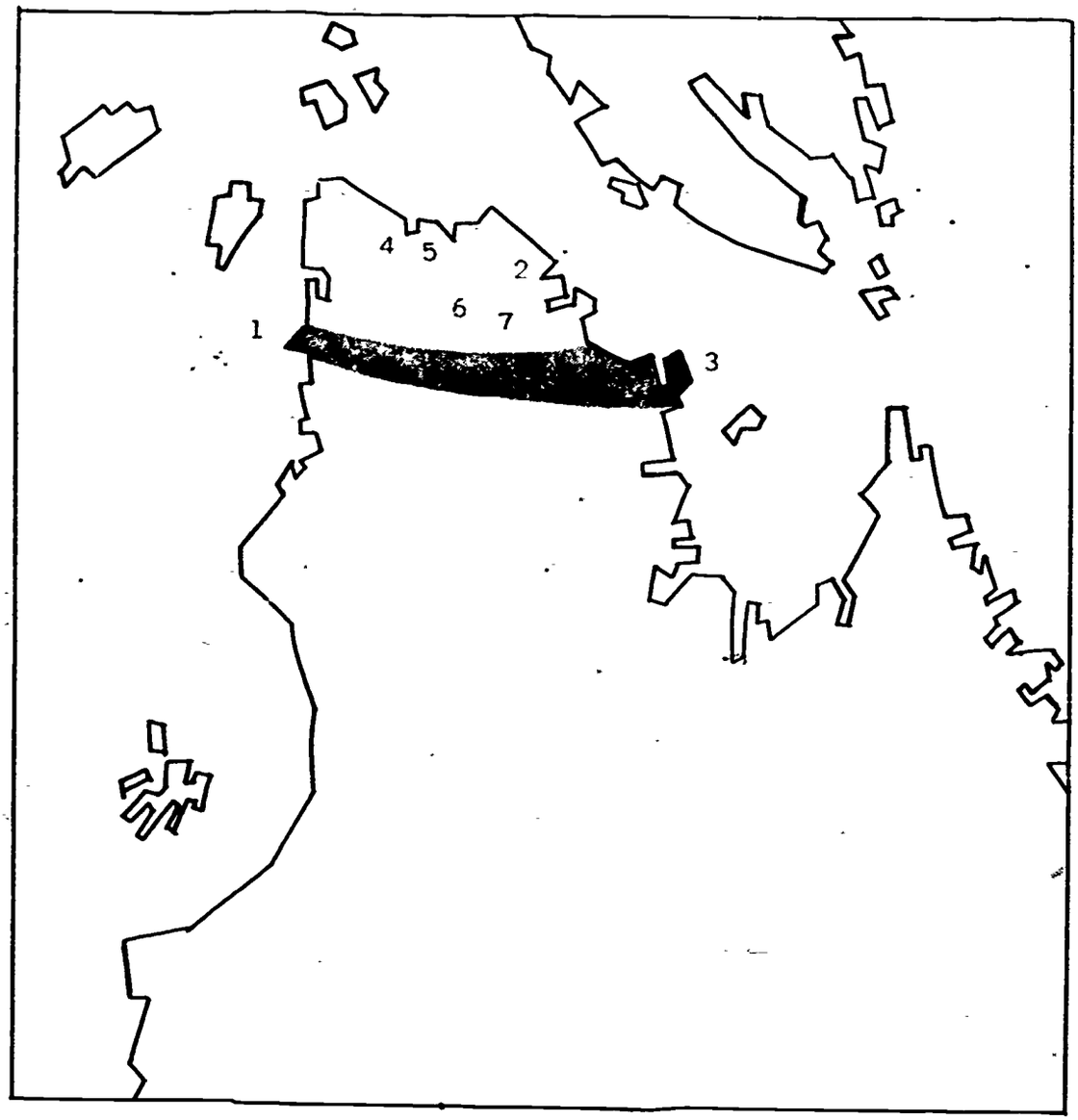


Fig. 4

Ungava's
mining belt

1. Smith Island
2. Wakeham
3. Koartac
4. Saglouc
5. Deception Bay
6. Asbestos Hill
7. Raglan

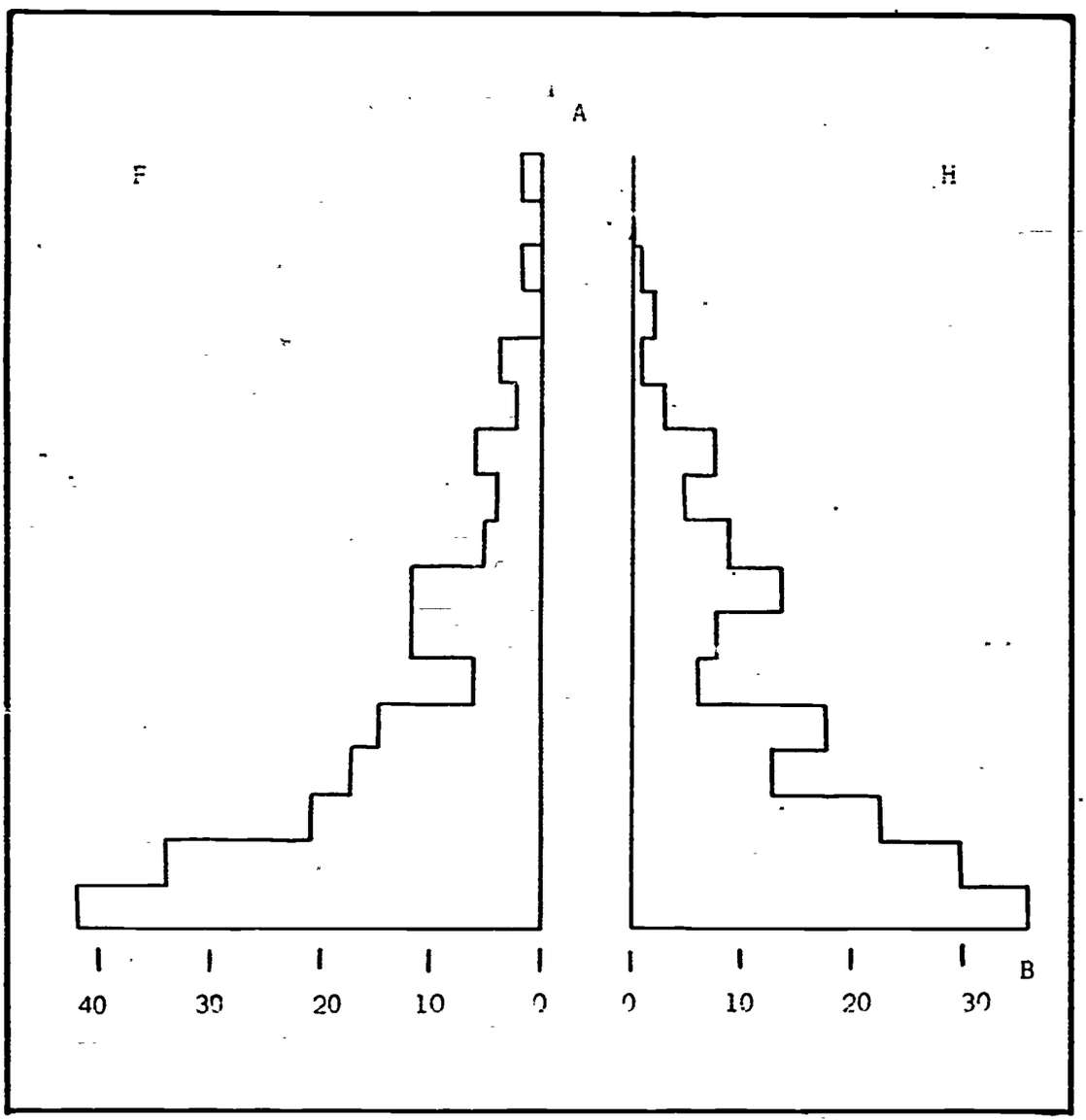


Fig. 5a

Legend: F - Women

M - Men

Ages

Scale A: 5-year intervals beginning 1966-70

Scale B: number of persons by sex

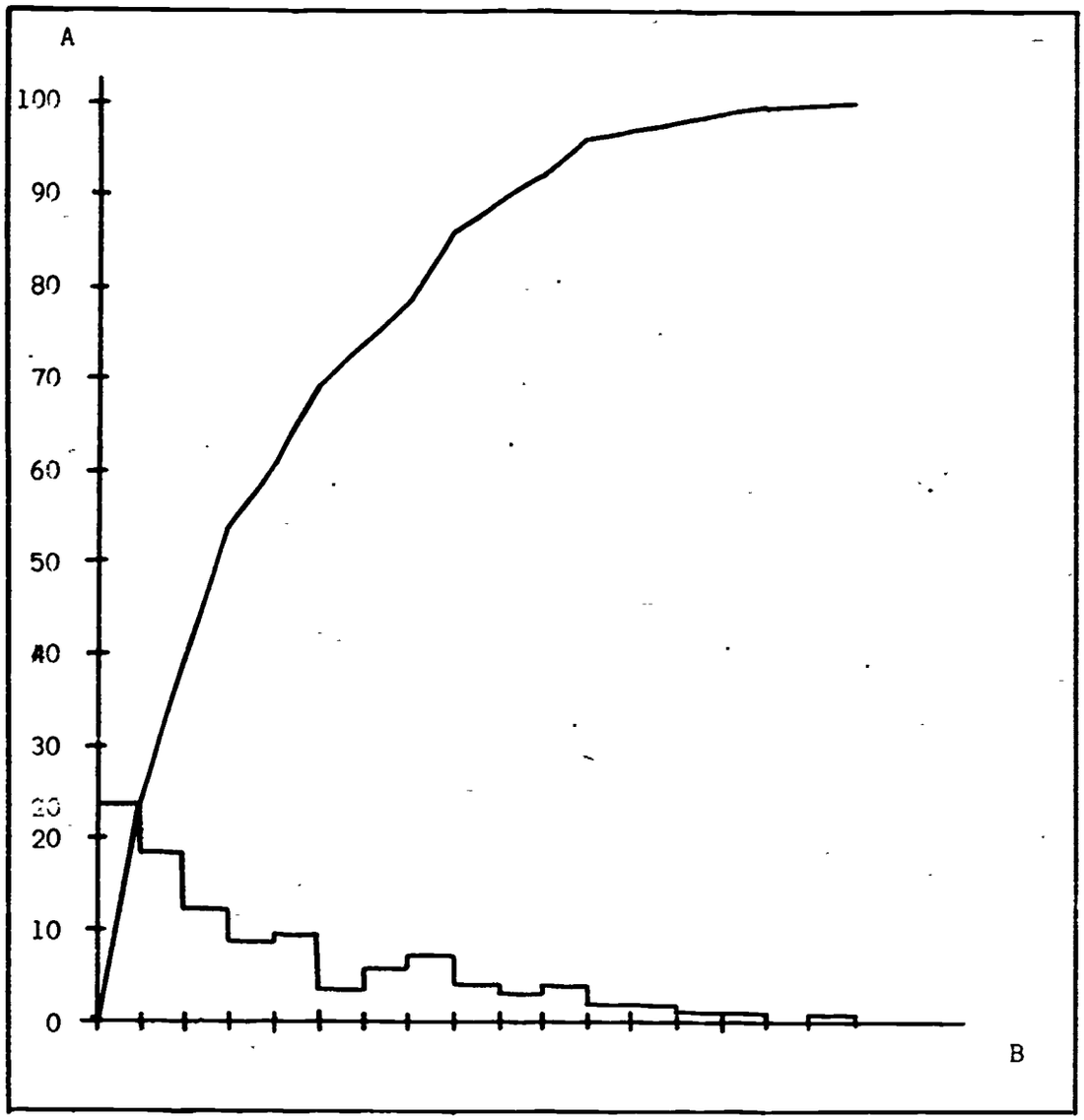


Fig. 5b

Cumulative percentage for age groups

Scale A: percentage of population

Scale B: 5-year intervals' beginning 1966-70

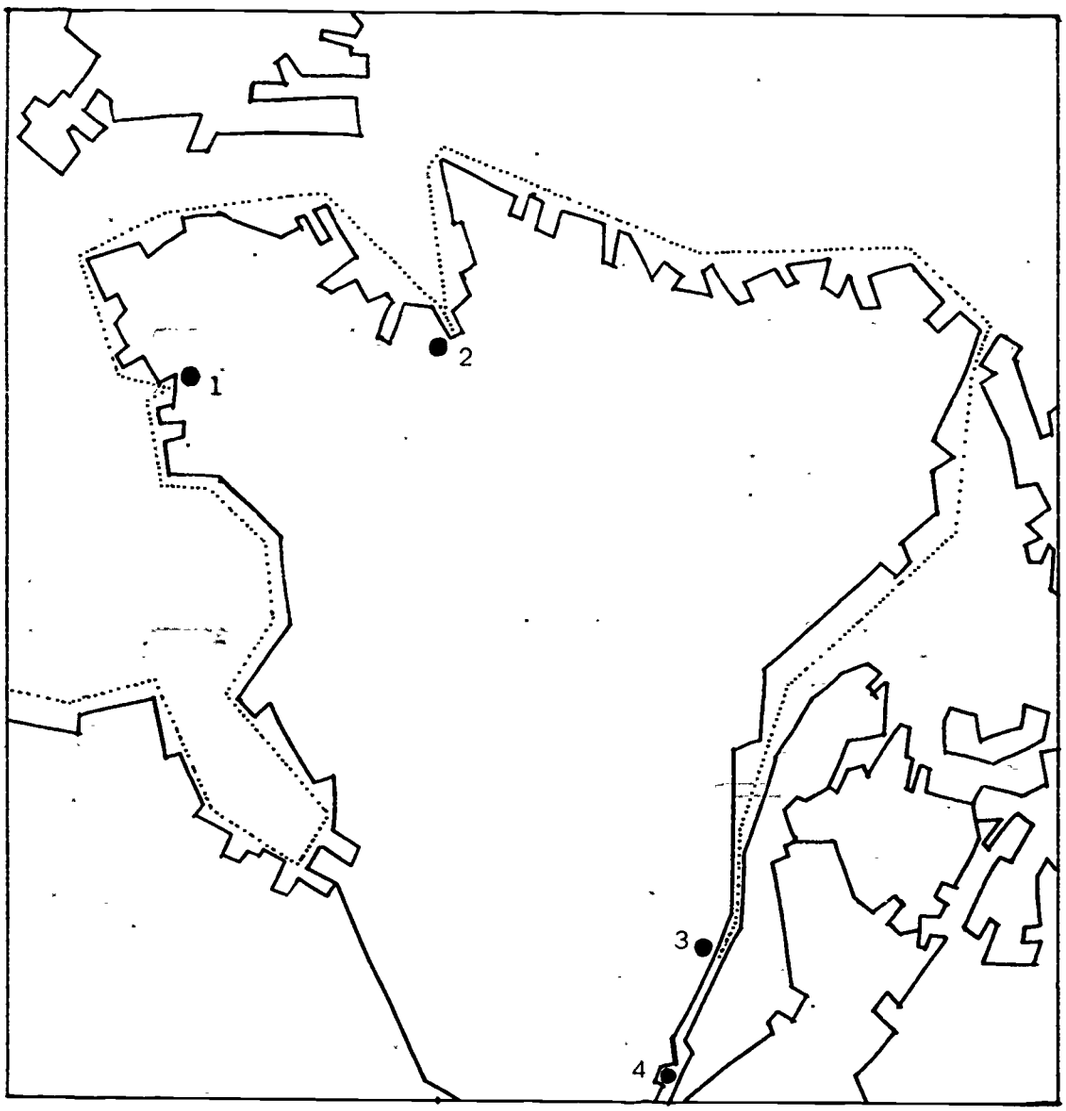


Fig. 6

Maritime transport routes

1. Povungnituk
2. Fort Chimo
3. Québec
4. Montréal

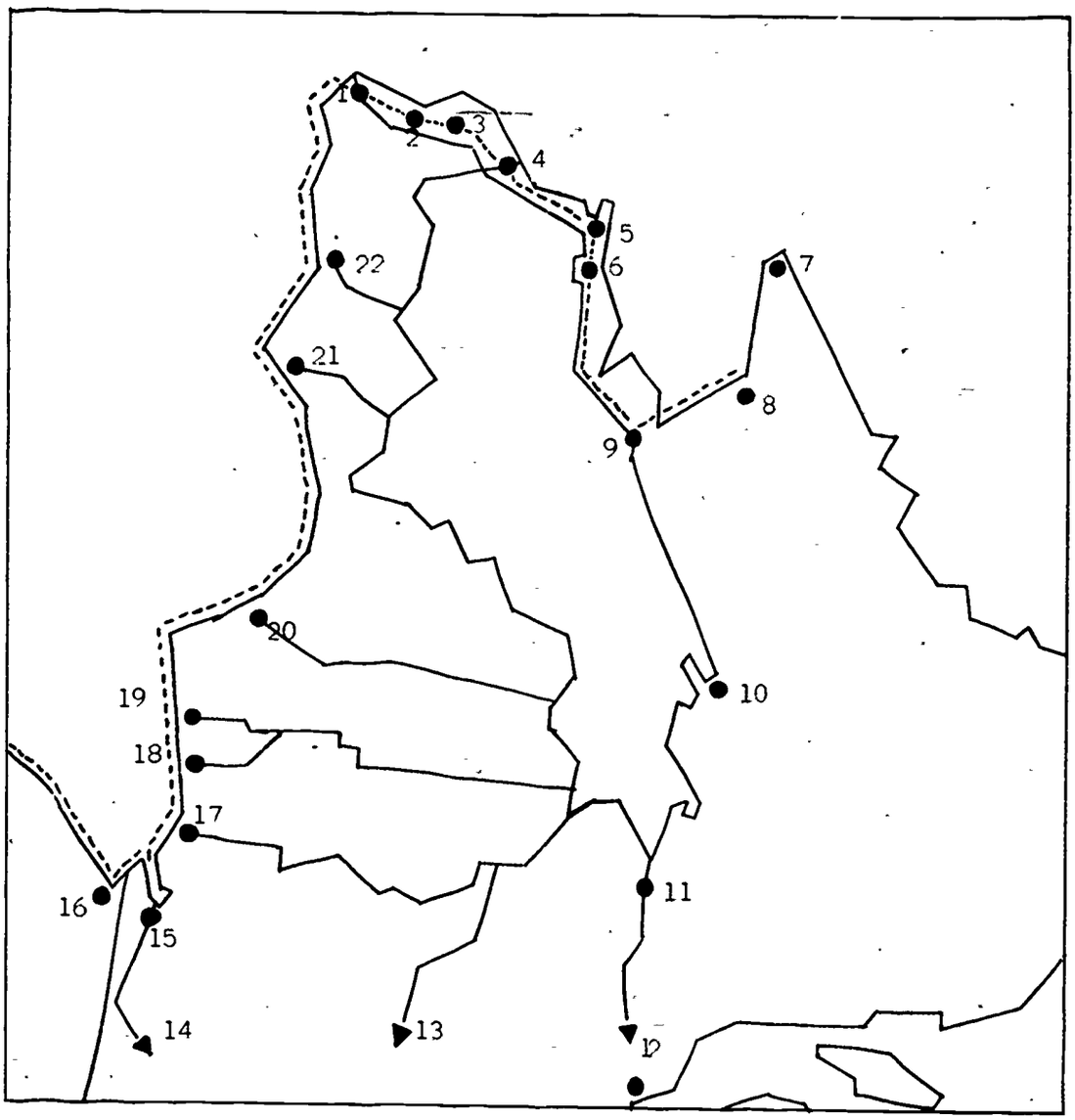


Fig. 7

Overland routes (travelled by snowmobile)

1. Invujivik
2. Saglouc
3. Putunik
4. Maricourt
5. Koartaq
6. Payne
