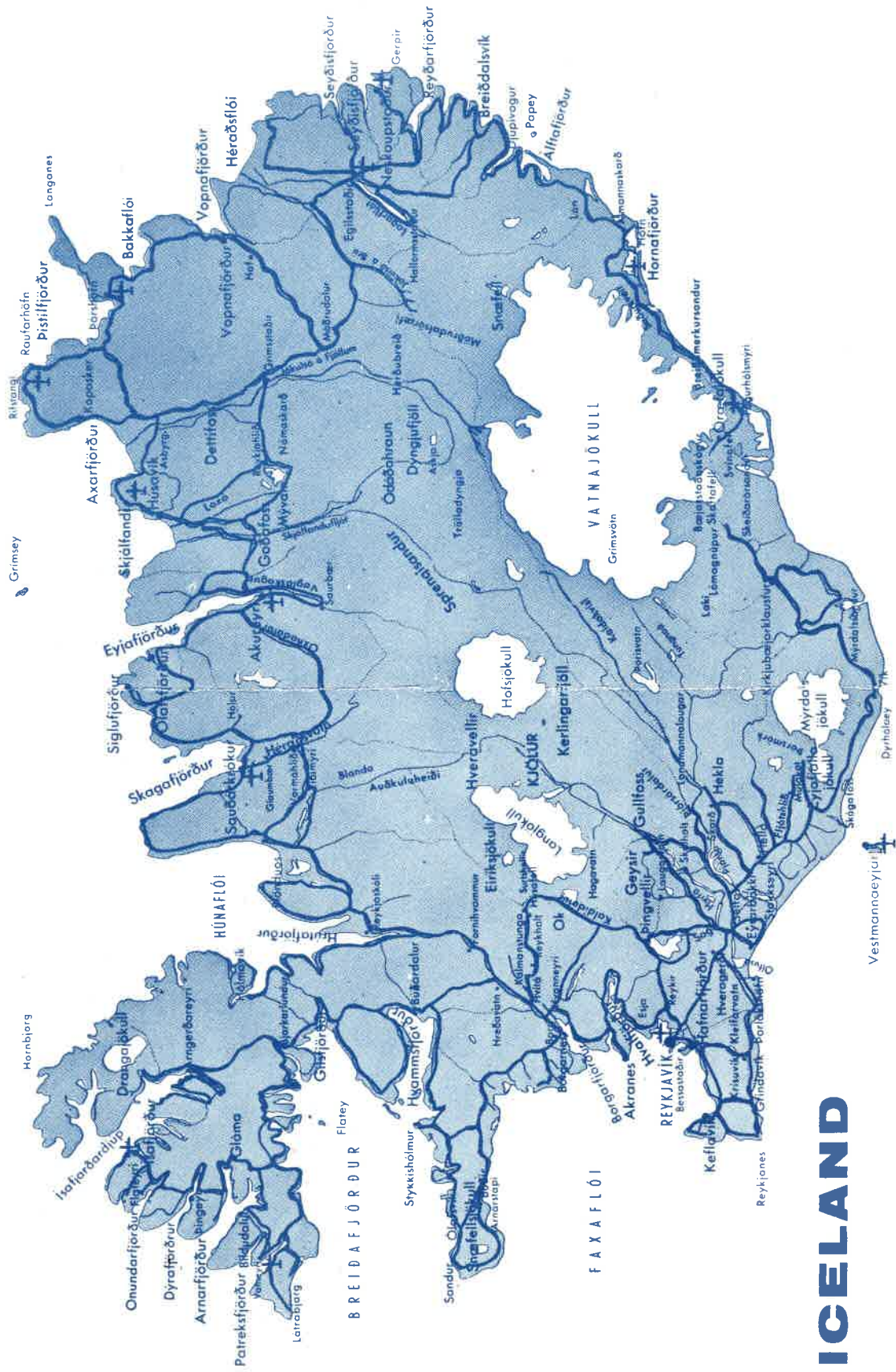


Tourism In Iceland Phase II

Volume II: Technical Reports

Feasibility analyses of specific tourism projects and a tourism development program for the Republic of Iceland.

**Checchi and Company
The Architects Collaborative, Inc.**



ICELAND

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TOURISM IN ICELAND: PHASE TWO
VOLUME TWO: TECHNICAL REPORTS

Commissioned By:

