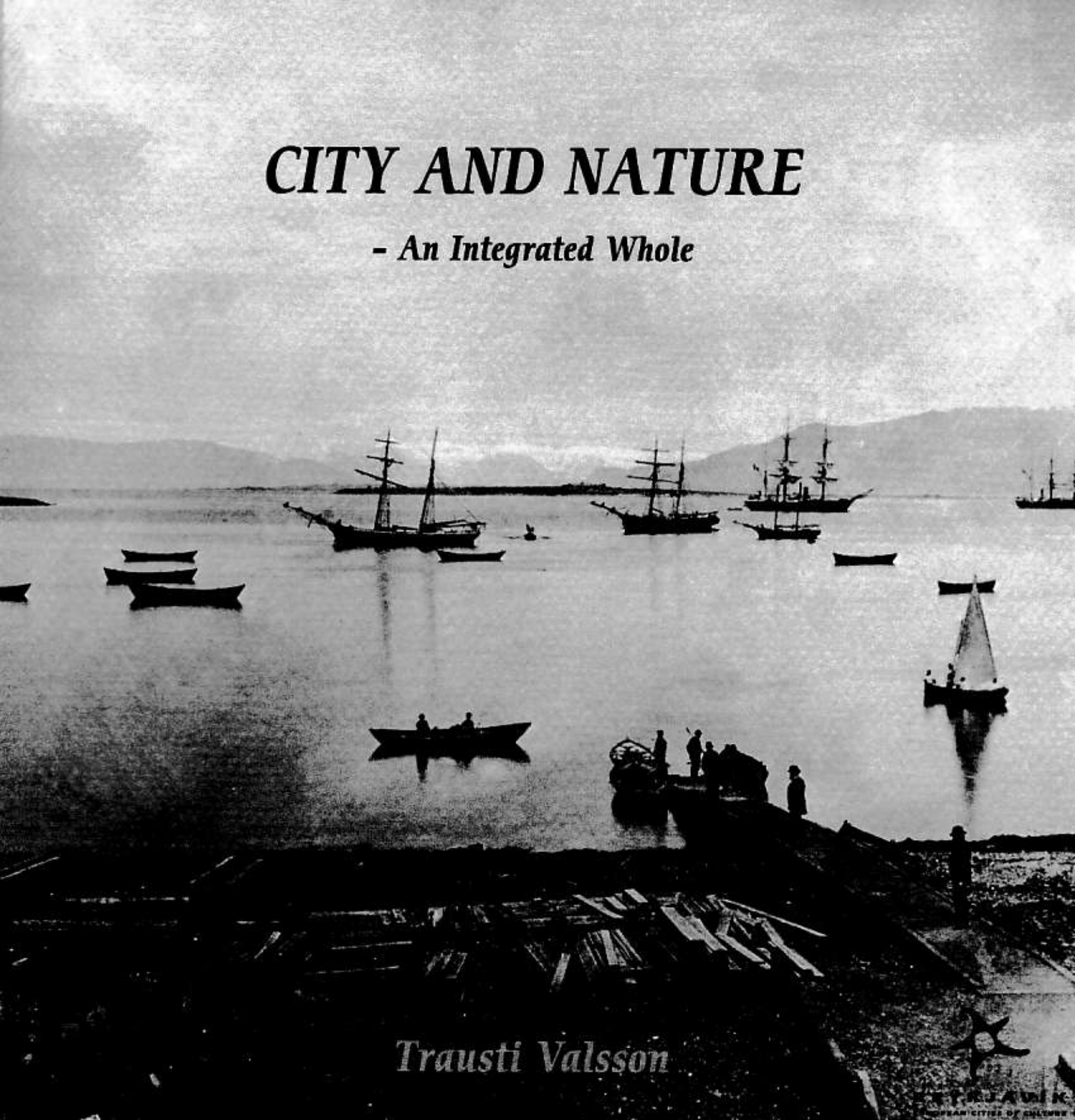
CITY AND NATURE

- An Integrated Whole



Trausti Valsson

Dr. TRAUSTI VALSSON

An architect and planner, educated in Berlin and Berkeley.

Valsson is an author of seven books and recipient of several awards.

CITY AND NATURE

– An Integrated Whole

Reykjavík, more than most other cities, was formed in a close interplay with nature, which in earlier times made this city, and its surrounding nature, a close unity. The book suggests a method to achieve this integration again.

Western thinking still sees binary pairs, like e.g. city and nature and house and garden, as opposites. – The book explains that these pairs, contrary to belief, complement each other. Their union, therefore, actually elevates cities and architecture to a higher level.

COMMENTS ON THIS BOOK:

"...a highly interesting and inspiring book."

Egill Helgason in an interview with Trausti Valsson on Channel S1.

"What I feel is the most important and enchanting in the ideas of Trausti Valsson, is the attempt to create a view of the whole, an analysis of the whole..."

Páll Skúlason, rector of the University of Iceland in a panel discussion on the book at the University.

"...I right away became impressed by his ideas in this field."
"...his most important book up to now."

Pétur H. Ármannsson, head of the Architecture Division of Reykjavík Art Museum in a panel on the book at the University of Iceland.

"It is not enough to criticise, one also has to point out methods for improvements. And, most certainly, this is what the author does..."

Ágúst H. Bjarnason in a book review in the Morgunbladid newspaper.

"I welcome this insightful work, which reflects attitudal changes of many young people..."
"...a brilliant text."

Michael Laurie, professor emeritus at UC Berkeley, in the Preface.

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CITY AND NATURE

– An Integrated Whole

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(An Idea on the First Iceland-Plan)
Framtídarsýn: Ísland á 21. öld, 1991
(A Vision for Iceland in the 21st Century)
Land sem auðlind – Um mótun byggdamynsturs, 1993
(Land as Resource, – On the Development of Settlement-Patterns)
Vid aldahvörf – Stada Íslands í breyttum heimi, 1995
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Trausti Valsson

CITY AND NATURE

– *An Integrated Whole*

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Foreword

The term, and the profession of landscape architecture are, even to this day, misunderstood in the western world. There may be a better word in other cultures. But this is what Trausti Valsson writes about: the essential interconnection between land and people leading to a healthy, happy and safe environment for living in a time of economic and technological change. His historical review recognises earlier periods when there was a closer relationship between man and nature, first by necessity, and in the 17th and 18th centuries, for aesthetic reasons as in the concepts of the Italian villa and the English landscape garden. Such wholeness, all be it aristocratic in origin, is embraced by Valsson. He advocates it as a theoretical model for architecture, city and environmental planning as opposed to the current science based specialisation, which he sees as the source of urban problems in Reykjavík, and in cities around the world.

Using his homeland, Iceland, and hometown, Reykjavík, Valsson leads us to a method for integration of landscape and social functions to create a fine Civitas. He is critical of the 19th centurie's emphasis on separate disciplines but optimistic about the changes which have occurred during the last half of the 20th century, a movement of which he was a part as a student at Berkeley during the 1980's.

I welcome this insightful work, which reflects attitundal changes of many young people, but sadly not their elders, throughout the globe; an wholistic world view. The science of ecology and new physics is central to his philosophy. Translated into the arena of urban design and environmental planning it gives a new view into a better future for our homes and cities and the landscape on which we depend for nurture and aesthetic pleasure.

Some ten years ago, I wrote a new preface to the second edition of my "Introduction to Landscape Architecture" which I had altered considerably. If I were to do the same today, I would include much of what Valsson writes and recommends in his brilliant text, and change mine accordingly.

Michael Laurie
Professor Emeritus
Landscape Architecture and
Environmental Planning
University of California at Berkeley

Introduction

This book deals with a subject that does not exist as a special discipline within the field of design theory – i.e., the interplay of city and nature. Most interest in this subject is to be found among landscape architects, who, however, are most often not very influential in the designing of cities.

The culture of Iceland and of Reykjavík have both been very much shaped in an interplay with nature, i.e., both with the forces of nature and also because for a thousand years the nation only lived from what nature – the ocean and the land – could provide.

As Reykjavík grew into becoming a town around the turn of the century in 1900, it soon reached some level of urbanity and the links to nature were moved out to the town's borders, i.e., the border where the settled areas meet the ocean or the natural hinterland areas.

Long into the twentieth century these borders were very open and active and the interplay of the life in town with the sea and the agricultural areas was very strong. In the Second World War Reykjavík started to develop into a service society and then the links of life in town to the borders started to decline.

After the war peoples' interest and understanding of nature declined sharply. It was then decided in a plan for the town that the whole north coast should be allocated for industry and harbour areas – and later, also for a city highway.

As this industrial belt became more densely built up and the traffic on the highway increased, the connections between the city areas and the coast and ocean were reduced. The ever-growing pollution along the coast made matters still worse.

In the last decades of the twentieth century understanding of the value of the natural environment started to become more widespread in the world and hence also in Reykjavík and Iceland. A huge effort has been made to clean up the coastline and the ocean around Reykjavík, and an effort has begun to re-establish access to the coast. For this purpose walking paths have been laid along the coast and various undesirable activities like the oil harbours in Laugarnes and in Skerjafjord have been moved away.

The new walking path along the south coast that proceeds inland through the Fossvogur and Ellidaár Valleys ends in the hinterland of Heidmörk Park. Along the south coast swimming in the Nauthólsvík Inlet is experiencing a renewal, now with a geothermally heated swimming pool.

The author of this book is of the opinion that a new epoch should now start in Reykjavík, an epoch where industries and industrial harbours are no longer given priority when it comes to coastal areas within the city, but rather will be gradually moved out of the city, as has happened in many cities in the world. If this is to happen the communities in the capital area must be united, at least to some extent.

Many will feel this book is rather theoretical, but here theory is not pursued without a purpose. It is used to get down to the roots of western thinking to better understand why our cultures have for so long drifted away from nature. Such a study helps us understand how attitudes and methods have to change so that we can reach the goal of letting city and nature work together.

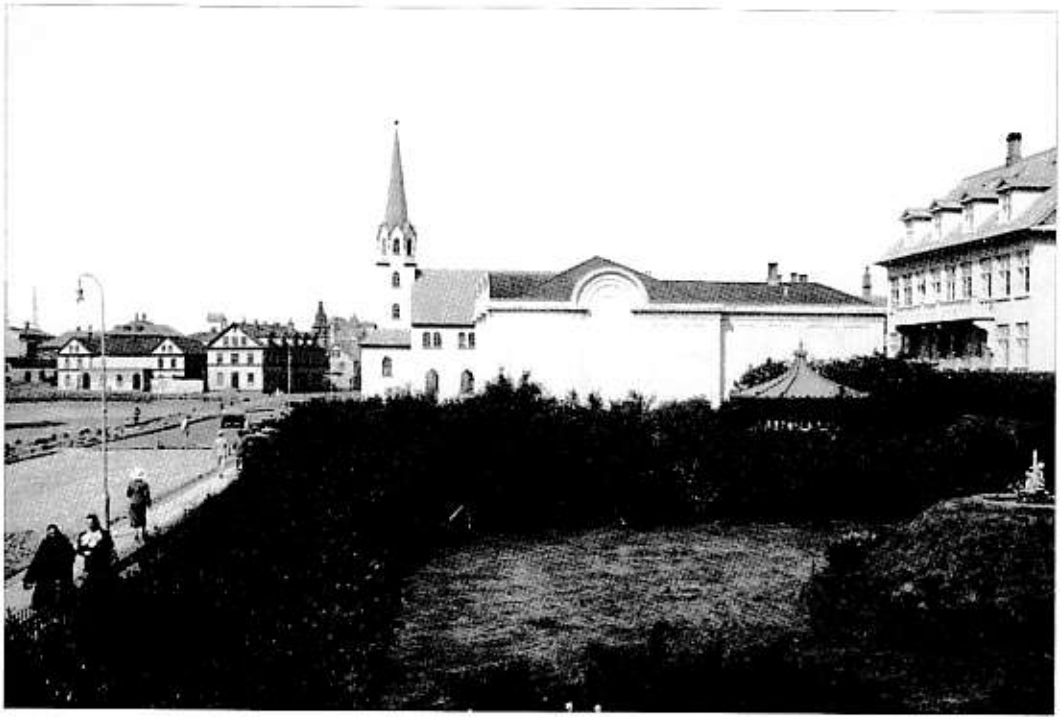
The core of this new scheme of thinking is not to see city and nature as opposites, as western culture has, but rather as an integrated whole. Guidance down this path can be found in eastern culture and design.

One of the most remarkable things about binary pairs – that we westerners call opposites – is that, if they are given the chance of working together, each member of the pair mutually enhance each other. This phenomenon is known from the colour theory of "opposite colours", where, for example, red and green can mutually strengthen each other. This law is called complementarity and the colours complementary colours.

Within the field of design we can experience complementarity at work when, for example, a house and a garden are designed together, because

The City Hall

The Árbaer farm



then the house is improved by the garden and the garden by the house. In this one example we realize that by applying this scheme, design can be elevated to a higher level. The same holds true if the city and natural areas are designed together.

The primary reason why this so infrequently occurs in modern design is that design tasks that actually are one whole have been divided into separate fields of study and relegated to separate professions. It is well to remember that many of the most beautiful design examples take their beauty from the interplay of a house and its environment, as does the Nordic House by Alvar Aalto.

The most beautiful example in Reykjavík of the interplay of city and nature is in the downtown area of Kvosin – as concerns its interplay both with the old harbour and with Lake Tjörnin. Here again it helps to create a theoretical projection because if we imagine the lake and the houses placed somewhere farther away, we see that the two elements are not that remarkable, whereas together they create a highly remarkable complementary unit.

All nations have made grave mistakes as concerns environmental matters – not least in the twentieth century. There we Icelanders are no exception. The world conference in Rio in 1992 gave an honest appraisal of the state of the world's environment. Only through an overall picture is it possible to see where and how effort should be applied to rectify the damage and prevent further catastrophe.

The Icelandic government, local governments and institutions have now defined environmental goals in the spirit of the Rio conference, and Reykjavík is now working on its Local Agenda. In the planning of the city some kind of a local agenda is needed for making better use of the treasure that the natural environment on the city's "doorstep" actually is. Reykjavík has, in this respect, a unique opportunity to become a model for other cities, a guide as to how to create intimate links between city and nature. If this book can help prepare an agenda that will realize this vision, the effort of writing it has been worth it.

The Nordic House

The Old Latin School

1 City and Nature

The City: Man's Shield Against the Threats of Nature

In the history of civilization, cities and the forces of nature have for a long time been conceived of as opposites. The city, in its function as fortress and defence, is a symbol of man's struggle to protect himself against the threats of nature and other external forces.

The beginnings of this struggle, when man was still in constant danger from wild beasts and the vicissitudes of nature are easy to visualize. Any type of shield or shelter was like a divine gift that could save man and his family from certain death.

Gradually mankind learned to build housing that gave protection against wind and weather, as well as other terrors of nature. Often, for instance, houses were built on hills or on pillars as a method for escaping floods or in order to stay clear of wild animals and insects.

As man started to form communities, he needed to protect these communities or villages as a unit from external forces. For this purpose man invented wooden palings and stonewalls that were built in a protecting circle around the whole village.

As a matter of fact, it was not beasts and the forces of nature that constituted the gravest threats in the long run, but other men. This, however, does not alter the fact that a circular city-wall sometimes with four gates at each of the four cardinal points has, at all times, been a symbol for the city.

This original and primal function of the city to protect and guard is manifested in Indo-European variants of the word *burgh/borough* meaning city: for example, Edin*burgh*, Helsing*borg* and Ham*burg*. In German, *burg* still means a fortress or a walled city, the word having been derived from the verb *bergen* meaning to shelter or to protect.

In Iceland, where there were no towns until the nineteenth century, the name for a town, *borg*, happens to stand for "a rocky hill". Icelanders, a mystical people even today, believe that fairies live in such rocks and in the larger ones even whole "cities of fairies", in other words, invisible cities in a country where there were otherwise no cities.

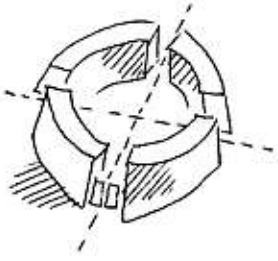
At the point when humankind had learned to control an aspect of the environment that was earlier a threat, the former threat ceased to have an evil image.

Humankind could then relax and was enabled to see the good and beautiful in the natural force that previously instilled fear. Attitudes towards nature are therefore based on the view of nature in each given period of time: is it threatening or tamed?

For most of Iceland's history, the nation has fought a tough battle with the unkind forces of nature, as well as a rough and inhospitable terrain. This struggle is often personified in Icelandic folktales: trolls and evil spirits live in mountains, monsters in oceans and lakes, and the volcano Hekla was even seen as the entrance to Hell itself, with all the demons and imps that dwell there.

In the nineteenth century technology and knowledge started to release the nation from the tremendous grasp of fear and stagnation. The safety of communication on land and sea improved, and therefore the image of the ocean and the landscape as realms of danger and evil forces started to be lifted.

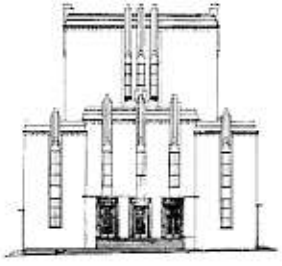
During the dark Middle Ages the fear of evil spirits governed the mental world of all of Europe. The clergy used this fear to postulate Christianity as man's shield against the evil forces that exercised, as it appeared, the upper hand in nature and thus the city, being a symbol of safety, almost became synonymous with faith. Or as Matin Luther put it: "Our faith is a city on a steady mountain built".



This perception or worldview can better be understood in light of the fact that, at that time, it was predominantly the elite, the nobility and the clergy, who lived in the cities, that is, within the safety of the city walls. The meaning of the German word *burg*, i.e., a fortress or castle, reminds us of this.

In the later Middle Ages urbanization progressed

Western thought tends to regard the concept of binary pairs as opposites. Thus the city is sometimes seen as good and the natural environment as dangerous and even evil, as depicted in these two pictures. Below: The National Theater as a citadel.



and the city was no longer only a lonely fortress on a hill but started to evolve as a larger city on low ground. A city wall was not the only thing used for protection, but often also moats and swamps. The name of the city of Venice in Icelandic, Fen Islands, says this directly.

As the city states grew to become nation states and the defences were moved out to the borders of these states, there was less need to contain urban development within city walls. Without this constraint, urbanization speeded up with the development of trade and industry and paved the way for the industrial revolution in the nineteenth century.

The brief historical sketch presented in this section has shown that the city, in the early part of its history, most often had a privileged status. Many of the first towns were the site of worship and prayer and thus, like Jerusalem, were known as holy cities.

The ancient Greek city states were a contrast to the earlier, barbarian rural culture. The English word *city* derives from the Latin for citizen, meaning a member of a community or state; *civilized* has come to mean not only polite but honed by the culture of a city.

The later word *bourgeois* also points in this same direction. This word derives from the French version of burgh, as in Stras*bourg*. *Bourgeois* denoted the middle class status of shopkeepers and others living in towns, but has been elevated and today has a tone of snobbishness.

Because most cities provided security when fear and terror lurked in every corner of untamed nature, it naturally followed that the city acquired an image of the good and the beautiful in contrast to nature's image of the bad and the ugly.

With industrialization many cities became terrible places. The binary pair of city and nature were therefore reversed and the city, which earlier had been seen as good, instead became associated with the evil and profane. In contrast, nature, once terrrible, was elevated to Romantic adulation.

Nature as the Image of the Good and the Beautiful

At the end of the Middle Ages, Europeans had progressed to the stage where they had mastered most of the perils caused by nature, thus allowing for the subsidence of the negative image nature had had.

Another historic development of the same period was also to have an influence on the image of nature, although by another track: the advent of industrialization and the ensuing growth of cities from the immigration of uprooted workers from the countryside.

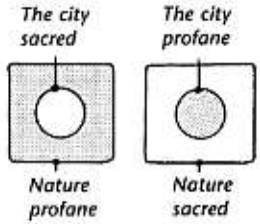
The consequences were bad: people were heaped together in the worst of hygienic and social conditions. Pollution and coal smoke covered everything, and diseases and immoral behaviour were rampant. In only a very short period of time the image of the city was totally reversed: the formerly good and secure city was now seen as the image of the dangerous and the ugly.

Since, at the same time and through improved technology, the various threats of nature had become more manageable, in a relatively short period of time the polarization of nature and city was reversed. The city that earlier was sacred now became profane, and nature that earlier had had the image of the bad and ugly now became the image of the good and beautiful.

This strange fact that what had been seen as evil had become good and the good, evil and profane understandably led to a total shake-up of the European worldview. Now philosophers, theologians, poets and artists, started to assess these new interpretations.

The period that emerged from this, in literature and the arts, is called Romanticism, and is characterized by the glorification of the newly discovered beauty of nature, a beauty that Europeans had now become capable of perceiving because of their new outlook.

In the political arena the revolutionary advances in technology and in the manufacturing industries



During the Middle Ages, Mt. Hekla and nature in general were seen as evil. After the beginning of Romanticism, European scholars and artists visited Iceland and started instead to glorify nature. Natural forms, like Hekla in this painting, were exaggerated, whereas the lower picture shows how it really looks.

resulted in the awakening of the general public that now started to shake off the chains of serfdom. Because of this call for freedom, oppressed colonies started to demand their national rights. As a consequence, the dream of free and unsuppressed nations blended in the arts and ideologies into a single vision of freedom and the romancing of nature.

In only a few places did the integration of this proud sense of nationhood and the worshipping of Nature reach a higher degree than in Iceland. This was because few things other than nature and the Icelandic sagas have such a degree of uniqueness, in a European context, that they are capable of earning the deep interest and admiration of other nations.

Understandably it was not the small farmers in Iceland who caused the reversal of images so that, for instance, Mt. Hekla was transmogrified from the ugly entrance to hell into a new image of beauty and glory. This happened at the instigation of the romantic foreign scholars and artists who wrote up their travels to Iceland, creating romantic pictures of the landscape that often presented the mountains as much higher and more impressive than they actually were.

Icelandic students in Copenhagen, then the capital of Iceland, were inflamed by this spirit and some of the leaders of the expeditions became their heroes. In a banquet in honour of one of these leaders, Paul Gaimard, Jónas Hallgrímsson delivered his now famous poem, "You stood on Hekla's highest peak".

At this time Icelanders had no painters to join in the praise of foreigners for Icelandic nature; they only had the poor man's art, the art of the word that cost nothing more than a scrap of paper.

Hallgrímsson, who was Iceland's most famous poet of the times, then began perhaps because of the lack of visual arts in Iceland to sketch magnificent nature and landscape pictures in words. Here his training as a natural scientist stood him in good stead in his pursuit of interweaving into a unity the features of nature and old folktales.

In the poem "Gunnarshólmi" Hallgrímsson paints a picture of a landscape ringed with mountains and

As Reykjavik started to grow in the late eighteenth century, the formula that says that the city is unremarkable and the natural environment remarkable had taken hold. Many Icelanders therefore had a very dim view of Reykjavik well into the twentieth century. – Today's Office of the Prime Minister is the white house in both the pictures.

makes it the dramatic backdrop for the heroic occurrences described in the poem: "In the north soar Hekla's highest peaks / With ice-capped summit and fire below. / In the depths of the abyss, held by hard fetters, / Terror and Death pass the long hours."

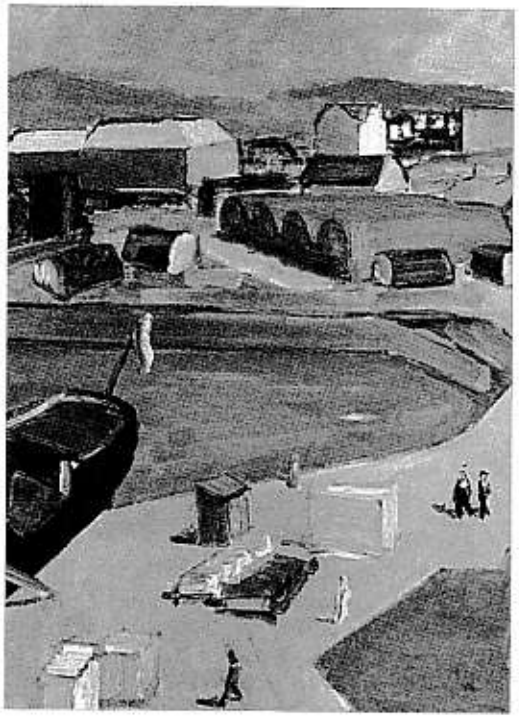
It was not till the end of the century that Iceland acquired her first landscape painters. But by then the early bloom of Romanticism had subsided, with the result that painting had turned to depicting a tranquil countryside. This approach happened to match the mild-mannered personalities of Iceland's first two painters, Ásgrímur Jónsson and Thórarinn Thorláksson.

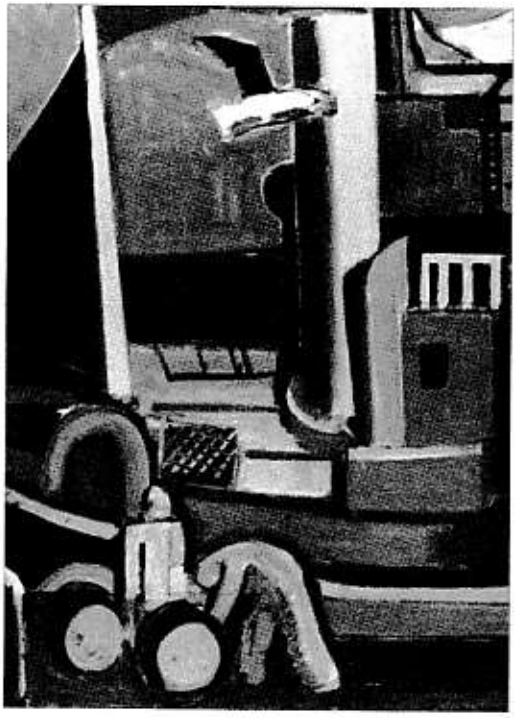
In accordance with the European formula of pitting city and nature against each other as opposites, the tiny town of Reykjavík, like towns on the continent, was supposed to have the image of the bad and the ugly. Reykjavík, however, did not share in the congestion, pollution and epidemics of the foreign industrial cities. Something else therefore had to be found to fuss about in order to have the city conform to the negative formula; laments began about the time-proven turf houses, although no houses at the time provided better shelter from the Icelandic winter. In addition, craftsmen and the inhabitants of the town were castigated for being Danish or Danish-trained despite the fact they were bringing Reykjavík into new and more prosperous times.

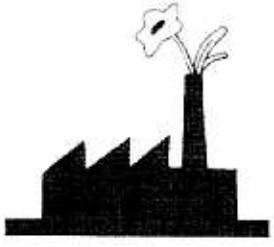
For a long time the prejudices against Reykjavík were strong, not least towards the citizenry because of their adherence to the Danes, and also later towards other foreign influences. In the minds of many, the ancient pagan culture was the true Icelandic culture, especially among those in the Progressive Party, a fact that was understandable because it was the party of the farmers. What is more surprising is that the Socialist cultural elite bore a grudge against the culture of Reykjavík well into the second part of the twentieth century. Even the brilliant urban poet Tómas Gudmundsson was looked at askance.

The Age of Technology came to Reykjavík suddenly at the beginning of the twentieth

As technology and urbanization were lifting Iceland out of poverty, the attendant, magnificient bustle became the object of adulation by many artists, replacing their earlier interest in the countryside.







century; motorboats, trawlers, automobiles and concrete houses. As in other places, technology greatly improved the standard of living. People in the communities of Iceland, who enjoyed most of the benefits, became fascinated with *ars technica*. Because of these developments the towns gradually got the upper hand over the countryside.

This led painters to expect to find beauty in the new towns of the country. The wonders of technology and the bustling life in the harbours became primary painting motifs. Impressive steamships, cranes, piers and people processing herring filled the canvas.

In the 1960's people now started to realize that industrialisation were arguably leading down a path of destruction for the earth. In many places people now started to see cities and heavy industry as symbols of evil and instead to glorify nature. It is likely that this worldview will follow us far into the new century.

Predictions of doom have at all times been a part of human culture. Norse mythology foretold that at the coming of Ragnarok, the Twilight of the Gods, the world would be destroyed by fire because of the bad behaviour of humans. It was the belief of early Christians that on Doomsday God would punish humankind for their disobedience.

In the twentieth century doom was predicted, for example, because of a population explosion and a lack of copper, energy or water. Today the doomsayers' best shot is the fact that greenhouse gases are accumulating in the atmosphere, which may lead to the warming of the earth's climate. This may hold true, but then again, during the long history of the earth the climate has often gone through cycles of warming and cooling. This climatic cycle will doubtless again lead to the warming of the earth's climate, resulting in the usual changes in the earth's ecosystems.

The main point in this connection is that the earth is going to get warmer irrespective of any human actions, except that we may cause the warming to be slightly greater. To call this natural cycle a doom caused by human irresponsibility is simply wrong.

City and Nature: An Integrated Whole

The first section of this book has described how historically the city originally had the image of a shield and shelter, as man still had not brought the forces of wild nature and barbarous society under control. The second section showed how this conception was turned round in the early phase of the industrial revolution when the city, formerly seen as a sanctuary, acquired the image of a terrible and dangerous place, and nature now tamed was accorded the image of a sanctuary and shelter from the problems of the urban beast.

What this historic sketch makes clear is that human existence for most of history was characterized by a difficult struggle against perceived terrors and that, in the process, these problems became symbols of evil forces. On the other hand, that provided for peace and shelter became symbols of beauty and even of sacredness. What is quite remarkable in human history is that the city and nature have taken turns at playing both these roles.

If global problems had not emerged, it is likely that this system of thought, that defined objects and processes as irreconcilable opposites, would gradually have been superseded. But unfortunately the attitude is gaining ground that technological man and thus his culture and cities is an enemy of nature.

Here we need to take a moment to have a serious look at this question before we let the blind and extreme system of irreconcilable opposites take hold of us.

It is the purpose of this book to support with various examples the view that man and nature, as well as the city and nature, can coexist to the benefit of both. Therefore it is of fundamental importance to overcome the primal emotional response of many environmentalists to reject humankind and technological culture and instead turn with tooth and claw to the defence of every hill and rocky ridge. In contrast, this book presents examples showing that some of the most beautiful places in Iceland, as well as in other countries, indeed take their beauty from the interplay of human artefacts and nature.

Most people probably know that one of the worst problems of modern science is that the separate disciplines proceed unrelated to the work of other disciplines. Of late there have been attempts to counteract this problem by developing disciplines such as ecology that create an understanding of whole systems. Yet other disciplines have been developed to clarify dualities, for example, that of nature and culture. The fascinaing interplay of human settlement and nature has been called *settlement-landscape* or *cultural-landscape.*

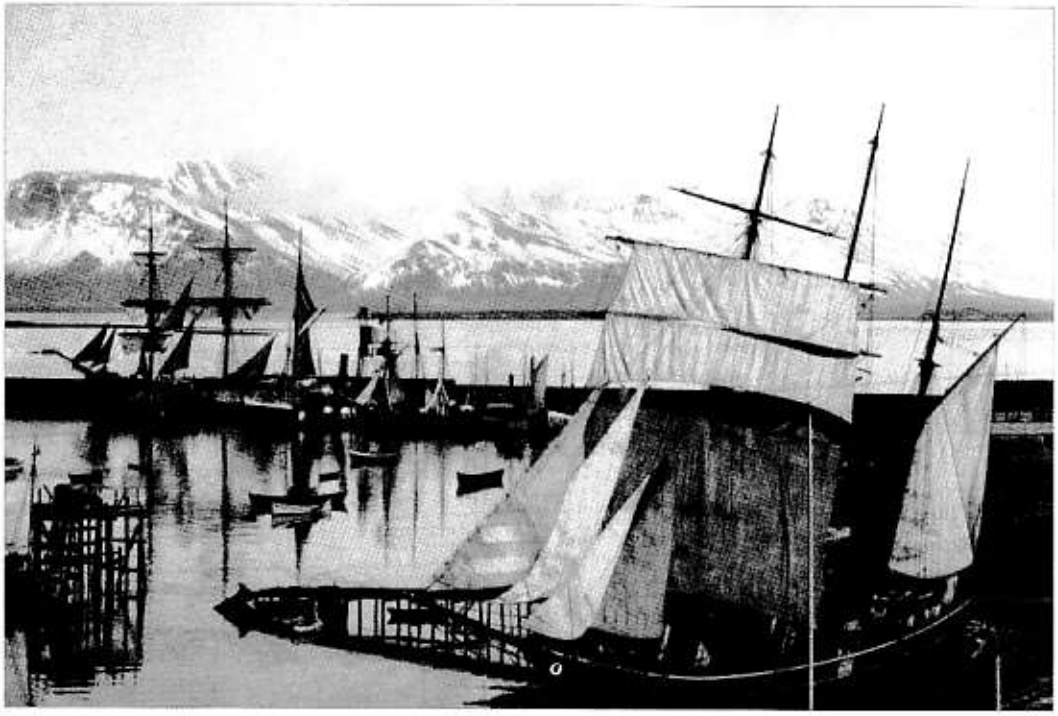
Research into the interplay of these two factors, human culture and the land, has demonstrated how enchanting and beautiful it is when a settlement or city harmonizes with the landscape. In some cases nature is somewhat moulded to adjust to the needs of a city, as it is with the River Thames in London and the Seine in Paris. Without this adjustment, the charming interplay of river and city hardly would have materialized.

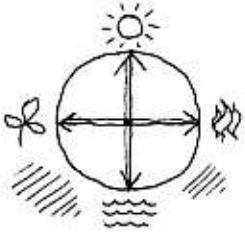
In more sparely populated areas and in smaller cities like Reykjavík the interaction of city and nature can be more informal. In this way the course of the Ellidaár River in Reykjavík is mostly untouched, which is quite suitable since outdoor rather than built-up areas flank the river. An exception is the dam, which has an interesting history as it was part of the first hydropower plant for Reykjavík. In addition, the dam creates a quiet mirror of water and also a variation in the valley, both for recreational activity as well as for ecological diversity.

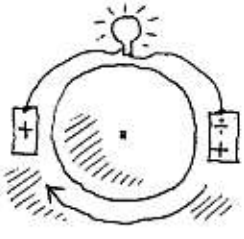
Iceland has produced two examples of the interplay of human habitation and nature that are of international importance: the turf farm and the coastal town at the time of fishing smacks. Photos from the island of Flatey in Breidafjord and from the old harbour in Reykjavík show this very clearly.

It is worthwhile taking a moment to study this closer. Originally Kvosin, the site of the old town centre and harbour in Reykjavík, was a small bay like thousands of others in Iceland. Buildings for trade and storage were built in a soft curve on the

The key to high quality in design is to allow binary pairs, like city and nature, to work together because then the two can complement each other. If, on the other hand, the two are not allowed to connect, complementarity is not achieved.







elevation above the shore. Piers ran from them over the flat beach towards the water, and out in the harbour fishing smacks with furled sails and rigging rode at anchor. All of this was quite pretty, but not that uncommon. Wherein then, rested the magical beauty of this place?

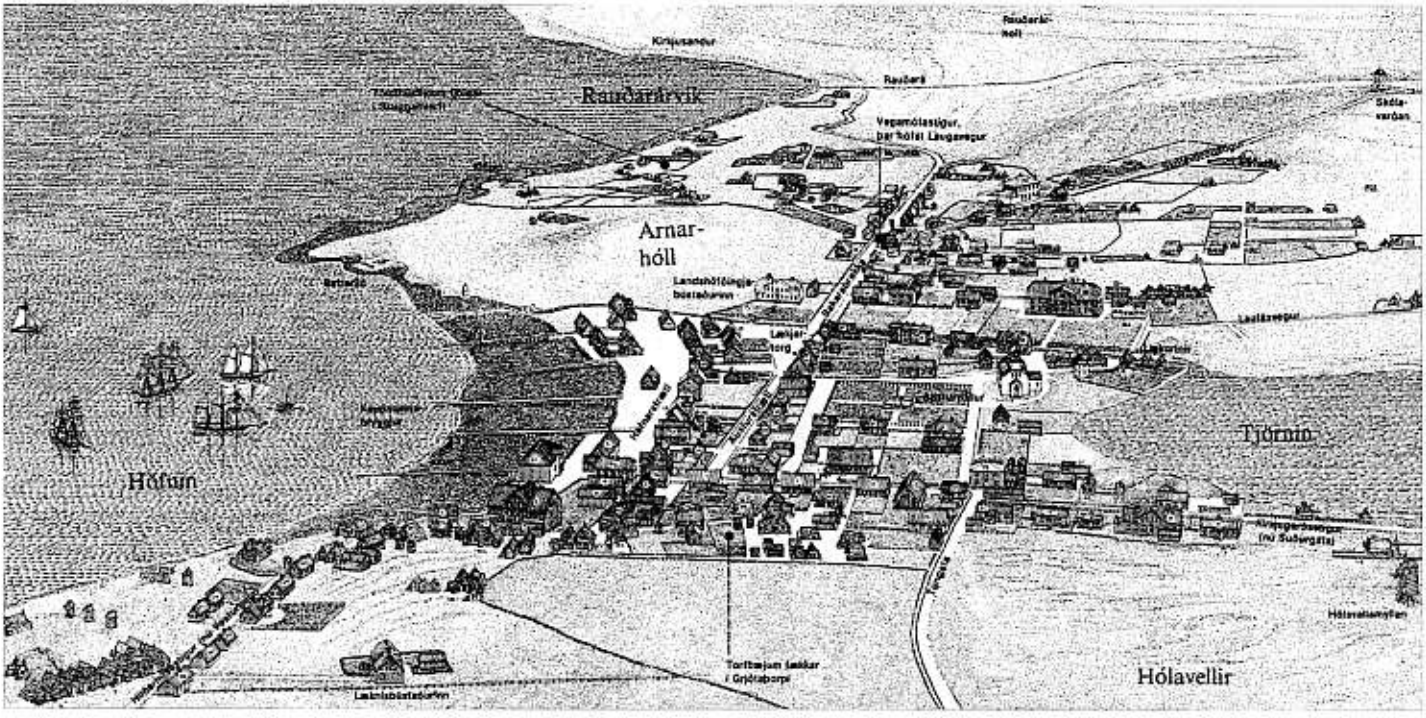
The magic had a foundation in the fact that here the settlement had a relationship with the water: the harbour, in such a way that the town became more special and more beautiful because of it and then, by reversing this the harbour became more vivid and picturesque because of the surrounding buildings. In this way the two, settlement and nature, formed a magical unity, although separately they would not be considered very remarkable.

Behind this magic lurks a powerful theory that, if used correctly, can be instrumental in achieving an enchanting interplay of settlement and nature. This theory is called *complementarity*. Many, probably, are familiar with this idea from the theory of colour created by Johannes Itten of Bauhaus. The theory of complementarity demonstrates that if a certain pair of colours, for example, red and green, are played against each other according to certain rules, each of the two colours becomes more vivid and in addition, they form a magic unity together.

The author of this book, in his dissertation for the University of California at Berkeley, developed a theory of how to make use of this idea in design and planning. This book makes use of this theory in order to explain how successful the interplay of settlement and nature can be in design, as has already been outlined in the case of Kvosin.

Now it is quite logical to ask: why is it so difficult to find high-quality design examples of this kind today? The answer is somewhat complicated and comes in two parts.

The first reason is because this type of superior quality of design can only be achieved with the interplay of two features that, as in the theory of colour, must be a complementary pair. The chief characteristic of such pairs is that they result from dividing a whole, as, for example, dividing the colour spectrum into a pair of "opposites" like red



The beauty of Old Reykjavik was chiefly the product of its interplay with the harbour. In today's Reykjavik this interplay with the environment is little used, although the city's location on a peninsula actually offers more opportunities for this than in most other cities.

