

The background of the entire page is a dark, semi-transparent aerial map of the Schouwen-Duiveland region. The map shows a complex network of roads, fields, and water bodies, with a prominent dark, irregularly shaped area in the lower-left quadrant that likely represents a specific study area or a region of interest related to the report's theme of shrinkage.

P5 report

THE COURSE OF SHRINKAGE IN SCHOUWEN- DUIVELAND

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COLOPHON

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PREFACE

This report concerns the graduation project that was drawn up as part of the Master Urbanism at TU Delft in the period from September 2020 to at July 2021. This spatial research and design focuses on the course of shrinkage in Schouwen-Duiveland and tries to provide insight into the possibilities of shrinkage.

The motivation for this thesis originates from my interest in urban shrinkage, which, despite the ever-increasing need, still has few elaborations in the spatial domain. The challenges that often accompany shrinkage require a different way of thinking than growth-oriented and therefore require a unique approach. In addition, the province of Zeeland and in particular the municipality of Schouwen-Duiveland appeal to me because of

the rich history and recreational function. This affection has therefore inspired the approach to shrinkage.

I would like to thank everyone who contributed to this project, but especially my mentors for their guidance. Leo encouraged me with his critical questions to get the most out of the project, to sharpen my choices, to think beyond everyday reality, but at the same time not lose sight of the subtlety of the project. Eric gave me ideas when I got stuck, made me aware of the consequences of my design choices in use and ensured the precision.



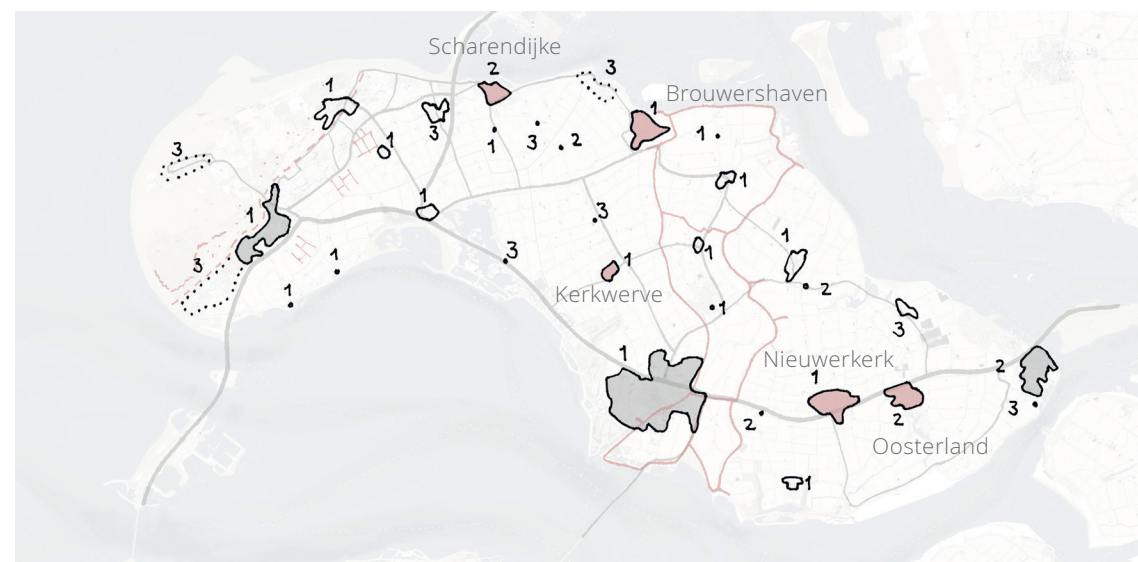
always swaying along
the tide is now threatening to turn
and gaps appear
when the villager goes
space is offered

altijd meedeinend
dreigt het tij nu te keren
en vallen gaten
wanneer de dorpling gaat
wordt er ruimte geboden

SUMMARY

Urban shrinkage, as predicted for Schouwen-Duiveland, leads to a less attractive living environment and is seen as a burden rather than a potential, often resulting in an aim for unrealistic growth. The recommended context-specific approach is spatially underdeveloped and takes too little account of the distant future. This project therefore generates a spatial approach for the acceptance of urban shrinkage in Schouwen-Duiveland, making use of the local qualities in order to show that shrinkage can also offer opportunities. The local qualities in the case of Schouwen-Duiveland are heritage to guarantee the quality of life and the increasing target groups, holidaymakers and the elderly, to maintain a certain degree of liveliness. Since shrinkage is a nuanced phenomenon, but at the same time a zoom was needed to

illustrate the interventions, three different types of interdependent settlements were examined to represent the rest of Schouwen-Duiveland. The shrinking and highly regarded Brouwershaven therefore has a more complex and extensive approach than the flourishing but low valued Den Osse. In the event that Brouwershaven shrinks extremely, the pre-war buildings can be used as an elderly or holiday home, the expansion neighborhoods can be demolished, freeing up space to restore the historic fortifications. In this way, shrinkage does not have to be a disastrous development and added value can even be created. Shrinkage thus certainly does not have to be imposed, but it is useful to take such a possible future into account now and to have flexible interventions ready.



0.1. The prediction of shrinkage and the valuation of individual settlements in Schouwen-Duiveland



0.2. The potential of heritage, of the aging population and of recreation



0.3. Isometric Brouwershaven in an extreme scenario with far-reaching urban shrinkage

01 PROBLEMATISATION

This chapter sets out the problem definition of this project and explores the relevant theme of shrinkage. First of all, the problem field will display the general problem, the definitions, the scope and the knowledge gap. The second part, the problem analysis, deals with the challenges of the problem field with regard to the chosen location, Schouwen-Duiveland. Finally, the chapter concludes with the problem statement.

PROBLEM FIELD

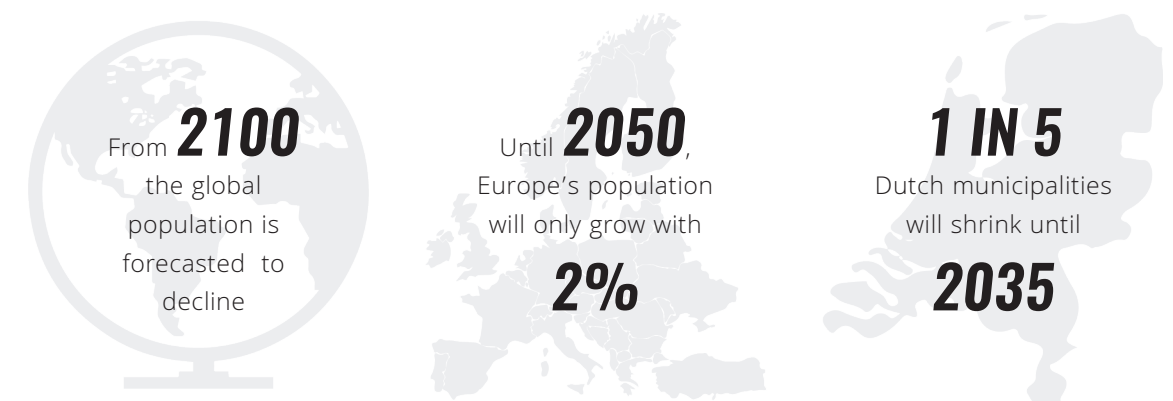
According to several studies, including the one by the United Nations in 2019, global population growth will come to a halt at the end of the 21st century and will shrink from then on. More specifically, Europe and North America will only have a population growth of 2% until 2050, showing the lowest population growth in the world (United Nations, 2019). In addition, more and more people are living in urbanised areas (Ritchie & Roser, 2019). According to Turok and Myknenko in 2007, therefore, since the turn of the millennium, mainly small cities have to deal with a declining population (Fol, & Cunningham-Sabot, 2010). The small towns and villages in Europe can no longer keep up with the globalisation of the big cities and are therefore faced with population stagnation and loss (Fol, & Cunningham-Sabot, 2010). This trend is also reflected in the Netherlands, where the population of the big cities in and around the Randstad will keep growing and the population of the edges will remain the same or even shrink (PBL & CBS,

2019). The forecast is that up to 2035 1 in 5 municipalities will shrink, mainly affecting the small cities and towns at the countryside (PBL & CBS, 2019)(figure 1.1).

The growth-dominated mindset prevailing in our culture will therefore have to be changed and a major challenge for especially small-sized settlements in peripheral areas will thus arise.

Defining shrinkage

It was not until the turn of the millennium that the concept of shrinkage received attention and was put on the agenda (Barvika et al., 2018; Haase, Rink, Grossmann, Bernt, & Mykhnenko, 2014). The definition of shrinkage is therefore still under discussing and varies from study to study. Bernt (2016) shows that many different definitions are circulating in which mainly the duration of population loss, the degree of population loss and the degree of urbanity are different. However, there are a few aspects that are almost always



1.1. Facts population decline on different scales

integrated in the definition. This concerns, firstly, population loss itself, secondly, the challenges that are typical for shrinking sites and thirdly, the causal links between shrinking agglomerations and beyond (Bernt, 2016). Urban shrinkage is therefore not only about population loss, but is often accompanied by economic downturn and the physical decline of the urban fabric (Winter, 2016).

Therefore urban shrinkage is defined in this project as population decline caused by both local and global factors with spatial consequences. These spatial consequences have an impact on daily life due to disappearing facilities and increasingly dilapidated street scenes in which vacancy dominates. Due to this declining quality of the living environment, more people may want to leave, creating a vicious circle.

In this definition, some diverging thoughts about the definition of urban shrinkage have been omitted. For example, Wiechmann and Bontje (2015) claim that a shrinking city must have at least 10,000 inhabitants. However, the smaller settlements in particular have to deal with shrinkage and therefore no minimum is needed. In addition, the duration and degree of population loss are sometimes also included in the definition of shrinkage. Small population losses, however, can go hand in hand with large demographic developments (Groenemeijer, 2014; Hospers, & Reverda, 2014). Shrinkage should therefore be put on the agenda at an early stage and the Dutch government has therefore designated anticipation areas, municipalities with predicted population shrinkage (Rijksoverheid, 2018). However, future shrinkage is still underestimated by many municipalities (Ven, 2017). This project therefore does not exclude small settlements, which, even if slightly, will shrink in the future in order to prevent possible negative consequences.

Shortcomings in the current approach

Shrinkage is generally seen as an undesirable

development and is therefore often not fully acknowledged (Hovens, 2016). However, urbanists and architects in particular believe that there are great opportunities in depopulation (Hospers, & Reverda, 2014). It is therefore up to this sector to convert the prevailing negative connotation into a connotation that perceives shrinkage as a respected development that can lead to a bright future.

Rocak's 2020 study shows that, according to many sources, shrinkage is rooted in the local context and can therefore only be addressed by taking this context into account. After all, every shrinking settlement is unique and has its own challenges and opportunities. However, most studies only emphasize the importance of context specificity without going into detail on the approach. This approach is therefore still too little developed on a spatial level.

Converting shrinkage into a favourable development therefore requires design interventions derived from the context. The local qualities of a place can therefore be a key factor in the spatial approach to shrinkage and will be seen as potential in the remainder of the report.

In order to make optimal use of these potentials and to be able to create a future-proof future on the other, not only the short term will be considered, but also the longer term. After all, most spatial designs for shrinking from reality look to the near future and have little budget to look beyond that. This graduation project is therefore the perfect opportunity to further develop this distant and perhaps improbable future.

PROBLEM ANALYSIS

To contribute to the current state of urban shrinkage, the project will use the municipality of Schouwen-Duiveland, which is in a similar situation to that outlined in the problem field. Schouwen-Duiveland has been designated as an anticipation region and is therefore predicted to experience depopulation (Rijksoverheid, 2018). The reasoning behind this choice for the municipality in the southwestern province of the Netherlands, Zeeland, is explained below.

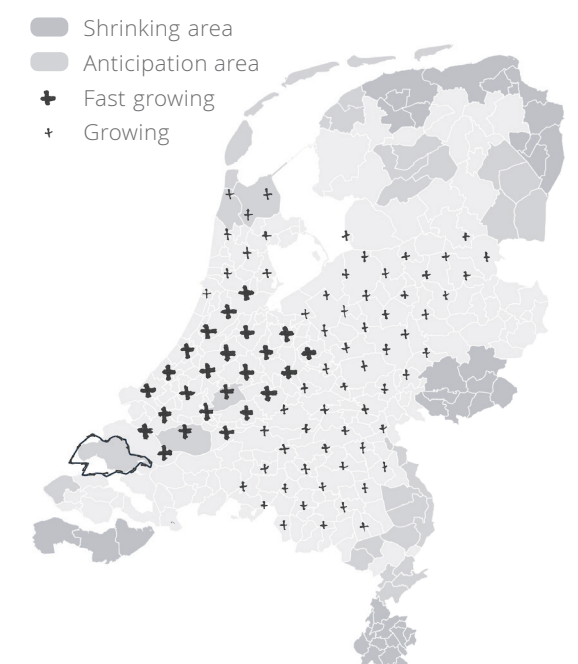
The prevailing challenges in Zeeland

The population of Zeeland has not grown since 2005 and is expected to decline after 2021 (ZB, 2018). However, this predicted decline already hides a demographic shift. 23% of the population is older than 65, making it one of the most aging provinces in the Netherlands (ZB, 2018). On the other hand, young people leave the province to study elsewhere and often do not return to live and work in Zeeland (ZB, 2018). This in turn results in a decreasing number of children and can eventually lead to shrinkage (ZB, 2018). At the moment, however, facilities such as education are already struggling to survive (ZB, 2018). Nonetheless, for years, more new construction was carried out than households were added (ZB, 2018). It could therefore be said that shrinkage is not yet fully on the agenda.

The economy of Zeeland has only a small share in that of the Netherlands. With a labour force of 21% of the Netherlands, they contribute only 1.7% to the national economy (ZB, 2018). It is striking that the unemployment rate is

low compared to the Dutch average and there is even a shortage of employees (ZB, 2018). This is probably due to the demographically changing population that provides less employed persons. The challenge of shrinkage is therefore not so much about the economy, but about the population itself.

The map in figure 1.2 shows that the marked location of Schouwen-Duiveland directly borders the growing Randstad. It is striking that unlike most other shrinking areas, there is no semi-growing buffer in between (Gopal, Groenemeijer, Leeuwen, Omtzigt & Faessen, 2020).

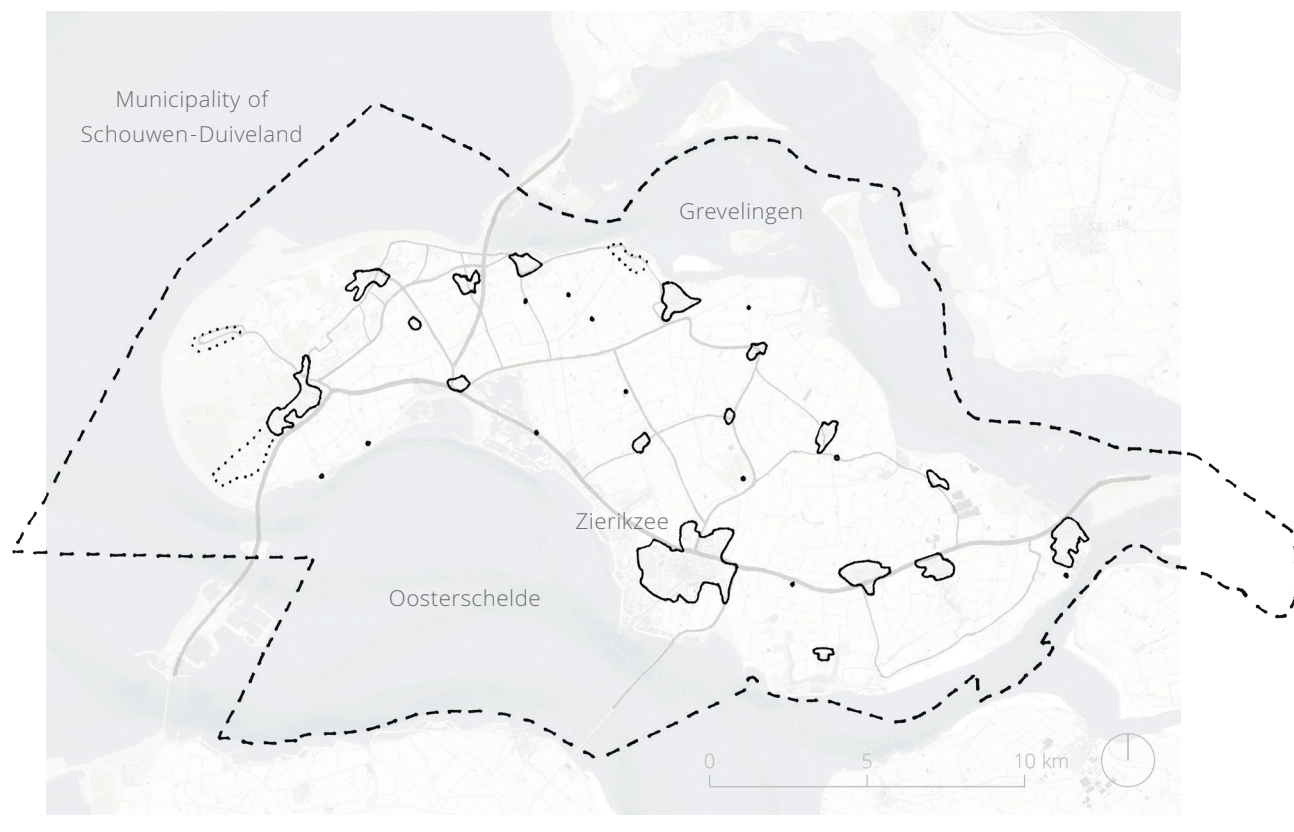


1.2 Schouwen-Duiveland as anticipation area next to growing regions (Gopal et al., 2020; Rijksoverheid, 2018)

The challenges in Schouwen-Duiveland

The municipality of Schouwen-Duiveland is a peninsula that is connected to the mainland by bridges and dams as shown in the adjacent map (Plaatsengids Schouwen-Duiveland, 2020)(figure 1.3). This clearly demarcated boundary makes it a suitable location to get a grip on the complex task of urban shrinkage. The municipality has a variety of different settlements, but the largest is Zierikzee with 10,500 inhabitants. (Plaatsengids Schouwen-Duiveland, 2020). It is a popular holiday destination for Dutch, Belgians and Germans. Figure 1.5 shows that the municipality has experienced a population decline in recent years to 33.700 inhabitants. The consequences of this population loss and the additional demographic changes are apparent in the municipality. The headlines show that facilities such as education are having a hard time and impoverishment is lurking. Relatively speaking, the population

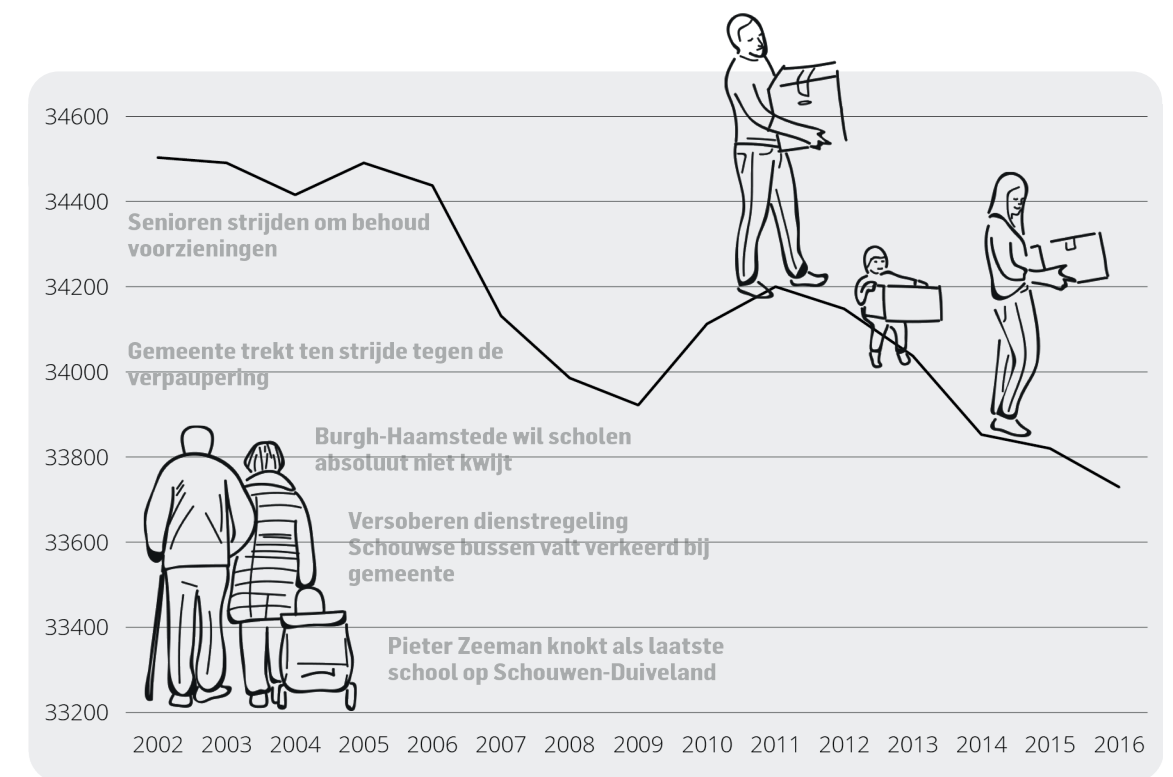
of Schouwen-Duiveland is decreasing the fastest of all other municipalities in Zeeland (Jongbloed & Kaagman, 2014). By 2030, 33% of the inhabitants will be over 65 years of age, making it the most aging municipality in Zeeland (Darwinkel, Engelbertink, & Geffen, 2012). The percentage of young people and adolescents is therefore low even by standards in Zeeland (Darwinkel, Engelbertink, & Geffen, 2012). This is a precursor to a sharp decline in the number of births and thus a decline in the native population (Toekomst Toerisme Schouwen-Duiveland, 2017). The vacancy rate in Schouwen-Duiveland is also higher at 6% than the average in Zeeland at 5.4% (Darwinkel, Engelbertink, & Geffen, 2012). However, in addition to the challenges related to shrinkage, Schouwen-Duiveland also offers many local qualities that can be useful in the approach. These will be discussed in more detail in the following chapters.



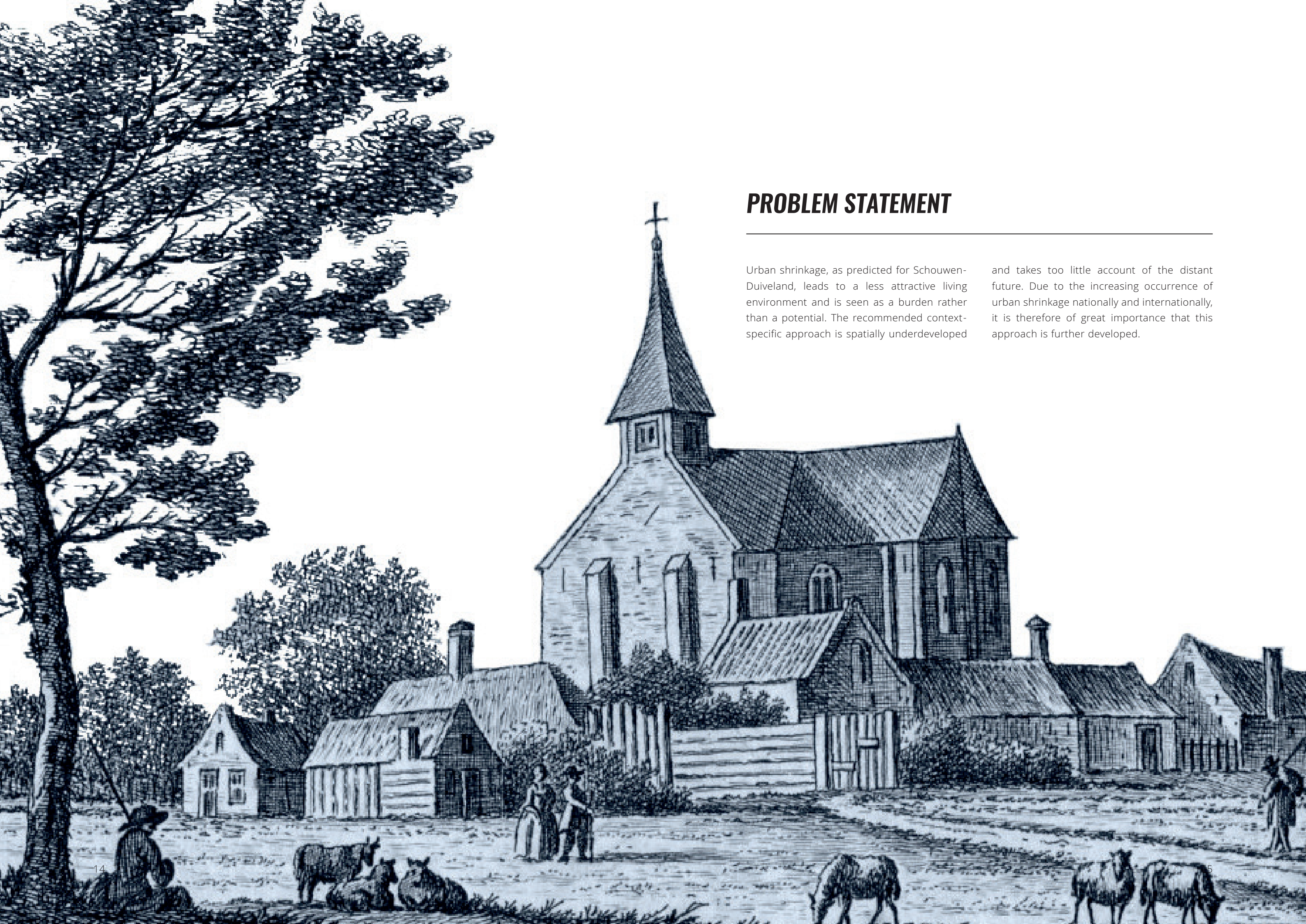
1.3. The municipality of Schouwen-Duiveland with its 17 settlements



1.4. Vacancy in Oosterland (27-12-2020)



1.5. Population development in the municipality (AlleCijfers, 2020a; PZC, 2011-2018-2019-2020)



PROBLEM STATEMENT

Urban shrinkage, as predicted for Schouwen-Duiveland, leads to a less attractive living environment and is seen as a burden rather than a potential. The recommended context-specific approach is spatially underdeveloped

and takes too little account of the distant future. Due to the increasing occurrence of urban shrinkage nationally and internationally, it is therefore of great importance that this approach is further developed.

02 PROJECT METHODOLOGY

This chapter sets out the approach of this project in order to clarify how shrinkage will be addressed. First of all, the goal of the project will be formulated, setting the conditions for an approach to shrinkage. Subsequently, the main question and associated sub-questions will be formulated. Finally, the project framework will provide an overview of the assignment and will unfold the project approach including the methods and results.

PROJECT AIM

The knowledge gap, as described in the problem field, concerns a missing spatial elaboration of the context-specific approach to shrinkage. The purpose of this project is therefore to examine how the local qualities could contribute in the approach to shrinkage on a spatial level. There is no single solution for shrinkage and there will therefore be a mix of design interventions.

The approach to shrinkage requires a multi-scalar strategy since the processes associated with depopulation take place on multiple scales (Kotilainen et al., 2015; Weaver, & Holtkamp, 2015). This also applies to the municipality of Schouwen-Duiveland, where both shrinking and growing settlements are located (Gemeente Schouwen-Duiveland, 2018). Therefore, zooming in on the local places and beyond is necessary. Finally, at the building level, the challenges of shrinkage will manifest themselves and the design will become tangible.

Shaping the approach to shrinkage

Many different responses to urban shrinkage are possible, ranging from urban renovations and economic interventions to bottom-up initiatives (Doringier, Uchiyama, Penker, & Kohnsaka, 2020). However, all the different responses can be divided into three approaches, namely denying, combating and accepting shrinkage (Rink, Rumpel et al., 2012).

By denying shrinkage and not responding, more and more vacant places are created and urban infrastructure and facilities are

underused (Haase et al., 2014). It should be clear that this approach is not preferred and should therefore not be used.

Bringing about growth in a shrinking area requires large investments in the economy and housing stock (Rink, Haase et al., 2012). Large industrial cities such as Leipzig have proven that shrinkage can be turned into growth (Kabisch, et al., 2019).

Recently, however, an opposite approach, namely to accept shrinkage, has also emerged. By dealing with population loss in a more organised way with smart shrinkage, other opportunities arise for, for example, spatial quality, traffic, nature and the environment (Barvika et al., 2018; Bernt et al., 2014; Hospers, & Reverda, 2014).

Accepting shrinkage

Urban shrinkage should absolutely not be undermined. With the prospect of a declining world population over time, it is unrealistic to continue to ignore or fight shrinkage, as regions eventually will compete for the same group (Hospers, & Reverda, 2014). The problematisation has shown that nowadays especially small cities are affected by urban shrinkage which generally can no longer keep up with the globalisation of the big cities, have fewer basic services and are therefore in a more difficult position (Fol, & Cunningham-Sabot, 2010; Kabisch, & Haase, 2011; Rocak, 2020). Large investments aimed at growth are therefore not feasible in small towns. Since Schouwen-Duiveland consists of small settlements, an approach in which shrinkage

is accepted if it occurs is therefore more appropriate.

The PBL (2010) has learned from experience that combating shrinkage was not useful and that shrinkage in the Netherlands should therefore be accepted and guided. This is not surprising because the shrinking and anticipatory areas in the Netherlands are mainly located on the edges of the country and have no large cities (Figure 1.2). Realising growth is therefore almost impossible. This also applies to Schouwen-Duiveland because although the growing Randstad is close by, it is relatively difficult to reach from Rotterdam, the largest nearby city, by both car and public transport (Figures 2.1 & 2.2). In addition to the poor accessibility, there are also no other foundations for growth, as the economy of Schouwen-Duiveland is small and the level of supply in terms of education, for example, is low. And since there are no plans on Schouwen-Duiveland for major investments in these sectors with which this project could potentially hitch a ride, it is wiser to guide

possible shrinkage rather than to combat it.

Nuance the approach to shrinkage

In general, policymakers find it difficult to leave growth-oriented thinking behind, accept reality and switch to smart shrinkage (Barvika et al., 2018; Bernt et al., 2014; Hospers, & Reverda, 2014). First of all, the misconception must be dispelled that accepting and guiding shrinkage also means that shrinkage must be imposed. The proposed design interventions are only applied if the quality of life for the remaining residents decreases to such an extent due to shrinkage. This project therefore only tries to illustrate the best possible future in case shrinkage comes into play. The aim is to inspire policymakers and to take the debate about shrinkage to a higher level. Hopefully, the generally negative image associated with urban shrinkage can then be somewhat left behind.

Shrinkage is difficult to predict and the design proposal should therefore be able to keep up with developments. All possible future design

interventions will therefore not have a date of implementation, but will be based on the degree of urban shrinkage. In order to deal with these uncertainties, many assumptions will have to be made and in some cases, therefore, no definitive choice of interventions will be made. In that case, the conditions and possible options should be outlined.