7. Killinik
8. Port Nouveau-Québec
9. Fort Chimo
10. Schefferville
11. Gagnon
12. toward Baie Comeau
13. toward Chibougamau
14. toward Abitibi
15. Fort Rupert
16. Moosonee
17. Eastmain
18. Nouveau-Comptoir
19. Fort-Ste-Foy
20. Poste-de-la Baleine
21. Inoucdjouac
22. Povungnituk

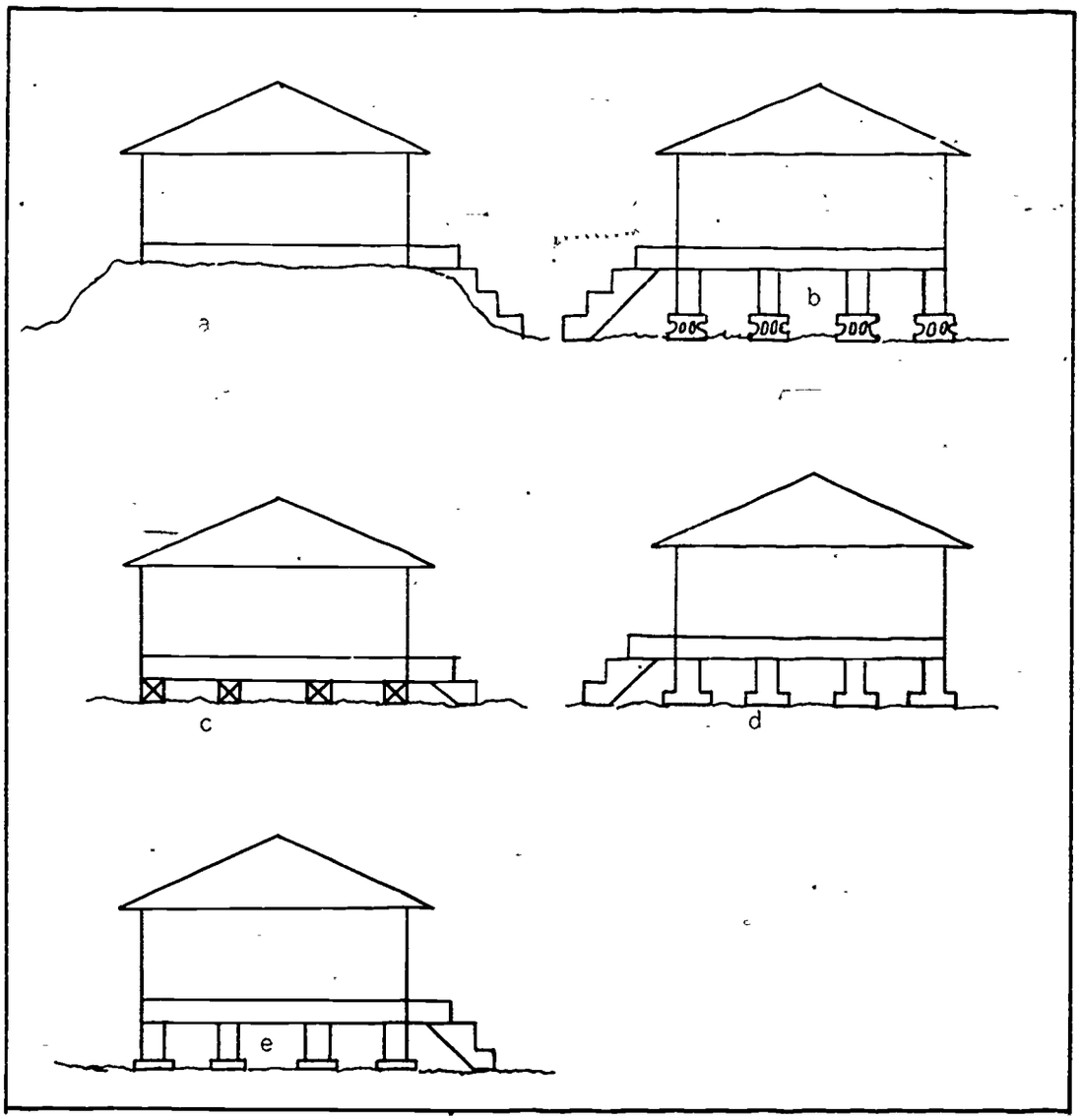


Fig. 8

Foundations for
light structures

a. gravel bed
b. wood columns on concrete blocks
c. cross-beams laid on ground
d. concrete columns on footings (one pouring)
e. wood columns on wood footings

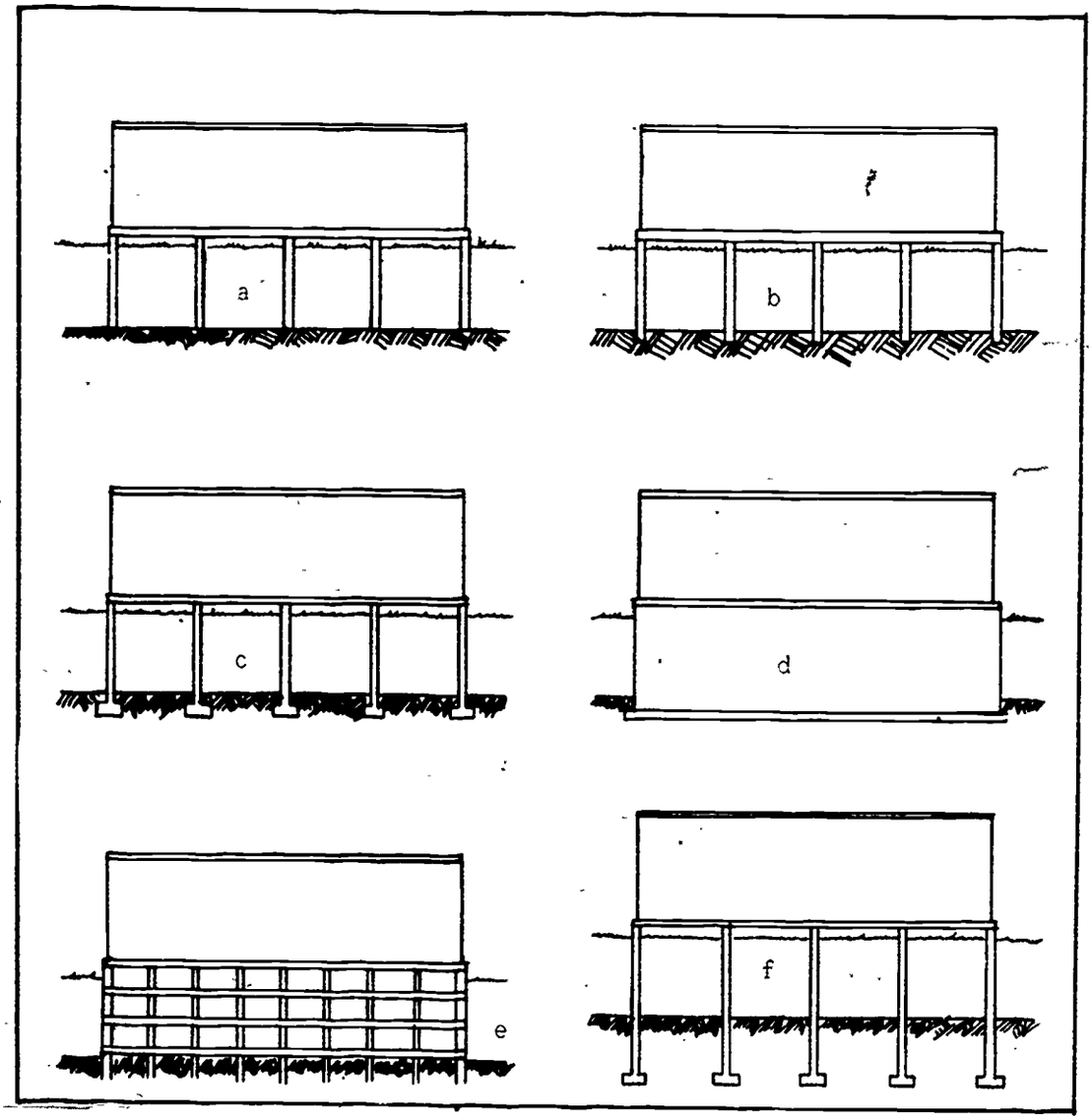


Fig. 9

Foundations resting on permafrost

a. wood columns
b. cement columns in permafrost
c. cement columns and footings
d. concrete foundation wall and footings
e. grid of crossed beams
f. columns deeply sunk in permafrost

