

THE AMBIGUOUS LANDSCAPE



**An Exploration to the Architectural Quality
of the Landscape of Groningen**

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of the Landscape of Groningen

Tiemen Anema

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Graduation thesis

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Delft, 1st of June 2017



ABSTRACT

The landscape of Groningen in the upper north of the Netherlands is in cultural decay. New build industrial and agricultural structures are neglecting their context completely. This thesis is concerned how the landscape of Groningen can be translated into architectural form. Thereby the thesis tries to learn from the landscape and explores context as generating tool. At first the sea-clay landscape of Groningen is historically and geographically defined and second, more sensitively, examined for its architectural value. The open and wide landscape of Groningen is characterized by nature and the cultivation of man, especially in the last 200 years. Through time the line between the natural and unnatural blurred. This current presence of the cultivated landscape is explored in material, landscape, typology and atmosphere.

◀ Emmapolder

A group of hunters on a salt marsh. In 1944 this salt marsh was impoldered into the Emmapolder, north of the Eemspolder.

Map of Groningen (next page)

Arial photo of the region of Groningen.
Highlighted is the area concerned with this
thesis, the north east of Groningen.

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PROLOGUE

*"We have never been modern."*¹ - Bruno Latour

1. Latour, B. (1991) *We Have Never Been Modern*. Massachusetts: Harvard University Press.

Dutch rural areas are production landscapes, where the relation with the land is direct, banal and unilateral alienating from their inhabitants. For ages the countryside is exploited for its resources. Nowadays demographic shrinkage is leaving a desolated countryside behind. Digital revolution is transforming farms into unmanned factories. Only wind turbines, datacenters and heavy industry are the newcomers in the area, however working completely independent from humans.

Also the upper north of the Netherlands is dealing with the increment of earthquakes as a result of the extrusion of natural gas. Historic farms and other structures in this danger-zone are suffering heavily, resulting in constructional damage or even demolition. The extrusion of natural gas is leaving her marks.

Besides the social impact these developments also have a cultural effect on the architecture and especially on the landscape of the countryside. Newly build factories and datacenters ignore their surroundings with high fences and blind facades. Windturbines and modern barns are build out of a catalogue and seem to only represent their function. Culture and genius loci seem to play no role in these cost- and functional efficient structures.

◀ Noordpolder

A traditional barn (red) with two modern extensions (green) along a road in the Noordpolder.

However these developments also give the opportunity to rethink the relation between man and landscape, therefore the aim

of this thesis is to explore the possibilities to re-engage these above mentioned developments with their context. It is examined how local spatial qualities can play a role in the creation of such structures. To do so the research will learn from the landscape, to bring architecture back in dialogue with landscape. Thus the idea of context as a generating tool will be explored.

Functionally these structures do not demand a relation with their surroundings, however the surroundings will always have a relation with the structure. Our surroundings are our common environment and affects us all, therefore we should reconsider how we want to develop our countryside. Thereby rural architecture in the Netherlands is underdeveloped in comparison with urban architecture². We should not treat our countryside as secondary and formulate a clear position towards its developments.

The thesis focuses on the region of North East Groningen which is suffering heavily from all the above mentioned tendencies. This area is part of the Dutch province of Groningen, positioned in the north east of the Netherlands. The region is characterized by a single type of landscape, a sea-clay landscape. Therefore the region of North East Groningen forms a subject of research³, with the aim to distil conclusions interesting for a broader discourse.

The later design will focus on an agricultural research center, representing the current industrial developments on the countryside. During the design process this global typology is confronted with the local qualities emerged from the research. The aim is to engage with locality and enrich the perception of the landscape.

2. Oxenaar, A. (1993). In: Colenbrander, B (eds). *Stijl: norm en handschrift in de Nederlandse architectuur*. Rotterdam: NAI Publishers. p. 87.

3. Also my family origins from the area around Groningen. This has logistic advantages, but mostly formed a personal sentiment for the region. Also this played a sufficient role in the choice for this particular area.

4. Noordhoff Atlasproducties (2014)
De Bosatlas van het Voedsel. Groningen:
Noordhoff Uitgevers. p. 12.

Research question

The thesis is concerned with the question, *how a landscape can be translated into architectural form*? To answer this question is divided into three sub-questions:

- A. Why the landscape has its current appearance?
- B. What are the spatial qualities of the current landscape?
- C. How these spatial qualities can be translated into architectural form?

In the research landscape not only means nature, but includes the whole rural unbuilt and built environment. The Netherlands consists for 65% of rural territory is characterized by a rich agriculture⁴. The research therefore also deals with themes as material and typology, because these themes have a defining presence in this cultivated landscape.

Spatial qualities are phenomena that form the character of a landscape. They are spatial because these elements are concerned with the physical world. Architectural form is the abstracted and shapeless state of these spatial qualities, described in a way it can be of use for an architectural design. Therefore the outcome of this thesis can function as a point of departure for a later design.

The results of the research are presented in two parts. Both parts represent a different attitude in regard to the research subject. The first attitude is based on a geographical and historical research and forms the guide through the thesis. Every phase in the first part is altered by a project from the second attitude. The second attitude is a more sensitive approach towards the research subject. Both attitudes represent other research questions. The

first part answers the first question and the second part answers the second and third research question. The first attitude can be recognized by the white pages, as the second attitude can be recognized by the grey pages. In the chapter *Method* both attitudes will be further elaborated.

The first part is divided in four chapters: *Formation*, *Cultivation*, *Industrialization* and *Digitalization*. All chapters represent a different time-frame in the geographical and historical formation of the landscape. The headers refer to the theme that summarizes the shaping in the specific timeframe. *Formation* concentrates on the geographical formation of the Groningen region until 800 b.c. From here the chapter *Cultivation* will deal with the human influence on the landscape until 1800 A.D. In *Industrialization* the political and technical influence from 1800 until now will be treated. *Digitalization* will give future perspectives and handle their future influence on the region.

The second part is also divided in four chapters: *Material*, *Landscape*, *Typology* and *Atmosphere*. In *Material* the renowned red Groninger baked brick is explored for its formal possibilities. *Landscape* deals with scars in the landscape. As *Typology* focuses on the relation between roof and structure in Groninger farms. The atmosphere of the Groninger landscape is tried to grasp in chapter *Atmosphere*.

The four chapters of the first part form the formal base to and are followed by the chapters of the second part. The second attitude uses subjects from the first attitude to explore their architectural values. For example, chapter *material* follows upon chapter *formation*, because the resource for the Groninger baked brick has been formed in the time-frame until 800 B.C.

All findings of this thesis are summarised, reflected and concluded in the epilogue.



▲ **Kwelder**

A salt marsh with plants near the Westpolder.



▲ Dijkcoupure

An opening in the dike for traffic. The small black house hosts wooden planks to close of the opening in case of high water.



METHOD

“There is an enormous, deliberate, and - I think - healthy discrepancy between what I write and what I do.”⁵ - Rem Koolhaas

5. Heron, K. (1996). From Bauhaus to Koolhaas. *Wired*. 4 (7).

6. Smithson, A. & P. (1990) The ‘as found’ and the found’. In: Robbins, D. *The Independent Group: Postwar Britain and the Aesthetics of Plenty*. Boston: MIT Press. p.20.

7. Yacomuzzi, P. (2008) Max Lamb: Bringing material to life. *Apartamento*. 2. p. 104 – 113.

As stated, the research is conducted with two methods, both representing a different attitude. The first attitude is formal and consists of a literature and maps study to the historic and geographical formation of the landscape. The main goal of this study is to unveil the reason of the existing elements in the landscape and is presented in text, maps and illustrations.

The second attitude is more sensitive and is based on research by doing. The second attitude could be described by the idea of ‘as found’ as introduced by Alison and Peter Smithson. ‘As found’ means to reconstruct how a context has formed itself and extract spatial qualities which could be build upon⁶. In this research multiple field trips were conducted to explore the landscape for such spatial qualities. This was done by walking, looking and talking.

Afterwards these spatial qualities are explored for their architectural value. In this step the ‘doing’ is used as a method of research. It is an attitude whereby the act of making forms a way of exploring. Max Lamb, a British industrial designer, uses this attitude to explore materials and techniques as an aesthetic base⁷. He designs through the process of making, rather than predefining every detail. In this way it is an exploration of possibilities rather than a focus on solutions.

◀ Open field

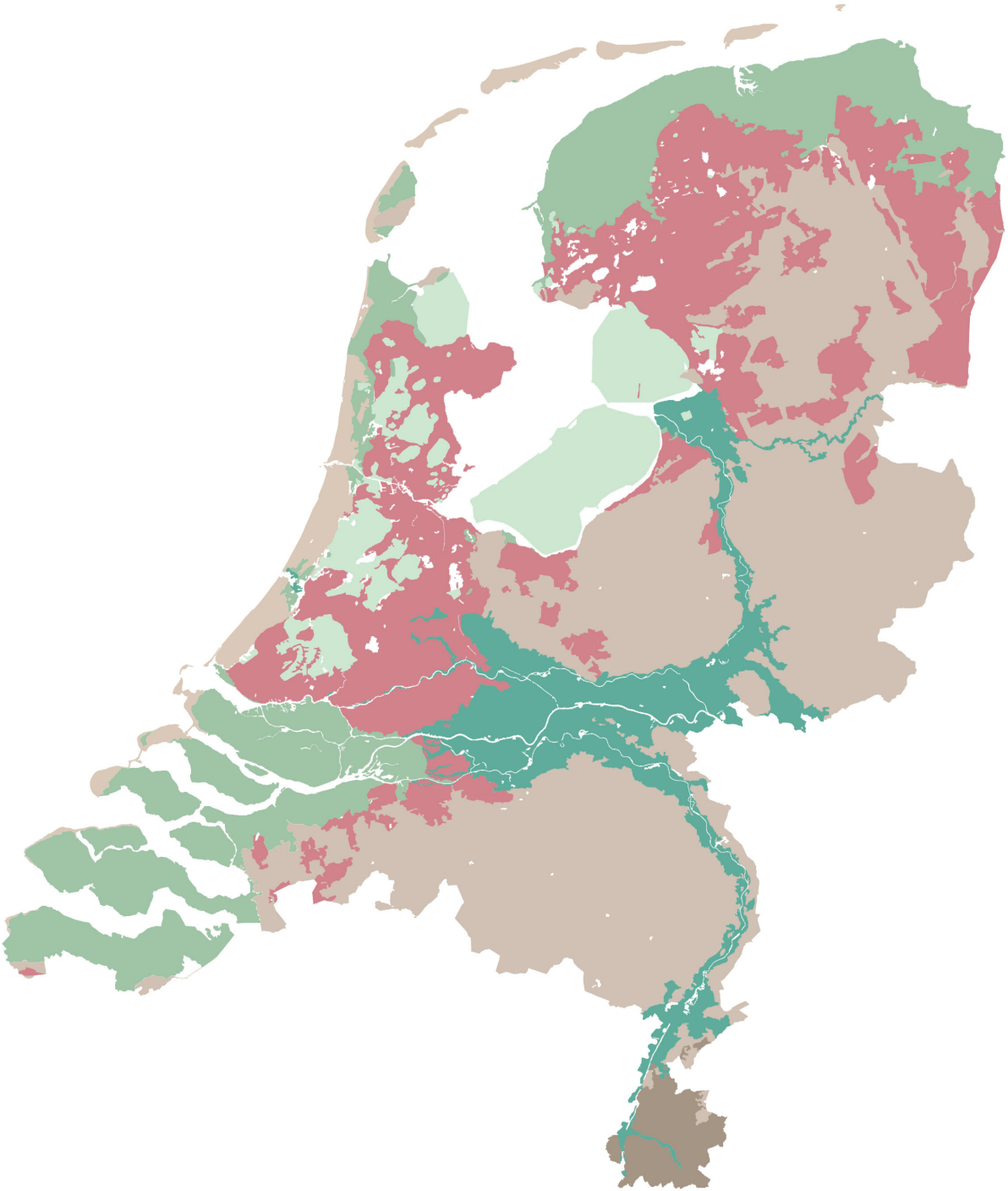
An open farmland for the cultivation of grass in one of the Dollard polders. These wide views are characteristic for the region of Groningen.