In order to be able to inspire, shrinkage will be brought to a far-reaching and extreme level where there is hardly any permanent housing. This is probably not a realistic future, but it can open eyes to the potential opportunities of urban shrinkage. The distant future is therefore central to the project and the design

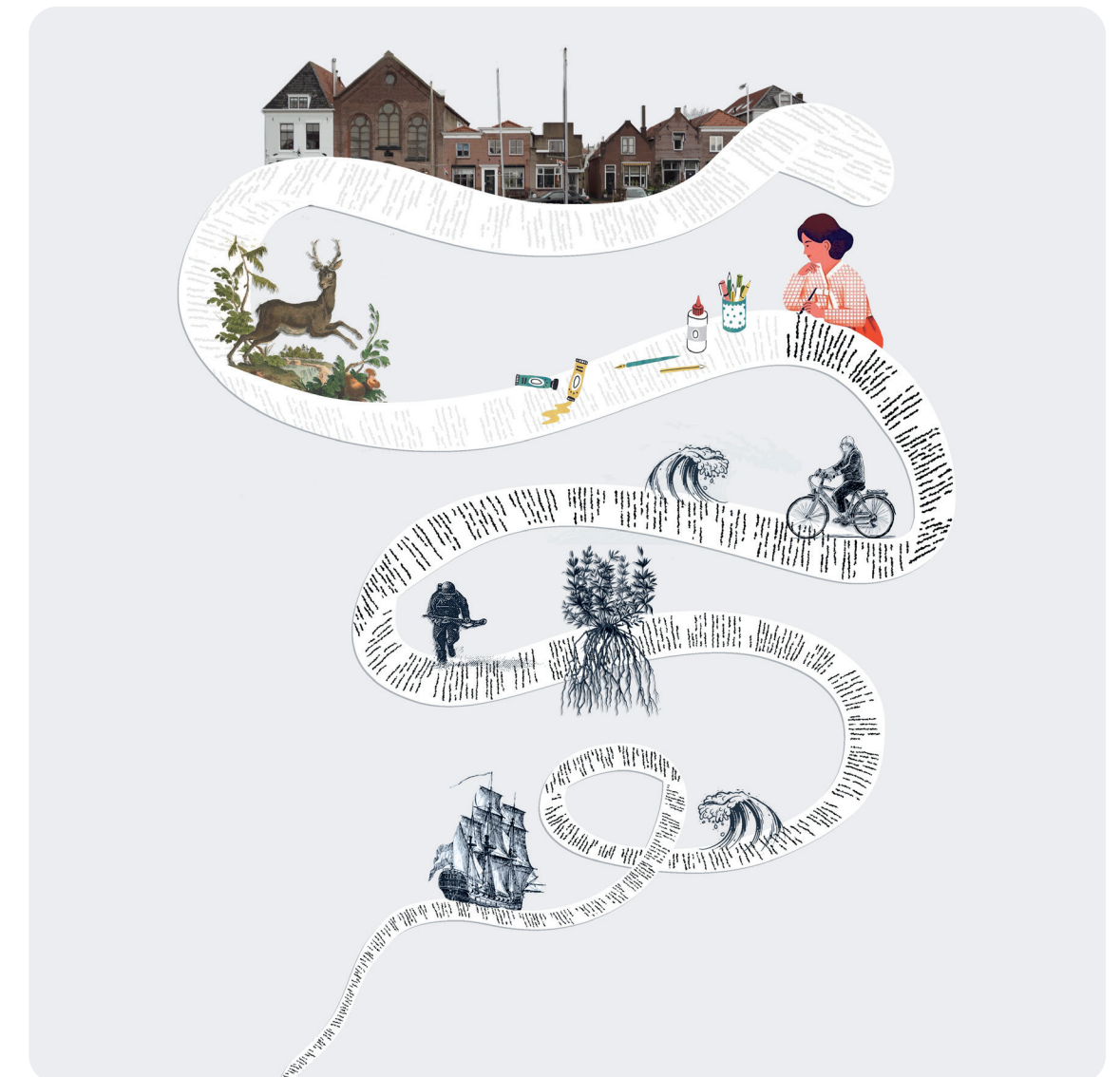
proposal can therefore be compared to the writing of a book. A long history of ups and downs has passed and a new chapter should now be set up. The course of shrinkage in Schouwen-Duiveland will therefore be continued with this project.



2.1. Reach by car within 75 minutes from Rotterdam Central (Monday 25 January 2021 17.00)



2.2. Reach by public transport within 85 minutes from Rotterdam Central (Monday 25 January 2021 17.00)



MAIN QUESTION

The main question of this research and design is derived from the project aim and is as follows: "How should the acceptance of urban shrinkage in Schouwen-Duiveland be expressed spatially, making optimal use of the local qualities?".

Sub-questions have been formulated to help answer the main question and also divide this report into several chapters. The first sub-question diagnoses the local qualities and delineates the design assignment. In addition

to more detailed diagnoses, the corresponding design interventions are also formed in the second sub-question. The last sub-question draws conclusions at a larger scale level. The appendix lists the more objective analysis on which the diagnoses from the previous chapters are based.

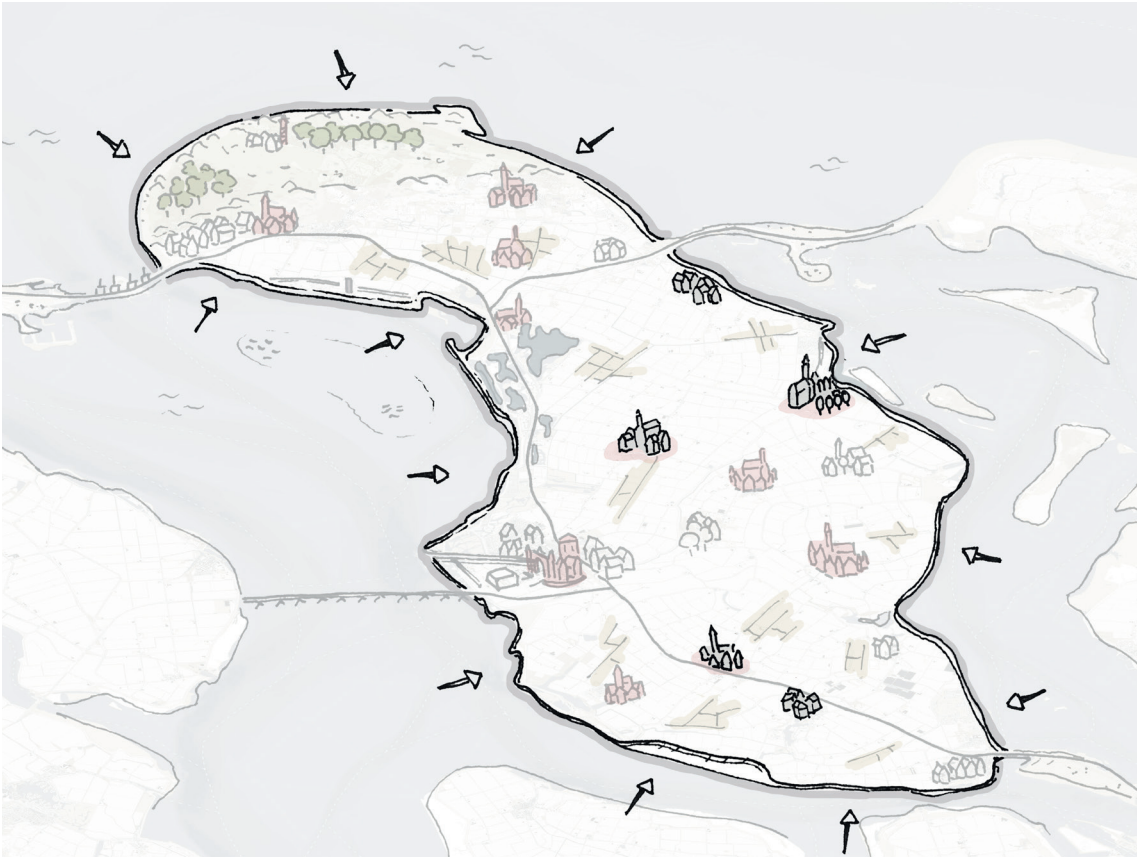
Main question

How should the **acceptance of urban shrinkage** in **Schouwen-Duiveland** be **expressed spatially**, making optimal use of the **local qualities**?

| | |
|---------------------|---|
| Acceptance | The approaches that acknowledge and allow shrinkage |
| Urban shrinkage | Population loss caused by both local and global factors with spatial consequences as a result |
| Schouwen-Duiveland | The location to be studied at municipal, local and building level |
| Expressed spatially | Designing for the three-dimensional built environment |
| Local qualities | The local features that can be valuable in the approach to shrinkage |

Sub-questions

| | |
|--|--|
| Chapter 03 Framing the assignment | What are the local characteristics of Schouwen-Duiveland that can stimulate the approach to shrinkage? |
| Chapter 04 Composing the settlements | How can these local characteristics shape the approach to shrinkage in a few carefully selected settlements in Schouwen-Duiveland? |
| Chapter 05 Implication for the larger scale | How can the design of the chosen settlements be projected on the entire municipality of Schouwen-Duiveland? |



2.3. Isometric Schouwen-Duiveland: utilising the local qualities in the acceptance of shrinkage

PROJECT FRAMEWORK

In short, this graduation project is about the challenge, urban shrinkage, which requires a context-specific approach that can be offered by making use of the local qualities. Linking this potential of local qualities to the challenge of urban shrinkage should result in an inspiring proposal.

The accompanying diagram links the sub-questions to the methods and corresponding outcomes. The first sub-question will be devoted to finding and formulating the local qualities that can be used in the approach to shrinkage. First of all, therefore, history will be studied. On the one hand, local values and trends can emerge, on the other hand, lessons can be learned from history, as Schouwen-Duiveland has experienced times of urban shrinkage before. In this way, not only the tangible elements of the location are appreciated, but the intangible heritage can also contribute to the approach. After history, the present will then be discussed. The focus will mainly be on the state of shrinkage, on the one hand to get to know the challenge better, but on the other hand to make positive use of the consequences of shrinkage. In addition to reference work, local observations during site visits will also be useful here. After this study of the past, the present and a little bit of the future, it will be investigated whether there are any notable demographic, economic and/or spatial elements and other local qualities that can contribute to the approach of shrinkage. Finally, the local qualities can be definitively determined and a suitable zoomed-in

location can be chosen that can illustrate the interventions for the entire municipality.

The second sub-question then concerns these zoomed-in settlements. First of all, an attempt is made to capture the identity and values of each place. This immediately highlights the valuable elements that should be preserved in the future. Based on this, approaches can be drawn up for each settlement. Hand-drawn isometries are often used in this sub-question to provide immediate insight into the spatial qualities and interventions. Since the long term is taken into account, it is sometimes still impossible to make choices, so either a flexible approach is formulated based on the degree of shrinkage or scenarios are drawn up. Each settlement will conclude with a poem to clarify the course of shrinkage.

The third and thus last sub-question will zoom out to the entire municipality of Schouwen-Duiveland and review the situation by applying the lessons learnt from the individual settlement. In this way, the last two sub-questions mainly provide inspiring and strategic images that could contribute to the debate on shrinkage. This makes it in its entirety a spatial communication tool for policymakers, in this case mainly the municipality of Schouwen-Duiveland.

Sub-questions

Framing the assignment

What are the local characteristics of Schouwen-Duiveland that can stimulate the approach to shrinkage?

Composing the settlements

How can these local characteristics shape the approach to shrinkage in a few carefully selected settlements in Schouwen-Duiveland?

Implication for the larger scale

How can the design of the chosen settlements be projected on the entire municipality of Schouwen-Duiveland?

Methods and outcomes

Historical analysis (basic outlines and occurrence of past shrinkage)

- Potential local tangible qualities
- Potential local intangible qualities (lessons to be learned)

Analysis of the current state of shrinkage (demographic, economic and spatial study)

- Potential local qualities

Analysis of thriving sectors (notable findings from previous studies)

- Potential local qualities

Choice of location on the basis of established local qualities

Valuation of the chosen settlements

- Isometric hand drawing

Spatial approach for the chosen settlements

- Flexible roadmap for the future or scenarios
- Zoomed in design elaborations of the approach
- Poem

Spatial development plan on the scale of the crucial triangle

- Manual for developments anticipating a possibly shrinking future

Evaluation to the scale of Schouwen-Duiveland

- Guidelines for the types of settlements and the surroundings on Schouwen-Duiveland
- Poem

03 FRAMING THE ASSIGNMENT

This chapter will frame the design assignment and will therefore mainly have an analytical and diagnostic character. First of all, the local qualities must be determined and the chapter therefore starts with a section about the history of Schouwen-Duiveland. The following section discusses the current situation with regard to shrinkage, on the one hand because there are opportunities in the problem itself, but also to gain insight into the local aspects of shrinkage. Once the local qualities have been identified, a location will be chosen to illustrate the design interventions.

CONDITION OF SCHOUWEN-DUIVELAND

The municipality of Schouwen-Duiveland covers an area of 490 square kilometres, making it one of the largest Dutch municipalities (Zalig Zeeland, n.d.). More than half of this surface consists of water and therefore plays an important role (Zalig Zeeland, n.d.). The surrounding water bodies all have an important share in terms of nature, recreation and economy (both fishing and energy potential). In the west lies the multifunctional North Sea, in the south the nature-predominant tidal Oosterschelde and in the north the

saline but non-tidal recreational Grevelingen. Schouwen-Duiveland is thus surrounded by a diverse palette of water bodies that was made possible by the Delta Works created after the 1953 flood disaster. In addition to a diverse water palette, the landscape of Schouwen-Duiveland is also diverse. Where the west side consists of dunes and forests, the middle and east side alternates with polders and wet nature.



3.1. Basic characteristics of the landscape of Schouwen-Duiveland

A BRIEF OVERVIEW OF HISTORY

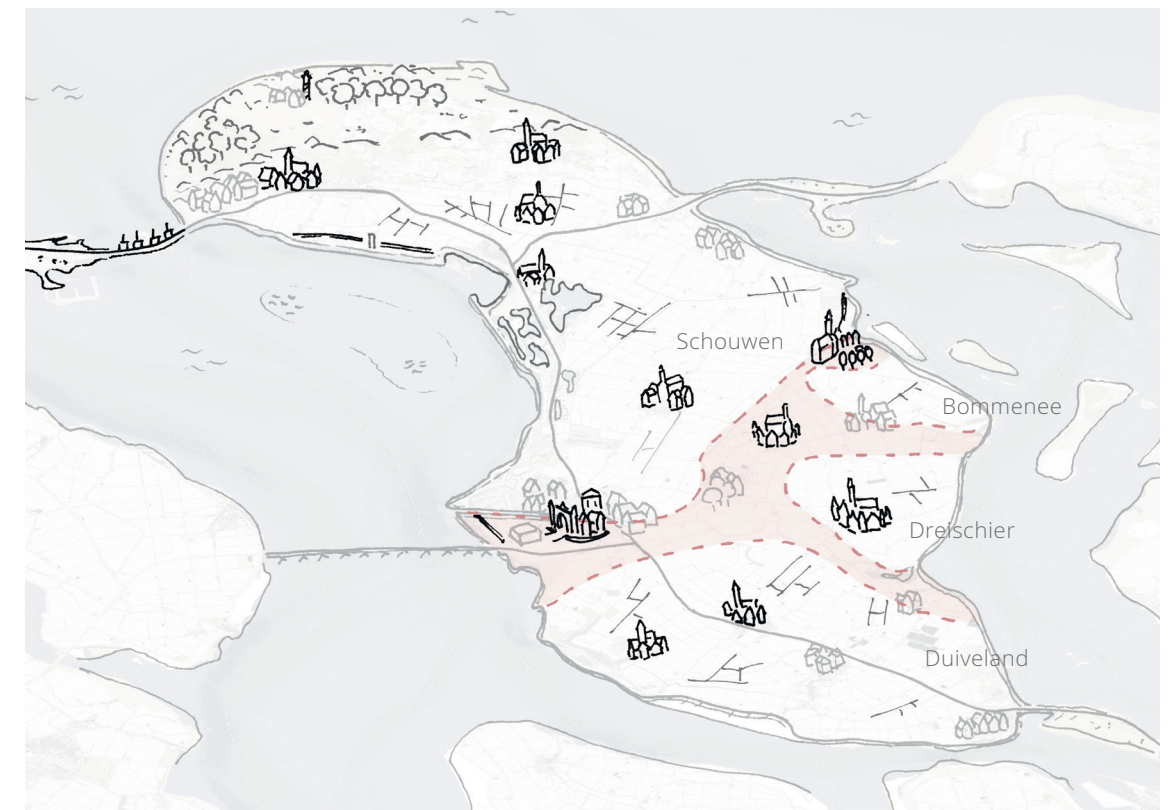
Because the local context, according to Rocak (2020), includes the history of a place, this section will be attributed to the history of Schouwen-Duiveland. History is the investigation of the past that primarily studies the people, societies, events and problems of the past (Llewellyn & Thompson, 2020). Heritage is defined as “those things from the past which are valued enough today to save for future generations” (Heritage Perth). UNESCO has divided heritage into the tangible, such as surviving buildings, and the intangible. Intangible heritage describes the knowledge and skills that are passed on from generation to generation and is of great importance for the formation of identity (UNESCO, n.d.). To cover the whole past of a place, both the tangible and intangible side of heritage will be considered.

FORMATION OF SCHOUWEN-DUIVELAND

On Schouwen-Duiveland a lot of tangible heritage can be found, varying from typical ensembles such as the ring villages to 830 national monuments (Gemeente Schouwen-Duiveland, 2012). It is therefore immediately apparent from these spatial elements that the municipality has a long history.

A division into six phases of the history of Schouwen-Duiveland in figure 3.3 to 3.8 shows that the economic motive, accessibility and relationship to water per phase has been subject to change. Several identity-

determining trends can be distinguished from this. Two more general but important trends are the love-hate relationship with the water and the constant evolution of the landscape. The water has always been a danger due to possible flooding, but has also always been very beneficial due to fishing, nature, and recently recreation. The landscape has changed a lot over the years. When parts of present-day Schouwen-Duiveland were first embanked in the 12th and 13th centuries, the area still consisted of four islands: Schouwen,



3.2. Original shape of the landscape (Alterra, 2003; Stichting Zierikzee Monumentenstad, n.d.)

Duiveland, Dreischor and Bommenee (Stichting Zierikzee Monumentenstad, n.d.) (figure 3.2.). Only later did the islands grow together due to embankment of silted edges. The land to the east also expanded due to silting up. The island has therefore undergone major slow-developing morphological changes, but some

setbacks have also caused drastic sudden changes. In this way, the western dunes and the south side of the island have been washed away by the force of the sea. But flooding and bombing during wars have also had an impact. And not only the disaster itself but also the repairs after a setback such as the of the



Origin of the landscape

Up to 1300

- *Economic drivers*
livestock farming and peat extraction
- *Transport*
by water and over creek ridges
- *Setbacks*
-

3.3. 'Vroongronden' (13-10-2020)



Progressive trade and times of flooding

1300 to 1700

- *Economic drivers*
trade and the fishing industry
- *Transport*
by water and over creek ridges
- *Setbacks*
Eighty Years' War (fires and inundation) and storm surges (drowned villages)

3.4. Cityscape of Zierikzee (Goor, 1858)



Agriculture as the main economic driver

1700 to 1939

- *Economic drivers*
agriculture (mostly arable farming)
- *Transport*
ferry services, airport Burgh-Haamstede, tram rails
- *Setbacks*
battle against the sea

3.5. Sugar beet in Brouwershaven (Beeldbank Schouwen-Duiveland, 1925 – 1930)

reallotment and levelling of the land after the 1953 flood disaster have left their mark on the landscape. From this point of view, it can therefore be said that Schouwen-Duiveland has changed a lot over the years and may therefore also be subject to spatial changes in the future.

In addition to these more general conclusions, two other trends are important for the further course of this project.

Open character in a remote location

Initially, the inhabitants settled on Schouwen-Duiveland due to the presence of water



Second World War and reconstruction

1939 to 1953

- *Economic drivers*
-
- *Transport*
-
- *Setbacks*
ten from Renesse, battle in Bruinisse, Atlantic Wall, inundation, late liberation

3.6. German soldiers on the pier in Zierikzee (Kate, 1940)



Watersnoodramp and reconstruction

1953 to 1986

- *Economic drivers*
material recovery and water safety
- *Transport*
by car over the dams and bridges
- *Setbacks*
-

3.7. Soldiers en route from Zierikzee to Nieuwerkerk (Leger Film- en Fotodienst, 1953)



Recreation as the main economic driver

1953 to present day

- *Economic drivers*
recreation (campsites, holiday parks)
- *Transport*
by car over the dams and bridges
- *Setbacks*
approaching shrinkage (but more of an opportunity than a setback)

3.8. Recreation in the dunes of Haamstede (Beeldbank Schouwen-Duiveland, 1960)



3.9. The ring village of Noordgouwe (04-04-2021)

and thus the favourable trading location. However, transport has changed over the years from water to land. Compared to the easily accessible place at the time, Schouwen-Duiveland is now relatively difficult to reach due to the ever-faster transport in the rest of the Netherlands.

This somewhat poorer accessibility however also ensures the strong and unique qualities of Schouwen-Duiveland, since the place is described as a distant but familiar place. The prevailing serenity therefore attracts many tourists. And despite the changing accessibility, Schouwen-Duiveland has always had an open character to the external. During the trading period people have always been open to new influences and people and now they receive mainly German, Belgian and Dutch tourists with open arms. The poorer accessibility is therefore not entirely negative, but also entails

qualities and must therefore be cherished.

The raised head of Schouwen-Duiveland

Schouwen-Duiveland has dealt with its own setbacks in every phase as described in the appendix, such as the silting up of a port, a changing trade route or the loss of the function of a cultivated crop such as madder ('meekrap'). However, the inhabitants have always found a way to deal with these setbacks and to keep their heads up proud. This urge to survive has ensured that residents have not been afraid to change the economic course from trade and fishing to agriculture to recreation. And so Schouwen-Duiveland has always made the best of times when the old formula no longer works, such as in times of shrinkage.

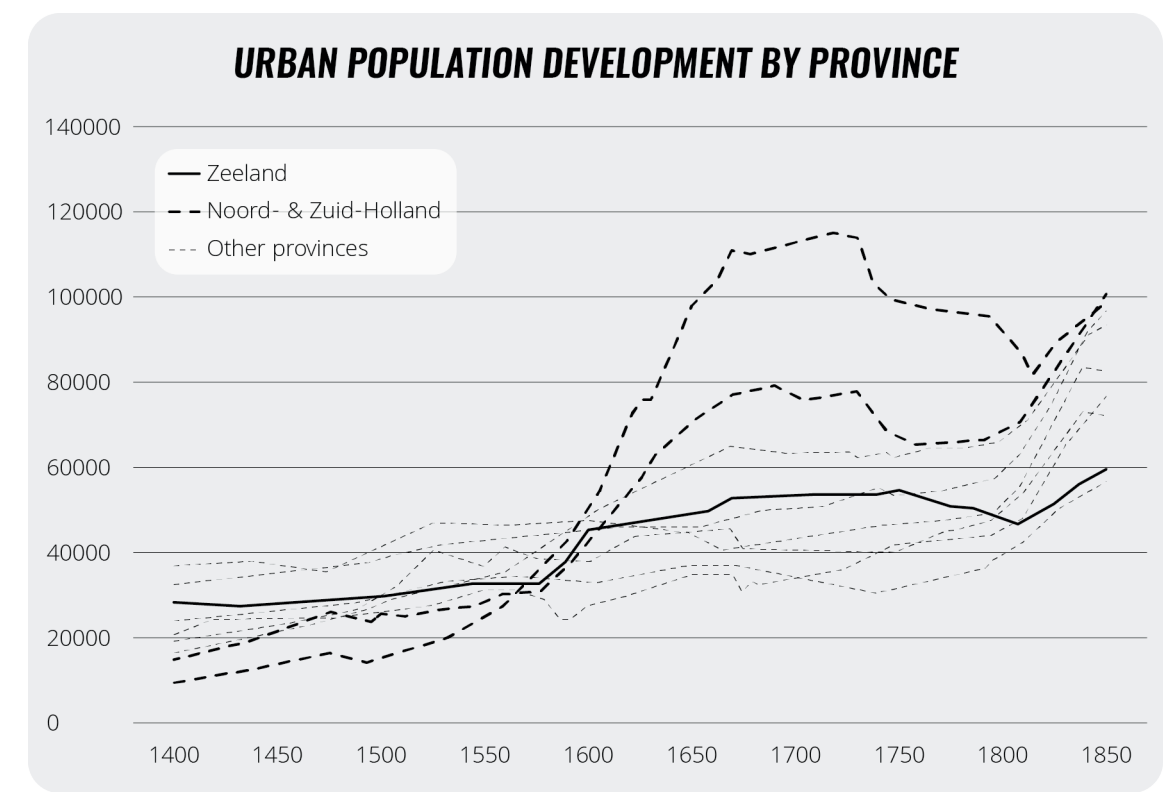
SHRINKAGE IN THE PAST

Schouwen-Duiveland has experienced economic ups and downs with consequences for population size. The graph in figure 3.10 shows that Zeeland experienced the same urban growth at the end of the 16th century as the cities in Holland. Zeeland became a promising location, but expectations did not meet and decline followed (Haartsen, 2009).

The mermaid of Schouwen

Schouwen-Duiveland has had to deal with major changes in the landscape that have

an effect on the population and the spatial environment. In the past, people tried to explain this through legends. In the harbour town of Westenschouwen, the legend goes that one day the fishermen had a mermaid in their net (Koman, 2008). Her husband, who was left in the sea, panicked around the boat begging for his wife's release (Koman, 2008). However, the fishermen brought the mermaid ashore where she weakened and died (Koman, 2008). The merman was torn with anger and grief and threw a handful of sand and seaweed



3.10.. Dutch population development by province between 1400 and 1850 (Paping, 2014)



3.11. Koudekerke Plompstoren (13-10-2020)

into the harbour to curse and silt up the village (Koman, 2008). The population became poor and moved around the island as beggars (Koman, 2008). The once prosperous village was doomed, disappeared and only the tower survived (Koman, 2008)(figure 3.12). This legend of the mermaid of Westenschouwen, in which setback was caused by silting

up, was later taken over by the village of Koudekerke, where sand was not the problem, but water (Koman, 2008). Koudekerke was flooded and only the tower remained there. Besides Koudekerke, Schouwen-Duiveland has many other drowned villages that were ravaged by floods (Uil, 2018). These villages sometimes became a ruin, but more often

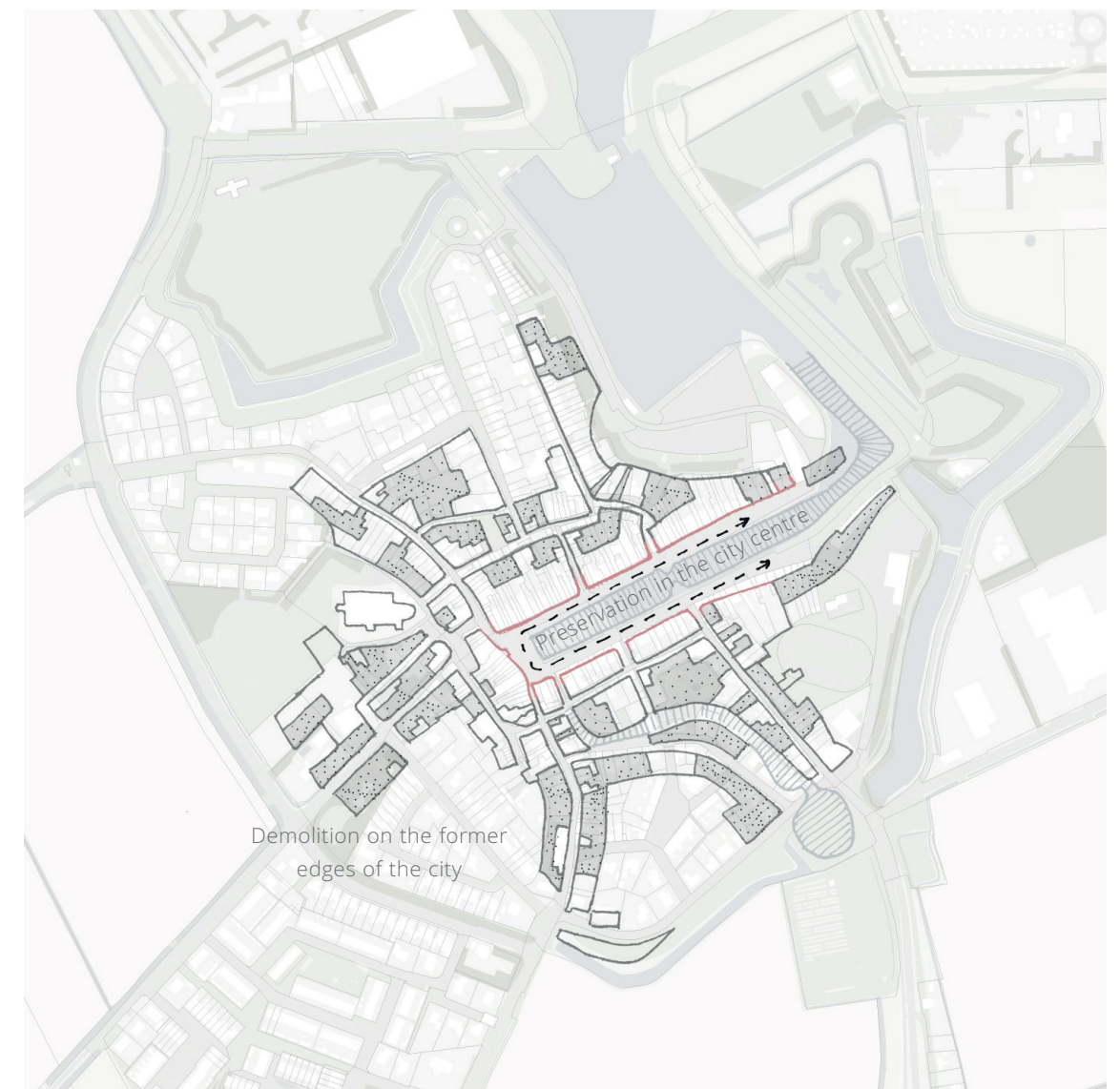


3.12. Westenschouwen (left) and Koudekerke (right) (Spilman, & Pronk, 1750)

Schouwen, Schouwen,
it will make you mourn
that you took my lady!
wealthy Schouwen will disappear
only the tower will remain!

Schouwen, Schouwen,
't sal je rouwen
dat je genomen eit m'n vrouwe!
't Rieke Schouwen zal vergaen,
alleen de toren zal bluen staen!

