small scale eco-tourism

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Title page

Title: Langå Nature Park - small scale eco-tourism

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Synopsis

This project takes place in Langå and deals with the question about how tourism can help establish a new role for Langå, after it lost its status as municipal capital to Randers during the municipal reform in 2007.

Since Langå's nature along Gudenåen is the town's main attraction, the project focusses on developing this advantage into a design for a Nature Park, situated in the beautiful nature found there.

The Nature Park appeals to a broad user group; locals, wildlife tourist and a new tourist group, where adventure and enlightenment are becoming more and more important.

Preface

This project is carried out as a Master Thesis at the Urban Design 4th semester MA program at the faculty of Architecture & Design Aalborg University, Denmark.

The project has focused on the development of Langå Nature Park as a destination appealing to a broad user group, incorporating the challenges created by a changing tourist industry and new consumer demands.

We would like to thank:
Randers municipality for their help with technical maps and information regarding the upcoming municipal plan.

Tom Nielsen from Århus school of architecture for insider information and facts about Langå.

Finally we would like to give a special thanks to our supervisor, Victor Andrade for his enthusiasm and great involvement of which we are very grateful.

Dansk resumé

Dette projekt fokuserer på byen Langå og dens nye rolle, efter at den mistede sin status som kommune hovedstad til Randers i forbindelse med kommunereformen i 2007.

Med Langås unikke natur og tætte forbindelse til Gudenåen, har projektet taget udgangspunkt i en udvikling af disse naturlige resurser til en Natur Park, som kan fungere ligeligt som en turist destination og et grønt offentligt rum for de lokale beboere.

Som en del af parken er der udviklet design vejledninger til et sti system, der udover at guide besøgende rundt i parken byder på forskellige aktiviteter og udfordringer.

Centralt i parken findes et oplevelses center med udstillinger omhandlende de tre specielle naturtyper på stedet – Skoven, åen og vådområderne. Centret byder yderligere på forskellige events og oplevelser, der gør parken brugbar hele året rundt.

Disse mange programmer og muligheder gør Langå Natur Park attraktiv for en bred brugergruppe. En succesfuld turist destination vil hjælpe Langå med at udvikle sin nye rolle i regionen, inden for en ny, omfangsrig og spændende industri hvor nye turisters søgen efter udfordringer, oplevelser og oplysning bliver mere og mere dominerende.

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Introduction

This project takes point of departure in the town of Langå - developing a nature destination attractive for tourists as well as locals.

When the municipal reform came in to effect in 2007, Langå lost its status as municipality capital to the larger city Randers. Therefore Langå now have to find its stands in this new context.

Since one of Langås main attractions is its nature and its close proximity to Gudenåen; already very popular with wildlife tourists and anglers, who use it for e.g. canoeing and fly-fishing, this project will investigate how this potential can be transformed in to a destination attractive for both locals and tourists.
A Nature Park with an Experience Centre will draw on tourist sectors already established in Langå and around the river.
It will further fall in line with a new form of tourism gaining ground, where the experience and adventure elements are becoming more important than the physical elements of accommodation and transport.

With Langås train station and its location close to the regions two main cities Århus and Randers, the park gains the further advantage of being able to supply its visitors with easy and sustainable public transport, from the cities almost straight to the park. This is something pretty unique for a nature tourist destination in the countryside - encouraging visitors to consider the nature of their destination, even before they get to the park.

Research question

How to create a tourist destination for a broad user group, focusing on the nature and wildlife of Langå?

Goals

- Create better accessibility to recreational nature, without disturbing ecologically sensitive natures
- Preserve threatened natures
- Design of an attraction that can function as an all year around tourist destination
- Increase people’s knowledge of nature


Langå

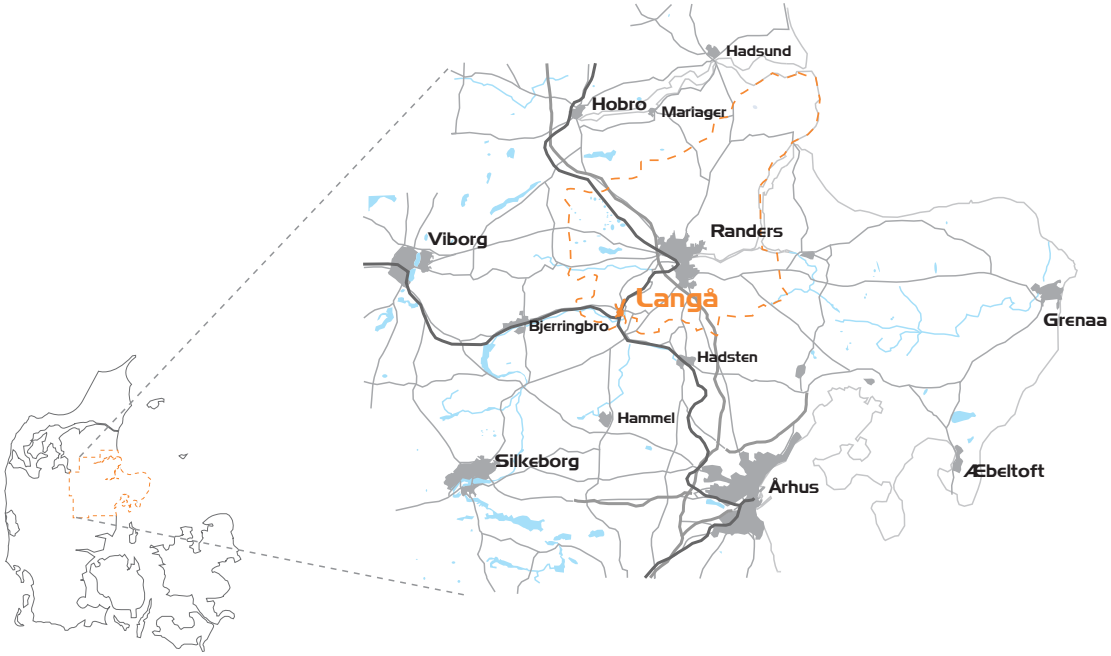


Fig.1. Langå in the new Randers municipality

Today

Langå is a community with approximately 2800 inhabitants [danskstatestik, www]. In connection with the municipality reform in 2007, Langå lost its status as municipal capital and the jobs and capital attached to this status, by becoming a part of the new Randers Municipality [Indenrigs og Sundhedsministeriet, 2005]. The town now has to establish a new role for itself and find alternative economic activities to ensure its future.

Towns in the countryside are often considered to be very similar. Therefore it is important for Langå to distinguish what sets it apart from the surrounding towns.

Strategic advantages

Langå has two main advantage, when taking on this new challenge.

Langå is placed in the main development zone of east Jutland, with a short distance to the highway, and trains connecting to Viborg and Århus within 30 min and Randers in only 9 min.[dsb, www]. This close proximity to the region's main cities and its infrastructure is very valuable for Langå when it has to develop a new strategy for its future success in the region.

Train departures:

Viborg	2 trains an hour
Aalborg	1 train an hour
Randers	1 train an hour
Århus	1 train an hour

[dsb, www]

User base within:

30 min	535.217 people
60 min	1.128.250 people

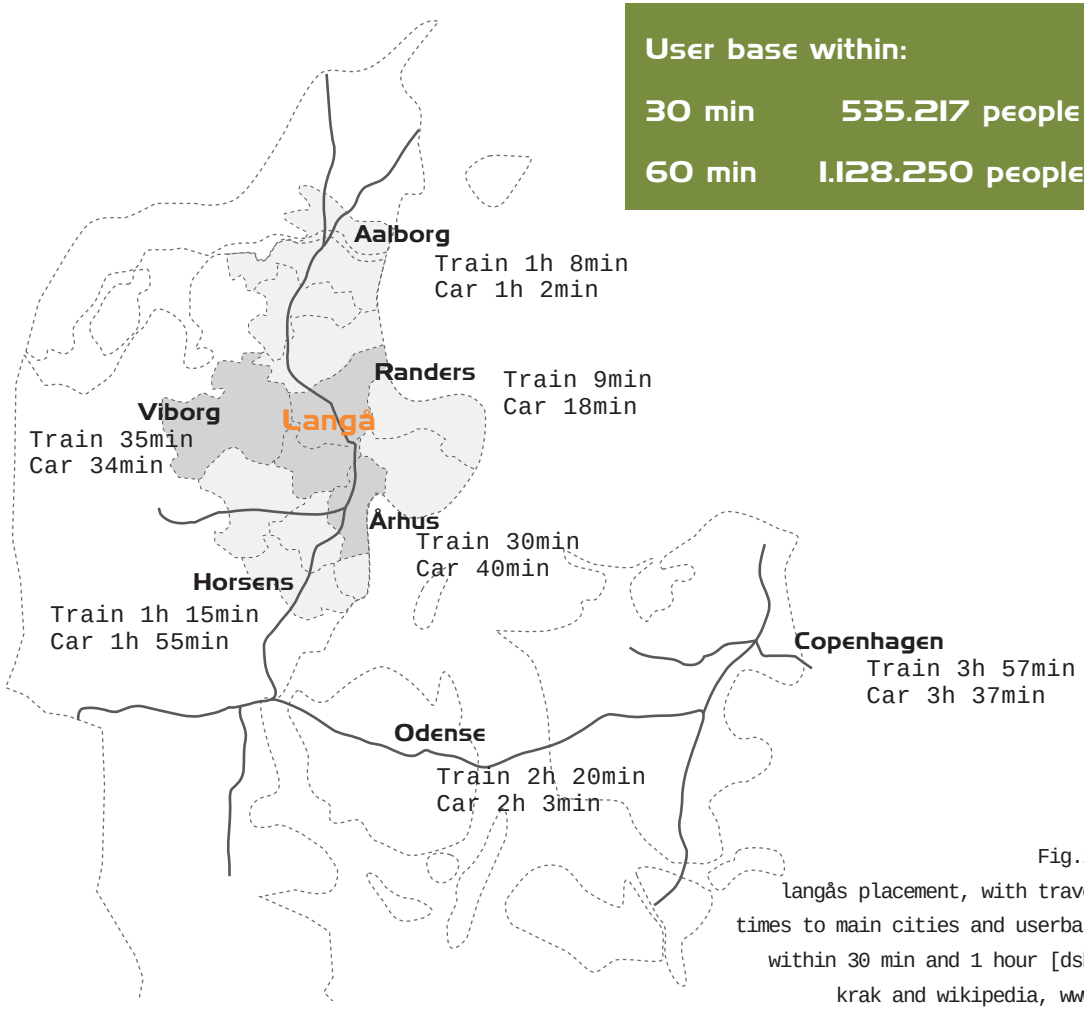
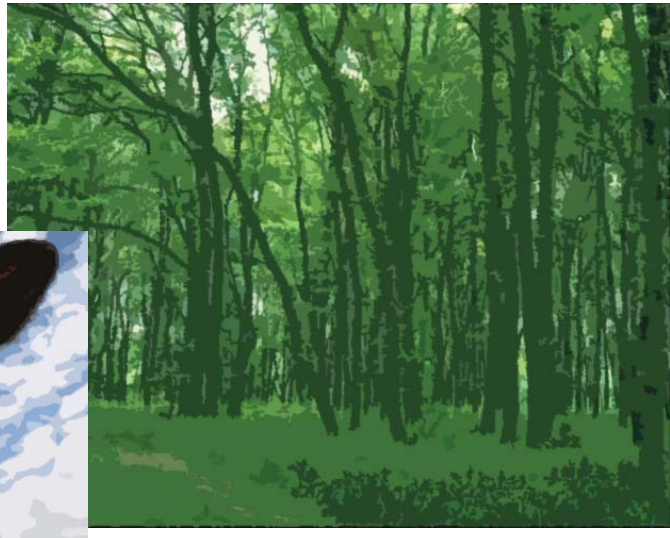


Fig.2. langås placement, with travel times to main cities and userbase within 30 min and 1 hour [dsb, krak and wikipedia, www]

Other than its acessibility, Langås main advantage is its nature. Surrounding the town is a quite unique mix of nature not often found together within such a limited area.

With 70% of tourist visiting Denmark giving nature as their primary motivation [Danske Regioner, 2008]. Langå have many of the right elements in place to create an interesting and relevant role for itself in the eco-tourism market.



A Nature Park creates a possibility to use and market Langås nature and to take advantage of what make Langå special, creating a strong identity from the town’s unique characteristics. The Nature Park would be a centre for diverse activity in town attracting locals as well as tourists.

Tourism

New Tourism

Definition of tourism by the World Tourism Organisation:

``tourism is understood as the activeties that individuals carry out during their travelling and stay in spaces different from their usual environment for a period shorter than a year for leisure, business or other purposes¨

This broad definition of tourism is still true, but the demands of the individual tourist are starting to change.
A new tourism where the focus has moved from the outer perimeters of the experience e.g. transport and accommodation, to the contents e.g. education, personal development and activity, is starting to gain ground.

Tourists as consumers are to a greater extent looking for identity, insight, education and other elements able to help them stage their individual life experiences and there need for self-realisation [danske regioner, 2008] placing them at the very top of Maslow's pyramid of needs (Fig.3).

Taking on a role in this new tourism entails that Langå has to accommodate the demand for individual, meaningful and authentic experiences.

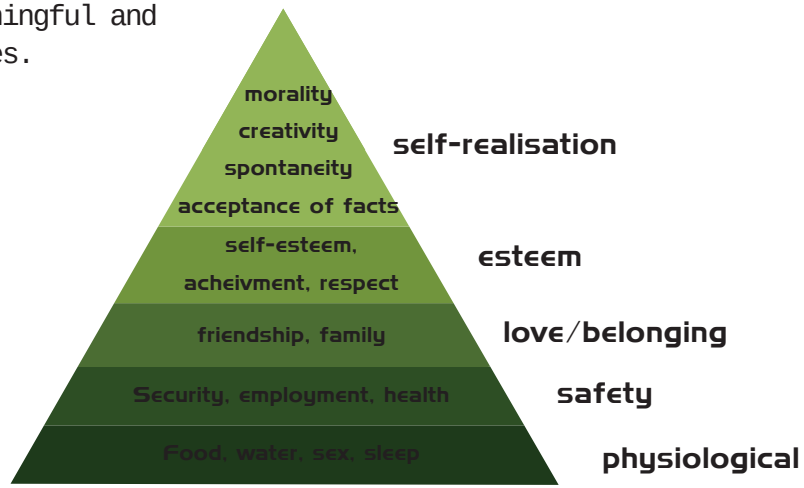


Fig.3. Maslow's pyramid of needs

Accommodation today

Campground:

Langå Campingplads

9 cabins	4-6 people each
one night	170 - 360kr.
one week	1000 -2150kr.
caravan spaces	97
tent spaces	30-40
one night	
adults	64kr.
children	30kr.

Bed & Breakfast:

Løgstrup Hovedgård

1 flat	4 people
two night	4200 - 4775kr
one week	7200 - 8275kr

Private House

1 flat	4 people
One night	400kr
One week	2200kr

[langaa-camping.dk, www]
[gudenaafisk.pbworks.com, www]
[langaa-overnatning.dk, www]

Today Langås main tourist attraction is the river, and what that brings of water related activity like fly-fishing and canoeing. This low-key outdoor activity is further mirrored in the main accommodation possibility found in town; Langå campingplads, an organised campground area near the river. It has incorporated different kinds of accommodation – small huts, caravans and an area for tents located just by the riverbank. [www.langaa-camping.dk]

Other than two Bed and Breakfasts flats, one in a privately owned home and one at Løjstrup Hovedgård, today Langå do not really have any hotels or hostels of a higher standard. The lack of this form of accommodation might have an effect on the kind of tourist staying overnight in Langå and the amount of capital spend in the area. This is something worth bearing in mind when considering the future user groups for Langå Nature Park.

Langå has previously followed the consensus that the countryside's nature related activities contained an attraction that made it unnecessary to promote it further [Danske regioner, 2008], but the new tourists increasing demands to their experiences, have made it necessary to consider how to strengthen the message of what Langås nature has to offer.

Today Langås nature has a very limited user group.

Hikers, anglers and the more outdoorsy locals are amongst the few groups happy to make their way to the river, where the bank is often hidden away behind livestock grassing areas and obstructing mud holes.
Better access to the nature and a broader selection of programs, would open up the nature for a more diverse user group, attracting tourists along with the many locals that hardly use the nature as it is today.

An angler pulls in a record-breaking salmon from the Gudenå between Langå and Randers.

By JULIE HORNBEK TOFT

An angler pulls in a record breaking salmon from the Gudenå between Langå and Randers. 21,1 kg over 124 silver shining cm. Thats how much salmon that got caught at the end of the angler Daniel Christensend fishing rod.

It is record breaking, and not just in Denmark. Other European salmon nations like Sweden and Norway have not reported a catch of the salmon colored gold that large.

[jp.dk, www]

Developing the advantages Langås special nature has to offer is in line with the regions new tourism strategy.
Nature and coast tourism is marked as one of four markets, chosen to be pillars in Denmark future strategy for entering the market of New Tourism.

Analysis shows that New Tourism is closely connected to a financial gain for the tourist and hospitality industry. The additional income connected with new tourism (Fig.4), is especially related to extra services e.g. experiences and events creating a possibility for further development. Traditional tourisms main income is found in transport and accommodation were the increase of profit is more limited.

Tourisme markets:

#1 Nature and coast
#2 Business
#3 Lifestyle
#4 Culture and event

[danske regioner, 2008]

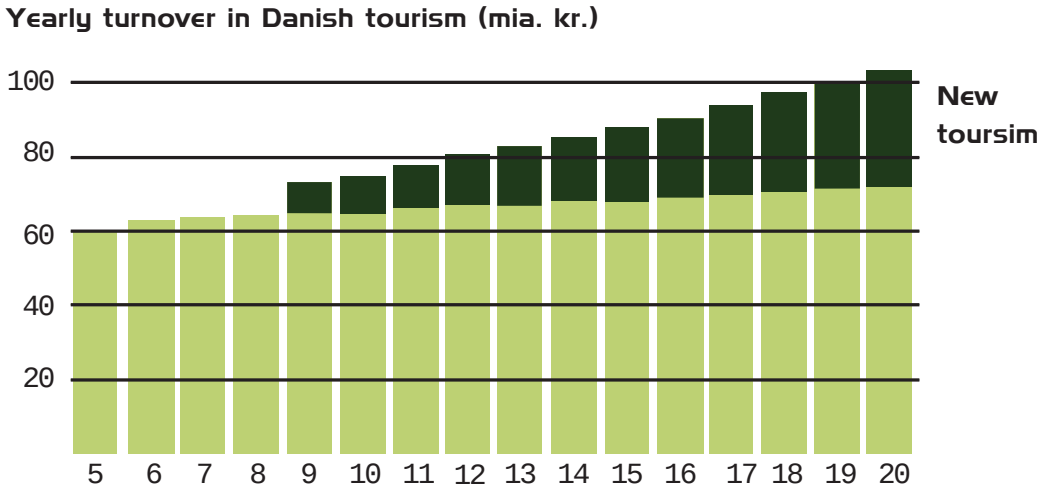


Fig.4. The added income connected to New Tourism. [danske regioner, 2008]

The new tourism is often a catalyst for cultural progress on a local level. Concerts, summer festivals and other events and activities often start as local ventures, which when successful grow strong enough to attract an increasing number of tourists. The new tourists search for unique, meaningful and individual experiences, often mean that these successful local events become the new tourist destinations. This continually blurs the line between products and events made for locals and the ones made for tourists. [danske regioner, 2008]

Even with Langå Nature Park being created as a tourist destination, it further serves as a public green space for the locals in town; this gives the park a more down to earth feel. This together with the short distance to Langå centre and the town's slight size would play in to the experience of Langå and the Nature Park as a joint local small town experience. This sets it apart from more glitzy tourist destination and plays in to the new tourists wish for more "real" adventures.

To improve Langå Nature Park's possibility for success as a strong attraction for locals and this new kind of tourist, it is important to create a strategic plan for the parks development. Strategic planning is most often found in the business industry, where it is used to optimise impact in the market for a specific product [Kvorning, 2007], but has lately become an integrated part of the tourism and hospitality industry as well.

Strategic planning

Thorough planning is significant for efficient performance and success in all sectors of the tourism and hospitality industry. Strategic planning is a tool that can help anticipate and monitor external shifts in the environment and manage the tourist destinations long-term objectives, resources and varying market opportunities. [Phillips and Moutinho, 1998]
It is imperative to see the destination as more than just one unit. All tourist destinations are a collective of many different elements, like a business portfolio of connected firms; restaurants, conference facilities, guided tours and souvenir shops.
This helps to clarify which departments should be developed, maintained or closed down; creating a plan for a long-term objective for the different departments.

No strategy is useable for all destinations; therefore the main objective for the destination is to determine which strategy will be most efficient dependent on its industry position, its mission objective, opportunities and resources.

A main part of this should be an environmental analysis, considering how the environment effects the destinations different departments e.g. changing trends in the industry. The ability to adapt to environmental change is at the essence of strategic planning. Tourist resorts and destinations do run without long-term strategic plans, but analyses have shown that its implementation can help improve performance and help develop efficient responses to an ever changing environment. [Knowles, 2001]

Equally embedded in strategic planning is a positioning strategy. The positioning strategy visualise how the destination wishes to set itself apart and distinguish itself from its competitors, and thereby create a competitive advantage for itself in the marketplace. The positioning strategy further consider pricing, marketing and the services offered, dependent on what user group is targeted.

Strategic planning is often used as a basis for structuring marketing, focusing on the four P's found in the traditional marketing mix; product, price, place and promotion.

Product
The product or service offered.

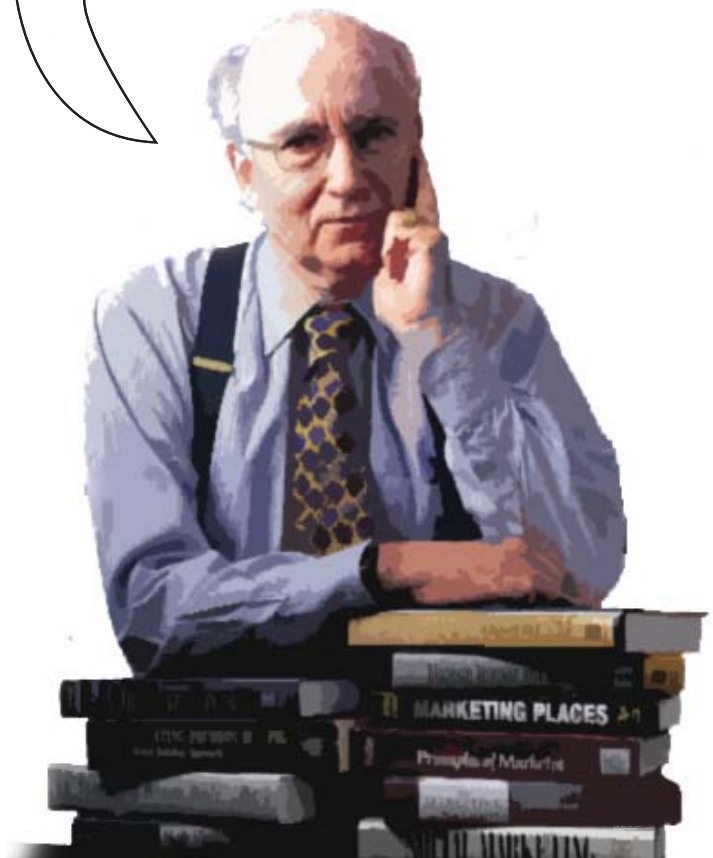
Price
The price or fees charged and the terms associated with marketing the product or service.