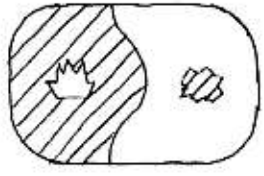
and green. Other examples of this process include the positive and negative charges in electricity and the north and south poles of a magnet.

The characteristics are the same, whether we are dealing with the pairs red and green, house and garden, or the city and nature; they all are capable of producing a field of energy, if people allow them to work together instead of considering them to be opposites that need to be isolated from each other, as the Western scheme of thought directs us to do.

This is the first obstacle that has to be overcome in order to move closer to design solutions based on interrelationships. And it is important to stress heavily that this can never be achieved properly as long as the ruling perception in society is that human settlement and nature should not be played against each other in the planning of cities and their environs.

The second obstacle in the path towards reaching the superior quality of complementary design has deep roots in the system and method of thought that now prevails in the modern world. This deep difficulty will be explained in the next section because action must be taken to counteract the fundamental problems in our modern societies. To put it briefly, what we have to deal with are the problems caused by the method of dissection that was created by Descartes and others in the seventeenth century, a method that now has spread to all areas of human endeavour.

This method has resulted in an approach that divides design projects into disciplines that lack an interrelationship. Thus, for example, houses and gardens today are not designed together but separately. Therefore the houses have little relation to their gardens and the gardens only a limited relation with the houses. As long as this approach prevails in the field of design, the supreme quality in the design of house and garden where the two are mutually enhancing, can not be reached, a quality that produces not 1 + 1 = 2, but an extra value: 1 + 1 = 3 !



2 Method Rules the World

Today's Method of Dissection

The first section of this book explained how city and nature usually appear as a pair of opposites in history: sometimes the city has been seen as good and nature as evil and then attitudes have been reversed and the city has become evil and nature, good.

As we have seen, there are various historical reasons for this polarity and its reversal, but at the same time it is very clear that what is imbedded deep underneath is a certain basic aspect of Western thought, i.e., the urge to define almost everything in terms of irreconcilably contrasting pairs. It is quite obvious that if we hold on to the position of defining, for example, the city and nature as a pair of opposites, little will be done to strive to connect city areas or buildings to nature.

In many cases in the field of design it is sufficient simply to explain problems and mishaps and the solutions will present themselves with ease. If, however, the problem is connected to the fundamental features of a worldview and system of thought that has prevailed for thousands of years, we cannot count on such a ready solution.

In order to start to approach the problem, nothing short of submerging oneself into the philosophical structures of Western thought will suffice in order to start to understand the fundamental reasons for the problem. By doing this we will gradually start to understand and internalise the fact that how we approach things is determined by the prevailing Western attitudes and that the outcome is determined by this approach.

Of course it is a long story how Western dualism came into being. In examining this question, it is quite practical to start with Christianity, which divides everything into good and evil, heaven or hell. There are almost no nuances: either an individual is lost or saved, a poor sinner or redeemed. Recently, however, this teaching is not as rigidly adhered to as before, even by the men of cloth themselves.

But it is not only individuals who are judged by the Church in this way but also most other phenomena. Following this formula, material things are commonly depreciated in contrast to spiritual things, which are valued more highly; thus, in ancient theology the city was sacred and nature profane.

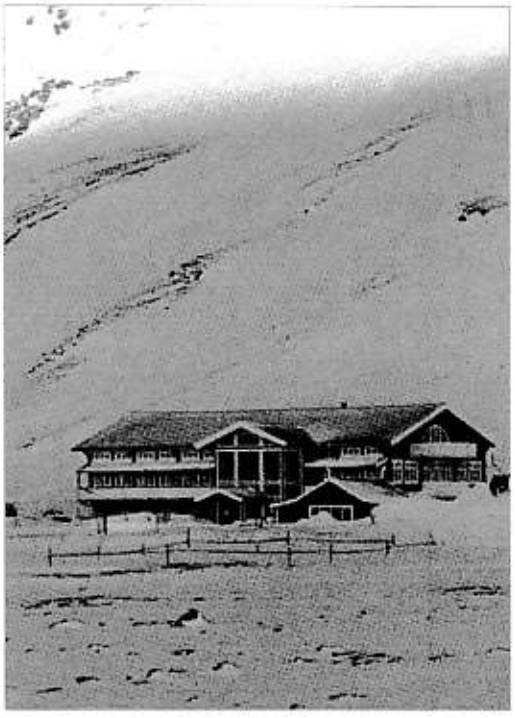
One would think that reconciliation could be reached among pairs of "opposites" by means of sensitive design and planning. Man-made artefacts, including cities and buildings, can go quite well with nature, although many environmentalists think this never can be the case.

An example of how much a good building can do to enhance nature is the Hveradalir ski lodge. This realization suddenly dawned on the inhabitants of Reykjavík after the lodge burned to the ground in the early 1990's. It then became unmistakably clear how much less impressive the natural surroundings were at this spot after the building had disappeared.

With the resurrection of the lodge, however, the beautiful interplay of a building and its environs was recreated. Or, as stated in the theory, a unity has been re-established where the building is more beautiful because of nature and nature more beautiful because of this particular building.

The fact that we need not be slaves to the scheme of irreconcilable opposites can be learned from the Eastern scheme of thought. There "opposites" have the names *yin* and *yang*, where *yang* stands for the manly and aggressive features, and *yin* for the feminine and yielding qualities. Both features are considered equally important because the two could not exist without each other. In the Western scheme of things, on the other hand, such pairs have contrasting values, i.e., the manly and aggressive are seen as admirable but the female and soft as insignificant. Following this same scheme, speed is interesting, but peace and calm uninteresting and until recently, the man-made was what was of main importance and nature much less so.

In presenting the Western attitude in such an uncompromising way, we have become aware of the fact that the Western perception of such pairs has been on the mend during recent decades. Feminine



The western scheme of thinking in opposites says that the manmade and the natural should be kept apart because they do not go well with each other. The burning down of the Hveradalir ski lodge showed people that this was not true because at that spot nature is more beautiful with the lodge and the lodge is more beautiful because of the surrounding natural environment.

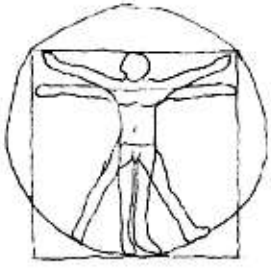
values and ways of understanding, as well as most values connected to nature, are in the process of gaining respect. The road ahead, however, is still long. This should not come as much of a surprise because we are here straining at the foundations of a system of thought that is thousands of years old.

Let us now look at how dualism managed to take hold of Western science in the seventeenth century, not least because of the influence of Bacon, Descartes and Newton. The most fundamental feature is that science was divided into two groups: respectable science, which deals with that which can be measured, and the opposite; not respectable science, that deals with things not easily measured. This "low" or soft type of science works frequently with social and spiritual values that all "true" scientists try to eliminate from their work.

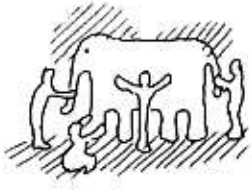
The operation of the University of Iceland is e.g. somewhat characterized by this haughtiness of the positivists, and two representatives of the university were members a Wage Tribunal that created new rules in 1998 that say that first and foremost what is created according to the working rules of the exact sciences will be acknowledged in hiring, promotion and salary advancements. With rules like these it is obvious that, for example, designers and constructors would not go far within this system and are in fact judged to be not hireable by the University.

Although earlier this discussion centred on certain flaws in the Christian scheme of thought that need to be corrected, there are other positions or values in Christian thinking which have had a good influence, as for instance, the respect for wholeness. An undivided whole as, for example, that of the human body and the soul, is considered to be of highest importance. The Church therefore had very serious doubts about the new Western science as it started to emerge, where almost the only method was to cut things apart before starting to study them. This method rests on the naive assumption, that a knowledge of the separate parts would produce a better understanding of the wholeness, and the nature, of the subject to be studied.

In order to demonstrate how questionable it is to



The segmentation of city functions (work, shopping and sleeping), as it appears in city planning and urban life, tends to be monotonous and unrewarding. This can be seen very clearly in a comparison of the newer neighbourhood with the Old Town, where all city functions create a lively mix.



draw conclusions in this way, as does scientific dissection, the story of the four blind men that were examining an elephant is often told. One of them studies the trunk and concludes that an elephant is like a hose, another one researches the leg and concludes that the elephant is like the trunk of a tree, etc.

It is not totally unreasonable to compare today's specialized scientists to these blind men; they all know their narrow, isolated subject very well, but very few of them have an overview that allows them to understand the wholeness of the subject within which their work takes place.

We thus today, unfortunately, are stuck with this method of "cutting apart", which actually is the real meaning of the Greek word "ana-lysis" that is used internationally to denote this method. The science of "putting things together", i.e., "syn-thesis", on the other hand is little dealt with and is thus underdeveloped. The Western scientist is somewhat like a child who is fairly good at taking his toys apart, but when it comes to putting them together again he lacks almost every skill to be able to do so.

The problems associated with dissection are studied here because only by doing so are we able to understand, in some depth, how bad it is that, for example, the design of a home and a garden or a city and landscape areas has been cut apart.

This book will attempt to describe some of the problems that are caused by this approach. That which probably describes the drawbacks best is the fact that the thinking of each specialist is as if locked in a box, and it is this that results in the specialist's lack of interest in the connection with other parts of the subject. Following this scheme of dissection, society gradually has been divided into specialized boxes. In cities, for example, residential neighbourhoods are in a box separated from other areas.

The second box has workplaces without a connection to other city functions, and the third type of box contains green areas (e.g., Miklatún Park in Reykjavík) that are often separated from residential neighbourhoods by heavily travelled streets that make it impossible for children to get into the park to play.

Dissection: The Root of the Problem

We have been discussing the prime method of modern science, i.e., dissecting all tasks into tiny pieces, which has had the result that nowadays specialists work on their piece as if in a closed box without connection to other subjects. This gradually has become the approach applied to most subjects in our societies and cities and has resulted in the dividing of society itself into compartments; one for young people, another one for the old, a compartment for the healthy, another for the crippled, etc.

The loneliness, the lack of compassion and the injustice that have resulted from this in today's cities are some of the worst problems of modern societies and they call on these societies to declare it a major task in the new century to create an understanding of how terrible the problems of compartmentalization are. This is a necessary step before people will be ready to make the improvements needed, that is, at a very deep level of organization, which means to reject dissection as the first rule as to how things are approached.

Now it is quite reasonable if one asks the question: If the method of dissection has led to such terrible things, both socially as well as in the design and planning of cities, how is it possible that the method is so productive and popular that one can almost say that it rules the world?

The answer has three separate aspects. The first is simply, because the method is so easy to carry out: one simply cuts the task or the subject at hand into pieces, and the specialists supported by society are commissioned to study the parts. This leads to the second aspect, which is that this method usually brings much economic gain because dissection allows you to limit yourself to material things, i.e., costs are not weighed against social, environmental or other aspects, but against material benefits only.

We have accepted this crude and unethical practice because it has made us rich, in the short-term, but the ghosts of the past will haunt us because we have cheated and quite possibly societies, and the world at large, are now heading towards a major societal and environmental catastrophe whereby, some say, the world will be destroyed.

The third and last aspect in explaining why the method of dissection has become so popular has to do with man's eternal struggle against the dangers that threaten him and thus make him feel small and insecure.

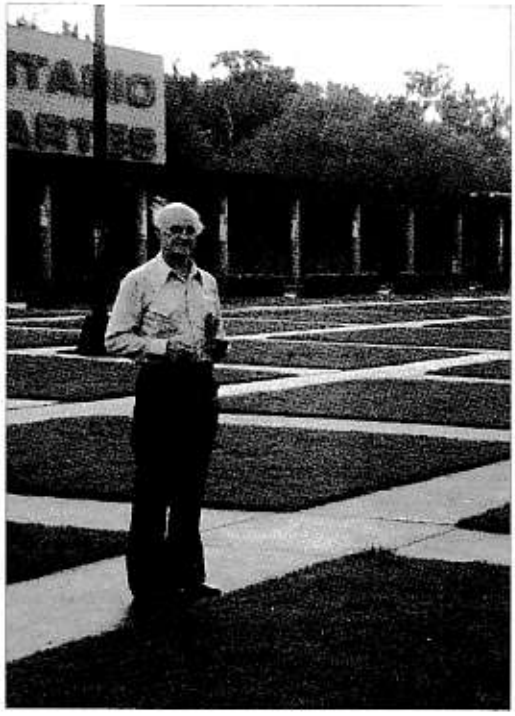
As explained in the first section of this book, humankind originally invented the walled city as a shield against the threats of nature. But nature also threatened man in another way, i.e., by being so complicated that it was almost impossible to figure out. In good years riches flowed from nature, but then suddenly she would strike with her rod of punishment so that people and livestock perished.

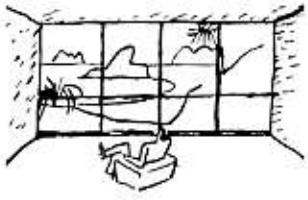
Something was bound to cause this because such terrible occurrences hardly happen without a cause! People's ideas on what power it was that had their fate so completely in thrall varied, but a common reaction was to try to mitigate this power through sacrifices, worship and submission. All this has a common feature: humbleness, which is an attitude towards nature that hardly could be wiser. The opposite, the false self-confidence and self-deception that says "we are so brilliant that we need not be careful towards nature we will simply disregard her" is what is so dangerous.

In the beginning the sins were small; a badly built home was taken away in a flood or a violent gale. But man's technological capability has increased, and at the same time he has broken continually more ancient rules of caution so that now more problems face him than ever; the greenhouse effect, desertification, cities and societies divided into isolated societal ghettos, etc.

One of man's oldest methods to find emotional stability in the unsettling chaos of life was to create abstract worlds of religion and philosophy. In this way humans managed to create a divide between themselves and reality and especially between themselves and the world of nature, where humans

The university in Mexico City was designed under the influence of Le Corbusier. The pavement layout is ridiculous and in front of the walls of glass people have built "wall ribbons" for protection against the sun. In addition, the useless and ugly column space under the building has been closed off and thus turned into a usable space. Below: A view illusion by Le Corbusier.





had always been mere playthings. Today people call this type of divide the mind/body split.

As with other types of dissection, this mind/body split has been both a benefit as well as a curse to humans. It is well known, for example, how Western medicine has little knowledge of how the sanity of the mind and body are thoroughly interconnected. The old Romans knew this as the Latin phrase "mens sana in corpore sano" a healthy soul in a healthy body demonstrates. The development of abstract theories without much link to reality has created many inventions and ideas that may be entertaining and even useful. But some such constructs, such as the extreme ideologies of communism and capitalism, have led to unspeakable calamities for many in their wake.

Dangerous, alien ideologies have been created in all fields of human endeavour because of the split between ideas and reality. Within the field of architecture and planning, functionalism has been the worst because, as the term itself points out, it focuses on function in design but disregards features like form, feeling and value. The promise of the functionalists that "form follows function" is nothing but a hoax. Because of the belief in functionalism most modern urban environments are mechanistic, ugly and terrible to live in.

One of the most dangerous ideologists and theorists was Le Corbusier, who said that the house should be a machine to live in. Understandably it would have been too much trouble for him if this machine was supposed to be connected to the social fabric of an organic city or to the nature of the site where it was to be located. Le Corbusier's "Unité de l'habitation" has as its model the loneliness of an ocean liner on the high seas. And in order to complete the separation of the building from society and nature, Corbusier put this apartment house or block of flats on chubby pillars. The blocks of flats in Reykjavík have adopted this ideology of separation from the environment as their model. For some time Le Corbusier was almost a god in the eyes of the middle-aged generation of architects in Iceland, just as in so many other countries.

The feature, however, that has caused most damage in today's cities is the dissection of human existence into separated and isolated city areas, a process that is commonly called zoning. Another fundamental mismanagement of today's city planning is the fact that it was made into a specialized profession without links to the adjacent natural surroundings. Landscape architects were supposed to take care of that.

This had the unfortunate result that the planning of urban areas became self-centred, which means that all the attention is directed inward to "the very important" central areas of the towns, whereas the outer areas and edges are considered unimportant and thus get little attention and respect. The result of this is that "all the junk", industries, highways, etc. is pushed out to the edge, where city meets nature.

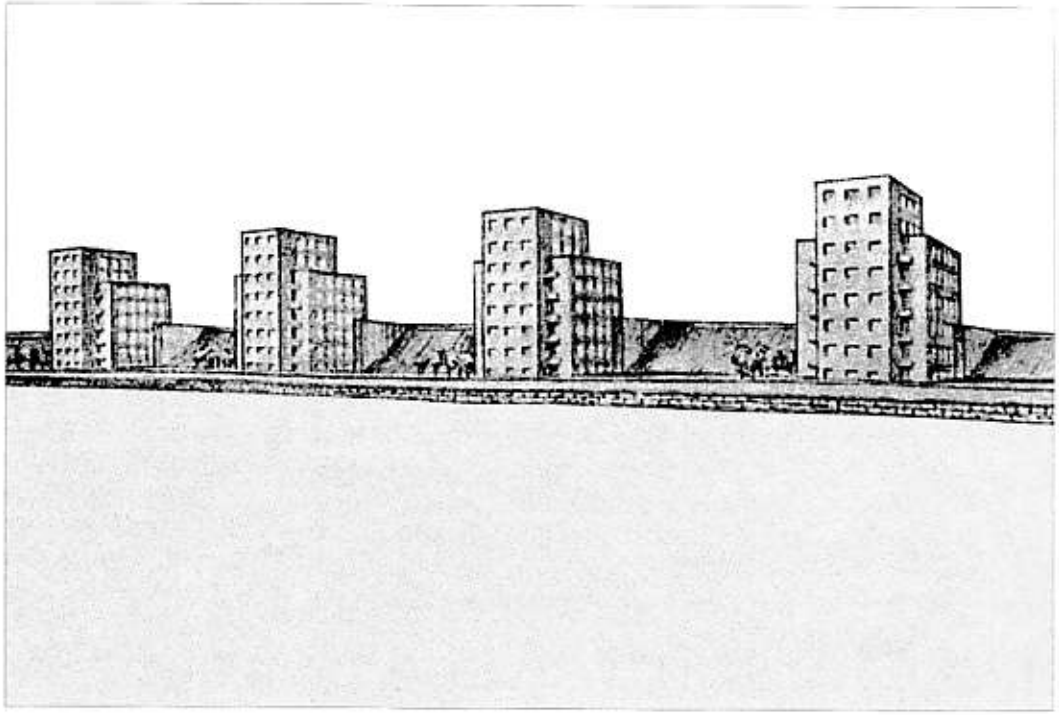
In many foreign cities such junk belts cut the cities totally away from the surrounding countryside. Today planners try to counteract this lack of contact with nature by devising so-called *green fingers* or channels for bringing nature into the cities. Such a finger plan exists in the Reykjavík capital area, even though unspoilt natural areas run all along its eastern border. This has come to be because of Heidmörk Park and the reservoir catchment basin that is located there.

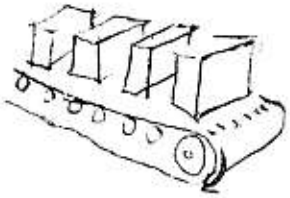
The north coast of Reykjavík, on the other hand, has been hard hit by the pushing of the junk out to the edges. The result is that this coastline is almost nowhere approachable by the general public, except at Laugarnes Point. This, according to the plan, will be the only green area, along a coastline of some 10 kilometres.

Later in this book the sad story of the loss of a whole coastline will be told and methods and an idea for a programme on how vast tracts of this coast can be reclaimed for outdoor activity and residential areas will be outlined.

In the 1948 Reykjavik city plan the whole north coast was designated for a belt of industries and harbours. The larger picture shows the beginnings of the Sund Harbour, and it also shows how widespread the settlement is. – Below: The house of an artist on Laugarnes, the only outdoor area along the north coast.

Modernism exterminated people's sensitivity to the organic beauty of the Old Town, and a mechanical and horrifying vision took over. In the 1950s there were plans to destroy most of the old buildings by Lake Tjörnin. This was the winning entry in a competition for what should replace it.





Machine and Nature – Two Models

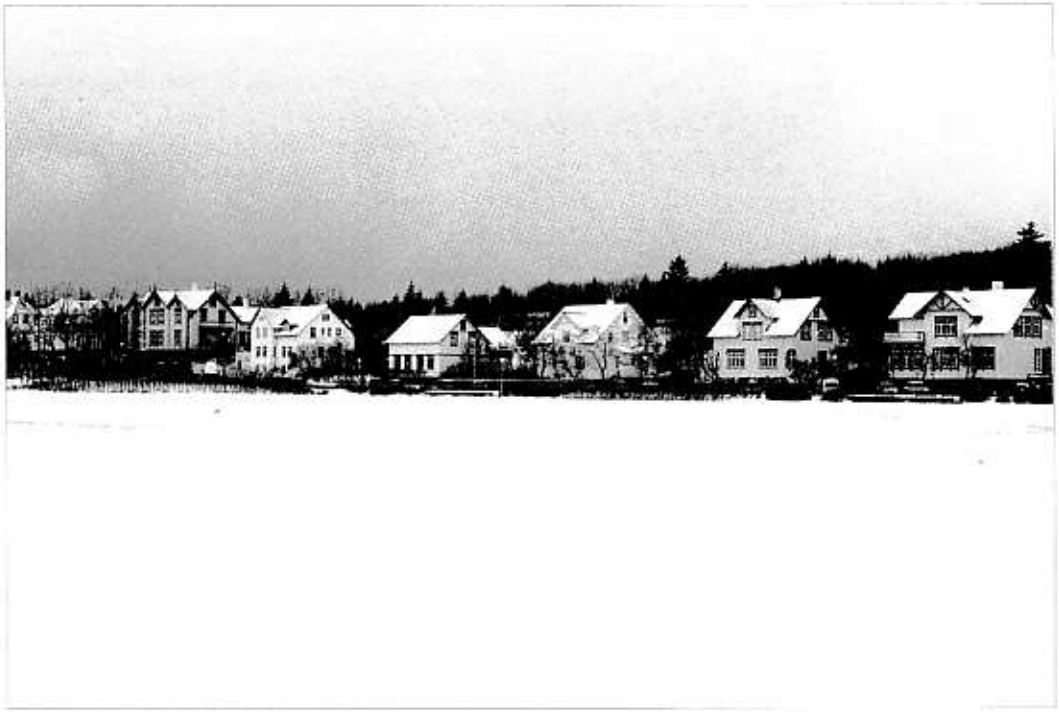
Earlier sections of this book demonstrated that most of the larger problems of societies and cities can be interpreted as having their origin in the mechanistic scheme of dissection and compartmentalisation. The mechanical method of cutting or dissecting all tasks into small pieces has provided a tremendous economic and technological advantage so that the Machine has even been termed "The God of Modern Times".

Our admiration for the accomplishments of this Machine-God has resulted in our praising his creations uncritically. We lavish admiration on the various characteristics of his works, i.e., speed, straight lines, smooth surfaces, absence of emotions, and monotone repetition. In this cosmos of the Machine-God, humans and nature, that are both characterized by curved and crooked lines, rough surfaces and inaccurate movements, look pathetic.

The adulation of things mechanical by wretched modern man can clearly be seen in art as well as in design, like the example of blocks of flats that look like boxes on a conveyor belt and that are, in addition, placed in monotonic and mechanistic residential areas.

The worshipping of mechanistic aesthetics and methods has been declining in the last decades of the twentieth century, not least because of a new, emerging science, particularly in quantum physics, that has demonstrated that the mechanical worldview of Newton and others is in fact both primitive and flawed. In addition, people have started to realize better that the machine as a model or a prototype for our societies and cities has led to terrible things, and that in the technological era characteized by a reckless attitude towards nature man has now suffered heavily for his actions.

This gradually is leading to a total shift in attitude, so that today many detest the Machine-God. However, there still lingers the unpleasant fact



Today the people in Reykjavik look on the houses around Lake Tjörnin as one of their architectural jewels. The magic comes not least from the interplay of residences and nature, i.e. the buildings become more beautiful because of the lake and the lake more beautiful because of the buildings.

that this god has so thoroughly shaped modern man, the humanoid robot, in his image that it is difficult for people come to understand even the most obviously incompatible attempts in the mechanical and sometimes appalling creations of modernism. The example of the winning entry in a competition for the "Beautification of Lake Tjörnin in Reykjavík" in 1951 makes it easier for us to understand the blindness to beauty that we all have suffered because of the aesthetics of the machine. We still suffer from this blindness, but not as much as at the high watermark of the technophile era after the middle of the twentieth century.

But now one may ask: What sort of a worldview and what kind of aesthetics will replace the mechanistic model in the beginning of the new century? Many believe that Nature is going to push the Machine aside as a model. This new worldview has already appeared in the ideology of the hippies in the 1960's, many of whom wanted to abandon the modern way of living altogether and settle in the wild instead.

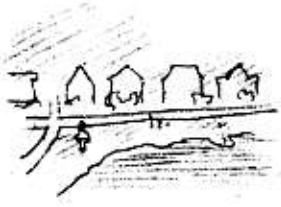
The idea behind this was the simple wish to want to live in peace with nature, i.e., not to go further than the limits of what nature can give or take. In some places in the United States, villages of this kind still exist in forested areas and remote valleys, but only a few of these hippies have fared well.

Strangely, it is quite believable that the emerging hi-technology can make it possible to realize the dreams of the hippies. New communication technology is on its way to make it possible for many types of professionals to be just as connected with the big world in "remote" places as in metropolitan cities. Many writers and scholars have made use of this and have moved into the countryside. In this way, they can combine the advantages of rural and urban lifestyles in one and the same place.

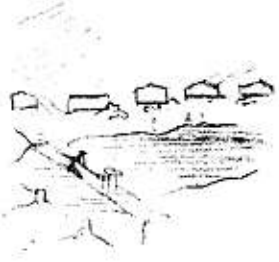
It is possible that this new development could lead cities to become smaller in the future. It is more likely, however, that this will mean a new lifestyle: double-residency or residing in two places,

Today people can use their summerhouses year round because of geothermal heating, mobile phones and computers. In these houses people can live in very close contact with the natural environment so that there is less need for large gardens and pastures within the city. This makes it possible to densify the city and thus create a more vivid urban life.

in the city as well as in the countryside, preferably some 30 to 60 kilometres away in the case of cities the size of Reykjavík. This development started with summer cottages that will eventually evolve into all-year houses, i.e., somewhat larger places with more space around them, for example for farming and animal husbandry.



This trend, if it becomes strong, will result in less need for open spaces in cities, both in terms of public parks and private gardens. On the other hand, the chance to live where a city borders nature, be it coast or countryside, will be much sought after because there, in one spot, you have both the city and the natural environment.



That the need for green areas in the city, will be reduced by this development and that people with a second home in the countryside will not also have to spend their time in a garden in the city, provides Reykjavík with the opportunity to make the city more dense, and to build blocks of flats, as in Paris and Manhattan, that have no gardens.

This lends itself to creating city areas of high density, bursting with life. Although the large open spaces in Reykjavík give the city a pretty appearance, they also mean that truly energetic city life is nowhere to be found, except in the Kvosin and Laugavegur Street areas. The city is almost a rural place without having the benefits of such areas to any considerable extent.

Even though this vision of being able to live in both the natural environment nature and the city is interesting, we also have to realize that this also has its flaws. First, this is a rather expensive way of living because it requires buying and running two homes. Therefore this residence pattern is primarily for people who are sufficiently well off, especially in densely populated countries where space in the vicinity of cities is often very expensive.

Secondly, double-residency in the countryside can result in some social isolation, especially for young people who do not have a driving licence. This is a problem similar to that of people residing in suburban areas with little or no bus service. Then it will come about that families with less income and who do not have a second home in the country will settle in the high-density city areas that have few playgrounds. This will mean fewer opportunities for outdoor activity. On the other hand, this is what most children in the larger cities in the world have to live with.

Considering the question of opportunity for outdoor activities, it is certain that if high density areas were to be built in Reykjavík, for example in today's airport area, the distance to open areas would not be too great. This area lies by the beautiful south coast of Reykjavík with Öskjuhlíd Hill to the east. In addition, it is only a short distance to the Tjörnin area and the University campus, which could be made into a public park.

3 A New Vision of Connectedness

A Holistic Worldview

The first two sections of this book have described the changing of man's attitudes towards cities and the natural environment and how dualism has furthered the methods of dissection and compartmentalization.

It has been argued that the attitude or worldview that has dominated Western societies is now caught in a process of change because the system of thinking and the methodology that it has produced have led to such bad results in design and planning. In addition, the overbearing and behaviour destructive to nature brought on by the Western system of thought has caused such enormous environmental problems that some even think are a threat to man's future on earth.

By examining today's worldview in light of the basic characteristics of the most serious problems afflicting societies and cities today, the basic outlines of a needed worldview become obvious. Such a revision and reconstruction of our worldview and methods are needed if we are to be able to correct the enormous incompetencies and problems brought on by today's worldview. This new worldview is sometimes described as holistic in order to underline its contrast to today's fractured worldview.

Five aspects that characterize the new worldview will be now examined. This study has as its foundation the discussion in this book's first two sections. The analysis of the flaws will provide indicators of what is needed for the main features of the new worldview and also how the new attitudes and methods that follow from it will help solve some of the worst problems of our modern times.

On the Attitude Towards Nature: Until recently, people had no problem steamrollering nature almost without a trace of conscience. Today we have an enormous change in attitude. The reasons why are the great difficulties that the love of technology and uncontrolled urban growth have brought upon us. These problems also can be seen in the exploitation of the natural environment and the pollution that threatens it. Therefore, today people want to give some priority to viewpoints highlighting the value of the natural environment.

On the Attitude Towards Binary Pairs: The Western view is that binary pairs are irreconcilable opposites. The new worldview, on the other hand, considers pairs, such as man and woman, as polarized versions of the same thing. Thus both members of a pair are of equal importance and, furthermore, complementary rather than contrasting.

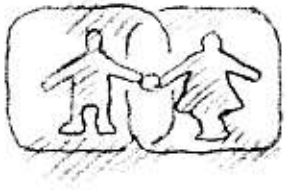
On Method: The method of starting all tasks by cutting them into pieces and then to work on each of the pieces in an isolated way, in compartments, has created societies that are mechanistic and lacking in connections.

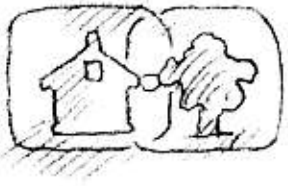
The holistic theory of ecology is now not only applied to help understand biological societies but also human societies. This book outlines a methodology on how to create wholenesses, how the interplay of binary pairs can be strengthened, and how to design border areas not so as to separate them, as is done today, but so as to let the boundary become an active interface that enhances the interaction of the two areas.

On Aesthetics: The fact that dissection and mechanism dominate today's worldview means that what results, i.e., boxing in and mechanization, we consider admirable and beautiful.

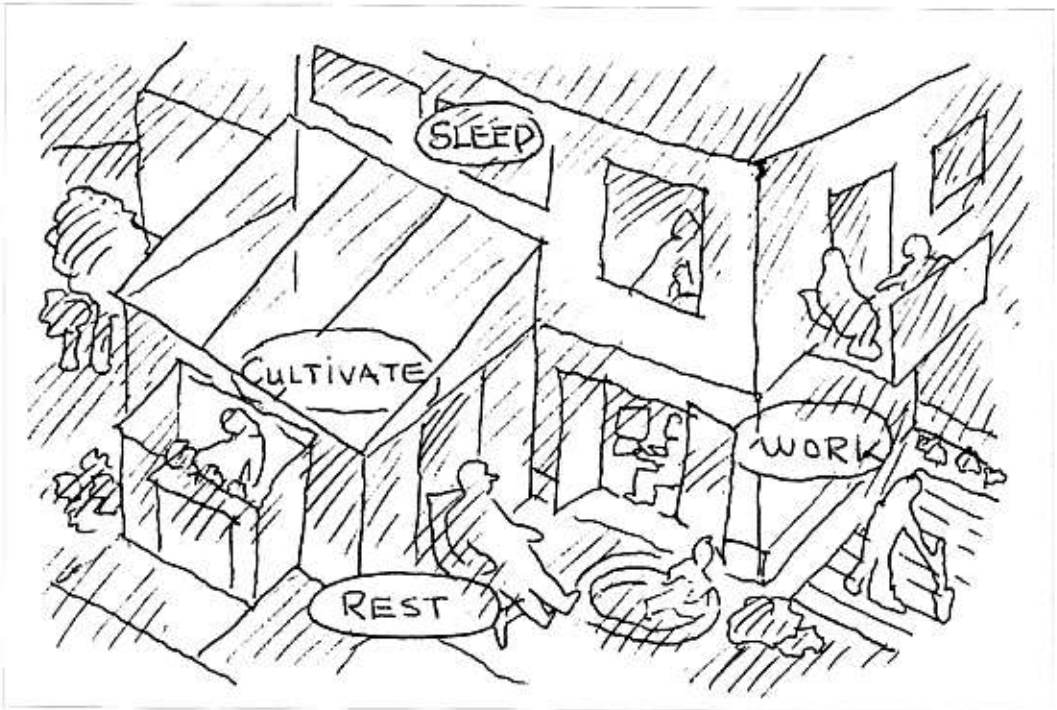
The opposite is things that are interwoven and organic. Structures and patterns of this kind can readily be found in nature, and nature seems to be in the process of becoming a general model for the new worldview. Complicated webs, roughness and curved shapes will therefore become the characteristics of the new aesthetics.

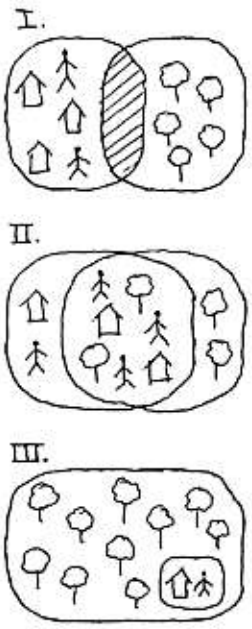
On Human Values and Ethics: Today's perception sees humankind as master of nature and that it is our solemn task to bend nature to our will. This haughty attitude has led to many gross misuses of the natural environment. This arrogant attitude has also been manifested in the oppression of the





The mechanical worldview turned the living areas into storage boxes. The worldview of integration, in contrast, mixes all the functions together again: to work, rest, and enjoy a social life, growing plants, and outdoor activities, as in earlier times, both in towns and in the country.





less powerful, both within societies as well as in international politics.

In the new worldview there are three possible variants in the scheme that should govern the relationship of man and nature. First, *Man and Nature are equals.* What follows is that the goal should be to balance the two and to facilitate interaction among them. This is the kind of philosophy that this book supports. Secondly, *A total interweaving of the two,* which would mean "back to nature". And thirdly, *Nature is given a ruling position over humankind.* This approach has already entered international law to some degree as, for example, in the Rule of Caution, which states that in case of doubt, nature should be given priority.

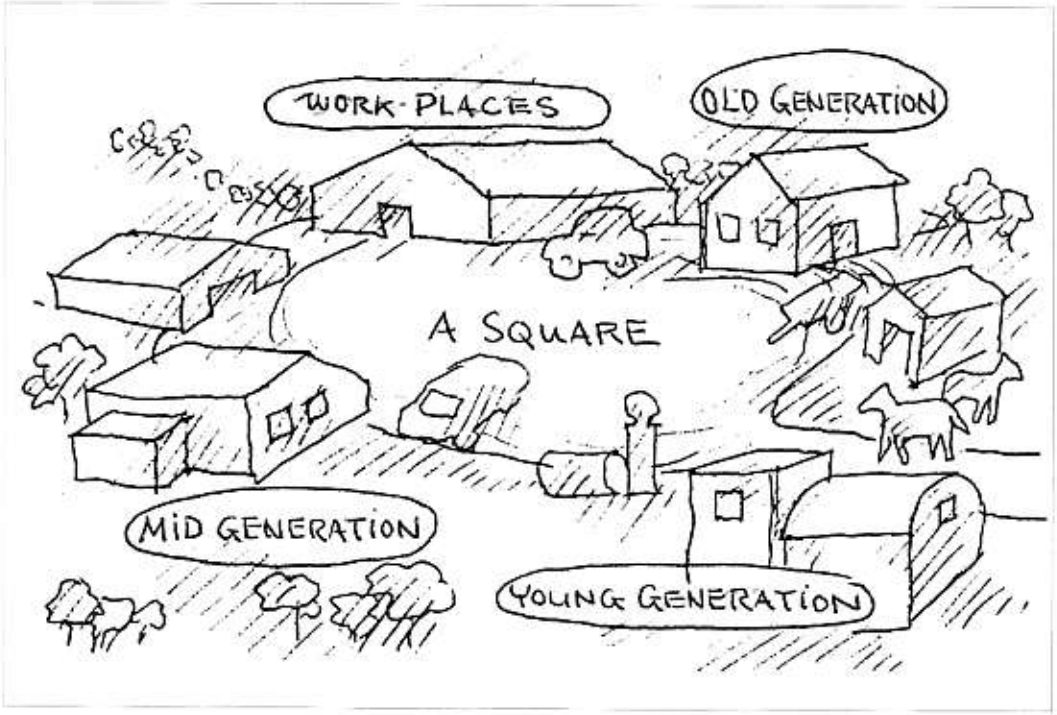
Unfortunately this new nature-friendly attitude seems to be developing in the direction of such extremism that the extremist cannot tolerate the harvesting of nature, as in the case of whaling and even traditional fishing. There is also a trend among the extremists to try to bar man completely from many natural areas.

Following are some examples as to how holistic methods have begun to appear. The best-known example is probably holistic medicine. It has as a starting point that man in his totality is one cohesive system: wholeness.

This means, for instance, that a bodily malfunction can have emotional origins and thus can be treated as such. Connections like this one, i.e., among "unrelated" disciplines, are little realized in Western medicine.

This also is the case with specialists in general, who are little interested in the connections of their discipline with other fields. Such specialists frequently overlook solutions based on interrelationships of this kind. Eastern medicine, on the other hand, is primarily concerned with holistic aspects and with the connections between systems. People who practice holistic medicine therefore look to the East for knowledge.

Holistic practices have now started to find their way into the building industry. There design, financing and the execution of a project are seen as



In modern town planning family- and occupational areas are separated. In the wide open areas close to the capital, lots for such units could be planned, where space is left for younger generations to build their homes later. Such family-units are very popular in the countryside.

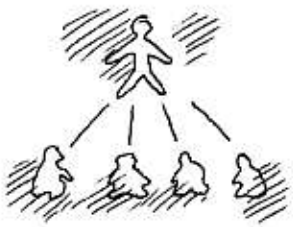
one whole. This has led to much rationalizing and savings, but architects complain they have lost some control in this new type of teamwork and that they are often overpowered and forced to give in, for instance, as concerns the aesthetical viewpoints they represent.

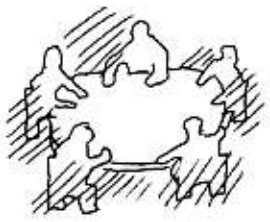
City planning has recently increasingly developed into teamwork among many types of professionals, thus opening channels for a wide range of knowledge and reducing the number of mistakes. Earlier it was common that architects and planners were the leaders of such work and therefore were in a good position to further subjective viewpoints that are so difficult to support with calculations.

Now the moneymen and the technologists have increasingly assumed the leadership, which means that now qualitative viewpoints have less weight in design and planning.

The city has a particular position in this respect because today it is a highly technical and also an enormously expensive construct. But, in spite of this, the planning of cities has to continue to be guided by the rules applied in the creation of a work of art. In cases where we are dealing with small areas or small buildings we easily can give the designer the authority of the artist in a project, but today, as we are dealing with ever larger and more complicated projects, this is becoming continually harder.