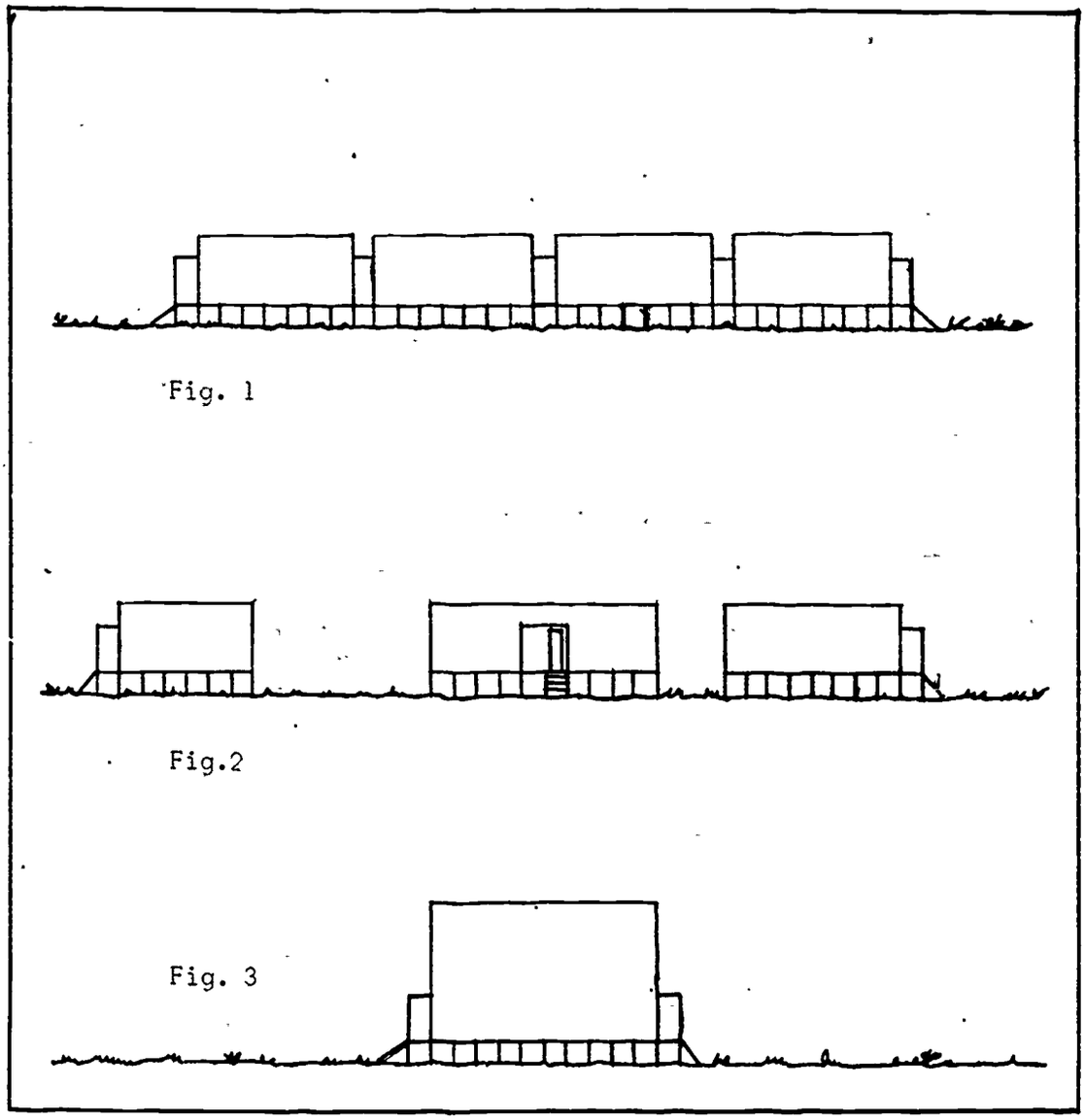


Fig. 1

Fig.2

Fig. 3

Fig. 10

Configuration types

Fig. 1: linked

Fig. 2: separate

Fig. 3: multi-storey

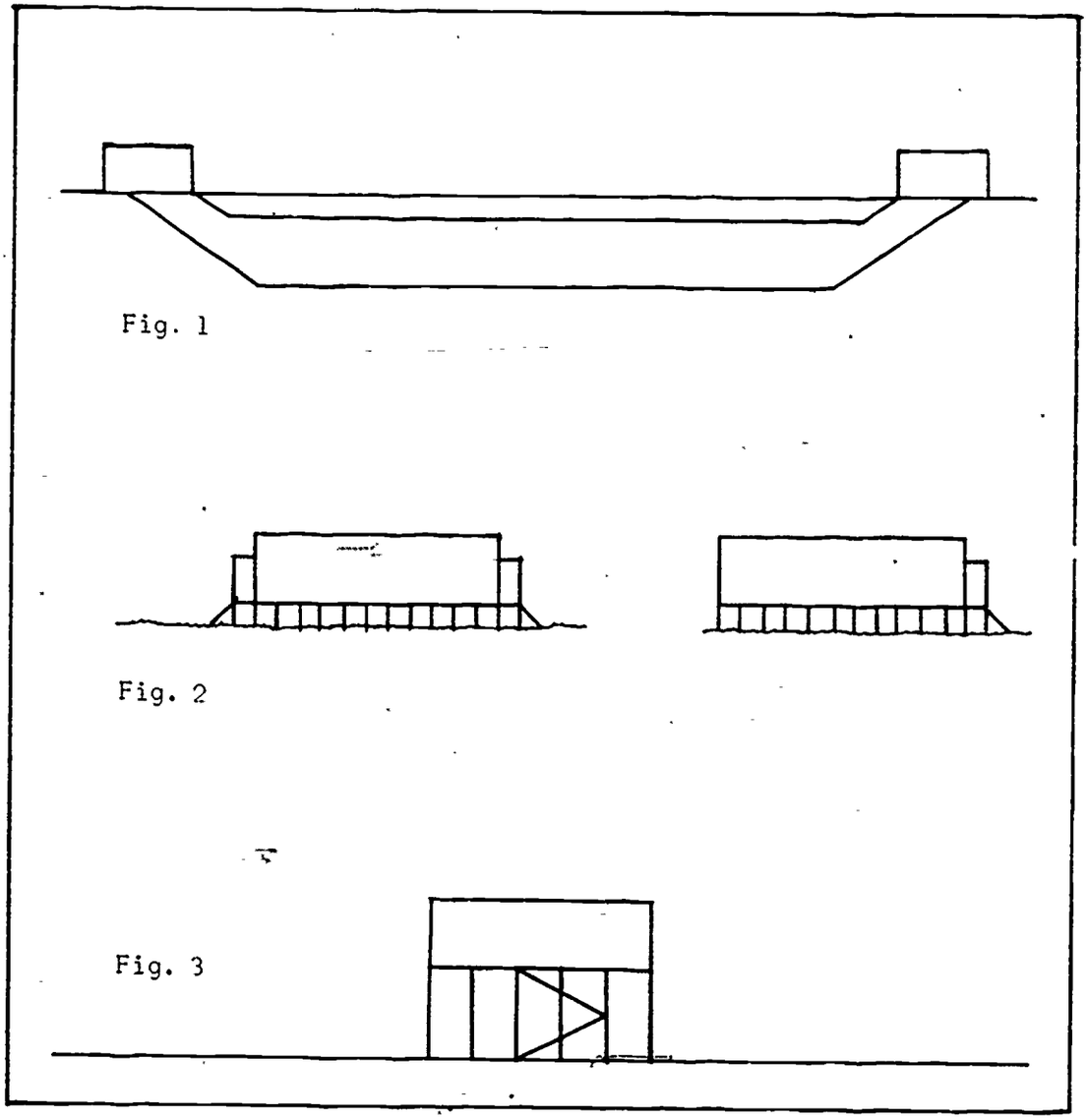


Fig. 11

Construction types

Fig. 1: underground

Fig. 2: ground level

Fig. 3: on pilings

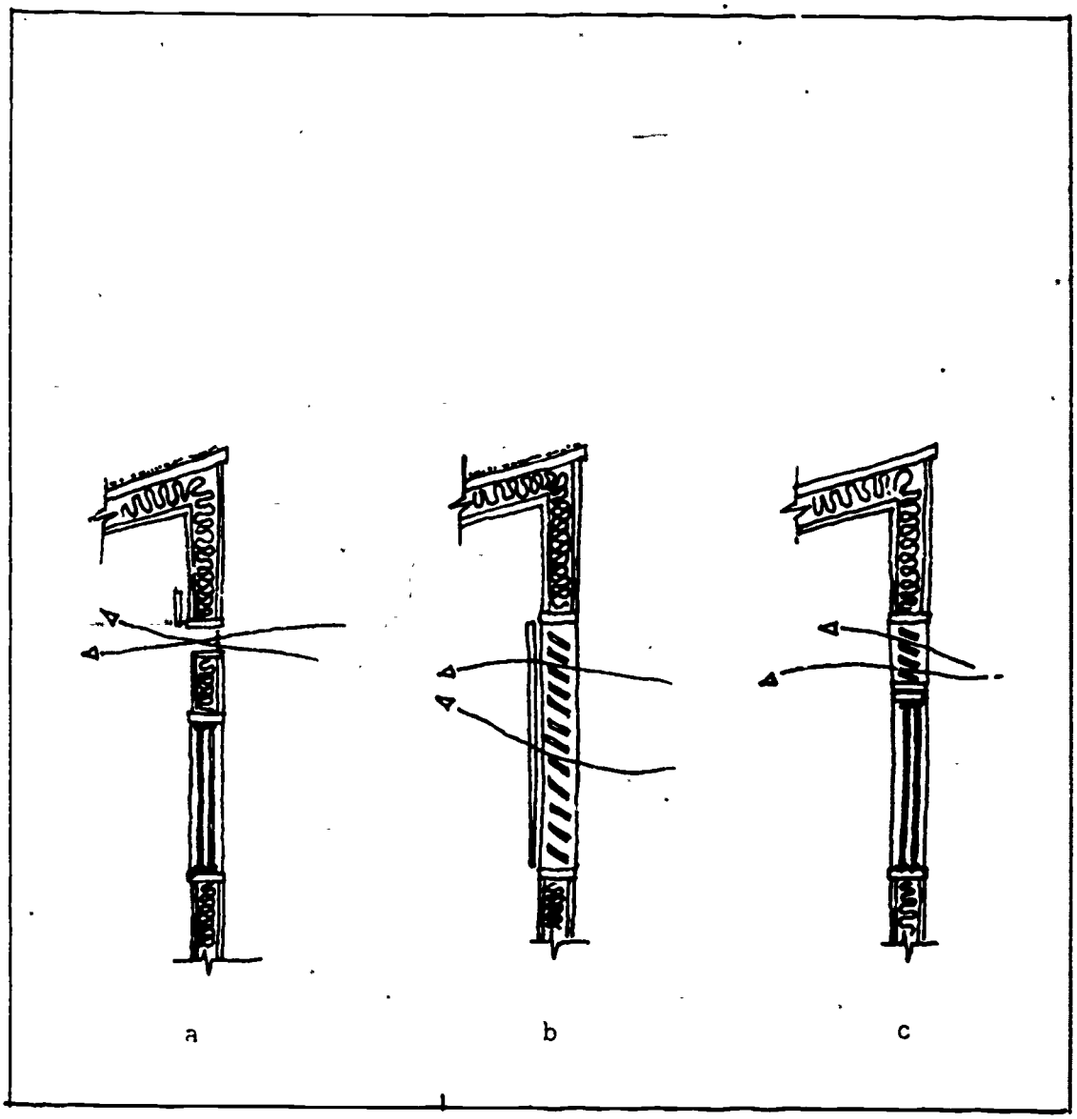


Fig. 12

Windows and louvers

a. ventilation louver above a sealed window
b. series of louvers on sides of window
c. series of louvers above window

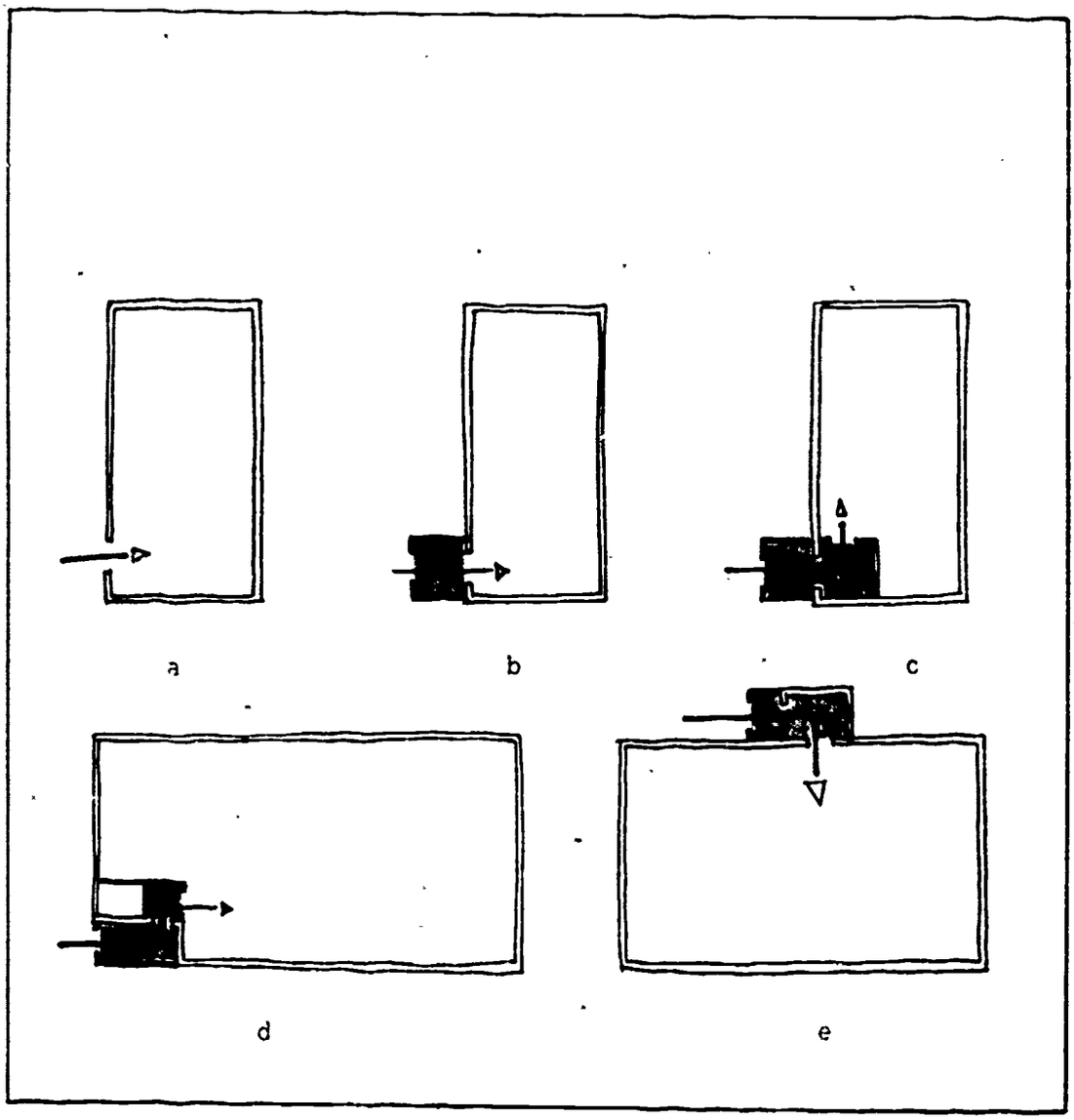


Fig. 13

Entryways

a. direct entry
b. porch entry, doors lined up
c. double porch entry, one change of direction
d. double porch entry, two changes of direction
e. double porch entry, facing prevailing wind direction

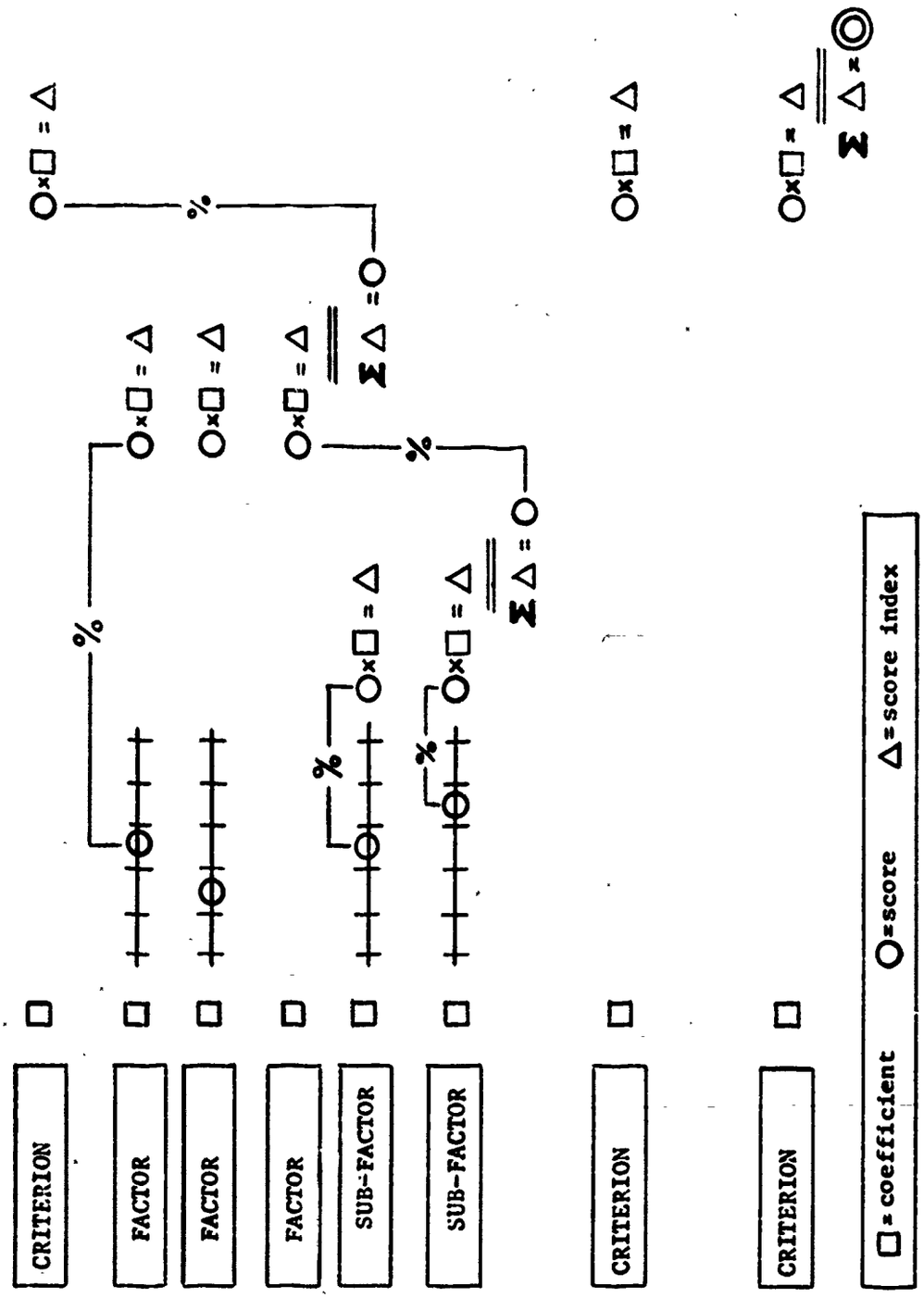
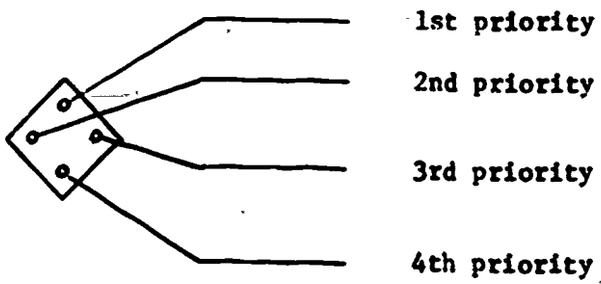
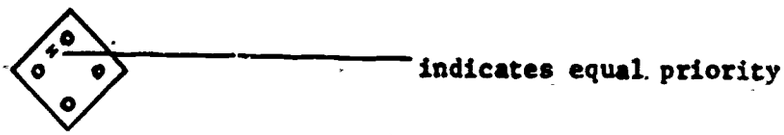