Promotion
The communications programme associated with marketing the product or service.

Place
The distribution and logistics involved in making the product or service available

"Marketing and strategic planning should be viewed as a partnership contributing to the long-run success of any hospitality firm"

[Kotler, 1996 in Knowles, 2001]



Marketing

Were strategic planning concerns itself with the long-term goals and objectives of the destination and its place in an ever changing environment, marketing lays down the guidelines for the more short-term objectives within the long-term goals. Marketing focuses exclusively on the product and how to reach the indented target markets and coveted user groups.

The very basis of marketing is to establish a positive impression, in this case of a tourist destination and then more importantly converting this impression into actual visits. [Knowles, 2001]

Like tourism has changed through time so have the way destinations market themselves.
Destinations you would think able, to sell purely on reputation have had to change their marketing strategy to reach the new audience.

In 1995 the British Tourist Authority understood that its strategy of marketing London to the Americans with the help of an all inclusive, typical postcard view was failing. As a consequence they changed their strategy. They segmented the market and identified 12 distinct market segments. Instead of one all inclusive campaign directed at all American tourism; they developed a number of different marketing initiatives focusing specifically on the different user groups. [Phillips and Moutinho, 1998]

Langå is not London but this is something that has to be considered if the nature park is to attract a large array of users.

Today Langå Nature Park is very much in line with trends found in the industry, considering eco-tourism and the possibility to create a meaningful experience with a local identity.

As one of the main elements in strategic planning is to be able to change with the environment, it is important for the park to consider how to manage if the trends start to change. This can for example be done by not purely depending on the wildlife elements of the park, but further adding programs with different agendas; like conference and education facilities and more up-scale programming, which would not necessarily be connected at first glance, to eco-tourism e.g. salmon safari or a gourmet cooking school.

These different services can

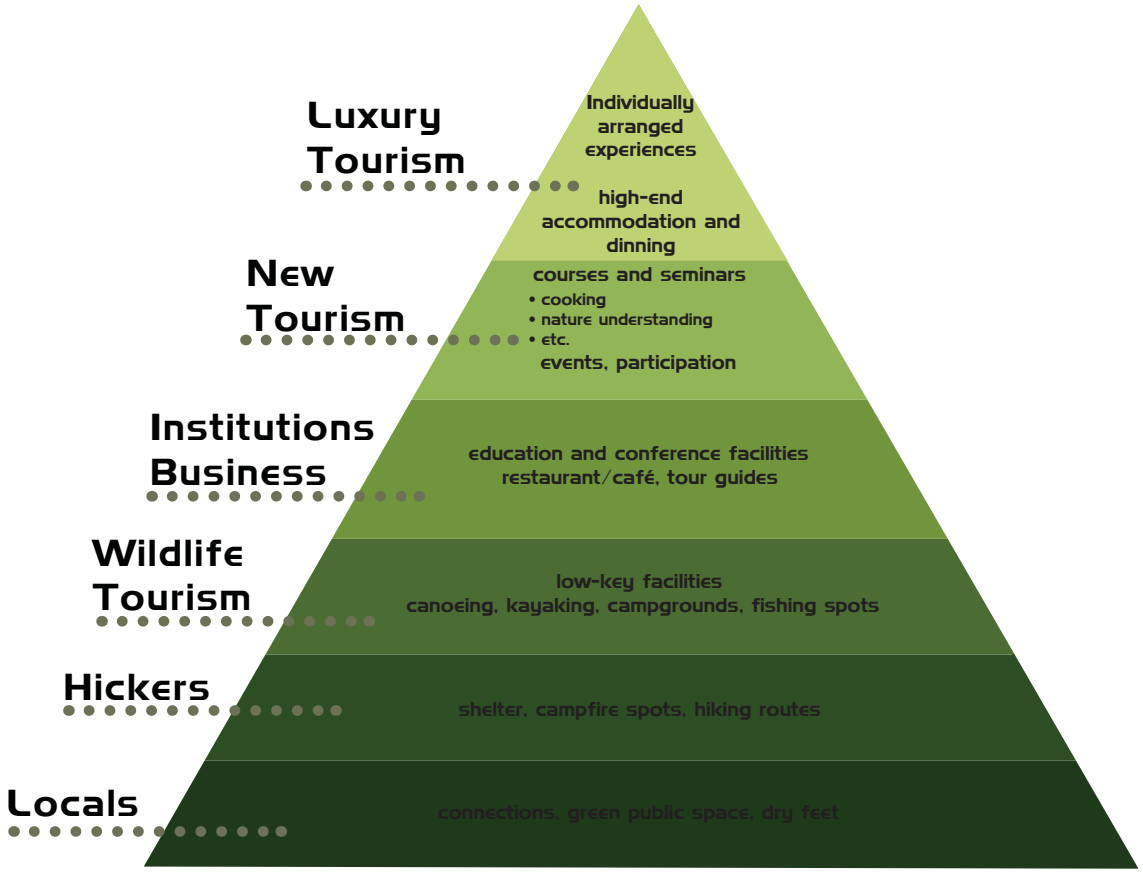


Fig.5. Possible user groups for Langå Nature Park and services needed to attract them.

further help set the park apart from its competitors, and attract user groups from all levels of the spectrum. Different user groups require different services and some user groups need more extensive marketing to attract than others.

As shown in Fig.5. different facilities and programs will help attract different user groups. Considering the groups as levels in a pyramid, it is possible to attract a new layer of users by adding a level of broader programs. The diagram does not prescribe that users stay indiscriminately within their level; locals will for example make use of programs found on the New Tourism level; like courses and lectures, but considers that if the development stops half way up the pyramid, the park will have problems attracting the remaining user groups as their demands and wishes might not be meet.

Another thing to consider when selecting user groups and how to market to them is what the price should be for the use of the destination. One thought would be that the cheaper it is the more tourists will come, but it has in fact shown that services can be sold to cheap.

Research has indicated that consumers use the prise as a measure for quality. If a destination charges significantly less than the competition, consumers tend to wonder what could be the reason, and believe that the more expensive destination will offer a better quality of service [Wall, 1992].

Therefore just merely underbidding the competition cannot be at the basis of the parks marketing strategy.

Langå Nature Park will have to consider what user groups they want to address and how to attract them. With the park being in the smaller end of the scale, when it comes to tourist destinations, appealing to a large number of user groups will help make the park profitable.

Combining supplementary programs in town, with the ones found in the park; all in different price levels, will help attract tourists from all levels of the pyramid. Keeping the cost low on the experience centre will appeal to families or wildlife tourist, whereas a more expensive cooking course or a private guide would appeal to people looking for a one of a kind experience.


Danish nature

From exploitation to preservation

The idea of what nature is and how it should be used and treated has changed through the ages. Nature comes from the Latin word *natura*, meaning birth. Nature's opposite is culture from the word *cultura* meaning cultivation. The Danish nature is by far a product of culture, remarkably different from what it would be without human interference. [Stoltze, 2007]

At times cultivation of nature has been to such a degree that the nature has been left unrecognisable, but is that necessarily a bad thing?

Nature that we find today, described as quintessential Danish is not native at all, but imported from around the world. The hollow poplar tree from Hans Christian Andersen's story "The Tinderbox" was in fact imported from Canada. The rose-hip bushes frequently seen on Danish beaches and in many left over green spaces around the country was imported from Japan to help stabilise the sand dunes.[Høyer, 1999]
Therefore it might be wrong to use the expression Danish nature, but since nature often is a result of culture most countries will have some specific characteristics, not likely to be found anywhere else.

Since the last ice age 14.000 years ago, Denmark has been under constant change – and in another 10.000 years it will again have changed. Other than Bornholm with its sturdy rock foundation, Denmark and its nature as it is found today, is not at all sustainable.

When Denmark lost the war to Germany in 1864 the saying became “what is lost outwardly has to be won internally – “Hvad udadtil tabes, skal indadtil vindes”.
For the next 100 years drainage of wetland and cultivation of the moors changed the nature radically.

Today the moors are an example of human interference with nature having a positive outcome, since they now frequently appear on impoverished farm land. Even with the positive examples, consensus seem to be that mans excessive use of nature, has come to a point where something will have to change, if any impression of wild nature is to survive [Stoltze, 2007].
The regulations with nature had become so restrictive that wild nature was not even allowed to blossom, were it was not in the way of production. The nature had become more and more uniform and a lot of animals and vegetation was endangered since only robust species would withstand the agricultural use of pesticides [Stoltze, 2007].

Fragmentation of the land had a further impact on the variation of Wildlife.
Large agricultural fields work as a wasteland for many species, creating very limited possibilities for survival and making it very difficult for the different species to spread.
Previously a colony that was extinct in one spot was able to re-immigrate in a few years simply by moving from nearby localities, but with industrial agriculture taking up more and more space, pioneering colonies that try to move habitats simply die out. [Bjerg and Halberg, 2002].
This new perception of nature’s importance, lead to new laws for preservation of nature in Denmark.

Area usage in 1999	
Cities and roads	19%
Cultivated land	63%
Forrest	10%
Meadows, moor, marsh	3%
Heath, common	3%
Lakes, streams	2%

[Bjerg and Halberg, 2002]

The role of Natureparks

Previously it has been the consensus that as long as an area was under the preservation laws the area would be safe as long as it was left alone. Lately the perception has started to change and it is now evident that since not many of the nature types found in Denmark are “natural” they need human help to thrive.

Denmark is one of the few countries that actually have a law regarding nature re-establishment “Natur reetaberings loven” from 1989. This law helps to set right old wrongs done to the nature; Streams are re-curved, dry lakes are restores and living fences are created to help migration of wildlife.

The goal is to slowly create a nature, which will be more durable and better able to take care of itself than today. This can for example be done by establishing large joint areas with plenty of room for complex eco-systems and great biodiversity. [Bjerg and Halberg, 2002]

The newest initiative toward this, which is still under way, is the creation of 5 new national parks.

The first of these – National Park Thy, was opened for the public on August 22. 2008 and the suggestion for Nationalpark Mols Bjerge is undergoing public hearing until June 30. 2009. The additional three areas – Skjern Å, Vadehavet and Kongernes Nordsjælland will open during the next few years. [nationalparker.skovognatur.dk, www]

The main objective for the National Parks is to preserve the different characteristic nature areas and its wildlife. The park creates a large united area, ideal as habitats for different species of wildlife.
Additionally the parks open up the unexposed nature to the public. Through different events and activities the parks educate its visitors about the nature and how it can be used without causing damage.
Further the areas are placed in the fringe of Denmark, and will assist the areas, that are often not a part of the county's main development, attract tourists in a way that will facilitate financial growth for the region. [nationalparker.skovognatur.dk, www]

Nature Parks it not just a Danish phenomenon – as the environment has taken on a more and more significant role in the global discussion, many countries have, in different ways, decided on how to preserve their nature. This has been done in many different ways; some Nature Parks are created as pure tourist attractions in small defined areas, while others stretch over a waste space with nothing but hiking paths to make it accessible – as the cases on the following pages will show.

Fig.6. The Danish Nationalparks

Reference projects

A number of different Nature Parks have been researched under the three relevant themes;

Restoring nature

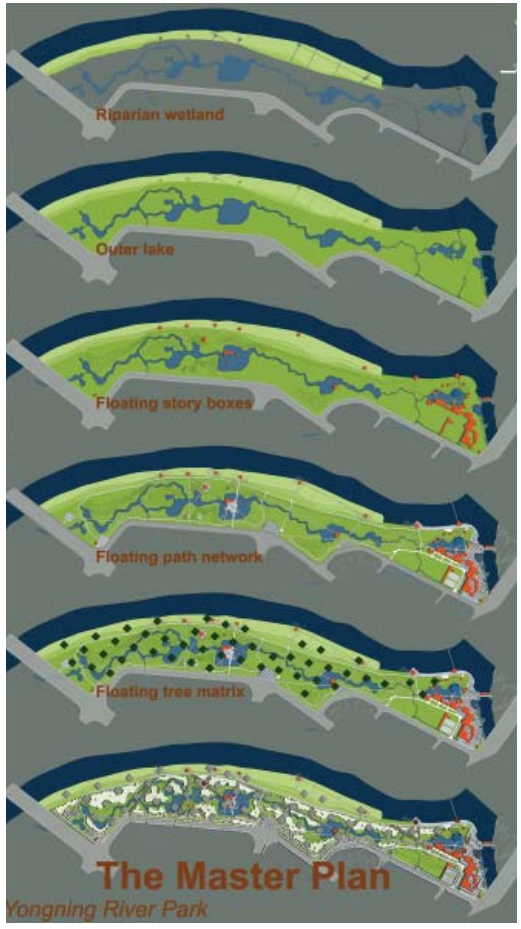
Preserving nature

City near nature

These themes are relevant for Langå Nature Park and will be incorporated in the design of the Park.

The projects investigated are chosen on the basis of one or more design details and not the whole project.

Restoring nature: The Floating Gardens -



Yongning River Park, China

The banks of the Yongning River were encased by concrete to control the flooding and the river was not accessible for recreational use. The design team Turenscape, had to provide a concept that would make the river accessible to both tourists and locals, while also providing an alternative flood control solution.

The park is composed of two layers: the natural matrix, which is overlapped by the human matrix. The natural matrix is composed of wetlands and natural vegetation and is designed for the natural processes of flooding. The human matrix is composed of a network of pathways and story boxes.

The story boxes stands in contrast to the landscape, with their geometrical forms and framing of nature, in addition they tell a story about the land.

In Langå, where the water occasionally stands high the concept about the layered design of the park is very relevant and the story boxes are a very interesting concept, which can be modified to fit in a Danish context. [turenscape, www]

Area **21 Ha**

[turenscape, www]

Restoring nature: Hong Kong Wetland Park, China

The Hong Kong Wetland Park is an eco-tourism attraction and was originally intended to be an ecological area for mitigation, to compensate for the wetlands lost due to Tin Shui Wai New Town development.

The park demonstrates the diversity of the Hong Kong wetlands ecosystem and informs about the need to preserve them and take care of the Chinese nature.

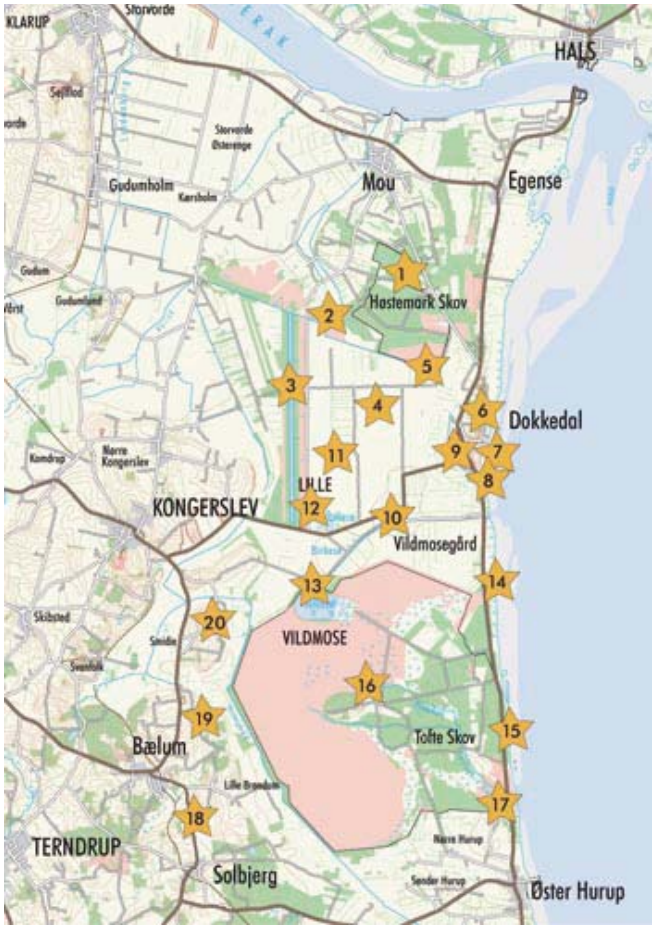
The Wetland Park provides facilities and exhibition areas informing the visitors on ecological themes and provides facilities for education.
The Visitor Centre is 10,000 m2
With themed exhibition galleries, a theatre, a souvenir shop and indoor play areas for children.

The main purpose of the park is to restore the Wetlands in which it is situated and provide facilities for education and public awareness. These are also very relevant themes for the design of a Nature Park in Langå, where farmlands that used to be wetlands are re-established.

Another interesting feature of this Wetland Park is the large glass wall in the Centre, which provides a great view to the park. [wetlandpark, www] [wikipedia 1, www]

Area	61 Ha
Visitors	100.000 [wwt, www]

Preserving nature: Lille Vildmose - Dokkedal, Denmark



The Centre of Lille Vildmose is placed on the edge of a large moor. It is the largest high-more in Scandinavia.

The purpose of the centre is to inform about how the nature and landscapes of the area has changed during many thousands of years and how the very special nature is preserved.

The Centre provides information through interactive exhibitions and a cinema. There are live as well as taxidermic animals and plants for children to investigate different aspects of the real nature.

In connection to the centre there are shelters for sleepovers and a barbeque spot.

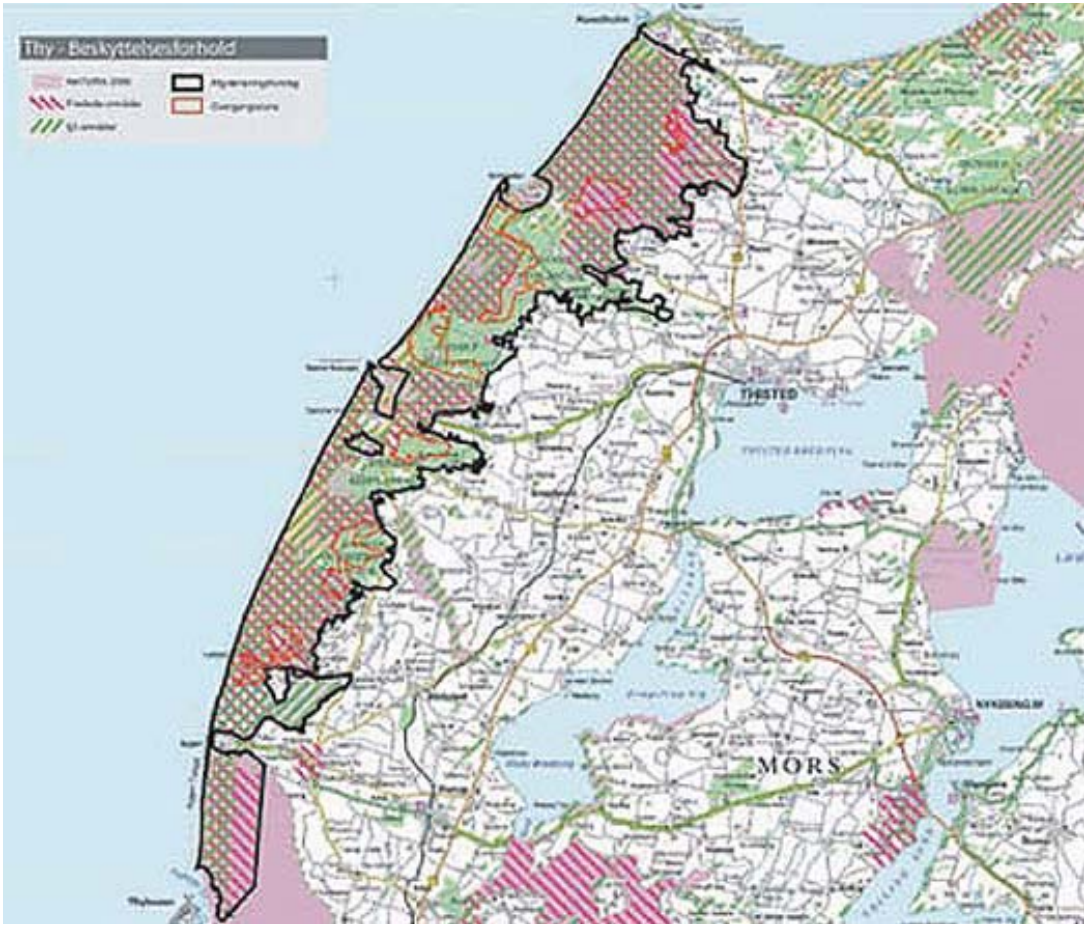
To provide facilities for a diverse user group many smaller initiatives has been implemented; as for example the shelters for sleepovers and the barbeque spot. This could be further developed for Langå Nature Park. [lillevildmose, www]

Area 7600 Ha

Visitors 100.000

[lillevildmose, www]

Preserving nature: National Park Thy - Denmark



The National park of Thy is the first of five new national parks in Denmark. The purpose of these parks is to preserve special heritages of nature and important habitats for animals and to improve the awareness on Danish nature. The goal is to create a network of large interrelated habitats, for animals and plants to wander free and spread through the whole of Denmark.

The National Park has no main centre but provides a broad range of activities and experiences.

Some are for those who likes to be physically active; hiking, mountain biking, surfing, horseback riding, hunting, golfing etc. Others are for those who are interested in history and culture; the remains from world war II or the traditional coast

fishing and yet others are for those who are interested in animals and plants.

With five new nature parks in Denmark that preserves nature, another view on nature in the park of Langå may be necessary. The Nature Park of Langå should probably not only preserve nature, but also provide a new way to experience and use nature in recreational ways. [dn, www] [nationalparker, www]

Area	**24.400 Ha**
Visitors	**800.000**

[nationalparker, www]

City near nature: Dyrehaven, Copenhagen – Denmark

The Park of Dyrehaven or Jægersborg Dyrehave, which is its official name, is a forest placed near Copenhagen. The forest is a natural forest, which means that protection of the forest is more important than planting new trees, therefore the forest is very old. There is a significant number of game in the park, used to be around people, therefore it is possible to get very close to them. [skovognatur, www]

There are several yearly events in the Park, for example the Hubertus Hunt and the Eremitage run. In the park there are spots for picnic and a small restaurant and it is possible to get a lift in a Horse drawn carriage. In the winter the park is used for sledging.