This is regrettable, but the holistic approach should not be blamed for this. Maybe the solution could be that all the specialists taking part in shaping a project be given so much education in the arts and the social sciences that the group as a whole will see to it that the aesthetic and human values will be sufficiently taken into consideration in the planning of cities.





A Revolution of Connections

In recent decades there has been a communications revolution as concerns connections and interaction in the world. Easy electronic interconnections through computers, fax, mobile telephones and satellites have multiplied interactions, both between individuals and companies. A key factor in the immense advantages thus created is improved access to all kinds of knowledge and information resources that certainly were there before but were not as accessible.

City planning of the future must also experience a revolution of connections, not a revolution of electronic connections but connections between areas and functions in the city. As in the world of information, resources are to be found all over cities. What is lacking is their contact with city life. In this book we are primarily dealing with resources connected to nature, in and around Reykjavík.

Let's take the coastal area as an example, with all the islands, bays, and bird life. There hardly is a doubt that these waters are among the most beautiful of any coastal cities in the world! But how have we succeeded in making use of this resource, this treasure, to make the city more beautiful and the city life richer? Badly! The whole coastline has been allocated to industrial functions so that the residential areas south of the highway along the coast have almost no possibility of making use of their proximity to this remarkable area.

A Revolution in Connections at this place will have to include a programme of moving the polluting industries away so that the coastline can be claimed for residential and outdoor areas areas that would make use of the enormous possibilities that present themselves with the proximity to the coast and the ocean.

We have discussed the fact that we have been locked into a frame of mind that has made us blind to the tremendous possibilities that present themselves in the planning of the city. The city and nature have been (and still are) seen as opposites, and therefore it has been considered illogical to form a planning policy aimed at connecting them. Furthermore, our adulation of compartmentalization has meant that we thought it was admirable to contain the residents within sterilized residential areas, without connections to work places, institutions and nature areas.

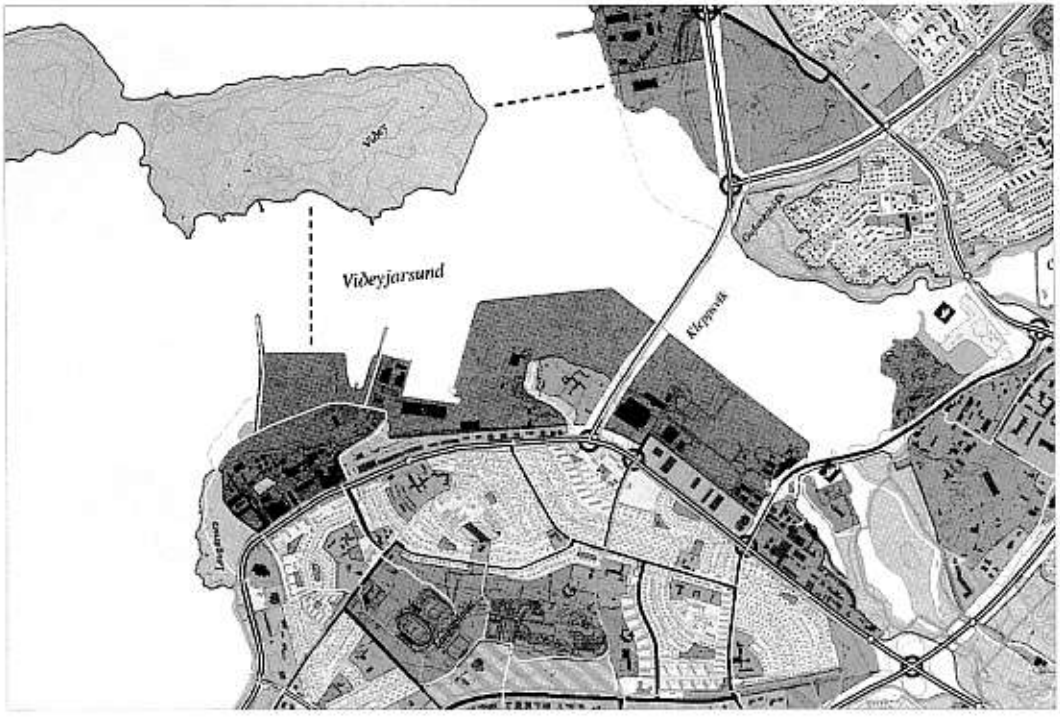
From what has now been described, one can realize that the problem is not the lack of possibilities for connecting the inhabitants to the wonderful resources available but rather that the problem rests with the remains of a mindset and a worldview where all types of dissection and compartmentalization were worshipped. The primary precondition for freeing ourselves from this bondage caused by a scheme of thought is a theoretical and philosophical effort that demonstrates to us that the worldview of compartmentalization is outdated and that the time for a new, holistic paradigm has arrived.

Let us now look at five primary features one works with in design and planning and study how new discoveries in theory and science are opening ways for our deeper understanding of them.

Creation of Wholes is an ancient goal in design. The problem in our modern times is that the whole, whether a house or a city area, are cut apart from their environs. The new understanding of wholeness, on the other hand, is that the subject and its environs together create the wholeness that the design should be dealing with. And such a whole is always formed by a binary pair, for example, city and nature or house and garden, that ecology helps us understand.

Creation of a Balance is yet another ancient goal in design. Today's architects create a balance between a house and a garden by designing the house as a self-contained unit. This also is the case with the garden. The result is a "static" balance, i.e., an unchangeable balance where even the reaching of the one unit into the other would upset the Newtonian scheme of things.

The new paradigm, on the other hand, includes time as an active parameter. Active time means that everything, both nature and the creations of man, are in a constant process of change and in a



Connections can be created in many different ways, e.g., with ferries, bridges, paths and also by providing access and opportunities for visual contact. The picture shows the 1997 master plan for the Sund harbour area. A ferry and a bridge to Videy island have been added.

constant search for a "dynamic" balance. In this worldview static things are like a petrified giant caught in the constant flow of time.

In architecture it is a good method to let the side of the house facing the garden have a great deal of openness, in order to facilitate the interaction, that is, to let house and garden be in a constant dynamic balance.

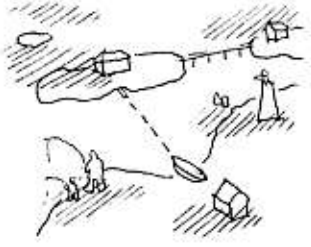
Contrasts in modern architecture are frequently achieved by making the house as much of a contrast to its environs as possible, thus creating an artistic tension. The contrast thus actually is created by disconnecting the house and its environs. Le Corbusier went furthest with this by putting some of his houses on pillars.

The Eastern understanding of binary pairs is now beginning to gain the upper hand with the help of the new understanding of the binary nature of the world created by the theory of relativity and quantum physics. The theory of complementary colours (e.g., blue and yellow) best illustrates the applicability of this in design.

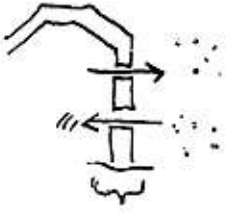
As one follows this new understanding in design the tension between binary pairs like house and garden should not be created by underlining their contrast through isolating each member of the pair but rather by opening the flow between them. By using this method the house becomes better because of the garden, and the garden also better because of the house. The equation therefore becomes not 1 + 1 = 2, as in the case of isolated contrasts, but rather a new additional value has been produced and the result is 1 + 1 = 3 !

To Create Uniformity has, at all times, been a widely used method in design to strengthen expression. A danger is involved, however, as uniform gardens or buildings can become mechanistic because of the monotony. Too much blending, on the other hand, can destroy clarity.

Eastern design has a method against this, i.e., to insert a small core of the opposite member of the pair into the first member, for instance a small pavilion into the garden or a small atrium garden into the house. This scheme can be seen in the T'ai Ch'i



The Japanese are very good at connecting a house with its surroundings. The left-hand picture shows a very active interface with the garden and the right-hand picture, how functions on the ground floor and in front of a parking garage can create a very vivid street life.



symbol. The understanding of the importance of the cores of opposites has been deepened in the theory on anima/animus in psychology.

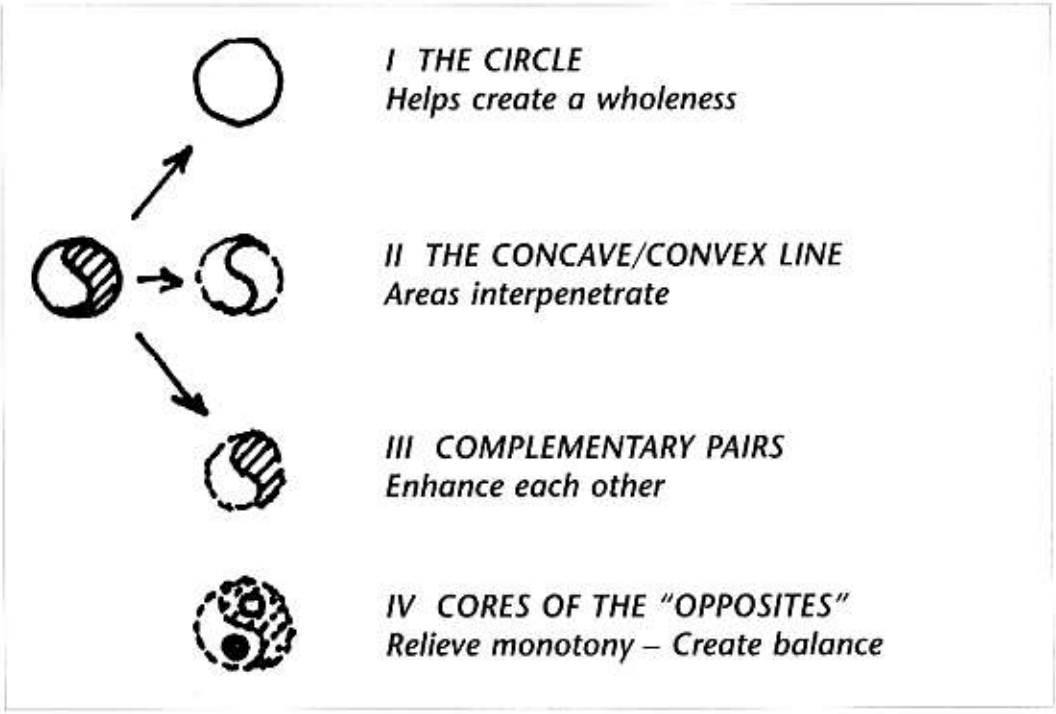
The Treatment of an Edge or an Interface. Within a worldview that claims that a thing can have an emotional meaning in isolation, without reference or connection to its context, the edge and connections to other areas are of little interest.

Einstein's theory, on the other hand, tells us that everything is relative, i.e., that the existence of each phenomenon is dependent on its context. Thus a black letter on a white page is strong, whereas the same black letter on a black page is invisible and ceases to exist.

The dualism that does not recognize that all things are dependent on the reference to their environment has been the main reason why buildings today mostly are without reference to their surroundings. In biology we can also study a similar situation, i.e., that traditional biology mainly focuses on the interior of the cell but much less on its interface and thus the interaction of the cell with its environment. When it was discovered that what matters most in cell biology is how the cell wall manages this interaction, it was considered a revolution that led to a totally new model for envisaging the work of the cell.

Architects must also introduce this new type of model into their field. Within this model the outer walls of the house are not only an edge but an interface where the interaction of inside and outside is to be managed. The interface of a house and its environs thus can have many types of functions and therefore must have thickness.

The "edge" between the city and natural areas should also be called an interface. This underlines the fact that the interface has a thickness, a width. If this is done, enough space is provided for the various activities that are applicable for interconnecting city and nature. Examples of such connecting activities are a restaurant and a recreational centre at a city's edge, or a boating harbour and a vista, if we are dealing with a coastal area that is meant to interconnect a city and an ocean area.



The four basic principles for connecting, according to the T'ai Ch'i symbol, are depicted in this diagram. – These principles, or patterns, appear naturally in nature, as the figures below show.

Methods of Connecting

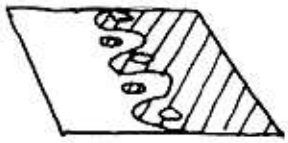
The preceding section presented an overview of five main tasks in design: the creation of wholes, balance, interaction, uniformity and finally how to handle an edge or an interface between spaces. There we examined what understanding or attitude predominated in today's Western worldview and also how new discoveries, for example in science, are altering our understanding in such a way that holistic and connecting features are becoming ever more important.

Modern scientists often cite the importance of Eastern thought for the development of their ideas. The Danish physicist Niels Bohr did this by putting the T'ai Ch'i symbol in his insignia as he was knighted, together with the Latin phrase "Contria sunt complementa" (Opposites are complementary pairs).

In the following, an analysis of the T'ai Ch'i symbol will be carried out to show how these four concepts form one unity. The form features of the symbol will then help us understand what forms are applicable in creating the four basic qualities in design and planning.

How the main concepts of the symbol are procedurally interconnected is very similar to the story of creation both in the Bible and in Norse mythology: In the beginning there was an undivided whole. Because of an external force the whole became divided into physical parts. In Eastern philosophy the parts come in pairs that co-exist in a dynamic balance because the system that has formed them is caught in continuous change, as time is an active factor in this worldview. A simple example of such a process of polarization is the separation of positive and negative ions from one featureless whole. This separation creates positive and negative poles that are an interactive pair with tension between them.

It is important for designers to know the origin



The first two pictures show the embracing qualities of the circle in Austurvöllur, Reykjavik, and in Siena, where the radiating lines also increase the focusing power. The third picture shows land/water circular units on Reykjavik's north coast and the fourth a beautiful interplay of town and harbour in Dubrovnik.

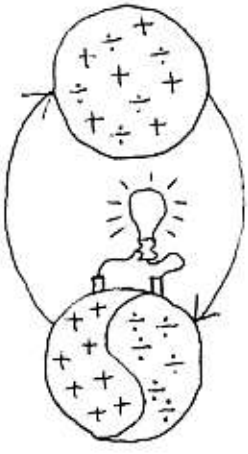
of the basic concepts within the holistic theory in order to be able to apply them in a more methodical way in design and planning. It is most important, however, for the designers to acquire an understanding of how the form features can be used to create connections and strong wholes in design.

In the following, a further description of the form features will be given, as well as how they can be applied in architecture and planning. This serves the purpose of an overview, but the form features will be mentioned frequently in the book as concerns their applicability for realizing connections in Reykjavik's city plan.

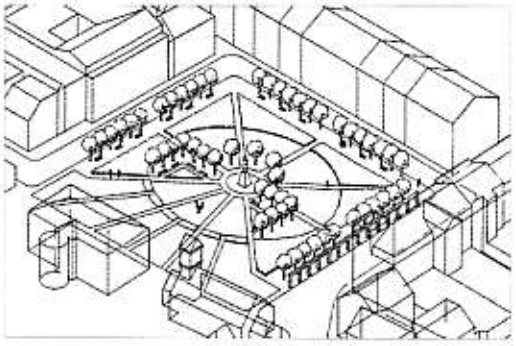
I. *Wholeness created by a circle.* A good example of such a whole is how the complementary pair of Kvosin and the Old Harbour are stronger as a unit because their overall form comes close to forming a circle.

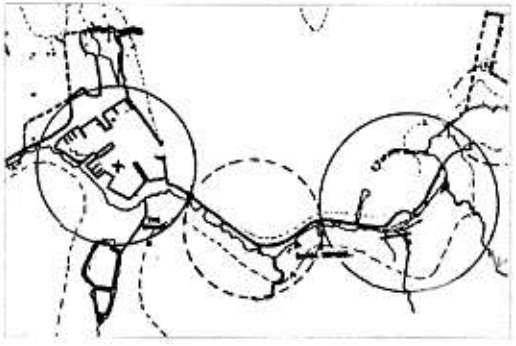
In addition, the two breakwaters are like arms that embrace the harbour, as if they wanted to protect the harbour and pull it towards the city. The two colonades that curve around and define the square in front of St. Peter's in Rome are a good parallel architectural example.

Various other form features can be used to enhance the focusing and connecting powers of the circle. Examples are: a square in the middle of a circle, streets that run radially down to the square or in circles around it.



II. *Dynamic balance created by a curved line.* Here it is best to take a coastline as an example. If the coastline is a straight line, there exists a static (dead) balance along the shore. If, on the other hand, the coastline protrudes, city areas on these headlands reach beautifully into the ocean, and where the coastline curves into the land, an inlet or a bay is created that participates in a beautiful way with the city area that surrounds the bay. It is a sad story how most inlets along the north coast of Reykjavik have been eradicated by landfills. Some of them, however, could be recreated outside today's landfills.





III. *Creation of an interaction by placing complementary pairs side by side.* Interactive and complementary pairs include, for instance, ocean and land and city and nature. If the natural, interactive nature of such pairs is to be made use of, they functionally and visually have to fit together to form a unity. An example is a harbour and a harbour area.

There are fewer harbour connections in Kvosin today than there were earlier, but now planners have declared the goal of increasing the interaction of the two. This can be done by developing the old harbour into more of a tourist and recreational centre. This goal can also be realized by putting more connecting functions at the edge between the harbour and the town.

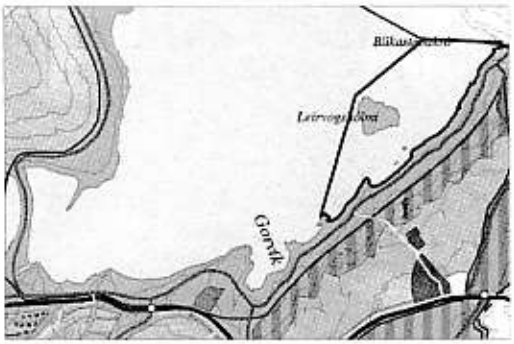
If a boating harbour does not have a functional connection to the city area that borders it, there cannot be much of an interaction between the city and the harbour.

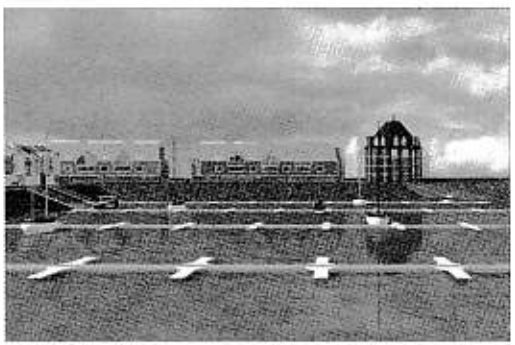
This is the case with the Ellidanaust harbour. The new Bryggjuhverfi in the Grafarvogur Bay, on the other hand, has much interaction with its boating harbour; however, the water area outside is not well suited for sailing.

IV. *An emotional balance provided in a uniform area by inserting a core of the opposite within it.* This principle means that one can enhance how binary pairs interact by placing a core of the opposite member of the pair within each of the two pairs, e.g., within a house and within a garden.

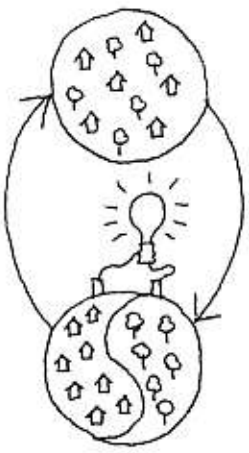
An example is the atrium garden within the Kjarvalsstadir Art Museum. However, the complementary core (a pavilion) is missing in its garden and would be needed if one wants to complete the form scheme and thus create a balance.

In city planning the chief binary pair is city and nature. The green areas in the city are cores of nature within the city that echo the natural environment outside of the city and in this way connect to it mentally. If the scheme were to be completed, small "village cores" would have to be created out in the surrounding countryside to echo the city.

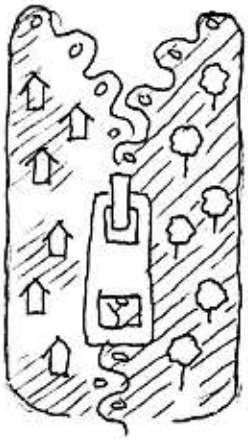




The first picture shows a straight, separating seawall along Skúlagata Avenue, and below it the curved and interlocking coastline of Leiruvogur Bay. The third picture shows the connection between houses and harbour in the Grafarvogur marina. The last one gives an overview of the Ellidanaust boating harbour, where no settlement enjoys a close contact to the harbour.



A pavilion in a garden strengthens the connections between the house and the garden. The same happens where a residential area meets an open space – if an outdoor centre is placed there. Outdoor facilities on islands have the same effect of interconnecting water areas and coastal settlements.



Activities in these cores need to be connected to the needs of the inhabitants of Reykjavík, e.g., in terms of outdoor activity, and to be of sufficient size to stand up as a counterpoint.

The beginnings of such cores include the Bláfjöll skiing area and the Nesjavellir geothermal area but they are too far away to be able to echo the city. A core of outdoor activity in the Heidmörk reserve, on the other hand, would accomplish this.

An interface between pairs can be made active by a curved line and by cores of the opposites. If a designer has the task of recreating a coastline with new landfill with the goal of connecting land and water as well as possible, he or she can make use of the four principles just described:

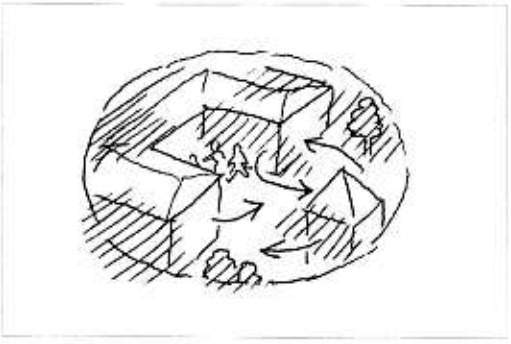
I. Try to let land and water form a circular unit.

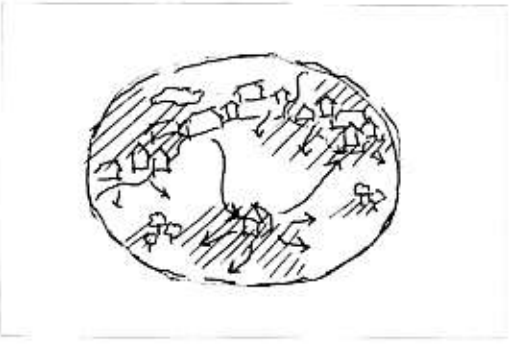
II. Increase the penetration of land and water into each other by means of a curved line.

III. Choose pairs of activities that fit together, e.g., a sailing club and a good sailing area.

IV. Create cores of land in the water (e.g., skerries or little islands) and cores of water in land (e.g., small lakes or pools).

This creates topological facilities for interesting new activities, the monotony of land and water is relieved, and in addition an interactive balance has been created.





4 Age of Integration

Man – Nature: A Unity

In this second part of this book the development of Reykjavík will be examined in terms of the interrelationship of man and nature. Few cities offer a better opportunity to acquaint ourselves with the development of a relationship of this kind. Through the history of Iceland we can study human settlement as if it were the first day after creation, i.e., as the settlers first came to this almost untouched island and started with cautious steps cohabiting with the natural environment.

Cities are built for various reasons. Many of the first cities were sites of worship and the seat of the clergy – holy cities. Others were fortresses for warlike kings and fighters, and still others were centres of trade at waterways or crossroads. Reykjavík, on the other hand, is a city that, well into the twentieth century, grew in interrelationship with and by harnessing nature; the ocean and the land. The history of Reykjavík is therefore very suitable for a study of how a town may start to grow in interplay with nature, and then to see what kind of changes different cultural periods bring with them.

The interaction is typified in three distinct periods that other cities and nations also can learn something from. Each of the three chapters of this middle section of the book deals with one of these periods. This first chapter (the book's fourth) covers the initial period where almost total integration of settlement and nature was the chief characteristic.

The next chapter then studies a period of alienation from nature that was caused by a mindless pursuit of technology and money, a period that lasted for the most part of the twentieth century, the period after the middle of the century being the worst. The third and last chapter of this section finally deals with the period of the reconnecting of city and nature.

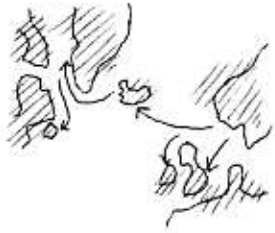
Here new emphases on environmentalism are of central importance, a development that Icelanders embraced with enthusiasm. The first International Environmental Year in 1970 can be seen to have launched this period.

The discovery of Iceland, the initial settlement and also the birth of Reykjavík were all remarkable events, events that are important to the world. The shipbuilding and navigation techniques of the Vikings and the discovery of the new lands in the West; Iceland, Greenland and America, are regarded as among the great events in the history of exploration.

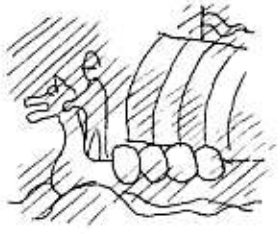
The remarkable account of the settlement of Iceland in the tenth and eleventh centuries came to be because the art of writing came to Iceland shortly after it had been settled. Therefore there exists a detailed description of how the country was settled, mainly in The Book of Icelanders and *The Book of Settlement.*

Icelanders also achieved respect as recorders of the settlement of the neighbouring countries of Norway, the Faroe Islands and Greenland, as well as scattered accounts on the discovery of America. In addition, there are also the tales and poetry that were preserved in the oral tradition from heathen times and then written down.

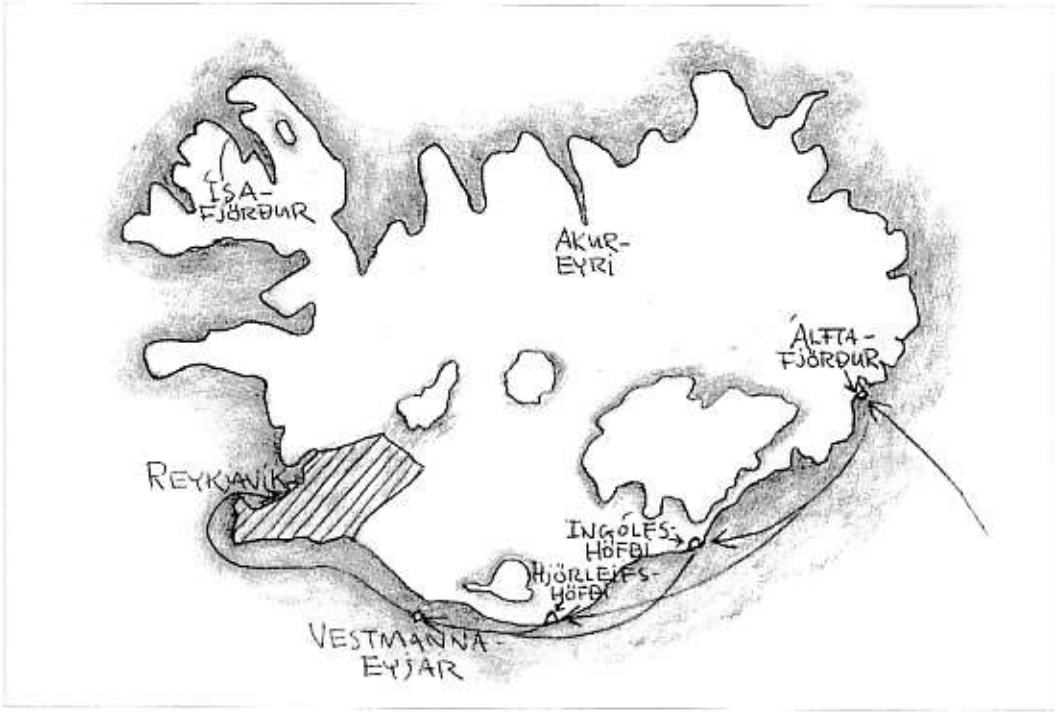
Icelandic writers brought these ideas to the world and thus also ideas about the ancient worldview and religion in the Germanic part of Europe. Our knowledge about Thor, Odin, Freyr, Valhalla, Yggdrasill, and other beings and places from Norse mythology mostly comes from this ancient poetry. And finally there are the sagas that tell about the Icelanders themselves.



The story of how Reykjavík was born is not as well known to the world as the discovery of new lands, the documentation of ancient poetry, the sagas, and the story of the settlement of Iceland. All of this, of course, is also the story of the people of Reykjavík, as of other Icelanders, but the story of Reykjavík's settlement has a special status because it was to become the capital of the country.



Iceland originally was discovered by chance by sailors who had lost their bearings at sea and landed in Iceland. When they returned home they told about the advantages of this beautiful island



The map shows the most likely voyage routes of Ingólfur and Hjörleifur as they sailed to Iceland the second time to prepare their settlement. Ingólfur settled in Reykjavik and "... took possession of the land between the Ölfusá River and Hvalfjord and the whole peninsula [Reykjanes]."

that then tempted many to go there for further exploration.

Two of these explorers were Ingólfur Arnarson and his foster-brother Hjörleifur. They came to Iceland around 870, as *The Book of Settlement* tells us, for a brief initial tour. They erected a dwelling place in Álftafjord in the southern part of the east fjord region, but "the land looked better to them to the south than to the north". The next year they returned with their dependents, as well as their slaves. This time Ingólfur threw his high seat pillars overboard so they might drift with the current and where they came to land would indicate the destined site of settlement.

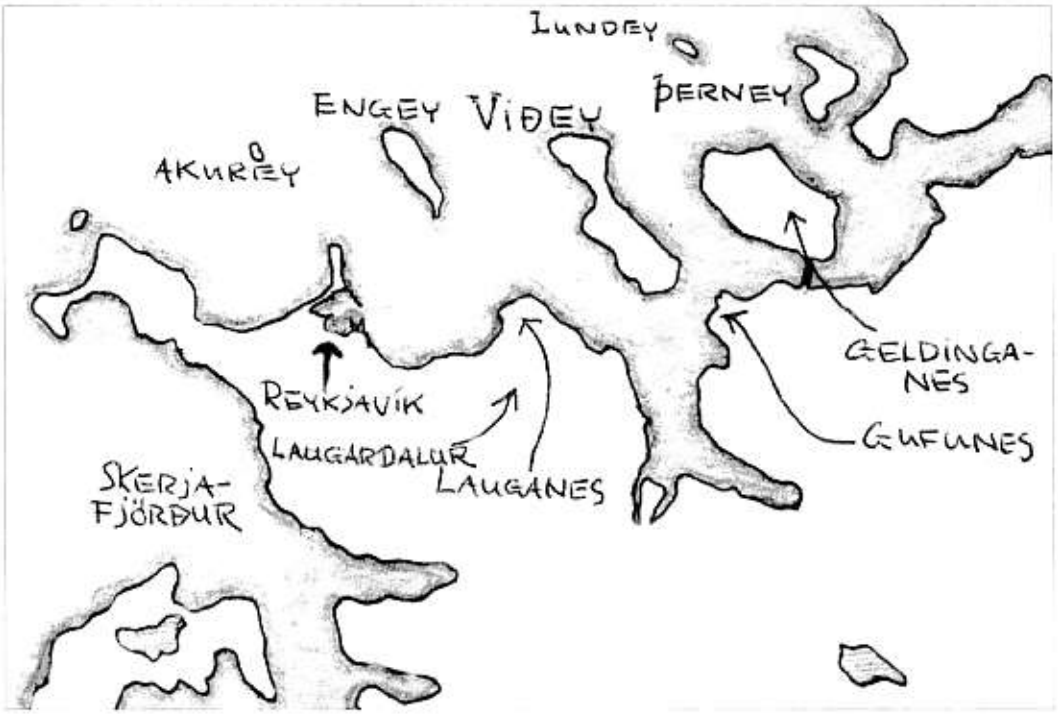
It is quite likely that this story was invented afterwards because Ingólfur sent two of his slaves, Vífill and Karli, on a three-year journey of exploration west along the south coast. Ingólfur and Hjörleifur also separated, but they both went westward. Ingólfur built his first winter quarters on Ingólfshöfdi Headland and Hjörleifur on the headland still named for him. The next summer Hjörleifur went out to the Westman Islands, where his slaves, who were called Westmen as they came from the islands west of Norway (i.e., the British Isles), killed him. The Westman Islands are named for his slaves.

Now *The Book of Settlement* continues: "During this time Vífill and Karli found [Ingólfur's] high seat pillars at Arnarhvoll west of the heath." There Ingólfur settled and "...took possession of the land between the Ölfusá River and Hvalfjord and the whole peninsula [Reykjanes]."

Later in *The Book of Settlement* account there is a remarkable sentence that gives an indication that the site of settlement was not based on where the high seat pillars were washed aground but rather that Ingólfur's choice was based on the slaves' study of the quality of land. This sentence makes clear that the slave Karli was not in agreement with his master's decision. *The Book of Settlement* has him say: "It was not for much gain that we have passed good lands but will now settle this remote peninsula." Whether or not this sentence was

Turf	*79%*
Peat	*77*
Possibility of driftwood	*44*
Lumpfish coast	*42*
Dulse coast	*38*
Shellfish coast	*33*
Brush (for fuel)	*30*
Beach plants	*25*
Trout	*21*
Salmon	*13*
Ling (for fuel)	*13*
Trees for making charcoal on common lands	*10*
Sealing areas	*8*
Berries collecting	*6*
Egg collecting	*5*
Turf for fuel	*3*
Seaweed for fuel	*1*
Catching puffins and sea birds	*1*
Collecting plants	*1*
Collecting down	*1*

A list of how common, in percent, resources were on farms in the inner part of Faxaflói Bay around the year 1700.



This map from the Reykjavík Area shows the great variation in topography of the area, which means a great variation in ecological units – each of them providing different types of food and uses. – The smaller maps show the location of dulse and puffin-catching areas in SW Iceland.

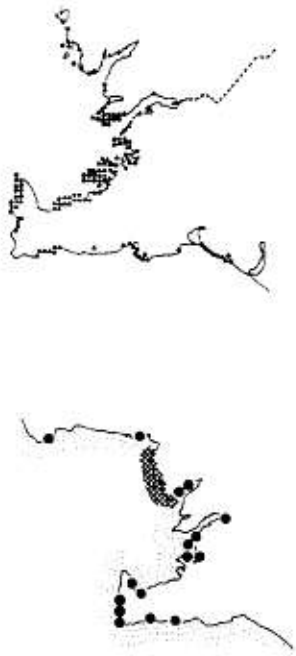
invented by the storyteller some 250 years later, it is true that the southern flatlands are a much better agricultural area than Reykjavík and its environs.

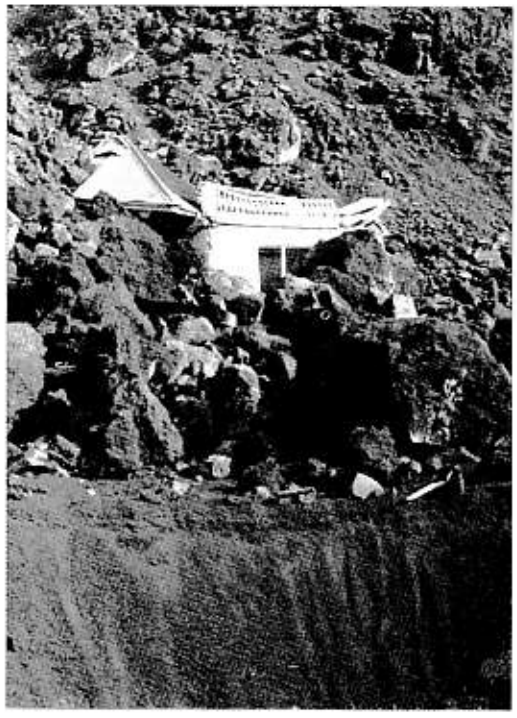
The livelihood of the first settlers, however, was not based on animal husbandry, but rather on fishing and utilisation of what the land offered. For these things Reykjavík and its environs, fit much better than does the harbourless south coast

It is the foundation of the science of ecology that there is congruence between life systems and the environment. This means that the more varied the landscape, the more varied and diverse the life systems, and thus also the products that man can utilise at any given location. As one reviews the geography of Reykjavík from this point of view, one sees that the topology, and thus the diversity that may be utilised, is unique at this place to mention a few advantages; fishing and food gathering as well as numerous types of agricultural opportunities.

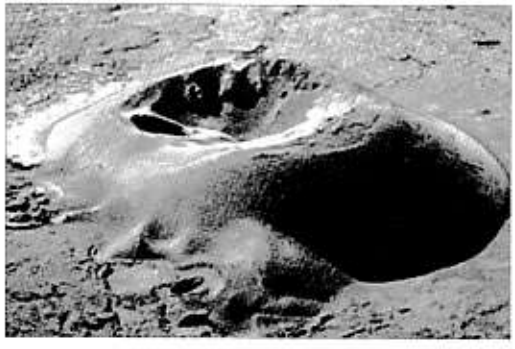
Because the Icelandic language is etymologically very transparent and also because the old place names in Reykjavík reflect life with nature so clearly, the main features of the settlement story can be read directly from them. Thus, for instance, one can read from these names what the islands near Reykjavík were used for in ancient times, as there still were no fences: Akurey (Field Island), Engey (Meadow Island), Videy (Wood Island), Lundey (Puffin Island), Therney (Tern Island) and Geldinganes (Wether Peninsula).

Many places derive their names from the geohermal water: Laugardalur (Hot Spring/Bath Valley), Gufunes (Steam Peninsula) and Reykjavík (Smoke Bay). Already in early times geothermal water was used for washing, bathing and cooking. The availability of geothermal water was later to shape Reykjavík's life in many different ways, as will be explained later. Today the whole city is heated by geothermal water, probably the only city in the world to be so heated. A special bonus that follows from this is that the city, known as "Smoke Bay", is one of the least polluted, and thus cleanest, cities in the world.





A house crushed by lava in the 1973 eruption in Westman Islands. This shows us how dangerous it is to build in volcanically active areas.



Modern man knows from arial photos and maps where the most hazardous areas are, and thus has the means to escape the disasters of earlier generations.

A ship being cut from the ice in Reykjavik in the freezing winter of 1918. The authorities have to explain how the danger of such hazards is taken into consideration in the planning of the city.

An Uneasy Union

For the fun of it, the relations between man and nature can be likened to married life. In the beginning there was the bliss of having found each other, young and untouched. The honeymoon was full of pleasure and plenty, but then the difficulties started to increase. The descendants became so numerous that there was not enough for each of them. In addition Mother Nature started to become so ill tempered that the marriage gradually became very difficult.

In this comparison, Mother Nature's fretful temper of course is a metaphor for her sudden outbursts eruptions, earthquakes and disastrous floods that caught the first settlers by surprise, as explained earlier. These hazards caused by volcanism and storms lashing the open shore had not been known to the settlers while they still lived in Norway.

The reason why the honeymoon passed, for the most part, undisturbed by natural hazards was because people at that time had not yet settled in the most dangerous places in the country, i.e., at the base of volcanoes and in the floodplains of the south coast.

The Age of Settlement in Iceland was therefore a golden era but this was to change dramatically. The number of settlers increased to such an extent that in many places the limits of what nature can sustain were reached, and therefore the quality of the land started to deteriorate. Forests were destroyed, erosion of pastures increased, and because of overfishing, the fish stocks in rivers and lakes collapsed. In addition the climate started to get colder and in years of heavy sea ice the growth of grass began so late in the spring that the supply of hay was spent and livestock collapsed before a new crop could be harvested.

The natural hazards added to the debacle, as in many places they wreaked havoc. Some people had built their homes at the very foot of the volcano Hekla. This settlement was destroyed in an eruption in 1104, buried under pumice and ash like Pompeii in its time.

Because of a cooling climate the overpopulation

and the depletion of some of the natural resources, the standard of living in Iceland progressively worsened during the Middle Ages. This meant that the strength and confidence of the inhabitants also were eroded.

As the force of natural hazards suddenly and inexplicably struck, with devastating results, the teaching of the medieval church that natural hazards were God's way of punishing sinners was easily believed. People sometimes barely dared to leave their farms and not at all to go over the central highlands, which had been quite common in older times.