(Koman, 2008)



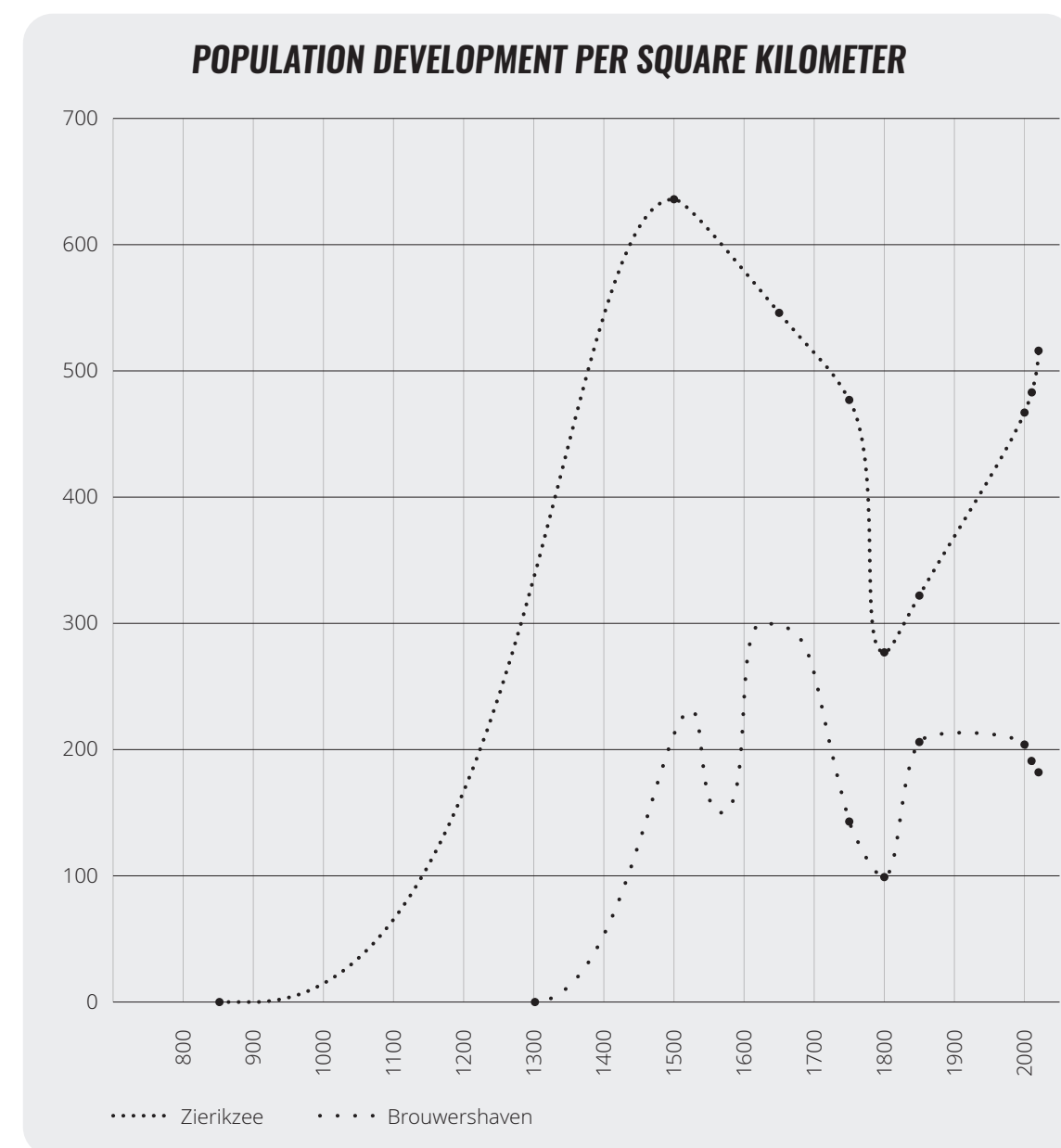
3.13. Disappeared buildings Brouwershaven from the mid-16th century to the beginning of the 19th century (Winter, 2016)

disappeared completely (Uil, 2018). Two opposite phenomena, silting up and flooding, therefore had major consequences for life on Schouwen-Duiveland.

Population development

Since this project is about urban shrinkage, the population development over the years has been charted. Figure 3.14 shows the

development of the number of inhabitants per square kilometre for Brouwershaven and Zierikzee. The creation of this graph has been verified in the appendix associated with chapter 3. It is striking that Zierikzee, but also Brouwershaven, had a large population peak around 1500 and have never returned to the same level (Liebregts, 2011). Brouwershaven has had two times of setbacks. Between



3.14. Population development (AlleCijfers, 2020bc; CBS & DANS, n.d.; Deerenberg et al., 2011; Gemeentearchief Schouwen-Duiveland, 2018 & 2019; Liebregts, 2011; Paping, 2014; Slager, n.d.; Stichting Zierikzee Monumentenstad, n.d.; Winter, 2016; Zeeuws Archief, 2018)

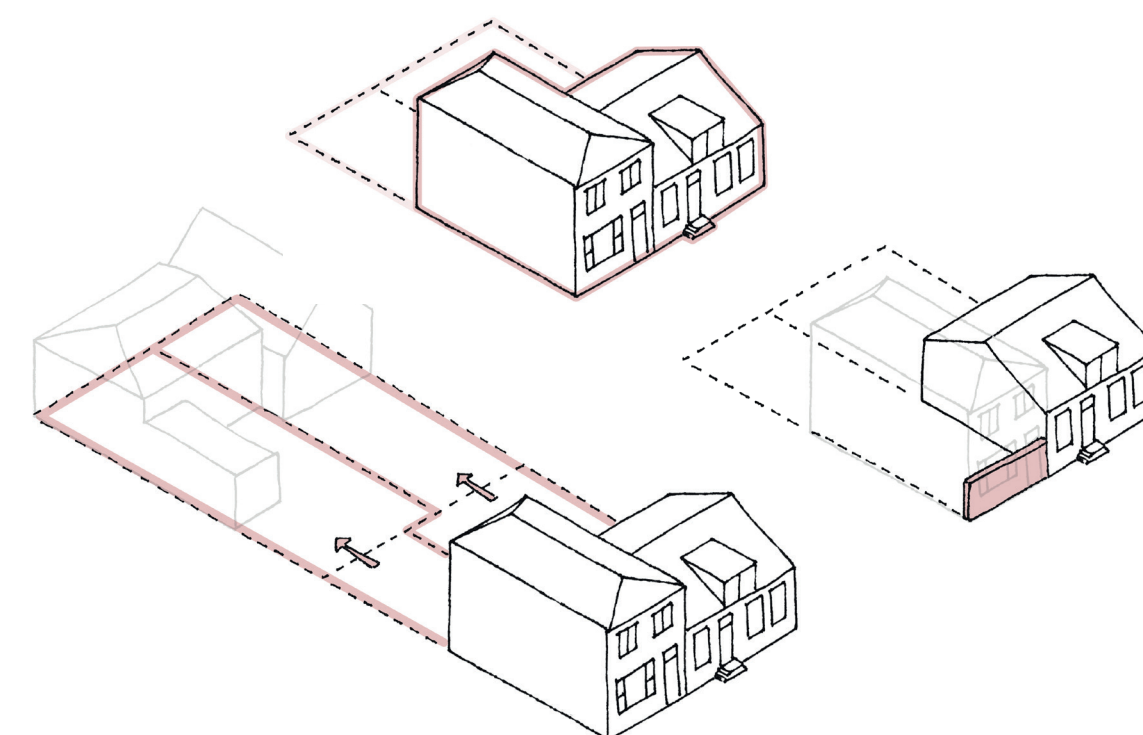
1545 and 1575 the city was hit by a fire (300 houses), by the plague (1400 victims) and the Eighty Years' War (300 soldiers) (Slager, n.d.). After that, however, in 1625 Brouwershaven was at the height of its heyday (Winter, 2016). Economic setbacks then caused a greater population decline.

Dealing with shrinkage in the past

Zierikzee and Brouwershaven have suffered from shrinkage before. Jan-Willem de Winter published his research results in 2016 on the morphological consequences of the shrinkage between the 16th and 19th centuries in cities in Zeeland, including Zierikzee and Brouwershaven. The interventions at the time in response to urban shrinkage were aimed at attracting as little attention as possible. Houses were joined, the harbour front functioning as the centre was preserved at all costs and in the event of demolition, the building line had to be guarded by placing a wall (Winter, 2016). It was also common for an entire street of buildings to be demolished and thus downgraded as

a back street (Winter, 2016). The vacant lots were then used as a garden by the houses on the front street (Winter, 2016) (figure 3.13 and 3.15). Major streets were not allowed to be demolished and it could therefore be said that, unlike other extreme events and survival attempts, shrinkage should not be noticeable and should have little effect on the (cultural) landscape.

From this it can be learned that priorities must be set where conservation issues should be addressed in the event of shrinkage and where other interventions are possible. In order to be able to set these priorities, it is therefore very important to keep a close eye on the values of a place. The following parts will therefore often contain a value judgment. In contrast to the approach to shrinkage in the past, the approach proposed here will not hide shrinkage, but proudly shows the opportunities for shrinkage. The interventions do not always have to be invisible and may well refer to a history of urban shrinkage.



3.15 Approach to shrinkage in the past

THE CURRENT SITUATION

This section outlines the challenges regarding shrinkage in Schouwen-Duiveland and nuances the complex phenomenon. In addition, priorities are set on the scale of Schouwen-Duiveland in response to the approach to shrinkage in history, since not everything can be preserved. Finally, notable contemporary aspects are discussed that can support the approach to shrinkage in order to determine the local qualities.

THE CURRENT STATE OF POPULATION DECLINE

Predicting population development in the event of shrinkage is difficult, but Kaagman (2019) expects that the population will decrease by 650 inhabitants in the next ten years and a further decrease of 1,000 inhabitants will follow from 2030 to 2040. The entire municipality will therefore have to deal with less support for facilities such as shops and schools. However, this does not say anything about the development of the required housing stock, since the general trend in the Netherlands is that households are becoming smaller and therefore a relatively large number of homes are needed. The province of Zeeland therefore expects a growth of 240 households for Schouwen-Duiveland until 2027 and Primos a growth of no less than 660 households for the whole of Schouwen-Duiveland (Gemeente Schouwen-Duiveland, 2020). Only from 2030 onwards is the number of households expected to level off and decrease (Modde, 2020). After this tide point, the consequences will be even stronger and there will be more often a surplus of houses. With this knowledge, choices can already be made in adjusting the housing stock.

As a result of this household growth in the coming years, it may therefore seem as if there is no question of urban shrinkage and therefore no acute approach is needed. It is therefore not without reason that the city council of Schouwen-Duiveland unanimously assumes a scenario with little or no urban shrinkage and calls it the most ‘rosy picture’ (Modde, 2020). However, in line with the thoughts of this project, there are

two misconceptions here. The first is that a scenario with urban shrinkage does not have to be less rosy than a scenario with growth and that new opportunities may even arise. The continuation of this project will try to demonstrate this. The second misconception concerns that, as mayor and aldermen also conclude, student numbers are declining as expected and the demographic shift is thus in full swing.

The demographic shift of departing young people and (relatively) more elderly people is a common phenomenon in urban shrinkage and is often experienced as a burden because they are no longer part of the working population and often need more care. However, a large part of the elderly is still mobile and active and also has money to spend, so that the (leisure) functions can continue to run. The needy part of the elderly also provides work in care. In this way the retired population retain a certain vitality in Schouwen-Duiveland and can therefore be regarded as local quality that can play a factor in the approach shrinkage.

Shrinkage in individual settlements

In addition to the nuance of the prediction of shrinkage and the difference between the development of the population and households, a refinement is now necessary for each place. As mentioned earlier, the municipality of Schouwen-Duiveland consists of many settlements. In 2018, the municipality of Schouwen-Duiveland made an estimate of the development of the number of households in those separate settlements from 2017



3.16. Inhabitant of Brouwershaven (13-10-2020)

| | Number of inhabitants | Number of households | Average household forecast 2017-2027 |
|---|-----------------------|----------------------|--------------------------------------|
| Towns | | | |
| Zierikzee, Burgh-Haamstede, Bruinisse | 3.000-10.000 | 1.000-5.500 | +190 |
| Medium-sized villages | | | |
| Nieuwerkerk, Oosterland, Renesse, Brouwershaven, Scharendijke, Kerkwerve | 1.000-3.000 | 400-1.000 | -30 |
| Small-sized villages | | | |
| Dreischor, Zonnemaire, Noordgouwe, Ouwerkerk, Sirjansland, Ellemeet, Noordwelle, Serooskerke | 300-1.000 | 100-400 | -2 |
| Hamlets | | | |
| Schuddebeurs, Burghsluis, Beldert, Brijdorpe, Moriaanshoofd, Zijpe, Kapelle, Elkerzee, Dijkhuisjes, Looperskapelle, Nieuwerkerk Schutje, Koudekerke | 0-300 | 0-100 | |
| Recreative settlement | | | |
| Nieuw-Haamstede, Den Osse, Westenschouwen | 0-400 | 0-150 | |

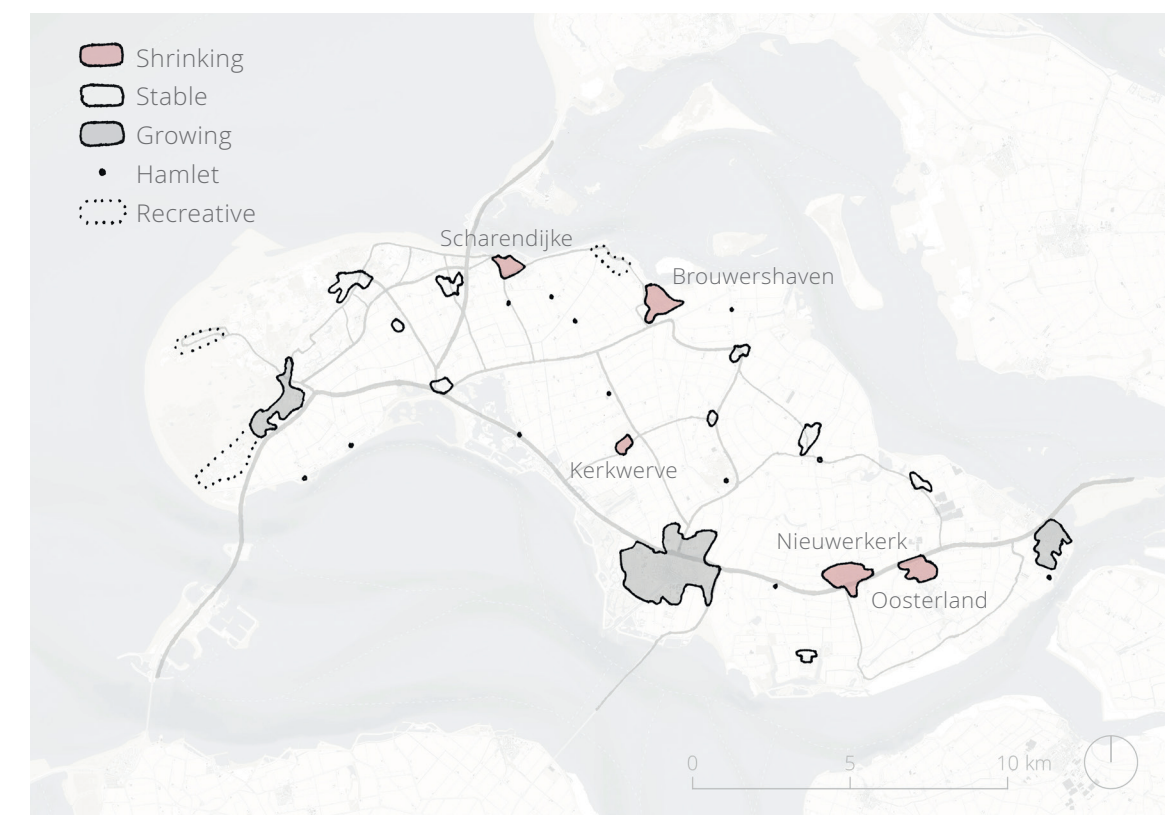
3.17. Household development of the types of settlements (Gemeente Schouwen-Duiveland, 2018)

to 2027. This prediction can be found in the appendix with additional information about chapter 3. There are five settlements, Scharendijke, Brouwershaven, Kerkwerve, Nieuwerkerk and Oosterland, which will show a decline in the near future. In the appendix the places are listed according to the number of inhabitants. The largest places such as Zierikzee show a growth in the number of households. Many people on Schouwen-Duiveland will move to these places because the desired facilities are available there. The smallest places such as Noordgouwe show a stabilisation in the number of households. Residents will consciously go and live here in peace without any facilities. The shrinking places are medium-sized villages that once had a reasonable number of facilities, but are now starting to disappear. In addition, Schouwen-Duiveland also has hamlets and recreational settlements. The assumption

is that hamlets behave the same as small-sized villages and are therefore stable at the moment. Recreational settlements are still very much in demand and have expanded exponentially over the past fifty years.

The five shrinking cores compared

In addition to the identity of each village, the occurrence of shrinkage also differs in each of the five villages discussed. From west to east (Scharendijke - Brouwershaven - Kerkwerve - Nieuwerkerk - Oosterland) the level of tourism decreases. The different villages have been severely affected in different ways in the past and this may therefore also lead to different approaches in the future. Kerkwerve and Nieuwerkerk had the biggest setback during the flood disaster of 1953, while Brouwershaven had the biggest setback during the Eighty Years' War and Oosterland during the Second World War.



3.18. Household development of the places until 2027 (Gemeente Schouwen-Duiveland, 2018)



3.19. Vacancy and decay in Zonnemaire (13-10-2020)

In Brouwershaven and Nieuwerkerk there are a number of cases of houses that are completely in disrepair and sometimes even have broken windows. These cases appear to be temporary due to the house being sold, renovated, or recent signs of life. The houses with disrepair in these villages are often in an otherwise well-maintained street. In Oosterland and also in Scharendijke, however, there are few totally dilapidated houses, but the whole of the street is bare and therefore less attractive. This already says something about the value of the individual settlements, which is important for the type of approach to shrinkage and will be discussed on the next page. It is certain with this approach that broken windows should be prevented, since the broken window theory states that visible signs of vandalism cause even more criminal, anti-social and disturbance of public order.

All in all, shrinkage is a nuanced phenomenon because it is almost impossible to make predictions, there is a difference between population shrinkage and household shrinkage, and the degree or absence of shrinkage differs per location.

VALUATION SETTLEMENTS

Delving into history has shown that it is necessary to prioritise when there is a shrinkage and therefore all settlement need to be valued. In the appendix with additional information to chapter 3, some tables with the basic characteristics and the presence of tangible heritage can be found. Based on this values are assigned to all individual settlements. The lowest valued settlements, indicated by a value of 3, have virtually no historical importance. The settlements with

a medium rating of 2 already have more of a historical importance. However, the highest rated settlements with 1 are really valuable with either a protected townscape, an unique structure such as a ring village or a very high percentage of pre-war buildings. It is remarkable that the highest-valued settlements cluster around the transition from the dunes to the polders on the one hand, and around the former waterway De Gouwe that divided the island into four on the other.

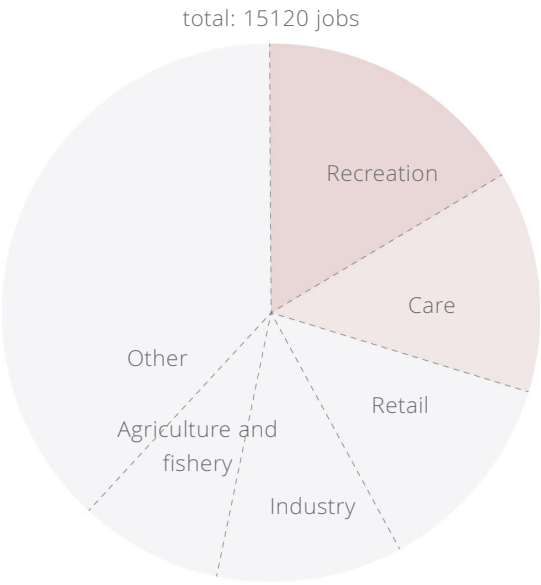


3.20. The prediction of shrinkage and the valuation of individual settlements

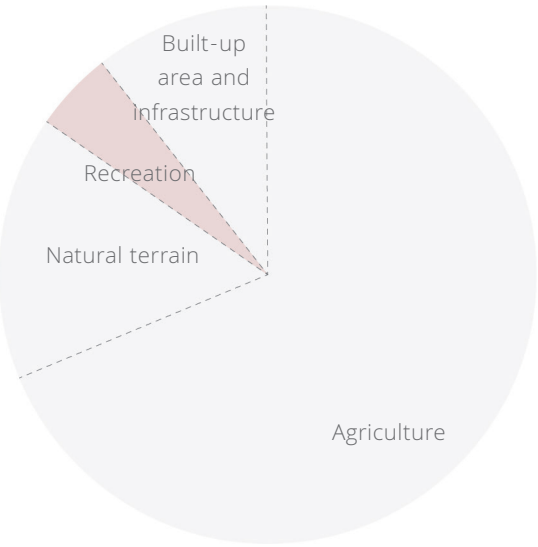
ECONOMIC POSITION

The economy of Zeeland has only a small share in that of the Netherlands. With a labour force of 21% of the Netherlands, they contribute only 1.7% to the national economy (ZB, 2018). The knowledge-intensive industry and thus the number of highly educated people are only slightly represented in this share (ZB, 2018). The outbound commuter traffic is, with 42,500 people, bigger than the incoming commuter traffic with 24,000 workers (ZB, 2018). Finally, due to the declining population, unemployment is low compared to the Dutch average, but there is a shortage of employed persons (ZB, 2018). Buck Consultants International (2011) concludes that it is not realistic to counteract

shrinkage in Schouwen-Duiveland and that as far as the economy is concerned, renewal and innovation in the core sectors should be stimulated. The figures below show that care provides many jobs probably due to the increasing target group of the elderly. But in addition, the recreational sector is also striking in terms of employment and use of space and will therefore be examined on the following pages for opportunities in the approach to shrinkage.



3.21. Jobs in Schouwen-Duiveland (Apperloo, 2011)

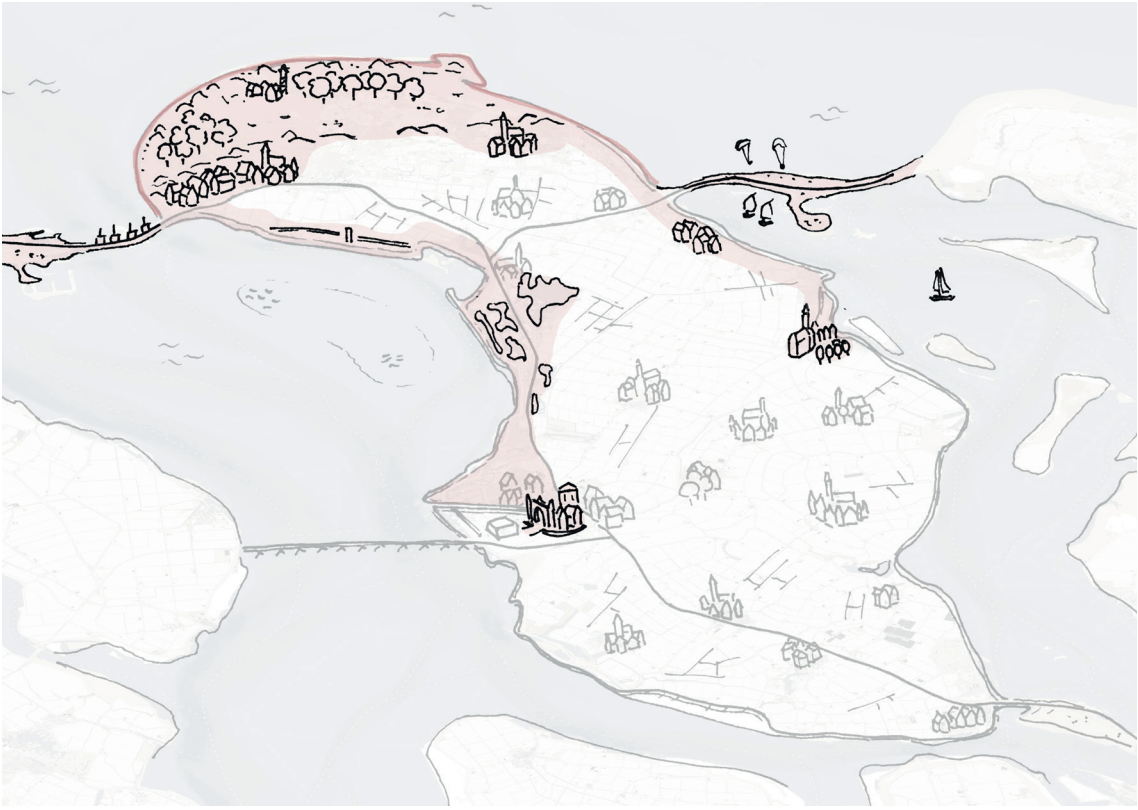


3.22. Use of space in Schouwen-Duiveland (Gemeente Op Maat: Schouwen-Duiveland, 2011)

RECREATION

Tourism on Schouwen-Duiveland is centred on the coast near the beach and the woods, so it can be said that tourists come for the peace and quiet and nature. However, the rest of the island is not inferior with some historical museums and a lot of heritage. As a core sector, recreation therefore has the potential to make a difference in the approach to shrinkage. In order to realise this, however, it is important that the recreational sector at Schouwen-Duiveland is future-proof and an

eye should therefore be kept on the trends. The current recreational sector does not fully meet these trends. The holiday parks and target group show little diversity. Almost every holiday park consists of a green, dense boundary with a ring road and winding waterways and a few central functions. The houses themselves are also all the same and have nothing to do with the common architecture on Schouwen-Duiveland. Because of the boundary separation, it can



3.23 Recreation in Schouwen-Duiveland isometric



3.24. Central square of Zierikzee (13-10-2021)

therefore also be said that the holiday parks do not respond to the surrounding context. These parks often attract the same kind of tourists, who are mainly interested in peace, privacy and the beach. The recreational sector must therefore be broadened regardless of

shrinkage, but could contribute if shrinkage occurs.

Spatial trends holiday parks

- Greater demand for small scale and luxury (Bungalowpark, 2021)
- Growth in popularity of larger holiday homes due to three-generation holidays (Bungalowpark, 2021)
- Nature, landscape, forests, beach are becoming more and more popular and should be able to be experienced (Braber, 2021)
- Sustainability (Braber, 2021; Bungalowpark, 2021)

Spatial trends holiday parks municipality of Schouwen-Duiveland

- Shorter stays (Kenniscentrum Recreatie, 2011)
- Demand for accommodation in spring, autumn and winter is increasing (Kenniscentrum Recreatie, 2011)

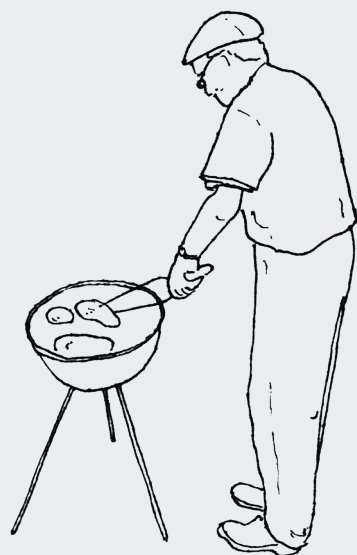


3.25. Typology of holiday parks



3.26. Ring road with vegetation and houses in holiday park (14-03-2021)

Tourists Den Osse



Leisure tourist

Go on vacation to escape everyday rush

Enjoy being together with the travel company

Preferably do as little as possible

Returning visitors

Activities: visit the beach, get an icecream, cycle or walk short laps, go to the playground or the pool, maintain the house, barbecue

Accommodation requirement: privacy

3.26. Identity description generalisation current tourists

POTENTIALS

In conclusion, three local qualities have come to light that can support the approach to shrinkage, namely heritage, the aging population and recreation. All elements have the potential to maintain or even improve the quality of life in the event of shrinkage. This is of great importance because shrinkage can lead to neglect and ultimately deterioration of the living environment due to the vacancy of homes and facilities and the resulting lack of investment in public space.

The existing heritage on Schouwen-Duiveland already offers great spatial qualities and can play a major role in the approach to shrinkage in the visual aspect. Vacancy and decay are then minimised or diverted to the background and Schouwen-Duiveland remains a pleasant place for people who still want to stay. The increasing number of elderly people and tourists has the potential to maintain a certain level of vibrancy of the street and keep the functions running.

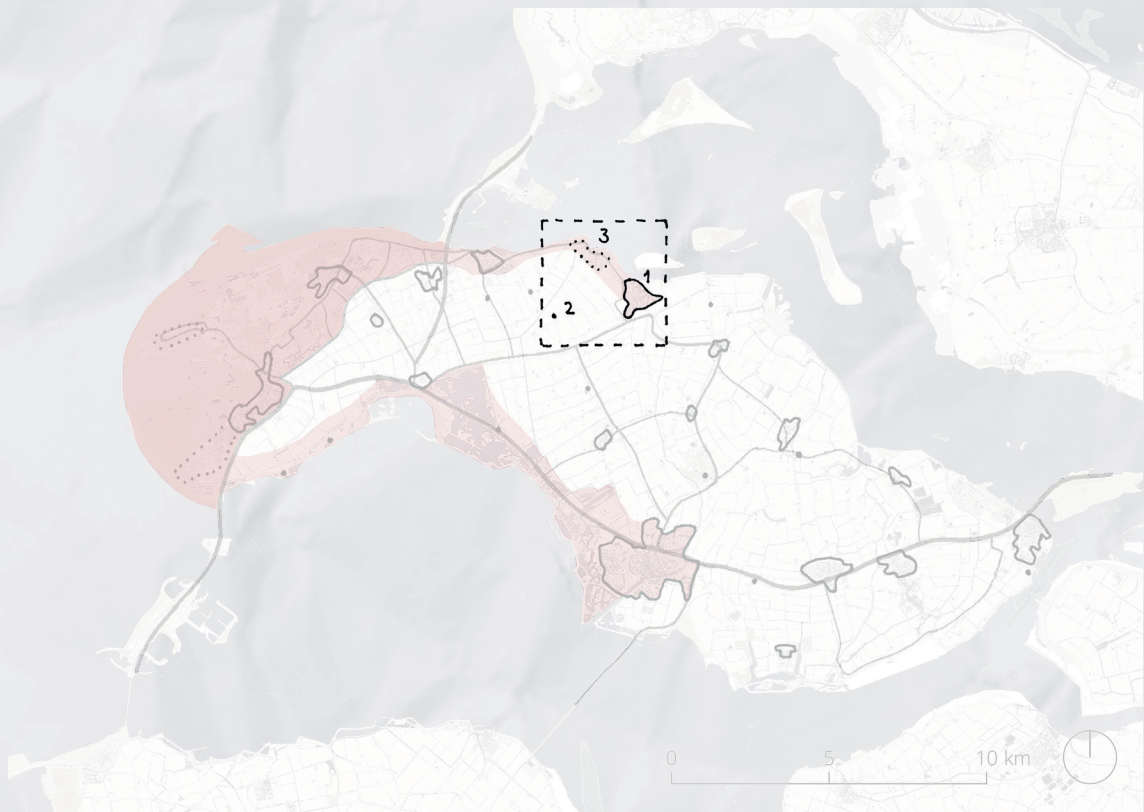
The local qualities can therefore be used in different ways and can therefore support each other well in order to create the most complete approach possible. In addition, the local qualities themselves can also be improved or expressed better, such as the diversification of recreation. To illustrate this, it is necessary to zoom in further on a part of Schouwen-Duiveland.