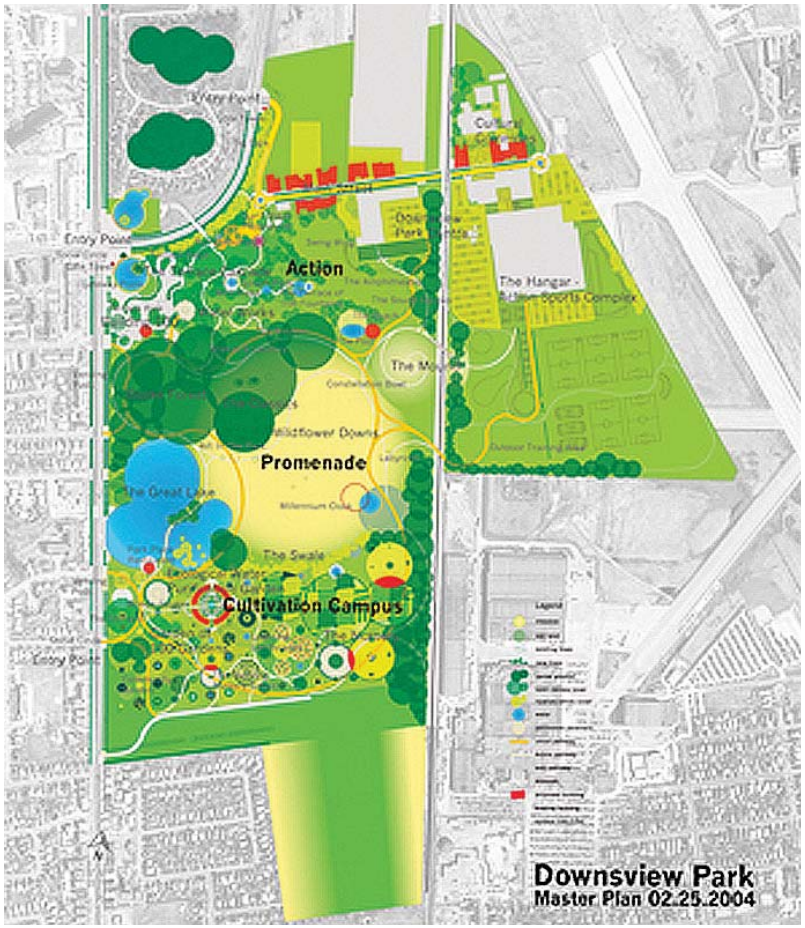
In the south end of the park is Bakken; the world's oldest amusement park.

The thirteen entrances to the park are all marked with red wooden gates, making it very noticeable when entering the park. [skovognatur, www]

To use yearly events to attract people to visit the park and to mark the entrances of the park could be relevant for the Nature Park of Langå.

Area	**1100 Ha**
Visitors	**7.500.000** [sl.kvl, www]

City near nature: Downsview Park, Toronto – Canada



Downsview Park is placed on land previously used as an air force base. The purpose of the park is to be a unique urban recreational green space for the enjoyment of inhabitants in Toronto and the Park was developed according to the principles of environmental, economic and social sustainability.

Many large programs are placed around the park, among others an Aerospace Museum, a Wildlife Centre, The Toronto and Region Conservation Authority, paintball fields etc. and in the old Air force hangar there is a Sports Complex, which provides facilities for indoor soccer and beach volleyball.

The Park also host a number of community and school programs, which makes the Park

a destination for Canadians to enjoy all seasons of the year. [toronto, www]

The city near parks have other purposes than preserving land, they have to offer everyday recreational space for the cities inhabitants, all year around. For the park to be successful the connections to and the programs within the park are very important to consider.

Area	260 Ha
Visitors	900.000 [toronto, www]


Langå nature

Mapping the Nature

Langå has three special kinds of nature in its proximity.

River

The water that flows in Gudenåen is becoming cleaner and is very good fishing water. Among others, it is possible to catch salmon and eel and amphibian such as frogs and salamanders have very good living conditions here. There are also many sorts of plants in and along the river; amongst rare plants; yellow iris and different kinds of seaweed can be mentioned.

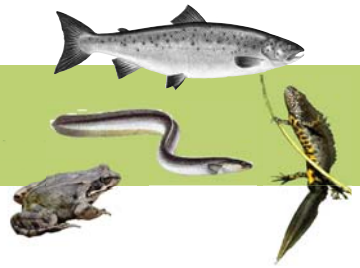
Wetlands

Of the different kinds of nature existing in Denmark, moors and wetlands are the ones that are poorest represented; they only cover 5 % each of Denmark.
As Wetlands are not that typical in Denmark, it is important to maintain and preserve them and the many different kinds of animals and plans living there, whereof many are threatened.
The biggest threads to this type of nature and its animals and plants, are drainage and agriculture. To maintain the wetlands they have to be kept down by grazing animals.

Forest

Forests have, like wetlands suffered under the search for agricultural land, and today they only cover 11 % of Denmark. [Stoltze, 2007] As part of the forest in Langå stands a very old oak forest, that is preserved. Many of the species of animals normal to Danish forests lives here; for example badger, fox, squirrel and marten.

In the following, the three different types of nature and their benefits will be examined further.

	River	Wetland	Forest
Nature			
Plants			
Animals			
Maintenance	Redusing the amount of nitrogen in the water will improve the conditions for many rare plants and animals	To secure the light demanding nature, it is important that the Wetland is maintained by grazing animals	The forest should be maintained by grazing cows, otherwise the forest floor will overgrow

Benefits of The River

Water in itself has no ability to clean air or soil, but clean water provides habitats for a great biodiversity, both in and by the river.

The water in the river of Gudenåen is now becoming cleaner and now there is a great nature and wildlife in and by the river. Therefore Gudenåen is becoming some of the best water for fishing in Denmark.

It is especially popular to fish for salmon and many tourists come to Gudenåen to go fishing. It is also possible to go kayaking or canoeing on the river, an activity that attracts many tourists to the area as well [rpiil, www].

In spite of the word “åen” actually meaning “the stream” in Danish, Gudenåen is actually the only river in Denmark [fugleognatur, www], and with its 158 kilometres it is also the longest.

It starts in Tinnet northwest of Vejle where it flows through the Jutland country. It flows to Silkeborg where it mix with other smaller streams where after it flows to the east, in a curve around Langå, until it at last runs out into Randers Fjord [rpiil, www].

There are no clear definition of a river, but a river is normally referred to as a stream with a certain size and length.

Fig. 7.

Fig.8.

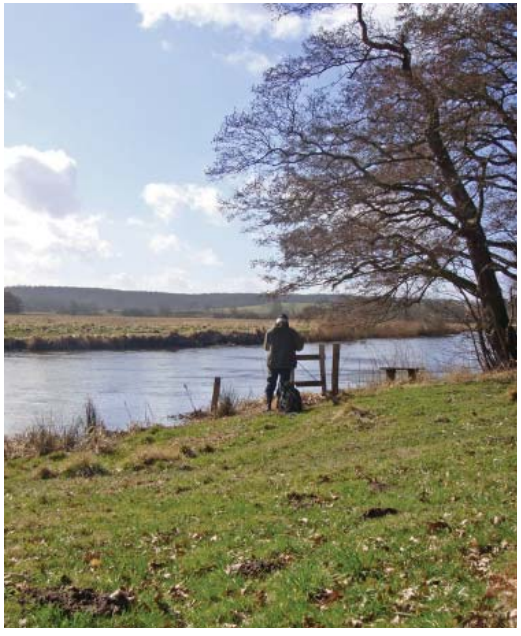


Fig.9.

Benefits of Forests

Trees are very beneficial for the climate, because trees grow by using sunlight and carbon dioxide; theyby removing carbon dioxide from the atmosphere. In addition trees have the ability to storage large amounts of nitrogen from the soil. [trae, www]

How much carbon dioxide the trees remove is dependent on many factors. Trees will take up carbon dioxide and other particles in the air most effectively if they have dense branches, rough bark and twigs and hairy leaves with a high ratio of surface to volume. [Spirn, 1984]

Old oak trees, as those found in Langå, have a very rough bark and a dense crown, which are some of the qualities needed to remove carbon dioxide from the air. But old forest and forest in temperate climates does not remove as much as younger forest or forest in tropical climates. [Snider, 2007]

The part of the forest between the Train Station and the river is a very old oak forest, with natural areas of clearings. It is about two- to three-hundred years old and is thereby one of the oldest forests in Denmark [Møller, 2003]. Therefore it is very important to maintain and preserve the forest.
The forest has slowly spread over time and is very well preserved, because it has been grazed continuously for the last two- to three-hundred years.
The forest contain several remains from ancient history, especially settlements from the Stone Age have been amongst the archaeological finds. [Møller, 2003]

To maintain the forest, it is important that it is grazed.
As horses, sheep and goats will eat the bark of the trees, the forest has to be grazed by cows. [Møller, 2003]

The desire from the Danish government is to double the areas of forest in Denmark from 11% to 22% during the next hundred years [trae, www].

This is another reason why it is important to maintain and preserve the already existing Danish forests.

A forest is an area of nature that are larger than 172 ha and wider than 20 meters

Fig.10. The old oak forest

Fig.11. Old threes are not removed

Fig.12. The forest is maintained by grasing cows

Benefits of Wetland

Wetlands are a type of nature very important to maintain, as there are not many areas of wetland in Denmark. This nature has many great features and many rare species of animals, especially birds and amphibians have their habitats here [Natur og Miljø, 2001].

Wetlands have an ability to remove pollutants such as nitrogen and phosphor from water. When streams and ditches carry nitrogen from agricultural fields to the fjords and sea, it contributes to an overproduction of seaweed and alga, which will decrease the living standards for fish and plants in the water. An overproduction of seaweed can also result in oxygen depletion [Natur og Miljø, 2001].

Therefore it is important to consider arrangements that can reduce the amounts of nitrogen lead to the fjords and the seas. Wetlands can be created in areas situated low, by regulating the dikes that prevent the water from flooding surrounding fields. Another way to create wetlands is to disconnect drains and close ditches that lead water from the fields and let the drainage water filter through the low-lying fields. [Natur og Miljø, 2001]

A wetland is an area that is situated low and where the land is saturated with water, such as a swamp, marsh or bog

In the areas were there are possibilities for the low-lying fields to be flooded, wetland is created. In the wetland the water is almost stationary and flow very slowly.

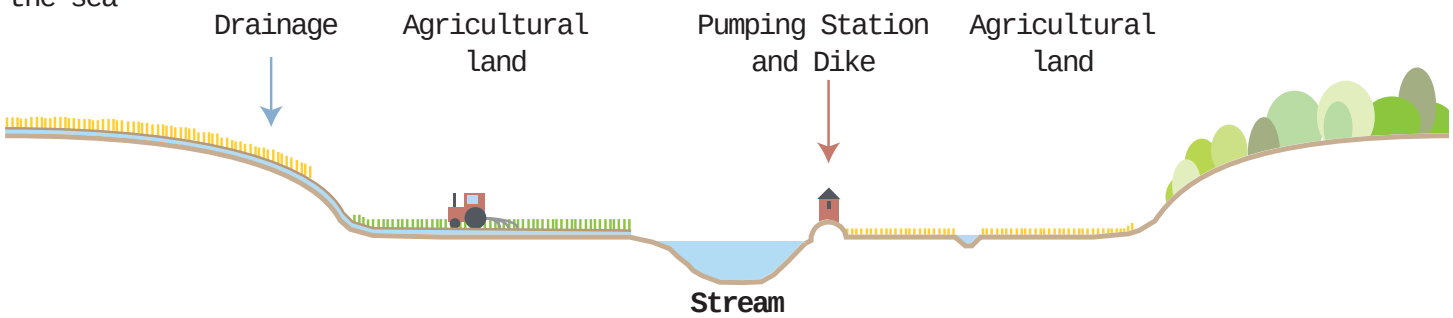
In situations where the water is almost stationary a natural removal of nitrogen will happen, because of plants being able to assimilate the nutrients brought from the agricultural fields. [Natur og Miljø, 2001]

The flooded areas will not only reduce the amount of nitrogen in the water, but also contribute to reduce the amount of phosphor that is transported to the river. This will contribute to a healthier environment for the flora and wildlife in and by the river and create better conditions for many animal species such as amphibians and insects, fish, birds and smaller mammals, as otter, badger and fox.

It is very important for the preservation of the wetlands that they are maintained, for example by being grazed by animals such as cows or sheep or that the grass is cropped once a year to make hay.

If the wetlands are not maintained trees and larger plants will take over the areas and many of the threatened sorts of plants would not be able to survive, because many of them are very light demanding. [Natur og Miljø, 2001]

Before:
Lots of nitrogen
flows to the sea



After:
Less nitrogen
flows to the sea

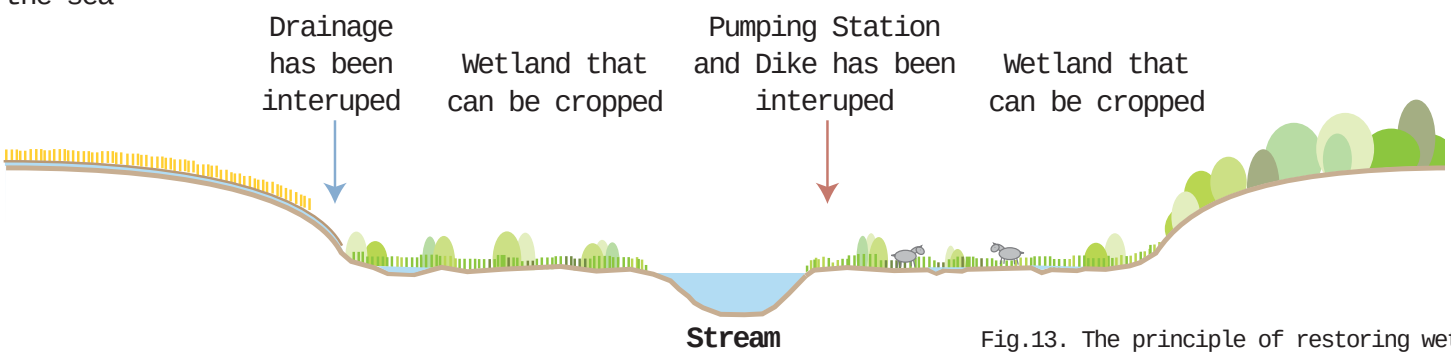


Fig.13. The principle of restoring wetlands

Planned Wetlands

In 2001 – 2003 the council of Århus did the preliminary examinations to transform an area of meadows, placed between Langå and Randers, by the river of Gudenåen to wetland [Natur og Miljø, 2001].

The purpose of the establishment was to increase the removal of nitrogen from the water in Gudenåen and in Randers Fjord, and at the same time improve the conditions for a diverse flora and wildlife by and in the river.

The land bordering Gudenåen is situated low and is artificially drained, so that it can be used for agriculture; such areas of lands are ideal for the restoration of wetlands [Natur og Miljø, 2001].

The council's project only considers the wetlands between Langå and Randers. The idea behind the wetland development is purely functional without any considerations about easy accessibility.

Therefore Langå Nature Park is more than just an extension of these planned areas of wetland (Fig.14). The Park will provide an opportunity to open up this special kind of nature and make it accessible to the public; giving them a better understanding of the nature and what it has to offer.

Summary

The quest is to utilize the advantages Langås special nature has to offer, without damaging it in the process.

By opening up the nature; showing and educating people about how sensitive it actually is, the possibility exists to create more considered users. Using a small wetland area in Langå as a tourist destination, will help people to understand the need for the large functional wetlands, even as they are hidden away behind fields and fences.

A wetland of 760 ha at the banks of Gudenåen can reduce the nitrogen pollution of Randers Fjord by 20 %

Fig.14. The Project area will be an extension of the planned areas of wetlands.

Building in Nature

When building a Nature Park and Experience Centre in Langås sensitive nature, there are many things to take into consideration.

It is very important that the new buildings do not prevent the stream to flood the surrounding areas of wetlands. Flooding can damage the buildings, but is necessary for the wetlands to be maintained [Spirn, 1984].

The wetland area of the site is appointed to be a migration corridor for animals; therefore buildings may not interrupt the natural flow in the area [webkort, WWW].

Further it is important to prevent moist from the wetlands to penetrate the buildings from beneath when building in a wetland, this can cause rot and mould.

A solution to these problems is to lift the buildings above ground level, for water and animals to pass underneath (Fig. 15). Lifting the buildings also creates a natural exchange of air underneath the buildings, which will prevent moist from damaging them.

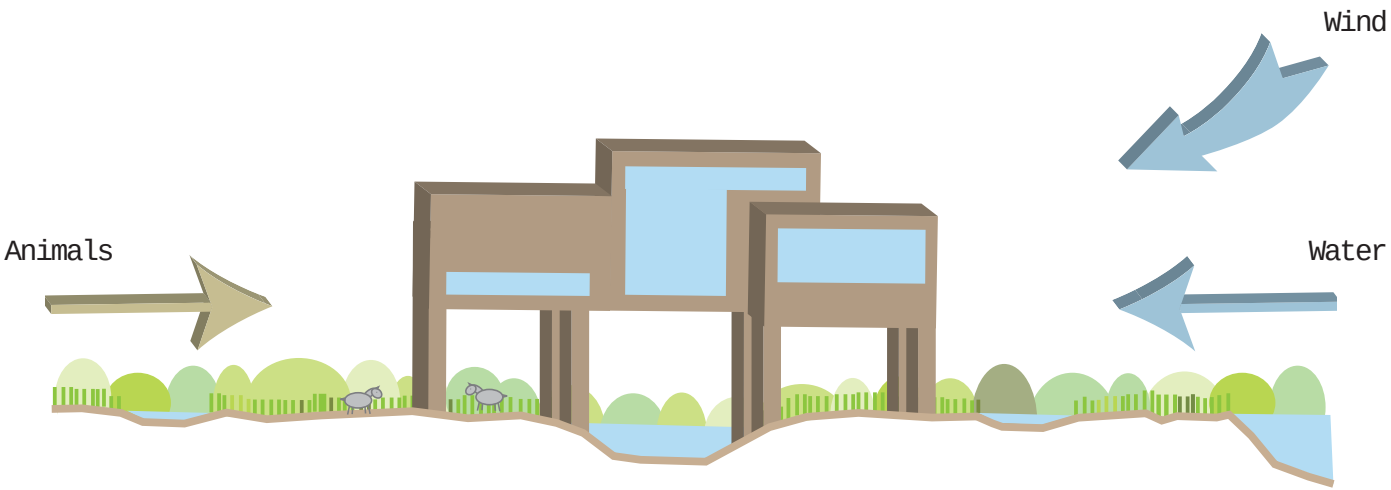


Fig.15. Principle of lifting the buildt from groundlevel, when building in wetlands

Nature restrictions

In Denmark restriction lines protect every river, lake or coast, there are also protection lines protecting green areas such as forests, meadows and moors.

Stream & Lake protection line

By Gudenåen there is a Stream & Lake protection line, which follows the river in all its length (Fig.16) [webkort, WWW].

The purpose of the protection line is to secure that the areas surrounding the streams and lakes are kept free of buildings, so that valuable landscapes and important habitats for animals are secured. [naturbeskyttelseloven, 1993]

Migration corridor

The migration corridor secures that animals are being able to spread and wander and find new habitats. The corridor for spreading often follows the Stream & Lake protection line, in this case it almost does (Fig.17).

It is very important not to make new buildings part the corridor into smaller habitats, because one large habitat provides better living conditions for animals than many smaller habitats does. [Spirn, 1984]

Forest preservation line

The purpose of the forest preservation line is to secure the that edges of the forest are preserved as habitats of great value for wildlife and for plants (Fig. 18) [webkort, WWW].

The areas within the forest protection line should be kept clear of buildings. [naturbeskyttelseloven, 1993]

Pending an evaluation by the municipality, dispensation can be given to build within these areas. This could for example be granted due to a developments low environmental impact, or the developments overall beneficial value for the town.

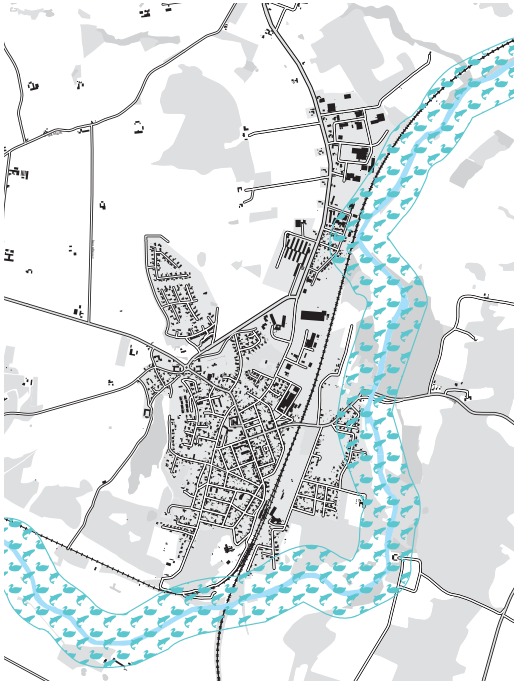


Fig.16. Stream protection line

Fig.17. Migration corridor

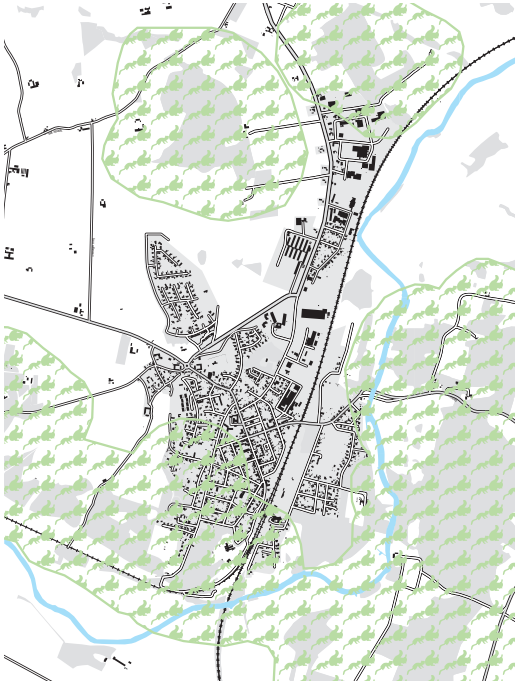


Fig.18. Forest preservation line

Constructions in nature

It is possible to build in nature, without damaging it. A “top - down” building process is an environmentally friendly way of building in areas of nature that are environmentally sensitive [naturebridge, www].