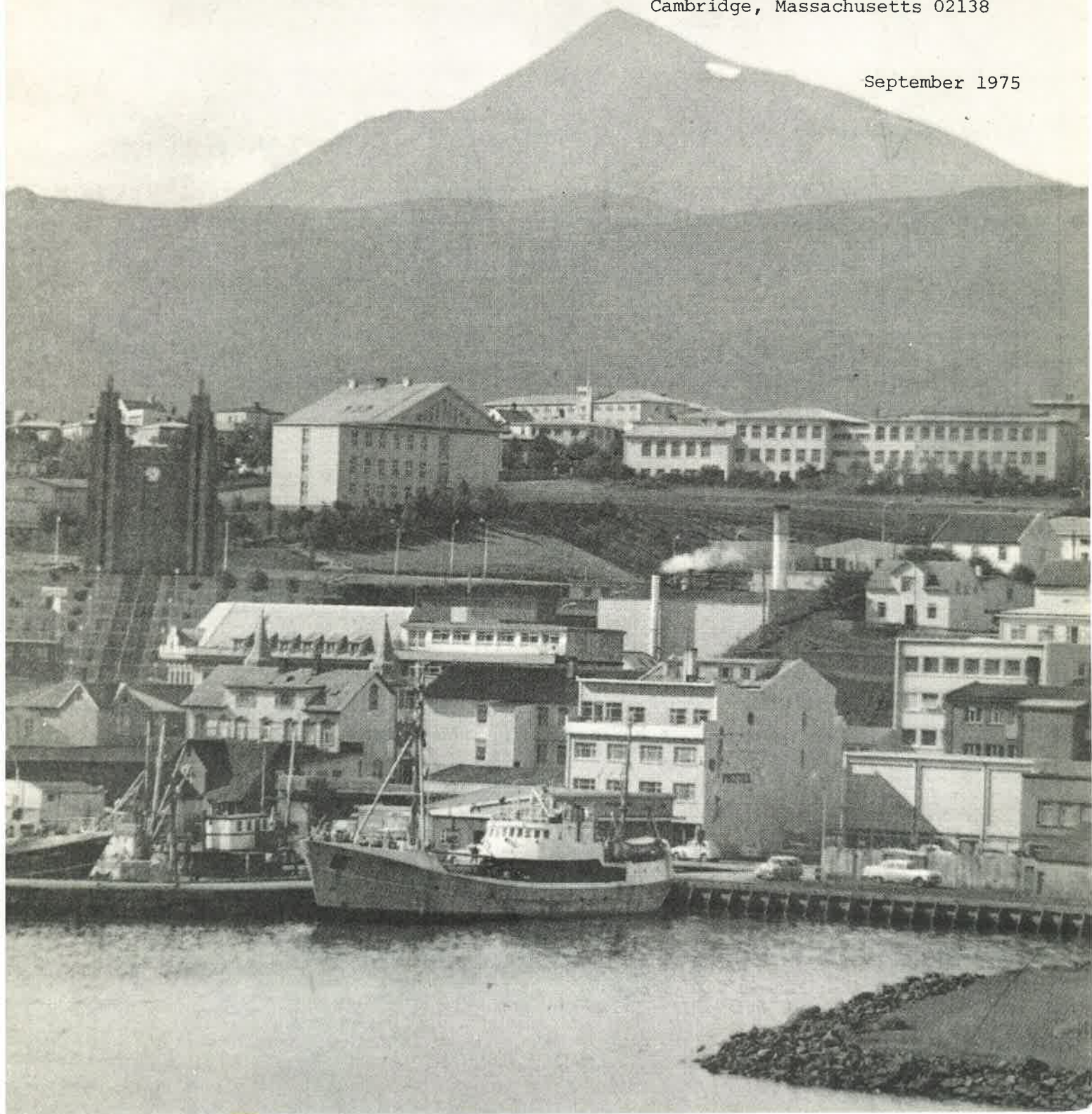
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September 1975



ORGANIZATION OF THE REPORT

The report contained herein represents Phase Two of a multi-phased study of tourism in Iceland commissioned by the United Nations as part of its technical assistance to the Republic of Iceland. The long-range objective of the study is to increase the flow of foreign visitors to Iceland by developing the country's tourist resources in a systematic and integrated way.

During the first phase, four resources were chosen for intensive study, including hot springs for spas and recreational purposes; lakes, streams, and sea for recreational fishing; snow fields for skiing; and meeting facilities for conventions, conferences, and seminars. Based on analysis of resource characteristics, markets, and development options and priorities, the Phase One report outlined a strategy through which optimal tourism growth could be achieved and identified a series of projects for inclusion in a tourism development program.

The second phase of the study was to provide in-depth feasibility analyses for three specific projects in addition to a tourism development program incorporating the conclusions and recommendations of the Phase One report. Projects selected for follow-up work in Phase Two include:

- A multi-purpose resort, consisting of a 300-room luxury hotel and adjacent "tropical" micro-climate;
- A cultural complex consisting of a science museum, history museum, and visitor center; and
- A living history village.

This Phase Two report on Tourism in Iceland summarizes and details the contractor's findings regarding the technical and financial feasibility of each project. It also recommends a development program by which such projects can be integrated with Iceland's existing tourism facilities, attractions, and attributes into a cohesive and rational whole.

The report is presented in two volumes. Volume One contains the Strategy Report and is organized into three books. Book One discusses prospects for tourism development within the context of Iceland's economic situation and, in particular, the changes that have taken place since the Phase One report was completed at the

beginning of 1973. Book Two provides a synopsis of the findings and recommendations for the multi-purpose resort, the cultural complex, and living history village, and the tourism development program. Book Three includes a perspective on the development potential of Iceland's geothermal resources for purposes of (a) medical hydrology, and (b) scientific research.

Volume Two, the Technical Report, is organized in six books and provides detailed background data in support of the comments, conclusions, and recommendations contained in the first volume. The material in Volume Two is arranged in such a manner that it can be read in conjunction with the Strategy Report in Volume One.

Book One of Volume Two discusses the feasibility of the Multi-purpose Resort. Books Two and Three consider two elements of the proposed cultural complex, the Visitor Center and the Natural History Display Network respectively. Each analysis provides data on the concept, the site, the development scheme, and financial feasibility as well as appropriate architectural graphics and sketches.

Book Four presents the results of the contractor's conceptualization of the Living History Village, and discusses some problems associated with its establishment.

Book Five is directed at the problems and prospects for tourism development in Iceland, with related recommendations on market and facilities development, resource utilization, product design and marketing, and financing and institutional reorganization. The result is a Tourism Development Program which, when combined with the specific recommendations of the first four books, is Iceland's blueprint for development of its tourism resources to achieve optimal growth.

Book Six contains the report of Maurice Lamarche, Professor of Hydrology at the University of Nancy (France) Medical School. Professor Lamarche considers the aspects of Iceland's hot waters that have curative value and/or touristic appeal. It is expected that his report -- the first of its type -- will indicate the potential inherent in Iceland's best-known resource.

The reader who would like additional information on Iceland's prospects for tourism development is referred to the contractor's Phase One report on Tourism in Iceland. This document contains a considerable amount of background data which could not be reproduced in extenso in the report on Phase Two, but which served as a starting point for the execution of the second phase study.

TOURISM IN ICELAND: PHASE TWO

VOLUME TWO, BOOK ONE

MULTI-PURPOSE RESORT

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I. THE CONCEPT

With the design and program of the multi-purpose resort as presented in this book, Iceland has the tremendous opportunity and challenge to create something truly outstanding with almost no parallel anywhere in the world. The basic orientation derives from the first paragraph of the Executive Summary of the Phase I report which points out that:

The uniqueness of Iceland's geology and physiology represents a solid basis for a tourism development program which would easily integrate the northern traits of Iceland's climate. Long hours of darkness, plus cold and wind which characterize fall and winter, during which changeability of the weather means that tourists may anticipate rains and storms, could be assimilated in the planning process through conceptual innovations which could underscore uniqueness. In spring and summer, the weather is warmer than might be expected, considering Iceland's location near the Arctic Circle, and its association to more conventional concepts of tourist activities comes naturally to mind. Throughout the year, the two concepts, combined in a transitional whole, could provide an unusual experience.