3.27. The potential of heritage, of the aging population and of recreation (Beeldbank Schouwen-Duiveland, 1960; own photo, 2020; Uil, 2018)

ZOOMING IN

Zooming in is necessary to make the interventions tangible. Because the valuation of the settlement and the occurrence of shrinkage have shown that there are large differences between the different places, a mix of three settlements will be considered. This illustrative triangle serves as an example for the whole of Schouwen-Duiveland and both the places themselves and the relationships between them will therefore be studied.



3.28. Diverse location of the crucial triangle in a semi-recreative area

INTRODUCTION OF THE TRIANGLE

The illustrative triangle consists of the settlements of Brijdorpe, Brouwershaven and Den Osse and is located in the north of Schouwen-Duiveland on the Grevelingen. This triangle is mainly chosen because they have different expected population development. Brouwershaven will shrink in the coming decade, Brijdorpe will remain stable for a while and then shrink and Den Osse has no forecast of shrinkage. In addition, each settlement has different characteristics in terms of size and appearance of the local qualities as can be found in the table. Finally, they all have a different rating and the declining Brouwershaven is rated highest, while the low-rated Den Osse shows few signs of shrinkage. In addition the crucial triangle is located in an average degree of recreational area and is therefore all in all representative of the whole of Schouwen-Duiveland.

Timeline of the crucial triangle

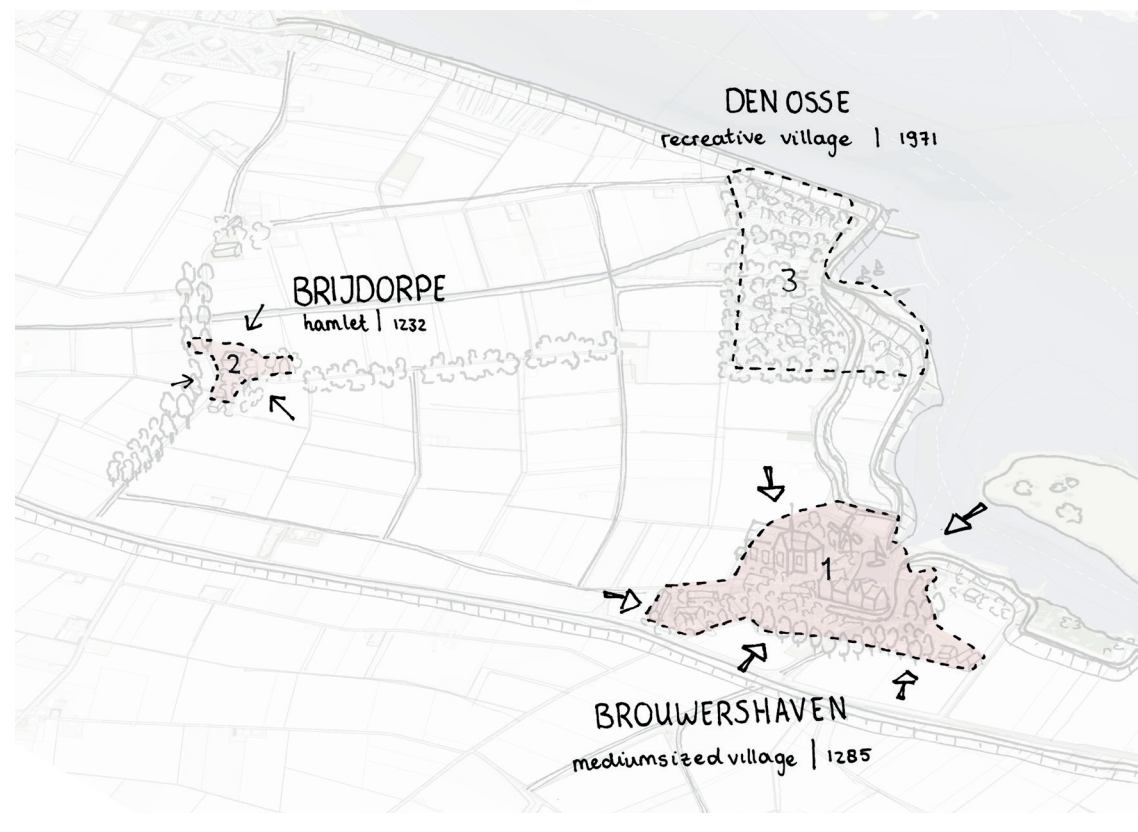
Since it was stated earlier that heritage is mainly expressed on the local scale and that it is also one of the local qualities, here is a brief

overview of the events in the triangle.

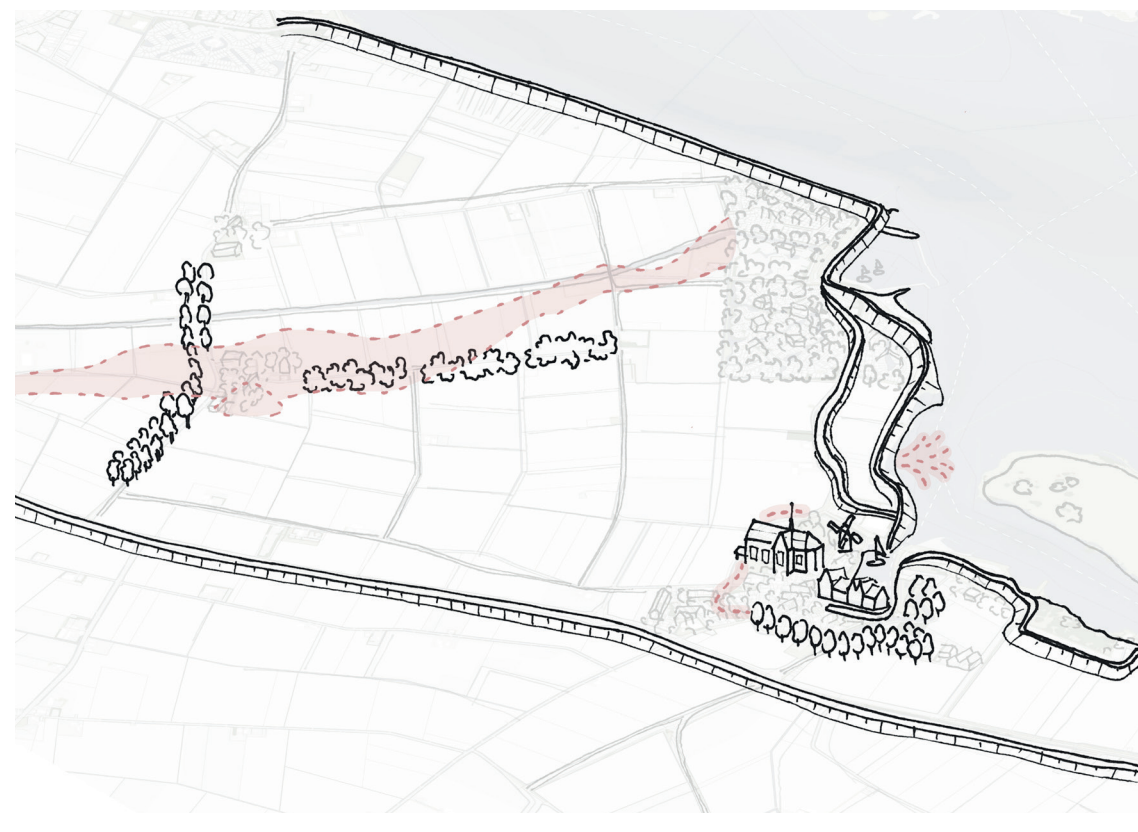
- 1232
First mention of Brijdorpe
- 1285
Brouwershaven foundation as new harbour for Brijdorpe; Grote or Sint Nicolaaskerk was built quickly afterwards
- 1244
Brouwershaven flourishing with herring fishery
- 1403
Brouwershaven got city rights
- Around 1465
Much prosperity; extension of the Brouwershaven church; trade: fishing, catching shellfish, wine, beer, wood, stone, wool, flax, turnips, beets, madder, salt
- 1545
Brouwershaven fire destroyed 300 houses; bad herring catches; plague claimed 1,400 victims
- 1575
Inundation Brijdorpe; only part of the population returned, ruin Brijdorpe church; capture Brouwershaven and fire

| | Brijdorpe | Brouwershaven | Den Osse |
|--------------------|------------------|----------------------|-------------------|
| Typology | Hamlet | Middle-sized village | Town |
| History | Long and dynamic | Long and dynamic | Short |
| Household forecast | Stable | Shrinkage | - |
| Recreation | - | Excursion | Overnight tourism |
| Value judgement | 2 | 1 | 3 |

3.29. Diverse location of the crucial triangle in a semi-recreative area



3.30. Basic characteristics crucial triangle isometric



3.31. (Disappeared) heritage in the crucial triangle isometric



3.32. Walking route over the dyke from Brouwershaven to Den Osse (14-03-2021)

- 1590
Brijdorpe church demolished; demolition uses the Brouwershaven walls
- 1599
Town hall Brouwershaven 1625: highlight Brouwershaven: 600 houses; Herring catch Brouwershaven and guild system flourished
- 1682
Brouwershaven flood disaster: destroyed bridges, gates and canals silted up
- 1753
Brouwershaven had 306 houses and 1000 inhabitants; main trade then: agriculture, co-shipping and fishing
- 1840
Swing bridge over lock removed, city gates demolished, dilapidated condition, fortress abolished
- 1872
Prosperity of Brouwershaven declines again; sugar beets instead of madder
- 1888
Brijdorpe town hall no longer in use
- 1957
Brouwershaven floodgate completed; hedgehog landscape
- 1971
Brouwersdam; as a result: shrimp fishery disappeared, camping, construction of Den Osse marina
- 2020
Brouwershaven rolling bridge back again

04 COMPOSING THE SETTLEMENTS

In this chapter, the three settlements that emerged in the previous chapter will be studied in more detail. Each settlement will be briefly described and valued. Subsequently, a suitable approach will be drawn up for each settlement. For each of the three settlements, poems have been written according to the Japanese poetic form, the tanka, in order to capture the identity of the past, present and future. The poems originally written in Dutch try to provide insight into an elusive concept, just like the legend of the mermaid from Westenschouwen.

RELIANCE OF THE SETTLEMENTS

Brouwershaven will be the most comprehensive approach as urban shrinkage will occur in the near future and has also been highly valued. A start will therefore be made with Brouwershaven, followed by Den Osse and Brijdorpe. The last two are currently showing no signs of urban shrinkage and because anything can still happen here, scenarios are used in these cases.

The facilities of Brouwershaven compared
Since it is suspected that Brouwershaven has

more facilities than similar villages through recreation, a comparison has been drawn up in figure 4.1. The villages all have about 1200 inhabitants and are located solitary in the landscape, but do not have the same level of tourism as Brouwershaven. The table shows that Brouwershaven has an average number of general services, but differences come to light in the recreational supply of shops and other recreational purposes. This shows that the proximity of Den Osse is crucial for the functions in Brouwershaven. Since a large



4.1. Dependency of the settlements

part of these functions should be retained, Brouwershaven is therefore dependent on Den Osse. The functions in Brijdorpe are also currently derived from the presence of Brouwershaven and Den Osse. In addition, Den Osse and Brijdorpe are also dependent on the available facilities in Brouwershaven and there will therefore be many daily trips.

Utilisation of the target groups

The local qualities of recreation and the aging population are two target groups that should play a part in the approach to shrinkage and should therefore be better known. As chapter 3 showed, recreation must be diversified to be future-proof. In addition to the leisure tourist, another type of tourist must therefore be added. Due to the presence of all the heritage in Schouwen-Duiveland, the addition of a cultural tourist is ideal.

| | General services | | | | | Shops | | | | Recreation | | | | |
|-----------------------------------|------------------|----------------|--------|------------------|-------------------|--------------|-------------|-------------|--------------|------------------|------------|----------------|--------|---------------------|
| | Nursery | Primary school | Church | Community centre | General practices | Fire brigade | Hairdresser | Supermarket | Food related | Non-food related | Restaurant | Overnight stay | Museum | Sporting facilities |
| Noordhoek 1045 inhabitants | 1 | 1 | 1 | 1 | - | - | 1 | - | - | - | - | - | - | 3 |
| Marrum 1185 inhabitants | - | 2 | 1 | 1 | - | - | 3 | 1 | - | 3 | 2 | 1 | - | 4 |
| Brouwershaven 1190 inhabitants | 1 | 1 | 3 | 1 | 1 | 1 | 1 | 1 | 2 | 5 | 8 | 4 | 1 | 7 |
| Oldehove 1315 inhabitants | - | 1 | 3 | 2 | 1 | 1 | 2 | 1 | 1 | - | 1 | - | - | 3 |

4.2. Comparison of similar villages Brouwershaven (AlleCijfers, 2020; Brouwershaven, n.d.; Openingstijden, 2021; Plaatsengids, 2020)

Possible tourists Brouwershaven



Cultural tourist

Go on vacation to be in a different environment

Enjoy the aesthetic qualities of both the urban and natural landscape

Like to undertake activities in the area

One-time visitors

Activities: visit the beach, get an icecream, cycle or walk big laps, visit a museum or tourist attraction, eat local food, shop

Accommodation requirement: small scale , aesthetics, identity

4.3. New target group of tourists

Elderly



Retirees (both active and in need of care)

Escape the hustle and bustle of the city with most amenities no longer needed

Enjoy the serenity qualities of the natural landscape

Have daily needs such as a trip to the supermarket, doctor or hairdresser, but also like to explore nature by bike or on foot

Permanent inhabitants

Accommodation requirement: not too big and easily accessible

4.4. Growing target group of elderly

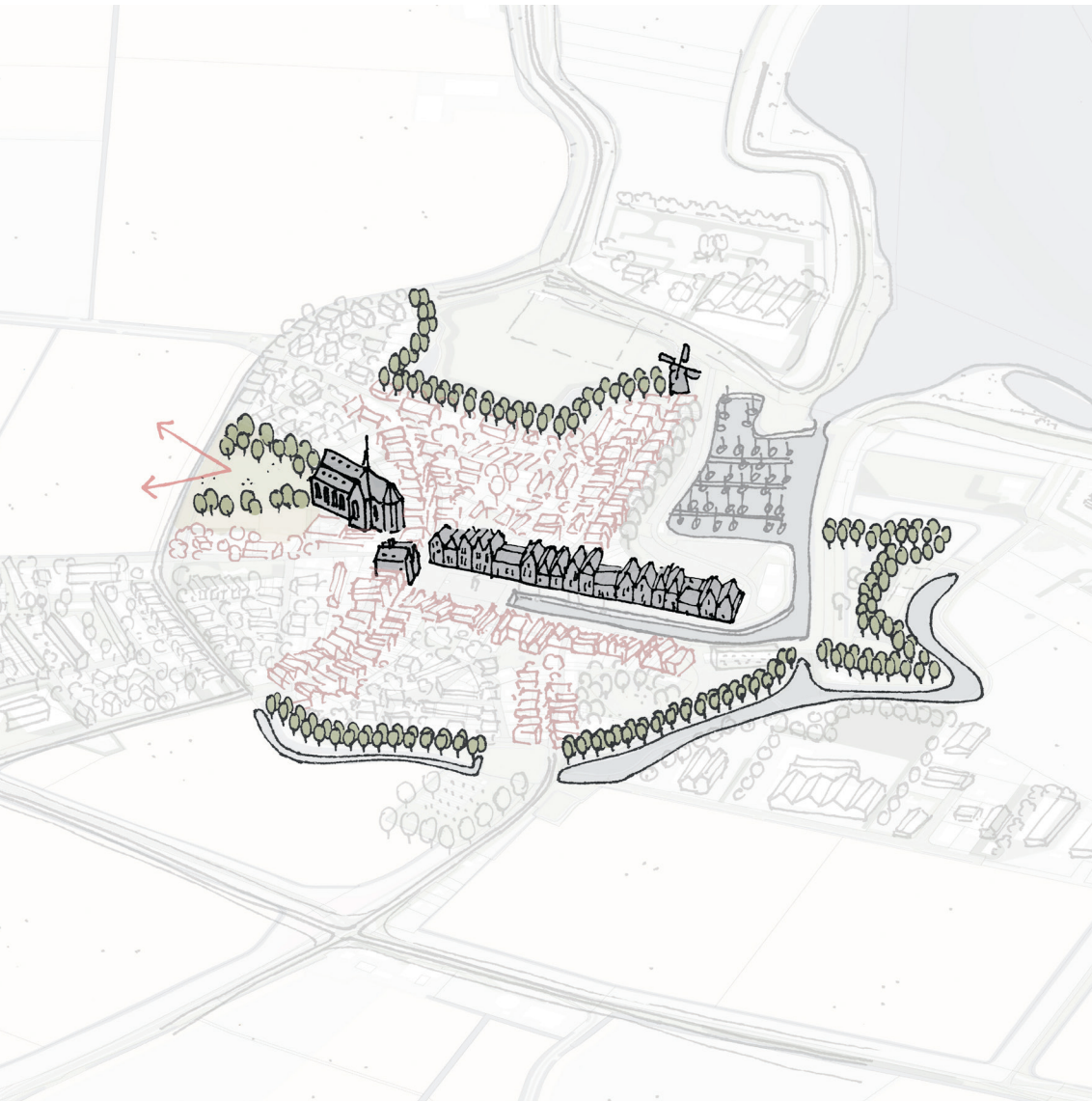
BROUWERSHAVEN

| | |
|-----------------------|-------|
| Number of inhabitants | 1.400 |
| Number of houses | 670 |
| First mention | 1285 |

Brouwershaven, although it has official city rights, is considered a medium-sized village in this project due to the small number of inhabitants. Obviously the settlement has prospered, but as chapter 3 showed, it also has faced setbacks such as shrinkage. This history is still clearly recognizable in the Brouwershaven and the area within the fortifications has therefore been designated as a protected townscape (‘beschermd dorpsgezicht’). Brouwershaven is to a certain extent visited by tourists, but is mainly home to residents and therefore has facilities for both target groups. Tourists mainly benefit from the presence of restaurants, a bicycle rental and a museum, while the inhabitants benefit much more from the presence of a supermarket, a school and a general practitioner. The expectation is that the Brouwershaven will already have to deal with a decrease in the number of households in the coming decade.

VALUATION

The Brouwershaven is considered very valuable and is therefore designated as a protected townscape for a reason. First of all, the contours of the fortifications are still visible and are accentuated in some places by a footpath with a double row of trees and sometimes even a canal. Likewise, the central square with its iconic facades is a



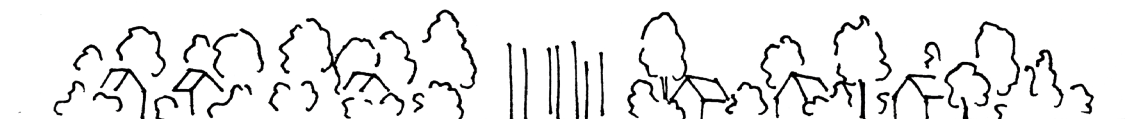
4.5. Valuation isometric Brouwershaven



4.6. Brouwershaven (14-03-2021)

defining feature of Brouwershaven. Many of the facilities are located in this square, but in the summer the place really comes alive during the ten-week market. Brouwershaven once started here with the harbour inlet and now serves as a marina. A larger marina behind the iconic facades fulfils the needs of the water holidaymaker. Behind the head of the harbour, where the acclaimed town hall is also located, is the Grote or Sint Nicolaaskerk. This proportionally large church for this size of village is located directly on the open landscape and therefore forms a unique image. In addition to all these valuable structures,

there are also many pre-war buildings within the fortifications that make Brouwershaven as a whole a very attractive village.

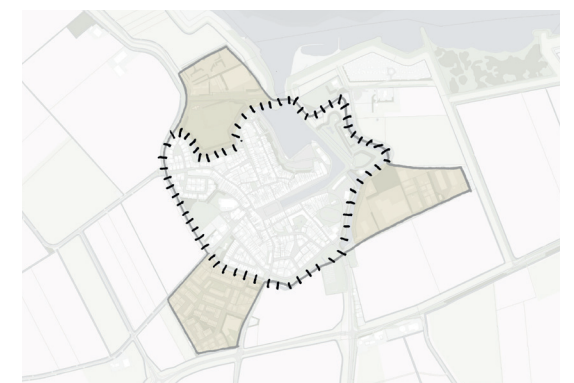
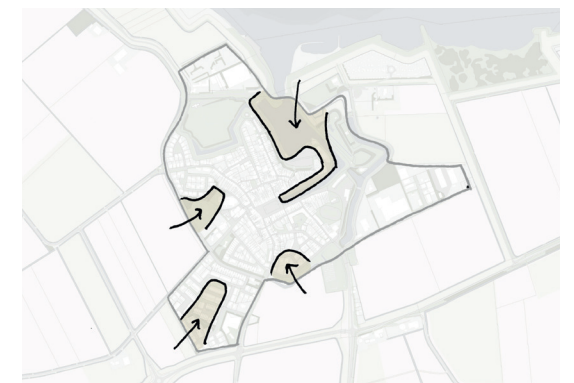


OVERVIEW APPROACH

Brouwershaven can cope with shrinkage and the accompanying vacancy in three possible ways.

The most easily applicable and obvious way would be to solve vacancy where it takes place. This results in point-by-point interventions in which vacant buildings are either reoccupied, are given a different (temporary) function or are demolished and replaced by a pocket park. However, this approach will eventually lead to large gaps in the urban fabrics, resulting in a lack of cohesion. Therefore, this approach is not widely adopted.

The other possible ways in which Brouwershaven can deal with vacancy are therefore more about the larger structure and try to contribute to the quality of life. The second way is to enlarge the green-blue inlets that Brouwershaven now has near the church and the harbour. By allowing more greenery in the paved village, the quality for the remaining inhabitants is increased. The last and third way is to complete the fortifications again and apply demolition in the post-war expansion areas that disrupt the shape of the fortifications. Making this historic structure visible again has a high aesthetic value and therefore increases the quality of Brouwershaven for both residents and recreational purposes. By combining these last two ways, shrinkage is expressed in a spatial sense, but it also brings positive developments that strengthen the village.



4.7. The three ways of dealing with shrinkage and the associated vacancy: punctual interventions, enlarging the green inlets, completing the fortifications.

The phasing in a decision tree

As described in the first chapters, shrinkage is difficult to predict and therefore no timeframes can be established. It is, however, possible to distinguish different phases of the degree of shrinkage. A decision tree has therefore been drawn up in which three phases have been incorporated. Due to the difficult predictability, it is not known to what extent shrinkage will occur and therefore a far-reaching future scenario is illustrated here that is highly unlikely. However, as stated in the aim of the project, this can inspire and shape the current approach. Hence shrinkage is not imposed and it can be concluded at any time in the decision tree that no further shrinkage will occur. Every phase and every moment in it can therefore be an end position.

Brouwershaven can be divided into different clusters. As the valuation showed, the pre-war buildings are iconic and therefore have a high priority. The expansion districts and sub-areas with functions such as businesses are of less importance.



4.8. Different clusters of Brouwershaven

Phase 1

The first phase will focus on providing a strong foundation for a village that will experience shrinkage. By prioritising and improving the most iconic and central places, it is less disturbing that the back streets are subject to decay. This phase can therefore already take place and is also not harmful if it turns out that there will be no urban shrinkage in the future.



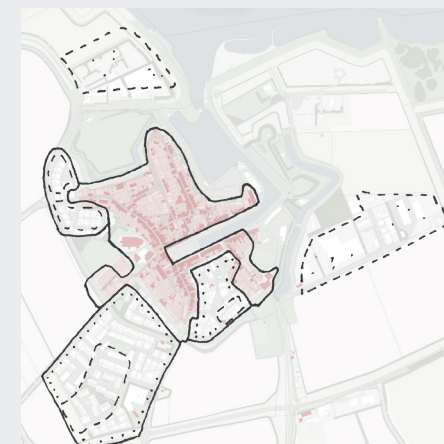
Short term interventions

- Reinforce the central square
- Upgrade the fortifications

No shrinkage

Phase 2

In the second phase, vacancy becomes an ever-increasing challenge and requires direction. The highly valued pre-war buildings must be preserved by looking for a new spatial expression on a small-scale and reactive basis, such as converting the buildings into holiday homes or accommodation for the elderly. Demolition can, however, take place in the lower valued expansion districts, as long as the quality of life of the other residents is improved.



Shrinkage in pre-war cluster

- Looking for a new use
- Shrinkage in expansion or amenities cluster: (partial) demolition
- Prospect of shrinkage as a rapid development: temporary greenery
 - Prospect of shrinkage as a slow development: more permanent greenery and upgrade of the remaining homes

No further shrinkage

Phase 3

In the last and third phase, many to all of the expansion districts have been demolished and the share of holiday homes and elderly accommodations has also risen sharply. This creates space and therefore opportunities to strengthen original historical structures.



Interventions when only the central cluster remains

- Complete the fortifications with holiday homes (or elderly accommodations)

No further shrinkage



4.9. Isometric Brouwershaven: phase 1



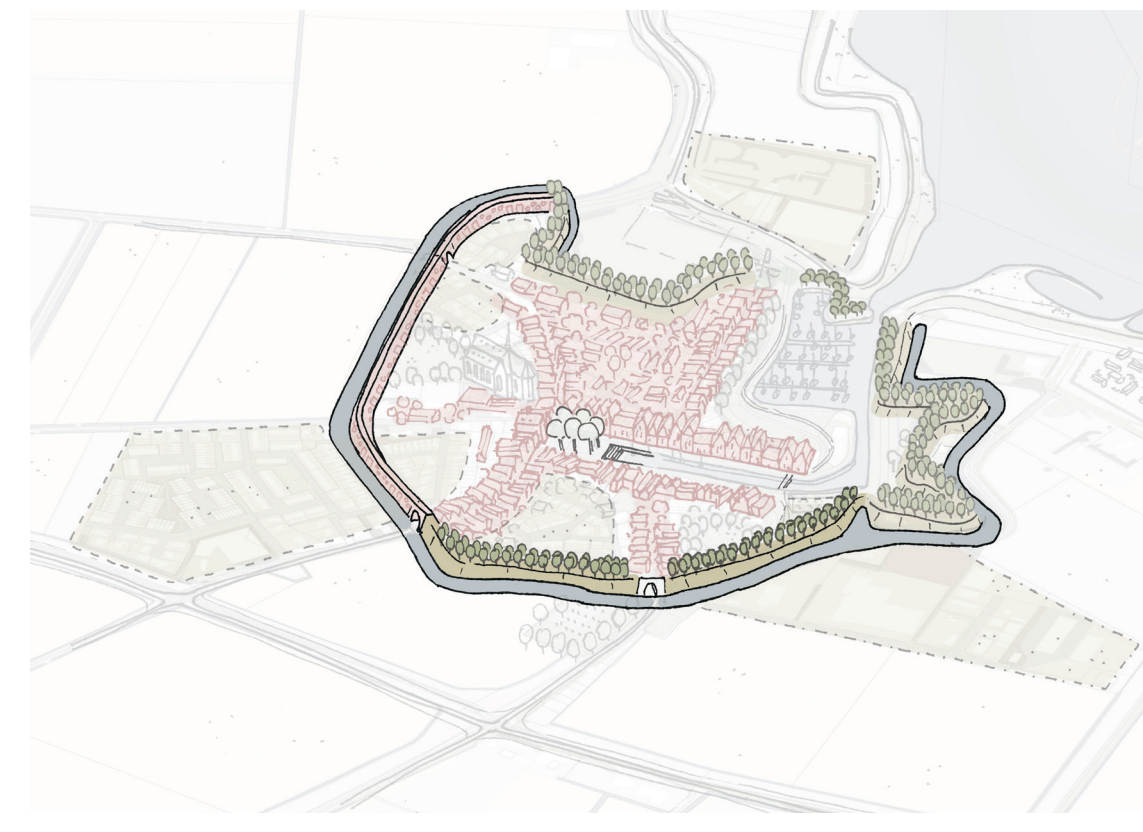
4.10. Isometric Brouwershaven: phase 2

Spatial expression of the phasing

The accompanying isometrics show what this phasing could look like for Brouwershaven. In order to create a solid foundation, in phase 1 the central square around the original harbour will be reinforced and minor interventions will be made to unite the fortifications. In this first phase, which could already be realised at the moment, the local quality of heritage is mainly utilised. In the second phase, the qualities of the aging population and the recreation sector will be added if vacancy starts to play a role. In the pre-war cluster there is either an incentive to find new (temporary) residents or to change function to a holiday home or home for the elderly. Demolition may take place in the other clusters if it adds qualities for the other inhabitants. The proposal is therefore to enlarge the green inlets in this phase and thus to focus on the second way of dealing with vacancy as described above. In the third phase, in which shrinkage takes on extreme

forms, the third way can then be utilised, in which Brouwershaven is completely located within the fortifications. A larger part of the buildings will then be filled with elderly people and/or holidaymakers and the fortifications can be restored by repairing the wall with trees on the one hand and adding a wall with recreational homes on the other. In this way the valuable Brouwershaven remains lively and will not be lost.

In the sequel, the themes that emerge in the phases will be discussed separately, from the design of the central square, to the approach in the event of vacancy, to the restoration of the fortifications.