By using lightweight machinery during the building process, the machinery can use the structure, instead of the ground to build from, ensuring that the sensitive nature on ground is not disturbed.

The lightweight machinery also delivers the building materials by using the structure, wherefore the building will be constructed consecutively from one end. [naturebridge, www].

Fig.19. Building in sensitive nature

Fig.20. Building in sensitive nature

Sustainable Materials

The materials used for foundations should be able to withstand water. A wooden construction, which is not impregnated, would not be able to do that for very long time without decaying. But to impregnate wood to make it able to withstand water, is not a sustainable solution. This will be harmful to the environment when the wood is going to be disposed. Instead materials such as metal or concrete will be suitable materials for foundations in wet areas.

When the foundation has been build to withstand water and moist, all sorts of materials can be used for the other parts of the buildings.

Wood

Wood is a sustainable building material, because it is organic and can be used for many purposes after its lifetime as building material has expired. It can for example be used for heating.

The lifetime of wood depends on which type of tree it is from and on the weather to which it is exposed. If it is exposed to extreme weathers, such as much rain, wind or sun the wood will rot or dry out faster.

The lifespan also depends on which protection the wood has got, if it is painted, oiled or impregnated. The lifespan of wood therefore varies a lot, from about 5 years and up till 200 years. [miljoeogsundhed, www]

Concrete

Concrete can be a sustainable material if it is made of the right components. Concrete is a mix of natural materials, such as sand, gravel, calk and water.

These are materials that can be found all over the earth, which means that concrete often can be mixed on the building site. Thereby the energy use on transport is kept to a minimum [danskbeton, www].

Often concrete can be reused after demolitions. In Denmark 95 percent of all concrete is reused, much of it for building roads [danskbeton, www].

Steel

Steel and all other materials made of metals, such as zinc, aluminium and cobber are not very sustainable building materials, as a very large amount of energy is used during production [bolius, www].

A redeeming quality is steels very long lifespan. Further the material is easy to reuse, without any destroying or demolition of the material and without increasing the CO2 emissions [kingspan, www].

Summary

It is possible to build in environmentally sensitive area, without destroying the nature and the living conditions for animals, as long as these many aspects are taken into consideration.

Of high importance is it that the build environment does not disturb the natural behaviour of the nature, such as flooding and the ability for animals to migrate.

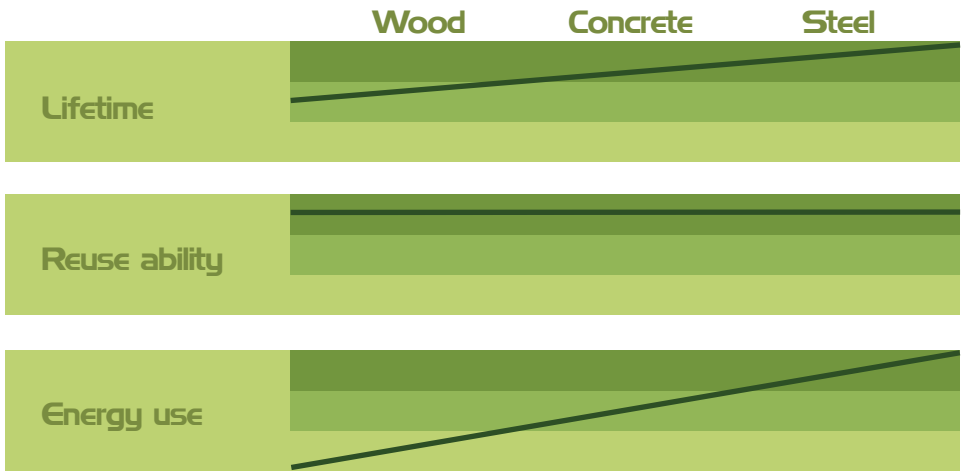


Fig.21. Sustainability of wood, concrete and steel

Analysis of Langå

Purpose of Analysis

The analysis investigates the context of the project area and will be carried out in two scales; Town scale and Park scale.

On Town scale the best location of a future Nature Park is found and on Park scale the immediate surroundings of the Nature Park area are examined.

The analysis will give an impression of which circumstances the design has to deal with.

Town Scale

Langå Location

The town of Langå is a normal Danish town; it has a main street with a small selection of shops (Fig. 22 and 23), there is a school and a nursing home for old people, but one thing that make Langå different than many other towns in the Danish country side is the Railway station.

Since the development and survival of towns in Denmark has for a long time been dependent on the main infrastructural systems, the station along with the town's location near the highway in eastern Jutland, is a great advantage for the town.
The highly developed infrastructure, inside the development zone makes it easy for visitors to go to Langå from the nearby cities.

Langå is located by the river of Gudenåen in a green corridor (Fig. 24). The Nature Park will become a part of the green corridor and be an extension of the preserved and restored areas of wetlands north of the town and make these habitats even larger.

Fig.22. Main street in Langå

Fig.23. Main street in Langå

Fig.24. Langås location in a green corridor

Railway

Today the nature and river are not very easily accessible for the citizens of Langå. This is due to the railway, placed on the edge of the river parting the town in two (Fig. 25 and 26). The railway is not only a disadvantage for the Nature Park; it also makes it easy for out of town visitors to come and visit Langå.

Langå is a special case, because there are no other towns with a railway station together with so special areas of nature and the river placed this close to the town centre.

The nature is situated very close to the centre of town, making it is possible to walk the distance from nature to town in a short time.

Fig. 25. The Railway parting town 1:40.000

Fig. 26. The Railway track creates a barrier

Roads & Paths

Langå is also well connected to the car dependent infrastructural systems. The highway in the eastern Jutland is located 14 km vest of the town [krak, www].

A hiking path, for people on foot follows the river its full length from Silkeborg to Randers (Fig. 27).

If the connections between the town and the path is enhanced the hiking path will be able to function as a connection between the site of the Nature Park and the town.

Fig. 27. Roads & Paths 1:40.000

Fig.28. Car road

Fig.29. Hiking Path

Nature

The nature surrounding Langå consists of three different types of nature, forest, wetlands and the river of Gudenåen. The cultivated lands surrounding the northern and western parts of town are a fourth type of nature, this nature is very similar to the agriculture that can be found in most of Denmark and is not special for Langå.

The first three types of nature can be used for many purposes in a Nature Park. The nature can have both recreational and educational purposes and the three different types of nature will provide a broad range of knowledge for the visitors.

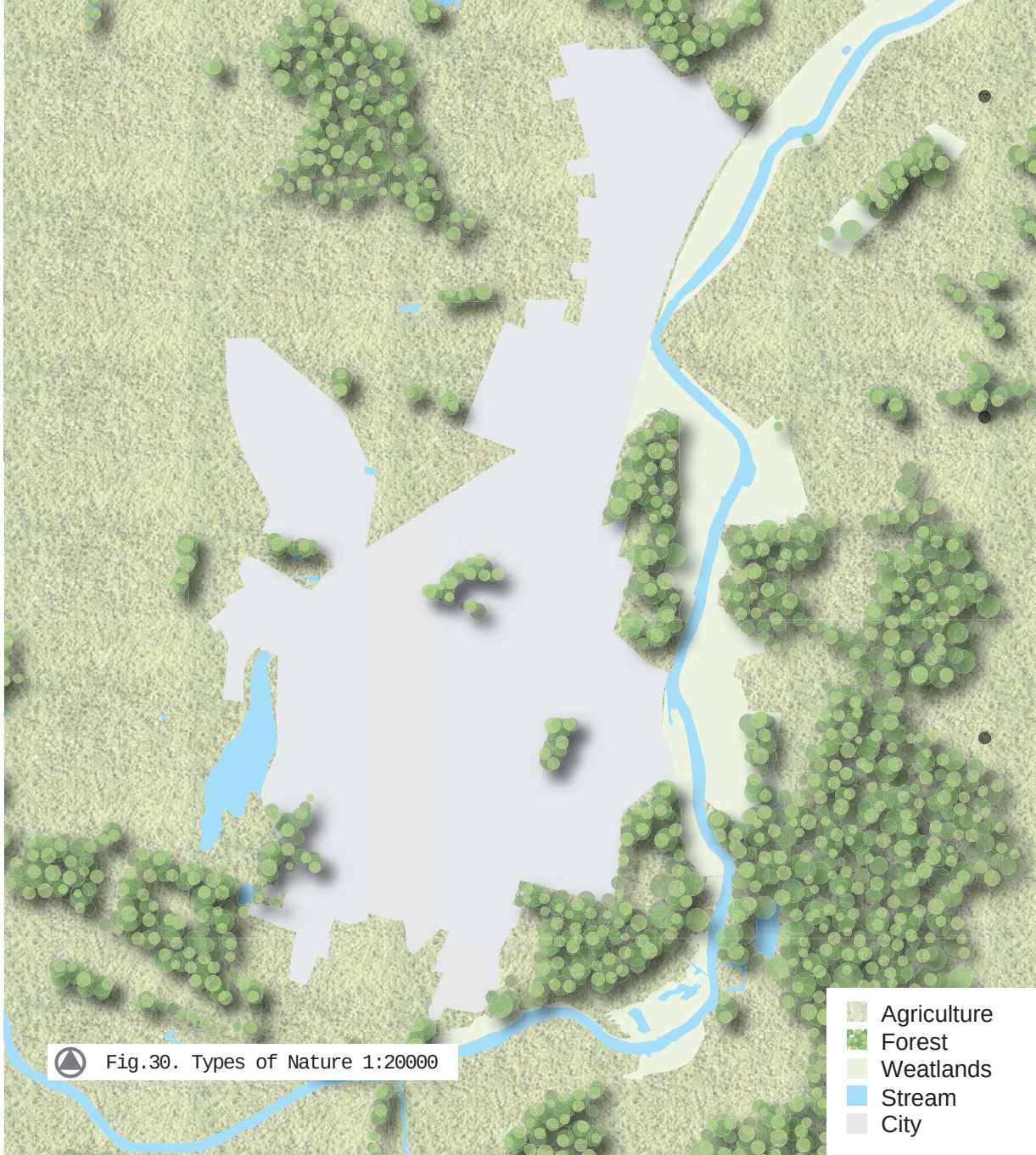


Fig.30. Types of Nature 1:20000

Terrain

The terrain in which Langå is placed is very hilly, compared to what are the normal standards in Denmark, making the areas around Gudenåen very diverse and interesting to investigate.

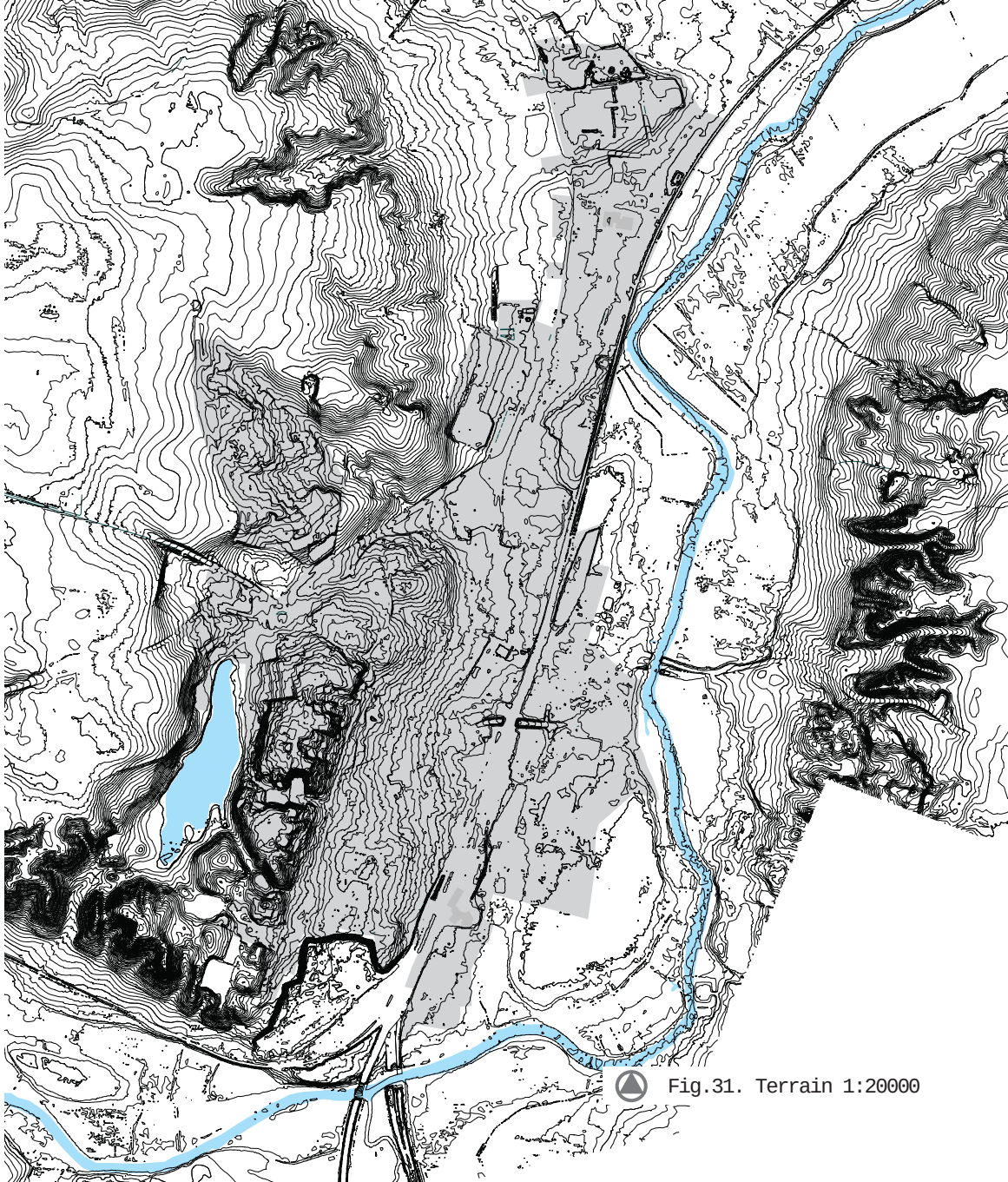


Fig.31. Terrain 1:20000

Sun and Wind

In Denmark many prefer to orientate outdoor programs towards south to get most out of the limited heat and light from the sun (Fig.32).

South of town on the northern side of the river, it is possible to enjoy the sun, while the forest provides shelter from the wind. At the same time it also becomes possible to enjoy the view over the river.

The forests will provide shelter for wind coming in from north and east, but on the wetlands, outside of the forest it can become very windy on days where the wind comes in from the west (Fig.33).

Solstice winter:

Equinox:

Solstice summer:

Fig.32. Almanak 56 North [nakskov, www]

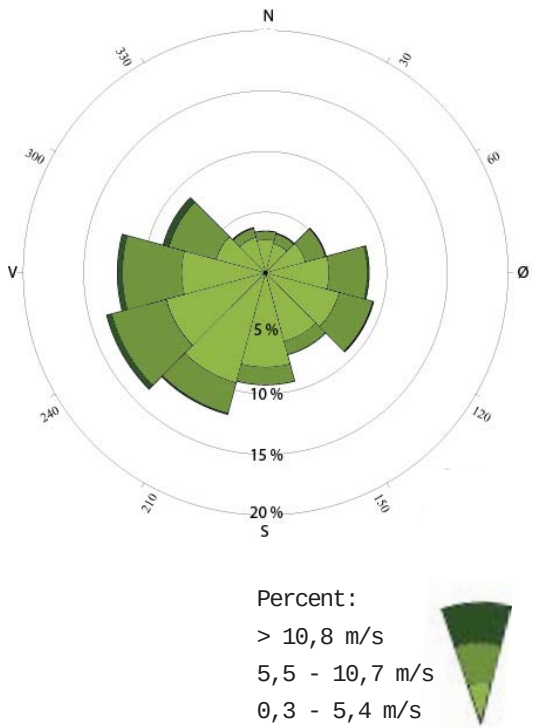


Fig.33. Wind rose [dmi, www]

Surrounding functions

A number of institutions is placed in the northern parts of Langå; for example the school, institutions for children and protected housings for elderly. It would be possible for these institutions to make use of the park, if they are well connected to each other.

The Train Station is a great advantage for the Nature Park to attract visitors from the nearby larger cities who would like to spend a day in the nature. The Main Street and the Railway Station can become important factors for the success of a Nature Park (Fig.34).

Also the Campground and the old manor house; Løjstrup Hovedgård are very important functions in the town of Langå (Fig.36 and 37).

Fig.34. Attractors 1:40.000

Fig.35. School

Fig.36. Campground

Fig.37. Løjstruo Hovedgård

Locating the Nature Park

The nature is Langå greatest potential; the natures have many great qualities and the present types of natures are not very common in Denmark.

Langå has a very great potential to attract a broad range of tourists and to market itself on environmental aspects.

The analyses of Langå and the areas that surround the town have made it possible to find the best location for a Nature Park.

The area southeast of Langå is situated very close to the Train Station and in this area the three types of nature; Forest, wetland and river are situated very close to each other, making it possible for an exhibition to put all three natures on display.

Functions like the campground and Løjstrup Hovedgård are also located close to this site and it will be possible in the future to extend the Park area to the south on the other side of the river.

Fig.38. Location of the Nature Park 1:20000

Park Scale

The typologies in the park area and the immediate context can be parted into four different categories. These categories will be explained in the following as layers of the site. The Layers are:

Functions
Buildings
Roads & Paths
Nature

Functions

The campground, the tent spot and Løjstrup Hovedgård are great attractors in the near context of the park, especially for tourists that likes to go fishing, kayaking or in other ways likes to enjoy nature and wildlife.

The Railway station and the main street in the town are other important attractors in the near surroundings (Fig. 39). These functions will bring many different types of people to the area. The location of a Nature Park close and well connected to these functions will be beneficial for all parts.

Connections to the functions from the park can for example be marked by the use of Urban Furniture and by the pavement on the pathways.

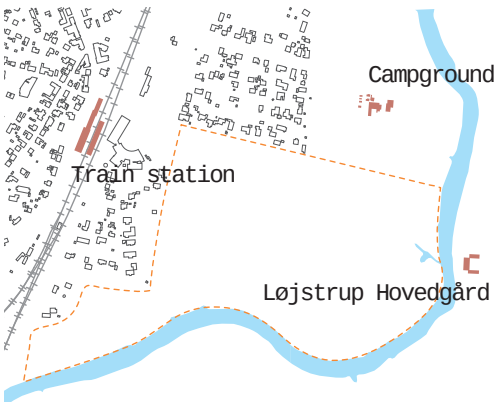


Fig.39.

Fig.40. Campground

Fig.41. Løjstrup Hovedgård

Fig.42. Main street

Buildings

The buildings surrounding the site are mostly private housings. In the southwest corner of the park, the dwellings are more common Danish villas. To the north of the park the houses are larger, and this area seems more expensive (Fig.43).

The Nature Park will be functioning as an extension of these houses backyards and the people living here can use the Nature Park for everyday recreation.

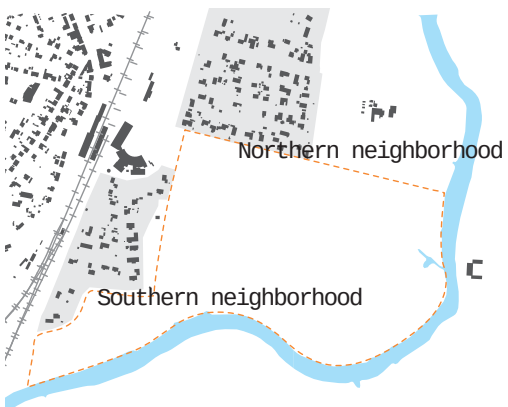


Fig.43.

Fig.44. Northern neighborhood

Fig.45. Southern neighborhood

Roads & Paths

There is a typical hierarchy between the roads and the paths; a main road leads to the housing areas (Fig.47), where the road gets smaller and end out being only gravel (Fig.48). Some of the smaller paths from the housing areas lead to the nature, making it possible for the inhabitants to use the new Nature Park whenever they like.

The Train Station is situated very close to the park, but there is no direct connection between the station and the nature, as it is not legal to cross the tracks, not that this seem to discourage many locals (Fig.49).

This is an important issue to deal with, if the Train Station should work optimal as an attractor for the Nature Park.

The connections from the Nature Park to the surrounding neighbourhoods are very important to keep and enhance for the Nature Park to become a natural part of the town.

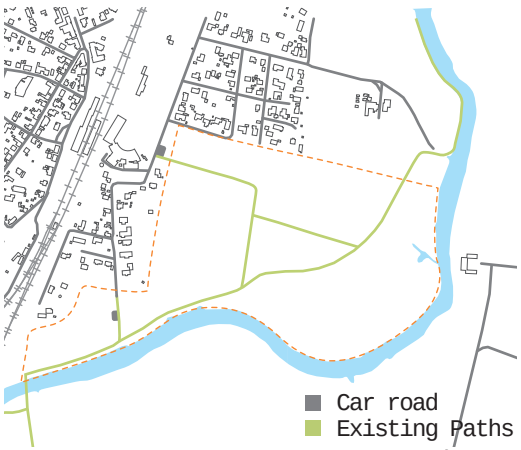


Fig.46.


Fig.47. Main Road to the Site


Fig.48. Gravel road


Fig.49. People often crosses the tracks

Nature

There are three different types of nature, which are determined by the water level. The three different types of nature are forest, wetlands and river and each with different qualities.

Closest to the station is the old oak forest with its clearings. By removing the dikes and drainage in the lower lands by the brinks of Gudenåen this area will be re-established as wetland.

Summary

It is very important for the success of the Nature Park that connections to the surrounding areas and functions, both on Park- and Town scale are carefully considered.

After analysing the site of the Nature Park it is now time to look deeper into the visions for the Nature Park.

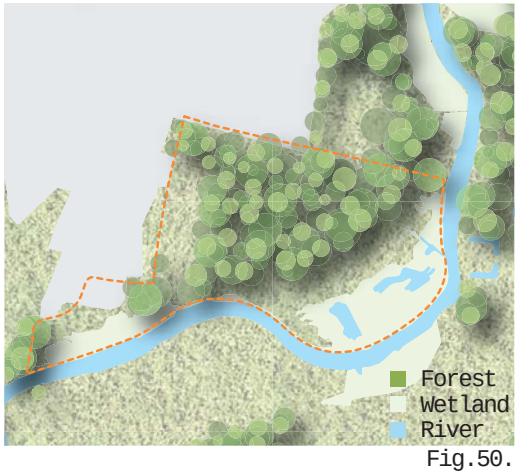


Fig.50.