The nation did not start to find relief from these dire straits until the eighteenth and nineteenth centuries. The most effective influence in this release was that the forces of nature were given scientific explanations. People then started to understand that by applying suitable measures, the difficulties and the damage caused by the forces of nature could be reduced.

Dangerous travel across large rivers, rough lava fields and barren land added to people's fears that evil beings lurked there. The fear of travelling also gradually started to decline as methods for safe passage improved. The steps taken towards this end were small: improvements in roads, rock huts for shelter, cairns for guiding travellers, wooden box trolleys running over a rope strung across a river, and simple bridges. The greatest improvement came with acquiring more boats and ships with the increase in fishing, and then finally the advent of coastal shipping in the second part of the nineteenth century. The new jobs created by the fisheries and the shifting of the transport of most goods and people to ocean-going boats resulted in the shift of most of the settlement to the coastline, leading to the building of the first fishing towns.

Reykjavík, which was established in 1752 as an industrial village for the production of woollens and maritime goods, at first grew very slowly, although some official institutions were moved there from the countryside. In spite of this, Reykjavík was by far the largest village and thus a natural centre in this new pattern of coastal settlements.

The white fist of the mountain threatens men and sheep in this drawing by sculptor Einar Jónsson.

A rest at a cairn. Marking routes by cairns was a precondition for safer travel through this sparsely inhabited country.

Large rivers were at first a very great obstacle to travel. In the early period when there were very few bridges, "cable cars" were of considerable help.

Today most people consider Thingvellir one of the most beautiful places in Iceland. Earlier there was a quite different perception, when some of the most respected people in the country said in a report that this place was "... not only one of the ugliest, but also a place where there are fewest provisions for food."

This shift in employment and settlement of the nation led to far-reaching changes which can be seen as the establishing of a coastal settlement pattern. In 1890 only about 12% of the people lived in fishing villages and towns, but ca 44% thirty years later.

We now have seen that great shifts have occurred throughout the history of Iceland of the patterns of settlement. Originally the pattern of settlement was coastal, but as space and resources became less available along the coast, the people needed to turn mor than before to raising livestock, and therefore moved further inland where grazing land and mountain pastures were more spacious. This created an inland settlement pattern, and land transportation overtook sea transport to a high degree.

The "tool" of land transportation, the small Icelandic horse, had much less carrying capacity than the boats, and in addition the landscape in many places was very difficult to traverse. The fear of evil spirits and imagined settlements of outlaws, made things still worse. The moving of such a large procentage of the population away from the coast also resulted in less contact with other countries, which was unfortunate.

Iceland is not very suitable for agriculture, which in addition to other things, meant that the living standard was low in the times of the inland settlement pattern. The grass often had a very slow start and yielded little harvest, so that the hay yield became the most critical factor in the livelihood of the people. Good grass and farmland were therefore seen almost as divine areas, but the black lava fields and driftsands, which often caused great damage, were seen as profane.

This view shaped the aesthetics of these earlier times. The description of the barren Lake Mývatn area by the famed scientists Eggert and Bjarni, in their account of the exploration of Iceland in the early eighteenth century, demonstrates this very clearly: "As we came down from the heath, the Mývatn area appeared, black and ugly." A similar description was published in a study carried out in 1799-1800 to compare possible sites for the Althing

(Parliament). The report, written by the best and most broadminded men of the time, concluded: "The place at Öxará (Thingvellir) is not only one of the ugliest, but also a place where there are fewest provisions for food."

Most remarkable here is that these two places, Lake Mývatn and Thingvellir, have changed in the minds of people from being some of the ugliest places in the country to the modern perception that they are some of the most beautiful. This change is so striking that it invites further examination.

The main lesson is certainly that beauty always is very much connected to the uses and hospitableness of the place in question. Locations that are useful are good and therefore also beautiful. And conversely, areas that are not useful or even dangerous, like lava fields and barren lands, are therefore both evil and ugly.

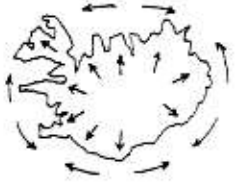
Knowledge of how cause and effect have operated and knowledge of the roots of terms like ugly and beautiful in the history of this nation can help us understand better the mind-boggling changes in attitude towards the city and nature in the course of history.

By knowing this history, we see that the lack of grass by the seaside fostered the negative attitude of Icelanders towards the settlements along the coast. This attitude becomes apparent from the negative tone in the expression "to move onto the gravel", meaning, moving to the coastal settlements.

Still today the understanding that "all is good enough, if it is green enough" is fundamental in the attitude towards city and nature in Iceland, especially among the older generation that still has a sheep's sense of beauty. People have not been able to accept the city, which by nature is asphalt and concrete, unless it is a grouping of buildings on hilltops surrounded by green pastures, like farms in the countryside. What strikes one here as quite remarkable is that in spite of all this grass, it is almost impossible to find a love poem to the city, except by the poet Tómas Gudmundsson. But even in his case his romantic view is that of a man from the country, as he was by origin.

Planning in Reykjavik has copied the custom of the countryside of erecting buildings on the tops of hills. The high-rises mark these spots in the landscape of Reykjavik. Below is the Sölvhóll farm that stood on the top of Arnarhóll Hill into the twentieth century.

These two photos show the close interplay of Reykjavik fisheries and agriculture in the town's most decisive period of urbanization. The first of the figures below shows the early dynamism in the movement of settlement from the coast inland, and the second, the migration to the coast with nineteenth century urbanization.



New Golden Era

Let us now continue our story at the beginning of the twentieth century, as the fisheries were starting to make the nation rich again. The migration of people from the countryside to the shore increased year by year and soon the majority of the Icelanders had settled in the new coastal towns. There bold, new dreams for the future could flourish.

This shift in settlement actually meant, for the common man, a leap in an unbelievably short time out of the ancient bondage of being legally tied to the land and fear. The world of the Icelander was now, suddenly, the new phenomenon of the coastal town. This meant reducing the connections to the natural environment, but the substitutes were the two contact surfaces of these towns with nature, i.e., the coastline and the edge where the town met the hinterland. Young lads stood on the beach and looked towards future and freedom, but at the backside of the town the vista was towards the old ways. There the children had their farms, with bones and shells, and there were located the potato patches and small dairy farms that supplied the town with milk and eggs.

At the shore the future was in the making each day: boats landed, laden almost to the point of sinking, fish were unloaded and processed, and the boats went out to sea again. The quays became larger, the breakwaters longer, and rows of sheds for fish processing and trade were erected along the seashore.

In this way Reykjavik, and other coastal towns, came to be in interplay with the two interfaces with nature: the interface that processed the bounty from the sea and the border that was active in utilizing the resources of the land.

Both these interfaces have constantly been changing as the modes of employment and technology have changed. The coast of Reykjavik, for example the north coast, has experienced many periods in its development, and the city's border

The left-hand photo shows an integration of a cabbage patch with outdoor life, and the one to the right how the view earlier was open from the town centre to the harbour through narrow passages. This kind of visual connection to nature must be provided for in modern planning.

with the land in each period has left behind the marks of its progress, like the growth rings in a shell.

The history of these edges will be recounted later in this book and also the story of other interfaces that have influenced how the city has progressed. Tracing this history, which up to now has been almost unknown, will reveal a new vision of how the city developed. This vision can help us understand where we have lost opportunities and contacts with nature and how we can recreate them.

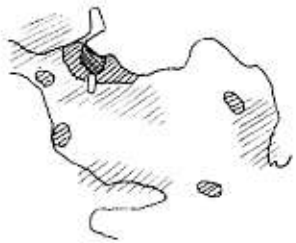
The most important thing in this period of history that is dealt with in this chapter, is that the first urban areas villages and towns were then in their formative stages. The period of a thousand years of integration of man and nature is nearing its end, and a new period where man lives within urban areas, and nature is outside, is beginning.

Integration with nature can be enchanting, but in the Middle Ages, with its poverty and lack of tools, man was at the mercy of nature, which alternately caressed him or slapped him down. The freedom from this uncertainty, that man has obtained inside the shelter of the city, is good but at the same time, many things have been lost.

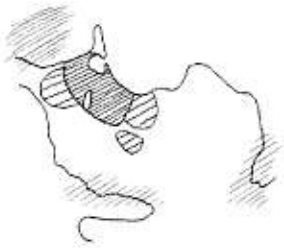
Although Reykjavík developed into a town at the beginning of the twentieth century, its connections to nature remained strong for a long time. The main reason for this was that the livelihood of the townspeople, far into the century, to a large degree depended on what nature gives, i.e., the bounty of both the ocean and the land.

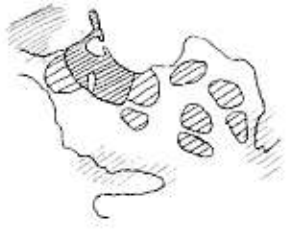
The abundance that came with the occupation of the British and the Americans in the Second Word War started to change this dramatically in Reykjavík. The modern city, which is first and foremost a service centre, started to come into being. As this happened the connections to the natural environment of the ocean and the land became less important, and the vision of the city turned inward.

The "suburbs", which earlier were built some distance from the town in Skerjafjord, Langholt and Bústadaháls, now started to be built closer to the central town, i.e., on the barren Melar and



Modernism in architecture was almost devoid of interest in connecting the inhabitants with their social and natural environments. Such residential silos were planned as storage space for the working class, whereas bungalow areas with large gardens were planned for the rich in the most beautiful areas of the town.





Holt areas which were hardly the preferred places of the newcomers from the countryside. Here standardized and partly mass-produced concrete houses were built, and in these neighbourhoods the first generation of Reykjavík natives "grew out of the grass", as is still said today.

Nevertheless, this new generation still were country people because most of the children and youths were sent for three to four months every summer into the country to work. This generation wrote the first real books about Reykjavík, for example, the books about the boy Andri by Pétur Gunnarsson. The countryside remained a large part of the writers' mental world because as these "city writers" took to their wings and started to write poetry, it was not the city but the countryside that illuminated their minds.

The next generation of neighbourhoods and writers came to be in the Hlídar, Sólheimar and Vogar areas. These writers seem to have spent their summers in the city rather than in the countryside because the latter is not prominent in their books. Still, their works do not really celebrate the city but rather express their disgruntlement.

Why this is so leads one to wonder: Is it because these modernistic neighbourhoods are so ugly and boring? Is it because the city centre has had almost no urban life? Or is it because the city was planned with the goal of trying to be both city and countryside, with the terrible result that it is neither.

But how should city planning aim at establishing and preserving an interplay of city and nature? The opinion of the author of this book is that the city should be allowed to be a city, and nature, nature but now with an emphasis on a carefully planned interplay with each other. And this special and enchanting interplay of course can best be realized at the edges where city and nature meet.

The edges; the coastline and the line where the city meets the heath to the east, are unusually long and offer enchanting possibilities for connecting residential and outdoor areas directly to nature. Why this has only been realized to a small degree in the modern city will be explained in the next section.

5 Age of Alienation

Origins of Alienation

The first part of this book explained that Western dualism is the origin of alienation and the lack of connections in our culture. Dualism divides binary pairs into opposites – in a way that defines the one element as good and remarkable and the other element as bad and lacking. An example of one such pair is the dyad of city and nature – phenomena that have taken turns in being considered good or evil in the history of Western culture.

The holistic worldview that now is in its formative stages also deals with these pairs separately. The different attitude towards these binary pairs in the East, however, has its origin in the understanding that such pairs originally come to be through a polarization of the same reality, and therefore both of the polarized halves are equal.

Because of this, it is illogical to say that one of them is less important than the other. Following this scheme, pairs such as city and nature or house and garden should be seen as equally good and important, and designers should focus their effort on helping their marvellous interplay materialize.

Reykjavík originally – like other Icelandic coastal villages – was in a productive and enchanting connection, both to its adjacent water area as well as to the natural environment and the countryside along its landward border.

After the middle of the twentieth century, however, things took a turn for the worse, as concerns this connection. This was caused by the lessened dependence of the city on the occupational activities linked to the sea, and also because of the decline of the farming at the city's hinterland border.

The period after the Second World War, until about 1970, was a baffling period in the history of culture. In this period the inhabitants of Reykjavík – and as a matter of fact most Icelanders lost their footing in the face of the avalanche of technology and the feverish building activity of that time so that almost all understanding of the treasures of nature and the environment evaporated. Most people, for example, were so blinded in regard to the beauty of the old buildings in Reykjavík that it was considered necessary to announce a competition for the beautification of the environs of Lake Tjörnin in 1951. The first prize went to a proposal that advised the demolition of the old buildings and presented a design of ugly, modernistic concrete towers! The blindness started to be relieved around 1970 – and the painting of the decrepit Bernhöftstorfa houses in 1973 by activists, can be taken as a watershed.

Dozens of very beautiful old buildings in the town centre were demolished without a reason – an act of destruction that can never can be put right. And on the outskirts of town, bulldozers and graders were tearing at and destroying the natural environment so that spots like the Raudhólar pumice heaps and the gravel quarries in Mosfellssveit today look like the aftermath of warfare. Only now have people finally started to try to patch up the damage.

The coastline of the city, that earlier was exceptionally beautiful, was more than anywhere made to pay the price: untreated sewage was released directly onto the beaches, every concavity was filled with rubble from house foundations, and every skerry, lagoon and islet was submerged in the filth. Did anybody protest? Very few – and it is completely wrong to hold only those who were in charge of public works responsible, because everybody knew what was happening and almost everybody was struck by the same astonishing blindness towards how much beauty and natural treasures were in the process of being destroyed.

It is necessary to pause here at this point and try to understand how this blindness and alienation could have happened. In the proess of doing so we need to ask ourselves whether we who live in Reykjavík are still, to some extent, struck by blindness towards these valuable natural treasures or perhaps to other values that might now be in a comparable danger.

Let us again turn to the study of the roots of

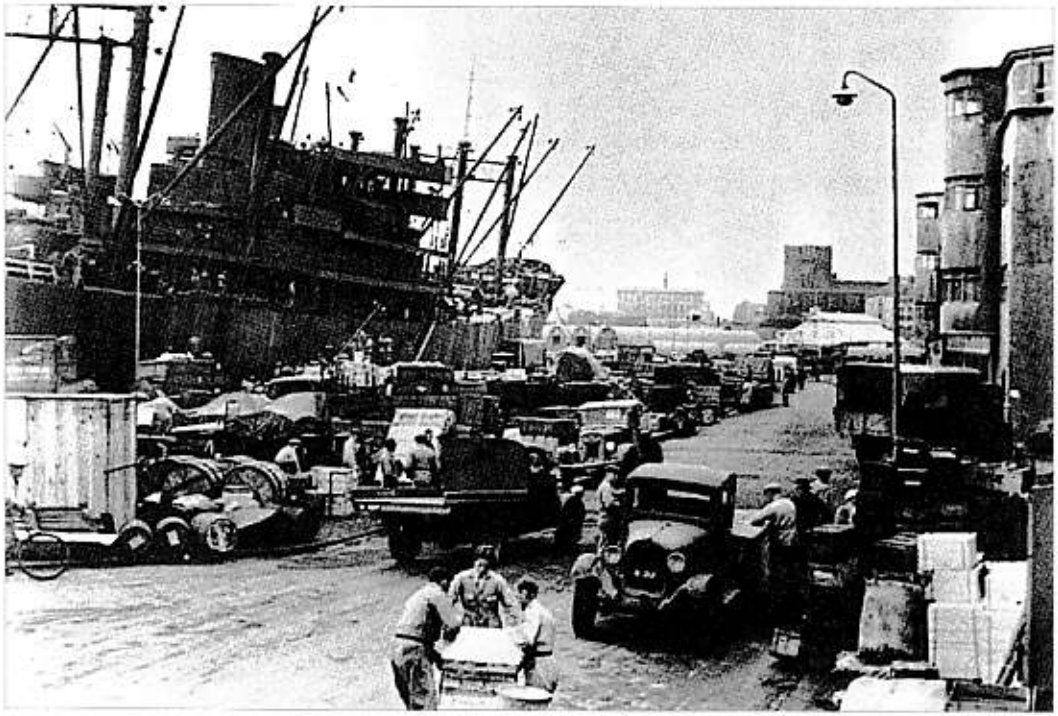
Urbanization was pursued with religious fervor, so nothing could stand in its way. The same holds true for industrialization; the workers were made a part of the mechanical world of the conveyor belt and craft work went into decline. Neither results are considered positive today.

modern alienation, i.e., to the dualism with its severing of the links that connect binary pair action and responsibility. We now have to put this whole matter into a wider context. Here it is quite illuminating to study what happened in a similar way in other countries. Let us first look at the case of the beautiful old city centres. Many of them were wrecked in World War II, and in other places modernism finished the job of destruction and presented us instead with terrible, modernistic boxes. Quite remarkably modernism was not allowed to destroy the old town centres in the East bloc, although the design of the suburbs was nowhere more terrible than in the East.

The treatment of nature was also very bad in most European countries, but the blindness to the ravage of this technocentric era started to decline earlier in Europe than in Iceland. One reason for this is that the industrial and technological revolution started much earlier in most other European countries. The British, being the oldest industrial nation, had already gone through most of the controversy over values and ideas in the second part of the nineteenth century.

The discussion in Britain clarified core elements as to what profound influence this revolution had on societies – as well as on man's position in the world in general. It was, for example, a matter of great concern that the industrial revolution led to the break-up of a societal pattern where each individual was accorded some measure of respect and dignity. What came instead was a faceless mass of workers who had lost the art and craft content of their work that earlier had given them fulfilment and pride. This was replaced by terrible mechanistic chores and awful social conditions in soot-drenched industrial quarters.

This was no small change from the life of the craftsmen who had lived in a small village and for people who previously had lived in the countryside. No wonder that many idealists concluded that not much was to be gained by this development towards urban industrialized society. One of these was William Morris. As he got to know the Icelandic



On one morning in May 1940, the life of Reykjavík changed completely. The harbour was filled with warships and the British army disembarked to occupy the town. The occupation force immediately started to raise camps in the most open areas in town and to make fortifications of sandbags.

Saga Age, he saw it as a splendid societal model where everybody was in charge of his own destiny, free from the oppression of an upper class.

Many other foreigners held a similar view, i.e., that one should look for examples in societies like that of ancient Iceland, societies that were in close contact with nature and also not too rigidly stratified into classes. Many of these people travelled to Iceland and as the Icelanders learned how much esteem and adoration people in other countries accorded Icelandic history, it helped them to regain some of the lost respect for themselves and things Icelandic. This was very important because Iceland had undergone long ages of destitution under a foreign power that scorned Icelandic culture and the Icelandic nation. Bearing these historic sketches in mind we can understand better what happened during the Second World War and in the ensuing decades.

At the beginning of the war people in Reykjavík still had few material possessions, and people were still suffering from the Great Depression. One early morning in May 1940, the harbour of Reykjavík was suddenly filled with warships laden with goods and soldiers in uniform. The British army disembarked and started to occupy all the main buildings and open areas in the city. Nothing that was linked to Icelandic sovereignty had value anymore; the society was castrated like a colt early in life.

Again the Icelanders were under the paw of a foreign power. This time this did not mean exploitation, but the provision of lodging and services for the occupying forces – though, indeed, for a considerable sum of money. The British, and still more the Americans later, brought with them immense amounts of trucks and tools of the highest technological standards. By sitting down at the controls of a powerful bulldozer the cuckolded Icelandic could see the possibility of regaining some of his respect in the eyes of the Icelandic women – and in the process, also for himself. The bulldozer operator who uprooted nature the most and the longest and turned it upside-down was the greatest and best.

The social effects of the occupation were enormous. Icelanders were then still very poor and countrified and therefore it is understandable that soldiers in uniform appealed to the girls. – The photo below was taken after the war as the British gave Iceland the airport.

The displaced workers from the countryside who flocked to carry out the work needed by the military looked with envy on those who had already built themselves new homes. Possibilities of gaining dishonest extra money were plentiful – and corrupted the morals of these innocent people; the split between action and the responsibilities that come with them had become wider. This also resulted in taking less responsibility towards society and the natural environment, as can, for example, be seen in the blindness to the qualities of nature that were destroyed in Reykjavík and its environs.

With all the fine jobs for the military, the respect for the branches of trade connected to the natural environment on which the city was based also started to decline. The women now said that the seamen, the harbour and the coast did not have a very pleasant smell. And men from the country were well advised to erase as fast as possible all traces of their connection to the countryside and nature.

There are, without doubt, other explanations as well as to why, in Reykjavík, most values connected with nature and its beauty evaporated. And one also needs to remember that something similar happened in most other countries. This blindness, however, seems not to have reached a comparable degree in most other countries, and the destruction of nature in the first two decades after the war has few parallels.

One of the reasons for this was how enormously fast the city expanded at that time, or from ca. 40,000 inhabitants in 1940 to ca 78,000 inhabitants in 1965. In connection with this insensibility, one needs to keep in mind that value is often raised by scarcity. As Iceland is a country with a very low population density, the abundance of natural treasures everywhere makes people rather unaware of how precious they are.

This same holds true in the Reykjavík area itself because from the very beginning the settlement was very much spread out, often leaving large tracts of untouched land in between settled areas.

Separation of City and Nature

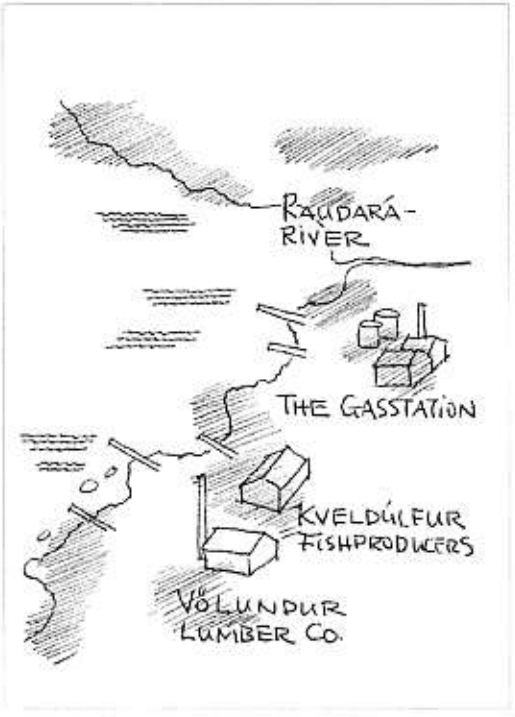
The planning maps for Reykjavík offer an opportunity to compare changes from period to period, and in this way to study the changes in attitudes towards nature. There exist maps suitable for this purpose for every decade of the twentieth century since the 1920's.

The first master plan for Reykjavík was issued in 1927. There one can observe that the whole coastline at that time, i.e., from Selsvör to Raudarárvík, was planned as an area for industry and warehousing. This was to be expected because such activity already at the turn of the century had started to spread along the coast. Many of these firms, like Völundur and the Gas Station, had their own private piers running down the beach into the water. Here therefore a pleasant interplay of land and water developed. As the harbour of Reykjavík was developed in 1915, it meant an end to this because then all the loading and unloading of ships was moved into this new, safe harbour.

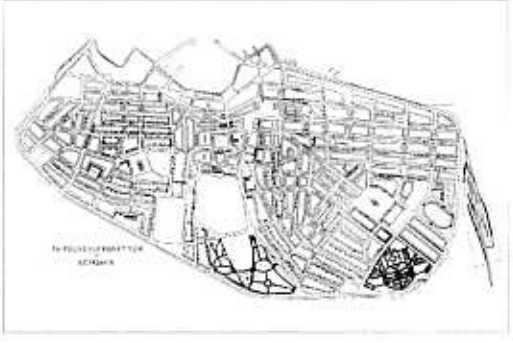
Instead came the need for new, good roads along the coast, leading into the harbour area. These roads today are called Ánanaust, Mýrargata and Skúlagata. To some extent they were built on landfill, but in the process marvellous coastal landscapes with coves, rocks, skerries, sand beaches and lagoons were submerged. This vibrant and beautiful contact area between the town and the ocean was thus destroyed.

The map from 1937 shows a more cautious attitude towards the value of nature. No industry is shown on the whole coast to the east of Raudarárvík Bay. The first sketches for the residential areas of Tún and Teigar show them directly by the coast and the two creeks, Fúlutjarnarlaekur and Laugalaekur, were not meant to be encased in sewers but rather to glide in curves through green areas into the lagoons at the beach. Residential areas also stretched all along the south coast.

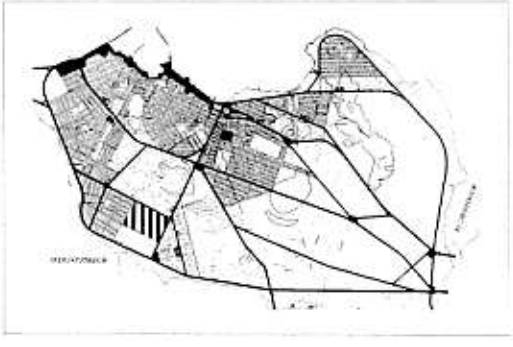
But now the war years had come and the notorious plan of 1948 followed in their wake. This plan proposed that an industrial belt should



Originally many companies that where located by the coast, where the Skúlagata Avenue is now, had their own piers. The interplay of ocean and town at this place was therefore both very strong and pleasant.

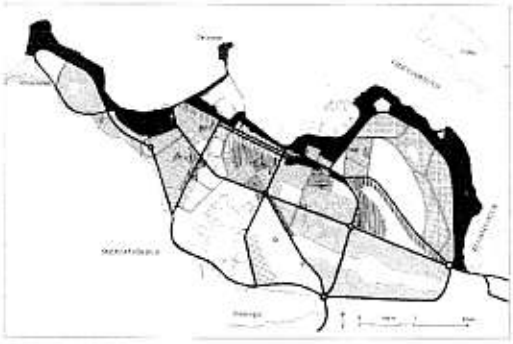


In the first master plan – issued in 1927 – it was decided to allocate the whole north coast of the town at that time for industry.



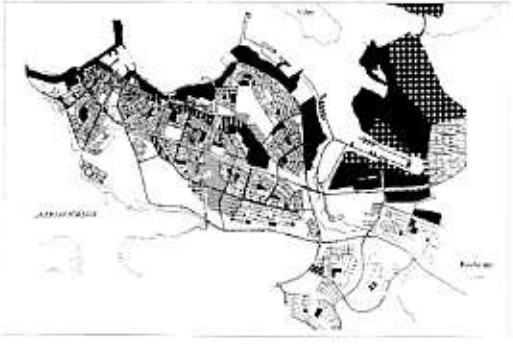
The plan of 1937 displayed a more cautious attitude to the natural environment than did the 1927 plan.

The plan of 1948 made the grave decision of allocating the whole north coast for industry.

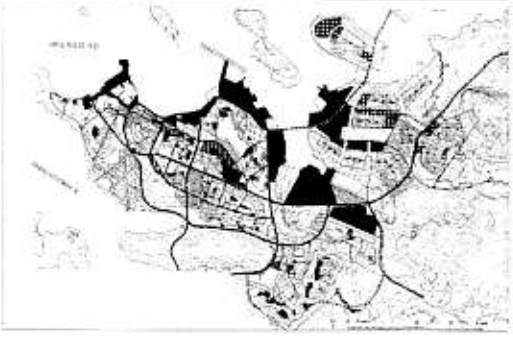


The planning proposal from 1957 suggested that the airport should be removed and provided for residential areas along the whole south coast (grey shading).

The Danish master plan of 1965 went still further in setting aside the north areas for harbours and industries, or all the way north to the Geldinganes Peninsula.



The plan of the Development and Planning Office in 1977 took great steps towards recapturing some of the coastal areas for residential and outdoor areas.



run along the entire northern coast, i.e., from Grótta to Ellidaárvogur. In this plan, not a single outdoor or residential area was shown on the coast or in connection with it.

Along the south coast the situation was somewhat better: residential areas were planned from Seltjarnarnes to Sudurgata – and also on the south slopes of Öskjuhlíd hill. The airport, built by the British, was now included in the plan, as well as the Fossvogur cemetery which, together with Öskjuhlíd and the airport, still today prevent the city from reaching the beautiful south coast, except by Aegisída and Skjól.

The plan of 1957 foresees some amendments because the airport is meant to be moved and residential areas are planned there instead, that is, along the coast from Sudurgata to the cemetery, i.e., also on the southern slopes of Öskjuhlíd! Along the north coast no corrections were made, except that now Kleppur is shown as a green area. In a new section east of the Ellidaár River, a new industrial area appears on the slopes of the beautiful Ártúnshöfdi. This area reaches into Grafarvogur Bay.

The plan made by Danish planners in 1965, went still further, proposing landfill and harbours from Laugarnes all the way to the bottom of Grafarvogur. This beautiful coastline would have been magnificent for outdoor and residential areas. But today it has been submerged. The whole coast and the land north of Grafarvogur were planned as an industrial area, and the Geldinganes Peninsula as well. The decision that the road along the north coast, Saebraut, was to become a city highway underlines still further the separation of the city from the coast.

The 1977 plan of the Development Institute does much to reduce the effects of the bad decisions made in earlier plans. Examples of these are the changing of the industrial areas at Eidsgrandi, Skúlagata and Laugarnes into more human land uses. Also the inner part of Grafarvogur is now shown as a lake, and the industrial area north of it is changed to a residential area. The same holds true for Gufunesmelar and Geldinganes.

The industrial areas north of Grafarvogur are again increased in the 1982 plan made by the Planning Office for the Leftists, but a considerable number of residential areas, on the other hand, are shown "on the heaths", i.e., by Lake Raudavatn and its environs. Here the Conservatives discovered reports of faults in the bedrock before the elections of 1982, which played a big part in their winning the elections. After that they changed the conception of the plan's residential areas in the direction of coastal development. Since then no great changes have been made in the planning of these areas, except that the two political parties in the City Council have not been in agreement about the planning for Geldinganes and the Eidsvík Inlet.

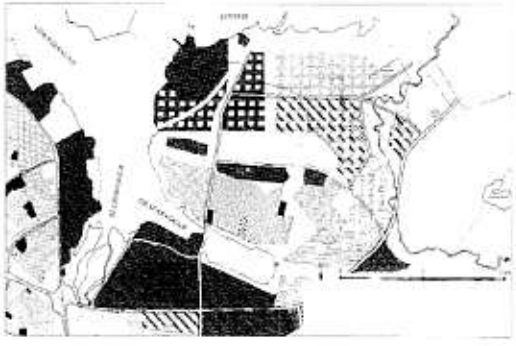
It is the opinion of the author of this book that a large container harbour like the one planned for Eidsvík has no place in the middle of a residential area – and in addition, this natural inlet today is one of the most beautiful places by the Sund (Sound). Quite the contrary, a plan should be made to rid the most beautiful coastal areas of polluting activity. In this connection, the Gufunes fertilizer plant and the asphalt and concrete factories on Ártúnshöfdi can be mentioned.

Actually, one should go still further, as is done in many foreign cities, i.e., totally move all polluting harbour activities from the city and relocate them in a special harbour area. The area the Straumsvík harbour is the natural site for such an integrated transport centre for the Reykjavík area – but the capital area's petty kings and parochial polities prevent that from happening.

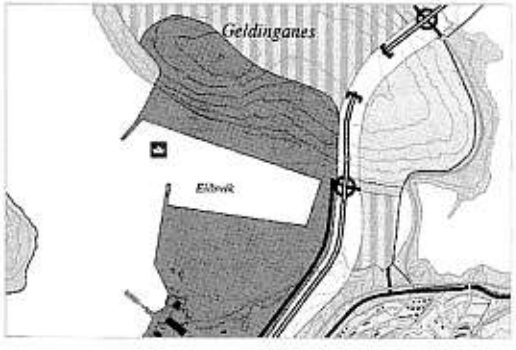
A study is needed to re-evaluate the coastal areas, a study that defines the best coastal areas and districts where outdoor and residential areas can best be linked to the beauty of the coast.

An example of such a beautiful area is the inner part of the Sund, e.g., at the waterfront at the Björgun and asphalt and concrete factories, as well as on the other side of the Ellidaárvogur Bay from Háubakkar to the Sund harbour. If this were done the proposed bridge over the Sund would not need to be elevated to almost 50 meters, but instead a

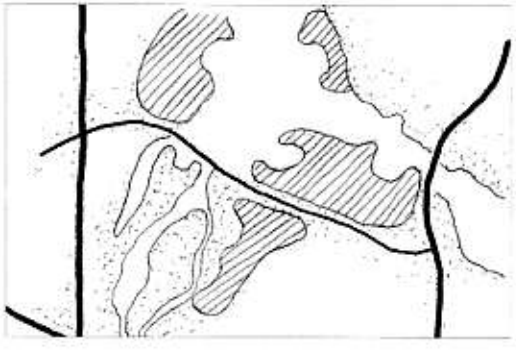
The 1982 plan called for residential areas to move toward Lake Raudavatn. The discovery of faults in the bedrock there brought an end to that plan.



Already in 1983 the new conservative majority in the City Council presented plans for a residential area north of Grafarvogur Bay.



One of the biggest discussion points in the planning is whether a harbour for large freighters should be placed in Eidsvík. The picture is from the 1997 plan.



An idea for residential areas, both on Ártúnshöfdi Hill and on landfill that would surround the body of water in Ellidaárvogur Bay.

A bridge should be built over Ellidaárvogur Bay. By removing the harbour activity that is now inside the area the bridge could be much lower and cheaper, and there would be space for a beautiful coastal residential settlement.

much lower, less expensive and more beautiful bridge would be sufficient for seafaring needs.

A long-term plan needs to be made to achieve such dramatic changes in land use. If this is done the expense will not be that great because everything has a limited lifetime and ends up being of almost no value.

In such a long-term view, the planning of the coastal areas and the adjacent water area should be seen as one task because the activities on the land that borders the sea need to have a relation to the water outside, both functionally and in terms of appearance.

Residential areas, as an example, should not be built at a cargo harbour but rather at an ocean area that is fit for outdoor and boating activity that naturally goes with a residential area. Only with such pairing of land and ocean areas does complementarity come into play, with the result that the ocean area becomes more beautiful because of the coastal settlement and the settlement more beautiful because of the water area.

Now: What is the main conclusion of this section? It must be that the planning of the interplay of the city, the coast and the ocean areas has not been successful in Reykjavík in recent decades. The main reason for this is that there has not existed a methodology on how to link the city and the natural environment in such areas.

The other main conclusion is that we have not had an understanding of the natural values of a coast and an ocean. In addition, it was very unfortunate that the first master plan for the whole Reykjavík peninsula was drafted at the peak of insensitivity during the post-war period, i.e., in 1948.

It is very difficult to correct the colossal mistakes of the plan, which was to give the whole north coast of Reykjavík over to industry but with a focused long-term plan many things can be corrected!

The fast pace of the building in the eastern part of the Reykjavík peninsula was also unfortunate because there was so little time to assess the plan: the whole area was finished in less than 20 years, i.e., around 1965.

Another unfortunate thing in the building up of these eastern areas was that it was exactly this period that was the worst in the architecture of the modernistic block neighbourhoods – not only in Reykjavík but also in most other cities in the world.

In most countries the worst period was over in the 60's. People then began to realize how bad these apartment block neighbourhoods are and the younger generation had started a fight against "architecture without a soul".

Separation leads to Alienation

This book has explained how the Western method of dissection has cut apart the integrated wholes of society and human existence. This method has created mechanistic boxes where, for example, young, old, rich and poor dwell in isolation.

The young people, for instance, are brought up in schools that are mostly devoid of contact with older generations, and old folks are stashed in high residential silos, in places where there is no city life. The rich isolate themselves in private clubs and in neighbourhoods of their own, and the less fortunate are heaped together in workers' quarters.

Another type of segmentation is the separating of the basic elements of our lives, for instance sleeping, working and shopping. This is what shapes the life of modern man: dead residential neighbourhoods, ugly working districts, and conveyor-belt shops.

The lively mix and the fulfilment that we experience in old districts are qualities that are unthinkable in cities that have the machine as a model. The mechanistic planning of the modern city simply means a mechanistic life for the inhabitants.

Let us now look briefly at what has happened concerning the connection of children and youths to the world of work. Earlier almost every child went to the countryside in the summer, taking part in all activities: haymaking, milking, home-slaughtering, breaking horses, shearing sheep, and rounding up sheep and driving them into the mountains. The most children get today is a few days or weeks at a summer camp.

Only a few decades ago almost all places of work and trade were open and integrated with the common life in the city. Let us take the Old Harbour as an example. The quays swirled with life – places that today see only container-lift traffic. Boats came to land, the seamen gutted the fish, and people came there for a cheap meal.

The children from the neighbourhood spent all their time in this world of adventure, fishing from the quays, helping in tying and untying mooring lines, and going out with the fishing boats.

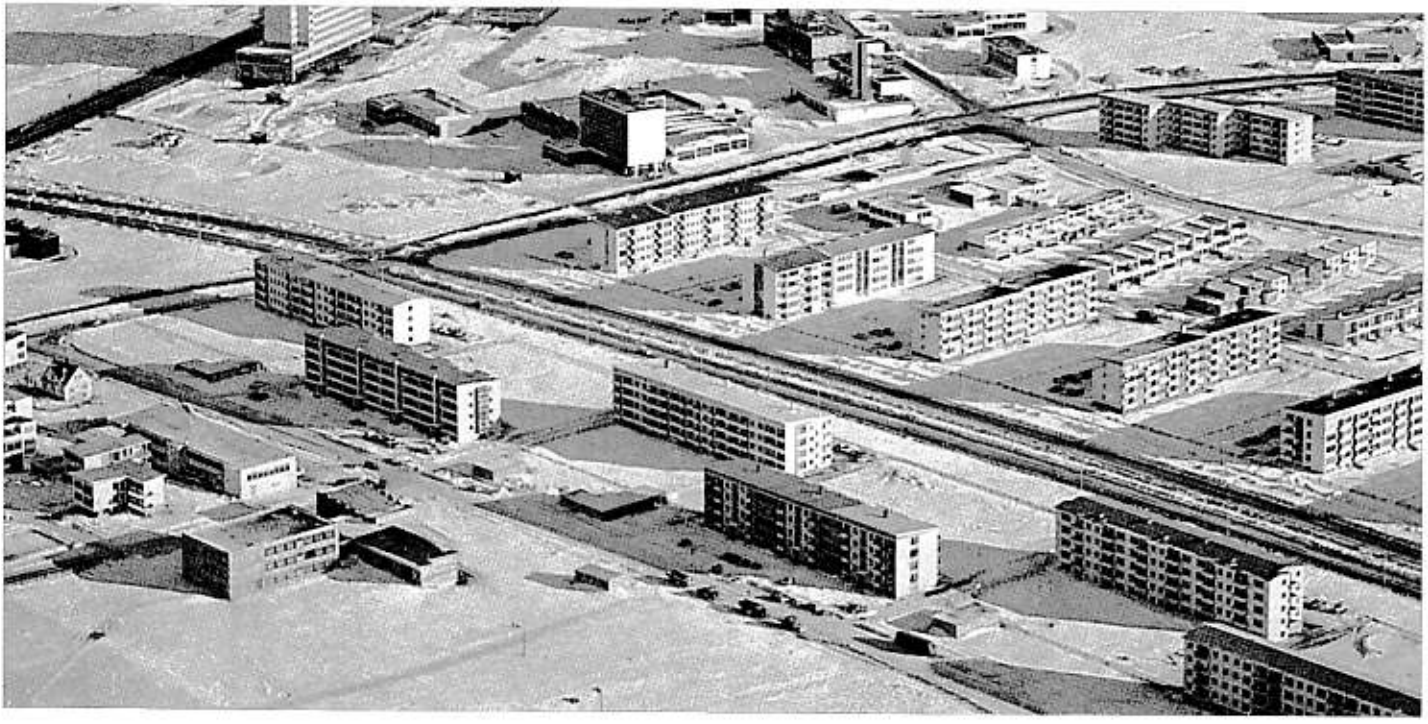
But how is the new Sund harbour today? Today no children are allowed into the area; the enchanting world of ships and coast is off limits. And the neighbours are holed high up in the blocks of flats across the thoroughfare, which the children cannot cross without guidance because of the traffic. This is quite a change from the world of adventure that the area was earlier, with the Vatnagardar lagoon and all the rocks, slopes and hills by the beautiful blue Sund.