In finite terms the architect and designer must contend with the verities of this land of contrasts; its endless summer days followed by eternal darkness; the clamor of life and of the pulsating elements with the real silence of virgin space, of jagged contours of a land still being formed with the soft profile of moss and lichen, of ice and fire in uneasy coexistence. A truly outstanding design must be based on correlating opposites -- the inward with the outward, the solid with the void, unity with diversity. This takes not only self-discipline in seeking solutions which are not merely expedient or reflections of formalism of one kind or another, but real imagination to integrate the diversity into a design of significant unity and spiritual meaning.

Finding design solutions that depart radically from the conventional are immeasurably increased in Iceland due to the presence of a source of abundant natural energy. That geothermal energy is available in significant amounts and in many locations will not only remove many design constraints but also permit great flexibility in site location to approximate the ideal. This approach will enable the selection of a specific site for the resort which would be truly spectacular. The visitor would feel he has arrived at a very special place.

Spectacular external vistas of water, mountain peaks, lava fields, and valleys clothed in soft green shades in summer and arctic snow in the winter can be integrated with wide indoor living space with its own micro-climate and a lush tropical setting. While protecting the visitor from the outside elements, the micro-climate produces an "elating psychological shock effect" which would be its most significant attraction. Construction materials for the resort should thus include as much transparent or translucent material as possible. Stone walls made with local volcanic material should be utilized to integrate the construction with the local colors and the existing landscape. Tropical plants can and should be widely used inside to create a striking and unique contrast with the delicate exterior nordic vegetation.

Glazed galleries and sitting areas would create a network of interior pedestrian streets interconnecting all the various functions of the resort and would enhance the enjoyment of the contrast between the beautiful coldness of the nordic exterior and the warm tropical environment of the interior. Facilities like swimming pools and hot spring pools could also be enhanced by the extensive use of glass and translucent materials. They could be partly inside and partly outside the interior spaces and, at the same time, take advantage of the effect that the steaming of the warm water would create in the outside cold air. Services and ancillary facilities should be kept underground as much as possible in order to maximize the exterior exposure of the public areas.

In real terms, the idea of contrasts and surprises should be geared towards the winter months which, as the Phase I report suggests, are characterized by long nights and highly turbulent weather conditions. We are confident that any resort in Iceland will be heavily patronized in the short summer season due to the already existing shortage of accommodations. This orientation towards winter is deliberate and is expected to appeal to both the foreign and domestic markets. In addition, the resort should take advantage of

the therapeutic aspects of Iceland's mineral waters by incorporating a hot water spa which would make use of the country's geothermal resources to provide rest, recreation, invigoration and therapy. The therapeutic aspect seems important especially for the domestic market since the only such facility in Iceland has a long waiting list and cannot now meet demand. Book Five gives explicit consideration to the best use of Iceland's most famous resource.

Our emphasis on the domestic Icelandic market is conditioned by both philosophical and utilitarian considerations. On the philosophical side, we feel that Iceland with its small population should continue to encourage foreign tourism for what it can do to improve the quality of life for its own citizens. Thus, even the small numbers of foreign tourists that now come to Iceland have enabled Iceland's two airlines to offer more frequent air services, enabling Icelanders to enjoy amenities such as hotels, restaurants and other facilities that would simply not be economic on the basis of purely local demand.

On the utilitarian side, it is well known that Iceland has a chronic balance of payments deficit on the travel account as discussed elsewhere in this report. The figures of the number of Icelanders traveling abroad shows a very high propensity of travel when compared to its total population of a little over 200,000. At a time when Iceland's foreign reserves have fallen to critically low levels, the need to stem the deficit on the travel account is obvious.

It is likewise apparent that this high propensity to travel is definitely related to climatic conditions, especially in the winter months when the country offers few opportunities to escape the unrelieved gloom and cold of the arctic night with almost no facilities for recreation. If the resort is planned as conceived above, it would surely provide an alternative at least to some Icelanders who now habitually seek the relative warmth of the Mediterranean winter. Even a small change in the winter vacation pattern would rebound to Iceland's benefit and save significant foreign exchange.

II. THE SITE

The Multi-Purpose Resort could be the backbone of Iceland's tourism expansion in the years to come. Combining a three-hundred room hotel and a tropical micro-climate, the resort will offer foreign and local tourists alike fine lodgings, first-class dining, relaxation and a range of recreational activities. The concept is unique, even daring; so must the site be.

In order to locate a site which would be indeed spectacular and outstanding, while complementing the objectives and program for the initial multi-purpose resort in Iceland, an inventory analysis and evaluation of the attributes and characteristics pertinent to this type of development has been undertaken for numerous sites.

In addition to the eight sites identified within the Phase I report, two new sites are included in this study. Although these two areas could not operate from new independent geothermal and hot water resources, they do contain several other unique and qualifying characteristics, while being sufficiently close to existing thermal resources which could be tapped at reasonable cost. The ten sites considered as potential locations for a tourist resort are shown on the map on page I-5. They include:

- | | |
|----------------|--------------------------|
| 1. Kristnes | 6. Hveragerdi |
| 2. Botnssalur | 7. Krisuvik |
| 3. Haukadalur | 8. Stardalur |
| 4. Laugarvatn | 9. Geldinganes Islands* |
| 5. Nesjavellir | 10. Saltvik (near Esja)* |

Each site has been comparatively evaluated with and against all the other sites in four general categories including nineteen specific characteristics, as illustrated in Exhibit I-1.

* Sites additional to those identified in Phase I.