Fig.51. Old oak forest


Fig.52. Wetlands

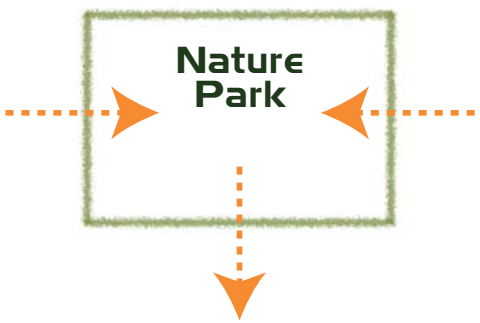

Fig.53. River

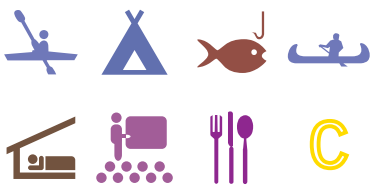
Concept

Diverse user group

With the Nature Park the nature becomes a place for a diverse user group to experience nature. A diverse program and a diverse nature will address a board user group.

Diverse Nature



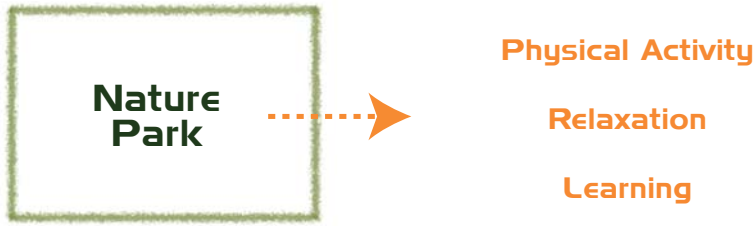


Diverse Programs

Diverse User Group

Diverse experiences

With the Nature Park's many programs It will be possible to be both Physical active and to relax. The Nature Park will provide education for all ages within the field of nature and sustainability.



Diverse connections

With the Nature Park, the nature becomes accessible to everyone by car and train and a welcoming and an integrated part of the town of Langå.

Design Presentation

Langå Nature Park

The plan drawing, opposite, contains the suggested solution for the design of the Nature Park.

The Nature Park is located between the town centre and the beautiful nature in the valley of Gudenåen. It is well connected to its surrounding areas and neighbourhoods; the train station, the campground, the tent spot and Løjstrup Hovedgård.

The Park is accessible to the public all day and all year around, for its neighbours to use for recreation and other active purposes whenever they like.

A tourist pamphlet is attached to the back cover of the report.

Fig.51. Tourist pamphlet

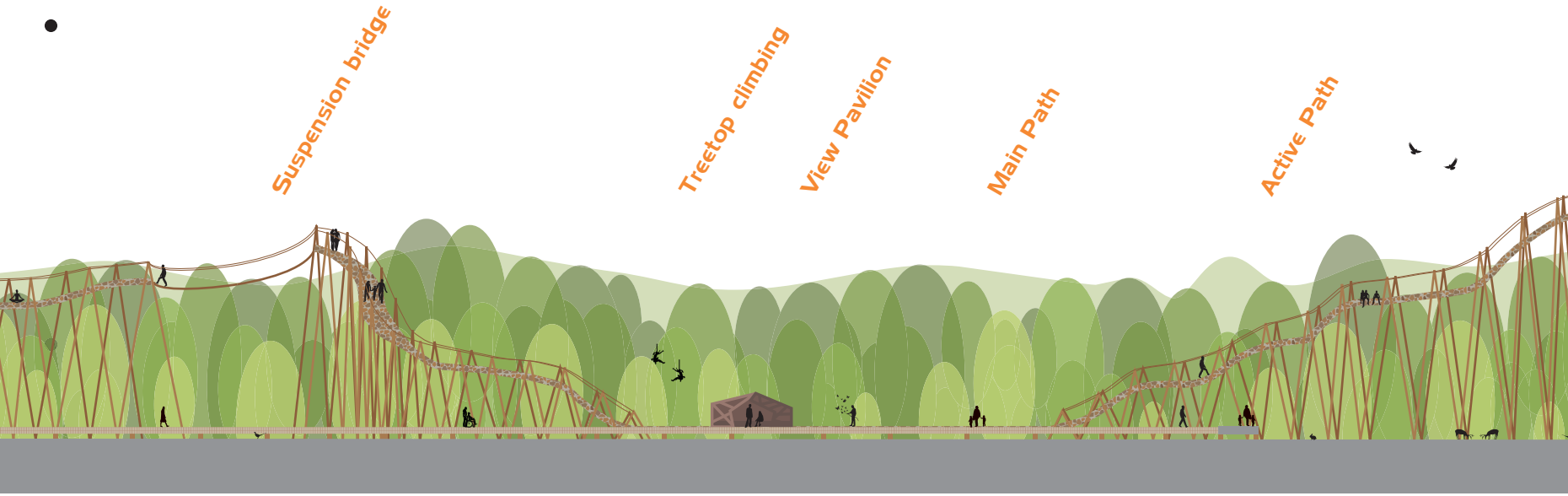


Fig.52. Section 1: 500

Town Scale

Describes how the nature park connects to the remaining town, proposing an idea for how urban furniture can help strengthen the relationship between the park and town.

Park Scale

Describes the concept, purpose and design of each of the programs found in the Nature Park. There will especially be focussed on the Pathways and the pavilions.

Centre Scale

Focuses on the design of the Experience Centre and its immediate surroundings; describing the use of materials, the conceptual design of the building and the selected programs inside the building.

Town Scale

Connections

It is important to integrate the park in the town fabric, if it is to succeed and become an incorporated part of the local's outdoors life. The main connection for tourist will be the parking area and train station, whereas it should be possible for locals to connect with the park in different ways dependant of their daily routine and location.

New connections are created by connecting to and upgrading the hiking path at the river, which already runs the full length of the town. These connections will reflect the materials and design found in the park (see page 150) and in this way create the feel that you are being guided toward your destination, and welcomed in already before you get there.

For the park to work as a "classroom" for the school it is significant that this connection creates an easy and safe passage. Connecting the school to the park, by use of the hiking path creates a passage for students away from the main roads and heavy traffic.

The main connection by the train station further connects the park to the town's main street. With the main focus on shops and other public functions, this connects the park to an area in frequent use by everyone in town. Establishing this visual link will encourage people to think of

the park as a natural extension of their urban space. To strengthen this feelingt, urban furniture found in the park, is placed along the path and on the main street. This further helps create the illusion that the park might be closer than it actually is.

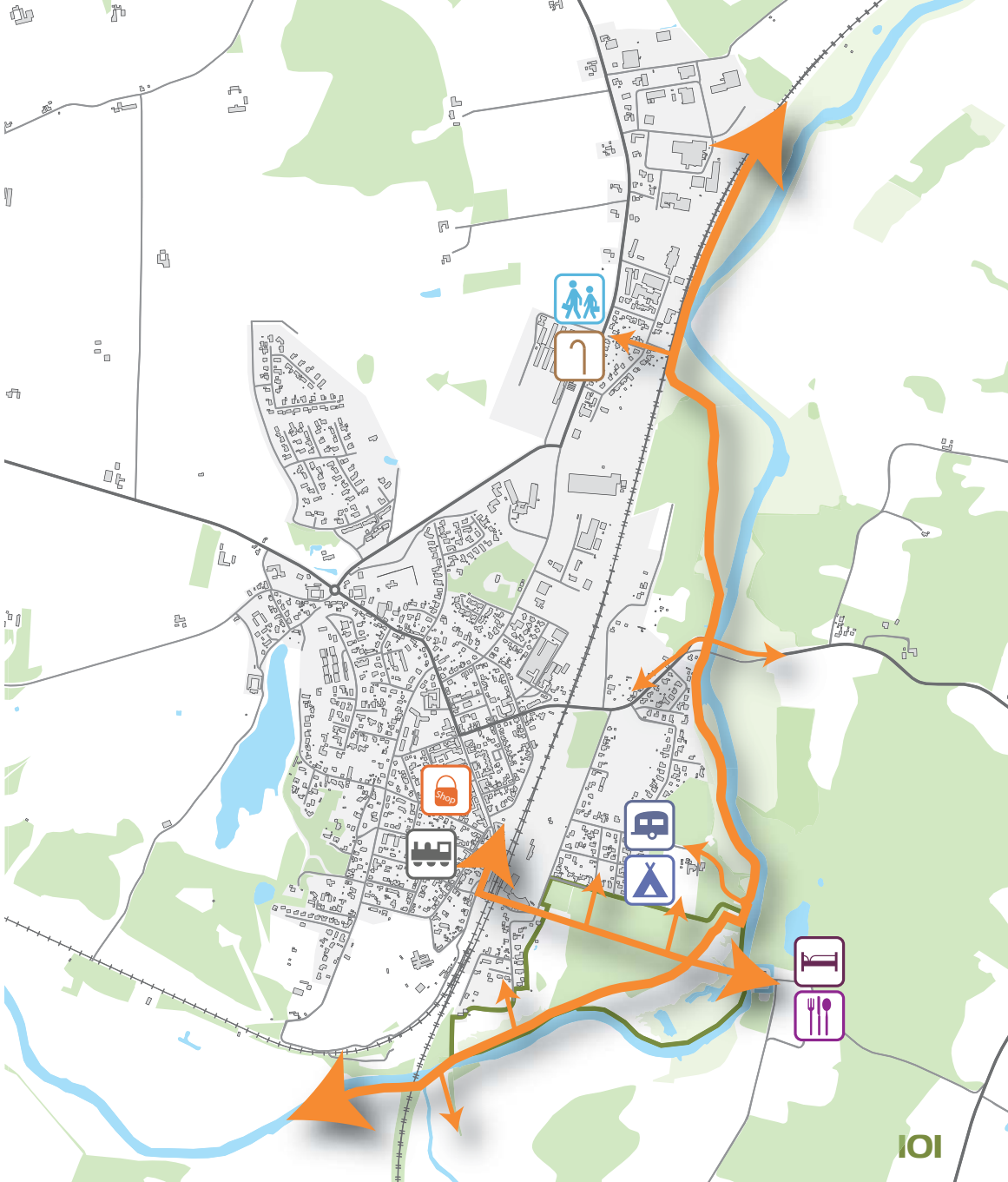


Fig.53. The Nature Park with the connections and the Hiking Path passing through.

Playing Cards

The programs surrounding the Nature Park and the programs in the Nature Park will be explained as a set of “playing cards”.

The idea of the playing cards is that they gives an easy overview of the many ideas, they also makes it easy to make sure that there is at least one program to attract each of the desired user groups (as mentioned on page 28). There should be programs which address wildlife tourists and programs that address luxury tourist. The programs should also make the Park and the Centre capable of functioning as an all year destination.

The playing cards have been a part of the design process, which is described in Appendix I.

Surrounding Programs

Many already existing programs are located in the near surroundings of the Nature Park and new one will be added.

These programs have many qualities and the ability to attract a diverse user group. It is the hope that the existing programs will develop along with the Nature Park.

Especially new ways of spending the night and the possibility to accommodate more people is necessary.

The Campground is located in the forest just north of the Nature Park and provides facilities for tourist that likes to live in caravans, here there are toilets, bath and kitchen. There are also small cottages for visitors to rent.

The Tent Spot the Tent spot is administrated by the Campground. It is placed just down to the riverbank, with a very nice view to the river.

Kayaks and Canoes can be rented for longer or shorter periods. The active tourist can sail, with the stream down the river and the Kayaks and Canoes can be picked up at small spots for getting on and off.

Fishing tools can be rented to the visitors that like to go fishing in the river. The tools can be rented for the periods the visitors wish.

Exclusive Rooms for tourist is rented out in Løjstrup Hovedgård on the other side of the river. These rooms are for those who like to spend a little extra on a nice weekend or a small vacation in the nature.

Exclusive Dining is an extra facility provided by Løjstrup Hovedgård creating an opportunity for visitors to experience a gourmet dinner created from local produce.

The Parking areas are placed in two locations. The main parking area is placed in connection with the neighbour-hoods largest road, just by the train station. The smallest are placed near the river and is mostly for anglers.

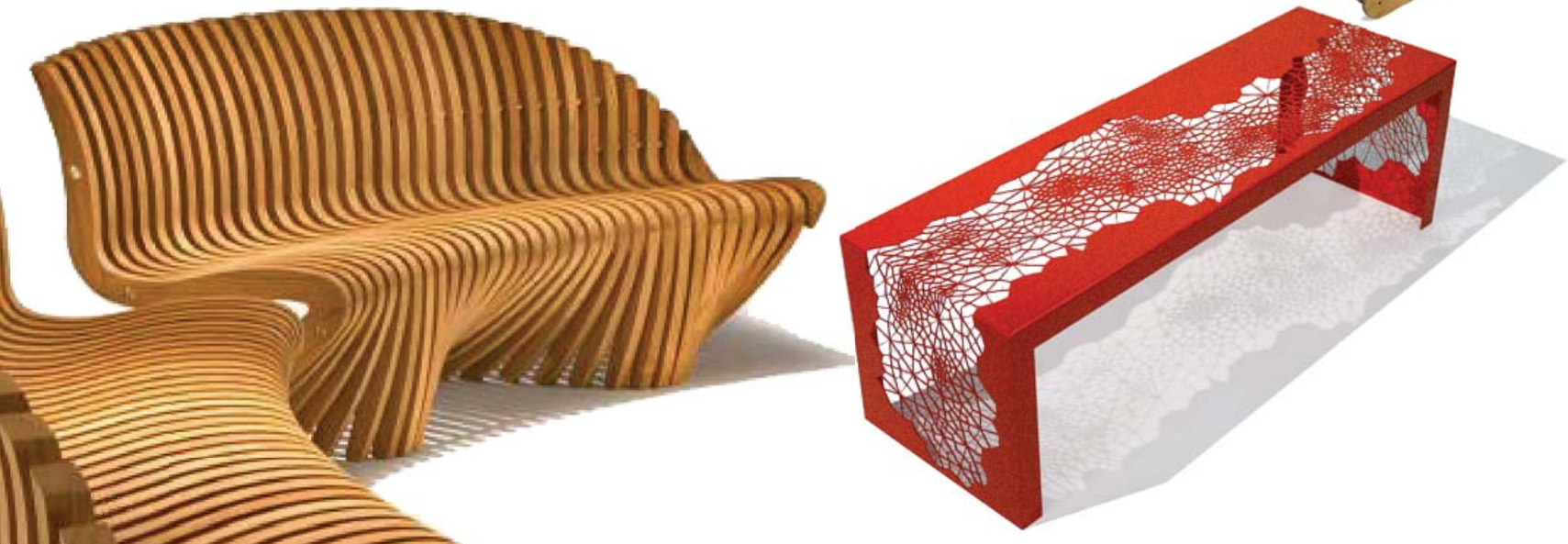
The Train Station is located about 150 meters from the Nature Park and the main parking area. A bridge connects over the tracks, to the Train Station and the main street in town.

Urban furniture - Seating

The furniture along the pathway, both the connecting pathways and the pathways in the Nature Park, imitates elements found in the park. The large benches with back support reflect the wooden paths and pavilions.

The smaller bench will be made of rust coated metal, decorated with a hole-pattern representing different nature in the park, mirroring material used at the Experience Centre facade.

The choice of material will be explained further in connection with the park chapter.



Urban furniture - Lamp posts

The lamps use the rust coated metal found in the park. The lights run on solar power, making them sustainable and easy to install in nature since they require no additional cables or power.

Depending on the need, the larger lights can be used for streetlights and along the path were activities require more light. The smaller lights can be used as guide and marking lights along the path, to help prevent dark areas were users would feel unsafe.

Urban furniture - Extras

The trash cans are found both in the park and along the connections again make use of the rust coated metal.
The design of the cans incorporate a hole-pattern of elements from nature, like the ones found on the metal benches and the Experience Centre facade.

Along the path small metal signs will show the way to the park. Different variations of the sign will appear in the park to guide the users to their respective activities.

Fig.53. Before

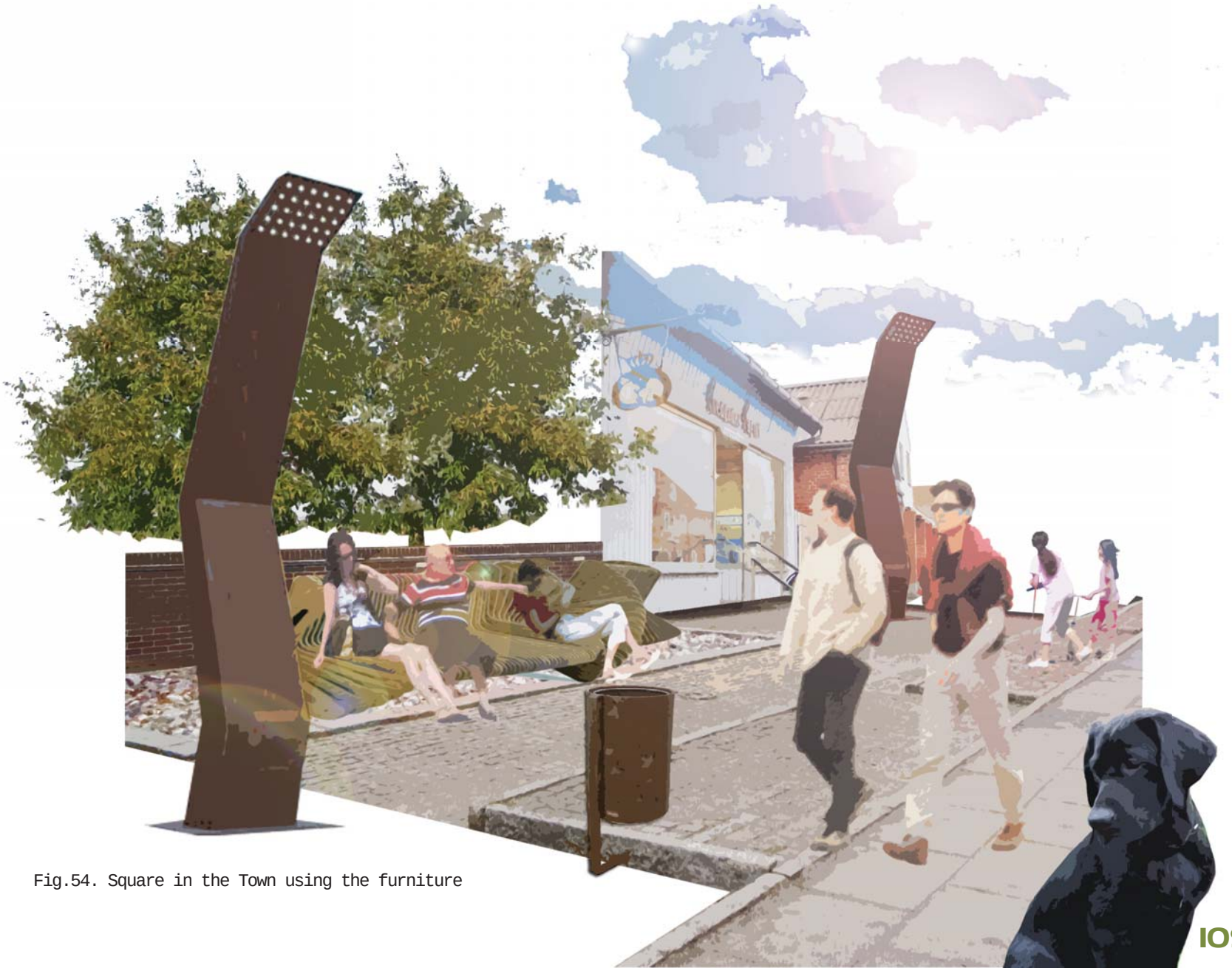


Fig.54. Square in the Town using the furniture

Park Scale

Programs in the park

The Nature Park is going to contain three main elements; a Experience Centre, Pathways and Pavilions.

Each of the three elements contains different programs. The programs and their purpose in the park will be explained in the following.

Pathways

The purpose of the Pathways is to lead visitors through the three types of nature and to connect the Park, the Pavilions and the Experience Centre to each other and to the context.
Each Pathway is marked with an icon and the pavement is distinguishing them from each other.

Fig.55. Pathways 1:5000

The Main Path leads to the Experience Centre from the Train Station and the Parking areas. The path moves through each of the three nature types, in a loop that origins and ends by the Experience Centre and it connects to a number of the Pavilions. it is possible to get around the whole Nature Park even for people with a disability or small children by following this path.

The Active Path is a secondary path, it also leads through each of the three types of nature and sets off by the Experience Centre. On the route several obstacles are placed to make the pathway physically challenging. This pathway encourage physical activity and is especially for those who are young, fresh or has a childlike mind.

The Hiking Path is a path that leads through the Park from Silkeborg to Randers. The path also connects to the northern parts of the town, to make the nature accessible for the institutions there. Hikers following this path in all its length will have the opportunity to make a stop at the park to rest or to visit the Centre.

The Connection Paths connects to the surrounding attractors and neighbourhoods to make it easy for locals to use the Nature Park. This Path is also going to connect to the Train Station whit a bridge leading over the railway tracks.

Design Guidelines

A number of design principles have been developed for each of the three paths. The diagram determines the patterns of the pavement, the sequence of the paths and the main user group to which they address.

The Main Path is going to be made of wooden boards, elevated from ground level to avoid the ever-changing water level in the wetlands.

The Active path differs from the Main Path. There are obstacles placed along it for the users who would like to play, climb and have fun. The Active Path is going to be made of a wooden pattern, raising and falling to create obstacles and areas for play.

The Hiking Path leads through the Nature Park and will be made of wood placed on ground level. This path does not need to be elevated from ground level because it does not lead through the wetlands.

The Connection Paths will be designed as the Main Path, but will not be as wide it. These pathways are mostly for the locals that like to make use of the Park.

Where the pathways cross each other the visitors can, if they like, shift to another pathway. In the next few pages there will be a more detailed description of each of the Pathways.

	Main Path	Active Path	Hiking Path	Connection Path
Pattern				
Sequence				
User Group				

Main Path

1,5 km

Forest

Wetland

River

Main Path

Where the Main Path origins, it is marked with the “Main Path icon” to make people know what path they are following.

Even more “nature icons” will inform about which way to walk to easiest get to the three different natures of the Park. The Main path is one and a half kilometre long and is easy to walk for everyone.

Along the pathway pavilions of different size and function are placed, to inform about the natures the visitors are passing through and to make rests and smaller activities possible.

Fig.56. Before

Fig.57. The Main Path in the Wetland

Active Path

The Active path is two kilometres long and just as the Main path is it marked with an icon, which informs the users about which path they are now following.

This path also leads through each of the three different natures. Along the path obstacles are placed to provide elements for climbing, playing and physical challenges.