Because of research by doing, the second attitude produces physical models. Through these models the spatial qualities are understood and explored. Every theme is explored in a different medium and was chosen to effectively work with the theme. In *Material* the baked brick is explored through its materiality to combine it with other materials. Elements in *Landscape* are researched by photography to imagine their current presence. In *Typology* the farmyard is examined by physical models to test the spatial relations. The atmosphere of the landscape is studied by making collages, because of its graphical character.

The results are presented by photos (or illustrations) accompanied by a brief description. The description focuses on the fascination of the spatial quality and the idea behind the object. Sometimes the process is elaborated, but the focus is solely on the final object. It is the final object, as in an art piece, that comprise the process and therefore speaks the most.

The second attitude presumes impressions, fascinations and ideas. All of them are dependent of the person conducting the research. This limits the research in a way of repeatability and objectivity and makes it personal. However this approach is a necessity to translate soft facts into physical form, to quote Swiss architect Valerio Olgiati 'only a single mind can produce truly fascinating architecture'⁸. In that sense it can hopefully function as a precedent for future similar research.

8. Olgiati, V. (2006) Iconographic Autobiography. In: Puente, M. & Puyuelo, A. 2G: Valerio Olgiati. Barcelona: Gustavo Gili. p.134.



FORMATION

until 800 B.C.

9. Boulder clay = Keileem
10. Panman, M., Possel, J., & van Oudheusden, J., (1992) *Architectuur en Stedebouw in Groningen 1850-1940*. Zwolle: Waanders. p.8.
11. Salt marsh = Kwelder

The landscape of Groningen has its origin in the geographical epoch Pleistocene, when during the second last ice age, the Saale, ice masses reached the Netherlands. The ice dragged along sand, loam and cobbles, which mixed with the existing soil. This mixture is called boulder clay⁹. The ice masses reached in phases into the Netherlands. In doing so hills as the Hondsrug were formed¹⁰. In the last ice age – the Weichselian – the ice did not reach the Netherlands, however the cold and dry climate was an ideal situation for snow- and sandstorms. These storms lay a sand layer of two to three meter over the boulder clay and formed sand ridges.

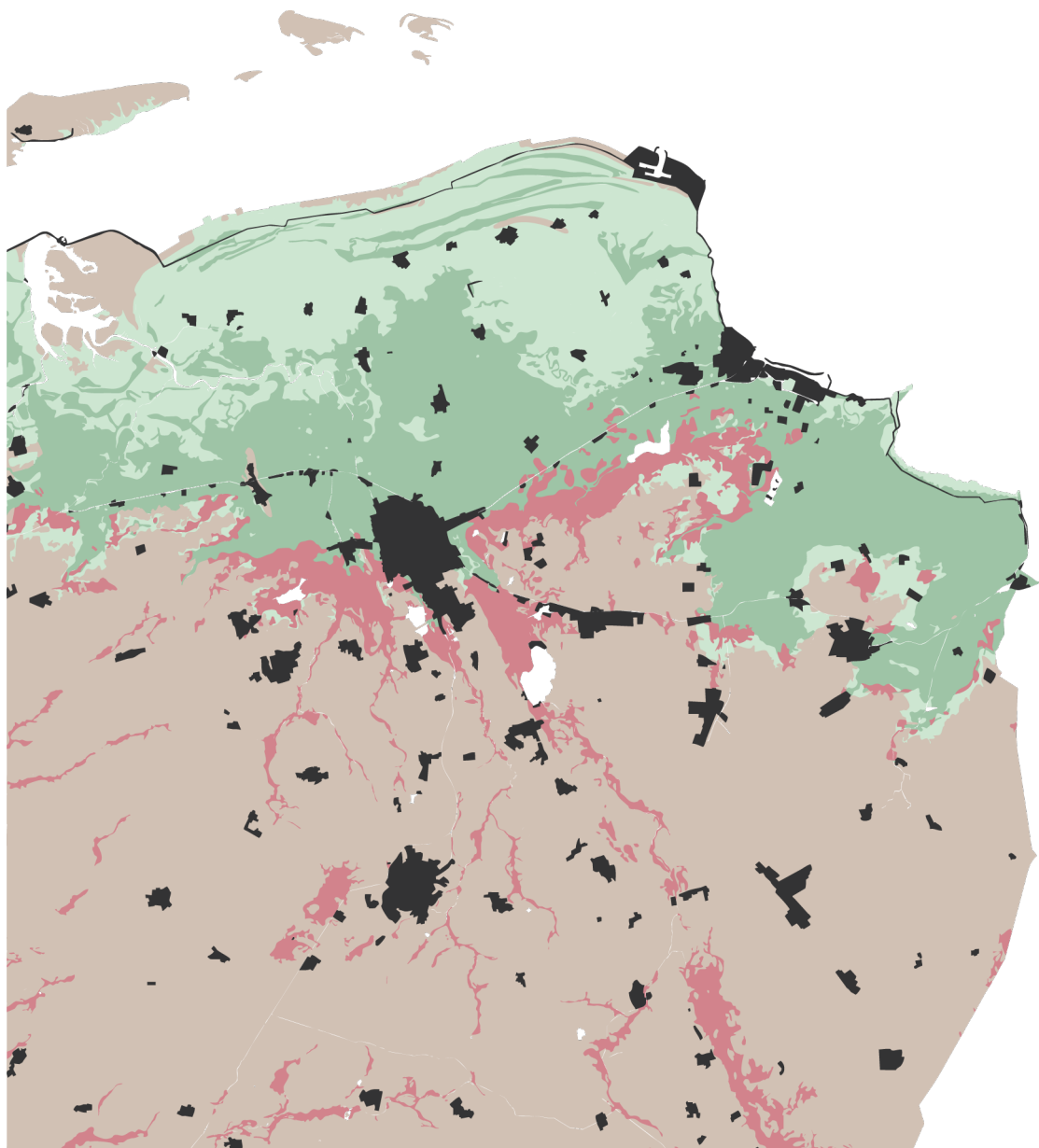
In the Holocene epoch that followed the Pleistocene it became warmer and more humid, whereby ice masses melted and the sea-level rose. The risen sea had a large influence on the lower grounds of Groningen and formed the land as we know it today. Because of heavy tidal movements of the sea the north of Groningen flooded frequently. When the water was low and the land dry, peat was formed. However in periods of high water clay and sand sedimented and the formation of peat stopped. Both periods altered each other, which resulted in a great vertical variety of soil composition.

By this process of flooding and sedimentation so-called salt marshes¹¹ formed. A salt marsh consist of a marsh ridge and a

◀ Landscapes of the Netherlands

The Netherlands in 7 different types of landscape, all characterized by a specific type of soil and accompanied cultivation.

-  Dunes
-  Sand
-  Hills
-  Peat
-  River clay
-  Sea clay
-  Polder



10 km

lower marsh. On these salt marshes small (salt) plants originated, which accumulated clay and sand. At places where a lot of clay and sand was accumulated ridges arose, disabling the seawater of going through anymore. The 'new' dry land behind the ridge is the lower marsh. In this way a relief of natural ridges arose in the landscape. Only at heavy spring-tide or storms these lower parts flooded.

On the higher sand grounds in the region the sea had less influence, so peat could form here more consistent. From these areas peat rivers penetrated the lower region of Groningen and flowed into the Waddensea, to drain redundant water. In Groningen there were among others the Peizerdiep, Eelderdiep, Drenthse A, Hunze, Lauwers and Fivel. At the end of these rivers estuaries developed, which were vulnerable places in the Groninger coast line. During spring-tides the estuaries easily flooded heavily, resulting for example, at the estuary of the Lauwers, in the current Lauwersmeer.

◀ Soil of Groningen

The soil types in the province Groningen as in 2015.

-  Sand
-  Peat
-  Clay
-  Zavel
-  Build area



MATERIAL

“It is precisely, and solely, from the discrepancy between their familiar purpose and a newly invented one that materials acquire character”¹²

- Jacques Herzog & Pierre de Meuron

12. Ursprung, P. (2002) *Herzog & de Meuron: natural history*. Baden: Lars Müller. p. 55.

13. De Verhalen van Groningen (n.d.). *Opkomst en ondergang van de Groninger steenindustrie* [Online]. Available from: <https://www.deverhalenvangroningen.nl/> [Accessed: 28 May 2017].

14. Birren, F. (1970) *Itten: The Elements of Color*. New York: Van Nostrand Reinhold Company. p. 49.

The fruitful sea clay from the Groninger soil is perfect for the fabrication of bricks. Already in the 12th century man started to use clay for the fabrication of bricks. In the 19th and 20th century this fabrication became industrialized and the region of Groningen hosted even 80 brick factories at it's top. Nowadays only one of them is still active¹³.