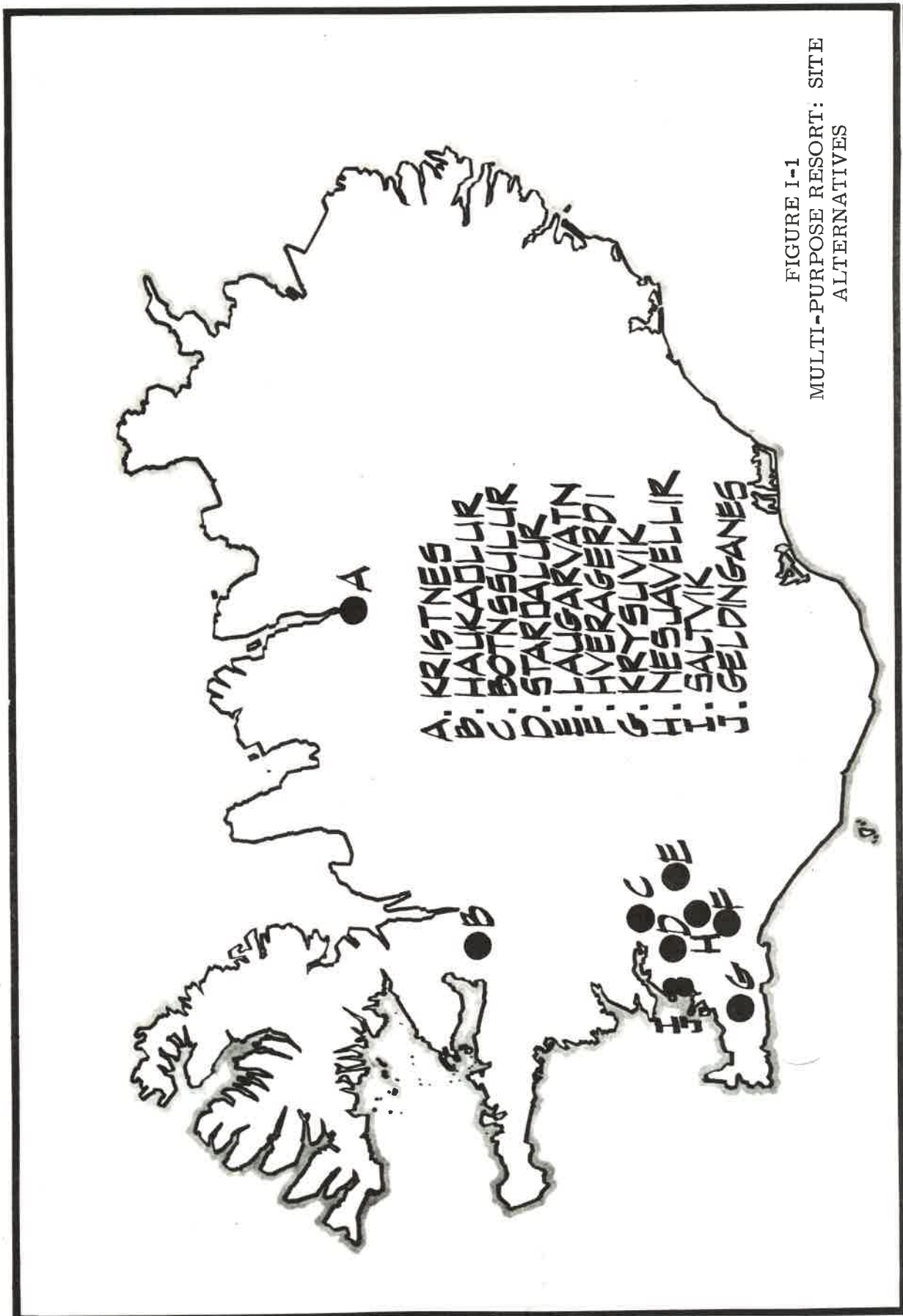


FIGURE I-1
 MULTI-PURPOSE RESORT: SITE
 ALTERNATIVES

ICELAND TOURISM
 FEASIBILITY ANALYSIS

POTENTIAL
 TOURISM SITES

SCALE 1:100,000

0 20 40 60 80 100 KM

NORTH

CHECCHI AND COMPANY WITH
 THE ARCHITECTS COLLABORATIVE INC.

EXHIBIT I-1

SITE EVALUATION CHART

	Kristnes	Botnssulur	Haukadalur	Laugarvatn	Nesjavellir	Hveragerdi	Krisuvik	Stardalur	Geldinganes	Saltvik	
I. ECONOMIC MARKET BASE											
A	2	0	0	1	2	2	3	2	3	2	
B	1	0	0	0	1	1	3	1	2	1	
C	2	0	0	0	1	2	3	2	3	3	
D	2	2	2	1	2	1	2	1	0	0	
E	2	2	0	0	1	0	1	1	0	0	
	<u>9</u>	<u>4</u>	<u>2</u>	<u>2</u>	<u>7</u>	<u>6</u>	<u>12</u>	<u>7</u>	<u>8</u>	<u>6</u>	Sub Totals
II. GEOPHYSICAL RESOURCES											
F	1	1	2	3	3	3	3	2	2	1	
G	1	1	3	2	3	3	3	1	1	1	
H	2	2	2	3	2	2	3	1	1	2	
	<u>4</u>	<u>4</u>	<u>7</u>	<u>8</u>	<u>8</u>	<u>8</u>	<u>9</u>	<u>4</u>	<u>4</u>	<u>4</u>	Sub Totals
III. NATURAL & INTRODUCED RESOURCES											
I	2	0	0	1	1	2	2	0	3	2	
J	3	1	2	2	3	2	2	2	2	2	
K	3	0	2	2	3	3	3	1	2	2	
L	3	0	2	1	1	1	2	1	2	1	
M	2	3	0	1	0	0	2	2	3	3	
N	2	0	2	2	2	2	2	1	3	2	
O	2	2	1	1	1	3	3	2	0	1	
P	1	1	1	3	2	3	2	2	1	1	
	<u>18</u>	<u>7</u>	<u>10</u>	<u>13</u>	<u>13</u>	<u>16</u>	<u>18</u>	<u>11</u>	<u>16</u>	<u>14</u>	Sub Totals
IV. APPEARANCE FACTORS											
Q	2	1	3	1	2	1	3	0	1	2	
R	3	2	2	1	2	1	3	0	1	2	
S	3	1	1	3	3	3	2	1	1	1	
	<u>8</u>	<u>4</u>	<u>6</u>	<u>5</u>	<u>7</u>	<u>5</u>	<u>8</u>	<u>1</u>	<u>3</u>	<u>5</u>	Sub Totals
	<u><u>39*</u></u>	<u><u>19</u></u>	<u><u>25</u></u>	<u><u>28</u></u>	<u><u>35</u></u>	<u><u>35</u></u>	<u><u>47</u></u>	<u><u>23</u></u>	<u><u>31</u></u>	<u><u>19</u></u>	GRAND TOTALS

Legend: Excellent = 3
 Good = 2
 Fair = 1
 Poor = 0

A simple numerical system representing "excellent", "good", "fair", and "poor" allows an ordinal priority listing for the selections of the first multi-purpose resort site. However, it must be noted that this ordinal listing does not necessarily establish the priority for further tourism developments, but rather allows for close comparison with those assets or constraints of other locations which might be developed quite differently from the initial site due to program adjustments, physical properties of the sites and the practical experience achieved through the creation and operation of the initial resort.