4.11. Isometric Brouwershaven: phase 3

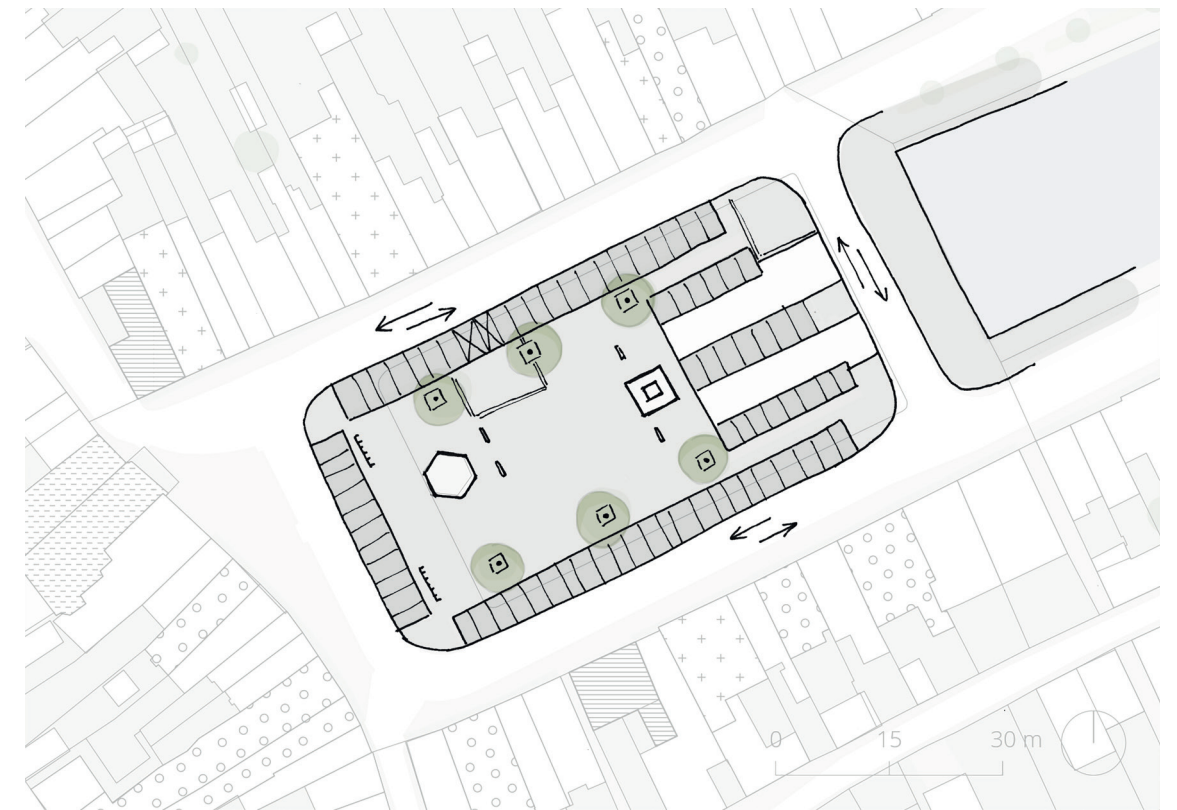
ELABORATION DESIGN CENTRAL SQUARE

Firstly, the challenge and the design of the central square in Brouwershaven will be explained. Brouwershaven has its origins around this square because of the harbour canal, which is still largely present. A brief development of this square and Brouwershaven can be found in the appendix. Due to this long history, a large part of the buildings on the square and the harbour are monumental and otherwise of heritage value. However, the current layout of the square distorts the image of these unique facades

and the attractiveness of Brouwershaven is therefore not fully utilised. Parked cars, a prominent materialisation of the square and low-hanging trees nowadays block the view, while years ago the square was much more minimalistic and all attention was focused on the facades. In addition to the relationship with the buildings, the relationship with the historic harbour is also missing and the square can therefore be improved in these two areas.



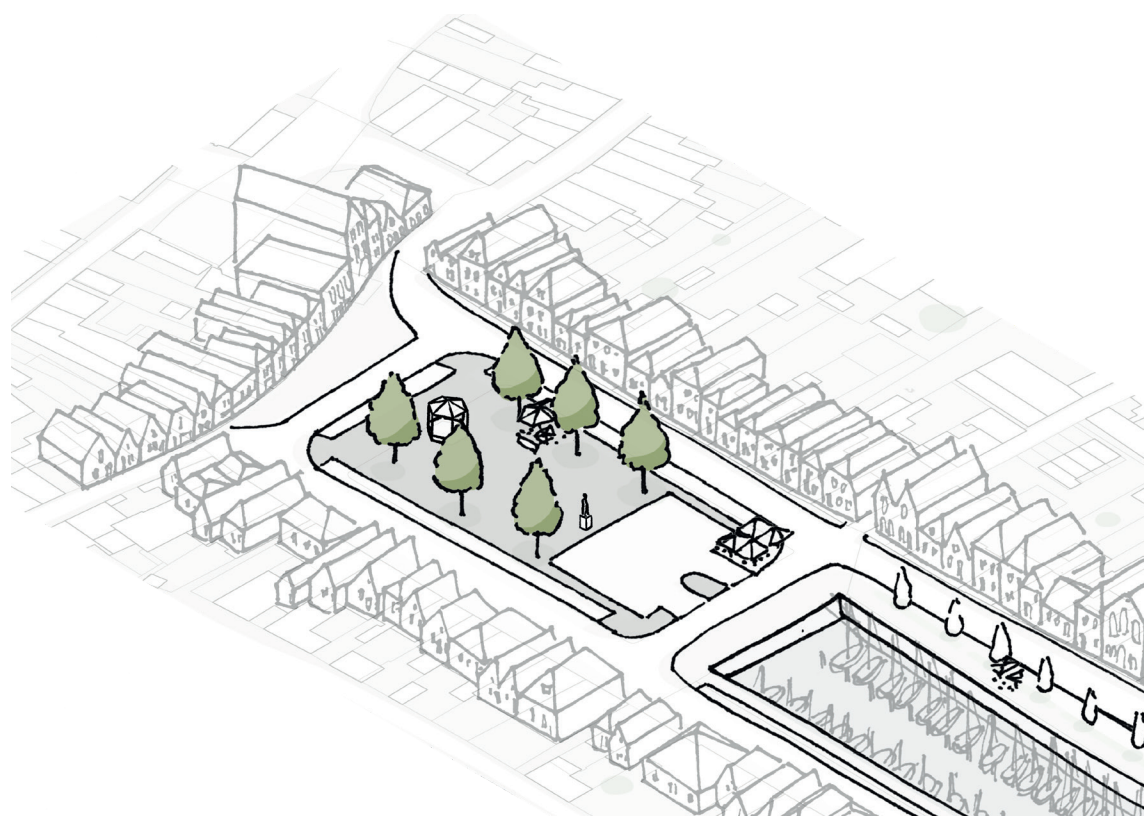
4.12. Current situation central square Brouwershaven



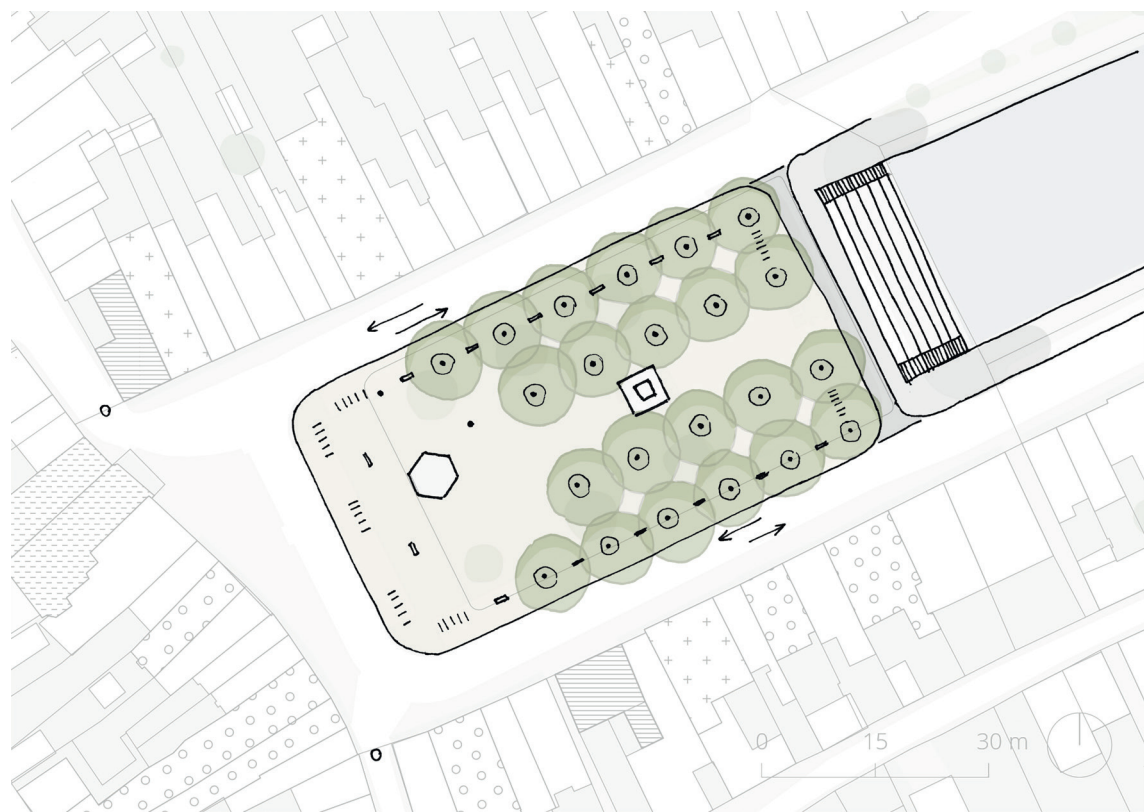
4.13. Current situation central square 1:1000



4.14. Past situation central square Brouwershaven (KVR, 1920 at the latest)



4.15. Isometric current situation central square and harbour Brouwershaven



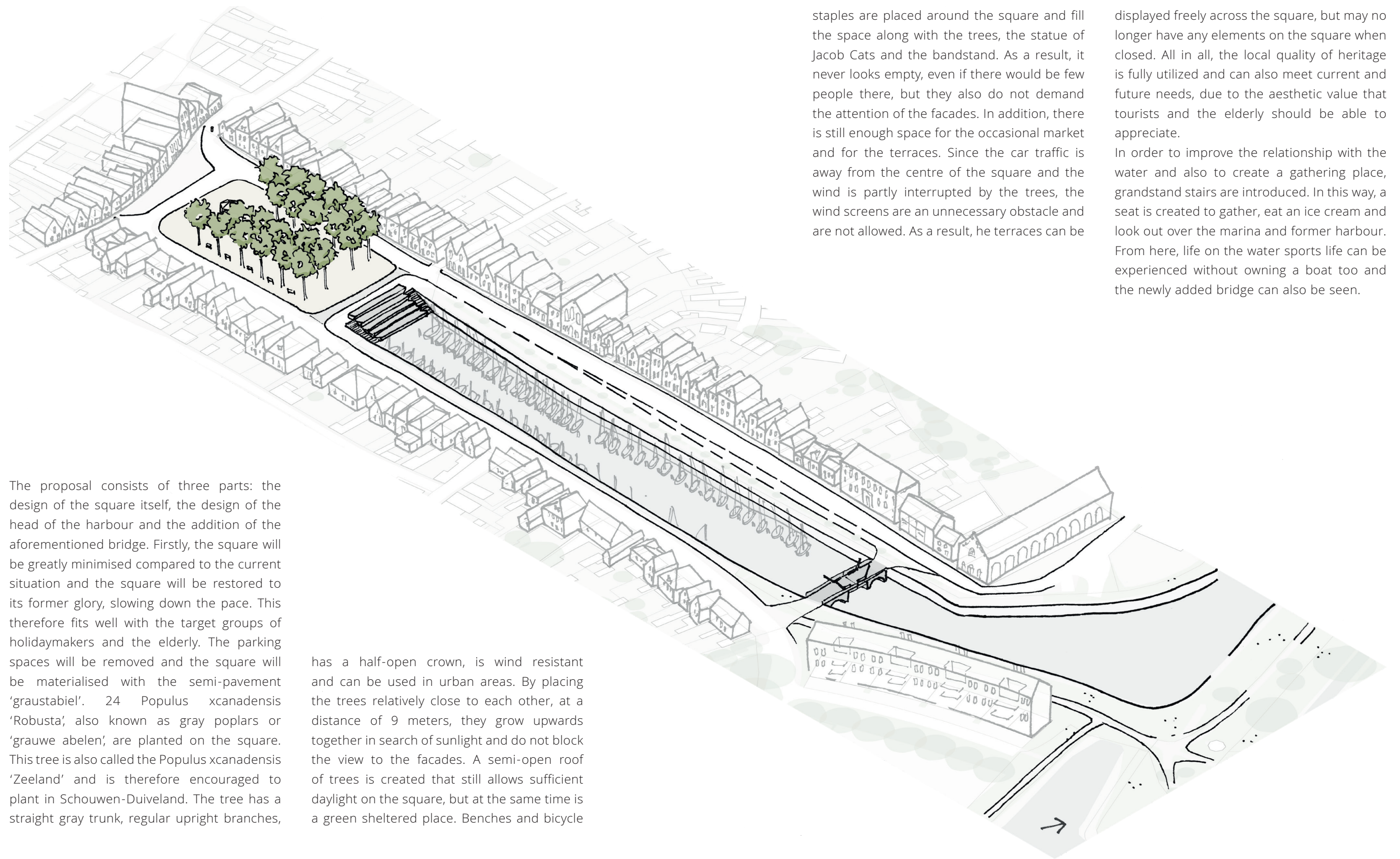
4.16. Proposed design central square 1:1000

The municipality of Schouwen-Duiveland also recognizes that the square could be improved, as landscape agency Felixx recently made a final design for the square. This design can be found in the appendix and although it is an improvement compared to the current situation, the square could be used even better. There are, although fewer, still parked cars in the square, the materialisation is still distracting with astonishing lines and the terraces are not located on the square, which means that there is no liveliness. That is why in my design all cars are removed from the streetscape and the parking spaces are

moved to surrounding existing and new fields. A bridge will also be built at the beginning of the harbour which improves the traffic flow, keeps cars away from the square, but also relates to history as there used to be a bridge centuries ago (see appendix). The centre of Brouwershaven has hardly any public green space and if there is, avenue trees are used to emphasize the fortifications. The current plane trees are far from each other and are pruned small, so that they are separate from each other and there is no green space to stay in the centre of Brouwershaven. The proposed design will therefore intervene in this regard.



4.17. Impact design central square on the rest of the village



The proposal consists of three parts: the design of the square itself, the design of the head of the harbour and the addition of the aforementioned bridge. Firstly, the square will be greatly minimised compared to the current situation and the square will be restored to its former glory, slowing down the pace. This therefore fits well with the target groups of holidaymakers and the elderly. The parking spaces will be removed and the square will be materialised with the semi-pavement 'graustabiel'. 24 *Populus xcanadensis* 'Robusta', also known as gray poplars or 'grauwe abelen', are planted on the square. This tree is also called the *Populus xcanadensis* 'Zeeland' and is therefore encouraged to plant in Schouwen-Duiveland. The tree has a straight gray trunk, regular upright branches,

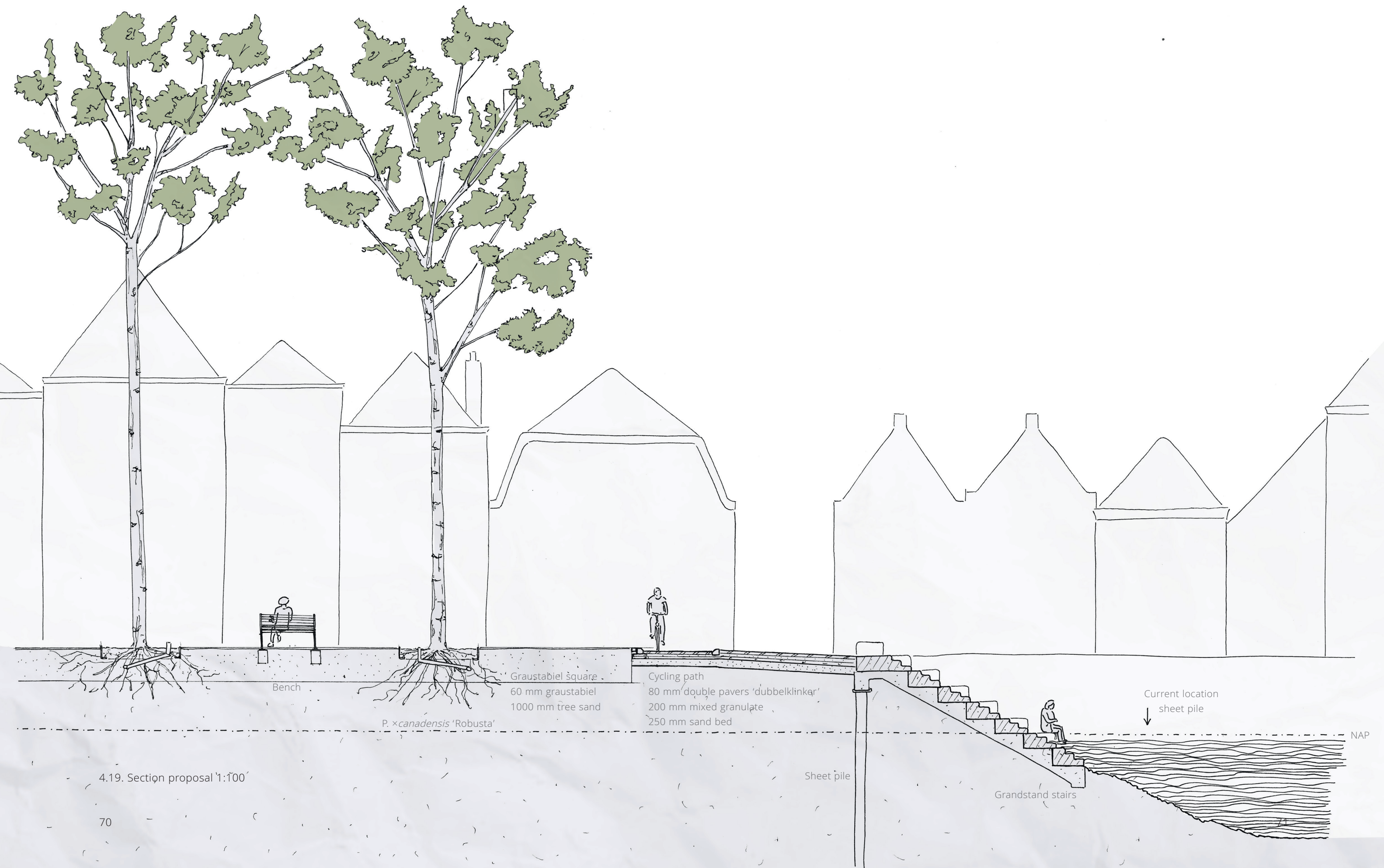
has a half-open crown, is wind resistant and can be used in urban areas. By placing the trees relatively close to each other, at a distance of 9 meters, they grow upwards together in search of sunlight and do not block the view to the facades. A semi-open roof of trees is created that still allows sufficient daylight on the square, but at the same time is a green sheltered place. Benches and bicycle

staples are placed around the square and fill the space along with the trees, the statue of Jacob Cats and the bandstand. As a result, it never looks empty, even if there would be few people there, but they also do not demand the attention of the facades. In addition, there is still enough space for the occasional market and for the terraces. Since the car traffic is away from the centre of the square and the wind is partly interrupted by the trees, the wind screens are an unnecessary obstacle and are not allowed. As a result, the terraces can be

displayed freely across the square, but may no longer have any elements on the square when closed. All in all, the local quality of heritage is fully utilized and can also meet current and future needs, due to the aesthetic value that tourists and the elderly should be able to appreciate.

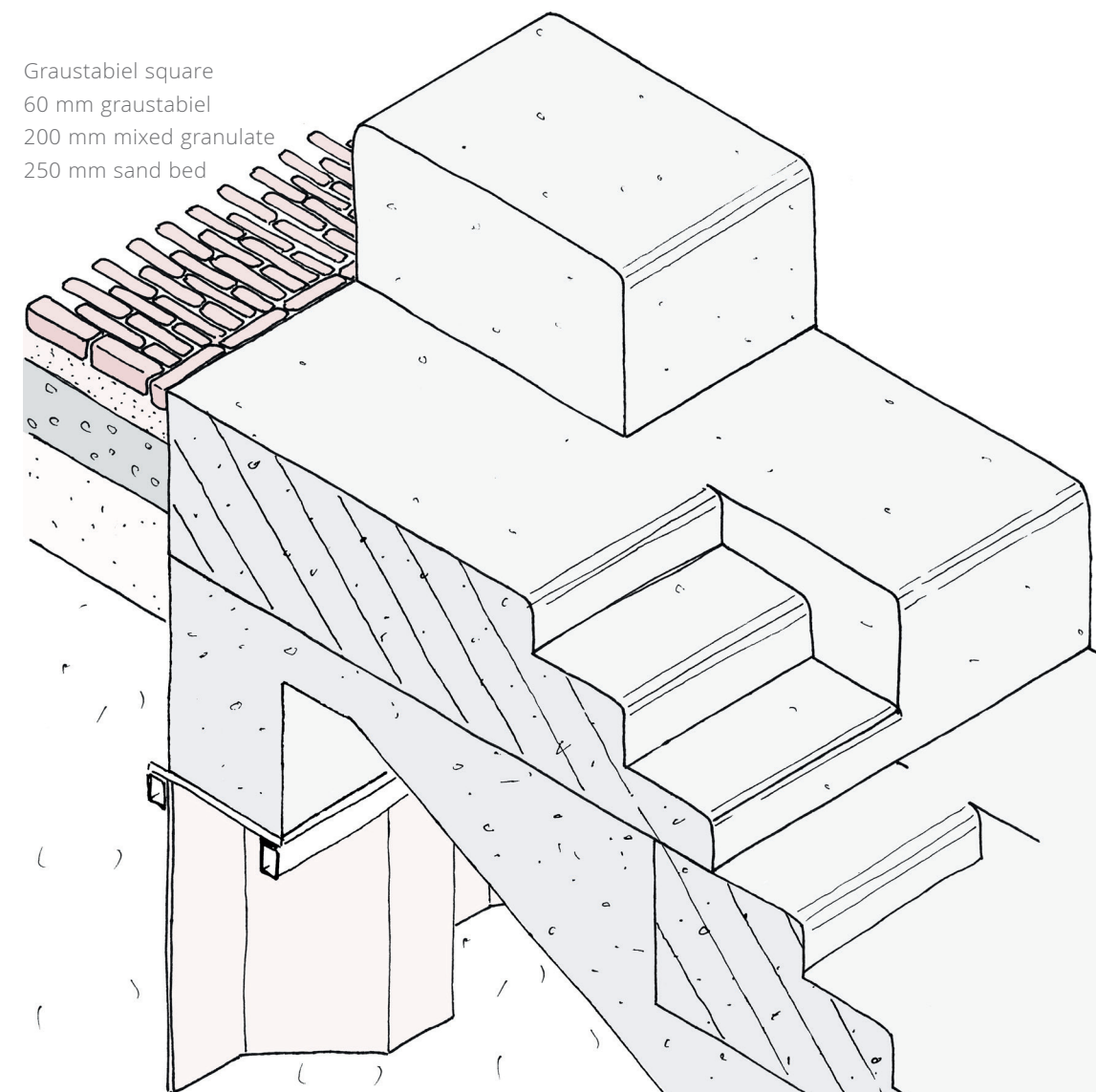
In order to improve the relationship with the water and also to create a gathering place, grandstand stairs are introduced. In this way, a seat is created to gather, eat an ice cream and look out over the marina and former harbour. From here, life on the water sports life can be experienced without owning a boat too and the newly added bridge can also be seen.

4.18. Isometric design proposal central square and harbour Brouwershaven



Detailing

The detailing of the market is as minimal as possible. The square itself is covered with semi-paved surfaces and the trees stand in a minimalist tree wreath, which allows oxygen to the roots and prevents roots on the road surface. In this way, the square also remains easily accessible for wheelchairs, which is particularly important for the elderly target group. The square is also still easily accessible for the summer market due to the solid surface.



4.20. 3D detail grandstand stairs 1:20

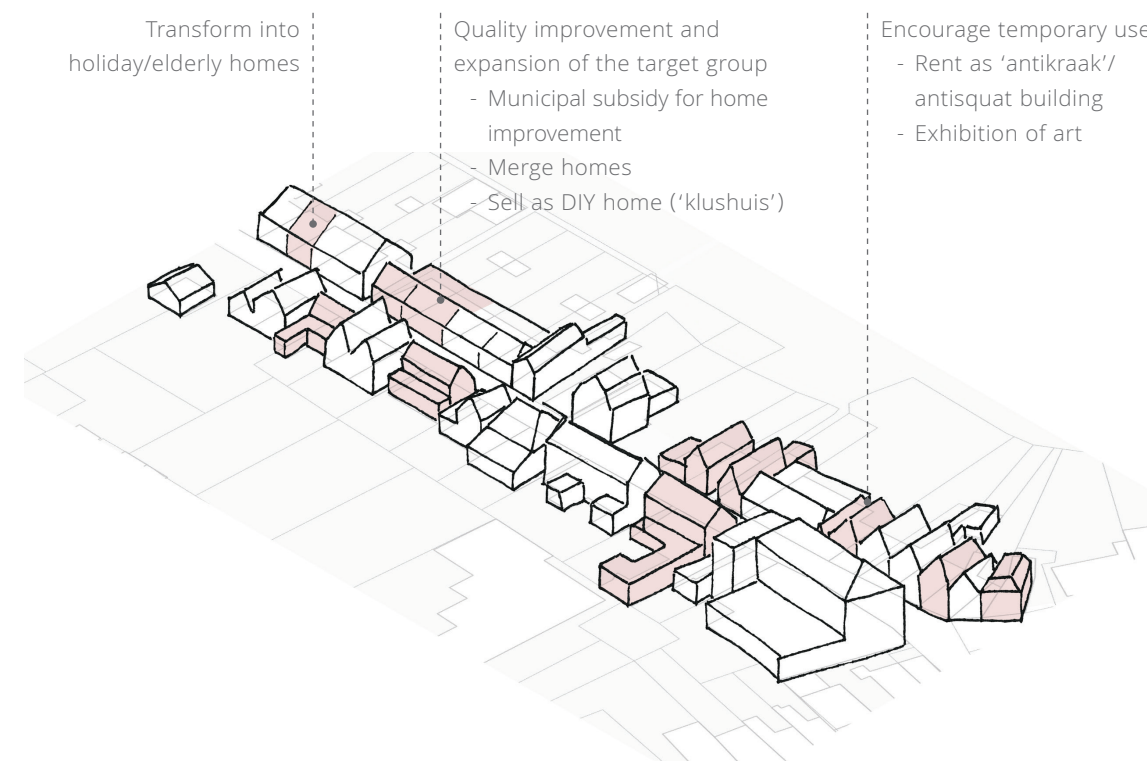


4.21. Section proposal 1:100 market



ELABORATION VACANCY STRATEGY

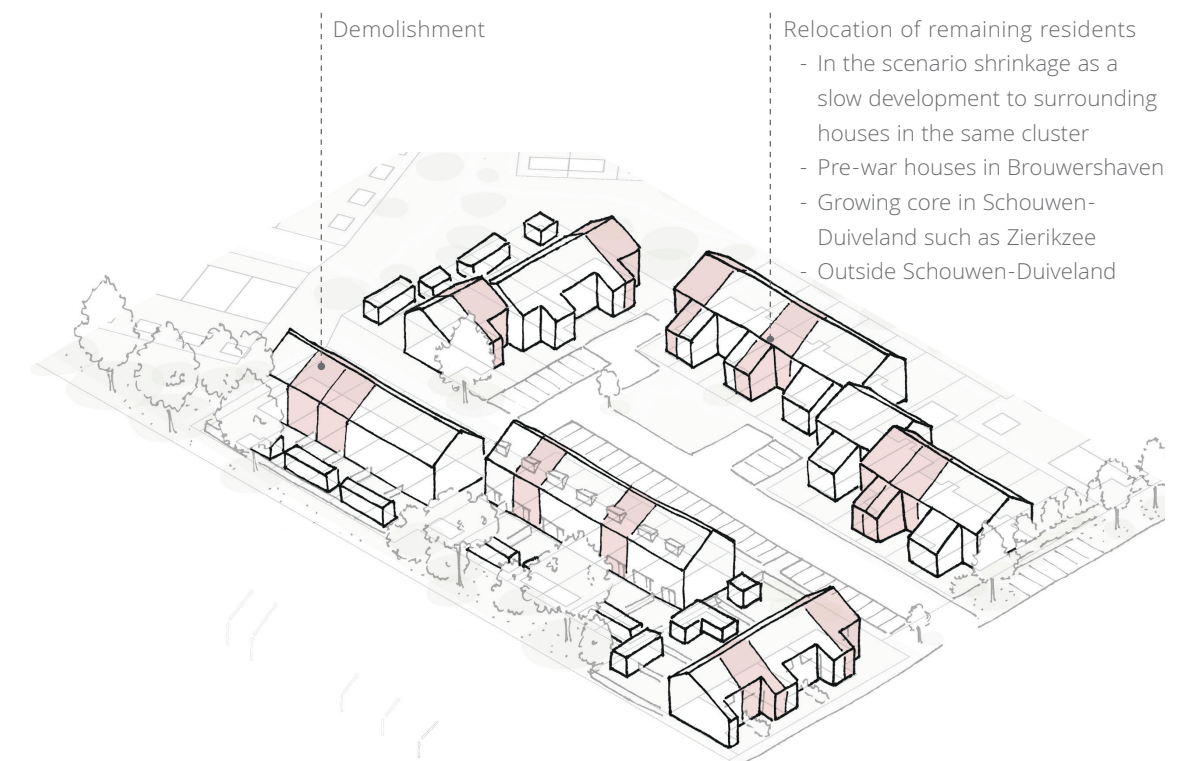
In the second phase, vacancy becomes an ever-increasing challenge and requires direction. In this phase, low-valued houses can be demolished. However, the highly valued, in this case the pre-war buildings, should be preserved. These two different areas therefore require a different approach. In the case of very extreme shrinkage, all post-war extensions would be demolished, while all pre-war buildings would be inhabited by elderly people in need and/or used by tourists as holiday homes.