Because of the high iron percentage and the low percentage of chalk in the young sea clay, the brick got a typical red tone known as Groninger Red. The Groninger soil formed the foundation of a material and colour that shaped the region. The brickwork and red tone are used everywhere in the region. Extra remarkable is that the red-tone is in high contrast with the other prevailing colours of the open landscape¹⁴; the blue sky and the green grass.

◀ Pigment

Concrete mixed with red iron pigment (ACC: CO.30.30).



Experiments were done to explore the possibilities how to re-use the Groninger brick and the red tone in other states. This is done by combining the brick in other states with other materials.

To start with a brick from an old farm in Groningen is pulverized into smaller pieces and mixed with concrete. Afterwards the top layer of the concrete was polished to expose the mixed structure of the concrete and brick. Another test was made with red iron oxide pigment and concrete. Three tests were made to mix the pigment in different amounts with the concrete.

◀ **Pulverized brick**

Concrete mixed with a pulverized brick from Groningen. Lightweight concrete with small air capsules was used, this resulted in the black dots.

CULTIVATION

800 B.C. - 1800 A.D.

15. Turf = Grascode

The current landscape of Groningen is characterized by cultivation. The fruitful clay grounds made the Northern delta a good region for agriculture, however the continuous threat of the sea made the region at the same time inhabitable. An evil paradox of nature itself. As early as the first habitants settled themselves in the Groninger delta, the battle against the water began.

The first settlers stayed on the higher saltmarsh-ridges. First seasonally, later permanent. People started, as protection against the sea, to heighten the ground under their settlements with garbage, manure and turf¹⁵. These different podiums slowly grew together into Wierden (in Groningen) and Terpen (in Friesland). Because most Wierden grew into villages, we nowadays can still read the ridges in the landscape by the positions of those villages.

Most of the Wierden in Groningen have a characteristic radial set-up. The centre was formed by a small pond to wash animals or was used as extinguishing water in case of fire. In the middle ages, the ponds were permeated to house churches. The central pond was surrounded by farms that were orientated towards the centre and used the hinterland as farmland.

Hydraulic structures

The map shows natural and constructed waterways, dikes and reclaimed lands from 1300 A.D onwards. Stated years indicate the year of construction of a polder.

- higher sands
- land in 1300
- current land
- 1300 coastline
- current coastline
- dikes
- waterways

In the 10th century man-made canals were introduced to drain the water faster from peat-grounds into the sea. In the region of Groningen the Delf was one of the first canals to drain the water



16. Barends, S. (2010) *Het Nederlandse Landschap: een historisch-geografische benadering*. Utrecht: Matrijs.

17. Bobbink, I. & Loen, S. (2013) *Water InSight*. Delft: TU Delft. p. 73.

from higher peat-grounds to the Waddensea. The canal had an open connection to the sea, whereby the tide had free play on the canal. Around Delfzijl the man-made canal was therefore transformed into a meandering river.

Because of the new waterways old peat-rivers gained less water and slowly lost their function. For example, by the construction of the Delf, the Fivel slowly silted. First the lower parts and the estuary and later the whole river. Now the once active meandering river is nothing more than a small ditch. The old stream of the Fivel is still readable in the landscape, because of the form of adjacent farmlands. These farmlands were shaped by the meandering river and kept their curved form over time.

The dike landscape

In the 10th century dikes were introduced as protection against the sea¹⁶. In doing so man started to impolder the swampy estuaries of the peat-rivers in the region north of Groningen. These estuaries, partly consisting of salt marshes, were made dry with the help of drainage ditches.

In the 15th century the introduction of the windmill made it possible to pump water from lower to higher lands. This technical innovation led to a rich Dutch hydraulic tradition, namely the polder¹⁷. A polder is a piece of low-lying land reclaimed from the sea or a river and protected by dikes. With the help of man, the land is pumped dry to cultivate it for agriculture. For example, a lake polder is made by excavating a canal around the lake. With the excavated ground a dike is made between the canal and the lake. With the ground, excavated out of the canal, a dike is made between the canal and the lake. Afterwards the water of the lake is pumped up with the help of multiple windmills into the canal and eventually flowing to

◀ Landscape near Overschie (1898) by Paul Gabriël

Paul Joseph Constantin Gabriël (1828 – 1903) painted a polder with traditional windmills, showing the changing landscape.

From the collection of Museum Boijmans van Beuningen in Rotterdam.



▲ Fivel

The former active river Fivel is nowadays almost vanished, but still readable by the curved form of the farmlands.



▲ Toornwerd

Toornwerd is a Wierde village with a typical radial set-up. Together with Middelstum, Kantens, Rottum and Usquert it is built on the same salt marsh ridge and forms a line in the landscape.



18. Panman, M., Pospel, J., & van Oudheusden, J., (1992) *Architectuur en Stedebouw in Groningen 1850-1940*. Zwolle: Waanders. p. 19.

another lake or sea. The polder tradition resulted in the erection of hundreds of windmills following the natural lines of the polder dikes, transforming the Dutch landscape in a picturesque image.

In Groningen the introduction of the windmill made the first sea-polders possible. These sea-polders were much larger than the polders in the estuaries of the peat-rivers. The Groninger sea-polders were made on the natural salt marshes, whereby dikes followed the higher ridges. Every time a polder was constructed a new salt marsh formed at the sea-dike, which later could be impoldered also. The Dollard-polders in the east of Groningen are a beautiful example where it is possible to read the history of the consecutive polders. Every polder forming around the organic lines of its predecessor.

An important political act shaped the pattern of the large sea polders in the 18th century. When a new polder was established, the owner of the farmlands at the old side also became the owner of the farmlands on the new side. In other words, ownership 'flipped' over the dike¹⁸. Thereby the north-south direction was necessary to drain the water via ditches into the sea. In doing so the farmlands of a single farmer extended every time up to the new sea dike, transforming the landscape into long and narrow farmlands.

The combination of following the natural lines of salt marshes and the act of 'flipping' ownership, resulted in the Northern area of Groningen in a semi radial structure of the landscape. The curve of the saltmarshes shaped the new sea dikes and therefore the 'flipped' farmlands grew wider to the outside. This phenomenon can be seen along the whole Waddensea coastline. Interesting is that an act of nature, the salt marshes, together with an act of man, flipping 'ownership', shaped the landscape.

◀ Oude Dijk

The curved old dike (Oude Dijk) from around 1300 A.D. divides two landscape patterns. In the south, an older patchwork of farmlands and in the north a modern semi radial pattern of narrow farmlands.

Nowadays the dike is removed, only the adjacent road remained.

The construction of new polders and dikes transformed the landscape in a so-called dike-landscape¹⁹. A relative young landscape orientated on farmlands without a rich variety of vegetation. Polder after polder got build when farmers needed more land, claiming more and more land from the sea. New polders got build behind an existing polder, resulting in the building of new sea dikes. Thereby the old sea dikes lost their prime function and only served as a back-up. These dikes are called sleeping dikes. Later most sleeping dikes also lost their back-up function, therefore some are even partly excavated to make room for agriculture. Sometimes their old positions are only recognizable in the current road pattern²⁰. Nowadays most of the sleeping dikes still left over are conserved for their cultural and historical value in the landscape.

In the 18th century, with the invention of the steam-engine, wind mills got replaced by pumping stations²¹. Resulting in again an upshift of scale, but also the loss of characteristic windmills. Later the power of steam was replaced by diesel and electricity. As opus magnus of the Dutch polder tradition in the 1890s plans were made for four enormous sea polders; the Wieringermeer polder, the Noord-Oost polder and the Flevopolders. These polders were realized to create new farmland with the motto 'Never hunger again'. These polders are characterized by their planned rigid and orthogonal structure²².

The peat landscape

In the 8th century people started with the cultivation of peat lands by digging drainage ditches flowing into peat rivers to make the lands usable for agriculture²³. In the region of Groningen most peat grounds can be found at the east of the province, especially around Veendam. In the 19th century the city of Groningen formed

19. Panman, M., Possel, J., & van Oudheusden, J., (1992) *Architectuur en Stedebouw in Groningen 1850-1940*. Zwolle: Waanders. p. 18.

20. Ibid., p. 20.

21. Bobbink, I. & Loen, S. (2013) *Water InSight*. Delft: TU Delft. p. 77.

22. Barends, S. (2010) *Het Nederlandse Landschap: een historisch-geografische benadering*. Utrecht: Matrijs.

23. Bobbink, I. & Loen, S. (2013) *Water InSight*. Delft: TU Delft. p. 69.

24. Dry peat = Turf
25. Barends, S. (2010) *Het Nederlandse Landschap: een historisch-geografische benadering*. Utrecht: Matrijs.
26. Dredging handle = Baggerbeugel
27. Small narrow lands = Legakkers
28. However, in some regions in the Netherlands the layer beneath peat consisted of sand and therefore were not suited for agriculture. In these regions the pools stayed, for example in Friesland.

the general company for the winning of dried peat, which brought an enormous prosperity to the city. The Stadskanaal as supply route for the city is a legacy of this time.

Dry peat²⁴ could be used as fuel and was already in use since the Roman era. With the cultivation of peat grounds and the lack of firewood in the 11th century the large scale peat excavating started²⁵. In that time peat was excavated from the top layer of the land, which is called dry peat winning.

With the invention of the dredging handle²⁶ in the 16th century, so-called wet peat winning became possible. Wet peat winning means excavating peat under the ground water level. Growing cities were in need of more fuel, which meant a growing demand for dried peat and an upscale in wet peat winning. In excavating peat not only above, but also beneath the water level, peat-pools arose in the landscape. Therefore Dutch peat grounds became completely excavated and transformed into huge lakes with only small narrow lands²⁷ to use the dredging handle and dry the peat. The existing landscape was completely re-organized and historical elements vanished.

In the 18th century, it became mandatory to impolder new peat pools to stop the quantitative land-loss. The clay ground under the peat layer was often fruitful and very usable for agriculture²⁸.

To briefly summarize, man first cultivated peat grounds for agriculture by draining the surplus of water. Secondly man started to excavate these peat grounds, resulting in wet grounds and eventually even pools. Subsequently these pools were impoldered to make agriculture possible again. These lands are constantly ploughed and cultivated for its resources, every time re-organizing the landscape.



LANDSCAPE

*"Dutch landscape is compact, controlled and fully designed; the architecture of the Dutch landscape resembles the architecture of buildings; Dutch landscape is itself a designed object."*²⁹ - Bas Princen

29. Princen, B. (2016) Ringroad Houston. In: Norwood, V. (eds). *The Construction of an Image: Bas Princen*. London: Bedford Press. p. 47.