Everything in the city now has been divided into boxes, resulting in a lack of connections between generations, work and play, and city life and the adjacent natural environment. And it is mostly the youth that lose out because the whole environment, social and natural – all of it needs to be a school for young people.

And what of the people in the boxes? Do they enjoy life? Ask the old people whom nobody visits. Ask the girl who stands beside the conveyor belt in a canning factory from 9 to 5. Ask the children that are alone at home as the parents are at work the whole day in another area. Are we satisfied with this kind of life, where everybody is isolated and alienated? No, hardly. And if we conclude that this is a life we do not like, we start to realize that many things have to change profoundly. And the very first step needs to be a true awakening to the fact that this is not a healthy and pleasant way of life.

Right at this point we begin to be confronted with many types of problems. One of them, strangely, is because of man's amazing ability to adjust and his constant urge to be content with the environment he lives in. Therefore, we are quite unaware that the segmented city has shaped us in such a way that we tend to perceive separations as good and beautiful.

The same holds true for the modernistic blocks of flats; we have got used to them. A few years ago a photo was published in one of Reykjavík's newspapers. At first glance this seemed to be the "friendly" apartment blocks in the Háaleiti area. But after reading the caption it became obvious that this



The two pages in this spread compare the tragic world of Modernism, where no street space is created at the main city arteries, as here at Kringlumýri, and then the contrast on the opposite page with the beautiful and organic street spaces in the old part of town.

was not the case, this was instead a picture of a Siberian town. With this realization our perception of the image changed completely. The friendly blocks now suddenly became soulless tundra buildings, devoid of contact with their surroundings.

This example shows us that we cannot trust our impulses; we need a theoretical elaboration in order to be able to discern what is good and what is bad in the planning of our society and our cities. And that is exactly what is to be achieved by the theoretical elaborations in this book.

Now somebody might say: We understand this about the segmentation and how bad the lack of social contact is – but why all this talk about the necessity of connections to nature and the importance of wholes, balance and harmony?

Yes, we are here dealing with emotional qualities that are much harder to explain than the functionalistic qualities. Let us again take a look at the Western dualism that divides all binary pairs into two elements where the one element is remarkable and the other unremarkable. This is so thoroughly ingrained in our being that we see nothing wrong with it.

A look at a few sets of pairs will help us realise that we Westerners are hardly ever in doubt that the first element of each of the three pairs that follow is the more remarkable: *The logical* – the illogical, *the materialistic* – the spiritual, *the functional* – the emotional.

If one is working on the planning of a city, which of the two elements do you think are dealt with in the work? Yes, the first one, of course. Its value is so easy to understand. If, on the other hand, one were to ask about the value of the two elements of these binary pairs in the creation of a work of art, most people would point to the second element.

This elaboration shows us that most people today only look at the city as a functionalistic thing, i.e., that it should only be designed as a machine to live in. Yes, this is the way city planning is conducted in our mechanistic times.

Even the question as to whether something is beautiful is hardly ever asked! Or what do you

Thingholtsstraeti Street. Here we see how much more beautiful and humane a settlement becomes with a variation in architecture and by incorporating trees in the street spaces. – Below is Thórsgata, which has been turned into an eco-street.

think about the question: Is Kringlumýrarbraut Avenue beautiful? People are taken aback by such a question – one should not even try to answer such a stupid question, we tend to think.

But if we start to think about this carefully, we realise that it is important to try to make streets, squares, gardens and houses beautiful – we feel better in such an environment, in such a city.

The conclusion is therefore that a city should be designed both functionally and also according to the same principles as all other works of art. And in all creation of art concepts like wholeness, balance and harmony are of central importance – and thun also in the designing of cities.

The pleasure we take from contacts with nature are somewhat different from the spiritual fulfilment man enjoys as he listens to or looks at a work of art. Both, however, are definite needs that we have, just as we have a need for vitamins and certain foods.

At this point in human needs, we Westerners often choose to disregard the spiritual side of things, in our case here, the spiritual need of people for close contact with nature. This disregard derives partly from the Western understanding that man is superior to nature and that it is his inborn right to regard it as subservient and of no real importance in our lives.

If, on the other hand, we turn this around and say that nature is the mother of all that lives, we have created a totally different perspective.

This view of reverence for nature is gaining a foothold. And many think that nature will replace the machine as the scheme we regard most highly because it is more proper as a model of the world, and therefore also of ourselves as humans and societal beings.

6 Age of Reconnecting

Connecting Man and the Environment

As explained earlier, the Second World War was the beginning of a period of an astounding recklessness in the treatment of nature and the environment. Machinery and chemicals were, without mercy, turned against nature to serve the human urge to increase utilisation of natural resources without regard to the ecological consequences.

What today is most baffling to us is both how blind people of this period were to how high the sacrificial costs were in terms of the natural environment and that people were very unaware of the links, for instance, between the use of pesticides and the health problems in humans and the despoiling of nature.

In 1960 Rachel Carson published her now famous book *Silent Spring*. This book tells about the effects of chemicals on birds and also on the ecosystems of rivers and lakes. The book was written in such an eloquent way that it awakened the whole world to an awareness of the terrible danger of pollution.

Suddenly mankind realized that unrestrained and unheeding utilisation of resources would lead the world into enormous difficulties if not contained early enough.

The Icelandic nation received a needed admonition of how dangerous uncontrolled resource utilisation can be when the Icelandic-Norwegian herring stocks collapsed in the second half of the 60's – and led to a difficult economic crisis in the country.

Icelanders received another similar reminder in the 70's when the cod stocks were close to collapse, which would have meant the total ruin of the Icelandic economy. It was the extension of the Icelandic fishing zone in the eleventh hour that prevented this from happening.

Only dramatic lessons of this kind are capable of making people understand that there is a strong cause and effect relationship between human actions and the sustainibillity of the environment. When we have realised this, we can begin to understand that our future depends on our learning to cohabit with nature with moderation and respect. This "new realization" has meant that people gradually have started to get accustomed to a method that says that every major undertaking should start by a study that clarifies whether the natural environment can be sustained in the face of the strains of the proposed developments.

Most academic disciplines then began serious studies of how this new understanding could change the ways these disciplines work. A watershed book of this nature, in design and planning, was published in 1968. It is called *Design with Nature* and was written by Ian McHarg. This is considered to be one of the most important books in the history of city planning.

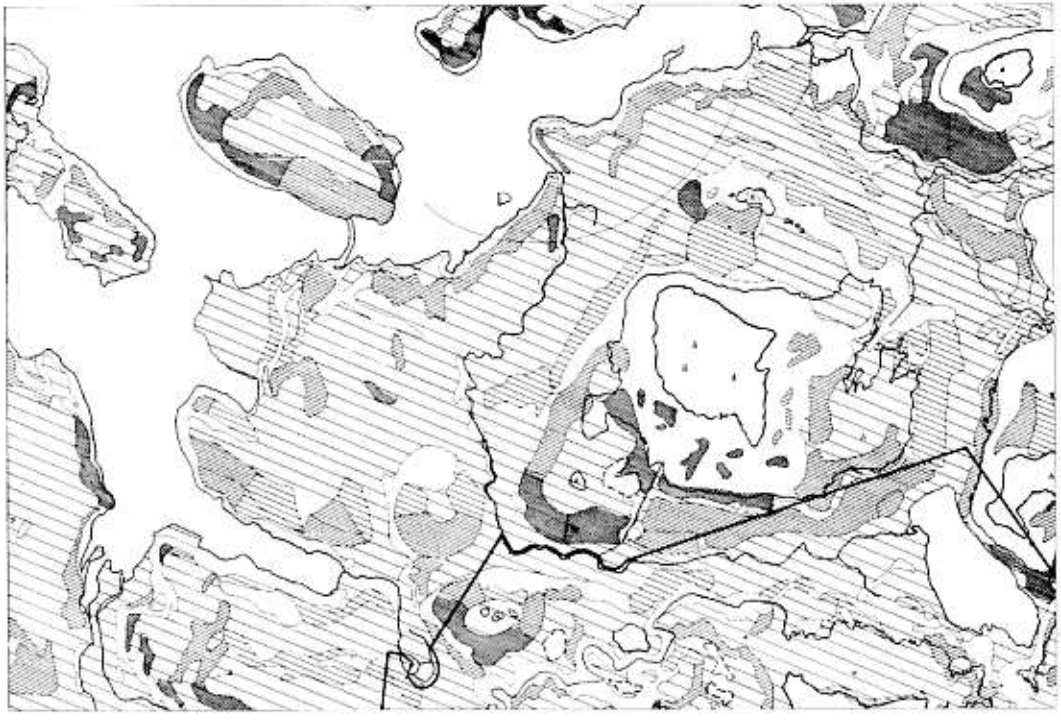
As the name of the book indicates, it was written to combat the ruling method of today's city planning – to plan cities "against nature", that is, without enough respect for the natural environment at the site where a city or neighbourhood is to be built.

In contradistinction to this, the method, here in its formative stages, is aimed towards a thorough study of the natural setting before any planning starts. McHarg's method processes the information so that it tells us how the planning of the city can best be adjusted to the natural environment.

The main tool for achieving this is the making of maps that analyse the various aspects of the natural conditions at the site. This includes natural assets we want to conserve, the mapping of mines we would like to utilise before construction starts, the mapping of areas most suitable for buildings, etc.

Already on the founding of Reykjavík's Development Office in 1972 – which continued where the Danes had left off – such a mapping method was introduced in the preparation for the planning of the areas north of Grafarvogur Bay. This was the first time these methods were employed in Iceland.

What is quite remarkable with this method of



The Development Office conducted a study of natural features in the areas north of Grafarvogur in order to be able to fit the plan to the natural conditions there. This map shows, with dark shading, what are the best slopes for low houses that are meant to provide a view and enjoy a good exposure to the sun.

"adjusting to natural conditions" is that this is the method people had to use in earlier times when they were selecting an area for settlement. This came from the necessity of gaining the best harvest possible – as well as the need to try to avoid the areas where nature, for example by floods or shifting winds, could wreak havoc on settlements.

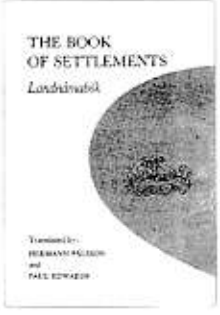
It is almost certain that it was such a study of the natural conditions that the slaves Vífill and Karli were meant to conduct in their three year exploration for their master, Ingólfur Arnarson. They were actually meant to study all conditions for settlement. Centuries of living with the country perfected this knowledge to such a degree that most old Icelandic farmsteads are admirably well situated.

When it came to the point in the development of technology that man came into the possession of the power of the engine, he became so filled with arrogance because of his might and splendour that he thought he had no use for the experiences accumulated by earlier generations; these generations were so primitive that nothing could be learned from them.

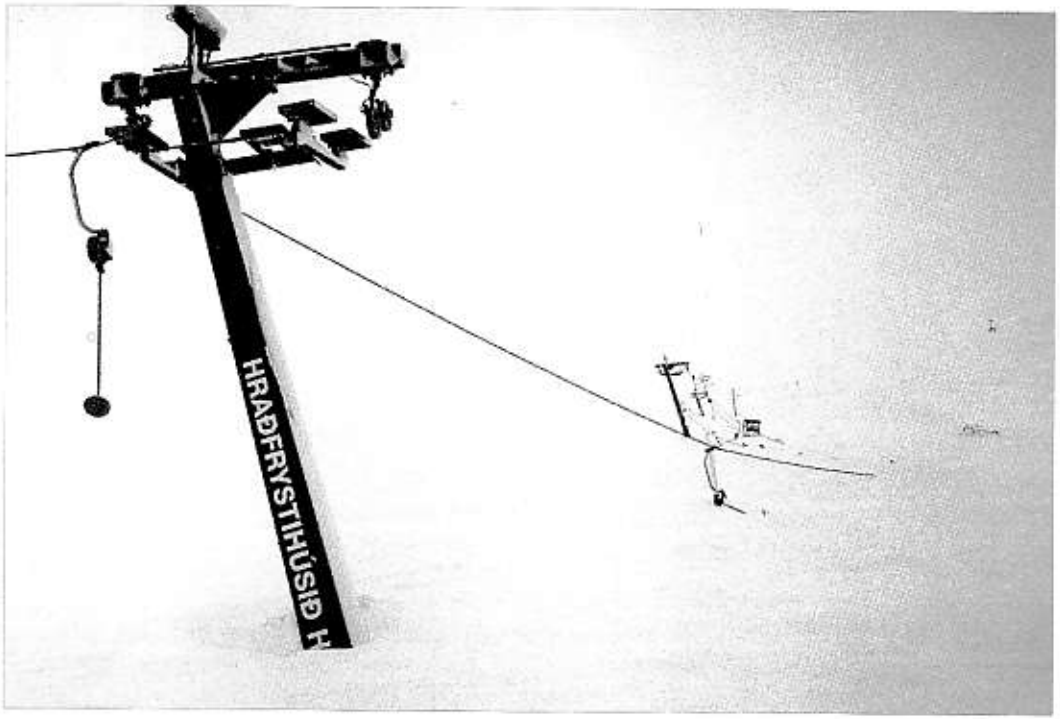
But "pride cometh before a fall" and now, gradually, the consequences of the haughty and unheeding placing of settlements and construction in Iceland in the most recent decades are coming back to us. Some have even been swept away in seconds in avalanches, mudflows and ocean flooding, with the loss of lives and enormous amounts of money.

As people started to realise that even the future of mankind could be in danger if human endeavour and the environment could not be brought towards a peaceful co-existence, international bodies initiated widespread analyses of the situation and began to form rules as to how man's conduct here on Earth has to change to avert disaster.

One of the most famous of such reports was the Brundtland report produced by a committee appointed by the United Nations. It was called *Our Common Future* and was published in 1987. This report defines the basic scheme of thinking and the



Through most of Iceland's history the threats of nature have been so over-whelming that Icelanders have turned a blind eye. But nature regularly reminds us that there is senseless not to heed her warnings. The people of Ísafjord have twice had to experience the devastation of an avalanche in their skiing area.



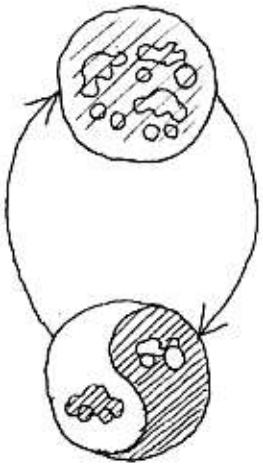
attitude that mankind has to adopt if things are not to go terribly wrong. The essence of this thinking has been condensed in one phrase that explains what we have to achieve: a sustainable development.

Today the whole world knows guiding phrases like "sustainable development", and in Iceland this kind of environmental planning has, for some time, been used in the management and control of the fisheries. The result is that the near collapse of many fishing stocks in the last few decades has been averted.

There are, however, difficulties in extending this cautionary thinking to the planning of land use. The people of the town of Ísafjördur, for example, rebuilt an area of huts and skiing the year after an avalanche had wrecked the area only one day after a ski competition had been held there. But nature again, only five years later, reminded us that such defiance of her laws does not bode well, and she again wrecked the newly rebuilt area.

The lesson we can learn from this is that knowledge alone, for example of the natural hazards in Iceland, is not enough as long as we are still filled with the arrogance toward nature and disregard of natural forces that has predominated in this nation for most of the twentieth century.

In connection with the skiing area example, one is faced with the difficult question as to whether the people of Ísafjördur are more arrogant than the rest of the Icelanders. Hardly. The explanation for this might be found in the fact that they have, for so long, fought such a heavy battle with nature, fishing high seas in winter, that there were actually only two options for them: to turn a deaf ear to the overwhelming dangers, or to stop all endeavour to survive and agree to their defeat in the struggle for their livelihood.



The Outdoors: A Source of Health

At the beginning of the Industrial Revolution in the nineteenth century, the science of medicine made a remarkable discovery: a bad and polluted environment leads to a poor state of health.

This led people to the simple and logical conclusion that if the bad health in the terrible industrial cities was to be improved, the cities themselves had to be improved. For that purpose the best opportunities were in the field of city planning.

Although this cause and effect relationship between the environment and health is obvious today, this was not the case one and a half centuries ago because the connection of various types of illnesses with pollution had not yet been proved.

Doctors, of course, were most likely to understand these causal effects, but because of the lack of proof and because of the arrogance and recklessness of people of power, they often had to fight for truth and justice with religious fervour.

There exists a powerful play about this by Henrik Ibsen, *The Public Enemy*. The play tells about a doctor in a village where their existence depended on the public baths. He discovers that serious illness is linked to the baths and fights for closing them – and is therefore declared a public enemy by the people and the politicians.

A similar case surfaced in Reykjavík at the beginning of the twentieth century as Dr. Gudmundur Björnsson discovered that typhus incidents were linked to certain wells. Björnsson's method for substantiating his conclusion was to mark on a map where the typhus cases had surfaced. It then became clear that only those who had used certain wells had fallen ill.

In spite of this striking correlation, Björnsson had to fight a heavy battle with the authorities to have the polluted wells closed. The solution that Björnsson campaigned for was, of course, the Reykjavík Waterworks, which was established three years later.

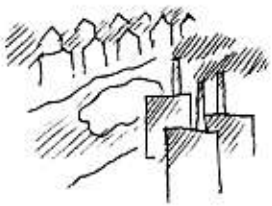
One of the first pieces of advice of doctors in the most polluted cities was to move the patients out of the cities – into nature. Although Reykjavík was not very polluted, this was also was very common advice there as well. This was especially the case with lung diseases like tuberculosis, and therefore sanatoriums like Vífilsstadir and Reykjalundur were built outside of town.

When it came to emotional and societal problems, people had a similar attitude towards the city; it was considered to be a bad influence in contradistinction to the countryside, which was defined as having a healing influence. Therefore the hospitals and asylums of Kleppur, Silungapollur, Jadar, Skálatún, Kvíabryggja and Arnarholt were built outside the city.

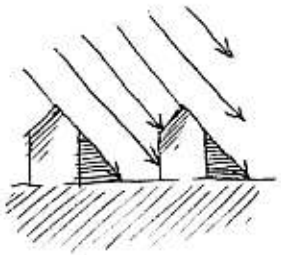
The earlier perception of Reykjavík as an environment negative for people with social problems we see today as an unacceptable generalization – but the pollution from the coal stoves, on the other hand, was a bleak reality until the geothermal heating system was built.

Britain does not have geothermal hot water, and at this time the British still had not developed a technology for reducing the pollution coming from their smokestacks.

What the doctors therefore advised in Britain was to separate residential areas from the industrial areas (zoning). Another main piece of advice by the doctors was that the city and countryside should be mixed in order to import the countryside's good influences into the cities. These cities are called garden cities.



In Iceland a professor of medicine, Gudmundur Hannesson, was an influential messenger of this theory and Icelanders also felt it was important to create space to let in the healing powers of sunlight. Hannesson published a book on these theories in 1916 called *On the Planning of Towns*. Hannesson was a member of the State Planning Board for a long time and his presence there meant that many Icelandic towns were influenced by the European garden-city ideals.



Shortly after 1960 the old interest in the link between environment and health resurfaced. What

The sooty air of the early industrial cities taught people that there is a link between health and the environment. Before geothermal heating a smoke cloud frequently lay over Reykjavík. The sanatoriums were therefore built out in the countryside. Here tuberculosis patients were made to lie outside in the fresh country air.

caused this was the strong indications of the unsound effects of pollutants on, for example, the fish and other organisms in the rivers and lakes. In geothermally heated Reykjavík, on the other hand, the pollution was far from critical levels, but nevertheless the international debate on pollution also triggered an increased interest in the green areas in Reykjavík as well.

Here an important question surfaces: If there is very little pollution in a city, are there then health reasons for having widespread green areas within the city limits?

Yes, there are to some degree, not least because it has been shown in recent decades that outdoor life and activities are very beneficial for people's health, both mentally and physically.

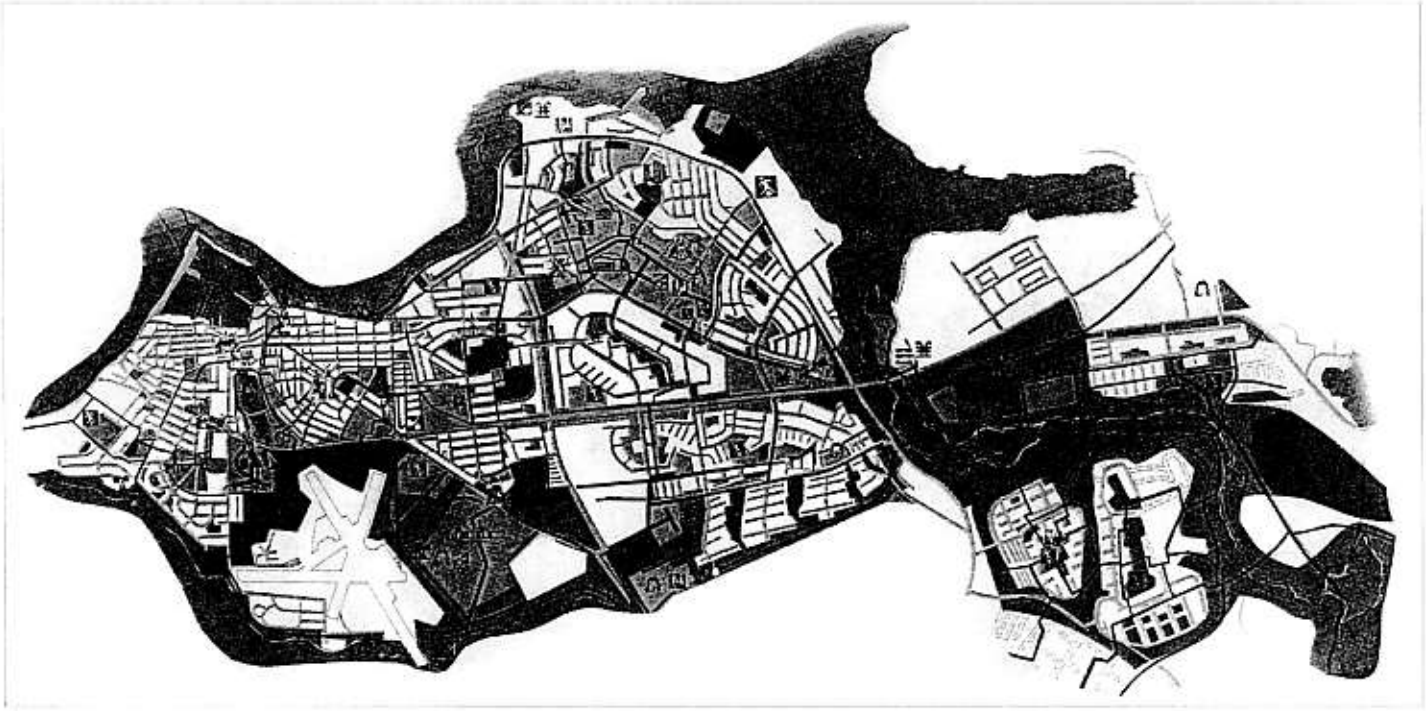
It was because of this that in 1974 Reykjavík devised a very ambitious plan on the environment and the outdoors. This plan was popularly known as the *Green Revolution*. The plan's main task was to improve the green areas and to make then more beautiful. (Beauty is also health enhancing!). Facilities for outdoor activities and physical training were also a part of the plan.

Many parts of this plan have been a success, for example the soccer fields, but the ideas on other aspects such as minigolf, jogging trails and space for hobbies in the green areas have not materialised.

The weather could be a factor, of course, but also simply the fact that some of the open areas such as the green areas along Miklabraut Highway are not good for such uses; the traffic passing by is too heavy and too noisy.

The large natural areas in the Ellidaárdalur Valley and on the Öskjuhlíd Hill have, on the other hand, become a success although their natural character has decreased. They are very pleasant and outdoor activity takes place there at all times of the year.

Another main part of the plan was to improve the connections among the various green areas and also their links to various other areas of the city. A network of walking and cycling paths was



Map from the "Green Revolution" of 1974, showing the green areas (grey shading) and the system of paths (black lines) to encompass the whole city. In many places pedestrian tunnels and overpasses have been planned. The path system is being realized gradually and parts of it, such as the path along the south coast, have become very popular.

designed, as well as a few bridal paths. This proposal included numerous bridges and tunnels, not least because of the heavy traffic planned for main thoroughfares, which will make them very hard for pedestrians to cross.

The idea of increasing the use of bicycles in order to decrease the use of automobiles has not materialized, but walking and bicycling have increased somewhat where good paths have been built. Some paths, as for instance the new path along the city's south coast through the Fossvogsdalur and Ellidaárdalur valleys all the way up into the Heidmörk Nature Preserve, have been a big success.

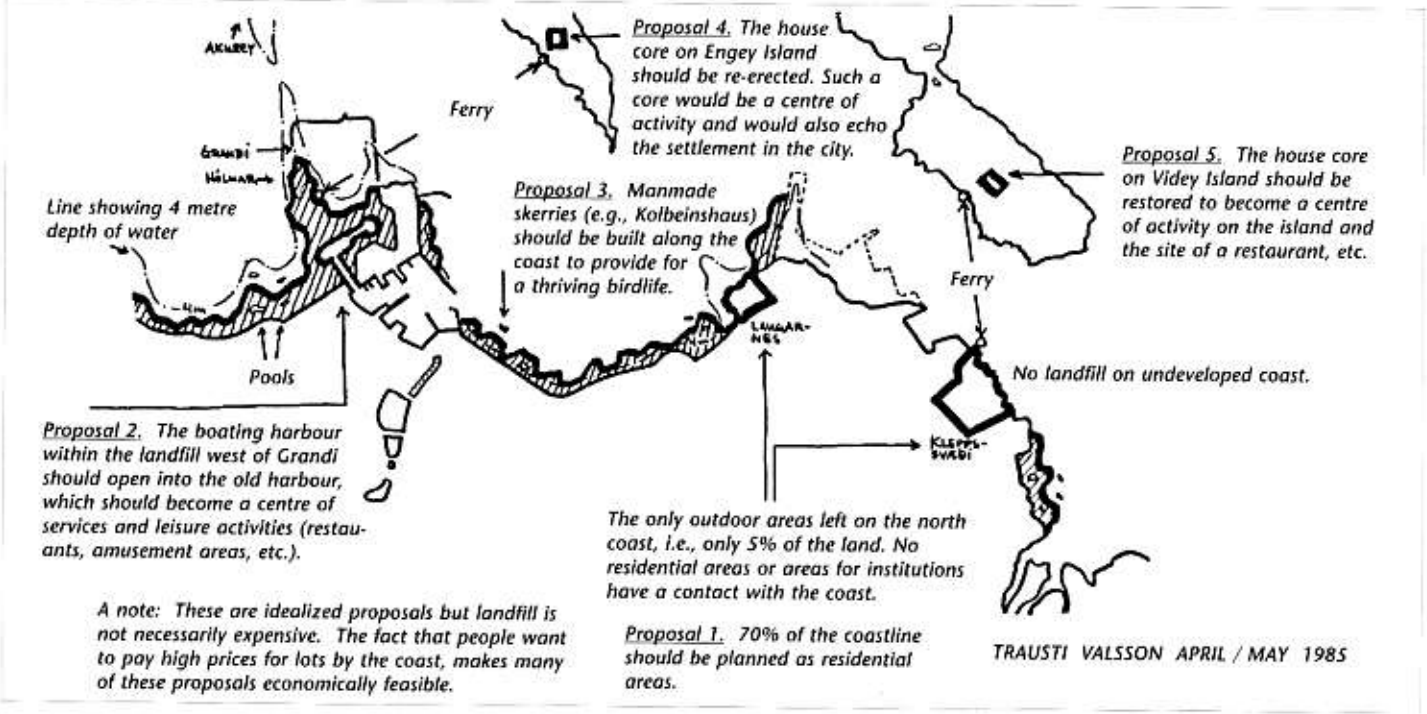
The last and the most unusual proposal in this green master plan of 1974 was the proposal to make the island of Videy an outdoor area. How much has been gained by this proposal demonstrates how important it is to create ambitious future ideas in the planning stages.

At this time many things made this idea look rather unrealistic. For one thing, the island belonged to another community. Furthermore, most of it was in private hands, and the building and church from the eighteenth century were in such bad shape that their owners were not likely to restore them.

But because the vision had been created in the plan people gradually started to solve the problems involved. This certainly took a long time, but at the end one of the city's finest jewels had been created. This place that was falling into ruin we now show our guests with pride.

In reviewing the green plan today, we are surprised how little the plan dealt with the outdoor activities on the city's coastline. Here one has to remember that the coast at that time was much less accessible than it is today.

In addition, the ideas on reclaiming and revitalising the coast that are presented in this book are ideas that are, to a large extent, based on the realisation of a long-term plan for new landfills and the removal and relocation of the many polluting activities that today fill the coastal areas.



A proposal from 1985 on e.g. landfill at the Grandi and at the north coast, in order to be able to build settlements that enjoy the proximity to coast and ocean. Also proposals on making the islands a more active part of the life in the city.

Another reason why the coast was so little treated in the 1974 plan was the enormous task of getting the green spaces inside the city itself into shape. In addition, the importance of the coastal areas had not yet been realized.

The same holds true for the interesting border where the city meets the upland and the heaths – the scale of the tasks within the city was simply too large to allow the borders to enter the picture. On the other hand, the time has now come to devise a new master plan for the city environment, a plan that, for instance, plans buildings in the green areas that are not suitable for outdoor activities.

The ideology would thus be to make the city a city and – as concerns the outdoors; to make it a central issue to improve the connections of the city to the marvellous natural areas that surround it; the ocean, the sounds, the bays and the islands, on the one side, and Heidmörk, Úlfarsfell and the heaths, on the other. The central task of this plan would then be to transform the edges of the city into interfaces that interconnect city and nature.

The third and last section of this book, which is called *Connecting City and Nature*, studies the various types of interfaces in some detail. Based on this analysis, concrete proposals are made as to how each of them can be designed and activated in such a way as to connect city and nature.

This is totally contrary to today's situation where the border areas, in many cases, actually function as areas that separate the city from the wide and remarkable adjacent natural areas.

The Vision of a Connected World

The first section of this book described how the Western worldview had been shaped by the conception of opposites as well as by the method of dissection that was invented by seventeenth century science and later domiated the thinking of the societies of the modern world.

The consequences were that, for almost every task at hand, the method became the same, i.e., to cut the task at hand into pieces and to work on the pieces separately as if in closed boxes – without connection to other aspects.

The outcome, as concerns our societies and cities, is that they have also been divided into such mechanistic "boxes" with the result that, for example, industrial areas and neighbourhoods are so monotonous that people become locked up in them in boredom and social isolation.

The task of this book is to demonstrate how bad this is and to try to convey how important it would be if a method could be created that was capable of reconnecting and remixing the things that modernism has cut apart with such negative consequences.

The holistic worldview, which now seems to be taking shape in the world, gives us various indications as to how we can again approach things in a holistic way. In this connection we are well advised to look towards nature for models.

Here it can be of some help, as ecology has explained scientifically, that an ecosystem can only be healthy if the environment where it is located is healthy.

This model can be of use in understanding the qualities of a city better: If the city is polluted, or faulty in some other way, the life of the citizens, "the human ecosystem", also becomes malfunctioning or unhealthy in some way.

The same holds true for the future of life and human existence in general here on Earth; if the world's environment becomes too damaged, this is bound to have a disastrous effect on the world's ecosystems.

The effect of the worldview of dissection has been, to state it in general terms, that human actions have been disconnected from the environment where we live – with well known and often terrible consequences.

In order to extricate ourselves from all these problems that the worldview of dissection and compartmentalisation has brought upon us, nothing less that the adoption of holistic approaches will do.

These methods will have as a central goal the recreation of earlier connections and bringing humankind and nature into harmony again, so to speak, to "glue" our broken world together again and in that way to create a new, whole and connected world.

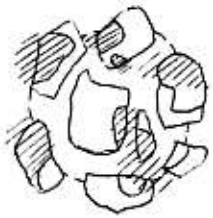
The first step towards creating the necessary willingness to tackle a problem is achieving a deep understanding of how serious the problem is. Such an awakening has recently happened in the field of the global environment with the result that all nations of the world are now joining hands to save the future of mankind here on Earth.

The problems of the societies and the cities of the world are not of this scale and magnitude; however, they could also become very serious. Sicknesses such as heart problems, cancer, and depression are on the increase. The same holds true for societal problems – drugs, crime and alienation – and most people see the connection between these problems and the type of society and environment in which we live.

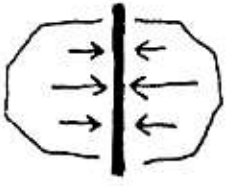
Previous chapters have described how great triumphs were achieved, such as when doctors in the nineteenth century managed to demonstrate that various epidemics of that time were caused by the unsound and badly planned city environments.

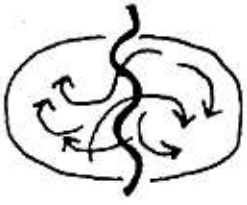
In the 60's parallel victories were achieved as scientists managed to prove that various dangerous chemicals that were used, for example as pesticides, were moving upwards in the food chain and finally ending up in food used for human consumption – and causing illnesses such as cancer.

What is common to all these examples is that it is often of little use to try to patch up the patients



The vision of a connected world stands in contrast to that of buildings that have no connections with their environment and of the isolation of areas into boxes, for example, with large traffic arteries. The borders should not be straight dividing lines but rather there should be living areas that can connect with other areas, as shown in the pictures below.





once they have become ill. The efforts of health authorities therefore have to be directed to the root of the problem. If this is done, it is possible to prevent the problems from occurring. The scientific term for this is "preventive medicine".

Let us now again look at some of the worst problems of our modern times: drugs, crime and alienation. There is a general agreement that these problems do have a societal root. This is primarily characterised by circumstances where individuals have lost contact with society, for example because of broken families or because of the lack of jobs in the cities in question.

Social measures are used to help solve, or counteract, these problems. To a much lesser degree the problems are traced back to a still deeper root – to the isolated and dead residential neighbourhoods, the isolated apartment blocks, and finally to an isolated flat, often high up in these buildings. This is a way of living that is seriously lacking in contact with society and the natural environment.

The author of this book has brought many arguments forward that support the thesis that today's architecture and planning, in many cases, are the primary reasons for the societal and mental problems of today.

This is especially important to realize because modern design does little to counteract the alienation and lack of connections that the worldview of dissection has imposed on design.

Because of this it is obvious that we will have to develop a methodology in design and planning that focuses on creating connections and integration in cities and also on the task of creating the wholes again that for a long time modern people have sought to separate, such as today's separating of work and life, work and pleasure, and city and nature.

The necessity of this reconnecting was explained in chapter three, which actually is a summary of *The Theory of Integration* that the author created in his dissertation for the University of California at Berkeley in the 80's. Since then he has been

The Bryggjuhverfi marina is the first construction area that is designed so that the inhabitants of Reykjavík can enjoy the privilege of living in a city that is located by the ocean. – The figures below show the gain in letting land and water relate to each other.

developing this theory further and he has also applied it to many of his projects.

The method focuses on the design of borders between areas in cities and on borders between city areas and natural areas. Today these borders are mostly designed in a way that separates them, whereas the new method has the aim of interconnecting the areas as much as possible.

The blindness of modern society and planning towards the importance and value of the borders is very strange, so much so that even the precious northern coastline of Reykjavík was almost totally destroyed and given over to industry in the decades after the Second World War.

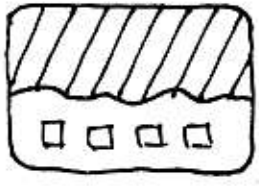
Although most of the marvellous landscape along this coast has vanished, one can certainly visualise that this coastal area could be made beautiful again by reclaiming it from industrial pollution or be recreated by landfill north of today's coast.

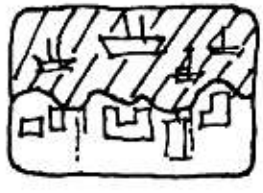
However, it is not enough to build residential areas along the coast, as by Skúlagata, because the area is blocked from direct access to the shore by the main thoroughfare. A connection to the shore could be achieved by a tunnel under the street and by creating a low landfill beyond the wall of rough, unhewn rock that now lines the coast.

In this way a beach area could be created that would allow the inhabitants a direct access to the shore and the ocean. This solution is somewhat similar to the solution at the Lake Tjörnin in the centre of Reykjavík, where a low area was created beyond a wall of rocks, right down at the surface of the water.

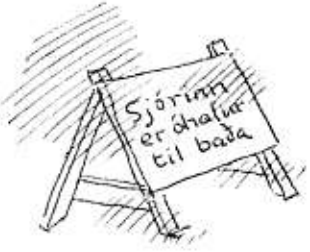
This is one example of how a connection between a residential area, a coast and the ocean can be created. The last section of this book will study the various borders in Reykjavík in order to open our eyes to their values and their possibilities. The method applied is to turn back the wheel of time – and then to conduct a study on how the borders have changed in the course of time.

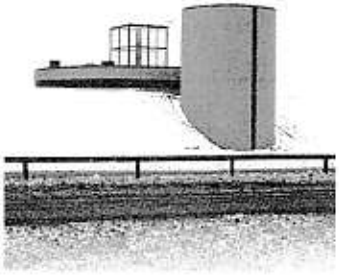
A common characteristic to be found here is that originally these borders, or interfaces, were full of





Until around 1960 the ocean was used for swimming here at Nauthólsvík. After the coast became polluted with sewage, swimming was prohibited. Now effective cleanup has been completed and a heated swimming area has been provided.





life and activity that connected the town to its natural environment. After that earlier friendly era, came the period of technocracy and alienation, which led to such destruction of the borders that they became unfit to connect city life to the adjacent natural surroundings.

The last period, *The Age of Reconnecting*, started some decades ago. Huge amounts of money have been spent to clean up the coastline and the ocean surrounding Reykjavík. Therefore today we do not have to avoid the coast any longer for health reasons.

We are therefore now, as concerns sanitation, already in shape to begin making an effort to redevelope most of the coastline as an area for recreational and residential purposes. This could become one of the largest and most important tasks in the city planning of Reykjavík in the first decades of the twenty-first century.

This large effort would make the whole coastline into an enchanting area, an area where people can enjoy outdoor activities and nature, as well as the mysterious atmosphere that all edges between two "worlds" bring with them.

This chapter concludes the theoretical part of this book. The six chapters that follow are dedicated to a detailed study of the various kinds of interfaces. Although all the cases are from Reykjavík, they can help open up an understanding of such borders in other cities and countries as well. Although the method for creating active and interconnecting interfaces is of most importance for coastal towns and cities, it also can be of much use in connecting cities with other types of natural areas.

7 Connecting City and Water

Evolution of the Connections

The chapters in this third and last section of the book explain how the city meets and meshes with nature. This first chapter explains in particular how the city meets water areas – where the coastline itself plays the most important role.

The study of the city/nature interfaces starts with an elaboration of the various types, and traces how activities linked to them have developed. This discussion defines what has characterized the interfaces and how they have contributed to the strengthening of the relationship of the city and its water areas, or conversely – as was quite common around the middle of the twentieth century – how changes in the coastal zones led to a reduction in the connections between city and water.