Fig. 14 Evaluation

ORDER OF PRIORITY





SCORING SCALE

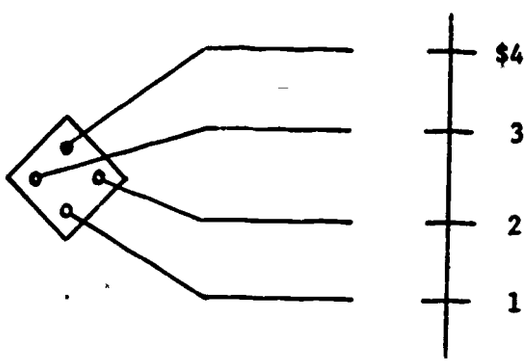


Fig. 15 Degrees of priority

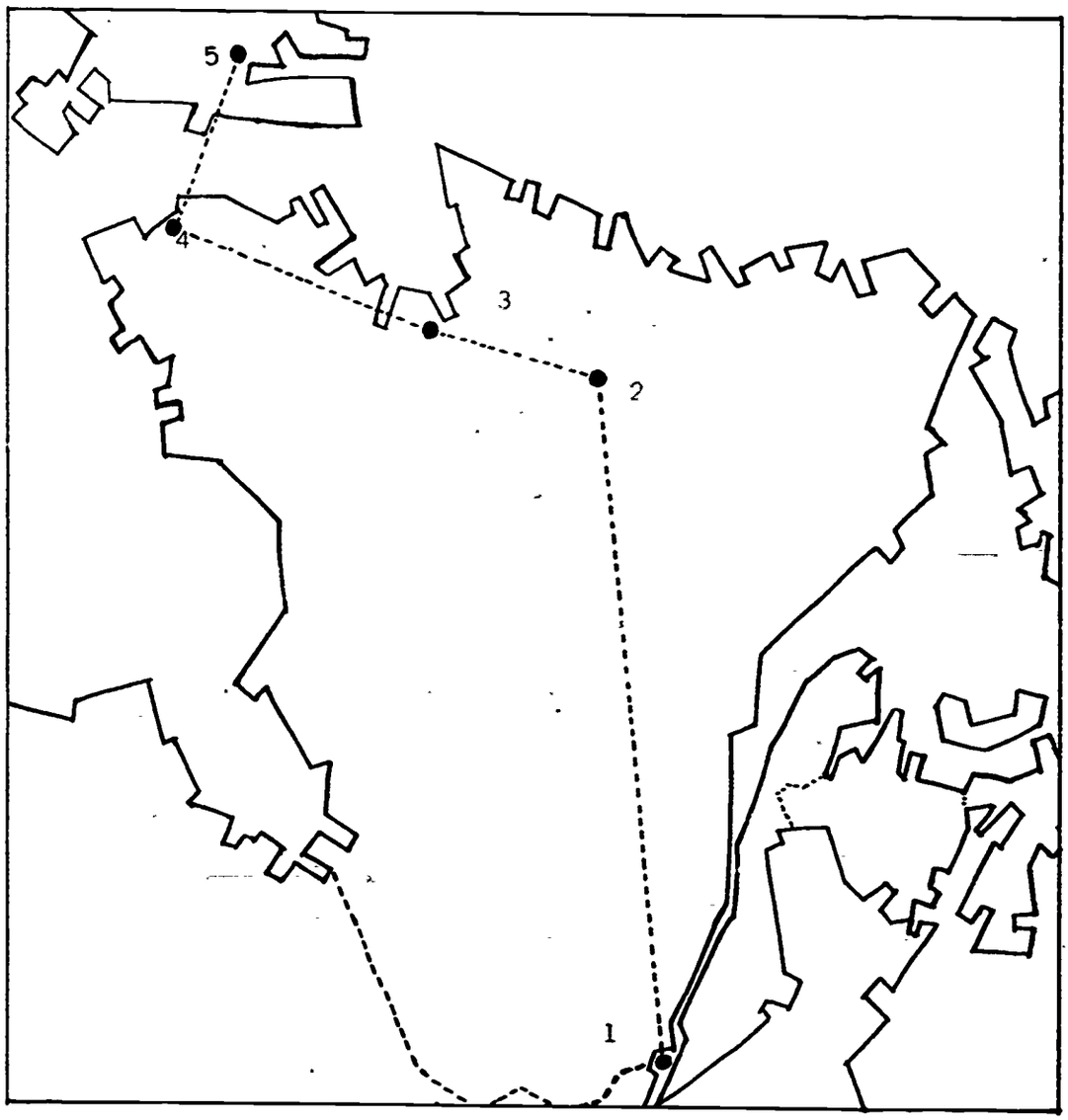


Fig. 16

Air routes

1. Montreal
2. Schefferville
3. Fort Chimo
4. Deception Bay
5. Frobisher

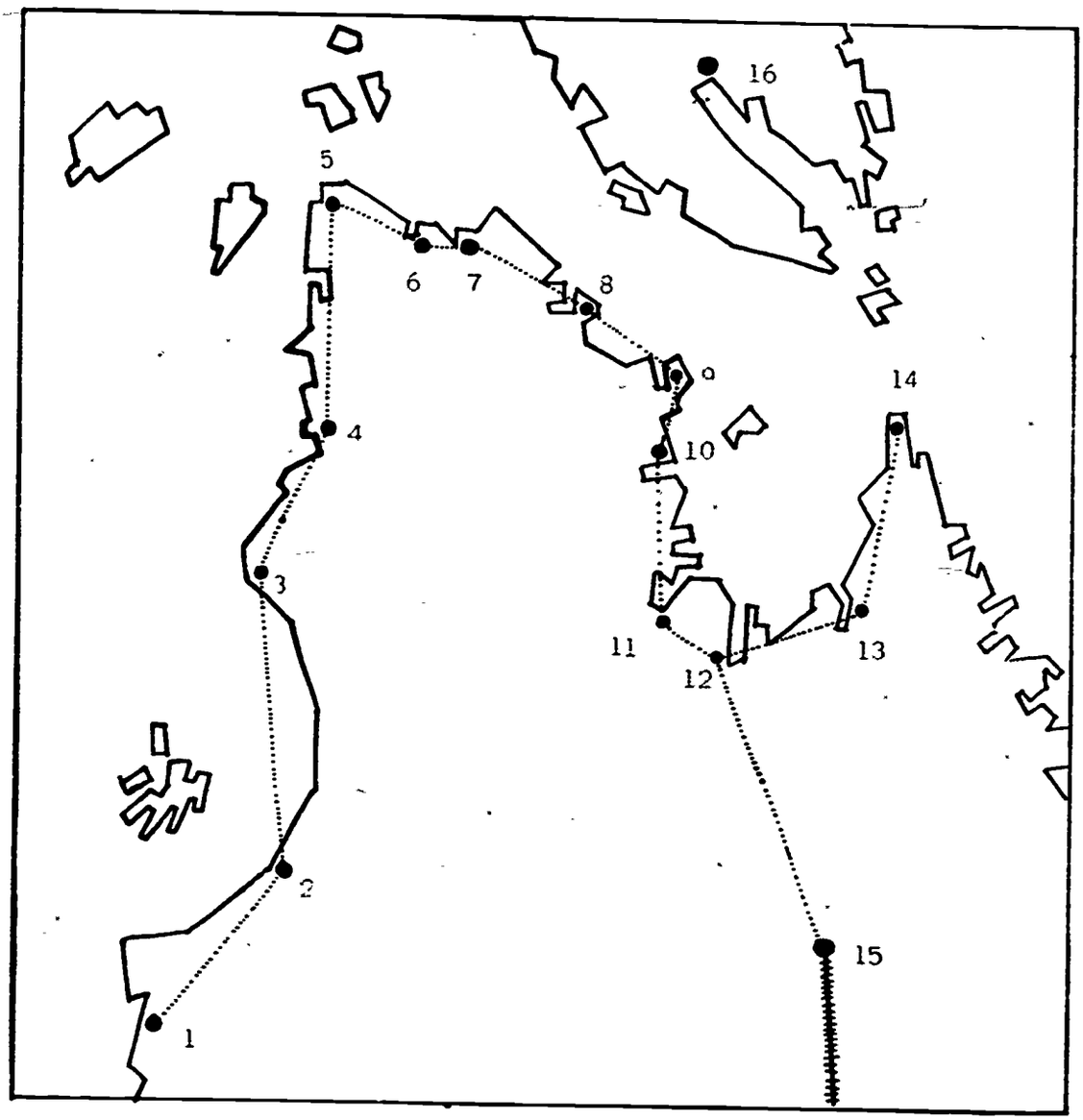


Fig. 17 -

Overland routes

1. Nouveau-Comptoir
2. Poste-de-la-Baleine
3. Inoucdjouac
4. Povungnituk
5. Ivujivik
6. Saglouc
7. Deception Bay
8. Wakeham
9. Koartaq
10. Payne
11. Baie-à-la-Feuille
12. Fort Chimo
13. Port Nouveau-Québec
14. Killiniq
15. Schefferville
16. Frobisher

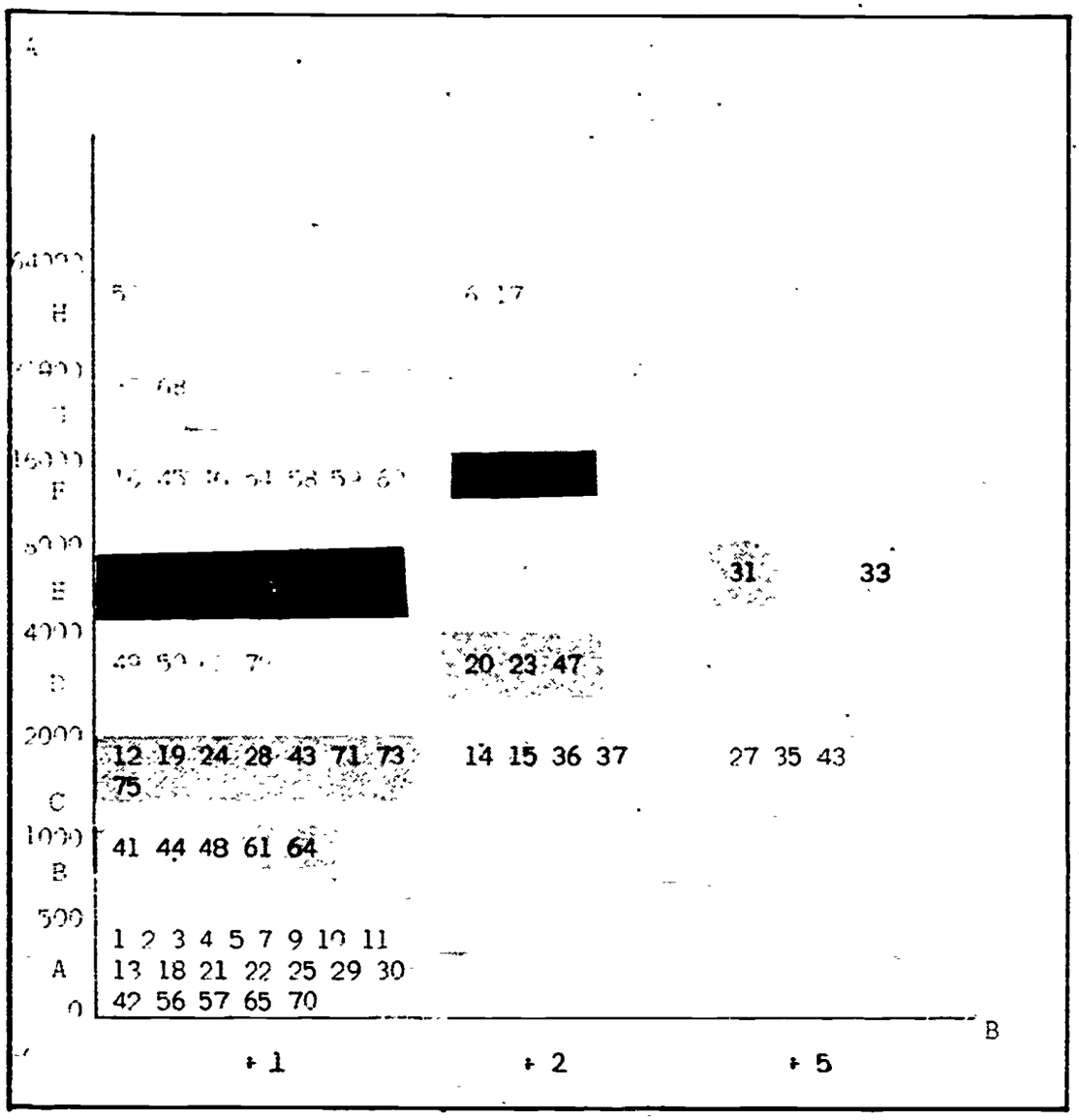


Fig. 18

Investment in equipment

Scale A: cost in $

Scale B: cost-sharing between 1,2, or 5 activities

Scoring scale

A: 8 light grey
B: 7 darker grey
C: 6 dark grey
D: 5
E: 4 darkest grey
F: 3
G: 2
H: 1