With the cultivation of the landscape man left his marks on the countryside. Often following nature, as salt marshes which were transformed into polders. Nature also affected the man made structures, such as the sea tide that transformed straight canals into meandering rivers. Other structures lost their hydraulic function, such as sleeping dikes, and also here nature re-appropriated these elements. During time the line between the man-made and the natural slowly blurred. Nowadays it is not so obvious what one sees.

This photo series explores this ambiguity of the landscape. It shows elements in the today's landscape, as facts, without their origin. By objectifying the subject only the current presence remains, free of connotations and references. It is this point in time, the now, where we read the landscape. At this point, the analysis begins.

It is this ambiguity that can be interesting for architecture. The ambiguity between design and naturally being. The nonchalance appeal of something that appears to just been build. This ambiguity brings architecture in dialogue with the landscape, giving it a place.

◀ Dobbe

A dobbe is an excavated pit to collect rainwater as drinking water for animals.



▲ Dike curve

Polder dikes followed the natural curves of salt marshes. Rational polder planning tried to straighten these curves, but a closer look unveils their natural origin.



▲ **Dike corner**

Boulders, clay and sand form the main material of dikes. The use of these natural materials smoothened junctions of different straight dikes, looking as natural curves in the landscape.



▲ Ditch and Wetering

A ditch is a small canal to drain redundant water. A wetering is a ring canal at the inside of the polder dike that collects all the water from the ditches and is in direct connection to a windmill. In this photo a sloot and the watering meet.



▲ River

The river already left the landscape, only a small ditch remains. But the curved farmlands give away the former stream of the river.



▲ Rijsdam

A dam made of willow branches for the stimulation of salt marshes to make future polders possible.



▲ **Sea dike**

The sea dike protects the lower hinterland against the sea. At this sea dike a new natural salt marsh is forming.



▲ The start of a dike

At this point the sleeping dike was excavated, making it stop in the middle of the landscape. The slope enables the road to continue over the dike.



▲ The end of a dike

Only a road and adjacent trees remind of the former Oude dijk (old dike) that is completely removed from the landscape. This spot forms also the endpoint of the road and trees.



INDUSTRIALIZATION

1800 A.D. - now

30. Westerman, F. (2000). *De Graan-republiek*. Amsterdam: Atlas Contact. p. 37.

31. Botke, I. J. (2002). *Boer en heer. 'De Groninger boer' 1760-1960*. Assen: Van Gorcum. p. 730.

32. Ibid., p. 728.

33. Herenboer = Gentleman farmer

34. Head-neck-trunk = Kop-hals-romp

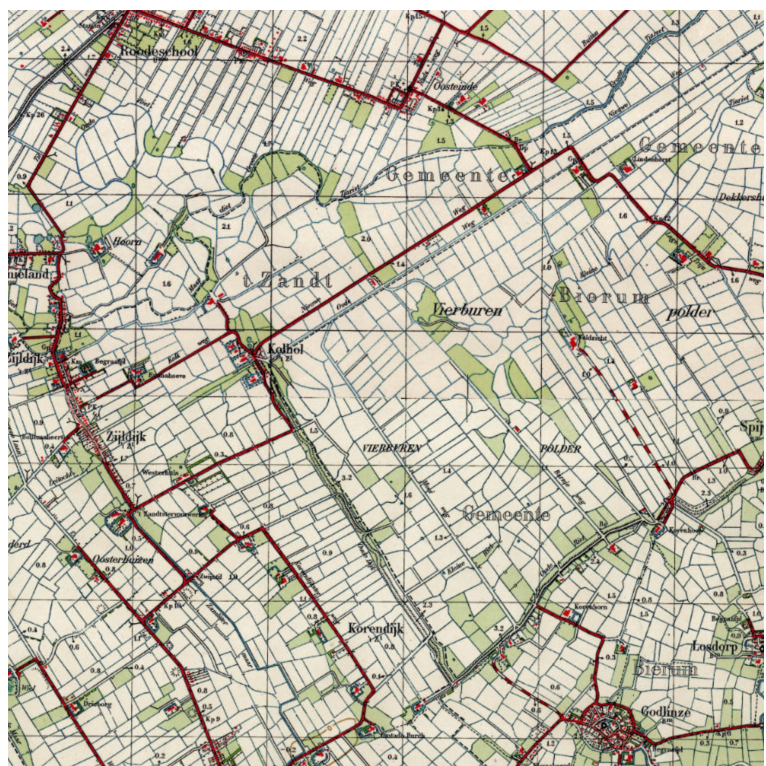
The young sea clay soil in the north east of Groningen made the region one of the most fruitful areas in the Netherlands³⁰. The area is therefore characterized by its rich agricultural industry.

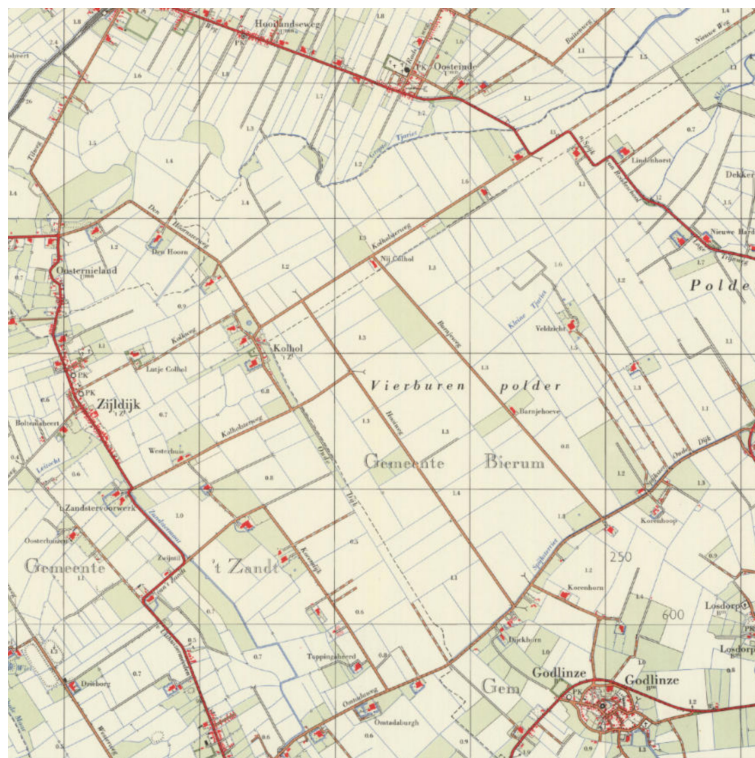
Around 1760 the first so-called Herenboerderijen were arising in Groningen³¹. These farmsteads were bigger than traditional farms and owned around 50 to 60 hectares of land. The growth of these Herenboerderijen was caused by the production for the city market, instead of providing, as traditional farmers did, only for inherent use³². The Herenboeren³³ became very wealthy and could employ land labourers. Themselves did not have to work on the land anymore and could concentrate on other things, like politics and literature.

The new status of the Herenboer was also represented in the farmhouse, which were transformed into houses with the allure of city houses. The Herenboerderij derived from the head-neck-trunk³⁴ farm type. The head forms the house, the neck a transition area and the trunk the barn for cattle and machines. Later the house was placed transversal in front of the barn, without the 'neck'. The façade of the house was organized symmetrical and decorated with neo-classic ornaments. The attic often got large windows to suggest an extra living storey, all to propagate a wealthy and urban allure.

◀ Herenboerderij

A Herenboerderij in Finsterwolde with a house placed transversal to the barn. Clearly the house wants to propagate a noble allure.





◀ ▲ Land consolidation

Farmlands in the Vierburen polder near Spijk in 1950 (left) and 1980 (right), showing the re-organization of the landscape in that period.

It was around 1928 that the first agricultural machines were introduced in Groningen³⁵. After the second world war this development came in an acceleration, because of the Marshall help from the United States of America³⁶. Hereby the farm labourers were one by one replaced by machines and soon the Herenboer could run their farms single handed.

After the second world war Sicco Mansholt was appointed minister of Agriculture affairs in the Netherlands. Mansholt was a former farmer from Groningen, who represented the social democrat party PvdA. He introduced a guaranteed minimum price for corn, which led to the growth of the Dutch agriculture sector³⁷. It was Mansholt's aspiration to get loose of the small traditional farms and go to rational organized larger farms, which could self support the Netherlands in its food supply.

It was also then that the government and farmers started with land consolidation to organize farmlands more efficient. Before that, farmers had their small plots of land spread over a certain region. By exchanging farmland, farmers compiled their lands closely together. By doing so, waterways and other elements in the landscape had to be relocated³⁸. Sometimes even farms had to be moved in order to re-organize the land.

Later in 1958 Mansholt would be part of the formation of the EEG. Now Mansholt was responsible for the modernization of agriculture in Europe. He envisioned a pan-European collaboration, where crops would be cultivated on the best suitable soil. He also introduced a guaranteed minimum price for corn in Europe in 1962. At the same time the European market was protected and the import of crops became restricted. Both actions stimulated the production of the European agricultural sector.

35. Westerman, F. (2000). *De Graan-republiek*. Amsterdam: Atlas Contact. p. 77.

36. Ibid., p. 132.

37. Ibid., p. 159.

38. van Stein, S. & Schoonman, J. (2014) *Mansholt, Landschap in Perspectief* published on the occasion of the exhibition at Bureau Europa, Maastricht, 18th January – 20 April 2014. Maastricht: Bureau Europa. p. 3.

39. Barends, S. (2010) *Het Nederlandse Landschap: een historisch-geografische benadering*. Utrecht: Matrijs.

40. Westerman, F. (2000). *De Graanrepubliek*. Amsterdam: Atlas Contact. p. 172.

41. Ibid., p. 236.

42. Ibid., p. 237.

43. Noordhoff Atlasproducties (2014) *De Bosatlas van het Voedsel*. Groningen: Noordhoff Uitgevers. p. 24.

44. Centraal Bureau voor de statistiek (2016) *Op meeste boerderijen geen bedrijfsopvolger* [online]. Available from: <https://www.cbs.nl/> [Accessed: 28 May 2017].

All actions worked in favour of the agricultural sector, but at the expense of the cultural and historic value of the landscape. The growing farmsteads and farmlands blunted the landscape and removed, mainly small and subtle, historic elements in the landscape³⁹. In doing so the characteristics of different landscape types were diminishing, resulting in a blunted and unvaried landscape.