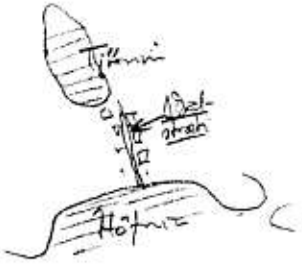
The second subsection of each of these six chapters sketches what measures can be taken to recreate the former splendid and close connection of a city with its natural environment. Although the examples are from Reykjavík, other cities can also profit from the way the four design principles, explained in the chapter *Methods of Connecting* (p. 33), come into play to help achieve effective interfaces. These methods describe how interfaces in cities can be designed so they interconnect city and natural areas closely, both in terms of form and of function.

Earlier it was described how the north coast of Reykjavík and the islands and surrounding ocean well suited the original settler, Ingólfur Arnarson, and those with him as their livelihood was based on what both the land and the ocean provide – not least the variety inherent in the interface of shore, shallow coastal waters, and islands. Originally fishing and collecting food were their primary food sources, but gradually farming and husbandry gained in importance.

The first settler's landholding gradually became divided into more and more farms, which led to small scale farming – alternatively depending on the land or the sea for their livelihood. A common characteristic of these farms was that each made the best use of its particular location. Those settlers who were located on the best inlets along the coast and were closest to the best fishing grounds had a clear advantage in that they had easier access to the bounty of the sea.

Those who lived on the islands, on the other hand, profited most because of their separation from the mainland. This detachment meant that the island pastures were protected from the inroads of other people's livestock. In addition, the islands' bird colonies were protected by the surrounding water from dogs, foxes and wild cats. The islands were close to the fishing grounds and the islanders' boats enabled them to traverse Faxaflói Bay in search of food and supplies. The island families were therefore strong, especially those on the two largest, Engey and Videy. This type of scattered settlement remained almost unchanged for nine centuries in the Reykjavík area.

In 1752 there came a sudden change when in a single summer a whole new industrial village was built, with help from the Danish King, at the site of Ingólfur's original farmstead. The two fishing smacks that brought building materials and machinery to the country were a part of the package because they were meant for supplying fish for the village – which, in fact, they did for a few years. The plan for the village also included vegetable gardens by the houses, a novelty that proved very advantageous for the people living along the coasts as they often had only a limited amount of land.



In spite of the good plan for the industrial village, its operation was not very successful. Difficult times were ahead because of the Lakagígar eruption and the weather conditions that followed, the years when sea ice encroached on the land, and finally the sailing blockades enforced during the Napolenic Wars. Trade improved somewhat as Reykjavík became an official trading post in 1786 and as official institutions were moved there. In this way Reykjavík gradually became a center of government and education.

It was not until the second attempt at utilizing

As the fishing industry grew in Reykjavík the fish processing companies stretched both east and west along the coast from Kvosin. Much space was needed because of the method of sun drying the flattened fish. Cooling was also used as a method of preservation and ice for that purpose was cut in Lake Tjörnin. (See below).

fishing smacks in 1866 that Reykjavík really started to grow; by 1900 there were 100 fishing vessels and the town had 5800 inhabitants. This meant that the settlement started to spread farther east and west along the coast, where the workers settled and started growing vegetables and drying and salting fish for their livelihood. Some had boats for fishing and they could make use of the coastal vegetation for food, fuel and also grazing land for their horses and sheep when the land was covered with snow in the winter. People could also catch fish and birds along the coast, and collect shellfish and young cod that lurked in the seaweed. At the landing places the boats were made ready for going fishing and unloaded when they returned; some fish processing took place there as well. The coast therefore was busting with life and it became the main playground of the young, both in summer and winter.

As fish processing increased, more space was needed as the fish were sun-dried in the open air by spreading them flat in designated areas. The fish were then salted as they began to dry. The largest processing places were erected along the coast all the way east to Kirkjusandur. Most of them had private piers and the workers built their homes in the neighborhood.

Besides sun-drying, food was also protected by refrigerating it with ice cut in winter. This ice could only be supplied from Lake Tjörnin and therefore three large icehouses were erected there. The two that remain today have been redesigned as the National Gallery of Iceland and a university lecture hall. Since the ice could only be cut in winter, the advent of machine-freezing in 1930 was a great improvement.

The icehouses and a growing fleet of trawlers and freighters meant that a harbour needed to be built in the Kvosin area. When the harbour was finished, the fish producers started to move there. As enough machine-produced ice became available during the whole year, there was less need to dry and salt the fish, since it could be transported fresh abroad by trawler, packed in ice. The next step, deepfreezing, made it possible to quick-freeze fish in blocks, to

The Sund harbour area and the highway cut the residents off from contact with this beautiful fjord area. Even visual connection has almost been cut off by a wall of windowless warehousing along the highway. Fortunately there are a few passages that afford a view, as can be seen in the photo below.

increase the volume of production, and to use freighters to export the frozen fish.

The result of this development was less need for space for the fish producers along the coast. Nevertheless, the city plan of 1948 reserved the whole north coast from Grótta to Ellidaárvogur for fish production, industry and harbours. For a long time this industrial belt was so sparsely occupied that the inhabitants of Reykjavík who lived farther behind it had ready access to the coast. But as the town grew the number of sewers that discharged by the shore increased and ever larger tracts of the beautiful coastal landscape became submerged under rubbish heaps and landfill. The lack of understanding of all the natural treasures that were lost in this way, and all the filth that accumulated, is hard to understand today. The uprooting of society and its values that came with the occupation by the Allies in the Second World War, however, explains some of the destruction.

Around 1970 the industrial belt began to fill up, which meant that access to the coast started to become more difficult. The situation today is worst at the Sund harbour area because there companies decided to close large areas off from the public. In addition, a wall of windowless warehouses was built along Saebraut Highway so that even visual contact with the beautiful Sound from the road and the neighbourhood was lost.

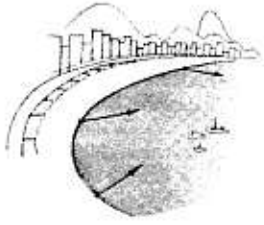
The Danish plan of 1965, calling for Saebraut to become a main artery with ever increasing traffic, has meant that this thoroughfare is a growing obstacle to the contact between city and coast. Not much can be done to alleviate the situation; not even a few pedestrian bridges can be of much help. A step for improvement would be to move companies from the coast that do not belong there, for example, the bus company and the oil harbour. In addition, expanding the harbour and industrial areas along the Sound should be stopped, and instead residences and approachable outdoor areas should be developed.

Along the south coast the relocation of the airport is the largest issue, and perhaps the south slope of Öskjuhlíd Hill should also be developed as a residential area.

Methods of Connecting City and Water

This book has explained the reasons why post-war Reykjavík has so little connection with its coastline. The three main reasons are: 1) the city originally developed only along the northern half of the peninsula but later lost its connection to the coast; 2) in the 1948 plan the whole north coast was reserved for industries only; and 3) the development of the city towards the south coast has been prevented by the airport, the Öskjuhlíd nature park, and the cemetery.

This book has also outlined measures that are needed if people would like to institute changes to help the citylife to connect to the shore: 1) Removal or relocation of most of the dirty activities from the coastal zones; 2) Creating landfills – for example, north of Skúlagata and Saebraut Streets – to create space for leisure and residental areas in the coastal areas that run directly into the water, i.e., to create a direct contact with nature; 3) Removing the airport and planning a central axis that would go from Kvosin across the peninsula to Skerjafjord; and 4) Building residential areas along the south coast and also on the low hills from Öskjuhlíd towards the cemetery.



Although the method of connecting city and water is basically to let the city and residential areas reach all the way to the water, the formation of the coast and selecting activities to be placed long the coast are very important. What is most important here is that the coastal areas include space free for public access rather than being almost closed off by private homes, as is the case, for example, in the Skildinganes area and at the Kjarval house on Seltjarnarnes.

The planning of the coastal area by Aegisída and Skjól has been successful because a large area along the shore was reserved for public use. The traffic is slow along the public area, allowing people to enjoy the ocean view from their cars. On the other side of the road are stately buildings whose inhabitants can enjoy a wide view over the coastal area and out to the ocean.

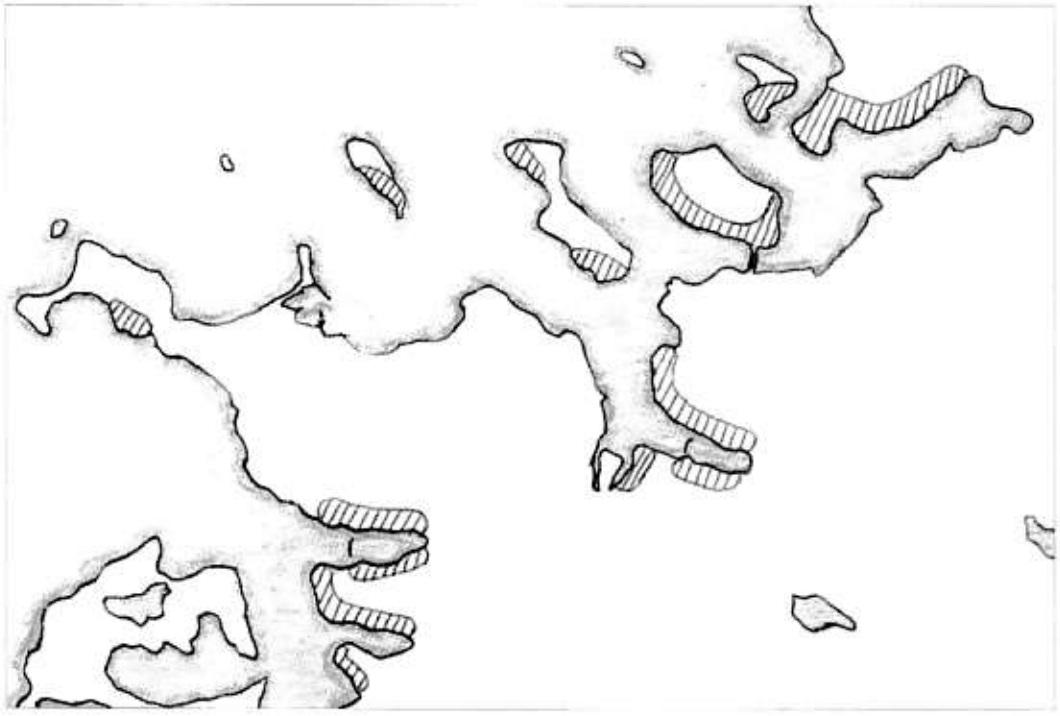
Another very important planning goal is that the ocean area outside the city has a functional relationship with settlements on the coast. A residential area by a dirty industrial harbour, for instance, is not pleasant. If the coast has a boating harbour with an adjacent sailing area, the harbour and the water can enhance the charm of the coastal settlement and, in turn, the water area becomes still more enchanting because of the settlement along the coast. This type of relationship-planning creates a magical complementary effect that gives the result 1 + 1 = 3 instead of 1 + 1 = 2, which is the result if land and water do not have this functional and visual relationship.

The Skerjafjord area offers good opportunities for creating an incisive interplay of ocean and settlement because there is so little ship traffic there since the oil harbour was removed. Sailing and other recreational activities have started to develop in the fjord. A negative feature, on the other hand, is how flat the land is and that there is therefore little slope down towards the water. The best landscape situation in terms of sloping toward the water is the low Öskjuhlíd Hill by Fossvogur Bay. In this area any settlement would enjoy a visual connection with the coast and the water surface below.

Only in two other areas in Reykjavík are there ideal conditions for coastal settlements, i.e., where the area faces south, where there is a beautiful water area and a view, and finally where the land has enough slope so that most of the settlement can enjoy a visual connection with the water.

The best conditions in Reykjavík for such settlements are therefore on the south slope of the Geldinganes Peninsula in the Eidsvík Inlet and on the south-eastern part of the island of Videy. The location on Geldinganes still has the huge disadvantage that the view from there includes a fertilizer plant; in addition, if the proposed poor planning is carried out, the view will also encompass a container harbour, which will spoil the beauty of the inlet.

The most splendid conditions for coastal



Areas that face south along a beautiful coast and have the right slope and a view, are of an extraordinarily high value, as we can see on the south side of Arnarnes Peninsula. The map shows that there are quite a few such areas in Reykjavík also. If fjords were to be closed, the stable water level would make it possible to construct landfill, such as in the lower picture.

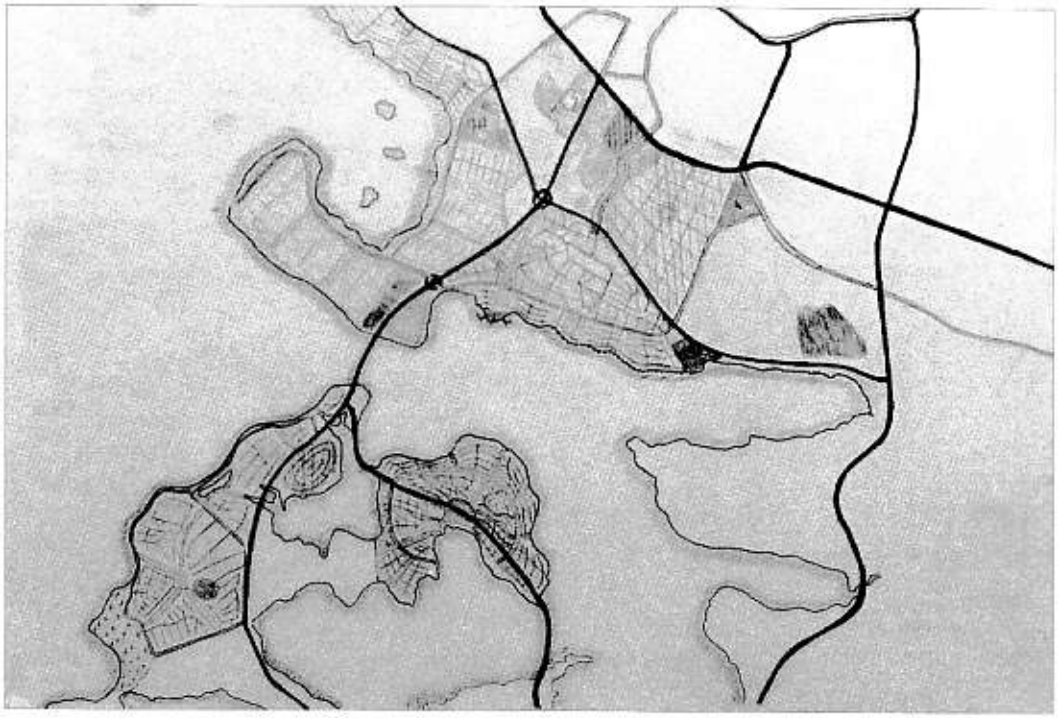
settlement, however, are in the concave bowl rising from the south-east coast of Videy. A traffic link to the island could easily be established from the Gufunes headland across the shallow sound. The residential area would enjoy a special interplay with nature because of its location on an island with an almost virgin coastline. The concavity in the landscape does much to create shelter from the wind and in addition helps to produce a stronger feeling of togetherness because the concavity of the land embraces the inhabitants and affords them all the same fine focal view towards the water in the small bay below.

The map on this page shows the areas in Reykjavík where it should be possible to plan beautiful coastal settlements. The best are those areas already mentioned; the island of Videy, the Geldinganes Peninsula, and and the low hill of Öskjuhlíd. But there are also good areas along the coast from the old harbour to Laugarnes, in the area from the IKEA retail outlet to Háubakkar, as well as in the western part of Ártúnshöfdi. The south coast of Eidsvík that runs south to Gufunes, the south coast of Álfsnes, and finally the south coast of Reykjavík where the airport is located today, also offer good sites for settlement.

In two places on the map settlement circles are shown around a large body of water, for example, around Grafarvogur Bay. In both cases it is suggested that these bays be closed off with landfill, which would mean that they would become freshwater lakes with a static water level, just like Lake Tjörnin in the centre of the city. The surroundings of such lakes are much tidier than coastal areas with the constant ebb and flood of the tide, and the conditions for outdoor activities along the coast and on the water are much more attractive.

It is easy to establish good fishing in such lakes by adding fish fry. Water sports are much safer there than in open bays with strong tidal currents. An added advantage is that a freshwater lake freezes over in the winter, thus providing the opportunity for skating, skiing and sledding as well as fishing through the ice.

Proposal for landfill for residences in the very swallow waters of Skerjafjord. By building there and on the airport area to the north and on Álftanes to the south, it would be possible to allow the youngest generation to live by this beautiful water area right in the heart of the capital area. This plan made by students at the University of Iceland, is a real alternative to offering the young lots in far-out suburbs. – Settlement on a landfill west of Grandi would also be a kind of suburb.

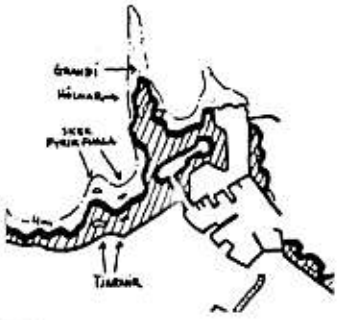


From what has been described it is quite clear that Reykjavík offers many splendid opportunities for coastal settlement, with the possibility of using landfill to create some additional attractive areas. The two most obvious areas for coastal settlement are on Geldinganes and Videy. A traffic link to the island of Engey could be considered by bridging the sound between the new oil pier and the island.

A negative feature of using landfills is how flat they are and also that the coast thus created is not as beautiful as a natural coastline. In addition, it mus be borne in mind that the Reykjavík area subsides about 30 cm each century and also that there is the possibility that the sea level will rise, if predictions of global warming come true. Even the Kvosin area and some parts of the airport could be endangered by a rise in sea level. The planning of the airport would have to take this into consideration, e.g., by making the area higher at the coast and by placing gardens and lakes – rather than buildings – in the lowest areas.

The airport area offers an opportunity to connect the old town centre with a central axis to the south, all the way to the south coast at the Skerjafjord. There the three communities of Kópavogur, Gardabaer and Bessastadahreppur meet Reykjavík, offering plenty of space for new building areas. The town of Hafnarfjord is also not far from the Skerjafjord area.

As to the planning of coastal areas, it is of most importance that the coastline itself remains in the public domain and that activities and facilities will be located there that help connect the life in the city to the coast and the ocean. The boating clubs and the thermal beach in Nauthólsvík offer a good start, but facilities like boating harbours, amusement areas, a fishmarket and guided boat tours should be added.



8 Connecting the City and Adjacent Areas

Development of Interfaces

The interface of the city with the countryside differs from the interface with the ocean in that it constantly moves farther out as the city grows. This interface, for most of Reykjavík's history, has played an important role as the surrounding areas provided agricultural space to supply the inhabitants with "the fruit of the land".

The first interface with the open landscape were the pastures of the officials who, for the most part, kept their livestock in their backyards or in sheds on their own land.

Quite commonly areas derive their names from the border that surrounds them. A point in case is the Scandinavian word for garden that means a hedge or fence and also the plot or homestead the fence encloses (compare the Russian *grad* meaning city, as in Petrograd). A second example is the Old English word *tún*, meaning an enclosed place, which later, spelled as town, came to mean a settlement. In Icelandic, which has remained little changed since olden times, the word *tún* continues to mean homefield.

This gives us some indication that the type of border that surrounds a town can have a great influence on its image, as well as defining what kind of relationship the town has to its environs. A town surrounded by walls, as an example, is quite different from a town that interacts closely with the agricultural areas at its border.

As Reykjavík changed from a town of officials to a town of fisheries in the second part of the nineteenth century, a border of cottages was created at the town's fringes. These cottages were built by workers and seamen who moved to Reykjavík from the countryside in response to the opening of new jobs connected with the fisheries. The old word for cottage, *kot*, still lives in Icelandic.

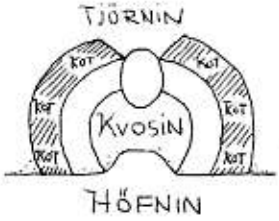
This new border of cottages had to be built outside of the border of the tún of the officials as these men were powerful enough to keep them out. This was disadvantageous at the time but the conservatism of the officials is the reason why we have the green areas of Arnarhóll and Landakotstún at the centre of the older part of town, despite the heavy pressure to build there. One enterprising man even presented the town council with a proposal to fill up Lake Tjörnin. Some of the cottages that bordered Kvosin still remain in the attractive Grjótathorp and Skuggahverfi areas.

The third border that developed was for gardening. The largest garden area was the Centennial Gardens where the bus station is now located. The Laufásvegur road was built because of these gardens.

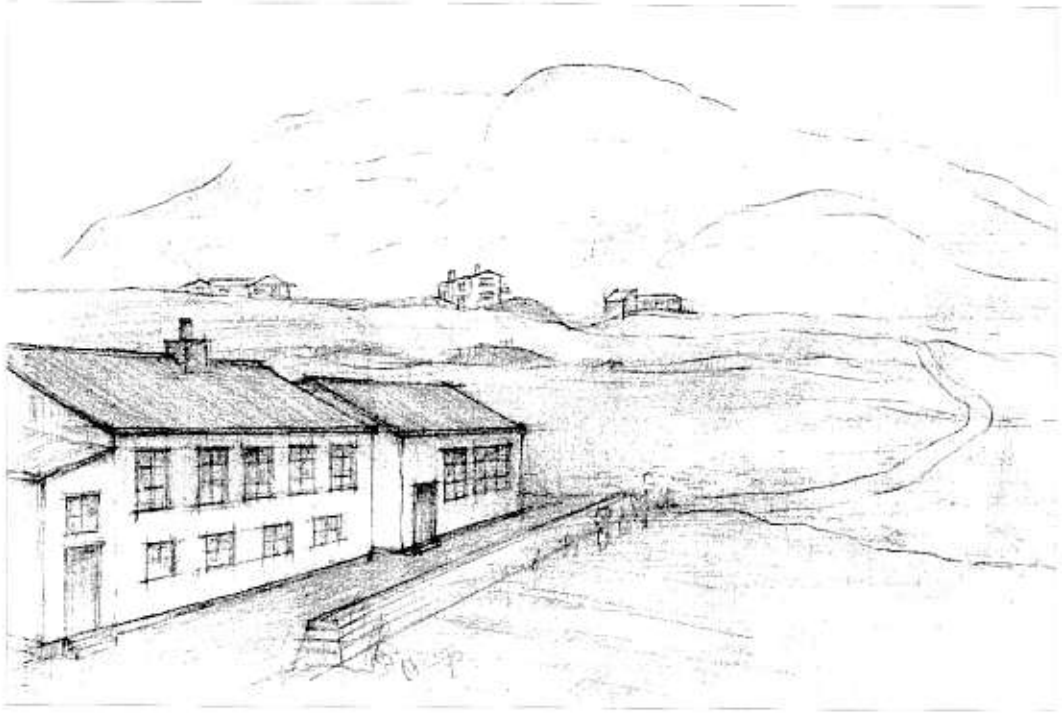
As the Great Depression hit Iceland in 1930 the town of Reykjavík reacted as did towns in many other countries by allotting a great number of cottage areas on the outskirts of town so that the unemployed could survive by gardening and farming on a small scale. The names of some of these areas are still known, such as Fossvogsblettir and Sogamýrarblettir. These areas can be called the fourth border.

In many countries these separate areas were called colonies or colonial gardens. In some countries they still exist and are used either as homes or as summer cottages. When the military came to Reykjavík during the war, these areas experienced a boom because suddenly there was a large market for their produce: chicken, eggs, potatoes and vegetables.

During the war a great number of country people migrated to the city to take advantage of the work offered by the military, and the population of Reykjavík increased more than 10% during the war years. These people were used to farming and raising livestock and wanted to continue to farm. Therefore still more gardening areas were allocated on the outskirts of town and also special areas for school gardens because people considered working with the earth to be of great educational value. Areas for sheds for sheep and horses were also developed and became known for their outlandish architecture. Owning a horse has since developed into a leisure activity and uppercrust sport and



The Nobel Prize winner Halldór Laxness was brought up on this farm, Laxnes. He later built his own house there – the one in the centre in the distance. Still later his two daughters also built their own homes "in the fields back home".

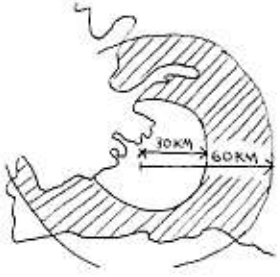


attractive stables have now arisen in many places in the capital area.

With the emergence of horseback riding, golf, hiking, and skiing as sports and leisure activities, the fifth border area has been created. This border reaches to about 30 km into the hinterland. The recreational areas that fall into this group include the golf courses at Grafarholt and Korpúlfsstadir, the stables at Árbaer and Vídidalur, and finally the skiing areas, which are further away, in Skálafell, Jósefsdalur and Bláfjöll.

Already before the war the sixth border had started to develop outside Reykjavík, i.e., an area of summerhouses ca 30 to 60 km distant from the city. The number of these cottages has grown constantly, with today some 500 in the Hvalfjord area alone.

Because of advances in communication technology and a growing flexibility at work, it is likely that a new style of living is coming into being, i.e., that people will live in such homes outside the city, surrounded by the beauty of nature and also have a small flat in the city.



If this form of living develops further, the make-up of the city may change considerably. There would be a lessened demand for large flats in the city, as well as gardens with the houses, and people, who can then escape the city whenever they want, will have fewer complaints about congestion. Icelanders, though, as they have been so used to wide spaces through the ages, are likely for a while to want to live in cities that are more spacious than in most other countries.

The young generation that has got to know the vibrant city life that the densely built cities abroad can offer has started to call for such city life in Iceland. This generation does not want to live in suburbia but rather in the old part of town where a culture of coffee houses and night life has been created, and has flourished in Reykjavík since around 1990. On the other hand, it is not certain that this generation is as keen on summerhouse living as the older generation but rather wants to be on the move, both within Iceland as well as abroad.

Although double residency requires proximity to

Kringlumýri was at one time on the edge of town with a great many garden areas where people could grow potatoes and vegetables. These areas also served as small spaces for cottages. The view is over the Fossvogur Bay to Kópavogur. – The lower photo shows the last farm in Laugardalur Valley.

the city – preferably at a distance of not more than 60 km in order to be able to drive to work or to a meeting comfortably – summerhouse areas still farther out, or up to 200 km, will prosper.

Within this radius there are many agricultural areas and small coastal towns where people can buy cheap older houses and lots for stabling a horse or growing trees, which are both very popular pastimes in Iceland. A special advantage of these areas is the contact for people who have their roots in the old Icelandic culture.

These country areas also gain from the proximity with others; the level of services rises and many things can be learned from the newcomers. In bringing the urban and rural together, we are therefore creating a complementary effect, where both gain from the partnership.

As concerns Reykjavík itself – and especially on the border where the city areas meet nature, in the second half of the twentieth century there has been a decline in the variety and vitality of functions, just as happened along the city's interface with the ocean.

The decline of the land/city interface progressed in several steps, just as along the coast. The biggest step was when people were driven away from their garden lots in the 1960's and '70's. This was because of the need for space for the new neighbourhoods and also because the modern Icelander prefers having everybody cast in the same mould and has little tolerance towards people that step out of the norm. There are, however, signs that the youngest generation wants more choices in types of residency and is more tolerant towards people that choose individual lifestyles.

Compared to the variety of life and functions that existed in Reykjavík up to about 1960, the present monotony is striking. No chicken and ducks run around quacking and sheep have been outlawed. The last farm in Laugardalur Valley was shut down in 1994. Many remember with nostalgia watching the farmer, Stefnir, bring his milk cans to the bus stop and take them by bus to the dairy.

Interplay of the City and Adjacent Areas

Most cities have some kind of a green or open space system. In the twentieth century it became popular to plan green "channels" going from the hinterland into the city. Sometimes the hinterland resembles the palm of a hand – as does Heidmörk, for instance, as it lies just beyond Reykjavík – and the green areas that penetrate the city, the fingers. This green scheme is therefore often called "a finger plan".

The model for this "green-supply" system is most likely the water supply system that gathers the water in the runoff area above the city and channels it into the city via the main pipelines. There this system branches out into the neighbourhoods, just as does the "green system".

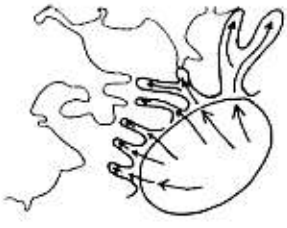
Most cities have had good experience with green systems like this, especially as these channels have been of help as people have tried to develop alternative systems for locomotion and leisure activities, such as walking and bicycling paths, to try to counteract the ever-expanding use of cars.

A flaw in such green systems is that they are mostly green fields or brush or trees and do not provide citizens with the opportunity to garden or to keep animals, as in earlier times.

In planning the capital area this system of a palm and fingers has been adopted so that now the hinterland has developed into a long greenbelt that borders on the whole area.

This area is called the *Green Scarf*. This very Icelandic term has come into being because the area that will be forested will provide a shelter belt for the city and will also stop snow drifting from the barren heaths and accumulating in the suburbs.

The Green Scarf and its forested areas will improve the conditions for outdoor activities at the edge of the city, not least because of the shelter that it will provide. A possible drawback could materialize if the trees grow so tall that they shut off some of the beautiful view toward the heaths and mountains that we enjoy today. The same holds true for the recent planting of trees along roadsides. These trees will grow to hamper the open view we enjoy from our cars today.



The section *Methods of Connecting* (p. 33) sets out four rules for creating a strong interrelationship between the city and the natural environment. The first rule is: *Wholeness can be created by using a circular form for two adjacent areas.* There an example was given of how a harbour and harbour area experience a better interplay and a stronger sense of wholeness if they approach together the form qualities of a circle.

This same rule applies for a neighbourhood and an adjacent green area: If they together approach the form and the density of a circle, a stronger sense that they constitute a unity is achieved.

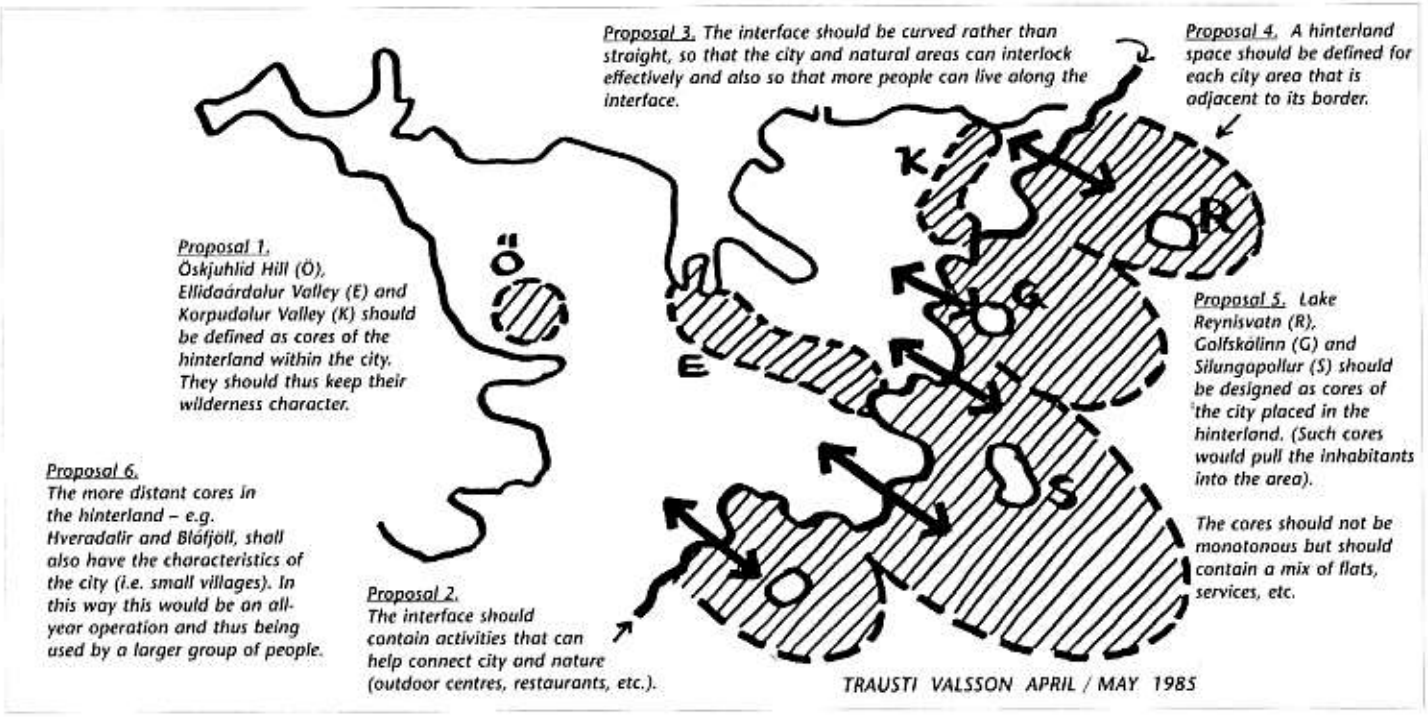
Rule two deals with the *Dynamic balance created with a concave/convex line.* Here one can refer to a straight line as a contrast because it so clearly lacks the energizing feeling created when convex forms of green areas reach into the city area and when a neighbourhood stretches beautifully into a natural area.

The third rule describes the *Creation of interaction by placing complementary pairs side by side.* This means that if a residential area is at the border, the adjacent open area has to include those facilities and features that best fit the residential area.

When this is the case, complementarity is achieved so that the residential area is improved because of the open area, and the open space improved by the presence of the residential area. The interaction thus creates an extra value that otherwise would not be there.

The fourth rule tells us that an *Emotional balance can be provided in a uniform area by placing a core of the opposite within it.* In terms of a city and its interplay with the adjacent natural environment, this rule tells us that the feeling of urban isolation from nature can be broken if a core of the natural environment is placed within the city. This means that nature itself has been pulled into the city, albeit on a small scale.

Reversing this rule about the *core of opposites* points out that the monotony and the isolation of



an adjacent natural area can in turn be relieved by placing small "village cores" within a natural area, cores that bring the citizens into proximity with nature and also, through contrast, enhance the experiencing of the natural environment. Examples of how such cores of the opposite are used in architecture include the atrium garden within a home with a pavilion in the garden.

The map on this page shows how all four rules can be applied to bring about a stronger interrelationship between Reykjavík and the natural areas adjacent to the city's eastern border. Here we are dealing with the main patterns in a plan that encompasses the city and its adjacent natural environment as one unity.

A plan that is intended to make one integrated whole out of a city and its adjacent natural areas (including the water areas) needs to define the two together as one, and the planning itself must be defined as one integrated task.

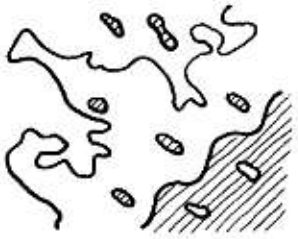
This approach transcends the traditional limits for city planning, namely, the coastline and the city fringes. Close collaboration of city planners and landscape architects has here become the first principle.

As we later look more closely at the border where the city meets the hinterland, the four rules can again be applied to enhance the interaction between neighbourhoods and their adjacent natural areas. Here the neighbourhood, for example, can be planned to embrace an open area in way similar to how a neighbourhood around a small bay intimately embraces the water area in the bay.

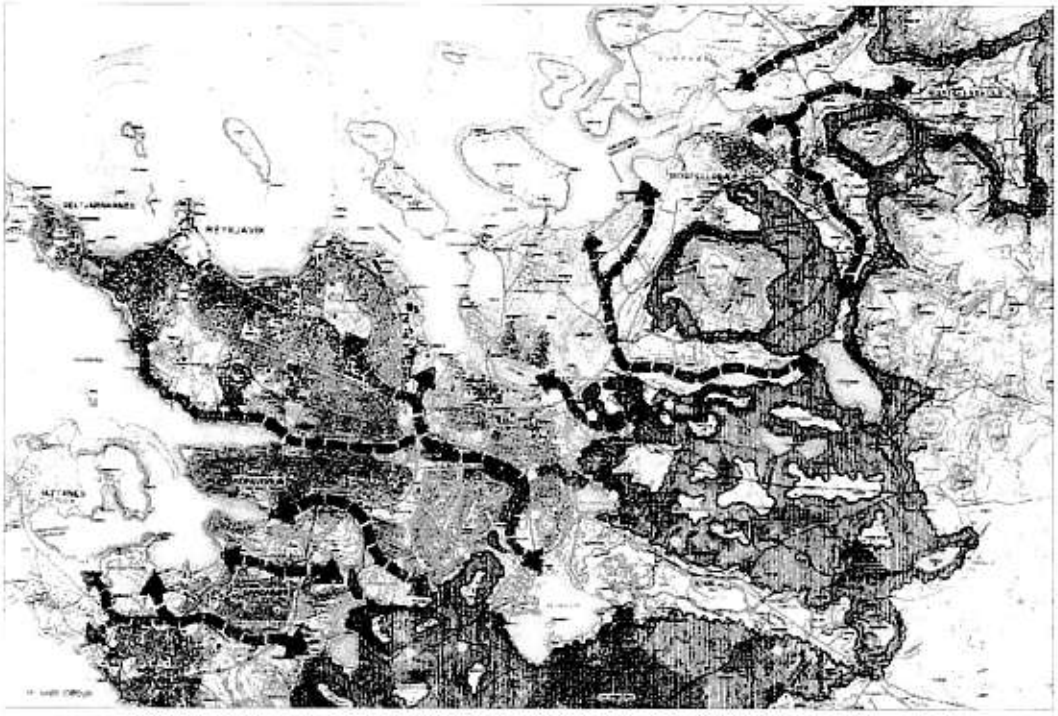
Cores of the opposites in this case are little gardens within the neighbourhoods and, conversely, small buildings out in the open area designed for the needs of the people who live in the neighbourhood.

Finally, it should be kept in mind that space has to be reserved along the border, the interface itself, for functions that can attract people to the border area and help them to enjoy and make use of the facilities in the open areas.

This map shows how the four methods of connecting (p. 33) can be applied to strengthen the contacts of the city to the natural areas on its eastern border. Certain green areas are defined as a part of certain neighbourhoods with recreational cores within each one. The curved interface interlocks city and hinterland.



The map shows the idea of a "Green Scarf" on the heaths east of the capital area. The dark grey areas are to become forested areas that will, in due time, provide shelter. The arrows show paths or channels that connect the city areas and the hinterland.



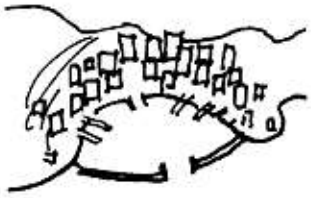
One possibility is an outdoor centre with orientation displays that would provide information on hiking trails, jogging paths, etc. Here we again can look towards the coast for a parallel in terms of interconnecting interfaces. On the coast there are also facilities, for instance a boating harbour, which is a necessity if the citizens are to be provided with the possibility of enjoying water activities.

Attention should be called to how many opportunities for recreation and enjoyment are linked to the beautiful and vast natural areas that border on the city – both the ocean areas and the wilderness areas.

Today's city plan does not do much to bring these natural areas into close contact with city life but rather focuses on the patches of green within the city that are called recreational areas even though, in fact, they offer only poor possibilities for outdoor activities.

This book therefore proposes that the policy for a recreation plan for Reykjavík be turned around in such a way that the tremendous recreational areas that border on the city will be made approachable and will automatically lead to a subsiding of today's regrets regarding the present useless green patches.

As this state of understanding of the recreational value of water and wilderness areas has been achieved, we will be in shape to utilize the opportunities that the green patches offer to make the city more dense so that in the future it can develop into a truly urban area. The *Green Scarf* plan that is meant to activate the natural areas east of the city is a good step towards this new policy.



9 Relations to the Elements

Vast Spaces and Hidden Forces

What probably has most characterized Icelandic existence through the ages are the vast spaces of the landscape as well as the small and sparsely settled population. Countries like Poland and Russia share this characteristic with Iceland and the fact that in recent times large cities have been built does not alter this trait; the foundation of the culture of these countries is the vast open spaces.