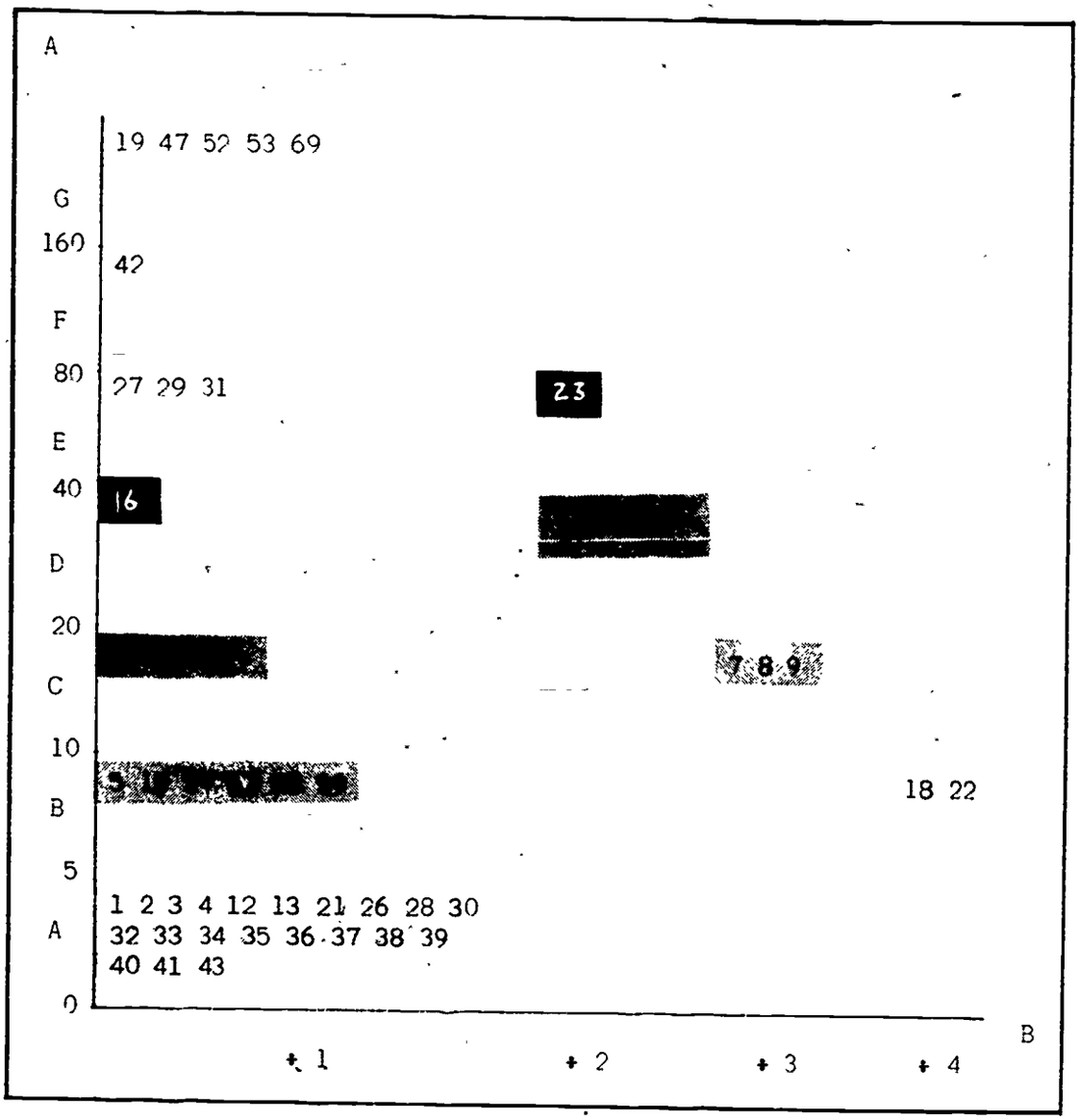


Fig. 19

Personal expenses

Scale A: amount spent in $
Scale B: cost-sharing between 1,2,3 or 4 activities

Scoring scale

A: 7 light grey
B: 6 darker grey
C: 5 dark grey
D: 4 darkest grey
E: 3
F: 2
G: 1

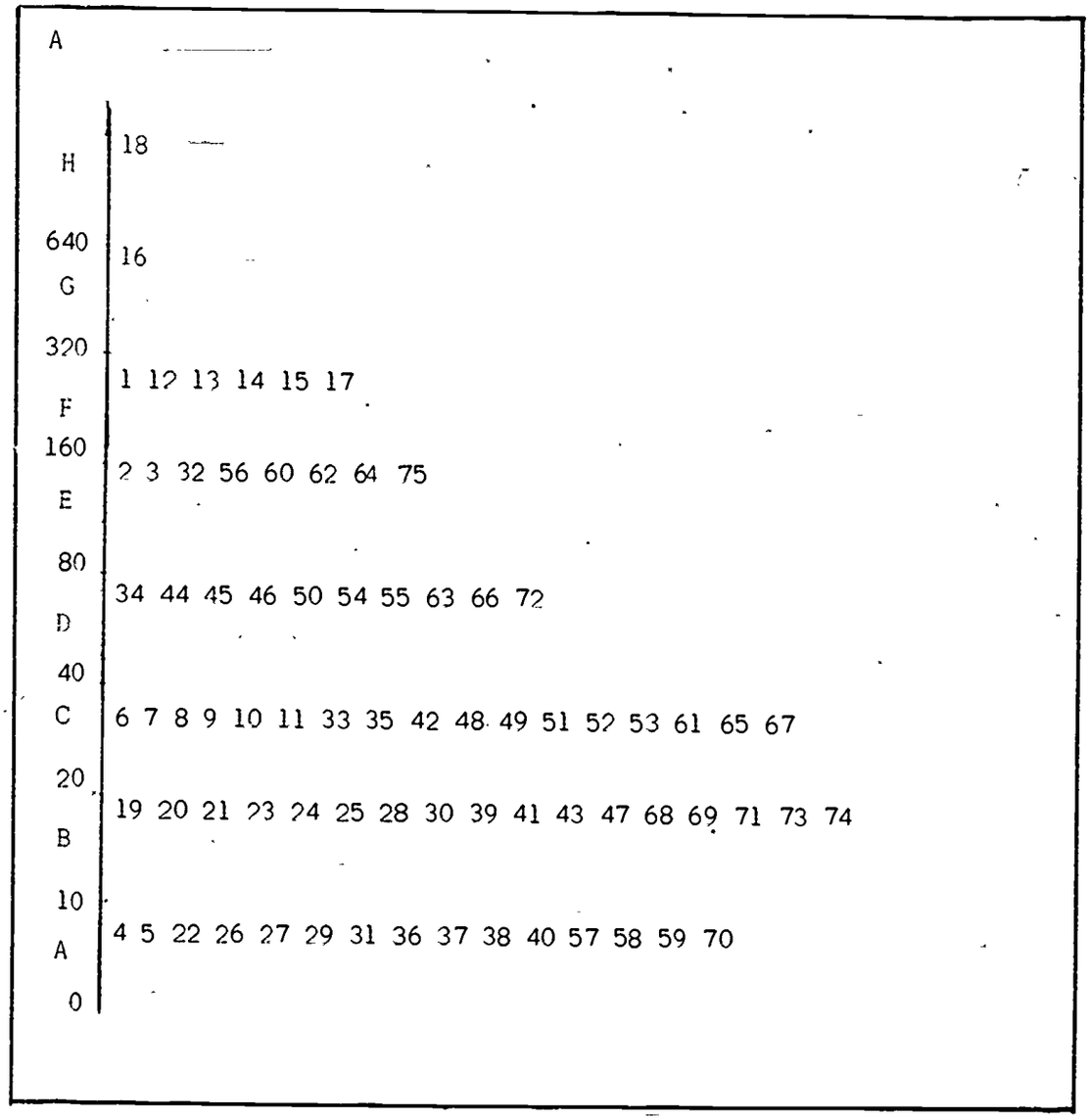


Fig. 20

Space needed in buildings

Scale A: surface area (sq.ft.) needed for activities

Scoring scale

A: 8
B: 7
C: 6
D: 5
E: 4
F: 3
G: 2
H: 1

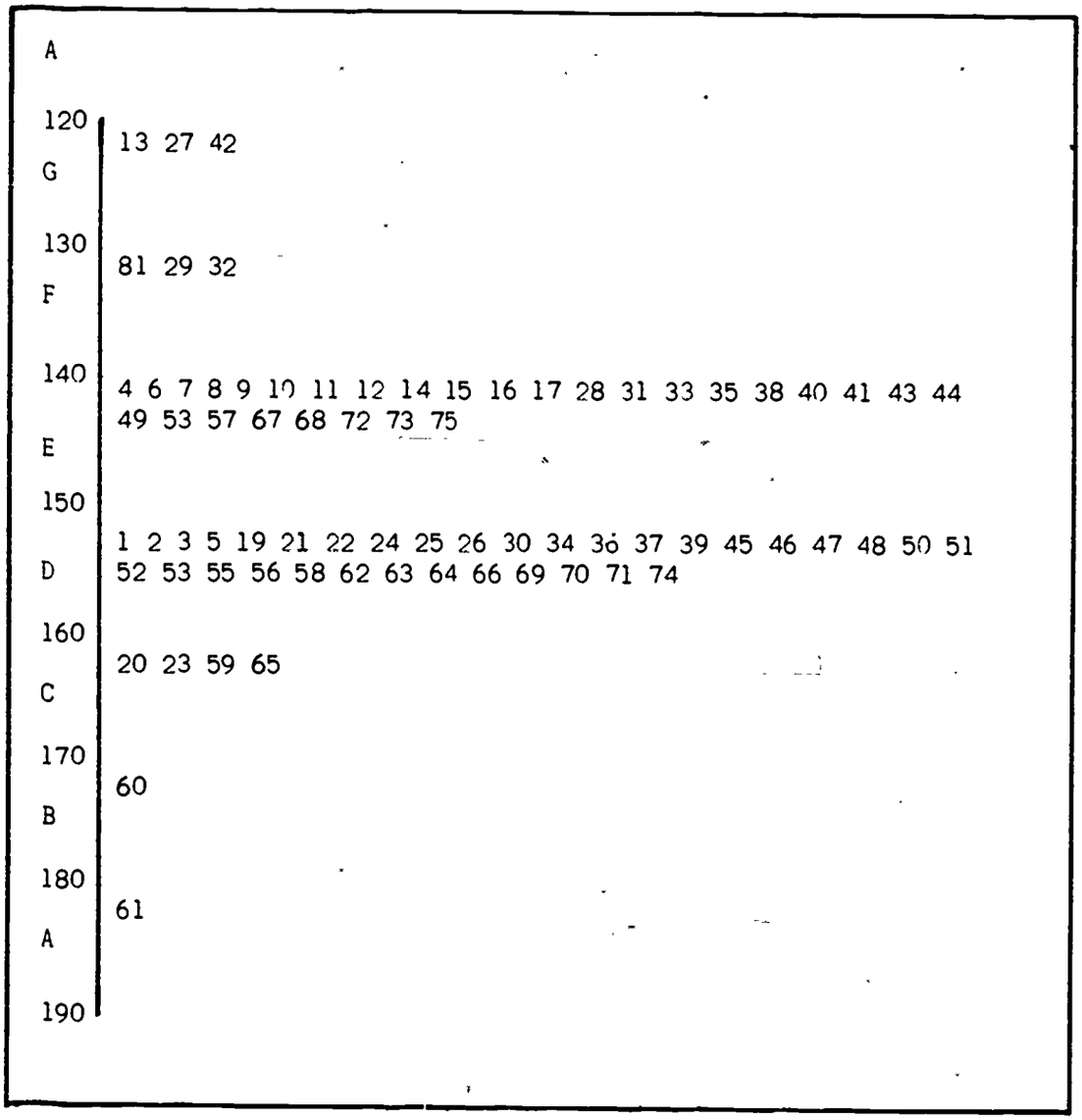


Fig. 21

Degree of compatibility

Scale A: results obtained by adding priorities

Scoring scale

A: 7
B: 6
C: 5
D: 4
E: 3
F: 2
G: 1

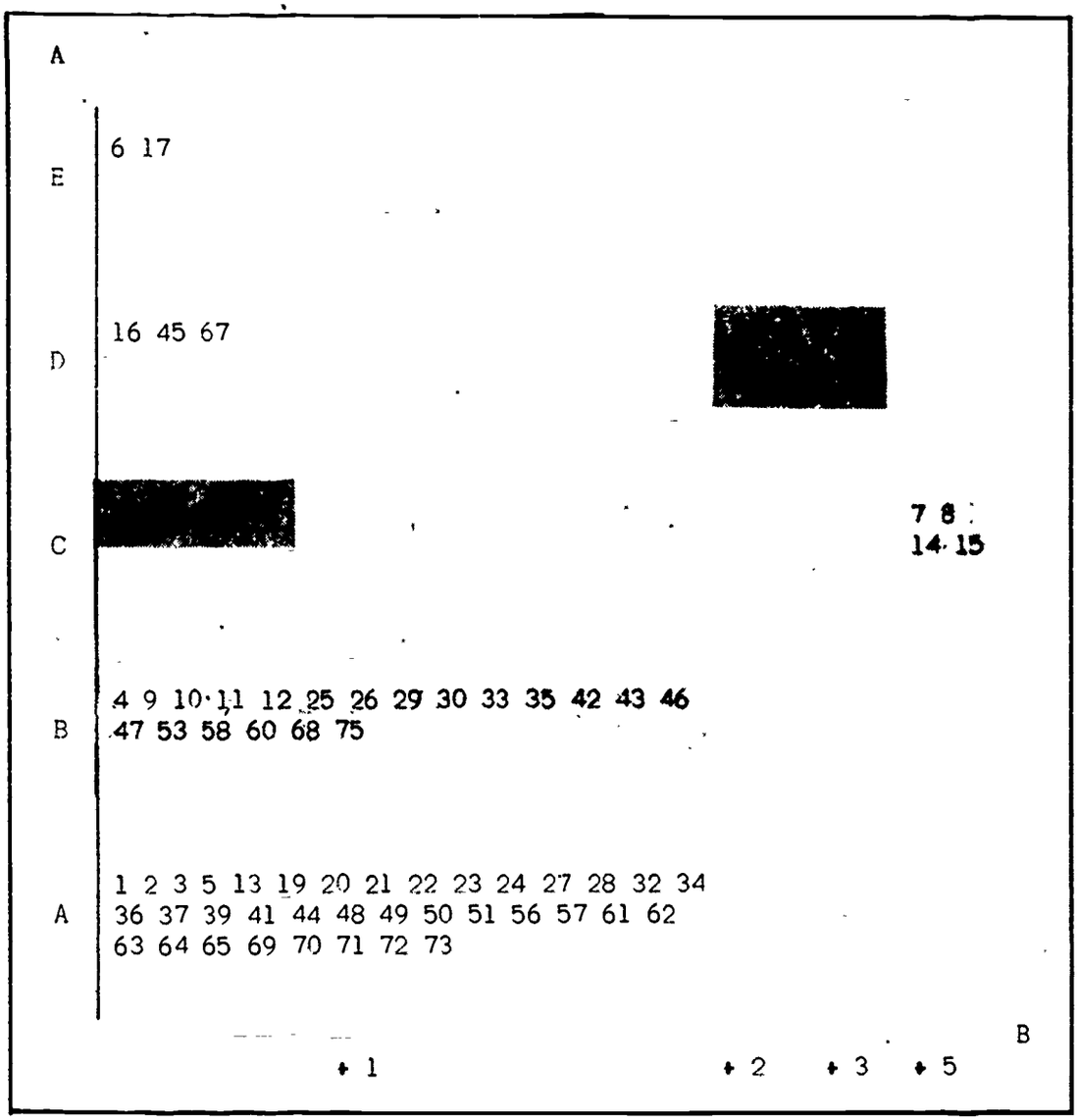


Fig. 22

Difficulty of accomplishment

Scale A: degree of difficulty

Scoring scale

A: 5 no difficulty
B: 4 little difficulty -light grey
C: 3 average difficulty -dark grey
D: 2 great difficulty
E: 1 excessive difficulty