Likewise in the Netherlands, also in Europe a food surplus became evident and was only growing in the 1960s. Since the EEG guaranteed a minimum price, they had to buy all surpluses. A part of these surpluses the EEG could stock, but the most was sold abroad with huge losses. All paid for by European taxes.

To counter this trend Mansholt decided that agricultural land had to be reduced and the half of the farmers should end their farm business⁴⁰. Also the guaranteed minimum price was reduced. In that time farmers even got paid if they left their lands fallow⁴¹. During the nineties farmers in the Netherlands were obliged to leave one tenth of their land fallow to reduce the production. In the east of Groningen ten thousand of hectares were fallow in that time, leaving a desolated landscape behind⁴².

Nowadays the market stabilized the production and price of corn. But the amount of farmsteads in the Netherlands nevertheless declined from 410.000 in 1950 to 67.000 in 2013. The total area used as farmland did not decline, meaning the remaining farmsteads only grew⁴³. In the coming years more farmsteads will disappear. One of the reasons is the lack of interest of a new generation to become a farmer. In 2016 52,9 percent of the farmers in the region of Groningen did not have a potential successor yet⁴⁴.

During the 1960s people, mainly living in cities, started to worry about climate change and the disappearance of nature. Pro-



45. Westerman, F. (2000). *De Graan-republiek*. Amsterdam: Atlas Contact. p. 147.

46. Ibid., p. 148.

47. Ibid., p. 150.

nature movements started to rise, mostly inspired by the book *The Limits to Growth*, published by the Club of Rome in 1972. Since then new polder plans awaited heavy objections by action groups to protect the habitats of birds or other species. During the same period agriculture suffered from overproduction and fallow lands were subsidized by governments. Pro-nature movements saw this as an chance to lobby to give fallow lands 'back to nature', so new wild nature could develop in favour of biodiversity⁴⁵. Nature is back on the (future) agenda, for example the Dollard and whole Waddensea coast are nowadays part of the Dutch eco-structure.

Natural gas

In the 1960s the Groninger agriculture was in decline, because of overproduction in Europe. The whole region suffered from this economic dip, but the rich Groninger soil acted again as guardian angel. In October 1960 the Dutch government unveiled that a gas reserve of 60 billion cubic meters was found near Slochteren. Later in 1963 the gas reserve even turned out to be 2500 billion cubic meters, the biggest natural gas field in that time⁴⁶. The region in decay suddenly was hopeful again and began dreaming of better times.

The plan for a seaport, the Eemshaven, in the northern point of Groningen, a long dream of the region, gained priority. A harbour was needed for the growing gas industry and therefore the seaport would focus itself on oil, gas and chemistry⁴⁷. In 1973 the harbour was opened, but the oil- and gas-crisis in that same year obstructed a smooth start. During the first years only revenues were gained for the parking of large oil tankers. During the 90s the focus on oil, gas and chemistry was shifted to logistics and energy. Especially this latter is nowadays a big success factor in the developments around the port.

◀ Natural gas

A pump installation for the extraction of natural in the landscape of Groningen.

In 2008 the gas reserve of Groningen has been more than halved. Despite activities to compensate the pressure level of the gas field – the pressure level decreases when pumping up gas - in 1991 the first earthquakes were recorded in the region of Groningen⁴⁸. The first earthquakes seemed fairly innocent, but the first damage on buildings occurred and aversion began to rise. In 2014 this resulted in a resolution to limit the production of gas from the Groninger field. The gas field in Groningen was another hopeful resource the rich soil gave to the region, but, just like agriculture, ended in leaving its marks on the landscape.

48. NAM (2017) *Ontstaan, kracht en gevolgen* [online]. Available from: <http://www.nam.nl/> [Accessed: 28 May 2017].

In the time of industrialization man got the upper hand in the organization of the landscape. Man exploited the area for its rich resources, with a negative influence on its historic and cultural value. Agriculture incorporated the landscape without much respect for historic elements. Extracting the natural gas reserve eventually resulted in tearing down the very history of this area.



T Y P O L O G Y

“Geometry is a fundamental tool for man to understand his surrounding. We are used to make our surroundings explicit by reducing her to simple contours”⁴⁹

- Gunnar Daan

49. Roos, R. (1995). De kiem voor een paradijsje Gunnar Daan: architect voor architecten. *Trouw*. 21 January 1995.

50. Maaskant, A.A.C., Post, K. & Dekkers, G., (1969) *Oude Boerderijen*. Deventer: Kluwer. p. 66.

51. These observations were made on a field trip to the farm of Sjoerd de Hoop in Hiaure (NL) on 12-11-2016. Sjoerd de Hoop gave us an extensive guided tour through his farm, which is owned by his family for three generations. For more information, please visit www.hetkoetshuisdehoop.nl.

The farm is a familiar phenomenon in the open landscape of Groningen. Like stated the typical Groninger farm is build up of a house placed transversal to a large barn⁵⁰. The barn is, to generalize, build up of two levels. The first level is for the cattle and has a minimum height to host animals and people. The second level, the attic - the space under the pyramid roof - is reserved for the storage of hay and therefore needs a maximum volume⁵¹.

The pyramid roof is only separated from the ground by an approximately 2 meters high masonry wall. Often this masonry is of the renown Groninger red brick. From a far distance the barn appears as an enormous sloped roof, which almost continues to the ground. Floating pyramids in an oasis of green grass. Farms therefore seem to arise from the land and smoothly blend into the landscape, almost as heaps in a meadow.

Function and construction lead to a speaking appearance. Abstract models explore the relation between the roof, construction and its presence.

◀ Stolpdak

The archetype pyramid roof shape bore by a so-called wooden dakstoel.



52. Called *dakstoel* or *langsgebint*

When entering the barn, a massive open space is unveiled under the sloped roof, there are no separation walls or floors, only an open void. The roof is carried by a wooden column construction⁵², placed inside the perimeter of the roof. The brick walls don't have any constructional use; they only protect the inside from the outer climate conditions. Without the brick walls the roof will simply remain.

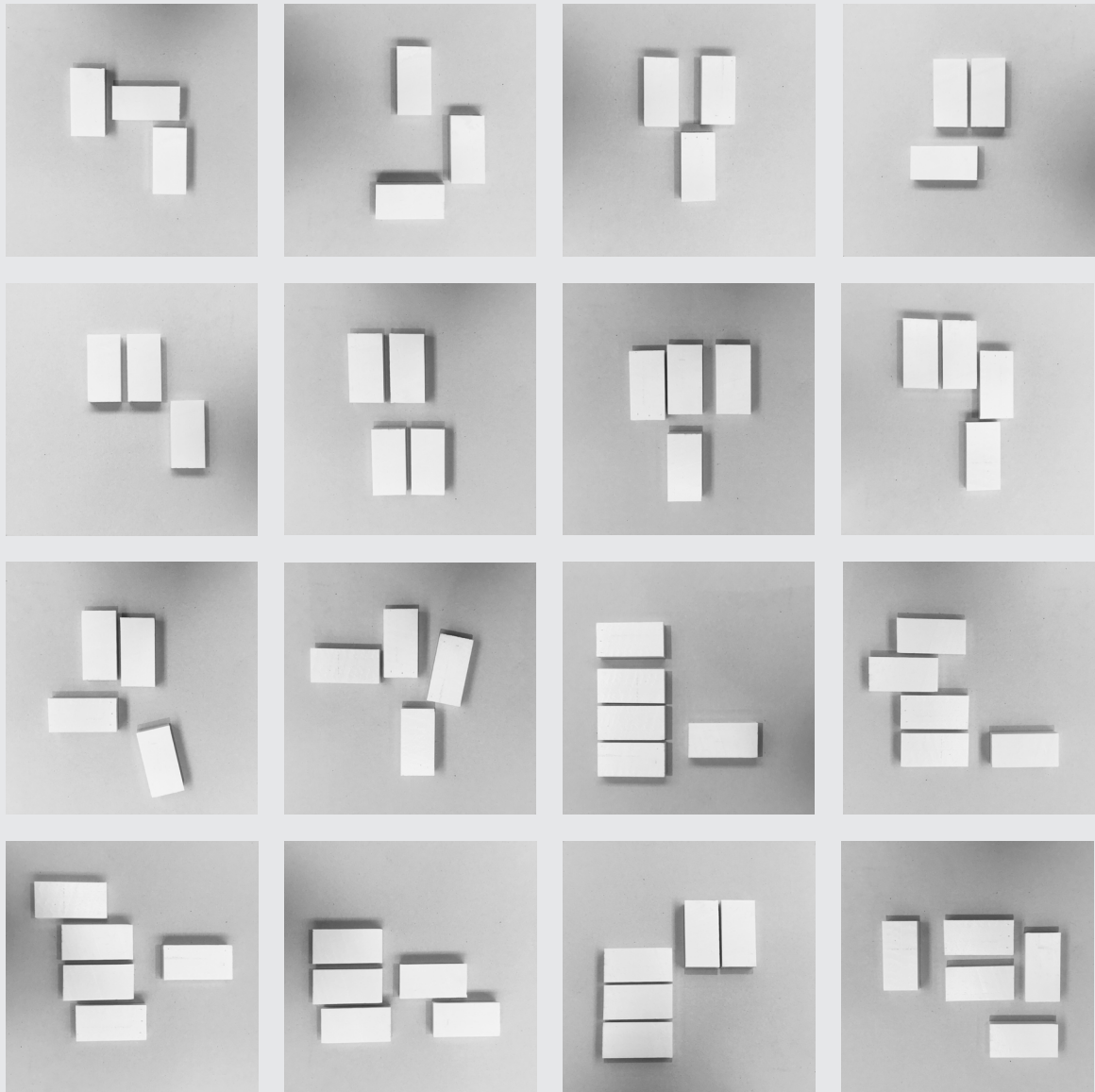
The sloped roofs of the barns are always a derivative of the pyramid-form. The pyramid-form appears closed to the outside; the highest point in the middle declines to the perimeter. Almost to keep the surrounding away, however when entering the pyramid, an enormous space unveils. An open structure of columns and a lack of separation elements enables a maximum open volume. The roof plays with the contradiction of the pyramid form; outside and inside, closed and open.

◀ Schilddak

A straight roof line enables more volume under the roof. The two straight parts at both ends are traditional elements providing ventilation.

◀ Zadeldak

With only two tilted faces an even bigger volume is provided, however both straight ends form a hard border.