The path elevate and fall, so that the users will experience the natures from many different angels and levels; from ground level down between the tree trunks, between the tree crowns, and a view over the entire park from above the tree crowns.

Active Path
2,0 km

Forest

Wetland

River

Fig.58. Before

Fig.59. The Active Path

Hiking Path

The Hiking Path is 110 kilometres long, it starts in Silkeborg in mid Jutland and follows Gudenåen to Randers and further on to the sea of Kattegat.

The path follows the old track, which the barge-pullers and horses used in the old days to get goods from Randers to Silkeborg. [vandreruter, www]

The path leads through many beautiful natures and its users gets close to the life that unfolds in and around the river.

In Langå the Hiking Path crosses the site of the Nature Park. The Nature Park Icon and a shift in the pavement will inform the hikers about when they enter the park.

Hiking Path
110 km

Forest

Fig.60. Before

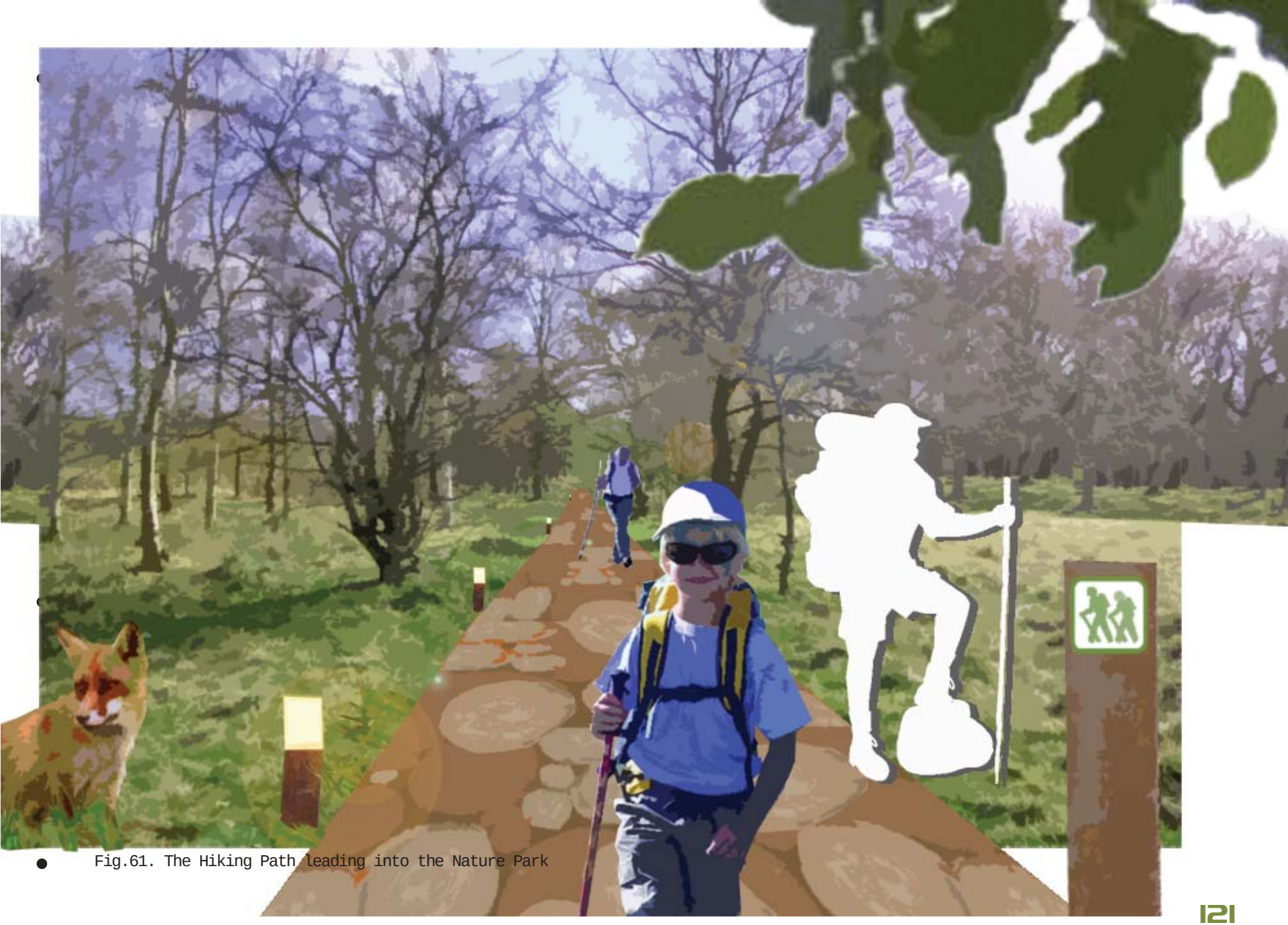


Fig.61. The Hiking Path leading into the Nature Park

Connection Path

Forest

Wetland

River

Connection Paths

At the Train Station the Connection Path becomes a bridge, which leads over the railway tracks.

It connects with the station building at the second floor, where there is an already existing bridge that connects to the main street in town.

Stairs and elevators leads from the bridge directly to the platforms.

Fig.62. Before

Fig.63. The bridge by the Train station

Pavilions

The parks outdoor functions are placed in Pavilions located around the Park. The Experience Centre is the main function in the Nature Park and will be described in the next chapter.

Every Pavilion is placed in connection whit one of the paths leading through the natures. They are placed with a distance of approximately 200 meters between them, to ensure that the experience of each Pavilion is not disturbed by the next.

There will be a hierarchy between the Pavilions. They will vary in size and function and will give visitors a possibility to be active and participating or rest.

Fig.67. Pavilions 1:5000

The Rest Pavilion are going to provide facilities for sitting and for eating lunch, for the visitors who prefer to bring that them self. They can also provide the necessary facilities for barbecuing.

The Information Pavilions are the largest of the pavilions and is going to provide information about the nature in which it is placed. One of these pavilions should be placed in each nature type.

The Shelter Pavilions are the smallest kind of pavilion and should be placed along the pathway towards the river to provide shelter, especially for the anglers.

The Art Pavilions are placed along the pathway to create a variety in the experienced environment. They should be made of the same materials as the other Pavilions, contrasting the landscapes.

The Lavatory Pavilions are placed in two locations in the Park, by the parking area at the main entrance and where the Kayaks and the Fishing tools are rented out.

The Fishing Spots are for anglers and does not necessary have to be a pavilion they can for example be formed as platforms, reaching out over the river.

The View Pavilions are going to stage a particular beautiful view of nature. In each of the three types of nature, there should be placed at least one of these types of pavilions.

The Bivouac Pavilion is for the wildlife tourist or the hikers that likes to have a sleepover in the open air. These pavilions are going to provide possibility for a very primitive way of living.

Design Guidelines

A number of Design Principles for the Pavilions has been developed from each of the tree natures. The type of nature in which the Pavilion is placed determines the distribution, how views to the surrounding natures are framed and the form of the Pavilions.

Distribution

Pavilions placed by the river will be low and when coming closer to the forest they gets higher and higher, to in the forest some of them are placed over the tree tops.

Framing

The framing decides how the nature is displayed from inside the pavilions. The view from the Pavilions placed by the river will lead the mind towards water bubbles.

The horizontality of the wetlands is reflected in the direction of the framing in these pavilions and the Pavilions in the forest are framing nature in a way resembling looking up at the sky through the branches.

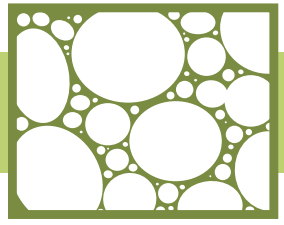
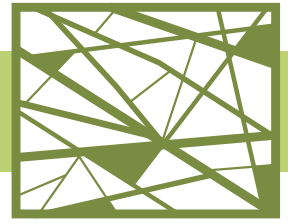
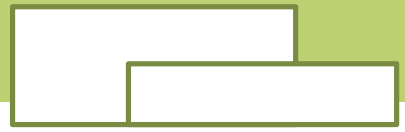
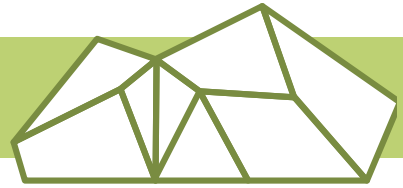
Geometry

The form of the pavilions by the river will be organic and the pavilions placed in wetlands will be squared. The form of the forest pavilions will be geometrical.

Material

All the Pavilions will be made of the same materials; wood and rusty iron, but the amount of each material can vary from pavilion to pavilion; from only using a little iron and a lot of wood to the opposite situation.

In the next few pages there will be a detailed description of two pavilions.

	River	Wetland	Forest
Nature			
Distribution			
Framing			
Geometry			

View Pavilion

View Pavilion

Wetland

Rest Pavilion

This Pavilion is placed in the wetland sheltered by the forest. The wetland determines that the form of this Pavilion should be squared and the framing of the view should be horizontal, to further strengthen the horizontality of the wetlands.

This Pavilion also provides possibility for rests and eating lunch.

Fig.68. Before

Fig.69. The view to the wetlands from inside the pavilion

Art Pavilion

Forest

Art Pavilion

This Art Pavilion is small compared to other of the Pavilions. Its purpose is to contrast the organic natures in which it is placed, to make the experience of the Nature Park varying.

The material is rusty iron, creating an experience tht will vary during the year. In the summer it will contrast the green colour of the tress. In autumn it will blend in with the browns and reds on the forest, just too then regain its contrast in the winter as snow covers the ground.

Fig.70. Before

Fig.71. The Art Pavilion

Number of visitors

To get an idea of how many visitors are going to visit the Nature Park during a year, a number of Danish Parks has been examined (Fig.72). The size of the parks are compared to the annually number of visitors in the parks.

The digram shows that it is difficult to predict the number of visitors; many other factors must be playing in on this, especially the location close to larger cities.

A number of Nature Centres were also examined (Fig.73). This examination shows that there are a somewhat linear connection between the size of the centre and the number of visitors visiting it.

The Experience Centre in Langå Nature Park will be 2400 m2 (see page 146). Looking at the graph (Fig. 73) it gives an annually number of visitors on approximately 200.000.

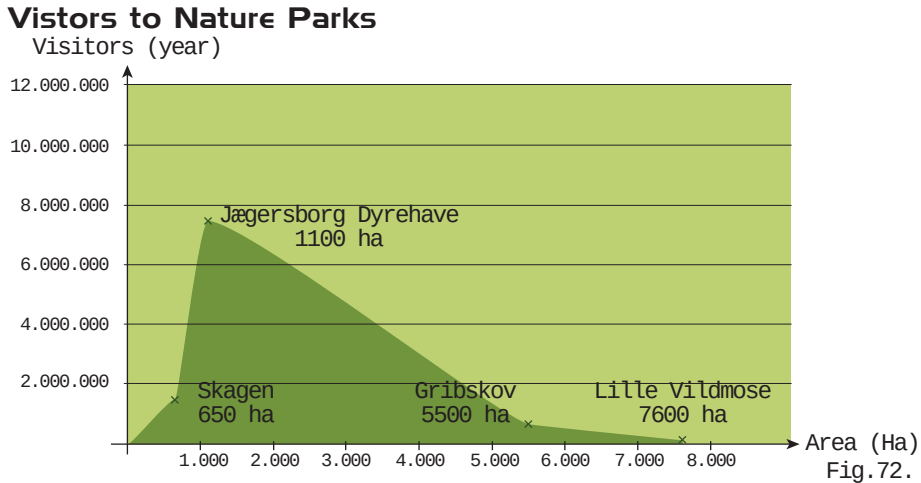


Fig.72.

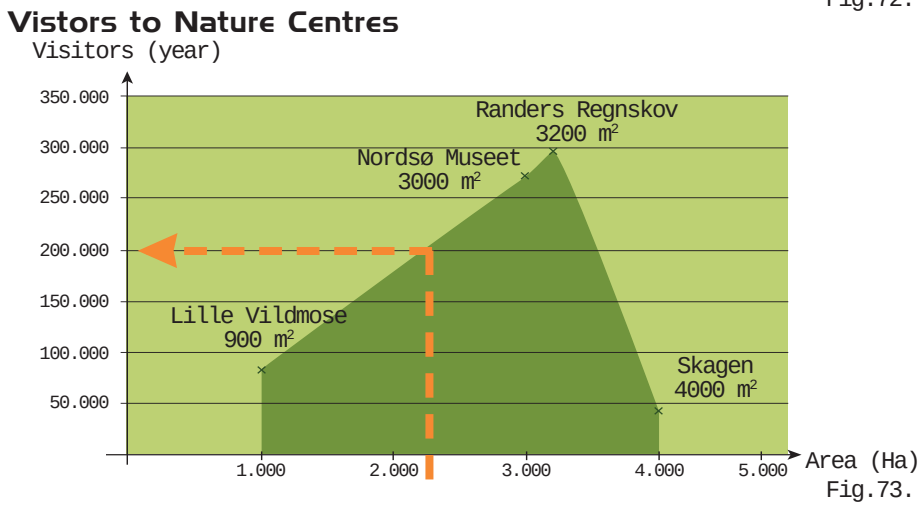


Fig.73.

This number is a rough estimate, but because of the good location and connection to larger cities it is a realistic guess.

Parking

Knowing the approximate number of visitors, the needed areas for Parking can be calculated.

One of the main target groups is the Wildlife tourists and it is evident to think that some of them will come by foot from the Hiking Path, some in kayaks or canoes sailing down the river and others will stay at the campground or at the tent spot. Even more some of the Luxury tourist will be living in Løjstrup Hovedgård and due to the Train Station a number of visitors will come with the train.

There will be 50 parking spaces for cars and 5 for busses with additionally a substitute area for the peak season with 50 parking spaces for cars and 5 for busses (see appendix II for calculations).

The parking spaces are located at the end of the road; Skovlystvej at Bane Danmarks area, just by the Train Station. This area is not in use today therefore it is opportune to locate them here.

For a closer look see the master plan in the beginning of the chapter.

The design of the parking spaces should be in accordance with nature and the urban furniture used here, is the same as in the rest of the Nature Park and the connecting Pathways.

Locating the Experience Centre

The Experience Centre is placed at the end of an already existing path, where the three types of natures are located very close to each other, making it possible to look at all three natures from the centre.

When drawing a circle with the Experience Centre as the middle point, the periphery of the circle will touch the three main functions in the context of the site (Fig.74). The circle has a radius on 500 meters.

Thereby the Experience Centre is reached easy from the surrounding areas. Even more, this location will make the Experience Centre visible from the river, when sailing downstream. It will also be visible from the nearby Løjstrup Hovedgård.

Fig.74. 1:5000

Centre Scale

Experience Centre

The plan drawing presents the suggested solution for the design of the Experience Centre.

The body of the Centre follows the direction of the Main Path, entering the park from the train and parking area, to lead visitors naturally into the Centre (Fig.75).

The ground floor ends out into a café and restaurant area with an outdoor terrace. The end wall will be made of glass to provide an exceptional view over the wetland and the river (Fig.76). The Nature Exhibitions are placed in squared rooms on the second floor. The rooms are turned to provide an optimal view to each of the three types of nature.

On the roof of the exhibitions solar panels will be placed.

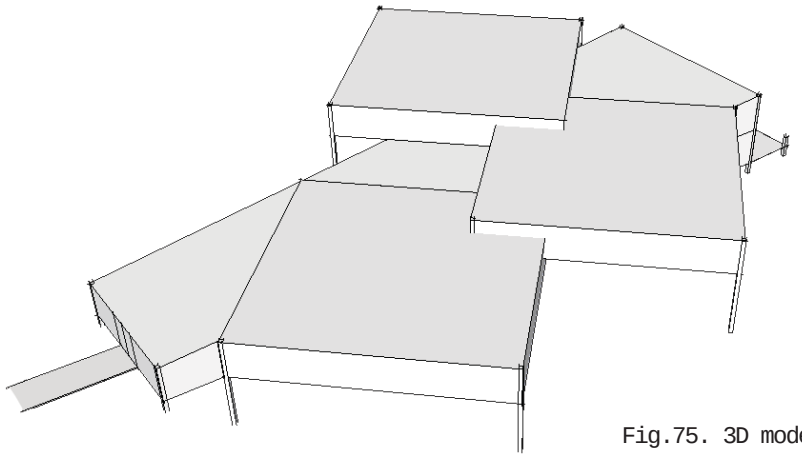


Fig.75. 3D model of the Experience Centre seen from Northwest.

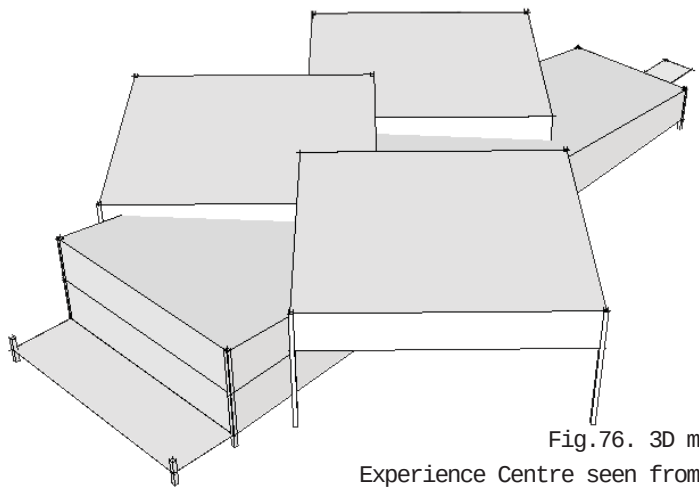


Fig.76. 3D model of the Experience Centre seen from Southeast.

Fig.77. Experience Center 1:500

Arrival at the Experience Centre

The Experience Centre is placed as a natural extension of the Main Path.

In front of the Experience Centre the three Pathways, cross each other and together they form a platform where visitors have several choices; they can choose to walk one of the routes through the forest, wetland and river areas, or they can choose to visit the Experience Centre (Fig. 78).

The Main Path and the Active Path are both raised from ground level to avoid the water in the wetlands. For the Hiking Path to meet the other Pathways in same level it will be raised in this point also.

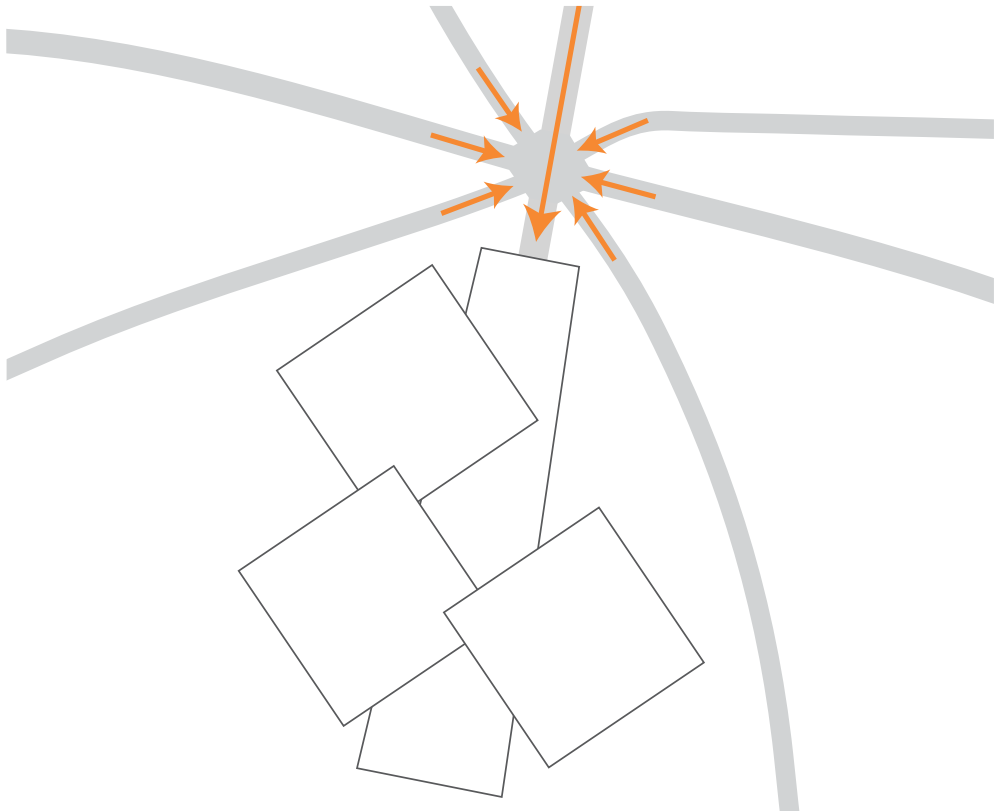


Fig.78. In front of the Experience Centre the Pathways forms an arrival platform.

Programs

In the following pages the programs of the Experience Centre will be explained.

The primary function of the Experience Centre is the exhibitions; there will be an exhibition for each of the three types of nature.

Besides the exhibitions the Experience Centre will provide a wide range of activities, to function as an attractor for a broad range of user groups, all year around.

The functions are placed inside the Experience Centre, but some of them can also be combined with events that take place outside in the Nature Park.

The Forest Exhibition is going to tell about the old oak forest; about how it is maintained, how it has developed during many hundreds of years and about the animals and plants that live there.

The Wetland Exhibition is going to inform about how the wetlands have changed and how they have been used in the last hundred years and about this nature's ability to remove pollutants form water.

The River Exhibition is going to provide information about the plants, fish and amphibian, special for the river. Further it will tell about the program for revitalising the salmon population in the river.

An Information stand will sell tickets for entering the centre and provide the visitors with the needed information about the facilities of the park. The visitors only have to pay for entering the centre; the outside areas will be free of charge.

A Conference Room will provide facilities for conferences and lectures of various arts. The Experience Centre will have to invite the relevant people to give lectures and arrange workshops.

A café will enhance the experience of the Centre and the locals will be able to rent the facilities for private parties etc.

A Gift shop will be placed in connection with the Information stand and will sell gadgets and souvenirs with relevance to the Park.

Toilets and Wardrobe are smaller, but very necessary installations for the Experience Centre.

E

Events will be arranged by the Experience Centre. They can be arranged in the Conference room or in the nature. The following four cards describe some of these events.

Fish and Fire the visitors can go fishing all day and prepare a wildlife dinner over a fire and spend the night asleep under the stars, in one of the parks pavilions.

Wildlife at dusk can be experienced in the seasons where the sun sets early. The visitors will have the possibility to get close to the animals that only come out at night.

Outdoor Classroom is for school classes and other institutions to experience the nature and its animals up close and personal.

Crazy in the Treetop is an extreme event where visitors gets very close to the life in the treetops and learns how to climb in the trees and to use the necessary safety equipment.