The Comparative Evaluation Chart provides the following:

1. A ranking system for the selection of the first multi-purpose resort.
2. Advantages and disadvantages of any selected site so that future expansion and new program needs for that site can be compared in proper perspective.
3. Pros and cons of all other sites so that the prerequisites and programs for additional resorts may be adjusted and integrated with that site which best meets the need.

The categories and characteristics compared are:

I. ECONOMIC MARKET BASE

A. Proximity to Domestic Market Population and Economic Resource Centers

B. Proximity to Foreign Market

International Airport
Transportation Modes
Economic Influx and Entry
International Functions

C. Access Potential -- All Seasons

Means of Access
Time/Distance
Existing Road Conditions

D. All Season Attractions for Potential Tourism

E. Off Season Potential Tourist Attractions

Skiing and Tobogganing
Skating and Iceboating
Sauna and Hot Water Baths

II. GEOPHYSICAL RESOURCES

F. Hot Water Availability

Quality
Quantity
Proximity

G. Geothermal Energy Potential

Independent Source(s)
Multi-Use Potential(s)
Temperature Range(s)

H. Cold Water Availability

Quality
Quantity
Source(s)
Proximity

III. NATURAL AND INTRODUCED RESOURCES

I. Utilities -- Existing and/or Potential

Electricity
Telephone

J. Soils -- Construction Suitability and Quality

Structural
Infrastructure (aggregate)
Local Methods

K. Soils -- Landscaping and Site Improvement

Quality
Quantity
Availability
Septic Discharge

L. Climate -- (Macro and Micro)

Wind
Precipitation
Temperature
Clear Days
Exposure

M. Minimal Potential for Seismic Activity

Earthquakes
Swarms
Lava Flows
Volcanos

N. Topography and Terrain

Construction ease/cost
Suitability
Accessibility
Development Versatility

O. Compatibility with Existing and Future Land Uses

Agrarian
Residential & Industrial
Public Parks & Recreation
Feasibility of Future Expansion

P. Minimal Environmental Impact

Effect on Wildlife
Effect of Geophysical Features
Ease of Recovery for Disturbed Areas

IV. APPEARANCE FACTORS

Q. Visual Amenities

Approach Views
Visual Vantage Points
- quality
- variety

R. Physical Characteristics Expressive of Iceland

Geisirs
Vents
Craters & Pseudo-Craters
Glaciers
Lava Flows
Waterfalls

S. Peripheral Tourist Attractions

Proximity to Other Features
Quality & Number
1/2 to 1 day trips -- origin/destination and return

The Site Evaluation Chart identifies the Krisuvik site near Kleifarvtn as being equal or better than all other sites under the four general analysis categories and clearly outstanding in the number of attributes deemed significant for the first multi-purpose resort in Iceland.

Not only is the site located between the airport and Reykjavik, ergo accessible to both foreign and local tourists, but it is rich in geophysical and other resources. The surrounding hills, lake and nearby seascape all form a backdrop accentuating the resort and emphasizing the features of the micro-climate.

The Kristnes site is poor in geophysical resources, a key feature of the proposed resort. Nevertheless, the nearby location of an airport, the scenic fjord and town of Akureyri and the surrounding mountains give the site great potential for future development. Aside from the absence of sufficient geophysical resources, two factors lead us to rate this site as second to Krisuvik: in some seasons, transportation into and out of Akureyri can be difficult, and the concept of moving large numbers of

tourists miles from Keflavik, when the resort can be located nearby, simply creates unnecessary problems. It should also be pointed out that the first big tourist resort in Iceland should be located near the biggest local market, the southwestern peninsula.

Hveragerdi is also an area rich in resources, but suffers in appearance by comparison with Krisuvik. Its location, approximately two hours from the airport, is another disadvantage. Nesjavellir has hot water but fewer other resources, and is likewise located at some distance from the airport. It was also felt that a site so close to the park at Thingvellir -- sacred to all Icelanders -- should be avoided.

Geldinganes Island lacks hot water and is not especially scenic; plans for bridges and roads on the island also make it undesirable for hotel location. Laugarvatn is well away from the principal base for local tourism, and at present, is approachable only over rather poor roads and after a long trip from Keflavik. The same criticisms apply to Haukadalur. Stardalur is without sufficient geophysical resources for a resort of this sort, lacks other resources (even the ski area is poorly developed) and has nothing to offer by way of spectacular scenery. Saltvik also lacks sufficient hot water resources, and is located at some distance from Keflavik. Botnssalur has very little in the way of hot water, is quite a trip from both Reykjavik and Keflavik and presents significant problems of tourist access.

In short, all of the other areas studied have some disadvantages which can be avoided by location of the resort at Krisuvik. The Krisuvik site is quite close to the hubs of foreign and local tourist activity, and is accessible by auto in well under an hour from both Keflavik and Reykjavik. It is thus close enough to Reykjavik to draw upon the attractions that city offers, and could even be integrated with an improved Blafjoll ski area to create off-site winter season diversions. The adjacent lake is currently used for recreation and fishing for Icelanders.

What makes Krisuvik the ideal location for the resort, however, is its resource endowment. No other site visited had comparable geophysical, natural and other resources. The quantity and quality of the hot water are excellent, and the ubiquity of the water assures its availability at little disturbance to the land. The soil content offers good potential for the new construction envisioned to create the resort, and even better possibilities for subsequent landscaping to complement the internal micro-climate concept. Disturbance with existing land

use schemes and the area ecology should be minimal.