The Groninger farm is a derivative from the 'head-neck-trunk type' where all volumes were interconnected. In contrast the contemporary Dutch farm is an ensemble of multiple volumes, built over time. The traditional farm forms the origin from where the farmyard gradually expanded with modern barns. A new barn was simply built when there was need for more space. When over time even more space was needed, an additional barn was built. In this way farmsteads slowly grew, resulting in a bricolage of barns.

To explore the spatial relation of these barns, different ensembles are reconstructed. All barns are given the exact same size, to concentrate on the spatial relation of the ensemble.

The exploration reveals that the spatial concept of the ensemble is only experienced from within the farmyard. From outside the built volumes are experienced as a whole. The area in-between the volumes is often rather small, but enables sightlines in the open and wide landscape.

◀ Ensemble

Multiples re-constructed farmyards in the region of North East Groningen.



DIGITALIZATION

onwards

53. Ruimtelijke plannen, Provincie Groningen (2009) *Krimp in Groningen*. Groningen: Provincie Groningen.

54. Ibid.

55. Blauwestad = Blue City

56. Provincie Groningen (2013). *Plannen Blauwestad bijgesteld door situatie woningmarkt* [online]. Available from: <https://www.provinciegroningen.nl/> [Accessed: 28 May 2017].

Due to the industrialization in agriculture many land labourers lost their job and moved to other regions to work in mostly factories. The last three decades another wave of depopulation strikes the region of Groningen. Especially young people flee the countryside for economic and social reasons⁵³. Because of aging the depopulation will only increase in the coming years. Estimated is that the population of the region of Groningen will decrease with 21% in 2030⁵⁴, especially in the more remote and rural areas.

The region of Groningen tries to counter this trend by developing leisure and recreation areas to attract new inhabitants. Blauwestad forms the prime example of these developments. Blauwestad⁵⁵ is a housing project realized around an artificial lake to increase the liveability. In 1988 the first ideas for an artificial lake arose after people started to ask what to do with the fallow farm lands. Eight hundred hectares of farmland was flooded in 2005 and the new Oldambtermeer was a fact, with the hope to attract 1480 new households. After the lake was full of water and the developments of the first houses began, the first problems occurred. The interest for the project appeared to be much lower and the housing crisis in 2008 made things only worse. In 2013 only 194 of the planned 1480 parcels were sold. The prices of the parcels are now lowered with 20%, the total amount of parcels is reduced to 1247 and three future neighbourhoods will be transformed into nature reserves⁵⁶.

◀ Datacenter

The second datacenter complex of Google at the Eemshaven, located next to the Waddensea.



57. Martini Tower: 96,8 meter.
 58. www.topdutch.com
 59. Geers, K. et al (2015). *Architecture Without Content*. London: Bedford Press.

The coastal region of Groningen is suitable for wind turbines, because of its windy conditions. After the oil crisis in 1973 the Netherlands began to re-think their energy supply, resulting in the erection of wind turbines in the 1990s. At the start wind turbines were built solely on the land or on farmsteads, scattered over the Dutch countryside.

The developments since resulted in more efficient design and planning of wind turbines and are today mostly planned in rural coastal areas. Innovation also led to the growing height of the turbines. Nowadays the tallest Dutch wind turbine is in the Eemshaven and almost 200 meters high, two times as high as the highest building in the province of Groningen⁵⁷. It can be said that in the flat landscape these enormous wind turbines have an impact on the landscape, just as the windmills in the 15th century. However, these windmills were built with local materials and were around 25 meters high.

The growing energy production was one of the reasons Google has chosen the Eemshaven as the location for their biggest European datacenter in 2014. Thereby the region started a campagne to convince Tesla to build their European so-called Gigafactory in this area⁵⁸. Both structures are enormous halls which contain only computers and machines. Often the buildings are strictly secured with high fences and connection with the outside is programmatically not desired. These new big boxes popping up on the countryside were described by Kersten Geers as 'architecture without content'⁵⁹.

Nowadays the European union and governments are dismantling the economic protective conditions built up in the 1960s. Agriculture is left to the global free market resulting in decreasing prices and bringing many farmsteads in hard conditions. Many Dutch farmers

◀ De Goliath

De Goliath, built in 1879, is a polder-windmill that pumped redundant water from the Eemspolder directly in the Waddensea. Nowadays it lost its function and is accompanied by much larger windturbines.

see only two options: to upscale again or transform to a biological farm. A bio-farm can gain higher prices for its products, however the transformation takes time and needs a big investment.

Therefore agriculture in the Netherlands is currently in uncertain times and so does 65% of the Dutch rural landscape⁶⁰. Upscaling will have, as history has shown, a huge influence on the landscape. Farmlands will be re-organized more efficiently and new barns will become bigger. Already multi-storey animal sheds are constructed on the countryside. The biological farm is in respect to the landscape a better option. Not only animals are treated well, often the landscape also. In some methods of biological farming, for example in Permaculture, agriculture and nature even strengthen each other.

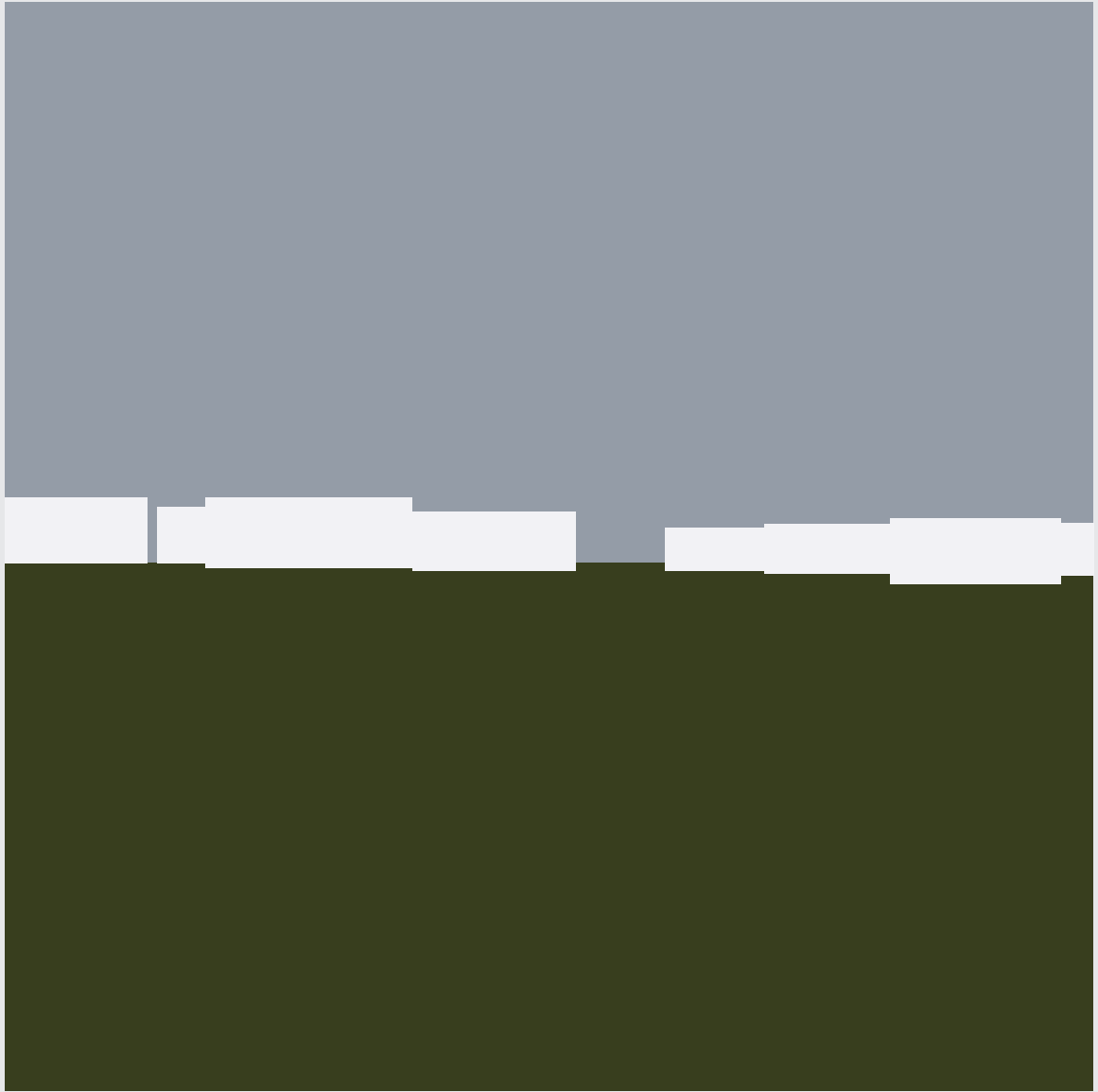
Agriculture is also facing a digital revolution. Cows can nowadays be fed and milked without the interference of a single farmer, robots have taken over all tasks⁶¹. Also on the field the use of digital tools is becoming popular⁶². Tractors can now track their routes and analyse the field with the help of 3d scanners and satellite photos. The result is that farmers can singlehanded handle even more land, which makes room for another upscaling of farmsteads.

But the digitalization of the farm also offers opportunities to be more respectful to the landscape. Working with drones, robots and big data farmers can be highly precise. This in contrast with tractors which only drive long straight lines and machines that have limited options for a great variety of crops. With drones curved lines can easily be followed and data can be collected per single crop, which can reduce the use of fertilizer and other chemicals. However, the interference of human beings will be reduced to almost zero and the digitalization of the countryside will probably also mean a further desolation of the landscape.

60. Noordhoff Atlasproducties (2014) *De Bosatlas van het Voedsel*. Groningen: Noordhoff Uitgevers. p. 12.

61. Bloomberg (2015) *This diary farm is run by robots* [Online]. Available from: <https://www.bloomberg.com/> [Accessed: 28 May 2017].

62. Koolhaas, R. (2014) Koolhaas in the Country. *ICON*. 135 (9).



ATMOSPHERE

63. *Hollands Licht* (2003) Film. Directed by Pieter-Rim de Kroon. [DVD]. NL: Dutch Light Films.

64. Birren, F. (1970) *Itten: The Elements of Color*. New York: Van Nostrand Reinhold Company. p. 45.

65. *Ibid.*, p. 31.