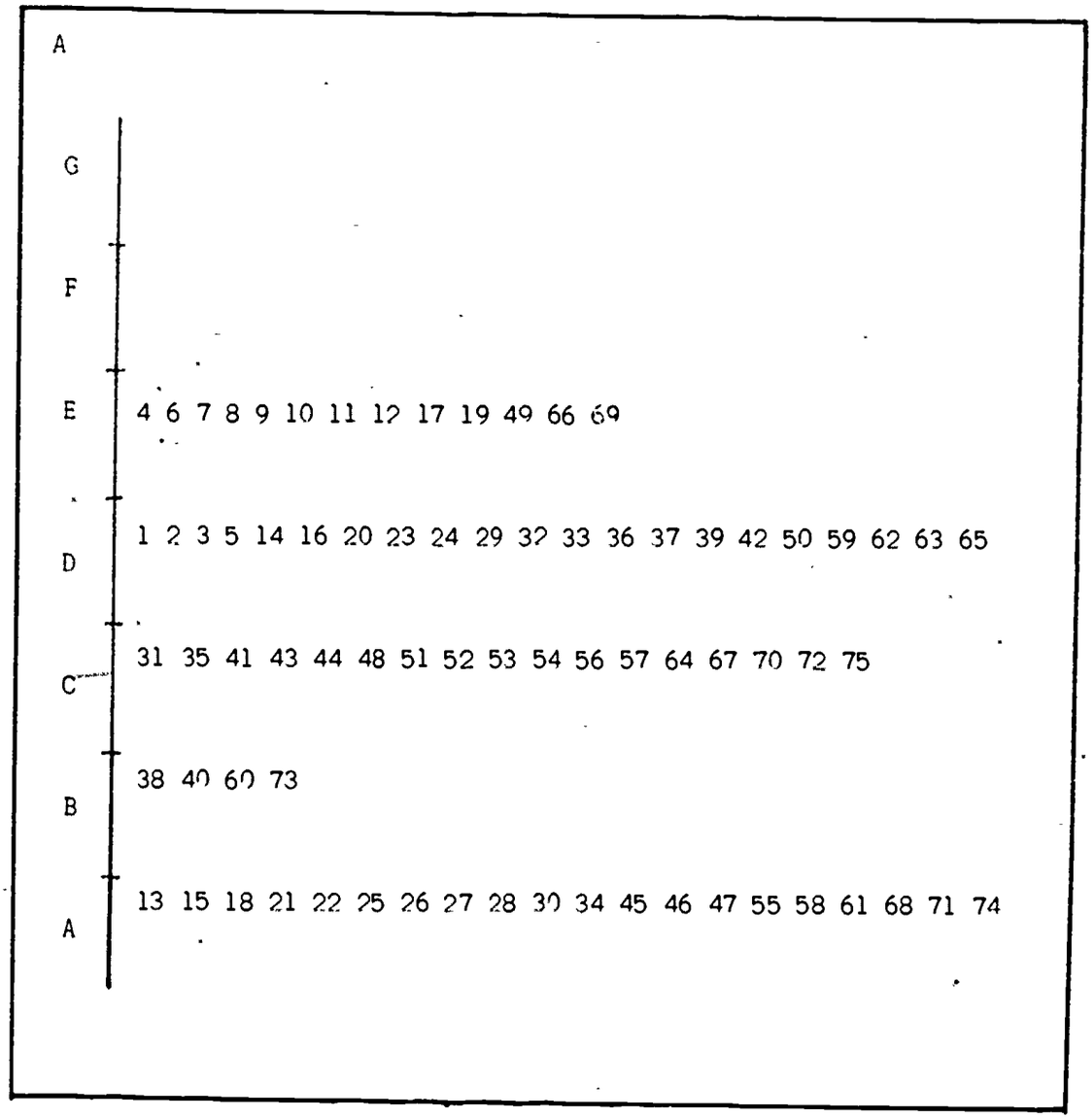


Fig. 23

Acculturation

Scale A: degree of acculturation

Scoring scale

A: 7
B: 6
C: 5
D: 4
E: 3
F: 2
G: 1

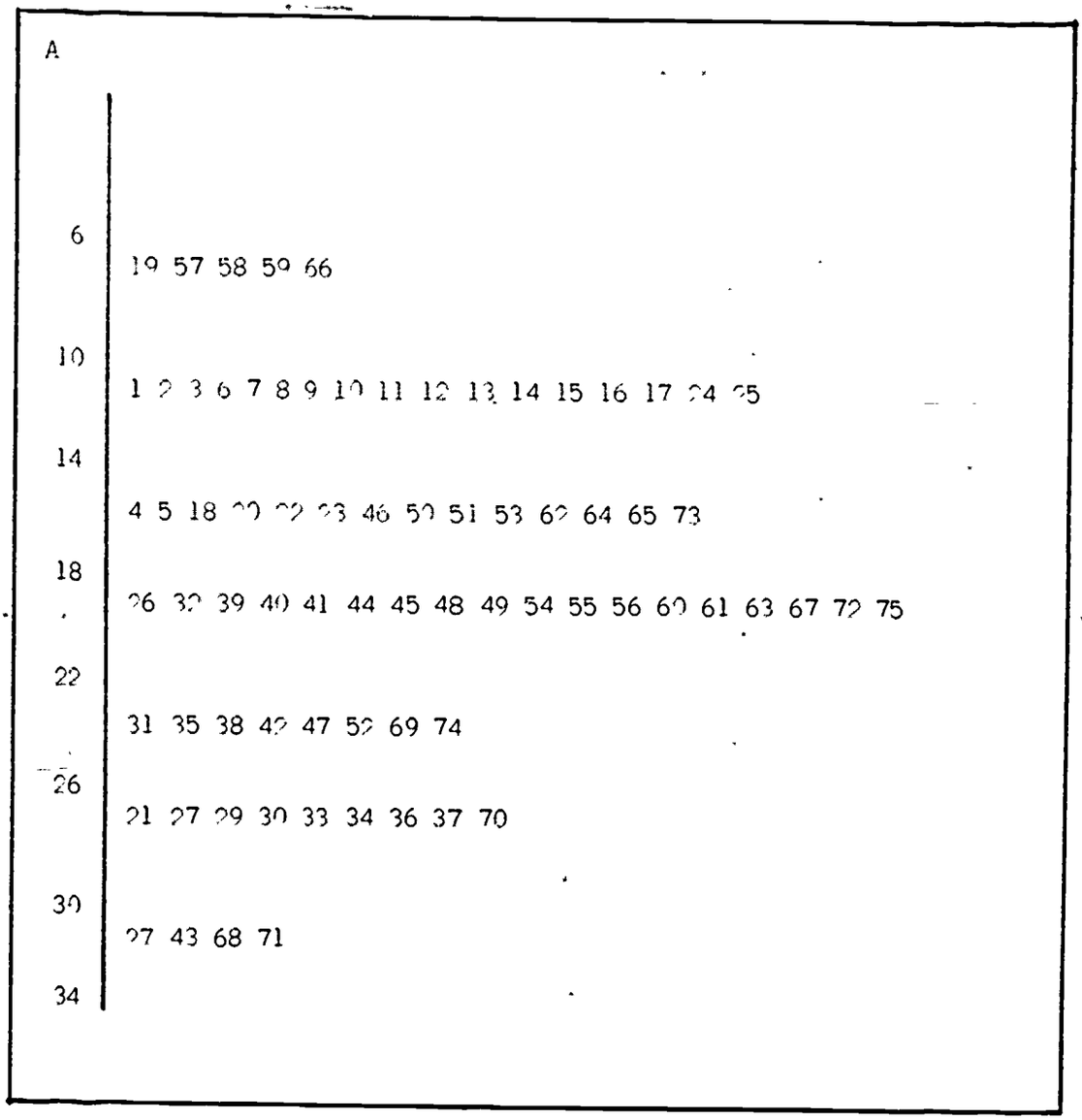


Fig. 24

Communication

Scale A: degree of communication

Scoring scale

A: 31-34
B: 27-30
C: 23-26
D: 19-22
E: 15-18
F: 11-14
G: 6-10

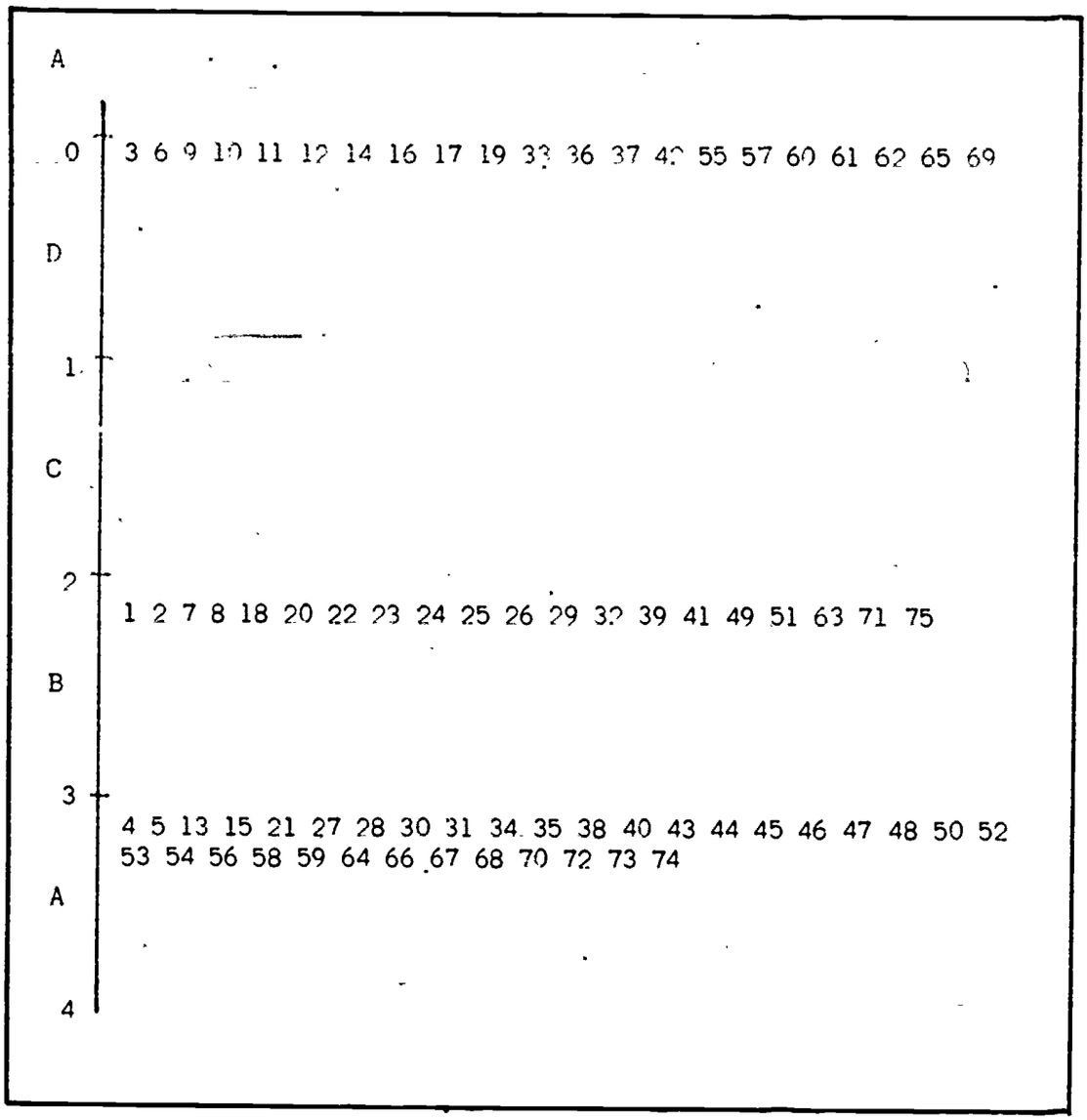


Fig. 25

Expressed need (Eskimo)

Scale A: degree of requested need

Scoring scale

D: not requested
C: requested by individuals
B: requested by a group
A: requested by the community