Super Salmon Safari is an event were you can go with a local guide, by canoe to the best fishing spots and bring the catch back to the kitchen and learn how to prepare an extraordinary dinner.

Location of Programs

The first the visitors meet when they enter the Experience Centre is an Information desk where they can buy tickets and get the information they need for a day at the Nature Park.

In connection with the Information there will be a Gift Shop and thereafter toilets and wardrobe will be situated. A staircase turned 45 degrees on the arrival direction will lead to the second floor exhibitions (Fig.79).

There are two main flows to follow. One on ground floor that will take the visitors all the way through the Centres non-exhibition facilities; the gift shop, the toilets all the way to the Café and restaurant area and one on the second floor, which will lead the visitors through the exhibitions, starting in the Wetland Exhibitions, then the River Exhibition and at last the Forest Exhibition. The flow on the second floor ends by another staircase, which leads visitors to the ground floor, directing them towards the cafe and restaurant area (Fig.81).

The exhibition cubes are orientated toward the outside nature which they represent; for example the cube which contains the wetland exhibition will have its main glass facade facing this nature (Fig.82).

Each exhibition area is 400 m^2 and the cafe and restaurant area, with all that belongs of kitchen etc. is 360 m^2. From the stairs at second floor, there are also access to the Conference and Event room which are placed above the cafe and restaurant area. This area is 195 m^2.

All together there is 2400 m^2 in the Experience Centre.

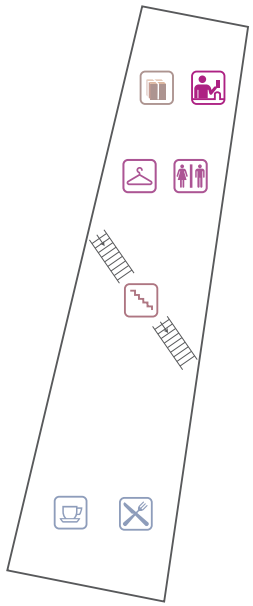


Fig.79. Functions on ground floor

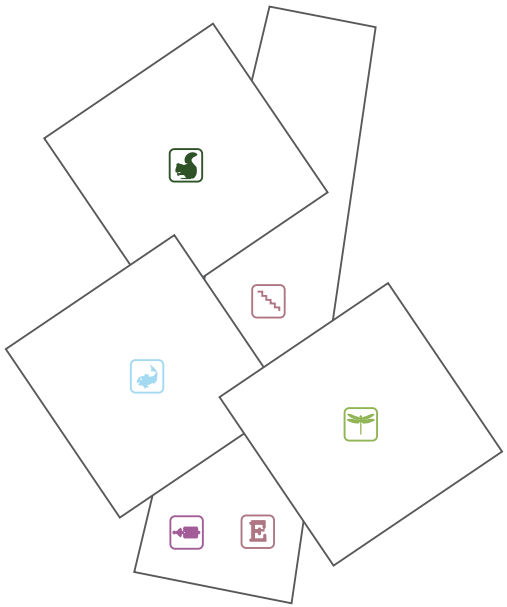


Fig.80. Functions on second floor

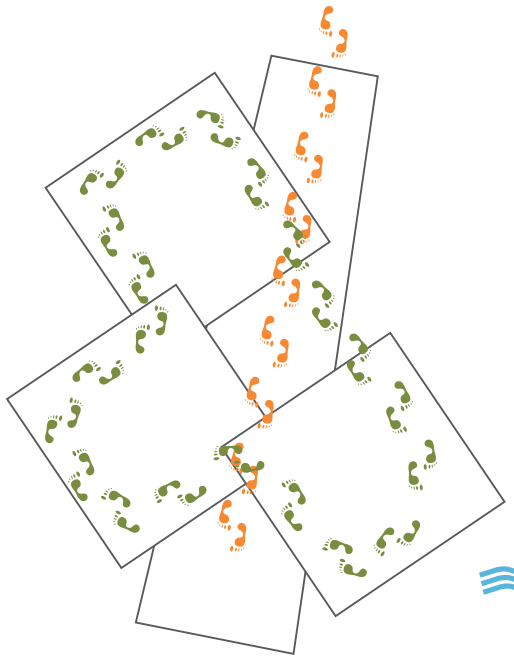


Fig.81. The two flows through the centre.

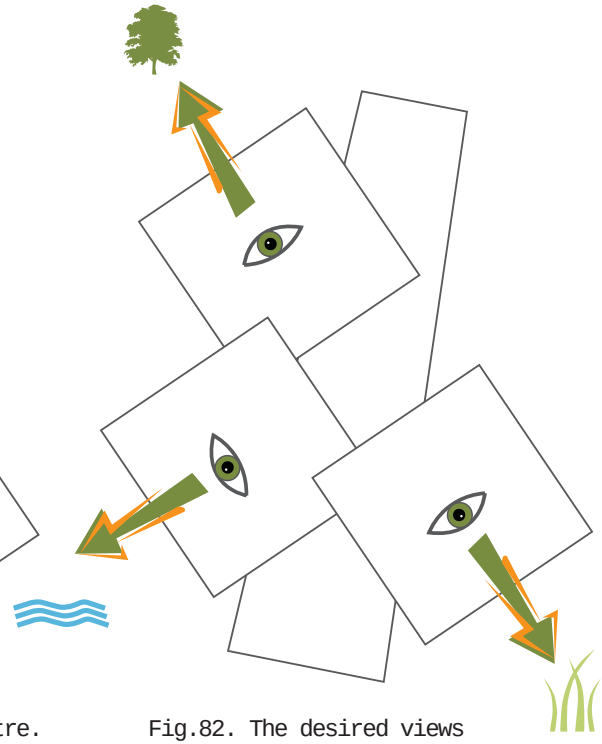
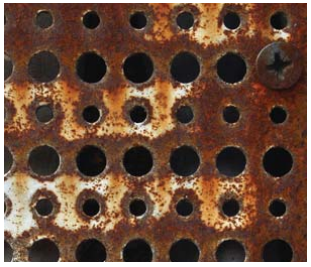


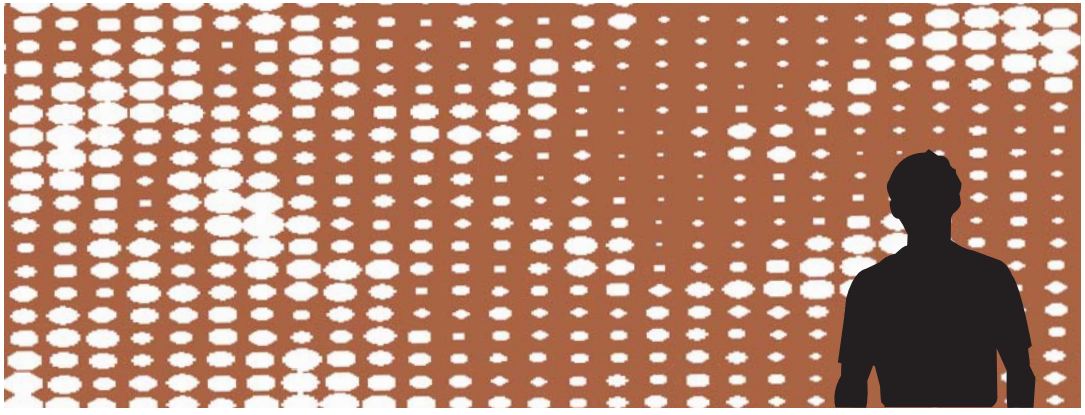
Fig.82. The desired views from the exhibitions.

Facade

One wall in each of the exhibitions will be made entirely of glass. To strengthen the glass facades as the main view from the exhibitions, the remaining facades will be clad in metal plates.

The plates are perforated to create a hole-pattern representing the exhibition inside each respective cube. The patterns will still make it possible to look outside and will still let sunlight enter, creating an exciting and dynamic feeling in the exhibition as the light changes (Fig.83).





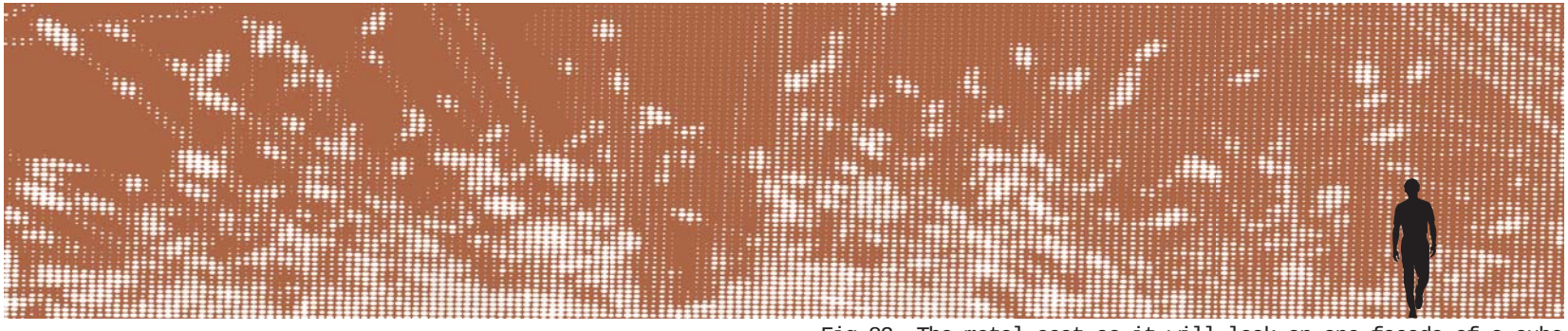


Fig.83. The metal coat as it will look on one facade of a cube

Fig.84. Arrival at the Experience Centre

Materials

Wood is used as material on the paths and pavilions, and as facade cover on the experience centres main building. It is further used for the urban furniture connecting the Nature Park to the town.

Metal is used for the structure lifting the experience centre up from ground level, and on the centres exhibition cubes as facades. Further it is used as elements around the park e.g. in the pavilions and as urban furniture like the lights and sign posts.

Making use of larch wood for the construction in the park will prevent the need for impregnated wood, which is very harmful for the nature as well as the people working with it. Larch wood contains a large amount of resin that serve as a natural fungal protector, preventing the wood from rotting.
It is further possible to grow Larch in Denmark, as well as in other Scandinavia countries, cutting down on the transport time and fuel used to obtain it. [f-rytter.dk, www]

Choosing larch trees for the wooden installations and a rust coating for the installations made out of metal creates another unique way to observe the time pass in the park. As the larch wood age its colour will change from light brown to an almost mouse gray shade (Fig.85), whereas the rust coated metal will only get more prominent and brightly coloured with time (Fig.86). Therefore the contrast between the materials will only get larger as time goes on.


Fig.85. Aged Larch

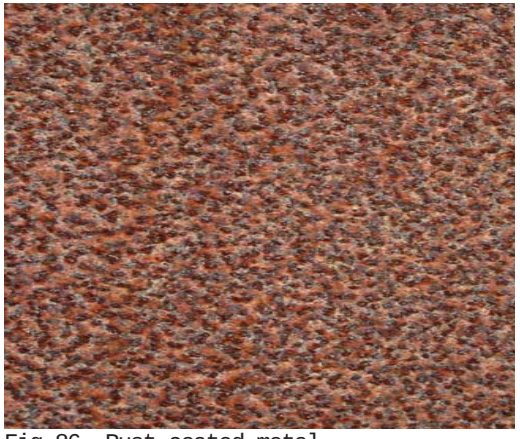


Fig.86. Rust coated metal

Fig.87. Wetland Exhibition

Solar panels

Solar papnels will be used in the Experience Centre for heating and lightning and in the rest of the Nature Park for lightning.

A solar panel is a device that converts sunlight directly into electricity. A simple explanation of how solar panels work is that the photons from sunlight hit the solar panel and are absorbed by a semi conducting material in the solar panel, such as for example silicon. Electrons in the solar panel are knocked loose from their atoms, allowing the electrons to flow through the material and thereby producing electricity [wikipedia 2, www].

Solar panels located in Denmark in average produces about 1100 - 1200 kWh/m2 (See Fig. 1. in appendix 3).

There are some problems related to the use of solar cells, but in these years the field of solar energy is rapidly developing and today it is becoming possible to store the energy produced by the sun and the efficiency of the storage batteries are increasing.

It is expected that when the Experience Centre is to be build, it will be possible to base almost all of the energy-use on solar power. There will have to be an additional connection to another network in case of black down.

The average efficiency of solar panels (energy conversion ratio) are 12 - 18 %, but solar panels with efficiency on up to 42 % have

already been invented [physorg, www].

On the roof of the Experience Centre there will be 882 m2 of solar panels (Fig.88) and with an efficiency of 1150 kWh/m2 they will be able to produce 1.014.415 kWh a year (see Appemdix III for calculations).

The Experience Centre will approximately use 92.992 kWh of energy in one year (see Appemdix. III for calculations). Therefore there will be more than enough to supply the Experience Centre; actually there will be much energy left: about 921.423 kWh/ year.

The energy left can for example be used in the houses and buildings in the town of Langå.

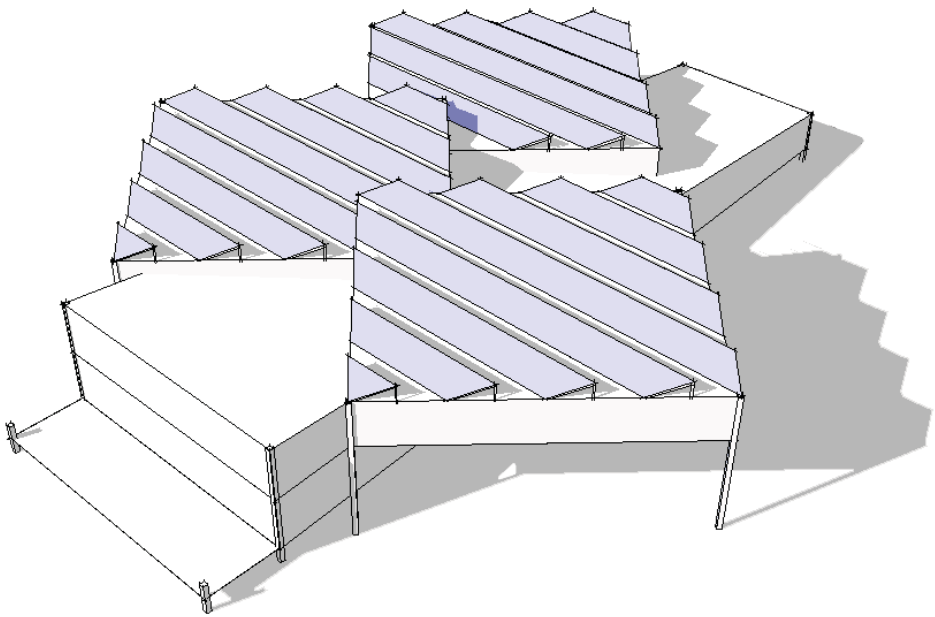


Fig.88. The Experience Centre with solar panels on the roof, oriented towards south.

Side Effects

The Nature Park will influence its surrounding neighbourhood and if it becomes a success it will also affect the town of Langå.

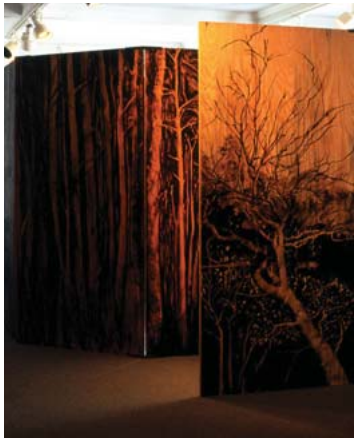
The Nature Park will generate new workplaces; there will be need for people who will have to take care of the daily run of the centre and the maintenance of the Park, there will be need for a staff to run the kitchen and it will be necessary to hire people to give lectures, guide tours and arrange events.

The Nature Park will make sure that the special nature along Gudenåen are preserved and maintained and it will inspire to new ways of recreation, for both the neighbours of the park and for the tourists visiting the park.

Tourists that are visiting the park will probably make use of some of the other facilities in the surroundings or in the town. That could for instance be the campground, the guest-rooms in Løjstrup Hovedgård or the groceries and shops in the town centre.

All together this will be beneficial for the town of Langå and will maybe inspire locals to start a further development of the town.

The Experience Centre is build in the nature inside of the restriction lines mentioned on page 68, but the Centre is at the same time build on the premise of nature and wildlife. Further it put focus on the many potentials of nature and on how it is maintained.




Blue Sky


Den Fynske Landsby

Season in the Park

The yearly rhythm in the Nature Park will to a large degree be characterised by the seasons natural shifting. During a year visitors will experience the river that freezes, the trees that blossoms, the many animals in the park that gets their offspring and the leafs that wither away in the autumn.

In the Park there are many outdoor functions; there are terraces from where the sun can be enjoyed in summertime and pavilions where visitors can find shelter from the weather in autumn and winter.

The Experience Centre will be open all year around and its exhibitions will provide information about what is special for each season. Even though the Centre is open all year, it is expected that most visitors will come during summertime and vacations.

Seasons in the Park:

Experience Center opening hours:

Future Prospects

The destination lifecycle

Destination

``A country, state, region, city or town which is marketed or markets itself as a place for tourists to visit´´

[Bierman, 2006]

A destination is a product that has to be marketed like any other. Most tourist destination start as undiscovered gems, and then when word spreads, become fully developed tourist destinations with all amenities necessary to satisfy the main street tourist.

Like any other product a tourist destination has a lifespan; they are launched, grow to maturity, level off and then gradually decline.

Butler's lifecycle describes this in 5 steps (Fig.89).

Exploration
Involvement
Development
Consolidation
Stagnation

This development can happen rapidly and the task is to prevent the destination, to then decline as it reaches its potential. [destinationrecovery, www]

There a many factors able to push a destination toward decline when it reach the level of stagnation (Fig. 89). As an example; the destination can have reached its carrying capacity or it can experience a shift in user interest toward other markets.

If discovered in time, it might be possible to prevent the decline and steer toward rejuvenation. This can for example be done by focusing on new markets and user groups, change of marketing or investments in expansion and new activities. [Wall, 1992]

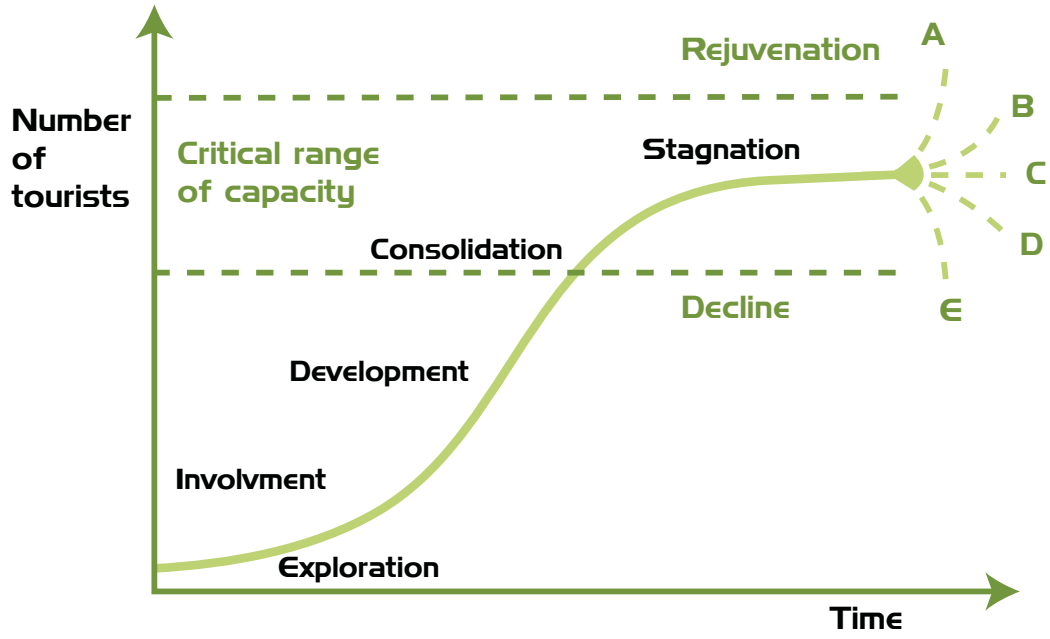


Fig.89. Butler's lifecycle model [destinationrecovery.com, www]

Exploration
A secret spot is discovered, no amenities, must "go rough".

Involvement
A few locally-run camps and a few concessions are established

Development
A well defined tourism industry is developed with advertising the destination

Consolidation
Tourism becomes a dominant feature of the local economy

Stagnation
Tourism growth slows and carrying capacity is reached, the area is no longer a new hotspot.

Decline or rejuvenation
Decline results as tourists choose other destinations; rejuvenation typically requires attracting a different kind of tourist.

With Langå Nature Park being a new tourist destination, it has been possible to consider many of these elements from the beginning and implement different precautions against a too rapid decline.

Thoughts have been given, to not just market the park towards one specific user group. A varied offer of activities serving both the wildlife tourists, low cost tourists and the high cost, luxury tourists has been created to make sure that the park is not dependant on only one user group’s moods for its revenue. The varied activities also make it possible for the park to shift its focus toward other markets; like conferences and courses if the market starts to change.

The somewhat small size of the park, and Langå as a whole, might create a problem with its carrying capacity. If the park is successful the amount of tourist might make it necessary to extent the park further, to maintain the quality of the experience. If people start to perceive the park as cluttered and if they feel they have to wait too long to use the different functions they are unlikely to return for a second visit.

Luckily for the park it is surrounded by forests and farmland that will make it possible to extent with new paths and activities if necessary. This could further make room for new activities that would previously have taken up to much space like e.g. mountain-biking or horse riding.

Reflection

The aim for the project has been to create a tourist destination in nature for a broad user group.

Trough the examination of new tourism and the changing tourist demands, this project has been able to developed Langå Nature Park as a destination, capable of servicing the demands found in this new tourist industry. The incorporation of a much varied program ensures that the Nature Park has something to offer for all user groups, providing the locals with a unique public space and the tourists with activities covering both ends of the physical and financial spectrum.

The Experience Centre and the parks pavilions further creates the shelter needed to use the park, not only in the summer but also for the part of the year were the weather can be more severe, providing the opportunity for events with the possibility to experience nature during conditions were most people would normally stay inside.

As Langå Nature Park developed in to a popular tourist destination, questions are raised which have to be considered.

Tourists in nature

With tourism changing toward destinations with a more profound and meaningful content, a nature park creates an opportunity for people to get a better understanding of the nature around them. People have a tendency to take this nature for granted and are not until now, with environmental concerns taking centre stage, starting to understand that it might not be around forever, unless we understand just how sensitive it can be.