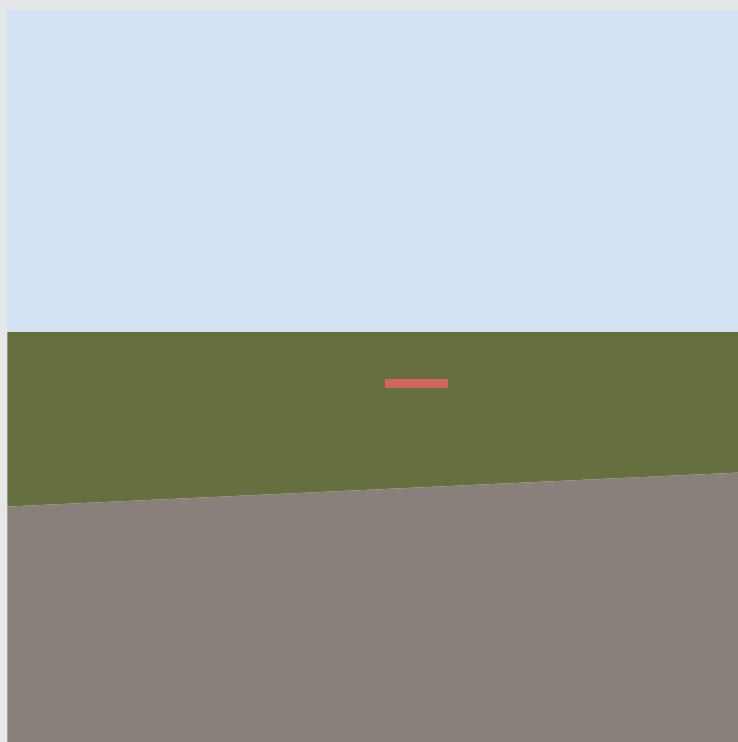
The landscape of Groningen is an abstract graphic still life. It is flat, wide and open and therefore characterized by two main colours; the green soil and the blue sky. The flatness enables a low viewpoint⁶³, which leads to an uneven division between the two faces. The blue sky is always in the upper hand. Both faces are sharply divided by the horizon, only build volumes penetrate the horizon and touch both faces.

Collages were made to explore the colour and atmosphere of the landscape. At one side to make abstractions of the landscape, secondly by reconstructing these abstractions to find specific tones and elements.

The characterizing colours blue and green are both cold colours⁶⁴. Also in light-dark contrast and saturation both colours are similar and therefore not contrasting each other. In hue both colours differ from one another, but the contrast is still minimal. Green is namely a secondary colour, as a result of mixing the primary colours blue and yellow⁶⁵. Therefore the Groninger landscape has a low contrast, cold and simple colour palette with a light appearance.

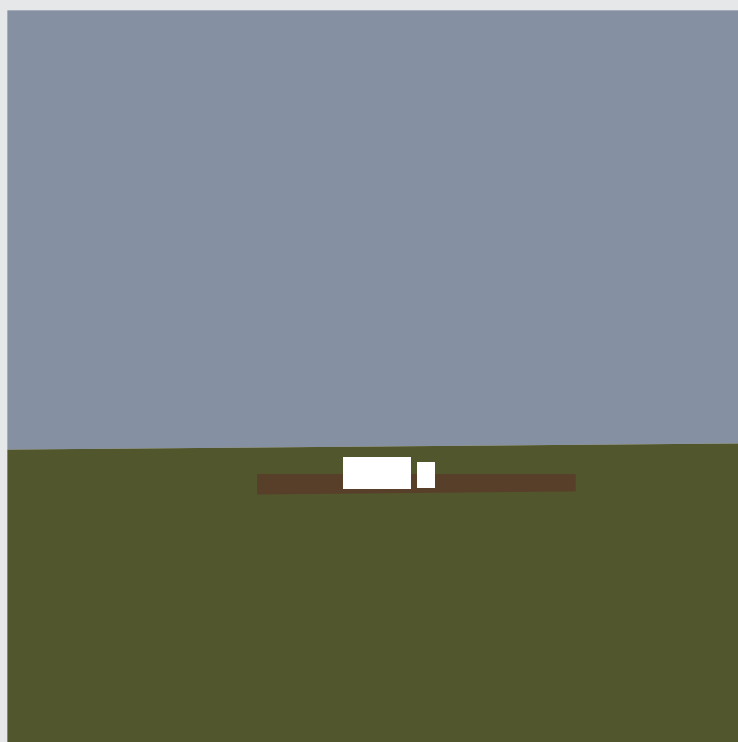
◀ Silos

Multiple oil silos in the landscape near the Eemshaven.



▲ Crossing

A road crossing with sign.



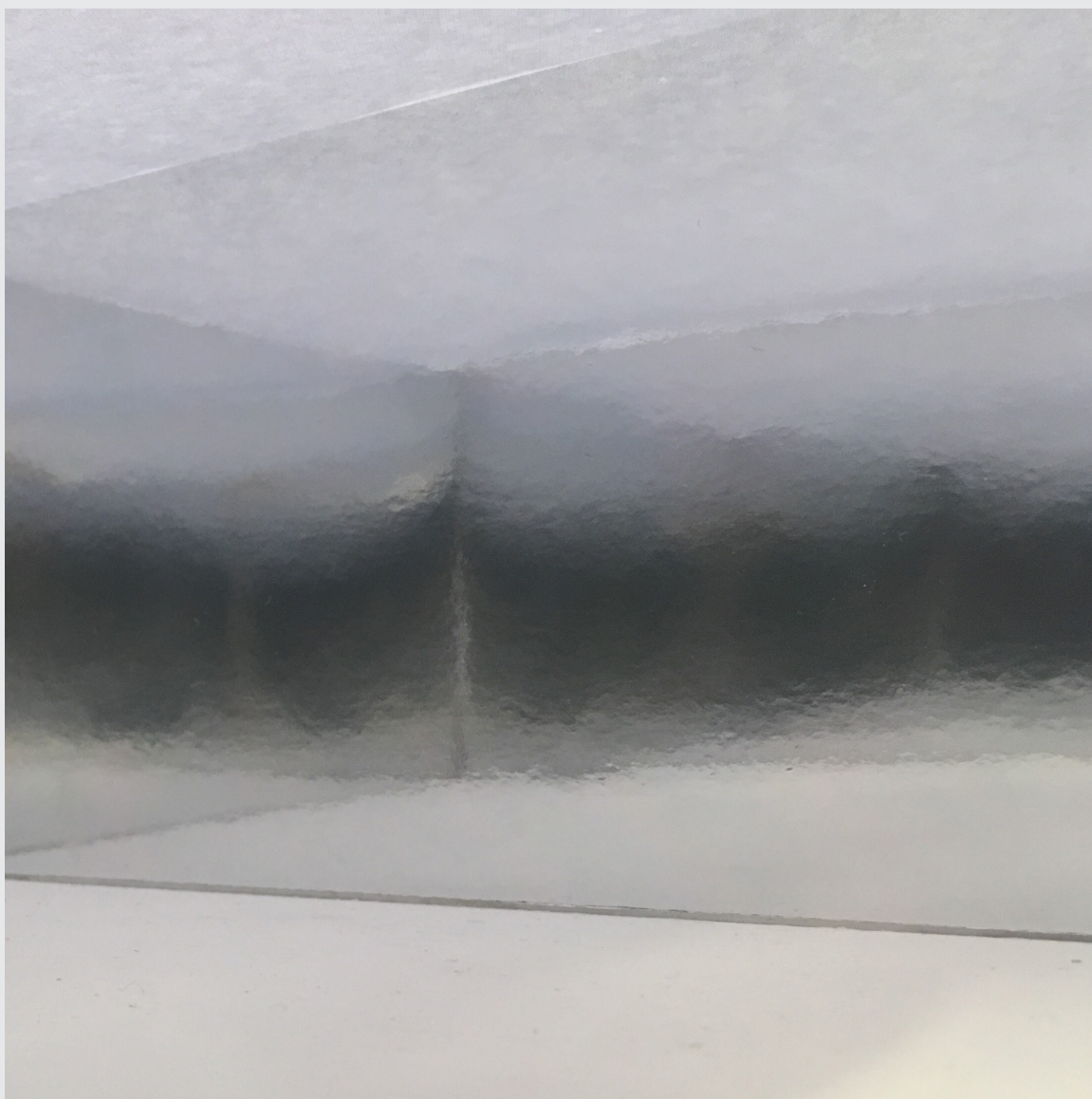
▲ House

White house in front of a dike.



◀ **Dike**

A dike with the characteristic Dutch clear sky.



66. *Hollands Licht* (2003) Film. Directed by Pieter-Rim de Kroon. [DVD]. NL: Dutch Light Films.

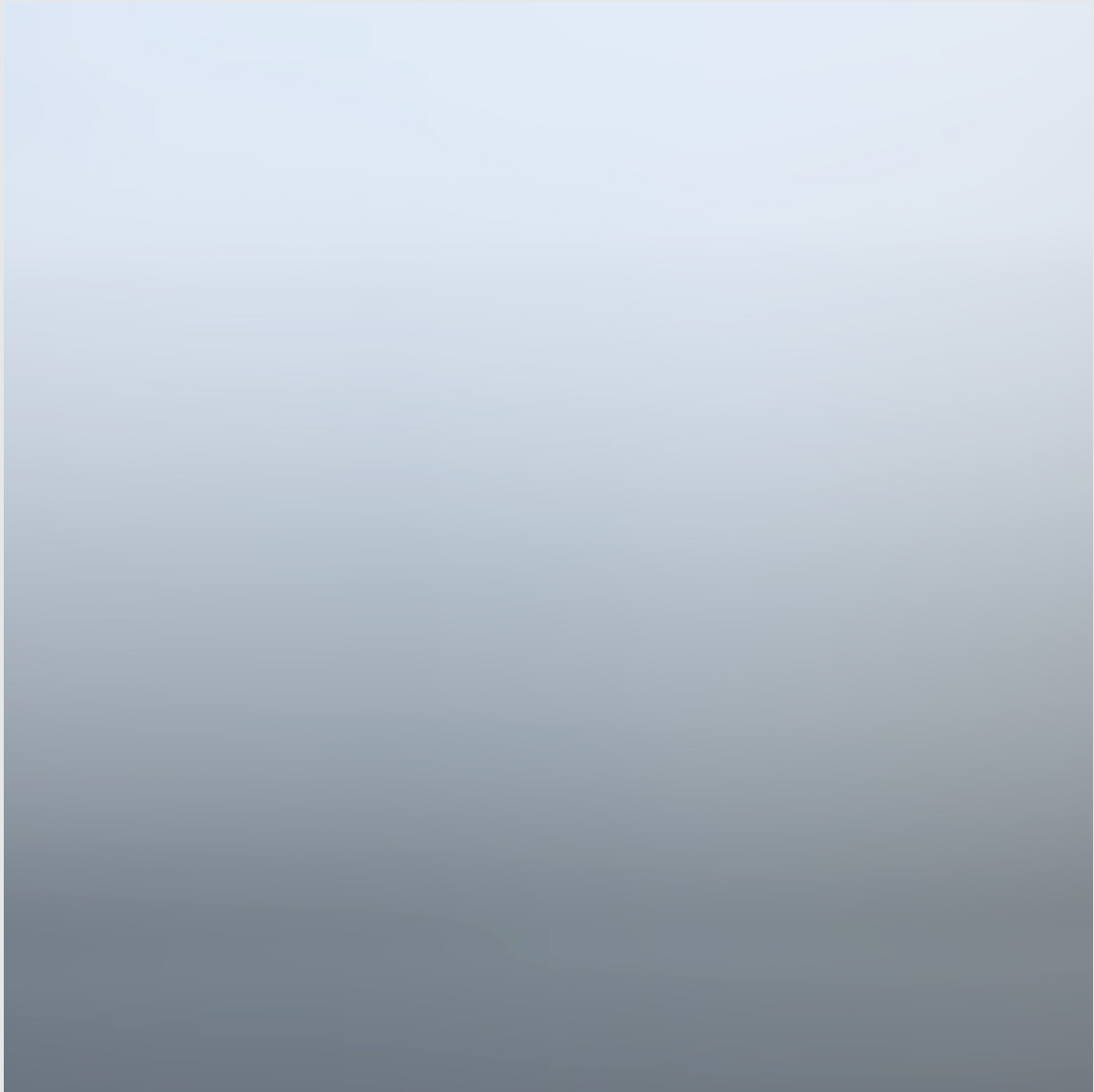
The rural landscape of Groningen is desolated, almost free of the presence of people. The atmosphere feels almost surreal; an abstract empty infinite grassland. The atmospheric effect of the perspective - sometimes in combination with fog⁶⁶ - even strengthens this effect of infinity. Borders blur and all far away elements become vague.