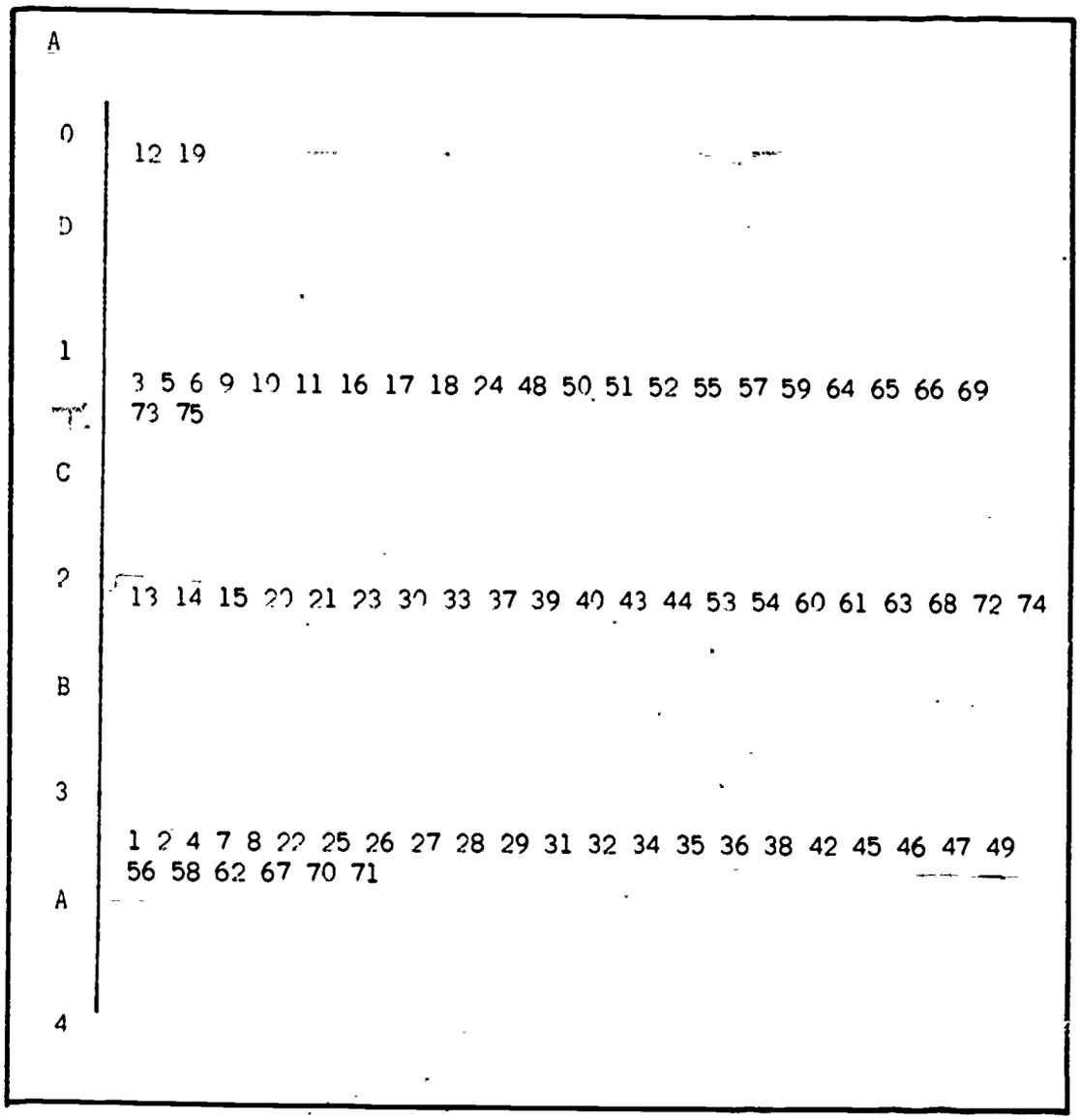


Fig. 26

Recognized need

Scale A: degree of need

Scoring scale

A: 4 indispensable
B: 3 great need
C: 2 less need
D: 1 no need

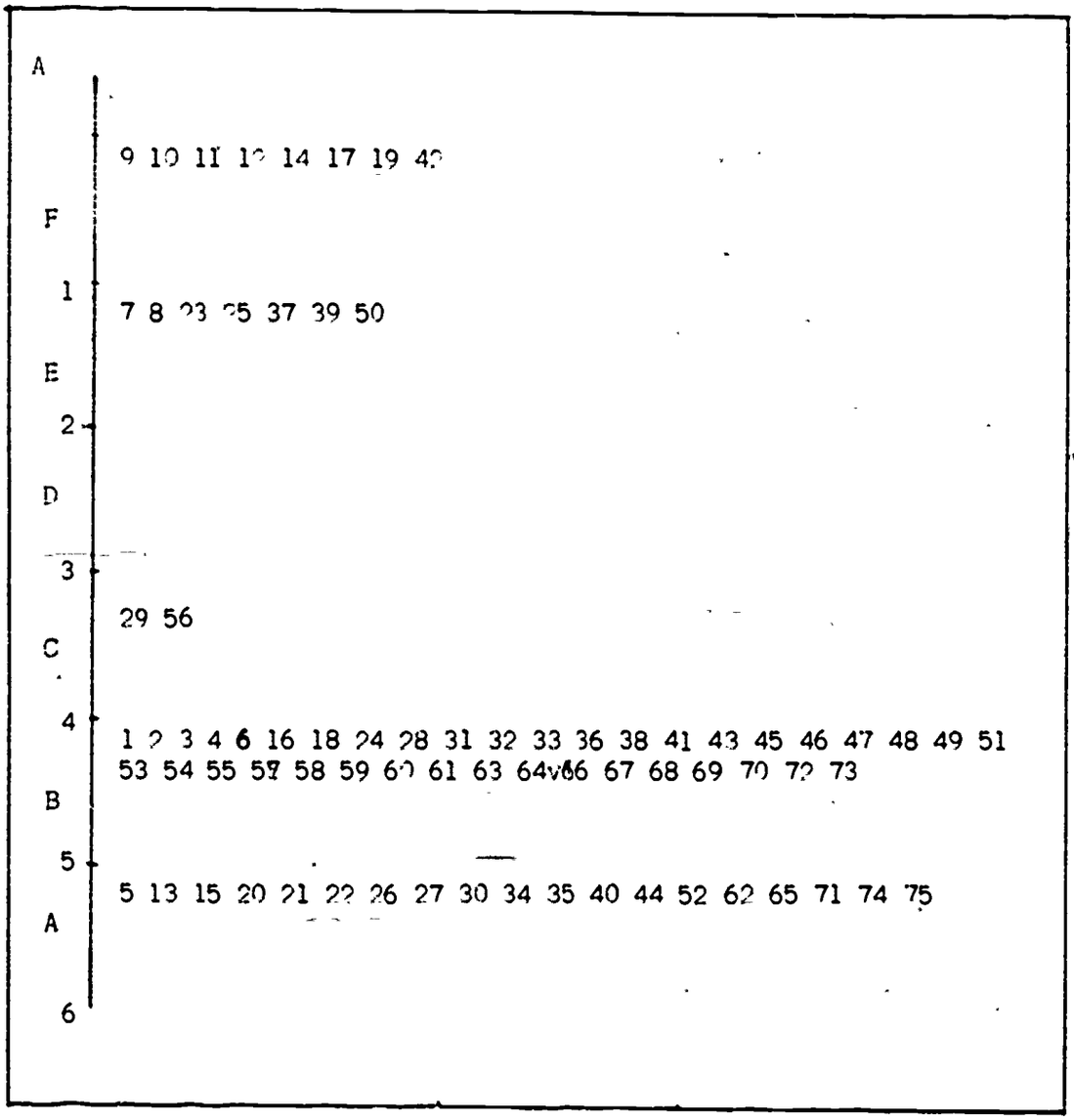


Fig. 27

Responsibility

Scale A: degree of responsibility

Scoring scale

A: 6 present responsibility
B: 5 eventual responsibility
C: 4 responsibility in the future
D: 3 responsibility possible for the present
E: 2 responsibility possible in the future
F: 1 responsibility unlikely

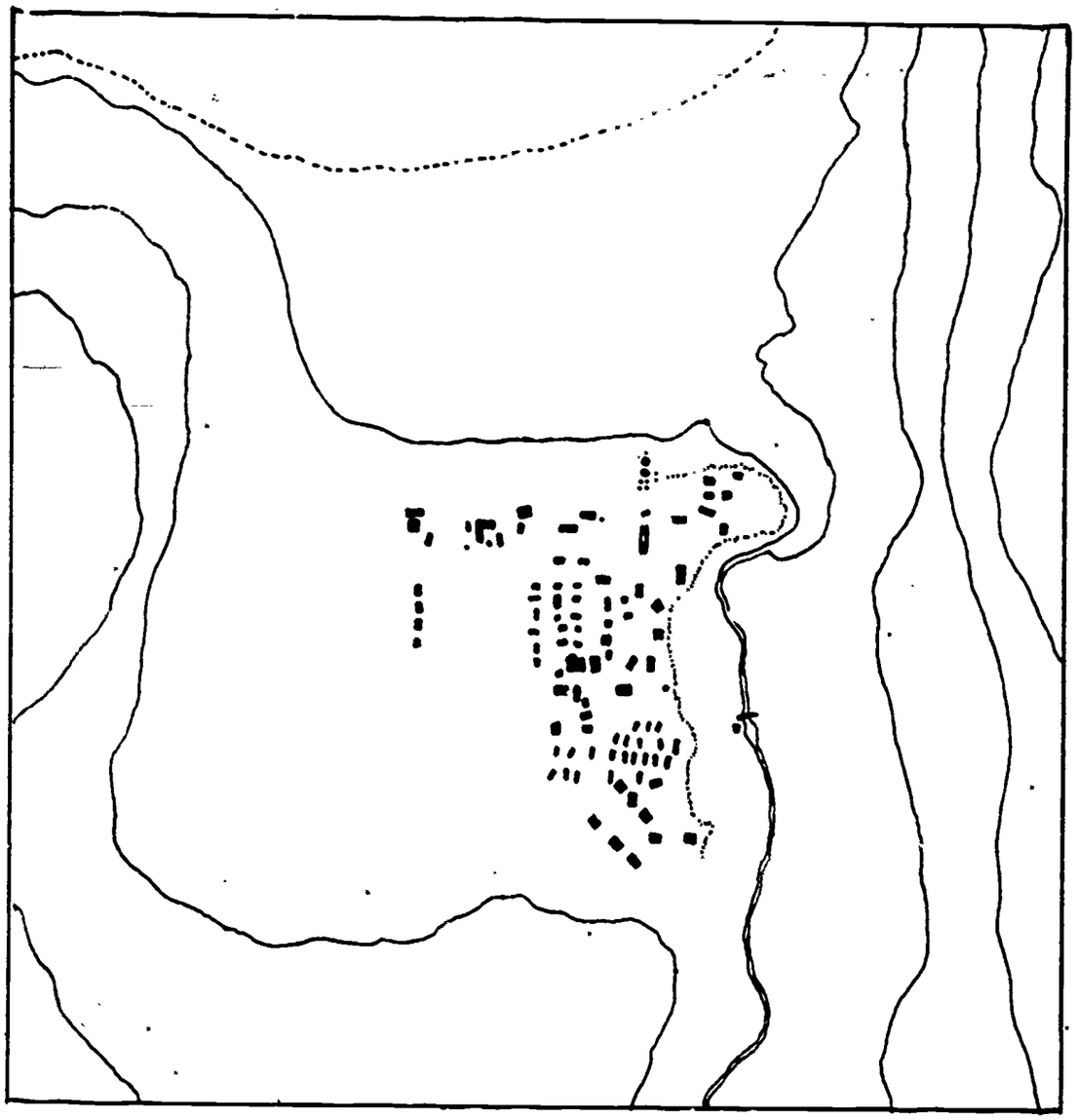


Fig. 28

Saglouc

See Figs. 29 and 30

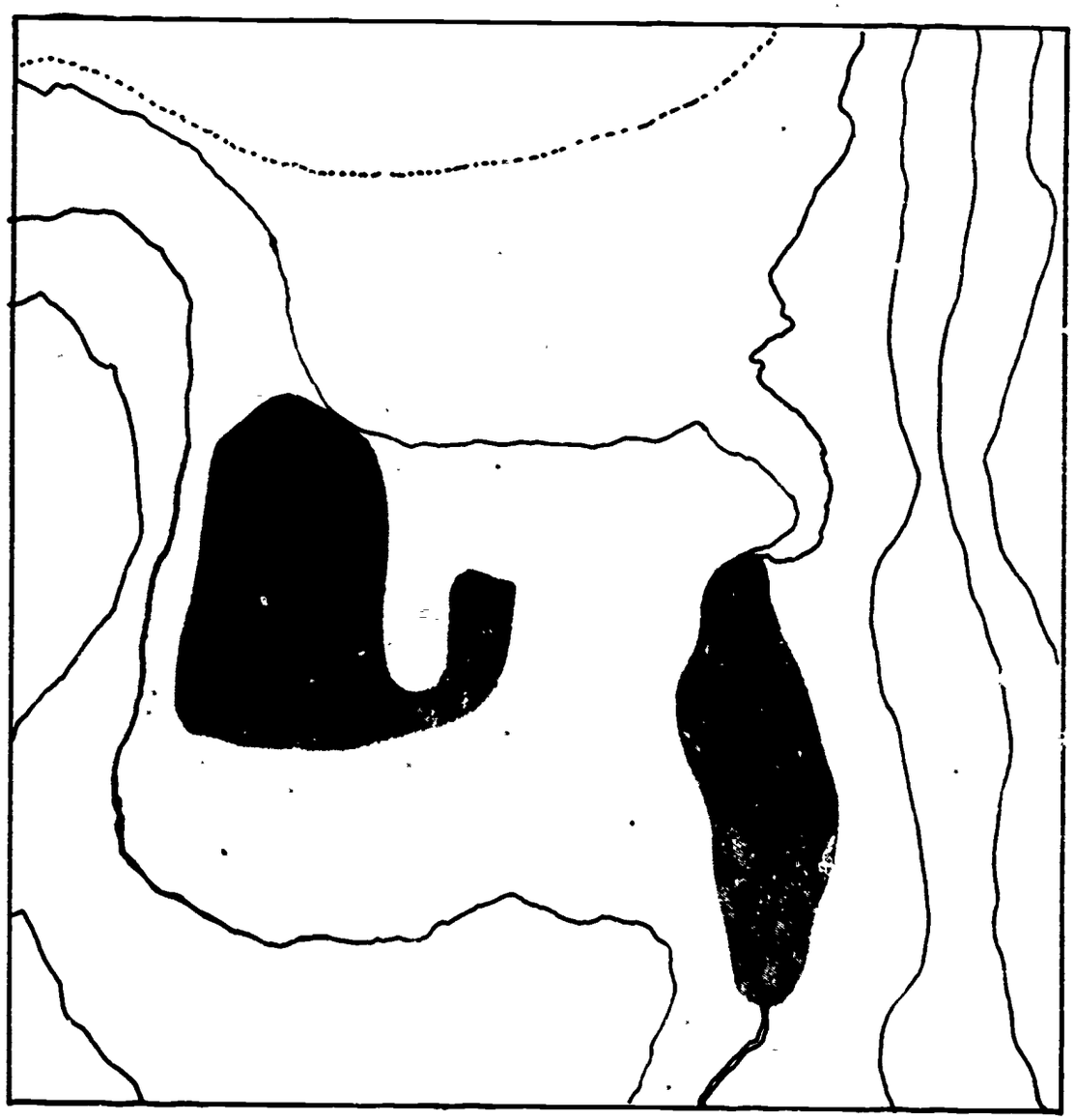


Fig. 29

Soil

Soil suitable for construction: white area

Soil needing some work: light grey

Unsuitable soil (marshy): dark grey

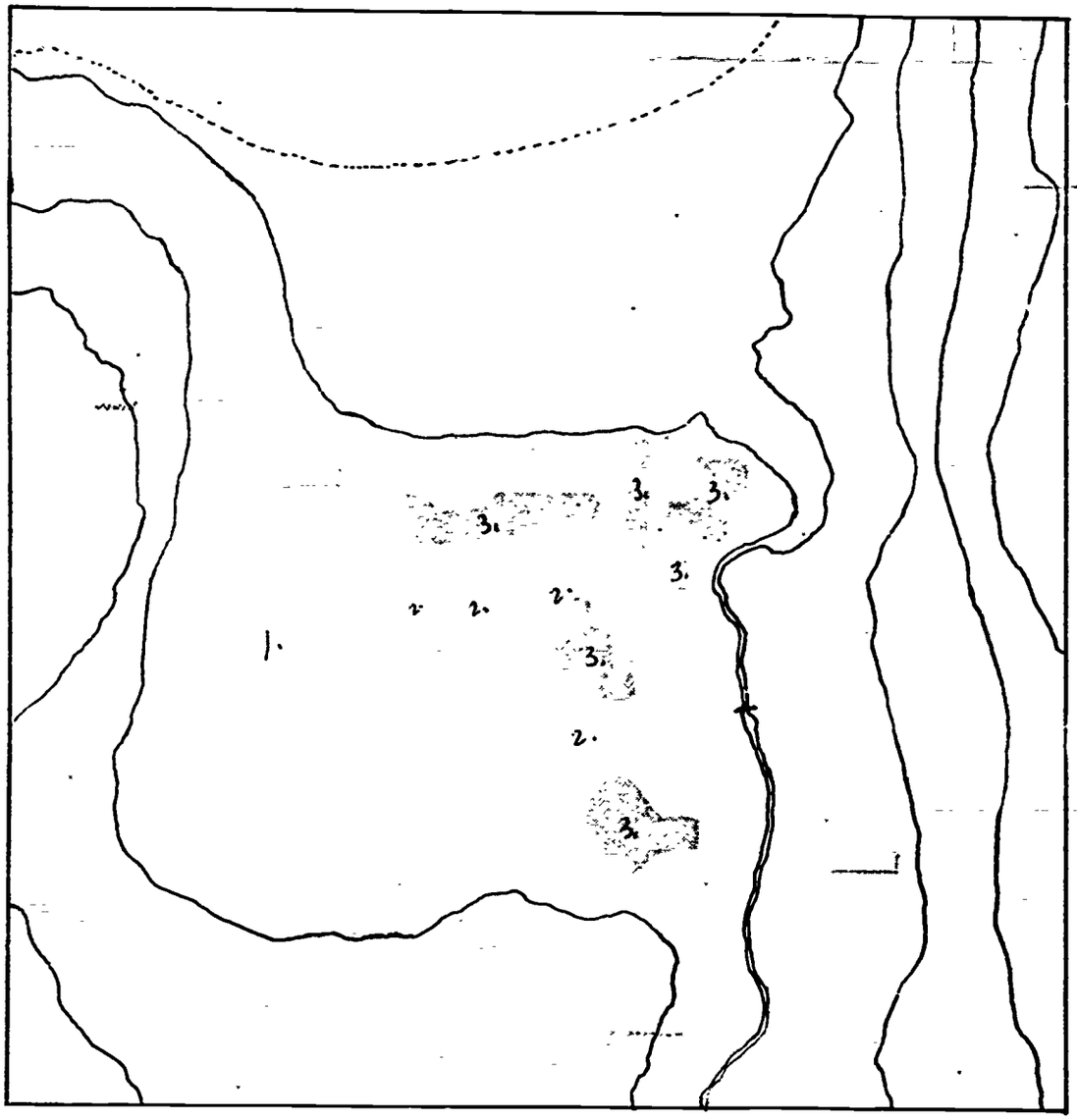


Fig. 30

Availability of land

1. Available land: white area
2. Land occupied by movable buildings: light grey
3. Land occupied by permanent buildings: dark grey