It can be considered if creating a tourist destination in nature is the right way to create this understanding; will the amount of tourist suddenly laying claim to an area not just damage it further?

Langå Nature Park is everything considered a small area of nature. With its varied nature types it serves as a condensed experience of the best nature the region has to offer. Opening this area up for visitors is a way to gather the tourists in one space, were their impact to a certain degree, can be monitored and controlled. The Experience Centre and its guides will be

able to give the visitors a much deeper understanding of nature, and the different programs and activities will give, especially children, a fun and interactive way of learning the importance of nature and its wildlife. Getting this understanding through play already as children will hopefully help create a generation, of more considered and understanding users, not just of the Nature Park but of all nature in general.

Competitiveness

Langå Nature Park manages to add something special to the area surrounding Gudenåen. For all the fantastic nature there are no tourist destinations along the river focusing solely on its nature and wildlife.
Denmark does have other destinations focusing on nature, some of them described in the Reference chapter (p.38), but not many seem to be as centrally located. The national parks are all located in the fringe of the country and are hard to reach by public transport. The size of the national parks can further make them seem overwhelming, for a one day visit. The size and programs chosen for Langå Nature Park make it possible to use the park in several ways. It is possible to visit the Nature Park and Experience Centre for one day and still be able to see the exhibitions and the park and it is also possible to use the park as a base for a longer stay, making use of the many different special events and attractions, which is also a significant part of the parks program.

Financial issues

The development and construction of the Nature Park and Experience Centre will more than likely, be too large an investment for the city or municipality to take on singlehanded. One way to finance the park could be through a public/private partnership. This is a way for the municipality to outsource, not only the construction of the park and centre, but the financing, design and maintenance as well.

One way to use a public/private partnership could be to let private investors finance the development of the park, with the municipality serving as a renter, paying off the publicly used areas; normally over a 20-40 year period. In this way the municipality is able to spread

out its investment over a number of years and do not have to take on the full financial burden and risks involved in getting the development started [PWC, www]. In this way the park and the centre's exhibitions would still run as a public function under the municipality, whereas for example the café, souvenir shop and seminar facilities would be run and financed by private investors.

Strategic planning and marketing

As the strategic plan focus on how to function in an ever changing environment, a lot of effort has gone in to finding a way to make sure the Nature Park would be able to survive different trends in the tourist industry.
Today preservation and protection of nature is very much in the public focus, but this might change.
As a measure to accommodate these changes, a part of the project has been to develop a program, able to serve different user groups and create a destination able to vary its focus if the trends were to shift.

Already incorporating programs for different user groups makes it easier to change the focus, for shorter or longer periods of time, than having to establish a connection to a new user group from scratch, if the interest from the original user group starts to fade.

Establishing this board a user group from the beginning will require a quite substantial marketing strategy.
Creating a marketing campaign considering the many different users group, that the park wants to engage, could easily become a cumbersome undertaking for a small tourist destination without a large budget.

This could possibly be helped by the different private investors found in the park. If different investors are behind for example the café and the souvenir shop it would be possible to gather the funds devoted to marketing under one collective strategy, creating a symbiosis were everyone would be able to benefit from the joint marketing of the park. At the same time freeing up capital for more specific campaigns targeting for example a explicit user group or promoting an unique event.

Langås further development

The development of Langå Nature Park will be able to create new jobs, and a successful tourist destination will most likely start a further development in the remainder of town, but what kind of development? When tourism becomes a large part of an areas financial basis, it often happens that the new development is created solely to serve the tourists and therefore slowly take over the town and its natural identity. This is often evident in many small communities along the coast, were the local identity has been drowned in ice cream stands and bed & breakfast signs.

It is hard to prevent this development since it seem to follow the natural progression of a successful tourist area, and what is the essence of a tourist destination if not to make money on the tourists. To make sure that the local identity and the main attraction, the nature and wildlife in the park, which attracted the tourist in the first place, is not overrun and disappear, the municipality will have to consider the positive and negative consequences following the development of the Nature Park and develop a strategy capable of incorporating this growth in to the natural development of the towns future. Creating a community where locals and tourist experience a beneficial symbiotic relationship.

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P. 185. [wikipedia 3, www]
http://en.wikipedia.org/wiki/File:EU-Glob_opta_presentation.png :3

Appendix I

Design process

During the process of developing the design, several different methods and media have been used. The many ideas were investigated through both physical models, drawing and 3D programs (Sketch up and Maya).

The media each have different qualities; some gives a spatial awareness, some a precise description of the idea and others an abstract approach.

It is important to shift between the different media in order to get the full potential of each media and test the design on different levels (Fig.1).

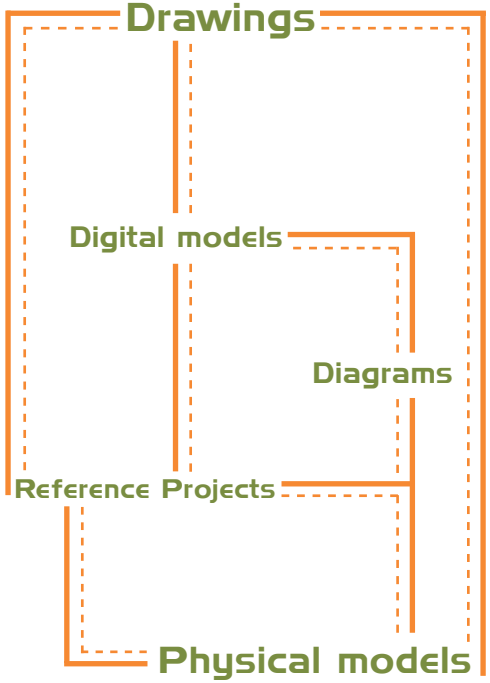


Fig.1. The use of different medias

The first idea for the project was to make an overall renewal strategy for the town of Langå. The renewal would contain a number of intervention points; this could for example be a new school, a new residential area, renewal and restoration of the main street in town etc.(Fig.2 and 3).

Later it was realized that the nature was the greatest potential for the town of Langå. Therefore the intervention points was now located in the nature along Gudenåen. One idea was that new types of residents and holiday houses could be developed in the wetlands (Fig.4).

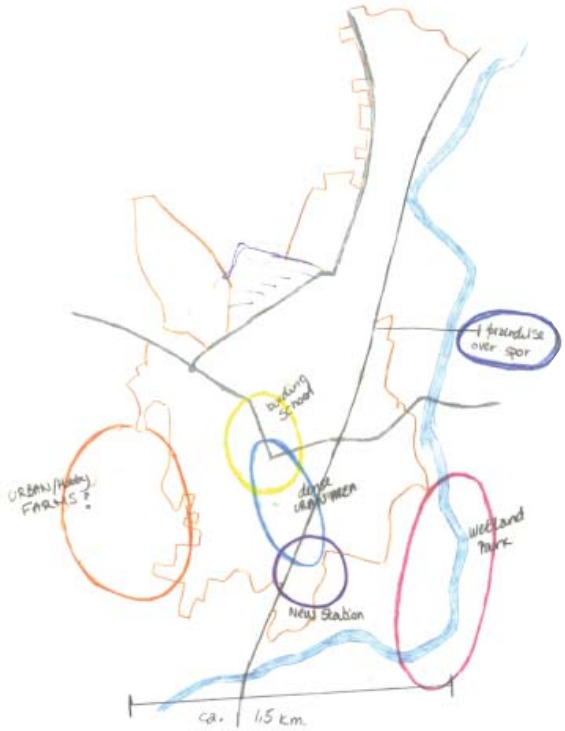


Fig.2. Intervention points in Town

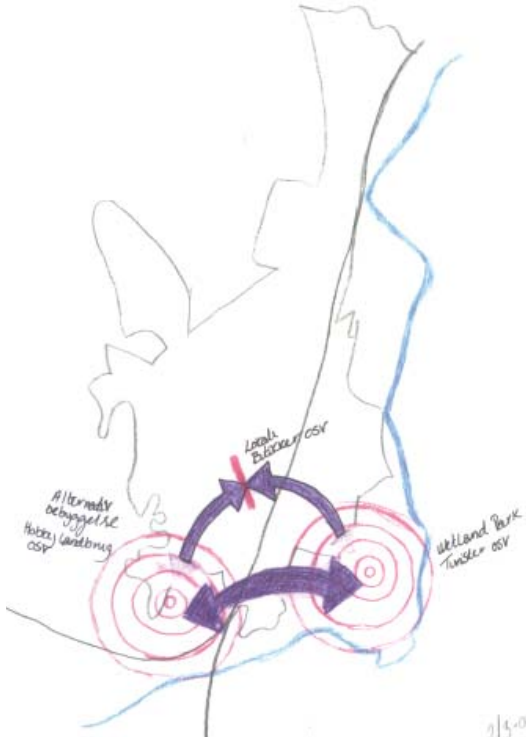


Fig.3. Intervention points in Town

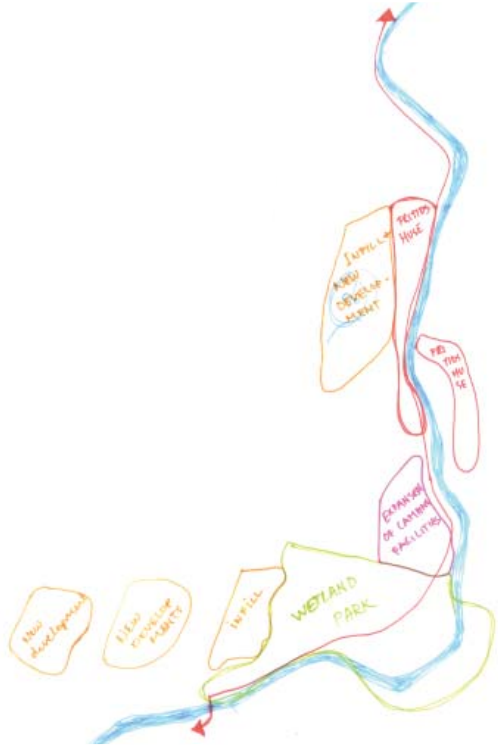


Fig.4. Intervention points in Nature

Nature Park

It was later evident that the idea of many intervention points scattered around the town was too extensive. Therefore it was now decided to develop only one of the intervention points.

The idea of developing a Nature Park had for a long time been one of the favourite ideas for an intervention point; therefore it was this idea that was chosen to develop further.

The reason to design a Nature Park was chosen with many considerations in mind, it should be able to generate new workplaces, attract new people to town and enlighten people of the environmentally problems that we are facing today. Further it became important to make the Nature Park a tourist destination that would be able to survive in the ever changing tourist industry.

During the process of designing the Nature Park it was important to figure out how to achieve these goals. Therefore many different programs and designs and locations of the Nature Park were considered (Fig.5-10).

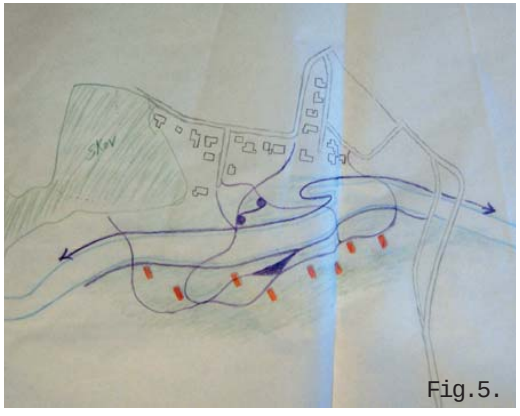


Fig.5.

Fig.7.

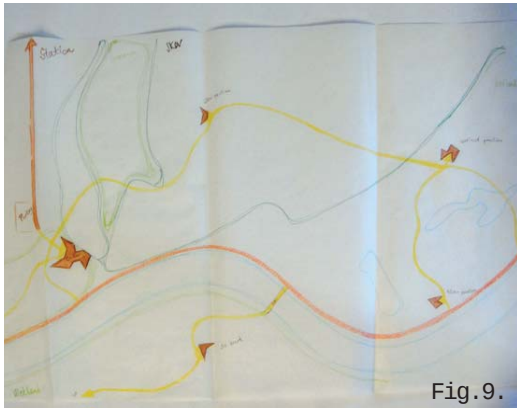


Fig.9.

Fig.6.

Fig.8.

Fig.10.

Pathways

In the process of developing the pathways the way they progress was considered as well as how many paths there should be and the length of them. It was also considered how the pathways could contribute to attract a diverse user group.

Guidelines for the materials and the sequence of each of the Pathways were put up, but the actually location were more tricky. We only knew that they had to go through each type of nature and that they had to connect the Experience Centre to the Train Station.

First a bow was created for one path and smaller pathways should connect to it at different locations (Fig.11-13).

Later the small connection paths were developed into a second path (Fig.14-15).

At last, when the exact location of the Experience Centre were found, it was decided that the pathways should all meet in one point leading towards the Experience Centre (Fig.16).

Fig.11.

Fig.12.

Fig.13.

Fig.14.

Fig.15.

Fig.16.

Pavilions

The pavilions were also well considered during the process. Especially the purpose and function of the pavilions, how many of them there should be, as well as the actual design of them.

Most important was to find out, what they could contribute with in the park.

Different guidelines for the pavilions were exploited. For example that there should be one of each type of pavilion in each nature and that there should be three different sizes of pavilions.

These rules for the pavilions were not used in the final design, because these guidelines could not be applied to all functions, for example the fishing spots could not be placed in each of the three natures. But still there could be placed one information pavilion in each nature.

Instead the function is what now determines the size and location of the pavilions and it is the materials that make them relate to each other.

Experience Centre

The location of the Centre was considered greatly. Among other thing it was considered if visitor would walk as far as 300 - 400 meters to visit the Centre or if it should be placed closer to the Train Station.

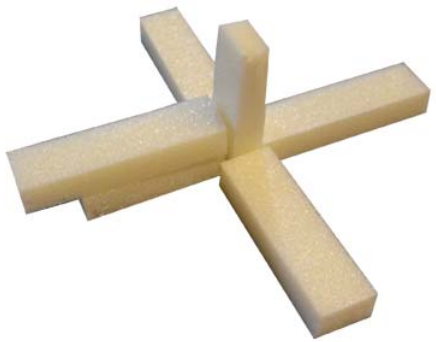
The design of the Experience Centre was also a long process. All through the process the same guidelines had been considered; the building should be lifted from ground level, the exhibitions should be orientated towards each of the three types of nature and the flow inside should progress naturally. But these guidelines could create many different shapes and forms.

Sun and light in the Centre were also an important part of the design. Some functions needed more light than others, like the conference room and the cafe area, and had to be orientated towards south, while the exhibitions had to be orientated towards each nature.

It was also considered if the exhibitions should reach out into each of the natures, but that would create a very large structure and also very easily disturb the migration corridor for animals.

Sustainability had throughout the project been an important theme to consider and among other things green roofs, water recycling and solar panels were considered.

In the final solution only solar panels are incorporated, because it was found that there were no point in incorporating green roofs to collect water, when the Experience Centre is placed in a wetland, which works as one large green roof.



Appendix II

Parking calculation

The number of parking spaces will be calculated by a comparison to the nature centre of Lille Vildmose. Lille Vildmose can be used as an example because we know the number of visitors and square meters and because it is almost impossible to get there by using public transport.

Parking in Lille Vildmose

The centre of Lille Vildmose has 90.000 visitors annually. In the local plan the number of parking spaces is set to:

30 parking spaces for cars
5 parking spaces for busses

and in an substitute area for the peak season there should be:

30 parking spaces for cars
5 parking spaces for busses

[Lokalplan nr. 30.19.03, Sejlflod Kommune, 2004]

Parking in Langå Nature Park

In Langå Nature Park there will be about twice as many visitors annually; approximately 200.000 visitors.

As many of the visitors will combine the visit to the park, with the use of other surrounding functions, the parks parking needs will be supported by parking areas found in connection with these functions.

One of the main target group is the Wildlife tourists and it is evident to think that some of them will come by foot from the Hiking Path, some in kayaks or canoes sailing down the river and others will stay at the campground or at the tent spot.

Even more some of the Luxury touris will be living in Løjstrup Hovedgård and due to the Train Station a number of visitors will come with the train.

Therefore, even though there will be approximately twice as many visitors in Langå Nature Park but it will not be necessary to have twice as many parking spaces.

A guess will be that:

50 parking spaces for cars
5 Parking spaces for busses

will be enough, with additionally an substitute area for the peak season with:

50 parking spaces for cars
5 parking spaces for busses

Fig.1,2 and 3. Natural parking spaces with permeable pavements

Appendix III

Solar panels

The first exhibition box has 305 m2 of solar panels on the roof. The first box overlaps the next therefore there are only 280 m2 of solar panels on the second exhibition box. The second box overlaps the third and therefore there are 296 m2 of solar panels on the third exhibition box. All together that is 882 m2 of solar cells.

The panels are placed in 8 rows on the roof of the three exhibition boxes, with 180 cm in between, to prevent the shadows form the one in front to hit the next (Fig.2).

They are placed in an angel of 35 degrees from horizontal level, because the optimal angle on the latitude 56 is between 30 - 45 degrees [elfrasolen, www].

On the diagram (Fig.1) it is seen that the electricity potential in Denmark is 11oo - 1200 kWh/m2. With 882 m2 of solar panels that makes:

1150 kWh/m2 * 882 m2

= 1.014.415 kWh/year

An estimation of how many kWh is used to heat the Experience Centre is made by the use of a program called PHPP (developed by Passiv Haus Institut in germany). Here the U-value and m2 for sealing, walls and windows are plotted in to the calculation scheme.

A zero energy window with the U-value 1,1 [rockwool, www] and wall and roofing with the U-value 0,15 has been chosen for materials.

Thereby the yearly energy consumption per m2 will be 40,1 kWh/year, making the Experience Centre an low energy class II building.

The energy use for the entire building will be

40,1 kWh/m2 * 2300 m2

= 92.992,0 kWh/year

Therefore it will be possible to base the energy supply on solar panels. Left over energy will be:

1.014.415 kWh/year
- 92.992 kWh/year

= 921.423 kWh/year

There is much energy left over, but this energy can probably be used in the town of Langå.

Solar Electricity potential in Europe

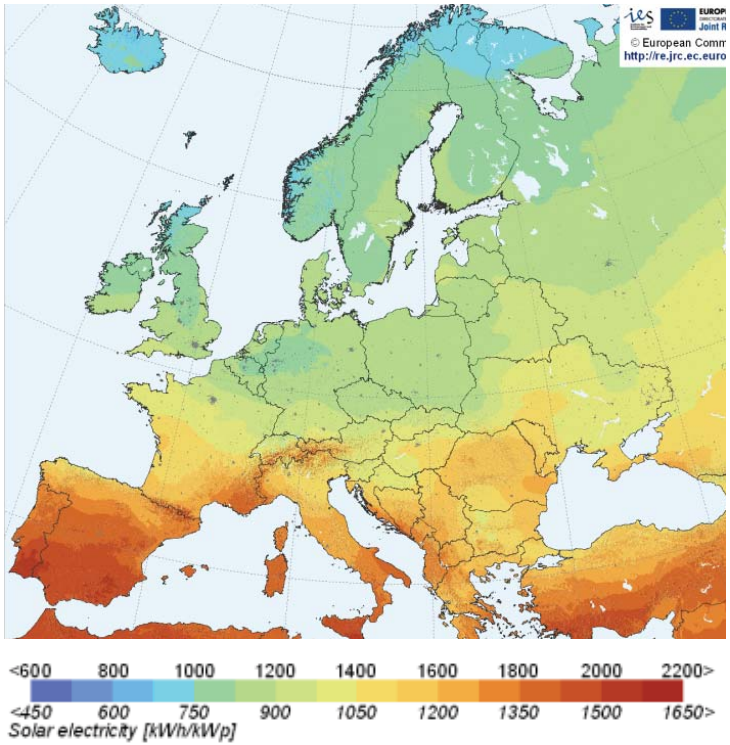


Fig.1. Yearly sum of global irradiation incident on optimally inclined south oriented photovoltaic modules. Measured in [kWh/m2]. Denmark 1100 - 1200 Kwh/m² [wikipedia 3, www]

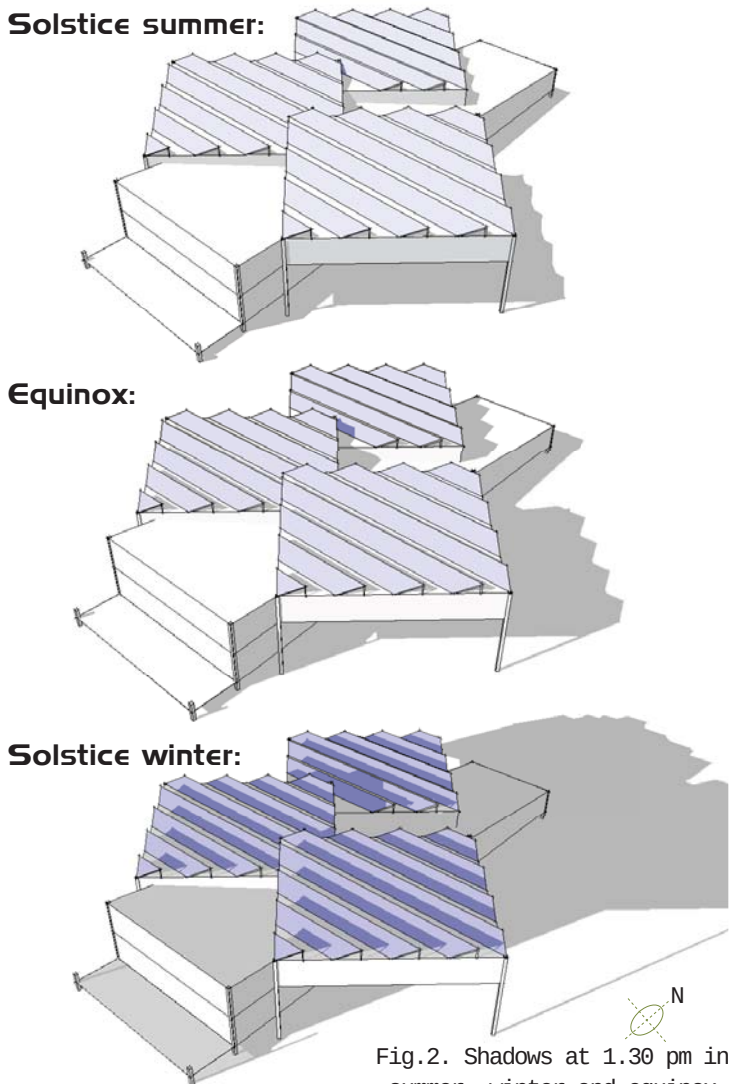


Fig.2. Shadows at 1.30 pm in summer, winter and equinox.