It can almost be said of Krisuvik that it is Iceland in miniature. From the hills ringing the lake (Kleifarvatn) one looks over moss-covered lava fields to the Atlantic Ocean clearly visible to the south. Active steam vents dot the landscape, to the south of the lake, a geiser uninterruptedly shoots hot water several yards into the air. Kleifarvatn itself is fed by underground hot-water streams. Volcano craters abound. Almost all the geophysical and natural uniqueness that makes Iceland a fascinating vacation spot are to be found right in this one place.

It bears repeating that if the resort is to be the gateway to Iceland, what lies behind the gates must be representative of the country. It is our judgment that no other site in Iceland and no other locale has the same combination of resources and scenic beauty, backed by the advantages of central location vis-a-vis existing markets, as can be found at Krisuvik. The need for a spectacular and outstanding site for the resort could be satisfied in no better way than to locate here.

Appendix A to this book gives further particulars on the Krisuvik site.

III. THE DEVELOPMENT SCHEME

A. The Design Concept

The objective for the creation of a multi-purpose might well be repeated here as an introduction to the design of the resort itself. Our aim throughout has been a new focus and image for tourism in Iceland. More specifically, our design objective has been the creation of a novel prototype resort based on the ubiquity and utility of the geothermal resources of Iceland, which have no counterpart anywhere in the world. We feel that this will create its own select market for international conventions, cater to the general-purpose tourist looking for a really special experience, and attract a large number of Icelandic tourists who currently must leave the country to find equivalent attractions.

The uniqueness of Iceland imposes special obligations on the architect and designer, while affording them new inspirations as well. The geology represents a solid basis for a tourism development program integrating the northern traits of Iceland's climate. Long hours of darkness, plus cold and wind which characterize fall and winter, during which changeability of the weather means that tourists may anticipate rains and storms, could be assimilated in the planning process through conceptual innovations which could underscore uniqueness. In spring and summer, the weather is warmer than might be expected, considering Iceland's location near the Arctic Circle, and its association to more conventional concepts of tourist activities comes naturally to mind. Throughout the year, the two concepts, combined in a transitional whole, would provide an unusual and exhilarating experience.

The design must, of course, be keyed to the site. From north and south, the coastal approaches to Krisuvik present the visitor with an initial impression of Iceland's organic relationship with the sea; this impression to the inland spaciousness of the austere volcanic landscape. The mountainous area inland holds the journey's prize -- a lake-filled valley unfolding unexpectedly from the north approach and defined by dramatic talus slopes and outcroppings of jagged rocks. The north approach will serve as the main access because it is closest to the visitors' point of origin. The road winds along the western edge of the lake, passing occasional promontories jutting into the water, and along black sand beaches. The lake terminates in a final black sand crescent rising to green pastures which culminate in the peak of Stora

Lambafell. From the top of this hill one can see both lake and sea. The hill is almost completely surrounded by steam vents with a geyser not far from its base. What appears to be an extinct volcano crater looms on the horizon toward the sea with pseudo-craters and crater-lakes in the foreground.

The approach from the south coast leads through the fishing village of Grindavik and across the rolling lichen- and moss-covered lava flows along the black coastal cliffs that gradually climb beyond Keflavik to Kleifarvatn. The lake appears in the distance and comes into full view as the road bends around the west side of Stora Lambafell. Its pivotal position in the landscape and its commanding view across the area focused our attention on Stora Lambafell as the site for the resort development.

Achieving a truly unique resort design in the Kleifarvatn setting calls for a scheme that is bold enough in its scale and clarity of line and form to establish its presence in the natural setting, and yet sufficiently evocative of the setting itself to be part of it.

Our solution extends the contour and size of Stora Lambafell to magnify its command of its surroundings. In doing so, we have used Iceland's most recognizable physical form -- the volcano -- which symbolizes the drama and spectacle of the land. Our design concept, as illustrated in the accompanying graphics (Figures I-2 and I-3), is to create a resort in a translucent, volcano-shaped structure. Its purpose is to be unique in world tourism, and to create a resource of major impact for the enrichment of life for the Icelandic People.

Our intention is to minimize disturbance to the integrity of the natural setting; improvement of the approach roads leading to the site should not destroy the abstraction of the unmarred landscape. We propose to leave the pastureland surrounding Stora Lambafell as a green apron setting the hill off from the balance of the valley, which is largely without vegetation. The portion of the pasture along the valley road leading toward the crater lake and existing farm sites can be developed as a golf course.

The approach road is fitted into the contours of the land and curves up the hill to a point close to the crest where the entry to the resort hotel is located. Public parking branches from the site road, where an open lot, not visible from the main road, will contain space for several hundred cars for visitors who are not hotel guests. The site road

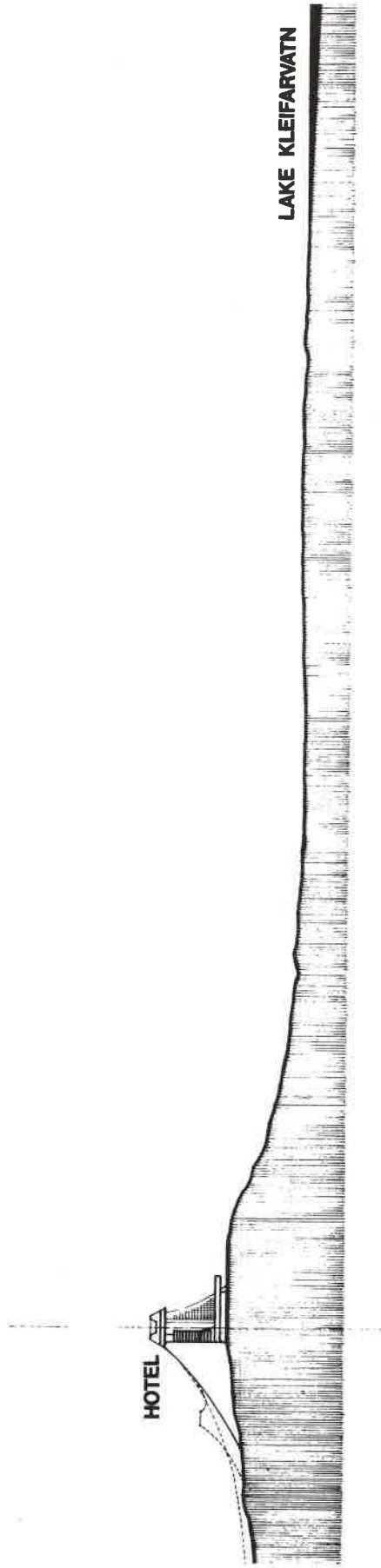


FIGURE I-2-
MULTI-PURPOSE RESORT;
DESIGN CONCEPT

SECTION A



FIGURE I-3
MULTI-PURPOSE RESORT: DESIGN
CONCEPT SCHEMATIC DRAWING



rises to the crest of the hill, where parking for hotel guests is terraced into the hillside, and where service vehicles exit for access to the lower floor.