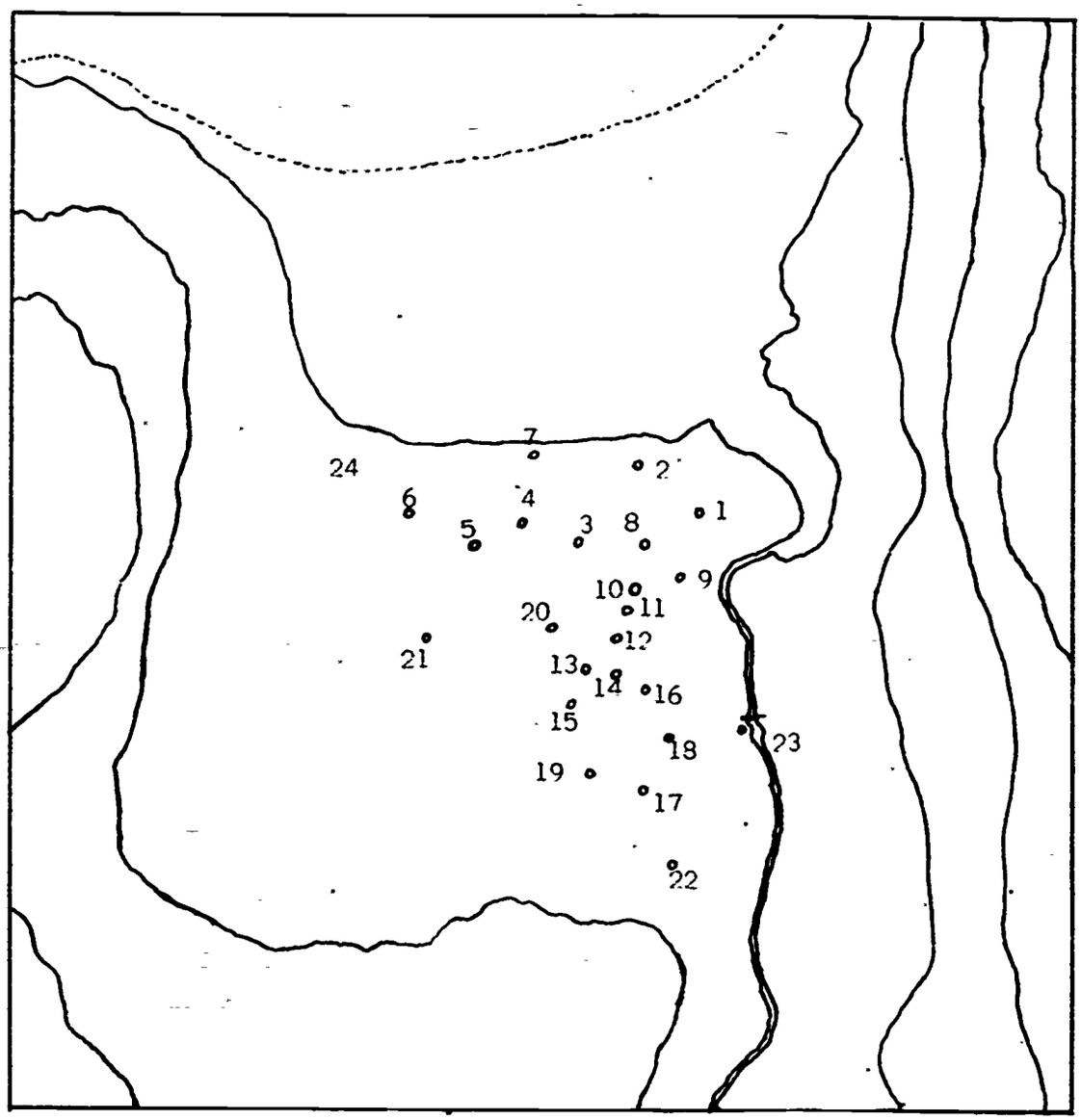


Fig. 31

Zones in Saglouc

See Table 21

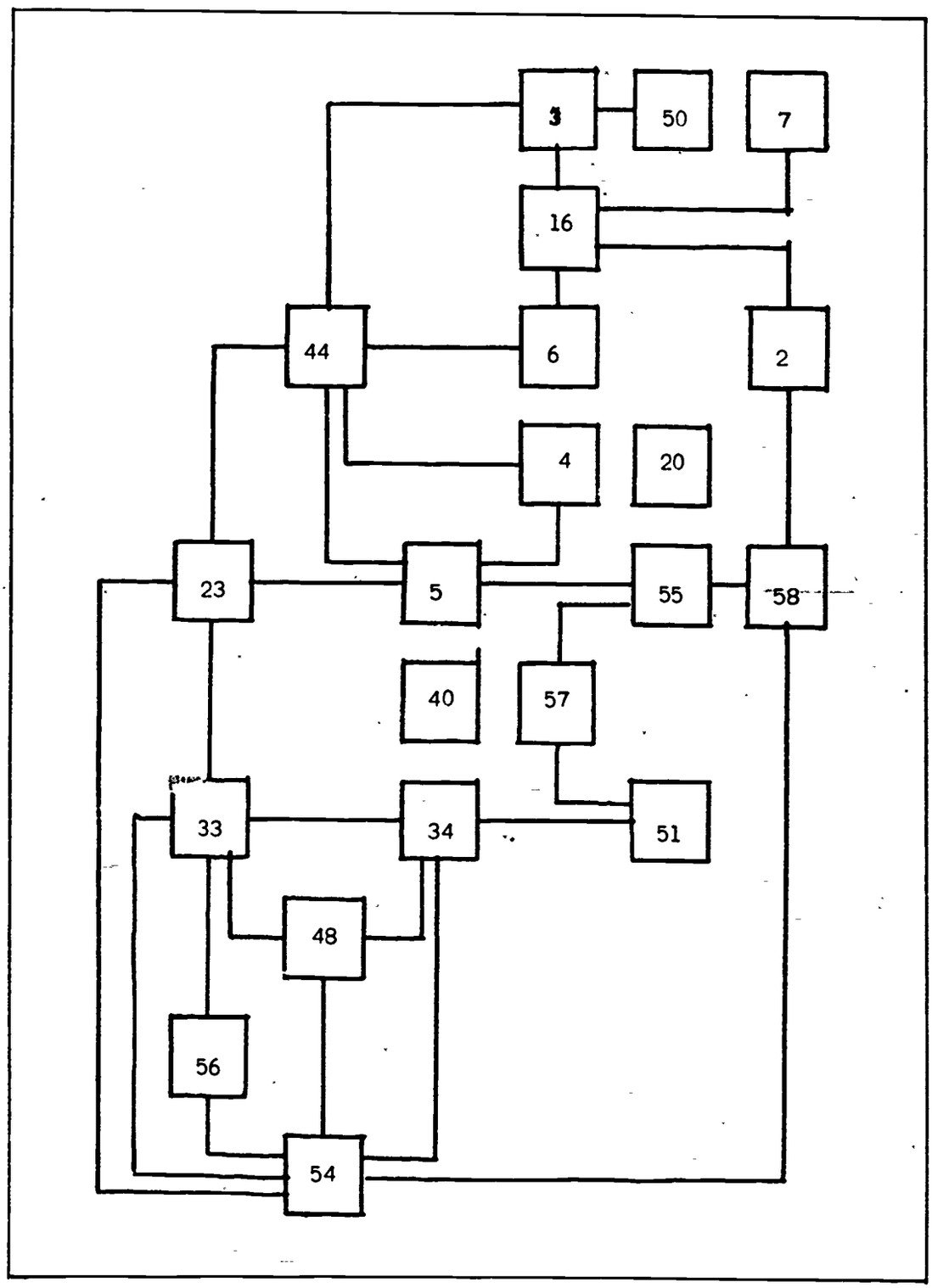


Fig. 32 Topological flow-chart

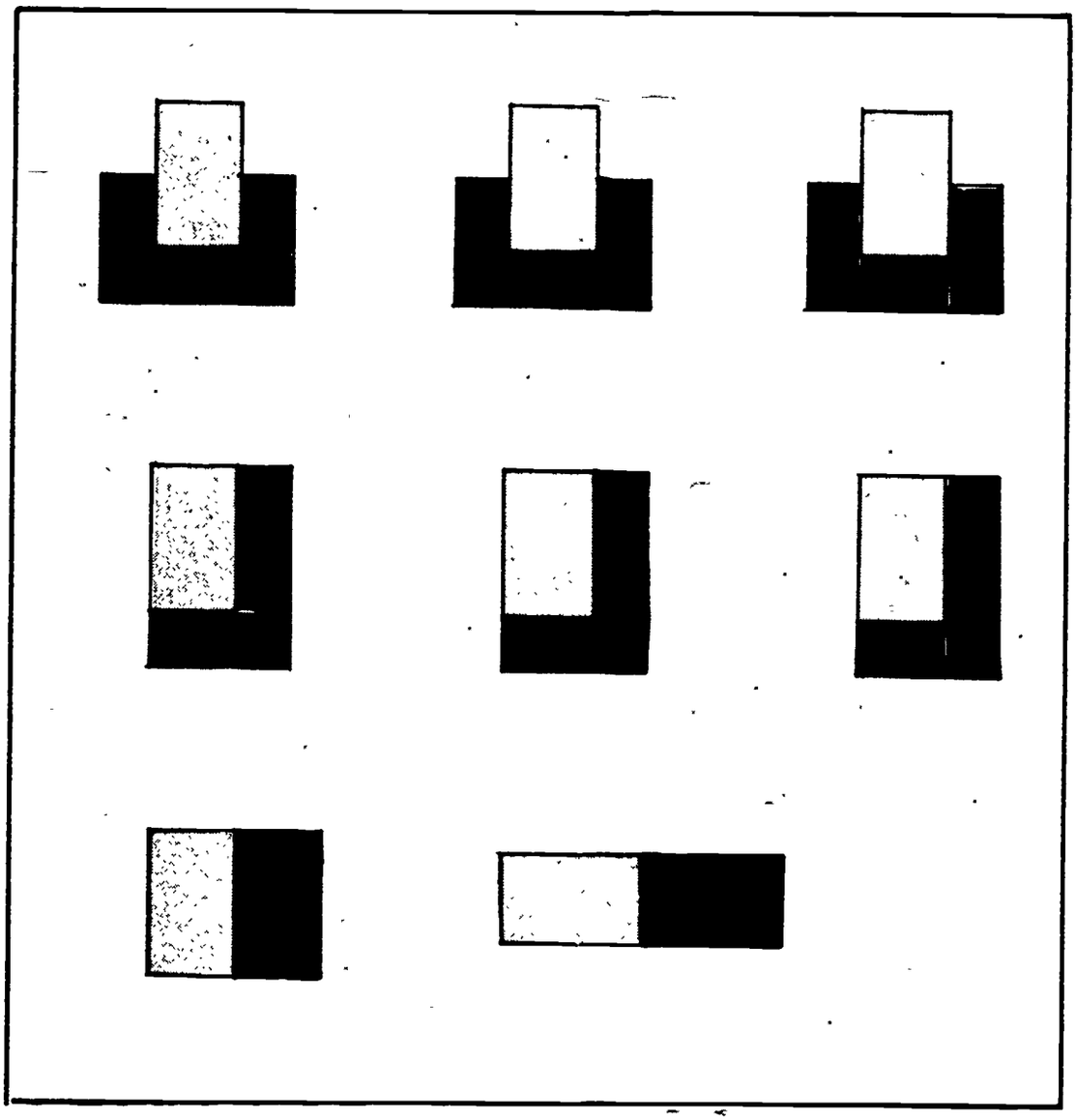


Fig. 33

Spatial organization

Large hall: light grey

Smaller halls, on one storey:
medium grey

Smaller halls, on two storeys:
dark grey

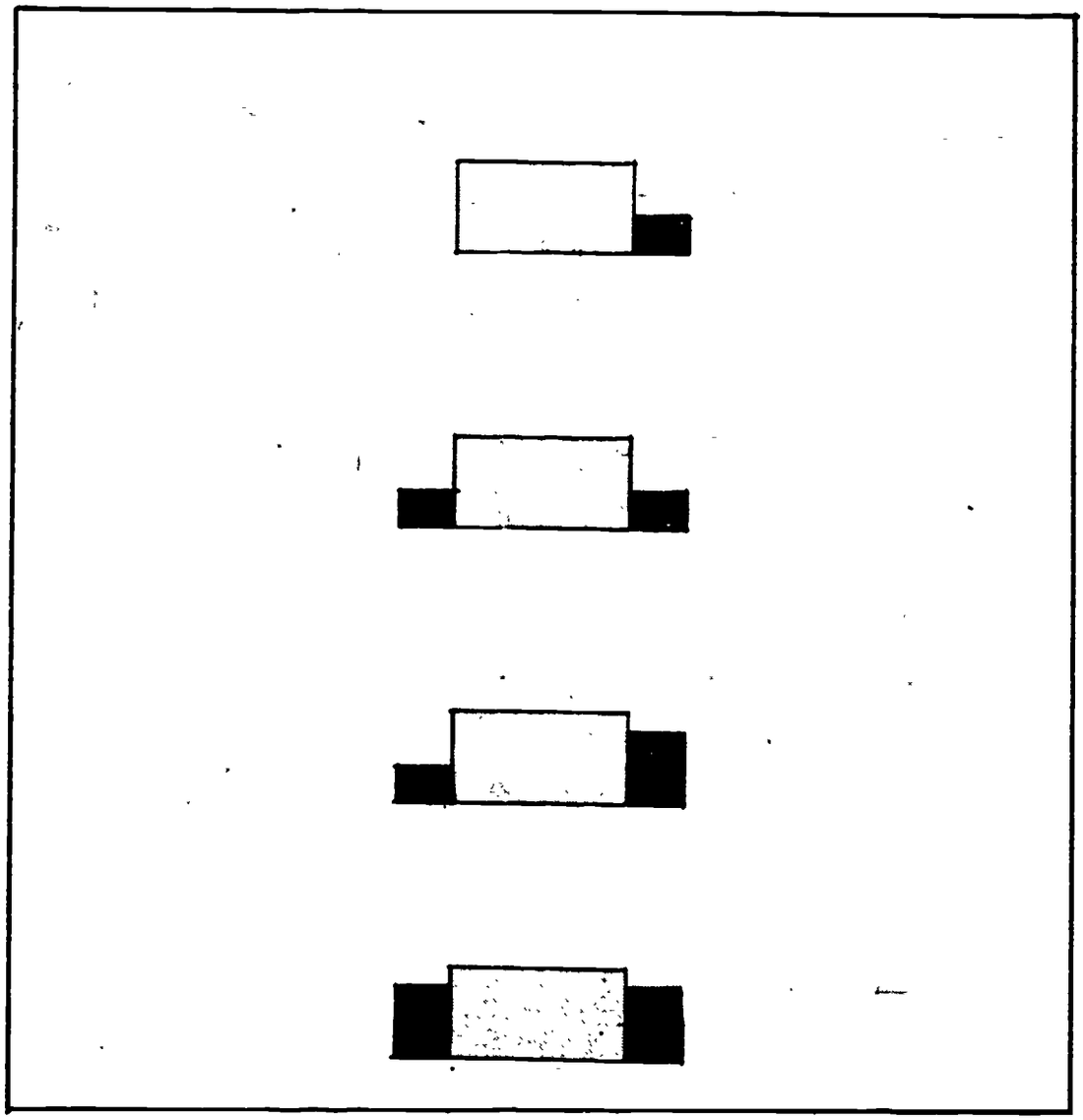


Fig. 34

Extension by rectangular modules

Main volume: light grey

Module: dark grey

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