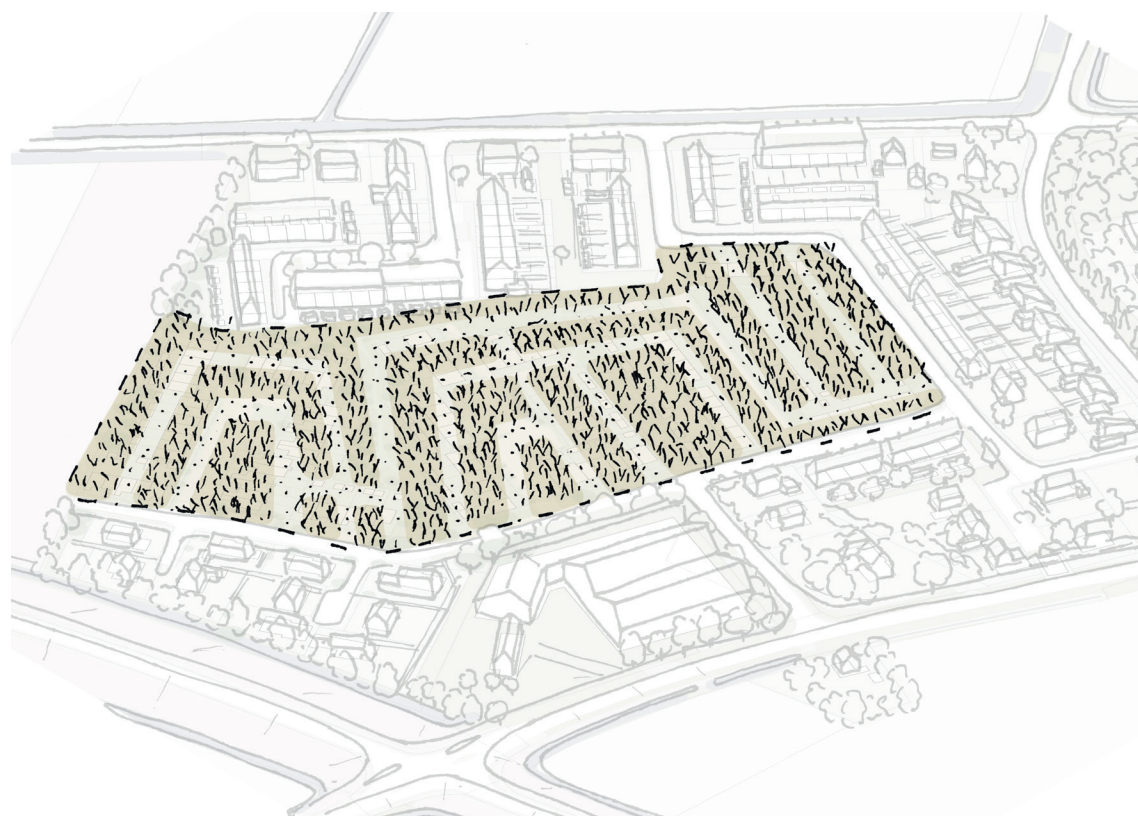
4.22. Approach in the pre-war neighbourhood



4.23. Decay in Brouwershaven (13-10-2020)



4.23. Approach in expansions of Brouwershaven

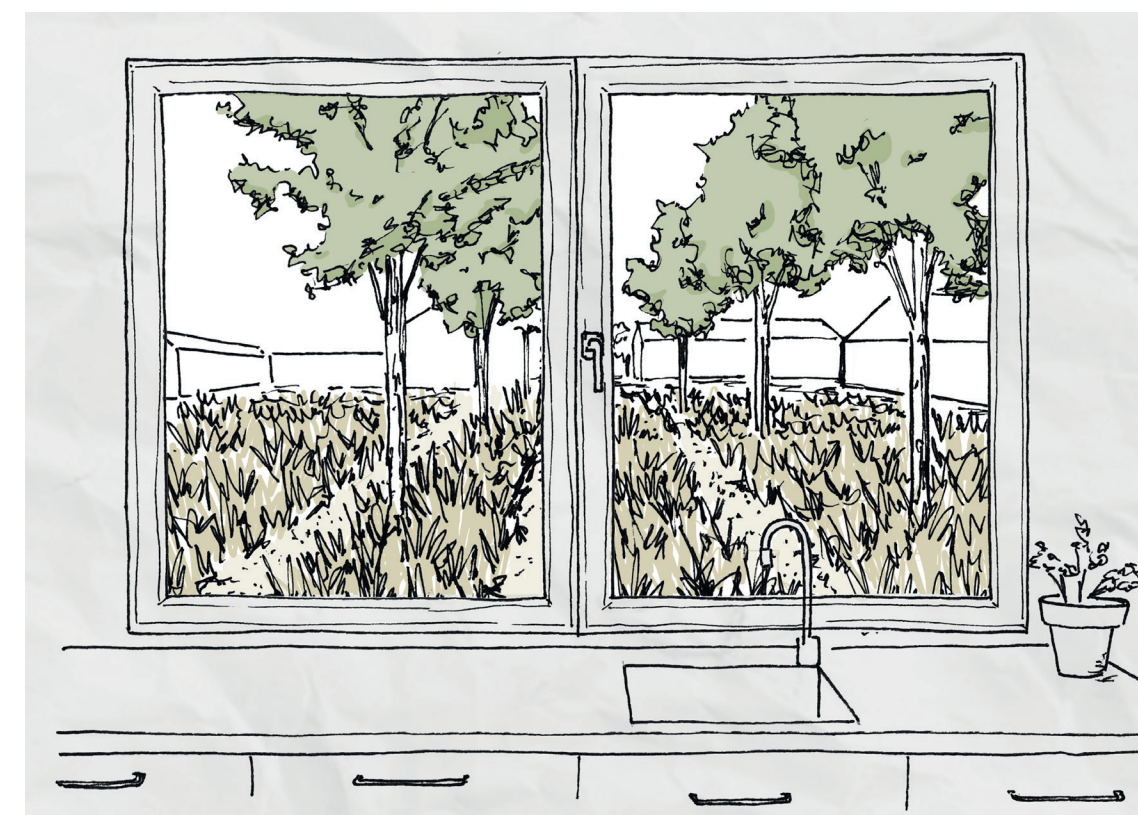


4.24. Short-term design for demolished area



4.25. Long-term design for demolished area

The expansion districts, which have less value, are divided into clusters. Some of these clusters have the ability to create a green inlet like discussed earlier. If a high number of houses are vacant in such an expansion area, the living environment for the other residents will deteriorate sharply. It is therefore possible to proceed to demolition and a transfer of the other residents. In this way, such an expansion district has two ways to fill in the vacant space. If shrinkage turns out to be a rapid development, a cheaper and temporary green use, with for example mowed grass at different heights, can already offer more quality to the remaining inhabitants. If shrinkage however turns out to be a more slow development, more can be invested with a more park-like design. By investing in renovation of the remaining houses, the view from the kitchen window improves considerably.



4.26. Quality improvement of the view of the remaining homes

If vacancy occurs in highly valued pre-war district, the focus should first be on adding quality so that more target groups are attracted. And this brings me to the third phase of Brouwershaven in which the local qualities of the aging population and recreation are being used.

If the recreational sector is utilised, a new kind of tourist will be added to the palette. The tourist from Den Osse is generally a returning tourist to his second home and therefore does not do much in the area. However, the target group to be reached here is a culture-appreciating tourist, who likes to stay in a unique house and see the surroundings. In general, therefore, few changes are needed in the accommodation and also in the available

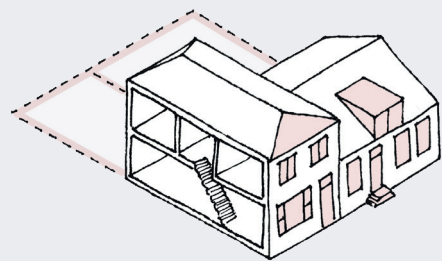
facilities since the tourists from Den Osse are already keeping the standard high.

As far as the elderly are concerned, few changes are necessary because facilities such as a local supermarket and general practitioner are already present. However, it should then be ensured that these are also preserved. In terms of accommodation, more adjustments may be needed to make the houses wheelchair accessible.

Recreation

Preferences for the accommodation

- Identity / uniqueness
- Outdoor space
- Doesn't have to be too big



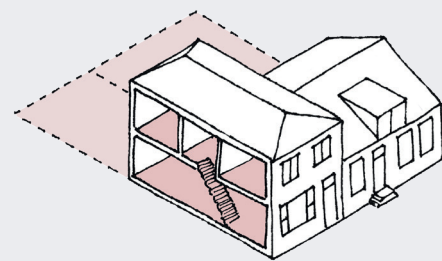
Preferences for facilities

- Bicycle rental
- Catering (restaurants, cafes, take-away options, ice cream tent)
- Playgrounds
- **Reception**

The aging community

Preferences for the accommodation

- **Wheelchair accessible**
- Garden

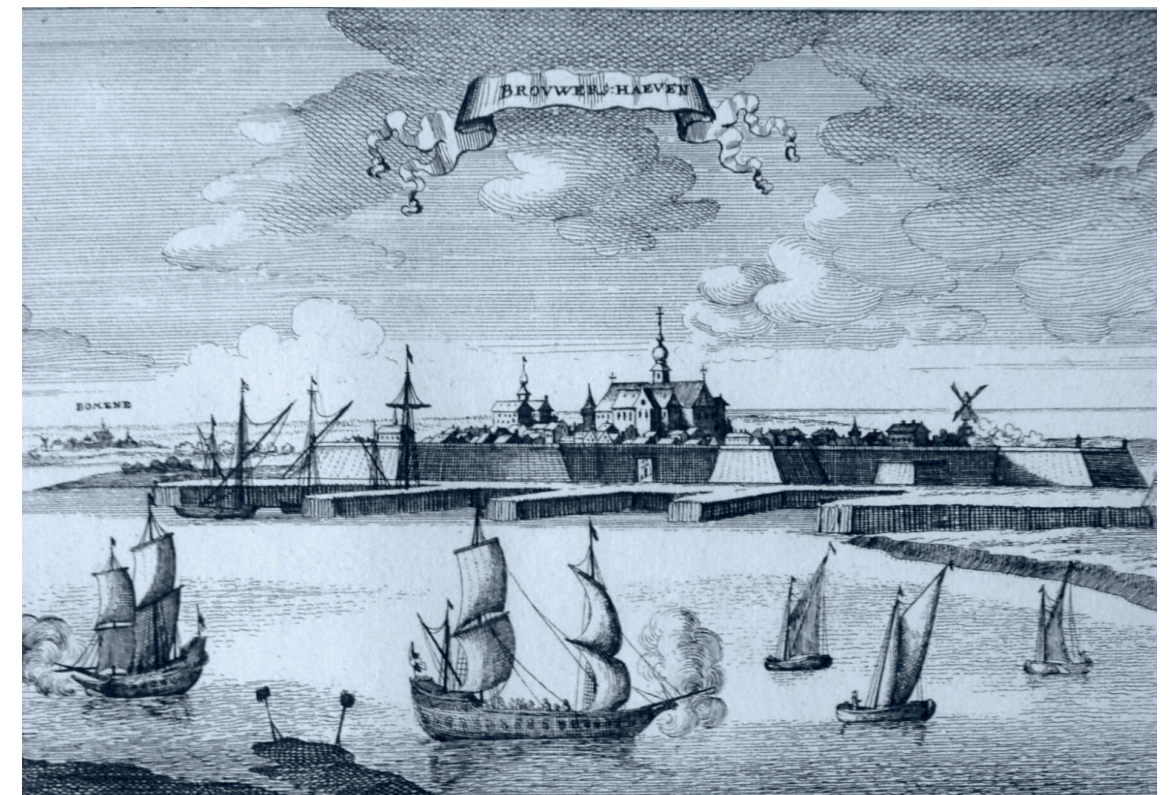


Preferences for facilities

- Local supermarket
- General practitioner and other care
- Village pub/community centre
- Weekly market

ELABORATION DESIGN FORTIFICATIONS

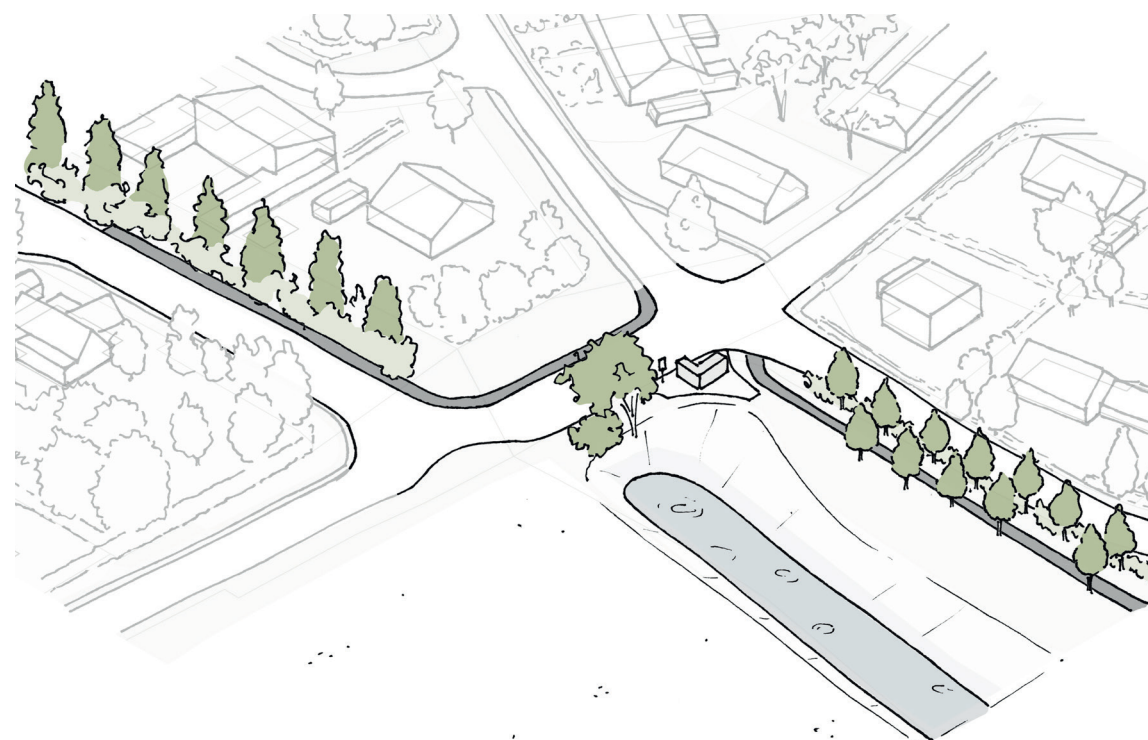
In both the first and third phase, adjustments to the fortification of Brouwershaven are proposed. This historic structure is unique and highly visible from the air, but barely noticeable at eye level. In the past, however, this structure was also clearly visible at eye level, as shown in the image below. In the appendix, the historical maps show how this structure has evolved over time.



4.27. Brouwershaven after the Eighty Years' War (Zalig Zeeland, n.d.)



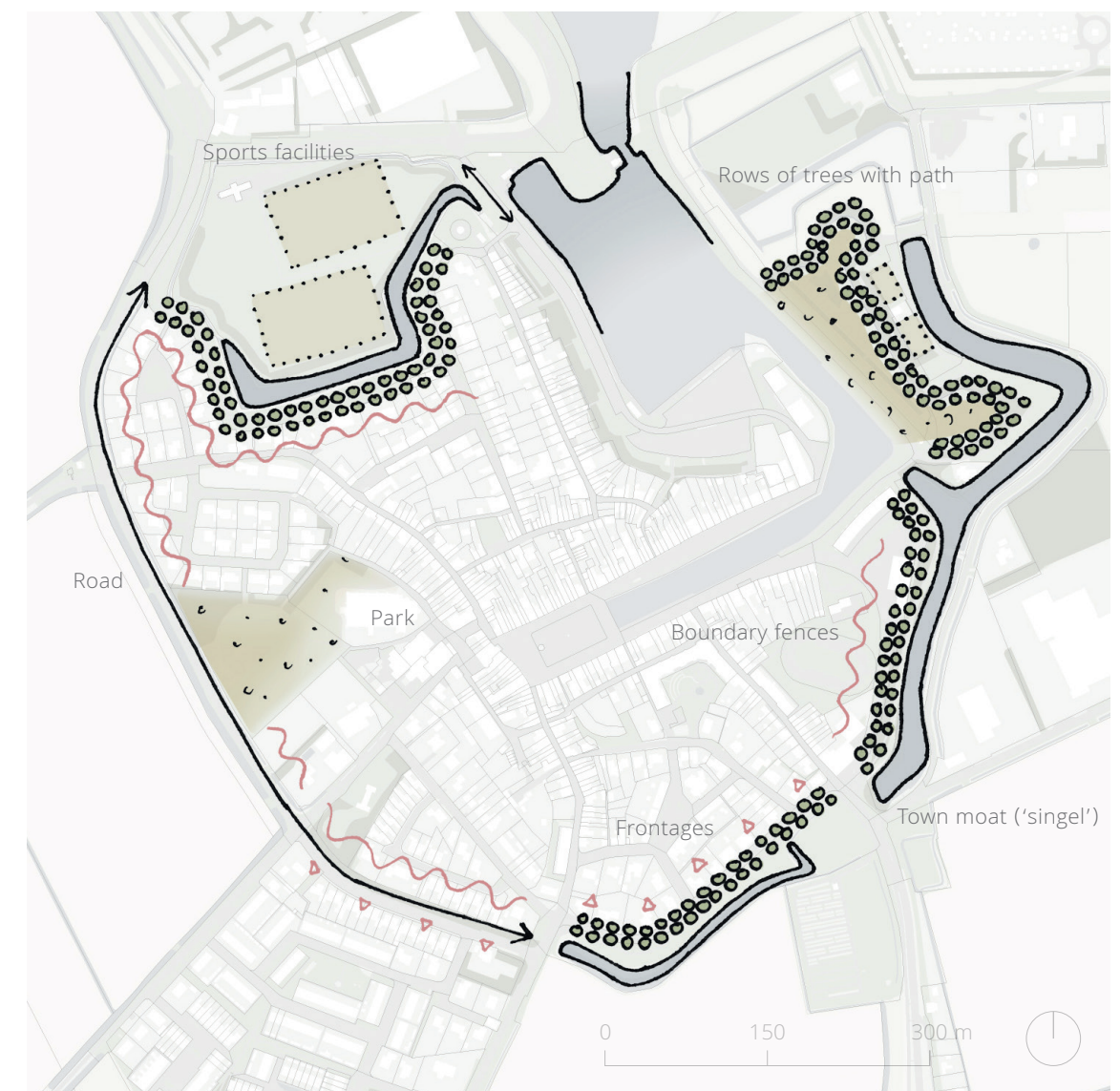
4.28. Southwestern fortifications Brouwershaven (14-03-2021)



4.29. Current situation former location southern gate

Current situation

In the image below, the current situation of the fortifications, it can be seen that the northern and eastern side of the fortifications are still fairly intact with a double tree-lined avenue with footpath. In addition, these sides are also located in a green and recreational setting. However, the southwestern side is only marked with a through road and some front and back sides of houses. In addition, it is also invisible where the five entrance gates to Brouwershaven used to be.



4.30. Spatial analysis fortifications Brouwershaven



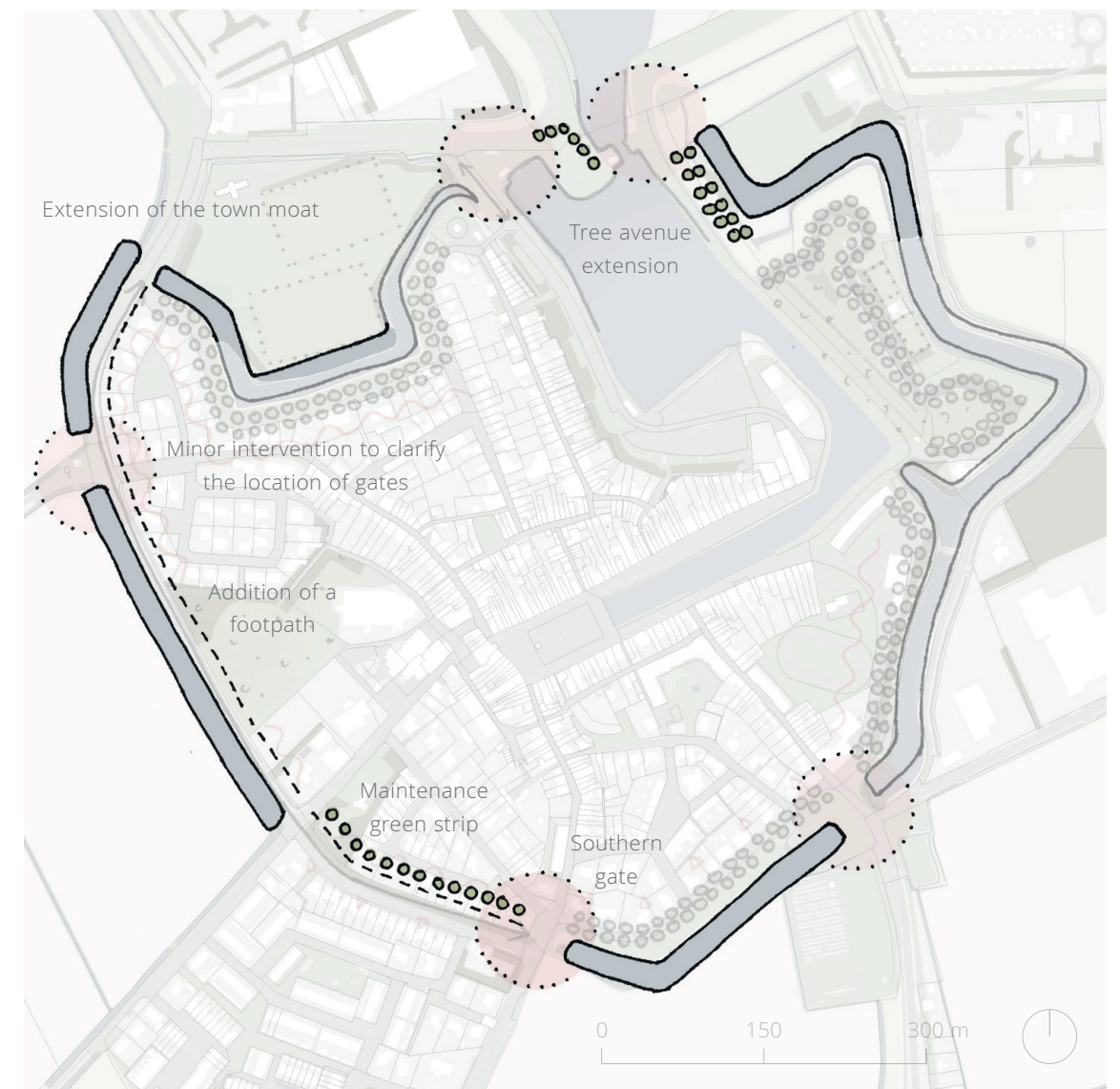
4.31. Location of the former southern gate (14-03-2021)



4.32. Proposed situation in the short term former location southern gate

Short term proposal

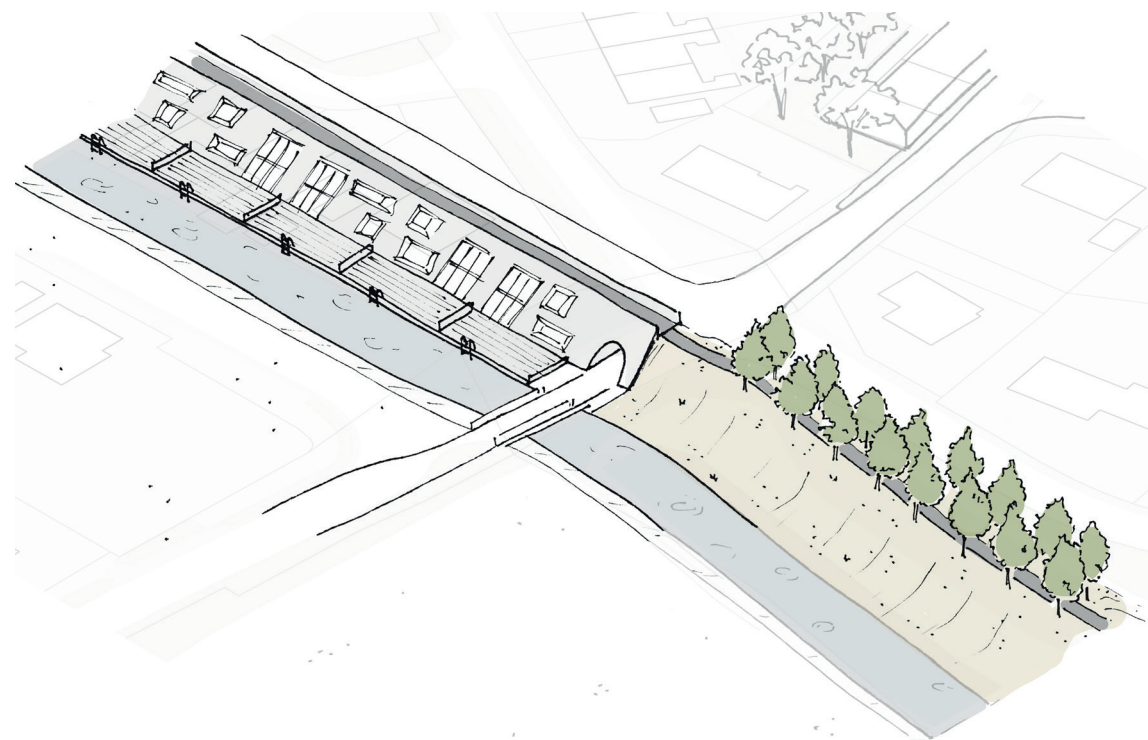
Therefore on short-term minor interventions can already be done to the fortification to ensure a certain level of unity. The former gates should therefore be marked by, for example, large trees or road markings. The structure in especially the southwest side could be clarified by maintaining the green borders and adding a missing walking path. Lastly, where possible the canal surrounding the fortifications could also be extended.



4.33. Proposed short-term fortifications Brouwershaven



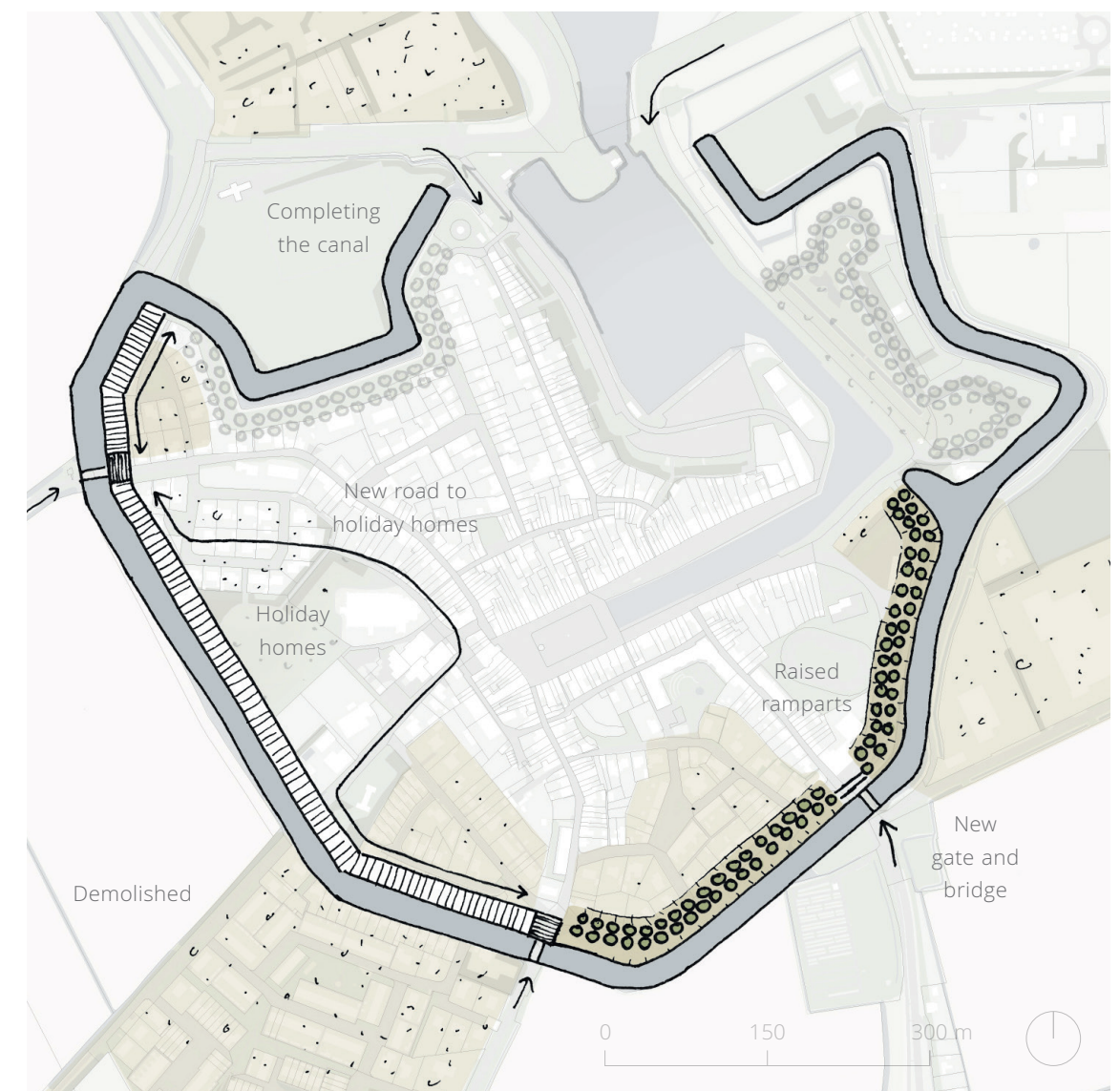
4.34. Northern fortifications Brouwershaven (14-03-2021)



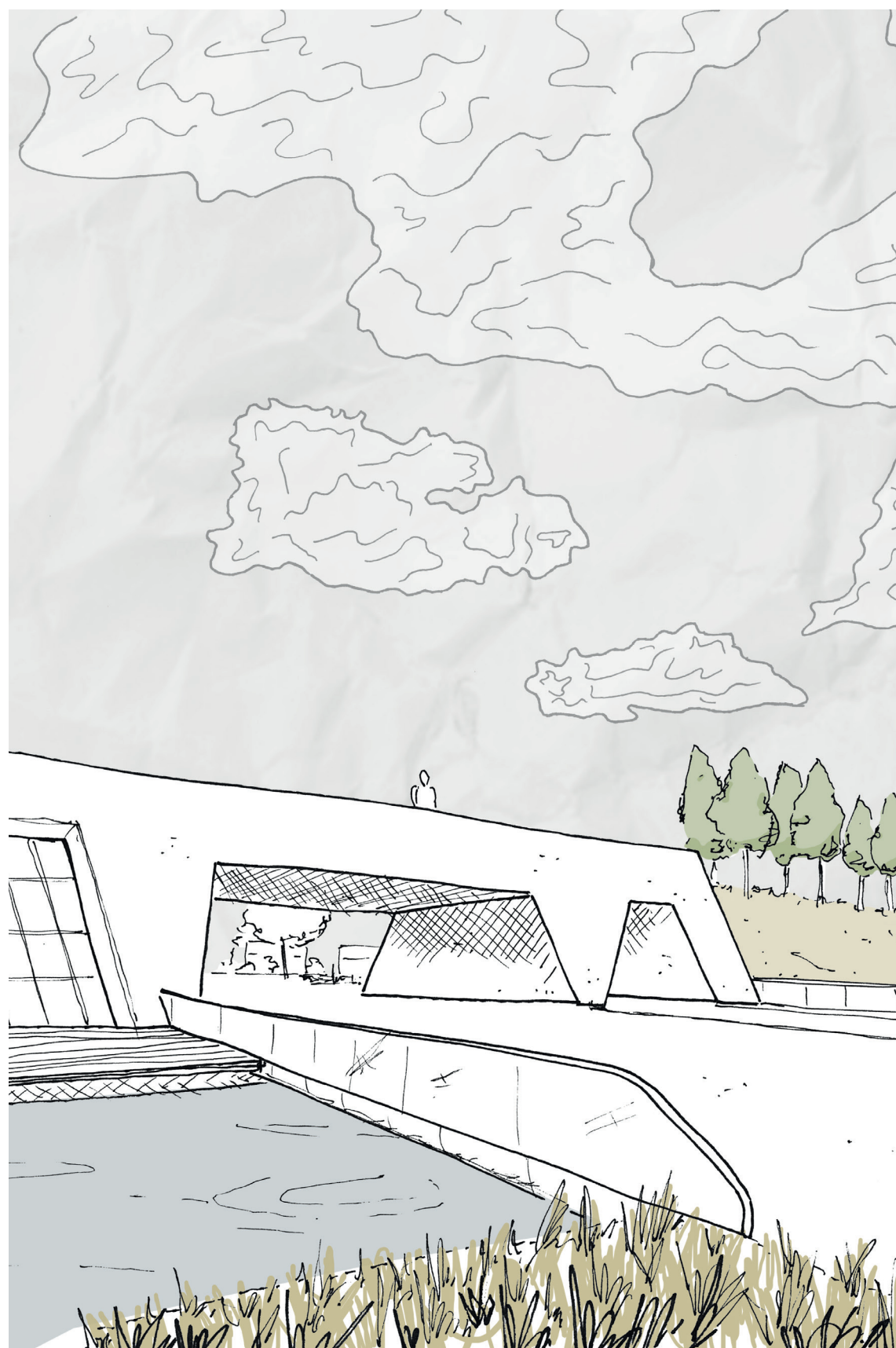
4.35. Proposed situation in case of extreme shrinkage former location southern gate

Proposal in case of extreme shrinkage

In the long term and in the event of extreme shrinkage, the fortification can be completely restored to its former glory. On the one hand, this is done in a more traditional way by raising the embankment in the places where it has not yet been raised, namely the southern side. On the other hand, the fortification can be given a modern twist by turning a newly added wall into holiday homes.