The drop-off and entry level afford a spectacular view of Kleifarvatn. Guests get their first view of the micro-climate upon entering the hotel lobby. The design concept for the resort closely integrates the hotel with the great interior space of the micro-climate. The hotel itself is formed by two pyramidal slabs which rise to form the top of the volcano-shaped roof of the micro-climate. Dramatic views are possible from many points in the hotel: there are exterior vistas down the lake, and views into the gardens and activities of the micro-climate. For example, a visitor will be able to dine in a top-floor restaurant overlooking the sea and the lake, descend the elevators, which could afford an overall view of the interior landscaping, and have coffee on the terrace with a view of a waterfall descending into lush tropical growth. This constant contrast between the exterior and interior environments is the theme of the hotel.

The lobby and entry level open toward the interior space onto a plaza that contains the coffee shop, shopping boutiques, and an exhibition area which could be used for convention purposes or for changing displays oriented toward tourists. The main convention facilities are located on the floors above, convenient to both entry levels and food service.

The guest rooms are spacious. Most of them give views of the lake and the pass toward the north. Some rooms open into the micro-climate with views of the gardens and activities below.

The spa and health club are located atop the highest point of the hill, with some elements located within the hotel structure, some within the interior micro-climate, and some on the exterior. The location of the spa affords some degree of separation from public activities, as well as providing spectacular views.

The hotel will have two first-class restaurants, as well as coffee shop and snack bar facilities.

The dominating element of the development at Kleifarvatn is the great cable-supported roof structure -- a volcano-shaped form which encloses about 60,000 square meters of space for varied uses (Figures I-4 and I-5). The interior space, for which the term "micro-climate" is used, is not only a necessary adjunct to the hotel, but also an attraction for Icelanders, particularly in the darker months. The concept for this