In contradistinction, there is another basic type of society, i.e. societies based on interior or nearby environments. Denmark and Holland are two examples of such societies. Their view of the world, for example appears in paintings that depict spaces within cities or within homes.

Icelandic and Russian art, on the other hand, most of the time dwells on the spaces in the landscape as well as on how small man is vis-à-vis the large scale of nature.

The Icelandic sagas and the Russian literature of authors like Tolstoi and Sholokhov also share this common characteristic. Many would say that the greatness of this literature derives from how naked and unprotected man is against the vast spaces of nature where man is tested to the limit so that he either perishes or is saved.

The Icelandic society still today is characterized by a primeval battle with the shelterless landscape; cultivation of the earth is difficult, erosional forces are constantly at work, ocean waves break against the coast and are thrown foaming over the land, storms sweep over the barren landscape, and under one's feet geothermal water simmers and erupts through cracks in the crust.

This wrestling with the unmerciful forces of nature elevates man and his struggle into an epic scale which has provided fine material for composers like Jón Leifs and authors like Halldór Laxness and Gunnar Gunnarsson.

How have these harsh forces of nature shaped Reykjavík? Obviously it is not easy for plants to grow on a windswept coast and life out in the open is cold for the greater part of the year. At a distance of only 20 km from the city are volcanos that have erupted in historical times. The lava fields and the hardened river of lava that runs through the middle of the city in the Ellidaár Valley, are reminders that the city could possibly be hit by severe earthquakes, an eruption, or a blanket of volcanic ejecta, even if these are very rare occurrences.

The possibility of volcanism and the threat of storms are a part of the daily scene in Reykjavík because the force that lurks under the earth's solidified surface fills the landscape with a powerful meaning that does not exist in places where such forces are not to be found.

We can compare life in Reykjavík on a quiet day to the calm before a storm; a tension of danger and fear is in the air, a tension that has accompanied Icelanders from the early ages. The struggle with uncertainty has left Icelandic faces firmer and emptier – but there the surface is deceptive because underneath lies a dormant volcano.

The same holds true for Reykjavík; in a photo it might seem to be quite a bland and even sleepy place, but this is a deception because below, it swells and seethes.

Geographically the city is beautiful place. It is located on rounded peninsulas at the base of a wide bay. A ring of mountains reaches from the Snæfellsjökull Glacier in the northwest to the volcanic cone of Keilir in the south. To the east there are vast heaths and lava fields, and to the west the Atlantic Ocean itself reaches into the bay.

This wide, empty frame makes the Reykjavík area a more singularly impressive and beautiful place than if it had been set within a densely populated area, vibrant with life and play. Visitors who drive parallel to the coast from the Keflavík Airport to Reykjavík get a strong feeling of the barrenness and the hidden powers leads people to be on constant guard.

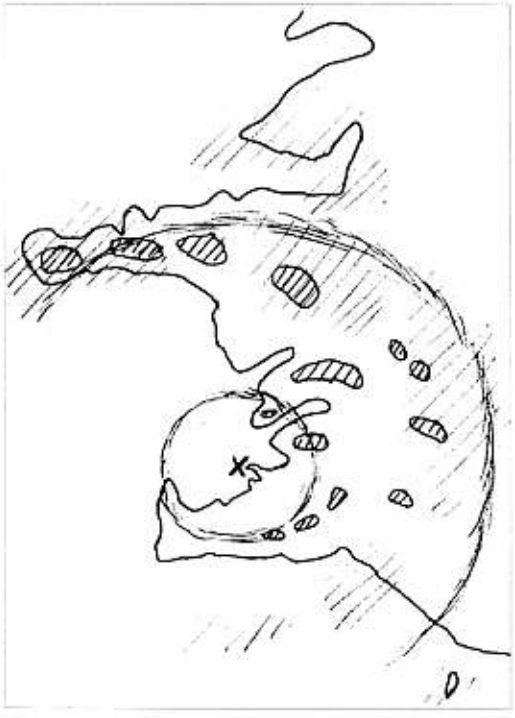
Therefore Icelanders want to live at a place in the landscape that provides a view over the surroundings. This is how it was earlier with

A view to the mountains from the edge of Breidholt III. Will the trees grow to shut off the view? – The drawing shows two circles of mountains around Reykjavik. Below: The old observatory was pulled down as the representation of a ship's bow as a base for the Leif Ericsson sculpture was erected.

farmers and seamen; they had to have a view all the way to the mountains to be able to see whether storm clouds were gathering, or if the rays of the sun were about to break through.

The ring of mountains was, in addition, the dial of a clock with peaks that marked the hours of the day, as well as a calendar with a solstice axis. In a country and on an ocean without landmarks the mountains also were a way of guiding and anchoring the people because by aiming a rock and a mountain peak together, people could orient themselves. The Icelandic term for a fishing ground, *fiskimið*, derives from orienting by lining up two places and where two such lines intersect, there is the spot.

In this dark country reminiscent of Ragnarök, the end of the world, the sun is the harbinger of joy. As it breaks out of the clouds this dead and cold country comes to life. The people hasten out of their houses, the streets become filled with life, and joy and thanks is behind each serious face. In the sun-filled air everything becomes strikingly clear and sharp.



Broad unused green area between Breidholt I and III. Is it not enough to have such tree areas on the other side of Breidholt III? By using some of these very wide unused open areas for buildings, the capital area need not spread out further to the south and north.

This is the frame and the scene of this city in the distant North Atlantic. In few other modern cities does humankind have more feeling for how much life depends on how the forces of nature twist or turn.

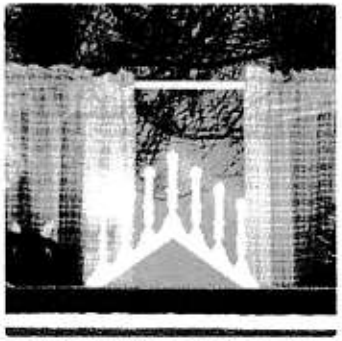
Over this stage of human existence arches the sky, bright in the summer, black in winter. In the middle of summer it never gets dark so the working day often becomes rather long. In the winter the darkness hovers over the city, the stars twinkle and the northern lights flicker. Reykjavík has a winter beauty.

Cheap electricity means that the streets are well lighted and everywhere there are lights in the windows, reaching a maximum with the celebration of light at Christmas, when most buildings in the city are adorned with colourful lights. The final peak is reached on New Year's Eve with an enormous display of fireworks.

A well-known American book of poetry is called *Climates of the Mind*. The title refers to the fact that there is a connection between moods and weather: in sunshine everything is good and beautiful but in a lowering sky people may also become depressed and gloomy.

The great variations in weather in Reykjavík change the expression of the city and of the people – sometimes often each day. Improved clothing has meant that people can easily dress for the weather, so that cold and bad weather need not lead to the discomfort experienced in the past.

Defence posture against the weather is no longer the dominating fact of the lives of the Reykjavíkeans who also gain from the fact that people now understand the forces of nature much better than in earlier times. As the storms rumble over the land, people may be scared, but most often the results are more just the spice of life.



Relations with the Environment

As described earlier, the industrial village of Reykjavík was built in the summer of 1752 along the path the first settler, Ingólfur, took to the sea. The main administrators and craftsmen were Danish, as were the houses that turned their long side towards the street. The next step in the growth of Reykjavík was the development of commerce and the second line of houses rose, following the soft curve of the gravel bank above the beach.

The Icelandic workers lived outside the village. The officials lived on farms some distance outside Reykjavík, for example, at Nes, on Videy and at Bessastadir. For their farming they needed large pastures and grazing fields. Their masonry houses were of Danish architecture and are still today some of most beautiful buildings in the Reykjavík area and are especially well placed in the environment.

The village itself and its houses were beautiful in their simplicity, like Danish villages from those times usually were. The vision was practical and down-to-earth, and architecture and setting offer few surprises.

During the first 100 years Reykjavík developed along these same lines, but very slowly. It was not until the middle of the nineteenth century that changes were first made; the cathedral was enlarged and the Latin School was built on the top of the slope east of the Creek that ran through the town. There the resurrected Althing, the Icelandic parliament, first held meetings in Reykjavík.

As the fishing vessels grew in number the influx of new residents speeded up, and Norwegian "catalogue houses" become a model for the new architecture. By about 1900 there was already a class of well-to-do merchants and fishing vessel owners, and new additions to the class of officials came when Denmark granted Iceland Home Rule in 1904.

In this period the most beautiful houses and streets of the age of wooden houses were built on both sides of Lake Tjörnin. Styles of architecture are hard to define but the urge for beauty that came with Romanticism, and the interplay of town and nature became dominant. The vision of the townscape is guided by the Lake and the Kvosin area, that are located between two hills, but the first building that was erected on a hilltop was the Skólavarda, the school observatory which has given the hill its present name.

National Romanticism and the Neo-Renaissance came with the first state architect, Gudjón Samúelsson, as he, together with others, started work on a city plan for Reykjavík. For example, he designed a "Citadel of Icelandic Culture" for the large square on the top of Skólavörduholt Hill.

Some official buildings today are reminiscent of this idea, but the only remarkable ones are Hallgríms Church and the Einar Jónsson Museum. The church, in the middle of the square, provides a visual focus from the two streets of Skólavördu and Leifsgata.

The plan of Samúelsson and the others followed the rule of the times to distinguish between worker and upperclass neighbourhoods. Most of the workers' dwellings were to be built as closed blocks lining the streets and therefore with very few possibilities of having a real view.

The beautiful south slope of the hill, on the other hand, was planned as an area of detatched houses for the rich, with large gardens. This concept can be traced back to Prof. Hannesson, as he wrote in his book on planning in 1916 that the rich "are more receptive to the beauty of the land and a good view". Later the painter Kjarval became very vocal about the necessity of opening the view to beyond the city, all the way out to the ring of mountains.

The plan continued the tradition that started with the Stjórnarrádid and the Latin School, to place official buildings on tops of slopes, like for example, the Austurbaer School, the National Hospital, and the University.

This high-minded period in planning and social vision can be said to have climaxed with the building of Hótel Borg and the millennium festivities of the Althing in 1930. What replaced it was the mechanical and uninspired style of functionalism. This style produced boring and mechanical neighbourhoods like Nordurmýri, where there is no

The College of Navigation stands on a hill like an old castle. Having buildings and settlements face outward has, however, been far too predominant in Reykjavik city planning. People should search for topographical situations that would allow buildings to face inward, toward a common centre.

real view nor direct contact with beautiful natural areas, even though the Miklatún is close by.

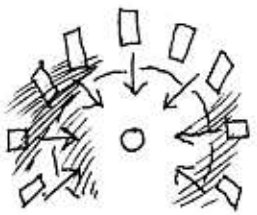
After World War II the architecture and planning started to be freed from the bondage of functionalism and special styles such as Arab and Chinese started to surface. In this same period an interest in placing official buildings on hilltops, like the College of Navigation and Hallgríms Church, reappeared. The rich started to develop an interest in building along the coast, as at Aegissída, and to build on the crest of hills, as along Laugarás and Háahlíd.

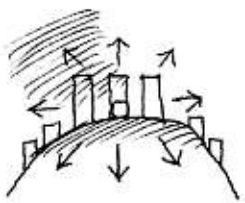
Now ordinary people were also clearly valuing "the beauty of the land and a good view" because residential blocks of flats were placed for the view on the top of Laugarás and Sólheimar. Detached blocks of flats were also lined up diagonally, as in Eskihlíd and Gnodarvogur, so that everybody could enjoy the view.

With this central emphasis on the view, the formation of urban space got out of hand. In the suburb of Breidholt I a good solution was reached because people in the U-shaped blocks both enjoy a view outward and also a view to the semi-enclosed common space within the U-form. This double directioning of the buildings was repeated in Breidholt III, but there both the buildings and the enclosed spaces are too gigantic in scale to be as effective.

The widespread interest in having a view is understandable and the hills north of Grafarvogur called for this same planning scheme, i.e., to place high buildings on the hilltops. Industrial areas, thoroughfares and green areas then fill the low areas so that the residential areas do not connect to form an enclosed space but rather stand high upon the hills in isolation one from the other.

The interest in the flat airport area for building could possibly have a connection with the fact that there the view would not be the prime factor but rather that the planning would focus on creating urban spaces – and thus also the urban life that such spaces bring with them. Such a space and such a feeling of community can not be created if





A proposal by students at the University of Iceland for settlement of today's airport area in which they suggest a very densely settled area in the northern part. This would be the old scheme of four storey buildings lining the streets, as in the old town centre, where the lower floors would contain shops and services that would create a vivid urban atmosphere.

a residential area is directed outwards from all sides of a hill so that everybody turns their back on the community.

This hill building-scheme is very Icelandic; people want to adore a scene of natural beauty from a detached distance. Icelandic individualism and the deep-rooted focus on wide vistas means that nobody wants to have their view disturbed, and there is in turn very little interest in turning inwards to create a close community with one's neighbours in pleasant and enclosed spaces and squares within a neighbourhood.

Many young people, on the other hand, now have an interest in forming such close communities, even if it means hardly any view and only small gardens. An example in the old part of town, which is now so filled with life that it is reminiscent of a southern village, is the Hadarstigur.

These changes in the preferences that come with the younger generation – i.e., the wish for a community and city life – is replacing the wish to live in isolation on hilltops in a suburb outside the city, and therefore the arguments for continuing the latter scheme of building are of doubtful validity.

One has to keep in mind, however, that many of those who are moving to the Reykjavík area from the countryside are still used to a low population density and wide vistas and therefore want to build their homes on hilltops in the outskirts of the urban area.

The planning goal as concerns the younger urban generation, on the other hand, should rather be to provide spaces for flats within the city. Residential towers are a solution for some – they increase the density – but first and foremost people want buildings with contract to the ground.

There are open areas all over Reykjavík that can be used for building. The authorities should announce a competition to see how some of the open spaces in the city could be used in order to make the city denser and to enrich urban life, and also to provide building spaces that would be very popular among the younger generation.

10 Relations with Geological Forces

Aspects of Vulcanism

It was well into the twentieth century before the nature of the movements of the earth's crust came to be understood and accepted. The theory that the surface of the earth is composed of individual tectonic plates that are either moving apart or crushing into each other was a revolution. Plate tectonic theory finally made clear the logic of the earth's various formations: mountain ranges, ravines, volcanic ridges and peaks, as well as the geothermal and earthquake activity that are linked to them.

The two largest plates in the northern hemisphere are the North American and the Eurasian plates. The spreading rift between them lies in the mid-Atlantic, and Iceland is the only sizeable landmass where this belt of faulting and vulcanism appears above the surface of the ocean. That the two plates are rifting apart leads to periodic earthquakes and volcanic activity and molten rock from the earth's depths rises through cracks and erupts, covering the surface of the land with lava and ash.

The widening and filling in of the rifts with lava means that new land is constantly being created and Iceland becomes ca 1 m wider each century. In response to this periodic widening, extra lengths of cable are sometimes added to high-tension power lines.

The mid-Atlantic ridge enters Iceland on the Reykjanes Peninsula and runs from there through Thingvellir to the north. A second series of faults first appears in the Westman Islands, runs under the Mýrdal Glacier and proceeds to the north in the western part of the Vatnajökull Glacier.

The belts of active vulcanism are the areas in Iceland that are both the most dangerous as well as the most valuable. They are valuable because of the geothermal hot water associated with them and also because in some areas the cracks act as tanks that fill with fresh drinking water. Some of the fault areas, on the other hand, are dangerous because of eruptions and earthquakes, so people should have the foresight not build close to them, or as the saying goes: "If you build your house on a crack in the earth, it's your own fault."

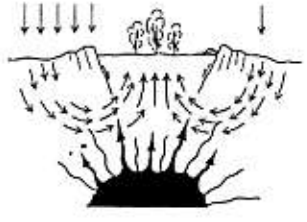
Taken as a whole, the fault areas are valuable, that is, if you are clever enough to build only in or close to those areas that are not dangerous. Reykjavík is one such valuable area because there is little danger of a lava flow or ash fall – though as little as 10 km further inland there is much more danger.

The fact that a non active fault zone flanks the east side of the city means that earthquake shocks that move through the bedrock towards the city from the east are absorbed in the fault zone, just like in the part of a car that crumples in a collision.

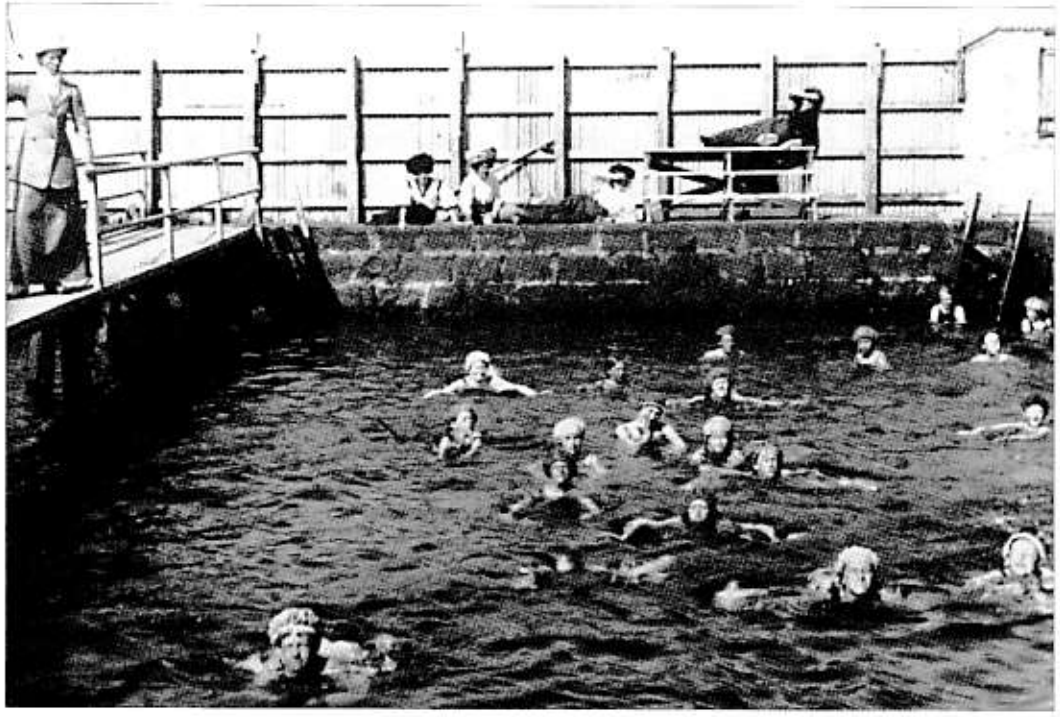
This fault zone also benefits the city by providing water storage. The drawback of utilizing faults as water tanks, however, is that many of them are open at the top and this means much danger of pollution. The whole hinterland of the Reykjavík area has therefore been designated a watershed preserve, a fact which has a strong bearing on the city's layout:

Firstly, at the city's edge there is no dirty industrial belt; instead the settlements meet an almost untouched natural area with clear fishing lakes. There is also the tree nursery area which was allocated space in Heidmörk because the area is a nature preserve. This all offers a unique opportunity to create, at this border, a marvellous interplay between the city and the wide unspoilt natural areas found here.

Geothermal hot water only appears in one place in Reykjavík itself, i.e., in Laugardalur Valley, which until around 1950 was well outside town. In spite of the distance, these hot pools or Laugar were much used by the townspeople. The Laugar road was put in to connect with the springs. As interest in swimming awakened in the late nineteenth century, the first swimming pool was built in the Laugar area. The hot water for the first district heating system in 1930 also came from this area. This first hot water utility provided heat for several houses on Skólavörduholt Hill and also made the building of the first indoor pool in Reykjavík possible. Further expansion of the heating system was delayed by the Second World War.



The utilization of geothermal hot water has brought huge gains for Reykjavík. The first use was this old swimming pool. At the end of World War II municipal district heating provided water via a pipeline from Mosfellssveit with the result that the cloud of smoke from heating with coal, started to disappear.



The benefits of the heating system are tremendous: cheap heat makes life in a cold country with no coal or other fossil fuels much pleasanter than would otherwise be the case, and a strong bathing culture has been created in a country that does not have any warm beaches.

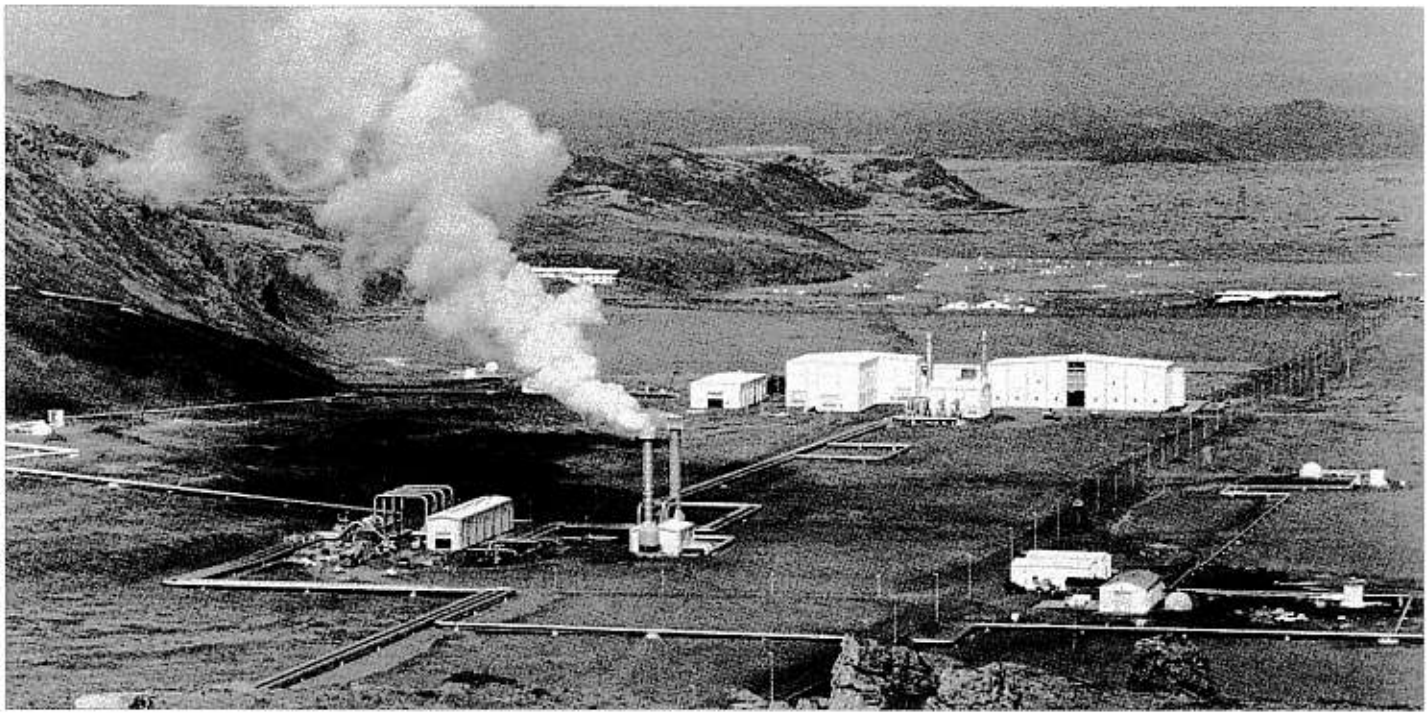
The gains in improved health are also very great because the low cost means that the open air hot-water pools remain in operation all winter, even in blizzards and freezing temperatures. And finally the coal cloud that had earlier hovered over the town disappeared, and houses and thoroughfares that were earlier drenched in soot have now become sparkling clean and shining.

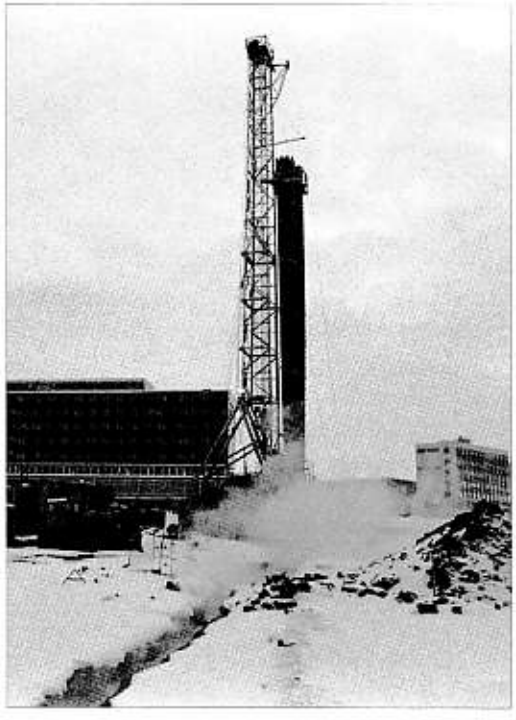
When the water from the Laugar was no longer sufficient, a 15 km long hot water pipe was laid from Mosfellssveit in the country to Öskjuhlíd Hill. There the water is pumped into tanks, from which it runs with gravity feed into the buildings and dwellings in the city. Öskjuhlíd is the highest and the best spot for a panoramic view of Reykjavík and therefore a restaurant, the Pearl, was built on the top of the tanks. The restaurant floor revolves, completing a full revolution in two hours.

In 1957 the Reykjavík District Heating Service started to drill for water within the city itself, using a big steam drill. These boreholes supply a considerable percentage of the needed hot water. It was quite remarkable to see this drill in operation, sometimes close to a shop or a home. And the whole city waited excitedly, like people waiting for an oil well to gush in an American movie.

There is an important difference between geothermal water and petroleum, however, in that geothermal water is both a clean and renewable energy source, whereas petroleum is both nonrenewable and also very polluting. Economics that are base on it are therefore not sustainable in the long run.

In 1990 a new hot water pipeline was laid from the high temperature area at Nesjavellir, and then the heating system was extended to the rest of the capital area. In high temperature geothermal areas the water is very hot, so hot that when the pressure





is reduced at the surface it starts to boil with an enormous increase in volume.

This steam is used to drive electrical turbines, producing clean energy. The steam then passes through a condenser and again becomes hot water, which is transported to the city, via a pipeline, for space heating and for greenhouse and industrial use.

In Nesjavellir a recreational area has also been created as a byproduct of the production of energy. The former work camp is now used as a hotel and the roads in the landscape of Mount Hengill that were built to reach the drilling spaces, make the area more accessible for recreational uses.

There also is the idea of letting the spillover run into a natural depression to create a geothermal swimming pool in the bosom of nature, as was done to form the Blue Lagoon on the Reykjanes Peninsula.

These examples show us how fortunate the inhabitants of Reykjavík are. Still there are many more possibilities for utilising this resource, both for industry, outdoor recreation, and health services, which are outlined in the next section.

Tapping the high temperature area at Nesjavellir has made certain that there is enough hot water for the whole capital area. Now electricity is also generated from utilization of the steam. – The left-hand photo shows a large steam drill at work close to Hotel Esja.

Many new opportunities can be created with the utilization of geothermal water, such as building a dome over a "tropical coast", as in Kempervennen in Holland. – The upsurge in adding hot tubs and glassed-in terraces is still going strong. (See examples below).

Enriching the City Through the Use of Geothermal Water

The first steps in the utilization of geothermal water were space heating and providing water for swimming pools. The next step was the heating of greenhouses and nurseries, an important change that resulted in a wave of growing vegetables and ornamental plants, both by the city itself as well as by associations and individuals.

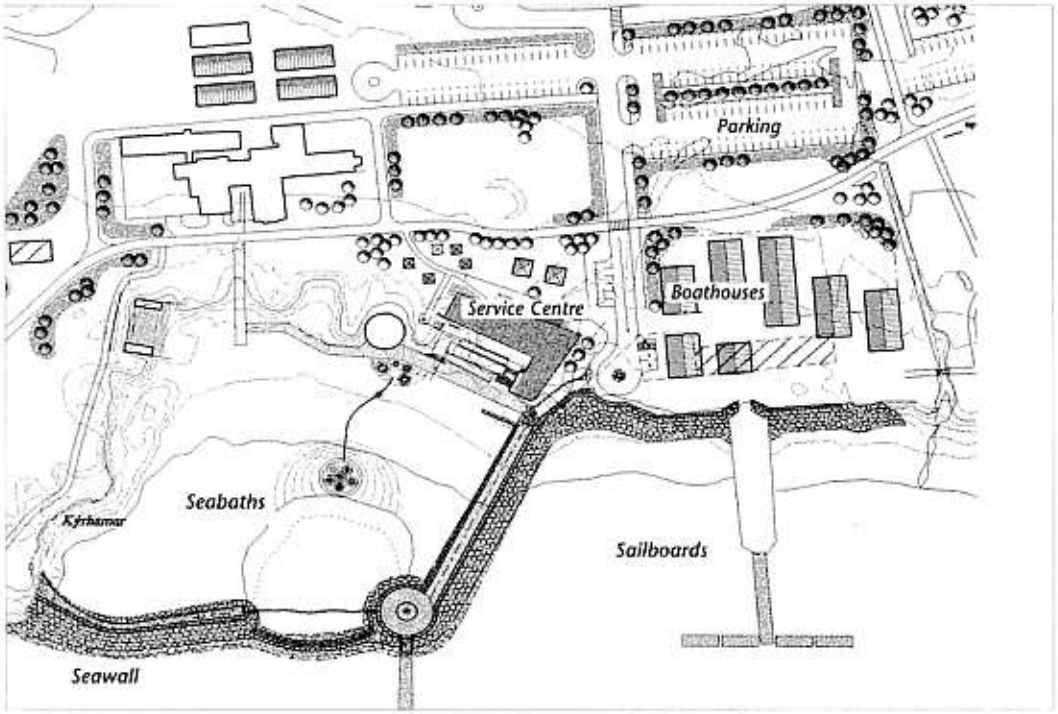
This possibility is very important because Reykjavík is a windy area, but the growth of trees and other vegetation has gradually started to create shelter in the city and thus improved the microclimate.

Successful use of greenhouses led people to start building small ones in their own gardens, which later developed into glassed-in verandas. If there is sun, people can sit there and bask in "southern" warmth and vegetation, even in mid-winter. Many have also added a hot tub for bathing.

Around 1975 a development began of heating pavements, driveways and even streets, with the run-off from the heating system. Now all pavements and pedestrian areas downtown, and also along Laugavegur and Skólavördustígur are heated, so that the snow melts away and the winters look warmer.

The advantages in terms of safety and cleanliness downtown are also tremendous. The next step needs to be to heat green areas like Austurvöllur, which could then be vividly green and in bloom the whole winter.

The development towards enclosed "outdoor" spaces, made economical because of the availability of cheap energy, started with the building of the indoor street in the Kringlan shopping mall in 1987. The next step was enclosing the large space between the hot water tanks on Öskjuhlíd; the Pearl Restaurant was built on the top of that space in 1991. In that space there are 7 m tall palm trees and also a manmade geyser that erupts up to the height of the palms.



This drawing depicts the thermal pool in Nauthólsvík, which is yet another step in utilizing geothermal resources. The lower photo shows how beautiful it is to build a pool along the coast.

The number of swimming pools has increased and now number five and services connected with them have increased. First came the hot tubs, and then saunas and clay baths, in addition to massage and exercise facilities. In 2003 a large privately owned health club is scheduled to be opened at the Laugardalur pool.

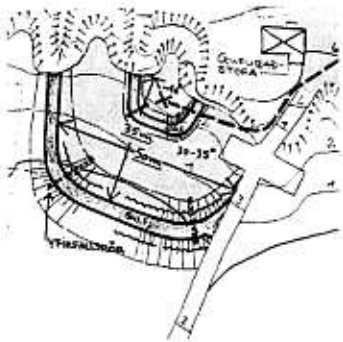
Most of the pools have water slides and other play equipment for children as well as grown-ups. The development is toward making the pools a world of play and exercise. It would be easy to build a glass dome over one of these pools to create a tropical atmosphere with palms and sand beaches, as in places like the tourist location Kempervennen in Holland, but it is doubtful if this would be worth it.

The noise under such glass domes is disturbing, and an important part of the charm of the open air pools of the interplay with the forces of nature – wind, sun, rain, and, yes, not less winter gales – is lost under glass. There are only a few pools at homes in Reykjavík because there are enough public pools and, very importantly, they also function as communal centres.

The first pool in Reykjavík was located out in an undeveloped natural area and was built out of hewn rock and had only simple wood cabins. Later concrete came to be used and the pools started to lose their contact with nature.

Most people who have experienced simple pools out in the countryside, for instance along the coast and in the mountains, know the singular and deep connection one feels with nature and also to one's own primal roots. It would be a treat if such pools were to be placed in some of the outdoor areas in Reykjavík, and even a swimming canal could be built so people could lazily drift through an outdoor area.

In Nauthólsvík Inlet on the south coast of the city there used to be a very popular swimming beach, even when the ocean was very cold. This place was closed in the 70's because of pollution. The sewer problem was remedied in the 90's so that swimming there again became possible.



The right-hand photo shows a year-round garden inside an Icelandic dome home. Increasingly shops are built within greenhouses and the opportunity to heat a large space cheaply creates the possibility for an indoor Tivoli. The old Tivoli could only be operated during the summer.

In year 2000 a new bathing place opened there. Now the inlet has been closed off so the seawater can be heated by geothermal water. This pool could have been realized earlier with fresh water, as was pointed out in a design proposal in 1974. Many other places in Reykjavík offer magnificent possibilities, but it seems that dozens of years always have to pass until they are realized.

Another area where cheap geothermal energy could be of help in furthering environmental life styles would be to start a revolution by giving residents support to build glassed-in areas to grow their own food. This would have large benefits for health and would also be an important step towards the self-sufficiency of households.

Vegetables are very expensive in Iceland, not least because of the cost of transportation and agent fees. If, on the other hand, people could connect their homes to glassed-in gardens, the work in the garden could become a natural part of the life of the household.

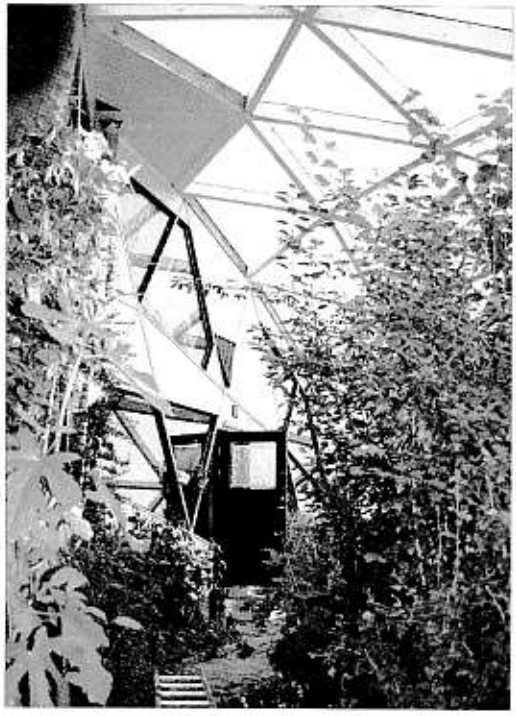
The designer Einar Thorsteinn has planned such garden domes and the architect Ólafur Sigurdsson has built a large building that resembles a greenhouse – inside are a garden and a small, inexpensive house for the family.

Still another development that can be taken further is what the Blómaval florist shop has done in its greenhouses, i.e., diversified into various kinds of shops.

The pioneer in this development was Eden in the town of Hveragerdi, where the focus is on tourists and providing them with needed services. For a while an amusement park was also operated in Hveragerdi, which, despite the rather unattractive sheds that housed it, was very popular among the young.

Such a roofed-over amusement park still needs to be built in Reykjavík. Such a place should have a variety of other functions to escape the monotony that comes with the separation of functions.

An interplay with indoor and outdoor natural areas would, in addition to this, enhance the organic quality of the place still further and these



natural areas could provide many places of pleasure for all age groups.

We have now in four chapters discussed many realistic proposals for strengthening the contacts between urban life and the four elements of the environment: water, earth, air and geothermal heat from the depths of the earth. This study shows us that a realistic future plan can be made to realize the vision of integrating the city and natural elements in a very close and enchanting way.

By carrying out such an intensive plan, Reykjavík would gain an absolutely unique position in the world in terms of a close interplay of city and nature.

11 Neighbourhoods and Open Spaces

How Connections Have Developed

In the beginning the village of Reykjavík had very close ties to the natural environment, as has been described. The ties were so strong because there were active occupational connections with the sea and the countryside, and the two borders were therefore filled with activities that tied the life in town to these open areas. In addition, the Lake Tjörnin and the land around it, provided a large open area in the middle of the settlement. The nearby areas have a very beautiful connection to this lake.

The first two suburbs, Skuggahverfi by the coast towards the east and Hlídarhúsahverfi by the coast to the west, were also in the beginning in very close contact with both the ocean and open land. The construction of roads on landfill along the coast in the 1920's was the first step in separation from the sea, as was explained in the seventh chapter of this book.

The ties of the town's evolution to the countryside and its agriculture, and later other functions there, remained strong for some time. The types of activities at this interface have been constantly changing. The importance of recreational activities, in particular, has strengthened, whereas agricultural functions have almost disappeared.

The extension of traffic arteries along green areas and at the borders of the city, as along the coast, have had a great deal of influence in reducing the links of the city and its neighbourhoods with open land.

However, as the city's industrial belt was laid out along the coast, industrial activities developed in the outskirts of the city only to a small degree. This development is in contrast to that of cities abroad, where it was almost a rule to construct untidy industrial belts that usually cut settlement areas totally off from the natural environment. With the special situation of Reykjavík in mind, it is clear that the tourism slogan "Next Door to Nature" is a rather good choice.

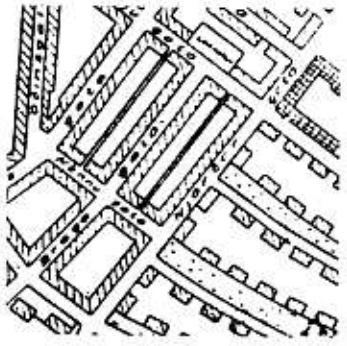
Up to the First World War almost all the buildings in Reykjavík, outside of the Kvosin area, were detached, and because there was very little traffic, the town was almost an open space with its numerous vegetable gardens and even cows and horses grazing. After the war houses were increasingly built in continuous rows, as, for example, along the Laugavegur and Vesturgata streets.

The plan of 1927 proposed continuous rows of houses along almost all the streets in town, following the common European planning scheme. Exceptions were made for the neighbourhoods for the wealthier on Landakot Hill and the south slope of Skólavörduholt. There the buildings were detached and on very large lots.

The Great Depression, which started in 1930, meant that the plan of destroying the earlier detached houses, and building three- to four-storey buildings along the streets, was only partly realized. Bits and pieces of old Reykjavík have therefore been preserved between the newer buildings. This means that in many places high window-less gable ends are still to be seen, and generally the appearance of the old town is very mixed, so much so that it can be called a style or characteristic of Reykjavík. Many see in this an expression of how individualistic the inhabitants of Reykjavík are – and thus, to this extent, very different from their kinsman in Scandinavia, who want to thrust everybody into the same mould.

However, this individualistic look is due to historical reasons and also the fact that the municipal government was still too ineffective to enforce the strict plan that had been approved. As planning control started to become stricter after 1960, tolerance towards aberrations in life styles and types of buildings in the city quickly evaporated. The suburbs that were built in this period are just as dead and mechanistic as in the Scandinavian bedroom areas.