4.36. Proposed fortifications Brouwershaven in case of extreme shrinkage



4.37. Proposition in case of extreme shrinkage former location southern gate

RECAP

In the Dutch versions of the poems puns occur with a double meaning. Brouwershaven towers figuratively above itself by not giving up in times of adversity, but the church of Brouwershaven also literally towers above the rest of the village. In addition, the degree of prosperity has often changed over the course of history, but nowadays the face of the city also changes when entering side streets with signs of deterioration.

However, by rearranging the historical structure and also using the target groups in a more efficient way, the disadvantages of shrinkage no longer outweigh the advantages. If shrinkage thus occurs to any extent, Brouwershaven can respond with this roadmap.



| | |
|------------------------|---------------------------|
| faded glory | vergane glorie |
| still towering above | toch bovenuit torenend |
| a changing face | een wankel gezicht |
| like a tangible memory | als een tastbaar geheugen |
| to arrange again | om wederom te schikken |

DEN OSSE

| | |
|---------------------------|------|
| Number of inhabitants | 40 |
| Number of houses | 15 |
| Number of holiday homes | 975 |
| Number of camping pitches | 270 |
| First mention | 1636 |

Den Osse, described as a recreational settlement, has hardly any permanent inhabitants and consists only of holiday parks. In a distant past the creek of Brijdorpe must have ended around Den Osse and the castle of Brijdorpe may have been there. However, Den Osse has only recently been built on as a result of the construction of the Brouwersdam to close off the Grevelingen. The plateau from which the work was carried out is located on the current marina of Den Osse and therefore has a depth of five meters (Plaatsengids, 2020c). This has created ideal conditions for water sports and Den Osse is therefore known as a diving spot. In its place, water sports have created a demand for recreational homes and the settlement has formed as a result. The middle plot is a campsite with mainly permanent pitches and the surrounding areas mainly consist of second houses, the largest part of which is owned by the Landal GreenParks company. The village is therefore largely visited by returning tourists. Each holiday park is closed by a barrier and also has its own facilities such as a restaurant, local shop, playground and sports fields. Since the recreational sector on Schouwen-Duiveland is thriving and Den Osse formed fairly recently (1980-2000), it is assumed that Den Osse is growing rather than shrinking.

VALUATION

Den Osse has been assessed with the lowest rating and therefore has the lowest priority in preservation. The strongest asset of the recreational settlement is its relationship with the water. On the one hand, activities take place here linked to the marina and a bathing beach, on the other hand, this is also the greatest spatial quality. The masts function



4.38. Valuation isometric Den Osse

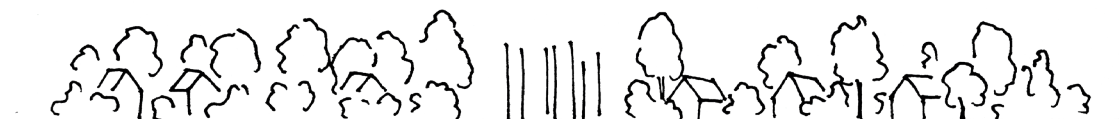


4.39. Den Osse (14-03-2021)

as a landmark for the skyline of Den Osse and the panoramic view over the Grevelingen from the dyke attracts attention. The footpath on this dyke must therefore certainly be preserved. The relationship between land and water is also strongly emphasized at the location of the pumping station and the primary waterway that carries the water from there and is supposedly biodiverse.

As far as the holiday parks are concerned, these cannot be called spatially valuable due to the similarity of the houses, the closure of the open landscape with a green edge and the atypical layout of a Zeeland village. That is why

the holiday parks do not currently fit into the context. However, the spatial characteristics do offer qualities for holidaymakers' stay in Den Osse. The detached houses with green boundaries provide privacy and the curved bodies of water create a natural appearance at first glance. The organically curved ring roads provide intimacy and at the same time good access. And although these features offer convenience, the pattern is too stylized, the houses and the greenery resemble each other and do not match the other villages in Zeeland and the parks are also becoming outdated.



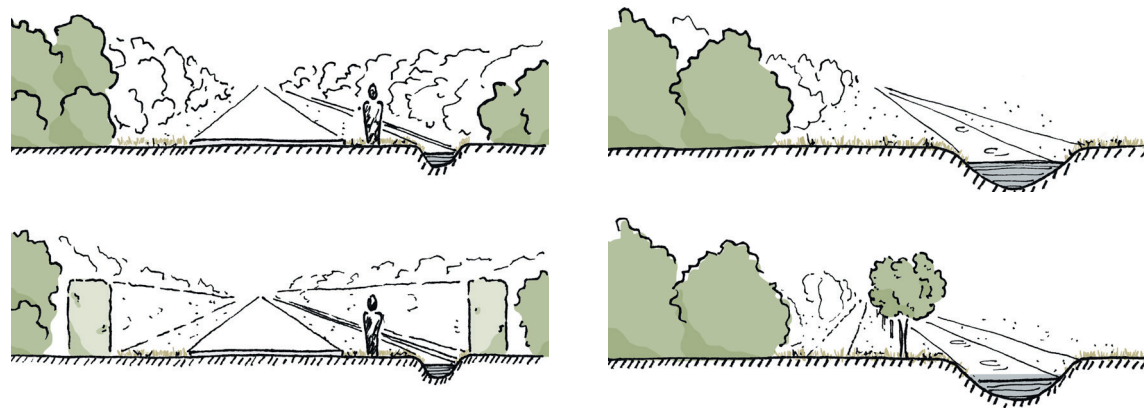
OUTCOME

As shown in chapter 3, improvements are needed in the holiday parks and Den Osse also plays an important role in maintaining Brouwershaven. First of all, therefore,

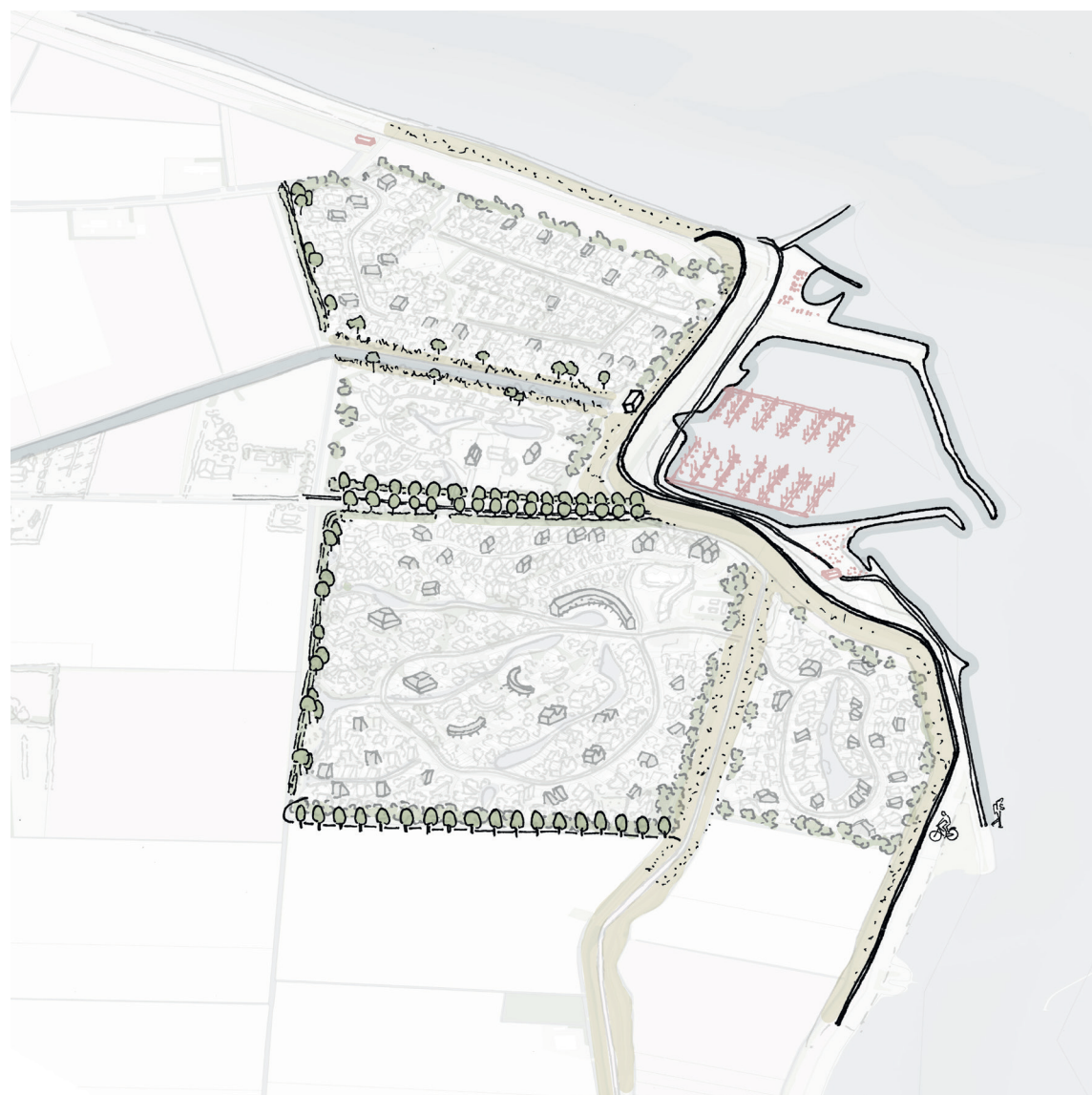
regardless of the degree of shrinkage, stability or growth, the edges will be opened. The vegetation will be neater and will take on the same shapes as in the rest of Schouwen-



4.40. Proposition in case of shrinkage isometric Den Osse



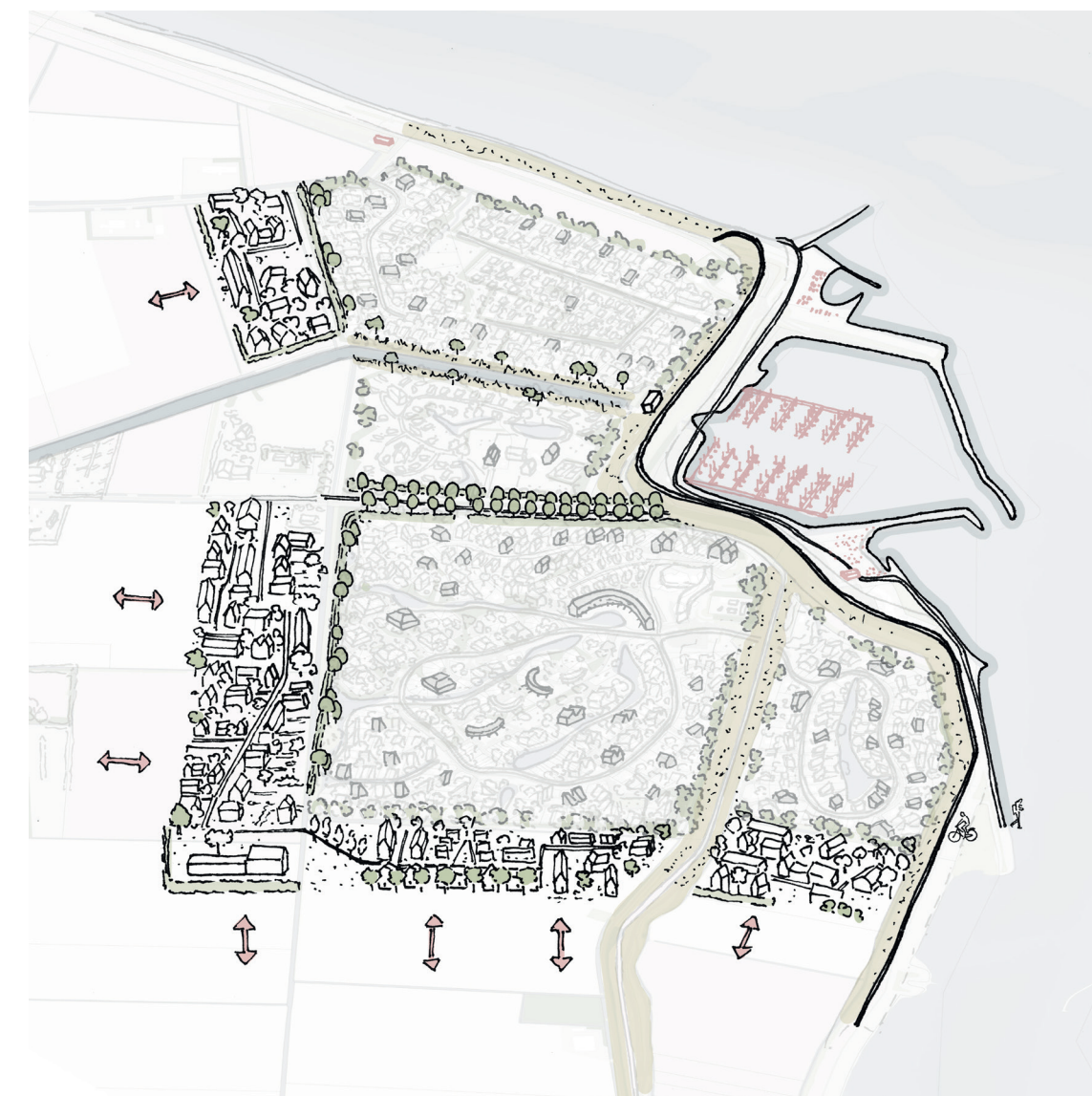
4.41. Sections edges of holiday parks



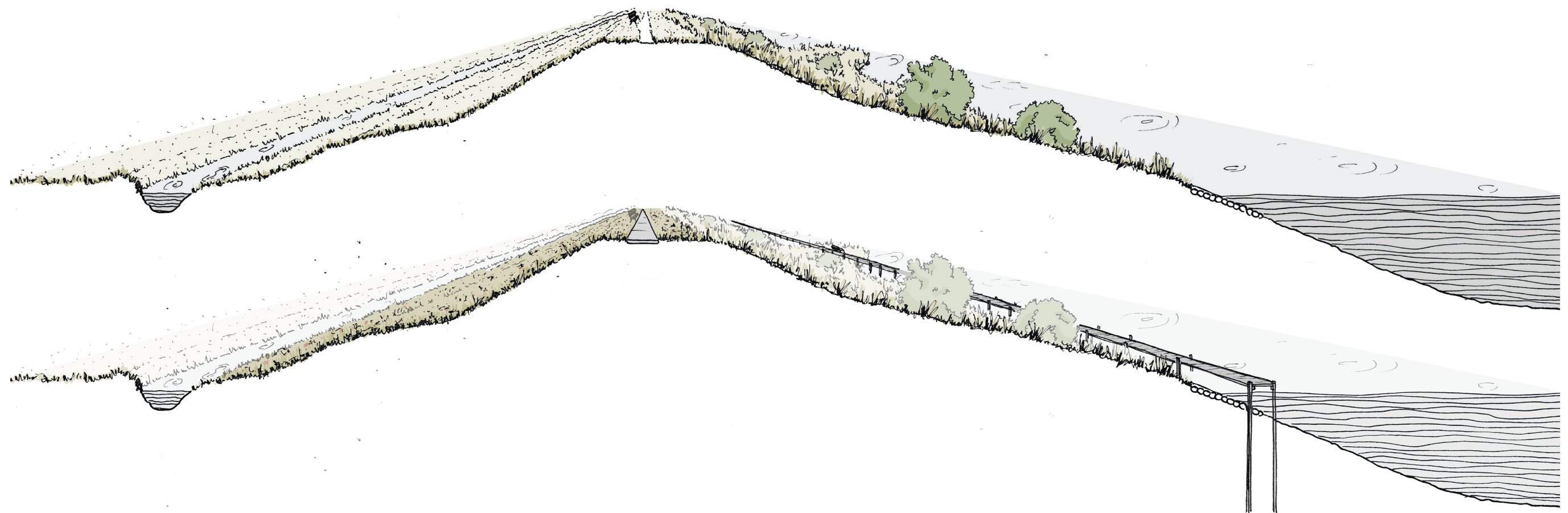
4.42. Proposition in case of stability isometric Den Osse

Duiveland. This vegetation is somewhat higher on the roads, while the vegetation on the landscape is more open, giving a view. Secondly, the backbone, namely the water side, will be strengthened as a central and publicly accessible part of Den Osse. The functions are already present here, but the route and planting are not yet sufficient. It is therefore proposed to build a wider bicycle/walking path on the dyke, where a current walking path is located, while a walking route is constructed on the water. Finally, the holiday parks themselves will have to lobby for renovation

and diversification of the homes in order to remain sustainable and offer a unique offer and thus be future-proof.



4.43. Proposition in case of growth isometric Den Osse



4.44. Section proposition inlay ('inlaag') 1:200

Den Osse, known for diving, was built in a short time and is home to ever-changing tourists. Due to the rapid rise, Den Osse, but also the recreational sector as a whole, has left its mark on Schouwen-Duiveland. Moreover, the holiday parks can also be seen as a stamp in which a formula, namely a spacious, green-blue and privacy-resistant structure, is extensively repeated. By reopening Den Osse, however, both outsiders can enjoy the settlement more and insiders can enjoy the surrounding landscape more.



suddenly surfaced
left a new mark
it shows ephemerality
the masts frolicking in the wind
ready to unlock

plots opgedoken
een nieuwe stempel gedrukt
laat kortstondigheid
de masten stoeiend in de wind
paraat te ontgrendelen

BRIJDORPE

| | |
|-----------------------|------|
| Number of inhabitants | 50 |
| Number of houses | 20 |
| First mention | 1231 |

Brijdorpe, the last settlement discussed, is a hamlet and consists of only a few houses. As discussed in the introduction to the crucial triangle, the history of Brijdorpe goes back a long way. Little is left of the once prosperous village, but the cemetery is still reminiscent of the site where a church once stood (Plaatsengids, 2020a). There are relatively many facilities for the size of this settlement. A mini-camping site and some marina-related activities depend on villages such as Den Osse and Brouwershaven. There is also a care farm where young people with psychiatric problems and/or intellectual disabilities can go during the day (Plaatsengids, 2020a). It is assumed that Brijdorpe will behave like small-scale villages and therefore will not experience a shrinkage of households for the time being, but will shrink in the years after.

VALUATION

Brijdorpe is assessed with an average rating and therefore has a certain degree of spatial qualities. The first thing that stands out in Brijdorpe is the green appearance. The three roads leading to the hamlet already have a green character due to either an avenue of trees or a one-sided hedge that breaks the wind. These three roads come together at two



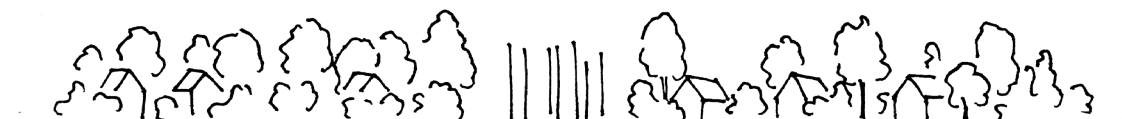
4.45. Valuation isometric Brijdorpe



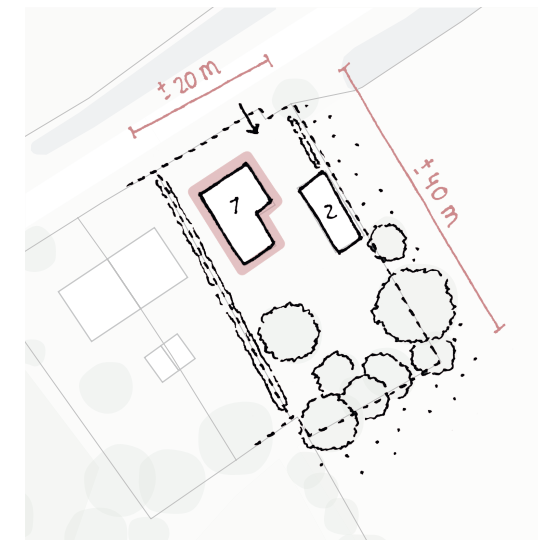
4.46. Brijdorpe (14-03-2021)

green semi-circular places, on the one side a central meeting place, on the other side the historic cemetery. These places connect the hamlet and radiate a certain serenity. The open landscape is close by and visible from almost every point of view in Brijdorpe. All plots are located on the three roads and roughly two types of buildings can be distinguished. The black barns recall the time when agriculture played a major role in Schouwen-Duiveland and flax was stored far from the villages to minimise the risk of fire. The houses mainly follow the typology as described on the right and are characterized

by their small scale. All in all, Brijdorpe is a small green settlement with a strong relationship with the surrounding landscape and where tranquillity reigns.



Lot typology Brijdorpe



Characteristics

- Two buildings per plot
- Main building is detached in the yard
- Buildings have a maximum of 2 floors
- Front yard
- Hedges on the property boundary
- Trees mainly on the backyard boundary
- Neighbours on the one hand and open countryside on the other



4.47. Brijdorpe type 1 map (1:1000), isometry, facade (1:200)

Valuation

- Green character
- Small-scale due to low-rise buildings, low density, connection with the surrounding landscape

POSSIBILITIES OF BRIJDORPE

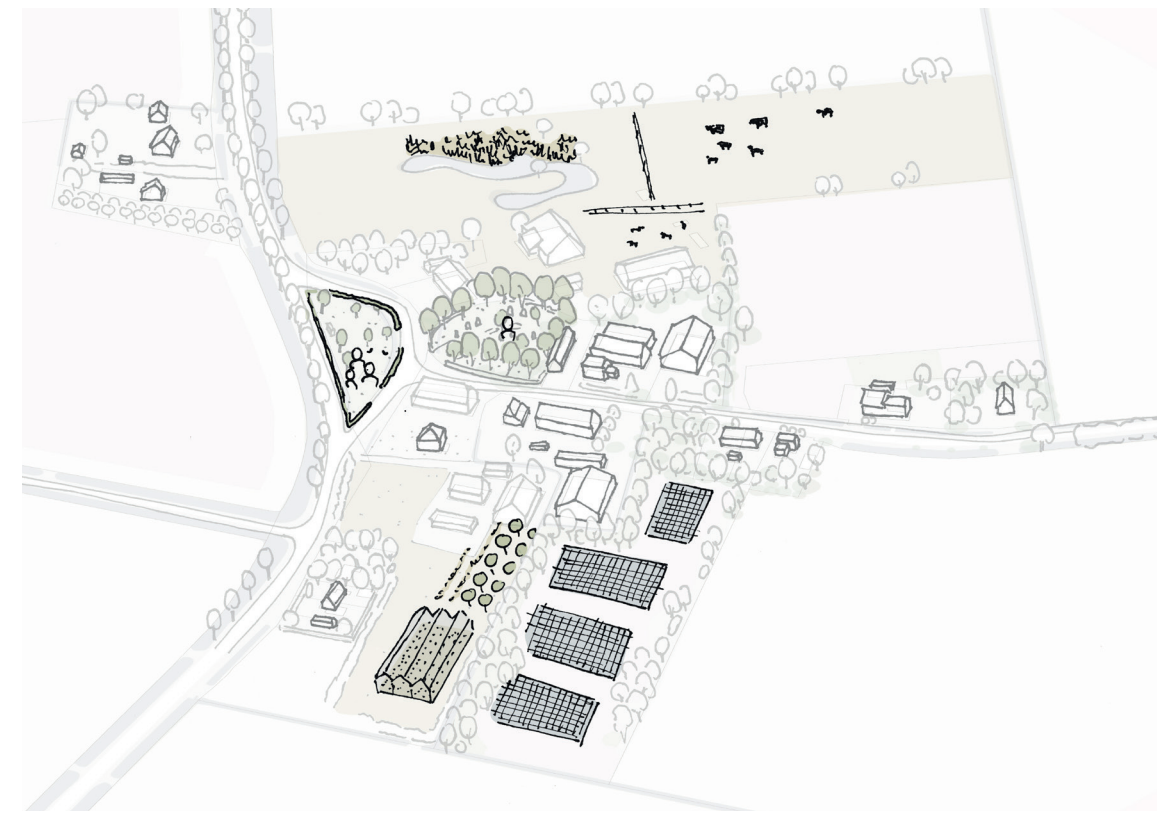
Since Brijdorpe won't experience shrinkage in the near future, it doesn't make sense to already decide now what should happen, as a lot can still happen before that. That is why the following pages show some options.

In the scenario of a care village, the daytime activities are maintained, houses that are accessible to the elderly are built on the campsite and all the surrounding vacant houses can be inhabited by fit people in need. The second option of a self-sufficient village could be inhabited by both permanent residents and special types of tourists who

want to escape the busy life and return to basics. In both of these scenarios, the central lawn is a place to gather while the cemetery is a place to retreat. The village itself can also be completely demolished and serve as a tourist attraction by turning it into a park that allows the village to continue to exist in a different way. Due to the proximity of Den Osse and Brouwershaven, this third option is currently the most likely and allows Brijdorpe most justice due to the lines of trees that can be clarified as a result. Finally, a growth scenario for Brijdorpe is also possible in which the



4.48. Care village (enhance daytime activities)



4.49. Self-sufficient village for permanent residents and retreat tourists



4.50. Complete demolition and conversion into a tourist attraction



4.51. Brijdorpe (14-03-2021)



4.52. Proposed situation in case of extreme shrinkage former location southern gate



4.53. In case of growth: following the same pattern (relation with landscape)

same pattern is followed.

The poem about Brijdorpe mainly describes the serenity that reigns in this hamlet. Brijdorpe is a sheltered place, but at the same time has a strong bond with the landscape in

which the birds are the most active visitors. It is therefore almost unimaginable that this was once a vibrant place, but shows all the more that Brijdorpe should be cherished in whatever form.



bygone buzz
fallen into obscurity
the wind now stops
and, only the birds
it will be cherished

vervlogen reuring
in vergetelheid geraakt
valt de wind nu stil
en zijn enkel de vogels
teneinde te koesteren

05 IMPLICATION FOR THE LARGER SCALE

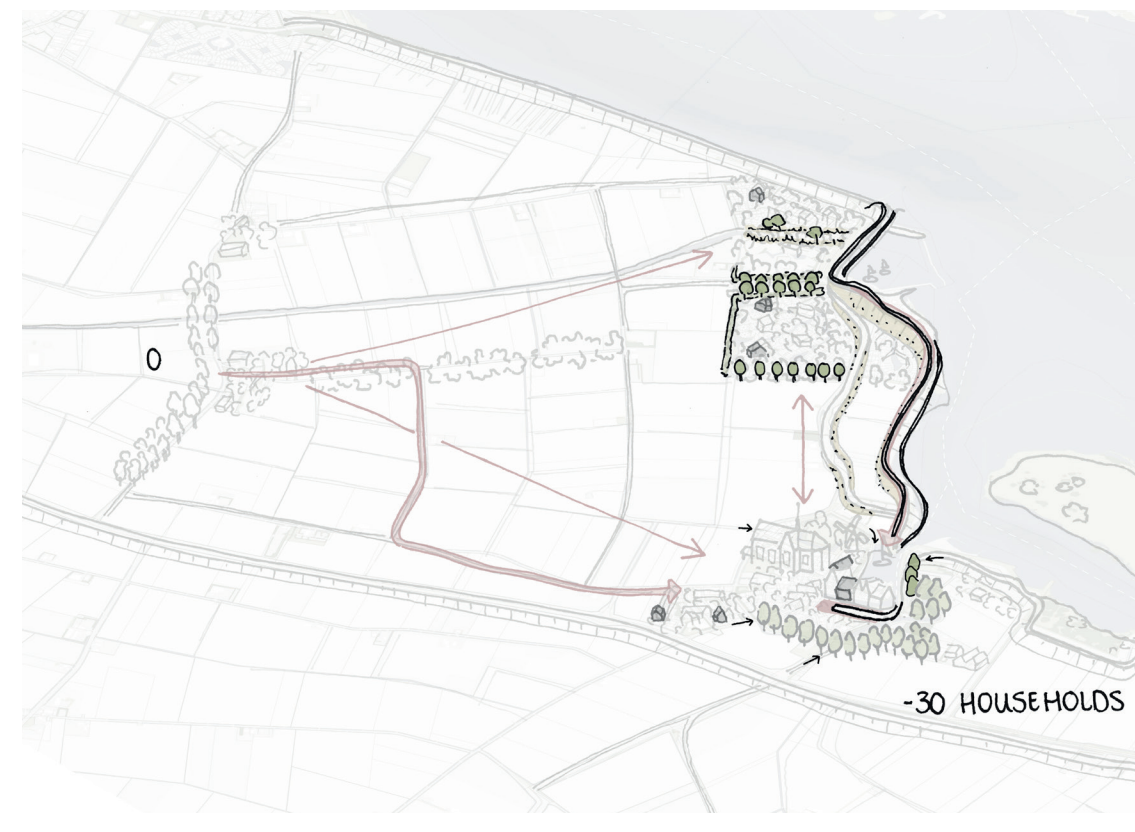
After the examination of the individual settlements, the consequences for the larger scale should now be considered. First of all, all interventions in the crucial triangle are assembled to provide an overall picture. Then the lessons from the individual settlements are projected to the scale of the entire municipality of Schouwen-Duiveland.