FIGURE 1-4
MULTI-PURPOSE RESORT: SCALED
MODEL: VIEW A

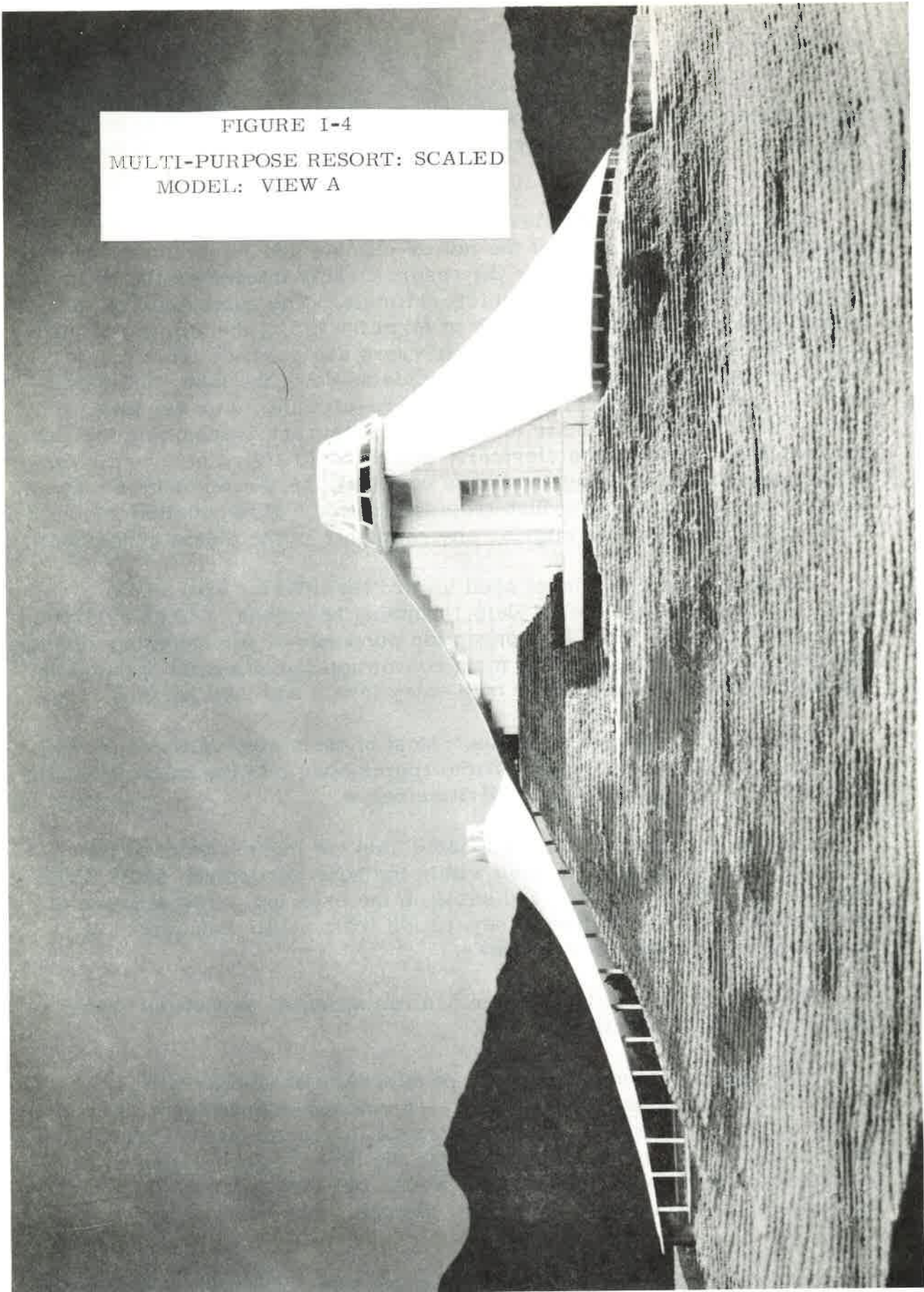
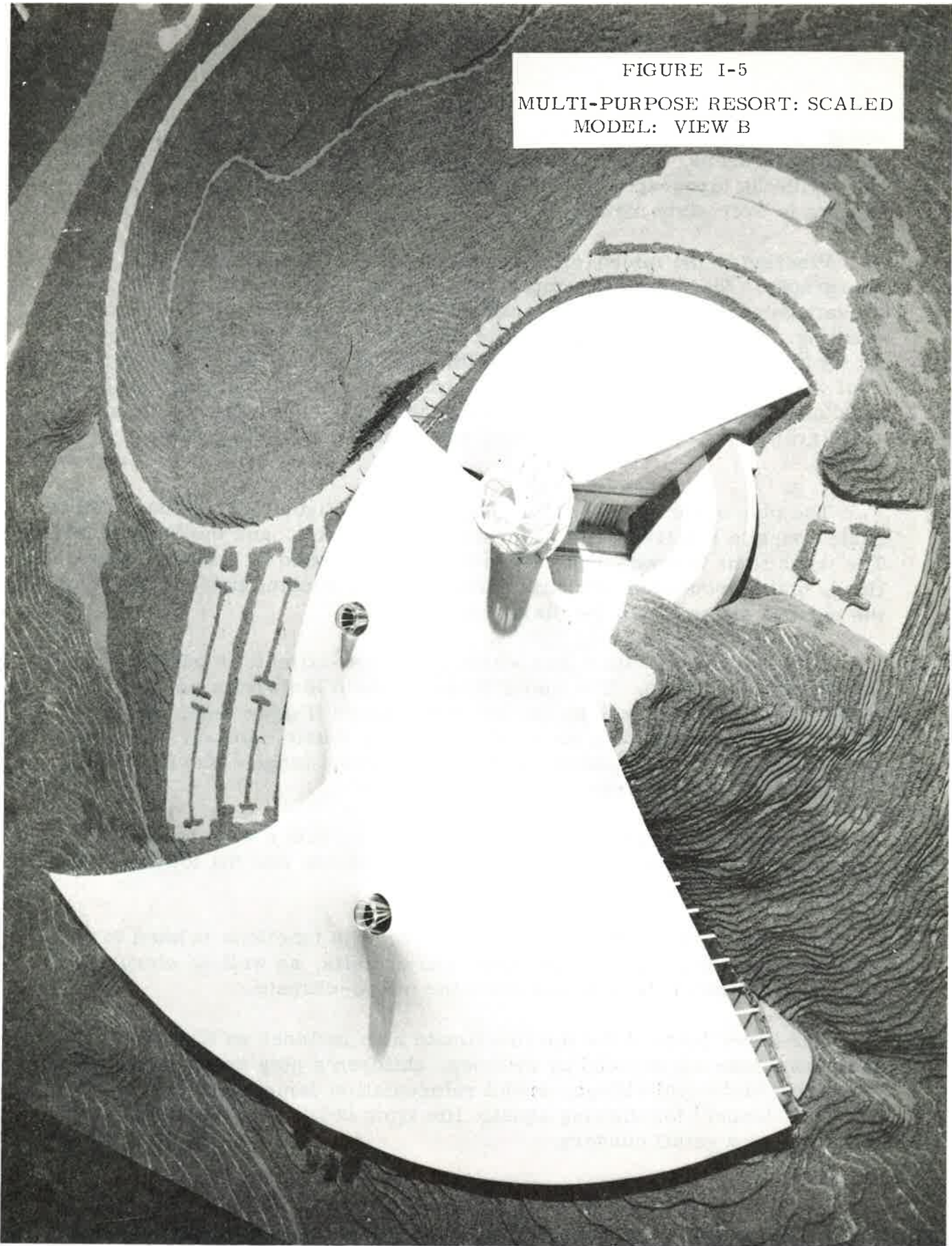


FIGURE I-5
MULTI-PURPOSE RESORT: SCALED
MODEL: VIEW B



space is to provide a great variety of areas ranging from quiet gardens, to shopping areas, to night clubs. The height of the space within will vary with the topography of both the land and the great roof, from a few meters to over sixty meters.

Planting in the micro-climate will be varied, depending on the topography. Since the air temperature will be higher at the upper elevations of the space, these locations would be well suited to tropical planting. Lower elevations would be used for temperate zone planting or for indigenous Icelandic plants. Although the glow of the translucent roof will provide light for some plant growth, artificial lighting will be used as a supplement, especially during the dark winter months when plant growth for some species could not be sustained by any other means.

The plan of the micro-climate, as shown in Figure I-6, contains three basic zones: a relatively flat lower zone, the hillside, and the hotel plaza. The transitions between these areas are accomplished by a broad, tree-lined, main circulation path with many smaller, winding paths connecting the various areas within the major zones.

A list of possible functions within the micro-climate is part of the attached program. The major features could include an active (even noisy) area for both public and hotel guests (Figure I-7), with a night club or beer garden, an amphitheatre for music, drama, and films, and an active recreation area. Other areas would include playing fields and quiet recreation areas.

The hillside area would be largely gardens, with a wide variety of plants. Overlooks are possible from the hillside into the lower areas.

The plaza area is the most active area, with functions related to the hotel such as shops, coffee shop, and exhibits, as well as circulation from the hotel itself to and from the micro-climate.

The lower level of the micro-climate also includes an area that features a lake surrounded by aviaries, children's play areas, a miniature historical village, model reforestation demonstrations, an "aqua-tunnel" for viewing aquatic life from below the small lake, and perhaps a retail nursery.



- 1. Hotel
- 2. Plaza
- 3. Shops
- 4. Spa
- 5. Hillside Gardens
- 6. Amphitheatre
- 7. Night Club
- 8. Recreation
- 9. Playing Fields
- 10. Children's Area
- 11. Lake
- 12. Aviary
- 13. Visitor Entry
- 14. Parking
- 15. Entry Road

FIGURE I-6
**MICROCLIMATE:
 SITE PLAN**

FIGURE I-7
MULTI-PURPOSE RESORT: SKETCH
OF MICROCLIMATE AREA