Suburb planning has a root in the garden city



This beautiful border between a settled area and an open space came to be because a plan to build a highway here, through the whole length of the valley, was aborted. The small drawings below, underline the contrast of how a garden area can be cut off on all sides by traffic arteries and, in contrast, how garden and building can be designed as one integrated whole.

movement of the nineteenth century, as cities were still very unhealthy places to live, and health professionals considered it wise to move the residents out to the outskirts of towns so that the public could enjoy the natural environment as did the upper class in their country residences.

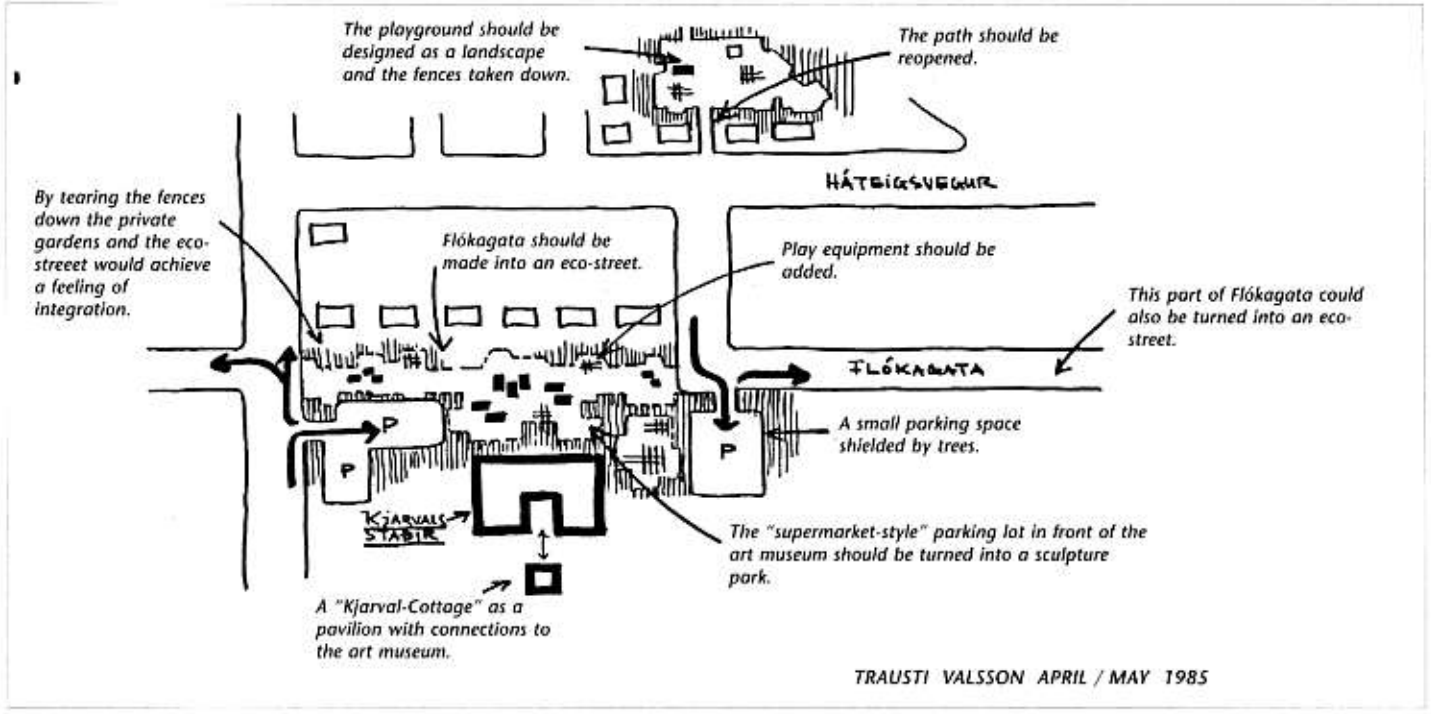
Architects like Le Corbusier made beautiful drawings depicting this vision, but reality turned out to be quite different. In most cases the buildings that resulted are terrible concrete monsters in a desert of garages and parking lots. The public had thus been robbed of contact with the city life of the older neighbourhoods and been given almost no contact with the natural environment that the modernist demagogues had promised.

The separation of each of the prime functions of city life – sleeping, working and commerce – were also a part of this planning vision. In order to make these separations as distinct as possible, long traffic arteries were constructed as to isolate these city functions into distinct boxes. Institutions were placed in one box, sleeping quarters in another, and a patch of green in a third.

This has had terrible consequences because, with the steadily growing traffic, people in many places are not able to pass over these traffic arteries on foot into the next box. This is, for instance, the case with Miklatún Park; the inhabitants that live beyond the Miklabraut avenue have little possibility of making use of this large outdoor area even though it is only some 50 metres away from their neighbourhood.

The common rule should be that the outdoor areas should be integrated with the neighbourhoods rather than be patches of green cut off from their surroundings with traffic arteries on all sides. As we are dealing with large green areas that are little used, like Miklatún Park, the authorities should simply build rows of houses on the sides of the park on the adjacent streets, as for instance at streets like Raudarárstígur and Langahlíð.

Such buildings would not be cut off from the green areas by main boulevards and would, there-



A proposal on how Flókagata Street by the Kjarvalsstadir Art Museum could be turned into an eco-street and even a sculpture park. Parking can be moved to nearby areas because cars need not be parked directly in front of the enterance as at a supermarket.

fore, give residents the chance to enjoy a close interplay with the park and at the same time to enliven the park. These buildings also would give the park a frame, and protect it from noise and pollution from the streets.

In some places in Reykjavík, neighbourhoods are in a close and beautiful contact with green areas, free of any hindrances. One can mention the direct connection of the houses below Laugarásvegur to Laugardalur Valley, the Fossvogur neighbourhood to Fossvogur Valley, and the direct link of Breidholt III to Ellidaár Valley. In studying how this direct contact came to be, one discovers that these connections were fortuitous, as according to the traffic plan, city highways were to be built at the borders between the neighbourhoods and the green spaces.

In Laugardalur Valley this highway was to have been Dalbraut, which today ends at Sundlaugarvegur Street. In the plan it was meant to continue through the whole length of the valley and then on to the south. In the other case we are dealing with, Fossvogsbraut Highway was meant to start at Lake Raudavatn, continue through Ellidaár Valley along the river, then take a left turn through Fossvogur Valley, take a large curve at the foot of Öskjuhlíd Hill, and finally connect to Sóleyjargata Street by the Hljómskáli in the park in the centre of town. The plan was thwarted by public disagreement and actions like e.g. the planting of trees in the valley.

The most effective planning method to avoid thrusting large highways through the city itself or placing them on the border between neighbourhoods and natural areas, is to place them outside the settlement areas. Good examples of this include some parts of the Outside-of-Town highway and secondly the Sundabraut highway that will go from peninsula to peninsula to the west of the settlements and which will reduce cross traffic through the Mosfellsbaer. The third is the proposed highway out of Reykjavík across Skerjafjord to the Álftanes Peninsula. This link would relieve traffic pressures on the Miklabraut and on today's road to Hafnarfjördur.

Connecting Neighbourhoods and Open Spaces

The rules on how a neighbourhood and an open space can best be connected are similar to those for connecting city and water: 1) The neighbourhood and the open space should form one circular unit together. 2) The border between them should not be a straight line that divides but rather a line that interlocks the two areas. 3) The neighbourhood and the open space should have a relationship in terms of functional and visual characteristics. In this way the neighbourhood is improved by the garden and the garden by the neighbourhood. 4) If small garden cores are placed in the neighbourhood and small house cores in the green area, the connection between them becomes still stronger.

If planners follow these rules the connection between a neighbourhood and a green area becomes stronger. A very important additional feature is that no separating or divisive elements like traffic arteries should be placed along the border but rather the opposite; the elements and outdoor activities that attract people to the interface and thus help open up the green areas for the people.

Activities that are helpful in this regard include a restaurant and an outdoor centre that afford a view of the green area and are convenient as points to venture from in order to enjoy the natural environment and outdoor activity.

In order that the connecting activities have enough space, the interface should have a thickness rather than be only a thin line, which most often is the case on planning maps. If a great deal of connecting activity is placed in this interface – i.e., activity that both reaches into the neighbourhood and into the green area – the interface area can strongly enhance the interrelationship.

As it is with beautiful water and open space areas around the city, the green spaces within it are also a resource that has been little utilized in creating a still more enchanting interrelationship of city and nature. We can observe this lack by looking, for example, at the great outdoor areas of Öskjuhlíd Hill and Ellidaárdalur Valley and see how little residential areas in their vicinity enjoy a connection with these splendid areas.

One special exception is the beautiful interplay of the Árbaer neighbourhood with the dam in the Ellidaárdalur Valley. Its border with Breidholt III is not as good because the adjacent neighbourhood is placed on a shadowy northern slope. The area in the valley that offers the best possibilities for building a residential area with a close connection to this natural area, is the space at the old electrical station and all the way down to the highway bridge that crosses the valley. Here there is still a little used area that faces the sun and affords a view and would provide a suitable slope for an attractive residential area. In addition there is no major traffic artery that would divide the neighbourhood from the green area.

Below the bridge is a large landfill, Geirsnef, in the estuary between the two forks of the river, and to the right the western slope of the headland of Ártúnshöfdi. Here we have a street that would separate a neighbourhood on the slope from the outdoor areas on the landfill. The planned Saevarhöfdi traffic line, to run from Höfdabakki along Grafarvogur Bay and over the end of the landfill would, however, make it possible to close the street at Ártúnshöfdi as a thoroughfare.

Today the large Geirsnef area is very little used and no residential area enjoys a connection to it or to the boating harbour there. In order to implement as vivid a connection as possible between the Ártúnshöfdi residences and this large outdoor area, a few pedestrian bridges would have to be built over the river. Also a recreational centre needs to be built on Geirsnef.

As has already been explained, it is of the highest importance that no major traffic artery is placed on the border between a residential area and a beautiful outdoor area. If this is not done such traffic lines sometimes have to be placed within the neighbourhoods, which can separate functions there, and lead to less traffic security. We are therefore obviously dealing with two basic types of traffic systems for neighbourhoods.

This model shows the very pleasant connection between the Stadar neighbourhood by the coast and the river area. – The lower pictures show how the Geirsnef green area can be utilized as an outdoor area for a settlement on the headland of Ártúnshöfdi, by building bridges over the two forks of the river.

The first system – not to have major traffic lines along the border of a neighbourhood – was used in the planning of the settlement that goes down to Grafarvogur Bay. The connection with the green coastal area there is therefore very direct, but, on the other hand, it is too steep to work well as a recreational area, and because of the tides in the bay, the water area is also not well suited to recreational use.

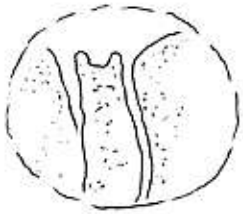
The second system – to reduce the traffic within neighbourhoods by placing the main traffic lines along the outside borders of the neighbourhoods – was used in the Rima and Borgarholt neighbourhoods. The resulting drawbacks occure only the western borders, because there the green areas are not that special. The traffic connection that separates these neighbourhoods from the Korpúlfsstadir coast, on the other hand, is bad.

In the Víkur neighbourhood, north of the old Korpúlfsstadir farm, there is no such traffic artery separating the neighbourhood from the coast and therefore it connects very beautifully with the coastal area. The east side of this neighbourhood also borders on the green area along the Korpa River, so there we also have an enchanting interplay between a neighbourhood and an open area.

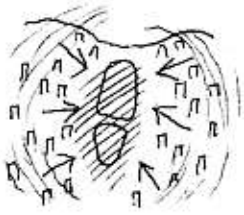
Up from Korpa there are large open areas that border on the river. These are a golf course and sports and institutional areas east of it, and agricultural and cemetery areas west of it. This is quite pleasant, though perhaps some residential areas should be placed there.

In these new neighbourhoods the large outdoor areas are all on the outskirts and therefore have some back-garden atmosphere. The reason is probably primarily the fact that the residential areas in Reykjavík are mostly in the northern half of the city area. The interest in opening the south coast of Reykjavík at Skerjafjord for residential areas is therefore perhaps greater.

Basically there are two options in placing open areas at the border of, or in the centre of, a settled area. As has already been pointed out, the



The view of the centre of the old town shows how beautiful and endearing it is to have a lake or natural area in the middle of the settlement area, and how it focuses attention. The round forms of the hills in Reykjavik mean that only in a few places can such pleasant concave areas be found.



landscape in Reykjavik is characterized by rounded hills, many of which stand alone. The spaces between them sometimes form concavities with a centre. There it would be logical to have the residences face this centre.

Probably the best example of such an "enclosed space" is Kvosin in the old town by Lake Tjörnin. This area is, however, more of a flat space between the two hills, Landakotshaed and Skólavörduholt, than a concavity.

What Lake Tjörnin and its environs demonstrate so perfectly, is how beautiful and socially connecting it is to have an open natural area in the middle of the settlement and to unite the community through its circular form. But there has to be a considerable inclination of the terrain towards that central space in order to realize the effect.

The landscape of Reykjavik does not offer valleys that form concavities enclosed on three sides. The only areas that have something of this quality are the bottomlands of the Fossvogur and Grafarvogur bays. Elsewhere in this book the proposal is made to utilize this space by closing in these bays from the ebb and flood of tides and then building houses all round them all the way down to the water.

By observing how the feeling of togetherness is produced by the form of a landscape concavity, we can better understand how convexity, which is the opposite of concavity, as with the rounded hills in Reykjavik, works against the goal of creating a feeling of community, because everybody turns away from the residential area and looks toward the distant mountains.

This habit of turning away from the community and staring into the far distance was what the people who moved from the countryside were used to doing, many times each day, in silence. The younger city generation, on the other hand, seems rather to want to turn their vision inwards, towards the settlement and the life in town, as in Kvosin in the early days.

12 Buildings and Open Spaces

The Lack of Connections Reflects Our Mode of Thinking

In the first chapters of this book it was explained that the dualism that divides everything into irreconcilable opposites, such as city/nature and buildings/open spaces, is one of the basic characteristics of western thinking.

In the history of western culture and environmental design this has resulted in cities that are almost fortified against nature, and most western homes are characterized by a defensive position against the environment, a stance that is well expressed in the popular phrase: "My home is my castle."

Thinking in terms of opposites has become less prevalent of late so that it has become feasible to have as a central goal in city planning and the design of buildings, letting the man-made and the natural work together for the enhancement of both.

Many seem to think that it is sufficient to place such dual pairs side by side, without any special means for connecting them. Admittedly, such a design can look good, i.e., it can display an interesting visual dialogue with its environment. But we have here been led astray by aesthetics that looks at the design of settlements and buildings as a visual game, where it is of minor importance that the result is meant to provide home and society for human beings.

This method of thinking of planning as a game of setting out blocks or cubes, was very popular for most of the twentieth century and is in fact only one more example of the alienation that has dominated our western culture. As we compare this kind of design to the Icelandic turf farm buildings and the old fishing villages and their magnificant interplay with the environment, we better understand the dishonesty and stupidness of this type of planning.

Architects and planners are trained to let things look good in photographs or in a model, but much too often there is a severe lack of responsibility towards their task of shaping societies and the lives of people. This is well expressed in a famous sentence, that describes the works of some of them as "private jokes at public expense".

The design of the future must be connected to and compatible with both the social and natural environment. In order to move from the view of architecture as monuments the architect Christopher Alexander encourages us to define architecture as "repairing" the environment, and points out how earlier cultures worked to shape the environment by gradually fixing and correcting what does not work well or feel right.

Here the user becomes the central focus rather than empty principles. This method has given man cities and architecture that are in harmony with both the inhabitants and the environment, a method that supports and respects people but does not make them the victims of flimsy, fashionable beliefs.

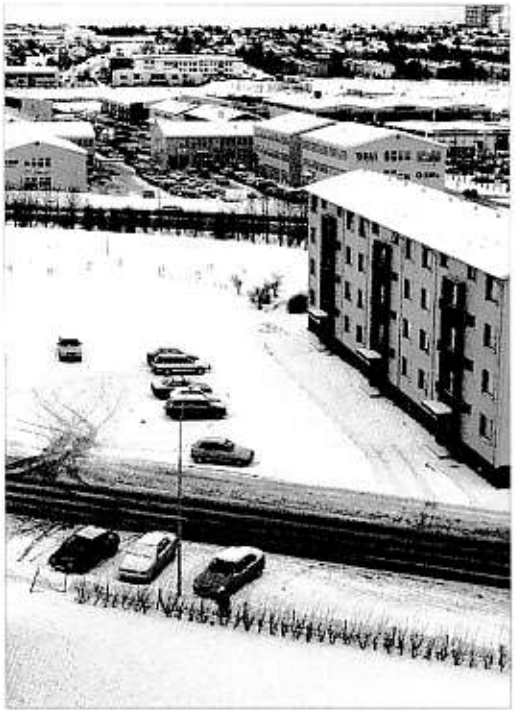
Most social research indicates that the alienation of the individual from his society and his environment is the primary reason for the severe social ills of today. It is therefore obviously bad that some of those who are given the responsibility of designing our environment, actually contribute to our being more alienated than people ever were in any past age.

A method that has the goal of separating construction from the environment and putting individuals and activities in boxes, is bound to have a very negative social effect.

Having realized this, great changes in the way our environment is designed must take place and the principal goal of design must be to create and restore connections and to shape the environment in a way that allows individuals and society to thrive as well as possible.

Because the largest part of the urban environment of today was shaped during the most serious period of alienation, i.e. in the second part of the twentieth century, it will be one of the biggest tasks in the beginning of the new century to repair the

These photos show clearly how far away this architecture is from reaching the point where the interplay of a building and its garden, enhance each other mutually. The small diagrams present this difference in method schematically.



urban environment and its architecture. This can be done by mixing city functions again and by tearing down social barricades to restore the former connections between city and nature and a building and its environment.

This book has attempted to demonstrate how necessary it is that this be done and how serious the situation actually is. The book describes, with the help of many examples, how connections can be created in cities, and in particular how links between the city and the natural environment can be established.

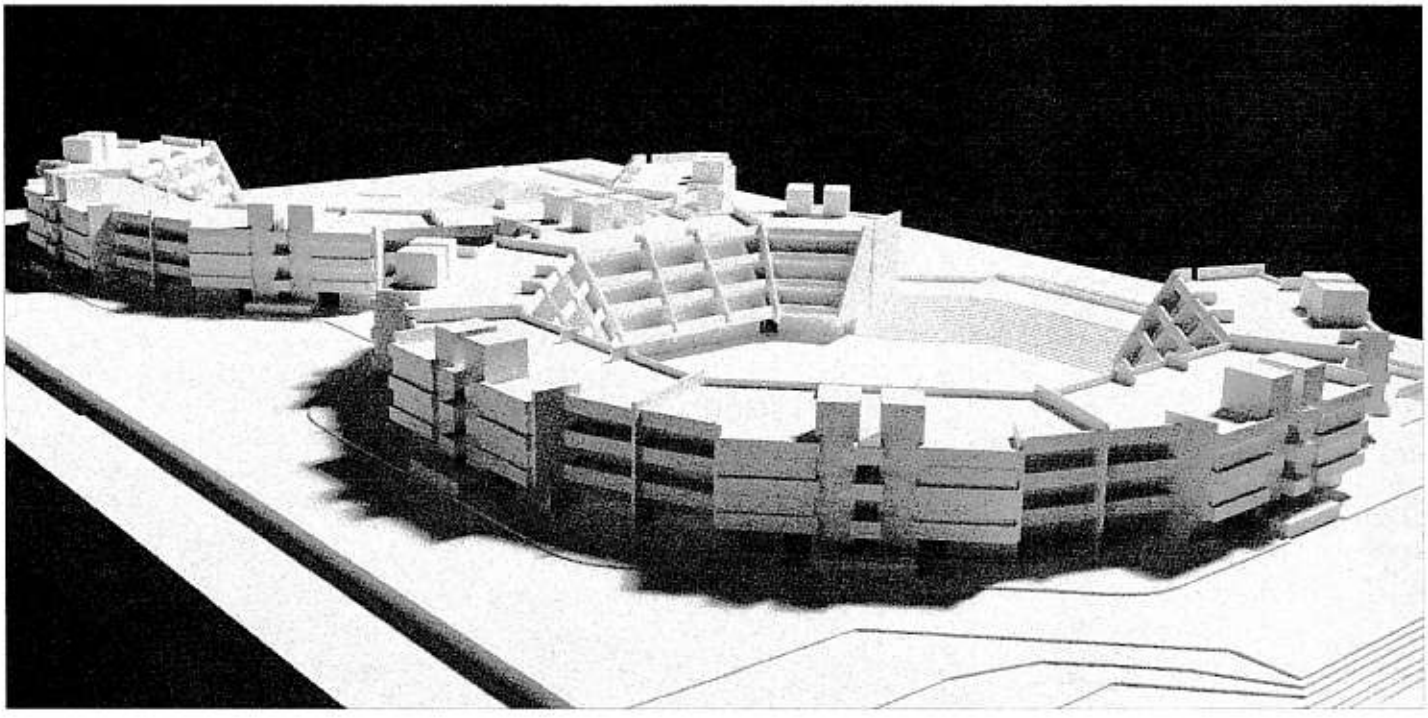
This method of integration is aimed at tearing down the older error of western thought which looked at binary pairs like city and nature as opposites that will not gain much from being closely intertwined, whereas many examples demonstrate that the reverse is true and that the city, human activity and buildings are enriched with a close interplay with nature.

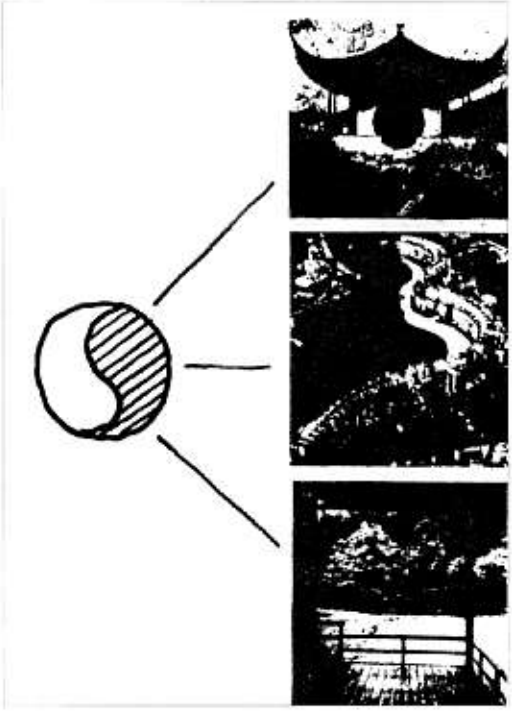
What is no less surprising is that the natural areas and gardens also become more beautiful and richer with such close interplay. The conclusion then is that, if such binary pairs are connected, they do not harm each other but rather enhance each other so that a magical additional value is achieved that is lacking if pairs like house and garden are designed separately.

What we are here dealing with is the mysterious law of complementarity that results in the magic that comes from the interplay of binary pairs. One way of starting to understand what kind of law is at work here is to study the nature of binary pairs in physics.

Let us take, as an example, how electricity is produced by a dynamo. As the dynamo is revolved, energy is applied to pull the positive ions away from the negative ions. By this act of separation, stored energy has been produced that can be used, for example, to light a light bulb. Magnetic north and south poles are created in a similar way.

If we now look at the binary pair of house and garden, we see that by building a house we are also polarizing, i.e., a tension; an energy situation, has





been created between an enclosed and an open space.

As with electrical and magnetic poles, the "electric" relationship between these pairs does not come into play unless the poles are close enough; the pull of the separated polarities must come close to reunite to be effective, just as with the pull of north and south poles of magnets.

The law at work here is the universal law of *entropy*, which says that it is the basic nature of the world that natural wholes, that have been polarized and separated, have a strong urge to pull together again, thus creating an energy situation between the two poles.

If we know and understand the methods for creating this tension, it can be utilized in various ways.

These blocks of flats embrace the garden areas so that all the inhabitants experience the garden as a focus, thus strengthening the feeling of community. – The small photos to the left show examples of the utilization of the circle, dynamic line, and complementary pairs.

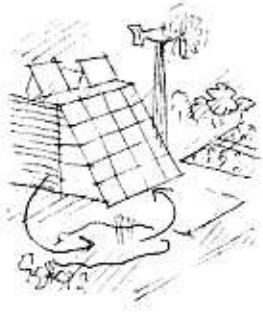
Connecting Buildings and Their Environs

In order to let the electrifying situation between enclosed and open space, as explained in the last section, materialize, a close connection between a building and its environs has to be established.

If we continue with the analogy of electricity, we can think of the house as the positive pole and the environs as the negative pole. In terms of the energy situation, it is of central importance what kind of connections are put between the poles. Here it is also very clear that if a connection is not established between the poles, no energy situation is created and thus no magic either.

The utilization of the tension between two electrical poles is achieved by putting instruments between the poles that convert the tension, for example into light or heat. In the same way, we can look at the border between a house and a garden as a place for "instruments" to create unexpected special effects between the "inside" and "outside" poles. Just as with electrical instruments the effects vary widely depending on how the interface is designed. A glassed-in terrace, for example, adds warmth and emits the sun's rays into the design scheme, whereas a roofed veranda creates a shadow and opens the space to a cooling breeze – the right thing for warm climates.

Older architecture swarms with countless examples of how the interface of house and garden can be designed, but a key feature is that the interface needs to have enough thickness so that there is space enough for the various types of functions that are well placed in such an intervening space, functions that can enhance the interaction of indoor and outdoor areas.



Examples of such connecting spaces are a balcony or a portico where delicate plants can thrive, a protected space for chopping and storing firewood, an outdoor sink for cleaning vegetables, fish and game, a grindstone and storage for garden tools, etc.

This short description shows us how modern architecture – that is not interested in the interplay of outside and inside but ends in a concrete wall – is in reality very poor and simplistic. The key feature for realizing the many enchanting possibilities in the interplay of a house and its environs is that the thinking of the architect should not end at the exterior wall, but rather that the house and its garden be designed as one integrated whole – in very close co-operation between the architect and a landscape architect.

What is important to be aware of in going over the functions of an interface, is how much this resembles a summerhouse or a country homestead: The house has become a centre for living rather than being only a box for storage where the people can neither get out nor are given the opportunity to do something useful while they also get exercise.

We see in these design examples how opportunities for a new and healthy lifestyle are surfacing, a lifestyle which opens venues for filling one's life with meaningful action and content instead of languishing in front of television waiting to be claimed by the sicknesses resulting from too much indoor living and lack of exercise.

To be active is of key importance because by being active a person becomes fulfilled, and acquires dignity by increasingly taking the responsibility for more aspects of one's own life: health, food supply, recycling, education of children, maintenance of property, and activities that unite the family. It may sound surprising, but these actually are the fundamentals for sustainable development; every family has to take responsibility for as large a part of life's duties as possible because the ever-growing helplessness of the individual only leads to the expansion of public institutions which, in turn, almost calls for the exploitation of resources.

Here it is instructive to remember the old Icelandic farm life when goods were not imported and there were no shops or institutions in the country. The farm was a completely self-sustaining unit. All food and clothing were produced at home, the houses were built from rocks and turf from the surroundings, the children were taught at home, medicinal herbs were prepared at home, etc.

The photo shows the old Árbaer farm, now the site of the Reykjavík Museum Árbaer. Such farms were, for the most part, self-sustaining units, sometimes supplemented by the resources of the sea. – Quite remarkably "modern" environmental techniques are often taken from old methods, like building a glassed-in space for collecting solar energy and cultivating plants.

With all our prowess today it is much easier to live in a self-sustaining way. Everybody can produce his own energy with a windmill, solar cells and a glassed-in veranda at home. A glassed-in veranda makes it possible to grow plants from southern climates and potatoes and vegetables can be grown in the garden. There may also be space to raise chickens for eggs and meat, and if a lake or the sea is close by, one can go fishing.

This enumeration shows how easy a lifestyle of self-sufficiency has become and how easy it is for people to take a few steps in this direction, at their summerhouses or in their gardens – for their health's sake, if nothing else.

Let us now finally look at how emotional links to nature can be implemented inside cities. Here it is useful to look to the Orient because there people have had to create connections with nature even though limited to a small space within highly urbanized areas.

The atrium garden is here the core feature. There are two basic types: a garden in the middle and part

The vertical forms of the Kjarvalsstadir Art Museum go well with the trees in the park. Small pavilions in the park would enhance the interaction of the museum and park, if they provide for activities with a functional tie with the museum.

of a home, and secondly the sacred garden that people can look at or quietly walk through in order to calm the soul and find peace.

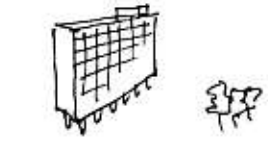
Such gardens are often versions of nature in miniature with, for example, rippled sand to symbolize the ocean and rocks that symbolize islands. In other such gardens the countryside is symbolically rendered with small mountains, bonsai trees, beaches and even a small creek.

It is interesting that psychology today explains these gardens as the need of the urban dweller for a link to nature because man formed and developed through thousands of years of cohabiting with nature. Surprisingly, a "pocket version" of nature close by, is sufficient. The knowledge of the psychological importance of such natural symbols has led to the planning of such miniature gardens for space stations.

Given the breadth of Reykjavík there is little need for such gardens except perhaps inside old people's and rest homes where people have little possibility of getting outdoors.

The U-shaped atrium garden which opens into a larger garden is rather common in Reykjavík. This form helps the garden area reach into the house and also creates a pleasant sheltered nook. Glazed walls around the garden make the connection between house and garden still more intimate and produce a more homey and protecting atmosphere.

The Kjarvalsstadir Art Museum has such a U-shaped atrium; however, it is only paved and is therefore not properly a garden. When there is no sculpture exhibited in this area, it is rather empty to contemplate. If on the other hand, the intent is to direct the eye to a larger garden beyond, the U-form needs to be more open than at Kjarvalsstadir. Out in the garden of Miklatún small pavilions should be built to increase the interplay of the centre and the garden.



Notes and Sources

Academic study is divided into two main categories: an area of specialization and an area of interdisciplinary study. Specialized studies focus on a very limited subject where often only a few disciplines are involved, whereas interdisciplinary studies aim at creating holistic understanding, e.g., by creating bridges between disciplines, as do ecology and environmental theory.

Theories of design are characterized by the fact that a theory is considered good only if it leads to better design or better planning. This book makes a special point of making clear in what way designs and plans would be better if the design theory presented, is applied.

The author formed his design theory in his graduate work at the University of California in Berkeley, and presented it in his thesis: *A Theory of Integration for Design and Planning Based on the Concept of Complementarity* (1987).

This thesis differs from most design and planning works in that it goes to the roots of worldviews and cosmologies in order to help define the basic faults of modern design and planning. Based on this approach the thesis describes how methods, as well as attitudes in general, have to be changed fundamentally if we are to remedy the most deeply-lying faults.

Because of this dimension of the project, the author took three courses in philosophy with Dr Paul Feyerabend, who later became a member of the author's examination committee.

The dissertation covers a very wide spectrum of academic disciplines. The list of references contains 104 books and articles and there are 162 illustrations. The dissertation has not been published, but copies of it can be ordered from the Graduate Division at the University of California at Berkeley, and Interlibrary Loan at the University Library in Reykjavík can arrange to obtain a copy on loan.

In most theoretical dissertations the value of the theory is tested through case studies. In this thesis six areas on the north coast of Reykjavík were studied. Here it was of great help that the author had already written the planning history of Reykjavík (*Reykjavík – Vaxtarbroddur*), which was published by Fjolvi in 1986.

Since his return to Iceland from California in 1987, the author has continued to research how his *Theory of Integration* can be applied for analysis, as well as for creating integrating design and planning schemes in Reykjavík and in some other cities. Teaching at the University of Iceland has been of great help because the students have applied the method in numerous projects they have worked on.

After thirteen years of study and work, the author finally felt he was capable of explaining his theory with good enough examples and clear enough connections between disciplines, so that the average reader could clearly understand what the theory states and what are the consequences of applying it to the real world of design and planning.

Work preceding this theory include the outstanding book *Design With Nature* by Ian McHarg (Doubleday, 1969) on how nature should be taken into consideration in design and planning. The Korean Jusuck Koh wrote his dissertation *An Ecological Theory of Architecture* (Univ. of Pennsylvania, 1978) under McHarg's supervision.

Koh lays out some fundamental aspects in the interpretation of the meaning of eastern thought for design. For instance, he explains the meaning of the T'ai Ch'i symbol, especially in reference to ecological principles. The author of the present book, on the other hand, focuses on creating a form theory that is rooted in these same philosophical and ecological principles.

The man who first received the American Institute of Architects' (AIA) gold medal for theory, Christopher Alexander, is a professor at Berkeley. Auditing one of his seminars was of great help, as were many of his books. The core of

Alexander's work is the study of patterns and structures in architecture and planning. His most important book is *A Pattern Language: Towns, Buildings, Constructions* (Oxford Univ. Press, 1977).

Other authors have also wrestled with creating design theories connected to form, and some have selectively collected older theories and categorized them to create a comprehensive theory. A good work of this kind is *A Theory of Good City Form* (MIT Press, 1981) by Kevin Lynch. This book was of much use for the present author in the task of defining the position of his theoretical work within the frame of form theory.

Not much has been written in Iceland up to the present on design theory, or the planning of Reykjavík. It is therefore mostly in conversations and workgroups that a theoretical work can be advanced. The author established a workgroup for the preparation of the exhibition "City and Nature" and much of this discussion was also of very great help in writing this book.

Pétur H. Ármannsson, head of the Architectural Division of the Reykjavík Art Museum, contributed greatly to the expansion of the concept of a border, e.g., to the distant border, the horizon. Nikulás Ú. Másson, head of the Architectural Division of the Reykjavík Museum Árbaer, helped define how the city border with the hinterland has developed in the course of time.

Björn Axelsson, landscape architect and head of the Environmental Division of the Reykjavík Planning Office, provided constructive criticism, pointing out that the theory has a certain tendency to p stulate one type of a border as the right one. He considers this to be a contradiction to the term "dynamic border" and he feels that one of the charming aspects of the borders is that they have been constantly changing as concerns both form and function. Axelsson also questions whether it is right to try to recreate the original, organic coastline with new landfill beyond the older landfill areas.

The author replied that it was not the goal to restore the former coastline completely but rather to aim at recreating some of concave/convex qualities of the coastline because these form qualities create facilities for various kinds of functions and in addition, simply through its form, help connect or integrate city and water areas. Something similar can be said about the design principles that say that adjacent areas should form a unit and that the two parts should be complementary. – It is not mimicking that is aimed for but the value of the integrating effect of these form/function principles that are described in this theory.

As concerns the historic development of the borders, they are now in many places approaching their ultimate limits as, for example, where the city has now grown all the way to the water protection areas in some places along its eastern border.

The preparation of this book has now for some time been a part of a discussion on Reykjavík. A second step in this discussion is the exhibit "City and Nature" in the City Hall in May, 2000. Hopefully this discussion can be kept active in the years to come, but this would require a planned effort. The establishing of the Urban Study Centre and a faculty of architecture at the University of Iceland – if the plans go through – would be very important steps in the furthering of debate and research. This work is needed so that design and planning in Reykjavík, as well as in other places, can be improved.

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The photo on the cover by Sigfús Eymundsson displays the Reykjavík harbour in the late 19th century. *National Museum of Iceland*

The portrait on the back cover is by Gudmundur Kr. Jóhannesson

All drawings by the author unless otherwise indicated. Photos on pages 7, 8, 20, 22, 223, 25, 26, 32, 35, 40, 48, 55, 57, 66, 68, 71, 77, 82, 83, 85, 86, 90, 92, 94, 100, 104 also by the author.

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Summary

The book's title: **City and Nature - *An Integrated Whole***

Reykjavík's theme in the Culture Year 2000 is "Culture and Nature". An exhibition in the City Hall and this book, explore the meaning of this theme for the City of Reykjavík and for the life in cities in general.

Originally cities were formed in a very close interplay with nature, but were gradually alienated from it during the mindless technological age. Now people are starting to realize how important it is that cities, and human existence in general, again can be connected to nature.

The planning-history of Reykjavík offers a unique opportunity to demonstrate – e.g. with old photos – how beautiful and giving the interplay of city and nature can be.

How the connections to nature, to a high degree, got lost in the technological era, is also illuminating, but most lessons, however, can be taken from Reykjavík's very ambitious program in the last decades, to recreate its lost connections to nature.

The vision behind this effort is that it is necessary for man to recreate these connections in order to counteract the mechanistic and alienating aspects in today's citylife. The way in which this program is conceived and executed in Reykjavík, can provide guides for such an effort for other cities and other nations.

The book reflects up on the interplay of the city with the four archetypal elements that are the subthemes of Reykjavík's cultural year: Water, i.e. the city's relationship with the coast and the ocean. Earth, i.e. the interplay with nature inside and adjacent to the city. Fire, which has formed the city through the geothermal resources, and Air which is the element that surrounds the city and meets Earth at the horizon, which has the function of defining the city's place in time and space.

The creation of the *Method of Integration in Design and Planning* starts by a study of the characteristic of western culture to define almost everything as pairs of opposites. Thus we speak about man and woman, house and garden and city and nature as opposites. The culture of the future has to try to free itself from this scheme of thinking in opposites, and try instead to see these pairs as one unit that has two complementary sides to it.

In his dissertation „A Theory of Integration ...." (UC Berkeley, 1987) Trausti Valsson created a methodology and theory on how complementary pairs can be designed and planned together in such a way that the result is more than the sum of the parts (i.e. 1 + 1 = 3!). This theory can be seen as an extension of the theory of Bauhaus' Itten on complementary colours, into the realm of design and planning.

Epilogue

The basis of this book is the *Theory of Integration* that I created in my dissertation work at the University of California, Berkeley, during the 1980s. Since then I have worked on further developing the theory as well as clarifying how it can best be applied. The aspects covered have mostly been in connection with architecture and planning in Reykjavík.

In 1997 Reykjavík was selected to be one of Europe's nine Cities of Culture for the year 2000. As it was announced that Reykjavík's theme would be *Culture and Nature*, I realized that my theory and case studies, would shed much light on how the city-culture and the shaping of Reykjavík, through most of its history have been formed in an interplay with nature. I also realized that the methods that I had created on how urban and natural areas can be interconnected at their borders, would fit the theme of the Culture Year very well.

I therefore prepared an application to the Culture City Committee and received a grant for preparing an exhibit and writing a book. Next I asked three institutes in the City of Reykjavík to join in on the effort. The contribution of the City Planning Office has been the greatest, thanks to the interest of its director, Thorvaldur S. Thorvaldsson.

A working group of five specialists was then formed: from the City Planning Office Björn Axelsson, who is Director of the exhibit in the City Hall in May 2000; Ingibjörg R. Gudlaugsdóttir, from the same office; Nikulás Ú. Másson from the Reykjavík Museum Árbaer and Pétur H. Ármannsson from the Architectural Division of the Reykjavík Art Museum.

Sigurjón B. Hafsteinsson and Gudbrandur Benediktsson at the Reykjavík Photographic Museum gave invaluable assistance in selecting photos from the museum collection.

This book was first written in Icelandic, following which I rewrote the text in English with a foreign audience in mind. Dr Terry G. Lacy corrected the text and offered a number of suggestions as to how to find the English words for the more difficult ideas. My thanks to her.

My thanks also go to Prof. Michael Laurie for writing the preface. Prof. Laurie is well known in many places in the world for his book *Introduction to Landscape Architecture*, which is a basic text in that field.

Many others also contributed to the preparation and production of this book, too numerous to mention by name, and I thank all of them.

Finally a few words on three special Icelandic letters. They all appear in the place names on the maps and drawings, but in the text they have been replaced by letters used in English, as follows: *Þ, þ* become *Th* and *th*; *Æ, æ* become *Ae* and *ae*; and *ð* becoms *d*. The English *fjord* is so similar to the Icelandic *fjörður* that it is used in place names in the text.

Trausti Valsson