By working with mirrors and the blurring of photos attempts were undertaken to explore this infinite feeling of the landscape. Recognizable elements, like a tree or house, were made anonymous, only visual impulses remained. You don't know exactly what you see. A vague impression is all that's left.

The landscape of Groningen is monotonous, abstract and infinite. The same colours appear everywhere, the relief is minimal and the view is so wide one could sometimes see the horizon. You could almost get lost in nothing, being disorientated in a void. A grasp of scale is lost.

◀ Apparent infinity

Mirrors reconstruct the wide views of the landscape of Groninger.



◀ **Spatial void**

Abstract visual impulses construct an infinite spatial void.



EPILOGUE

The landscape of Groningen is a co-creation between nature and man. In the pre-historic period nature had free-play. Ice masses dragged sand and cobbles to the Netherlands and later melted into sea. The sea would play an influential force in the formation of the landscape. Spring tide flooded the land and sedimented more clay and sand. Peat formed in the flooded areas and along the coast salt marshes arose in the landscape.

At the higher salt marshes the first habitation occurred, starting a new chapter in the formation of the Groninger landscape. Man began their defence against the sea with the creation of Wierden and Terpen. Thereby man began to cultivate the fruitful sea clay for agriculture by making ditches, canals and dikes. Later man even started to gain new land at the expense of the sea by creating polders.

Technology slowly began to establish a bigger role in the way the Dutch organized their land. The invention of the windmill made larger polders possible and the later use of steam, gasoline and electricity only expanded these developments. Also technical inventions in agriculture as the tractor left their marks on the countryside. Land labourers disappeared and the growing farmlands often ignored historic elements in the landscape.

◀ Hay

An outside hay storage next to a dike between Den Andel and the Noordpolder.

With the growing scale of the projects also politics started to influence the landscape. Upscaling in agriculture after the second world war, under the lead of minister of agriculture Sicco Mansholt, put another layer of efficiency over Dutch rural areas, again without much respect for the existing landscape. With land consolidation and technical innovations Mansholt wanted to get rid of small farmers and aspired large scale Agrarfabriks. These political ideologies homogenized the Groninger landscape once more and marked the countryside. It was in this period man slowly got the upper hand in the organization of the landscape.

Man became aware of the consequences of an intensive agriculture on our environment and with the surplus on the market, pro nature groups gained influence. This resulted in special zones where nature could be restored and got free play again. Also fallow farmlands were transformed into leisure and housing zones to revitalize the declining region of Groningen.

However, the revitalization and preservation only counts for preservation zones. The other areas are nowadays in uncertainty. Agriculture is threatened by a globalizing market and therefore decreasing prices. Upscaling to lower the costs is an option to counter this threat, but history has taught us this is not without consequences for the landscape. Bio-farming and digitalization are another direction and are potentially more respectful to the environment and landscape.

Another insecurity on the countryside is the development of industry. The extrusion of natural gas brought industrial structures to the countryside and is nowadays threatening historic buildings because of consequential earthquakes. Groningen is also forerunner in the energy transition towards more sustainable energy, especially with the coming of windturbines. Also the

construction of large scale barns and the building of datacentres are bringing 'big boxes' to the countryside. These new structures are often standardized designs, without any connection to their context. However these new developments also give the opportunity to establish new relations between man and the countryside. But only if the landscape, local culture and identity of the areas is respected.

Architectural quality

Both the hand of man as the force of nature is readable in the current landscape of Groningen. Radial set-ups of old Wierden, (sleeping) dikes and canals unveil the interference of man, however the dikes followed natural salt marsh ridges and canals started meandering because of the sea tide. Farmlands were squeezed between former peat-rivers and are nowadays the only marks left of these waterways. The landscape of Groningen is a synthesis of man-made interventions that respected and followed natural elements.

The fruitful clay boosted agriculture in Groningen and was also a great resource for the fabrication of bricks. The high level of iron and low percentage of chalk gave the baked bricks their characteristic red colour, referred to as Groninger red. The brick became an often used material in the region of Groningen and coloured the built environment.

The destruction of farms as consequence of earthquakes results in redundant waste bricks. By mixing pulverized brick with concrete this waste can be recycled into terrazzo floors or walls. Thereby the red pigment is in high contrast with the prevailing colours blue and green of the landscape. By using the Groninger red tone the landscape can be highlighted.

The brick, consisting of local clay, was used for the construction of farms. Grand roof structures shaped the countryside with their enormous volume. Pyramids flowing elegantly in the open field, the roof as building. The sculptural roofs hide an enormous spatial void for the stacking of hay, only experienced from within. But from outside the pyramid form, with its declining faces, holds off. A play between open and close, inside and outside.

In time agriculture grew and farms expanded, farmyards transformed into ensembles of modern barns. These ensembles form a place of intimacy in the wide and open landscape. The ensemble plays with the conception of outside to inside and inside to outside. From within sightlines between the volumes reach to the horizon, but from the outside the farmyards appear as closed unities. The intimacy of the volumes and the wide view through the volumes, let one experience far away and close by simultaneously.

The flattened landscape transformed the countryside in an abstract still life. Two main faces – and therefore colours – typify this image; the blue sky and green farmlands. Two cold colours, which hardly contrast. The wide horizon makes a sharp division between the two faces. Sometimes a house or farm pops-up in the field and penetrates the horizon. The wide and empty landscape invokes a monotone and infinite atmosphere; a spatial void.

When intervening in the landscape of Groningen, large abstract faces will easily blend in the Groninger landscape. The low contrast and cold colour palette of Groningen can be extended with other cold and soft colours. Within that palette sun and shading can make subtle gestures. Large faces play with scale and scalesness and therefore easily fit in the apparent infinite landscape.

The landscape of Groningen is often typified as a solely man-made landscape, but this does not value the force of nature. It is nature

that set out the lines that man followed and it is nature that takes over after man-made structures are erected. The landscape is a patchwork of impoldered estuaries and salt marshes. Dikes try to straighten out natural curves, but clay and stones always diffuse the intersections. Man-made canals meandered by the tide of the sea. Farmyards are a wild assemblage of barns constructed over time. Even nature formed the main resource of the Groninger red brick; clay. It is not the rigid and planned structure of other famous polder landscapes as the Flevopolders or Wieringermeerpolder. In Groningen the line between what is man-made and the force of nature is blurred through time and makes the landscape ambiguous. This ambiguity should form the main design attitude in every intervention in the Groninger landscape.



ACKNOWLEDGEMENTS

To start I gratefully thank Jeroen van de Laar for his guidance of this research. Jeroen introduced me to a way of working which forms the base of this thesis. Also a way of working I was not yet comfortable with. Thanks to his patient and competent assistance it made me discover new fields. Thereby I would like to thank Robert Nottrot and Jan van de Voort for their comments on my research and for their assistance on my design. I would like to thank Inger van Dooren for her critical eye, interesting stories about agriculture and most of all her presence during the long working days and field trips. Remt Meijer, Sjoerd de Hoop, Erik Wong and in special Cor Kalfsbeek for willing to share their knowledge. Also I would like to thank Gunnar Daan for his writings and most of all his hospitality. Sadly he passed away too soon to host us. Also I would like to thank my family for their support on my field trips and being a listening ear during my project.

◀ Eemspolder

Windturbines behind the sleeping dike of the Eemspolder. The Eemspolder forms the location for the design phase.

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Overview map – From www.ahn.arcgisonline.nl/ [Accessed: 28 May 2017].

Map on page 13 – Based on map from www.leestekensvanhetlandschap.nl [Accessed: 25 October 2016].

Map on page 15 – Based on map from Map Room TU Delft Library on 10 March 2017.

Map on page 21 – Based on map from Reh, W., Steenbergen, C. & Aten, D., (2007) Sea of Land. Amsterdam: Architectura & Natura.

Image on page 23 - Landscape near Overschie (1898) by Paul Joseph Constantin Gabriël (1828 – 1903). From the collection of Boijmans van Beuningen.

Images on page 25, 26, and 27 – From www.ahn.arcgisonline.nl/ [Accessed: 25 April 2017].

Image on page 41 – van Galen, P. (1976) for Rijksdienst voor Cultureel Erfgoed.

Image on page 43 and 44 – From www.topotijdreis.nl/ [Accessed: 26 April 2017].

Image on page 47 – From www.contrataxatie.nl/ [Accessed: 11 January 2017].

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People

Cor Kalfsbeek, Architect in Paterswolde

Erik Wong, Graphic designer in Hornhuizen / Amsterdam

Remt Meijer, Farmer in Kloosterburen

Sjoerd de Hoop, Biological farmer in Hiaure