CRUCIAL TRIANGLE

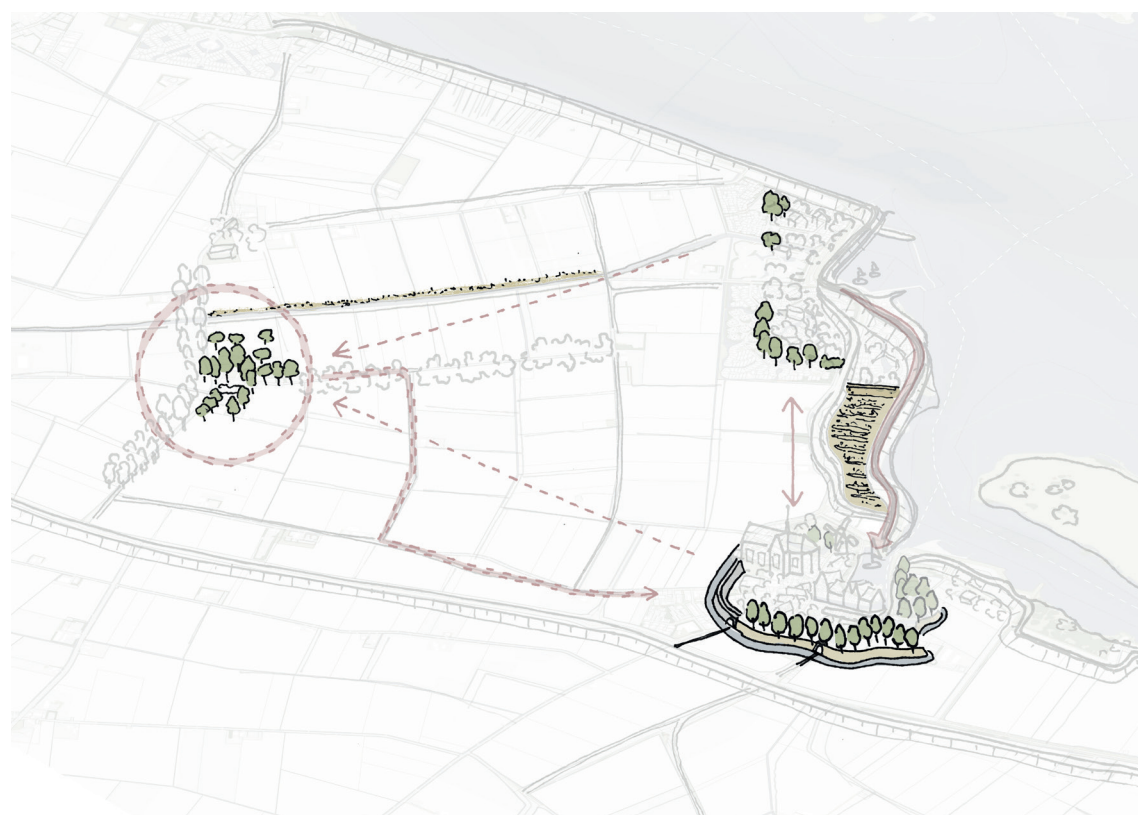
As shown in chapter 3, shrinkage will not play a very big role in the next ten years and in the short term only some small interventions will therefore be needed to create a solid foundation for what the future holds. The dependence of the villages must be maintained, especially that of Brouwershaven and Den Osse. In the short term, a broader and more ecological route should ensure this. In addition, the functions and target groups will have to be maintained. In the short term, vacancy can still be tackled point by point through temporary

filling or quality improvement, but demolition will have to take place in the event of extreme shrinkage. The relationship with Brijdorpe will then change depending on the scenario that turns out to be most appropriate by then, but the dependency between Brouwershaven and Den Osse will remain virtually the same. That is why the inlay (or 'inlaag') itself is returned to nature, in particular to guarantee the recreational function for both tourists and the elderly.

Chapter 3 also showed that there is a trend



5.1. Short-term shifts and interventions for the crucial triangle



5.2. Long-term shifts and interventions for the crucial triangle in case of extreme shrinkage

in Schouwen-Duiveland to minimise the difference in the number of tourists between summer and winter. The triangle will therefore not be used so differently, certainly because the increasing target group of the elderly uses the space partly in the same way. Only the use of indoor and outdoor spaces will differ, but that applies to every space in the Netherlands. The extent to which the target groups of the elderly and tourists will develop over time and in which settlement they will settle depends on the demand, which is currently unpredictable. It is therefore quite possible that a mix of permanent residents, culture-conscious tourists and elderly people in need will arise in Brouwershaven.

For the triangle and thus also for the rest of Schouwen-Duiveland, recommendations can be made on the one hand and advice can be given in the event of developments on the other. That is why a spatial development plan has been drawn up for the illustrative triangle

as advice to the municipality. The black to grey items are the advice to take into account in case there are developments in the area and therefore relate to things that are already there. These can be summarized as preserving the typical Zeeland landscape, cherishing spatial structures and valuable buildings and the approach to expansion. The pink elements are recommendations that strengthen the area with or without shrinkage and improve the quality of life for residents, tourists and the elderly.



5.3. Spatial development plan crucial triangle

SCHOUWEN-DUIVELAND

In order to be able to apply the lessons from the triangle in the entire municipality of Schouwen-Duiveland, the value judgments in chapter 3 are used again. Each value judgment has a different priority as shown in the table and therefore a different approach if shrinkage occurs. Subsequently, it can be concluded that the facilities and developments in the housing stock should be centralised in Zierikzee. In case of shrinkage, this will be diverted to

the other settlements, where this will lead to opportunities for heritage, recreation and/or the elderly. High-value places are restored, while low-value settlements can be completely demolished. However, the chance of this happening because shrinkage is hitting so much is not great. That is why the five settlements that will shrink in the near future are brought up again. The triangle has shown that the highly valued Brouwershaven

| | Priority 1 | Priority 2 | Priority 3 |
|----------------------------------|---|---|---|
| Town: Zierikzee | Centralise developments | - | - |
| Towns: other | Accept developments | Fend off developments | - |
| Middle-sized villages | Exhibit valuable structures and buildings with shrinkage as a driver Brouwershaven | Exhibit some of the valuable structures with shrinkage as a driver | - |
| Small-sized villages | Exhibit valuable structures and buildings with shrinkage as a driver | - | Demolish the buildings and restore or renew the landscape |
| Hamlets | Use the valuable structures to accommodate the local qualities | Use the valuable structures to accommodate the local qualities Brijdorpe | Demolish the buildings and restore or renew the landscape |
| Recreative settlements | - | - | Demolish the buildings and restore or renew the landscape Den Osse |



5.3. The approach in case shrinkage will occur in all settlements

can survive if it is supported by Den Osse. In this way, the highly valued Kerkwerpe and Nieuwerkerk can also continue to exist when they are supported by Zierikzee. These supporting settlements should therefore also be preserved despite the value they have

been attributed. Such support in the event of extreme shrinkage is not feasible for the medium-valued shrinking settlements of Scharendijke and Oosterland and a similar approach as proposed for Brijdorpe can take place there.



always swaying along
what seemed like doom and gloom
is now considered a strength
the waves lead the way
ready for what is next

altijd meedeinend
wat leek als kommer en kwel
nu beschouwd als kracht
wijzen de golven de weg
klaar voor wat de toekomst biedt

06 CLOSURE

This last fundamental chapter mainly revolves around the conclusion containing the answer to the main question. In addition, the sub-questions and recommendations for Schouwen-Duiveland and similar locations are discussed. Subsequently, the reflection deals with the assessment of the content and the process of the work. The chapter closes with the references for both the texts and the images.

CONCLUSION

In short, this project explored the spatial potential of urban shrinkage using the local qualities in Schouwen-Duiveland. In order to be able to assess the results, the sub-questions and main question are subsequently answered.

Answering the questions

What are the local qualities of Schouwen-Duiveland that can stimulate the approach to shrinkage?

The identified local qualities are heritage, the aging population and the recreational sector because they have a certain degree of existence in Schouwen-Duiveland and have opportunities for further development.

How can these local qualities shape the approach to shrinkage in a few carefully selected settlements in Schouwen-Duiveland?

Heritage has contributed in particular in the approach to shrinkage by improving the quality of the living environment. This is mainly done to strengthen the most representative places in order to provide a well-founded basis for a village where the surrounding streets sometimes have to deal with vacancy and

decay. In this way, the aging population and tourists can be attracted and bring a certain amount of vibrancy back to the settlements. But in addition to the fact that these local qualities yield something for shrinkage, the reverse is also the case. Historical structures have been brought to light, elderly have a pleasant place to retreat and recreation has diversified.

The illustrative triangle illustrated the various interventions for Den Osse, Brouwershaven and Brijdorpe. Each has a different value with an associated priority level and prediction of shrinkage, which makes each approach different from each other. With a high priority level and expected shrinkage in the near future, Brouwershaven is the most extensive approach.

How can the design of the chosen settlements be projected on the entire municipality of Schouwen-Duiveland?

The valuation and degree of shrinkage in the individual settlements of the crucial triangle have led to three different approaches. These can therefore be translated to all settlements in Schouwen-Duiveland since the triangle is representative. In addition, the dependencies of highly valued but shrinking places such as Brouwershaven on Den Osse can also be determined.

What spatial response can be given to the acceptance of urban shrinkage in Schouwen-Duiveland, using the local qualities as potential?

Shrinkage is a nuanced phenomenon and therefore requires a context-specific approach. That is why the local qualities have been used as the driving force in the approach and refinements have been necessary in time and per place within Schouwen-Duiveland. This project looks into the distant and future and therefore takes bold statements in the approach to shrinkage. In general, the focus has been on a subtle, sensible and flexible approach that only intervenes when necessary. The outcome is therefore not entirely realistic, but is a projection of an imaginable future and looks for the ultimate possibilities. The basis, however, is straightforward by adding spatial quality to ensure attractiveness, in this case using heritage, and adding liveliness by present and emerging target groups, in this case the tourists and the elderly.

Recommendations for the location

Thought has been given to the distant future and far-reaching measures have been proposed to show the positive side of shrinkage. In this way an attempt is made to inspire and to further stimulate the debate about shrinkage in the municipality of Schouwen-Duiveland. It is then up to the municipality to paint a realistic picture in which financing should be taken into account. Some action points could emerge from this debate. It is recommended to monitor demographic development and to keep track of how households in each settlement are developing and where vacancy occurs. In addition, investments could be made in valuable but not yet fully utilised cores such as Brouwershaven. With regard to new construction, it is advisable to carefully

consider whether it is necessary and what the target group is, especially in settlements other than Zierikzee.

Lessons for other locations

The use of local qualities in the approach to shrinkage could also be useful for other shrinkage places. Knowledge of the history and of the local shrinkage issues is crucial here, because in this way the local values can be determined and the solution can be adapted to the challenge itself. Other shrinking places, for example, may suffer more from economic shrinkage than from population decline, such as in Schouwen-Duiveland. The local qualities will therefore be different for each place, but the approach used to find the local qualities can be used as a starting point. In this way, the course of shrinkage in Schouwen-Duiveland can inspire other cases.

REFLECTION

1. How do you assess the academic and societal value, scope and implication of your graduation project, including ethical aspects?

Literature often concludes that a context-specific approach to shrinkage is needed. However, after this determination, little is done to prove and illustrate this claim spatially. Scientifically, this project tries to contribute to closing this knowledge gap by focusing on the possible spatial consequences and possibilities of the local qualities in the approach to shrinkage.

More and more areas will have to deal with shrinkage, in principle mainly due to ongoing urbanisation, but ultimately also due to a predicted declining world population in the more distant future. Those who stay behind in the shrinking areas are confronted with an increasingly unattractive living environment due to disappearing facilities and decay. On a societal level, it is therefore important that those people are being heard. However, this approach is more difficult in some areas than an approach to a growing place, since shrinkage is a sensitive topic for both residents and policymakers. Residents see their houses disappear in visions of the future and can therefore feel expelled and disappointed about the invasion of their privacy. Policy makers often resist shrinkage because it feels like failure. These groups will therefore, probably at first glance, show their

horror at these future plans. However, if they take a closer look at the project, they will see that the plans are a lot more nuanced and that the design interventions only present themselves when the need is urgent. It is therefore unlikely that all these interventions will occur in the near future and therefore not all decisions have already been taken. For example, no decisions have been taken at all for the future of Brijdorpe and the decision tree for Brouwershaven can at any time turn to a scenario without further urban shrinkage. Taking this distant future into account is therefore on the one hand a selling point because of flexibility, but on the other hand also a pitfall due to the amount of speculation and the degree of uncertainty. However, no other approach would be appropriate for a phenomenon as unpredictable as urban shrinkage. This project thus fills the gap where an approach to shrinkage often falls short by merely looking to the near future.

2. What is the relation between your graduation project topic, the studio topic, your master track (A/U/BT, LA, MBE), and your master programme (MSc AUBS)?

This graduation project is carried out within the studio 'Design of the Urban Fabric' during the master of 'Urbanism'. The main theme of Urban Fabrics this year, density, corresponds

to the problematisation of my project, namely urban shrinkage. This opposite phenomenon to the much-discussed urban densification will be a growing challenge in the future due to migration to cities and local predicted population declines. It is therefore important to already draw up spatial consequences and possibilities at early stages of shrinkage, in which the number of households is not yet decreasing, but demographic shifts are already impacting daily life. In addition to the main subject, this project also aligns well with the studio as the local qualities, which in my project are used as potential in the approach to shrinkage, are often discussed during meetings.

This project fits well within the Urbanism master's program due to the worldwide challenge of shrinkage and the creative solutions that are being tried to find. In this way, shrinkage can gain a positive association and bring people and place together. There are also interfaces with the master 'Landscape Architecture' due to the emphasis on the design of the public environment. By accepting instead of combating shrinkage, more houses will disappear than will be added and the challenge is therefore mainly how to deal with this created empty space.

In its entirety, this project therefore fits in with the master program 'MSc Architecture Urbanism and Building Sciences'. This thesis obviously concerns the built environment and also combines knowledge from the physical and social sciences.

3. What is the relation between research and design in your graduation project?

The studio 'Urban Fabrics' is a great advocate of the use of design as a research method, which offered me the opportunity to develop myself in the field of design. Shrinkage has

only been a topic of discussion for a relatively short time and the spatial possibilities have therefore only been explored to a limited extent. This graduation project should contribute to this spatial development by clarifying spatial consequences by means of designs.

A systematic approach with a strong argument is often the guiding principle for me in the realisation of designs. However, my mentors have encouraged me to be inspired by my own drawings and use this as a means of gaining new insights. In this way, the inquisitive attitude mainly ensured the delineation of the subject, while designing and drawing have pushed me to re-imagine the future

4. How do you assess the value of your way of working (your approach, your used methods, used methodology)?

The approach of this project has not always been structured and the goal, the main question and the end products have been changed several times. Initially, the plan was to use scenarios to arrive at a definitive design, but despite changing variables, this did not yield a useful result. However, being open to new developments has also ensured that the story has become increasingly sharp. Some themes, such as the aging population and recreation, have therefore acquired a central position late in the process, while other themes, such as the landscape and the traffic network, have been decentralised. The process therefore mainly consisted of trying out working with different themes and deciding whether it has potential for tackling shrinkage. Hence, no pre-conceived method, such as a particular analysis, can be identified that has led to the final result. In retrospect, however, guidelines can be drawn up for exploiting potentials in the approach to shrinkage. Knowledge of both

the local history and current appearance has proved to be crucial, as discussed at length in the answer to the first sub-question.

Besides this somewhat more substantive description of the way of working, writing poems and hand drawing isometries have also proved to be fundamental. The poems have ensured to distance intangible values such as the sound of birds and thus have contributed to the description of the identity. The hand-drawn isometries have provided spatial insight and have inspired me to imagine possible futures. They have also proven to be a good means of communication, emphasizing the important elements and directing the attention of the audience.

5. How do you assess the value of the transferability of your project results?

Because the approach is driven by the local qualities, it is impossible to apply the same approach. However, the local qualities can be analysed for each location and offer possibilities in the approach to urban shrinkage. In fact, the local qualities of this project may already give a start, as shrinking cores are more often linked to an aging population and many places can learn lessons from local history.

In addition to the attentiveness of the context in the approach to shrinkage, this project can also inspire other shrinkage areas to envision a distant future. Until now, there have been few projects on shrinkage that reflect on a distant future in which a large proportion of households will disappear. Although it does not look likely now, it is wise to prepare for it now as it could change the direction of the current strategy.

Even within Schouwen-Duiveland, the project results are not so easily transferable. Within the municipality, a crucial triangle of three villages has been chosen in which interventions are

designed. This triangle is comparable in some respects to the rest of the municipality in terms of the type of villages and the proximity of water. However, there are differences in some areas, such as the landscape and the degree of recreation. Schouwen-Duiveland is therefore elaborated down to the detailed level of guidelines, while the crucial triangle is fully illustrated.

6. How do you assess the usefulness of the local characteristics in designing for the built environment?

This project uses the local qualities, in this case the local heritage, the aging population and recreation as potential in the approach to shrinkage. These local qualities have ensured that shrinkage certainly does not have to be a disadvantageous development and can even yield new qualities.

Originally, only the local heritage was seen as an opportunity on the one hand to learn lessons from history and on the other hand to optimise the qualities of the tangible heritage for the future. Working with history in a design has turned out to be more difficult than previously thought. Heritage is defined as those elements that have been preserved from history (Heritage Perth, n.d.). Decisions thus have been made during the past about whether something should be protected or not. Heritage is therefore not entirely objective and could be interpreted in many different ways. Working with history is therefore inconclusive and many choices about how trends should be continued in the future are still open. However, working with history is of great value. In this case, it strengthened tangible structures that could come to light through shrinkage, such as the fortifications and the design for the market in Brouwershaven. In addition, local history

has taught that priorities must be set in times of urban shrinkage and that the combative character of Schouwen-Duiveland has never led to complete deterioration. In this way, the other local qualities, the aging population and recreation, have started to play a role. The aging population is valuable because opportunities are seen in the challenge itself, shrinkage. Recreation as a possibility is compelling because it is an already flourishing local industry that is being strengthened. Both factors can provide a breath of fresh air in a village trapped by urban shrinkage.

7. How do you assess the value and creation of a spatial design for shrinkage?

The value of a spatial design for accepting shrinkage is useful for both scientific and social knowledge and is important because it is still underdeveloped. However, it has turned out that creating a spatial design is difficult. First of all, many people have a negative association with urban shrinkage, which has prevented me from proposing bold design interventions. Secondly, the role of the urbanist is complex because buildings disappear instead of being added. A potential demolition strategy concerns private ownership and makes feasibility more difficult. By looking to the distant future, however, I was eventually able to open my mind, allowing all kinds of proposals such as the restoration of the fortifications in Brouwershaven. In this way, the spatial design can inspire, initiate the debate about shrinkage and give direction to current interventions related to shrinkage issues.

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07 APPENDICES

LOCATION VISITS

This project was carried out during the corona pandemic and during the site visits, measures were therefore in place that could give a distorted picture of reality. The photos taken therefore mention the date of the site visit to clarify the circumstances. The lack of people in the photos may therefore be due to the day, weather conditions or measures in force and may not be a symptom of shrinkage.

Tuesday 13-10-2020

Mild and cloudy

Working from home, only necessary travel for countries such as Belgium and France, holiday traf-fic between the Netherlands and Germany possible, last day before closing of the cafes and restaurants

Sunday 27-12-2020

Cold, windy and rainy

Lockdown (restaurants and cafes closed, non-essential shops closed, schools closed)

Sunday 14-03-2021

Windy and mostly cloudy

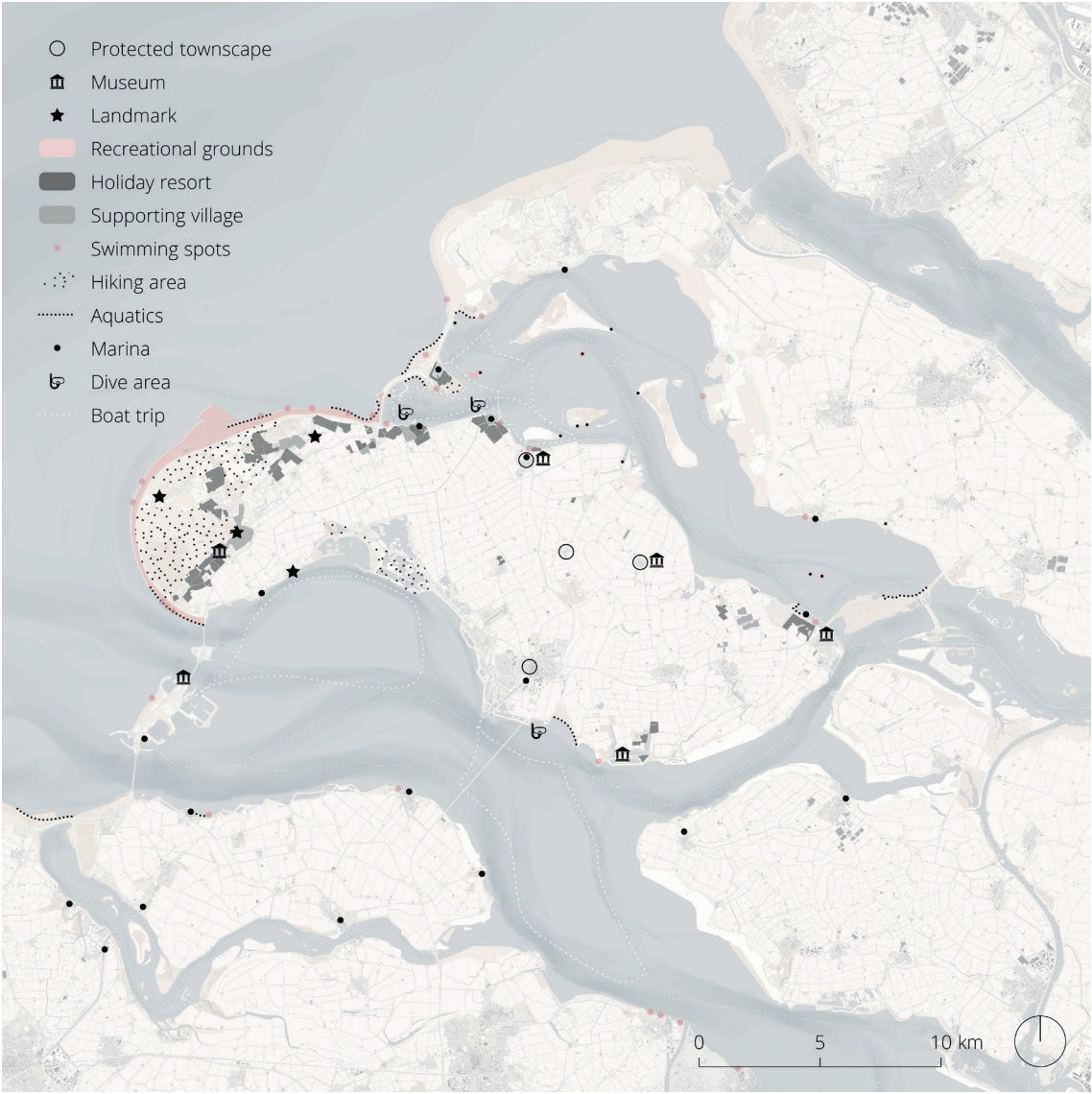
Lockdown, curfew, shopping by appointment, schools partially open

Sunday 05-04-2021 (Easter)

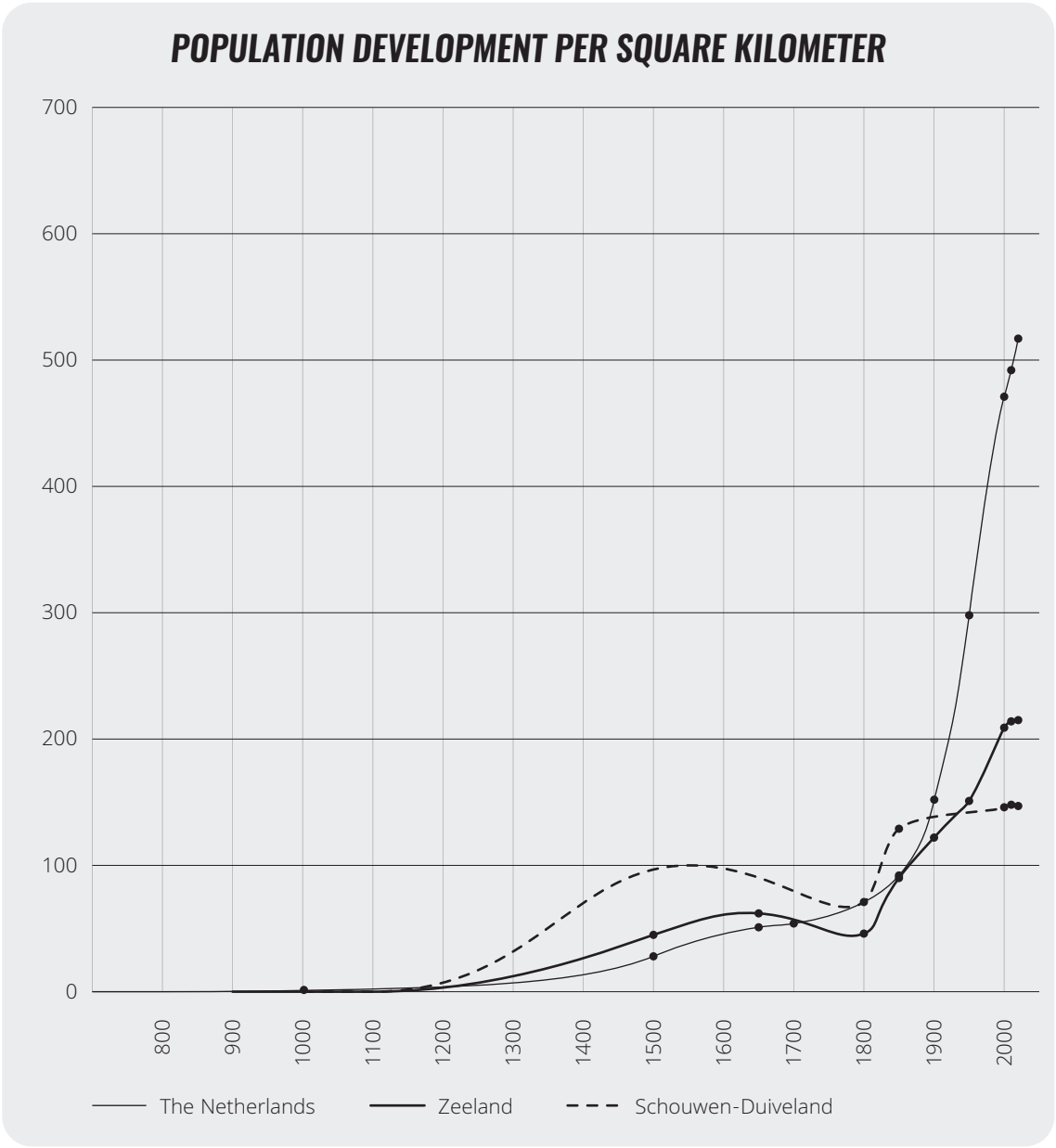
Windy and cloudy

Lockdown, curfew, shopping by appointment, schools partially open

ADDITIONAL INFORMATION CHAPTER 3



7.1. Landscape use: recreation



7.2. Population developmment (AlleCijfers, 2020a; CBS & DANS, n.d.; CBS StatLine, 2020; Colenbrander, 2005; Ekamper et al., 2003; Gemeentearchief Schouwen-Duiveland, 2018 & 2019; Metatopos, 2020; Paping, 2014; Provincie Zeeland, 2004)

| Years | | Netherlands | Zeeland | Schouwen-Duiveland | Zierikzee | Brouwershaven |
|-------|--|--|--|--|--|--|
| | Number of square kilometers in 2020 (land) | 33.671 (Metatopos, 2020) | 1.782 (Metatopos, 2020) | 230 (AlleCijfers, 2020a) | 22 (AlleCijfers, 2020c) | 7 (AlleCijfers, 2020b) |
| 0 | Population | 150.000 (Colenbrander, 2005) | | | 0 | 0 |
| | Population density per km ² | 4 | | | | |
| 300 | Population | | 0 (Provincie Zeeland, 2004) | 0 | 0 | 0 |
| | Population density per km ² | | | | | |
| 1000 | Population | 30.000 (Colenbrander, 2005) | | | | 0 |
| | Population density per km ² | 1 | | | | |
| 1500 | Population | 950.000 (Paping, 2014) | Urban population of 30.000 with an urbanisation rate of 36 (Paping, 2014) 80.000 | | 14.000 (Liebregts, 2011) | |
| | Population density per km ² | 28 | 45 | | 636 | |
| 1650 | Population | 1.800.000 (Paping, 2014) | Urban population of 50.000 with an urbanisation rate of 45 (Paping, 2014) 110.000 | | 12.000 (Liebregts, 2011) | |
| | Population density per km ² | 53 | 62 | | 546 | |
| 1750 | Population | | | | 10.500 (Winter, 2016) | 1.000 (Winter, 2016) |
| | Population density per km ² | | | | 477 | 143 |
| 1795 | Population | 1.880.463 (CBS & DANS, n.d.) | 82.212 (CBS & DANS, n.d.) | 16.343 (CBS & DANS, n.d.) | 6.086 (CBS & DANS, n.d.) | 690 (CBS & DANS, n.d.) |
| | Population density per km ² | 56 | 46 | 71 | 277 | 99 |
| 1850 | Population | 3.084.000 (Ekamper et al., 2003) | 160.000 (Ekamper et al., 2003) | 29.733 (CBS & DANS, n.d.) | 7092 (CBS & DANS, n.d.) | 1.439 (CBS & DANS, n.d.) |
| | Population density per km ² | 92 | 90 | 129 | 322 | 206 |
| 1900 | Population | 5.107.000 (Ekamper et al., 2003) | 217.000 (Ekamper et al., 2003) | | | |
| | Population density per km ² | 152 | 122 | | | |
| 1950 | Population | 10.027.000 (Ekamper et al., 2003) | 269.000 (Ekamper et al., 2003) | | | |
| | Population density per km ² | 298 | 151 | | | |
| 1953 | Victims of the 'watersnoodramp' | 1.836 (Gemeentearchief Schouwen-Duiveland, 2018) | 873 (Gemeentearchief Schouwen-Duiveland, 2018) | 534 (Gemeentearchief Schouwen-Duiveland, 2018) | 24 (Gemeentearchief Schouwen-Duiveland, 2018) | 3 (Gemeentearchief Schouwen-Duiveland, 2018) |
| 2000 | Population | 15.864.000 (Ekamper et al., 2003) | 372.000 (Ekamper et al., 2003) | 33.601 (AlleCijfers, 2020a) | 10.265 (Gemeente Schouwen-Duiveland, 2019) | 1.431 (Gemeente Schouwen-Duiveland, 2019) |
| | Population density per km ² | 471 | 209 | 146 | 467 | 204 |
| 2010 | Population | 16.574.989 (CBS StatLine, 2020) | 381.409 (CBS StatLine, 2020) | 34.118 (AlleCijfers, 2020a) | 10.615 (Deerenberg et al., 2011) | 1.340 (Deerenberg et al., 2011) |
| | Population density per km ² | 492 | 214 | 148 | 483 | 191 |
| 2020 | Population | 17.408.573 (Metatopos, 2020) | 383.519 (Metatopos, 2020) | 33.858 (AlleCijfers, 2020a) | 11.340 (Gemeente Schouwen-Duiveland, 2019) | 1.275 (Gemeente Schouwen-Duiveland, 2019) |
| | Population density per km ² | 517 | 215 | 147 | 516 | 182 |
| Notes | | | Until 1814 without Zeeuws-Vlaanderen | | Founded around 849 (Stichting Zierikzee Monumentenstad,n.d.) | Founded between 1286 and 1318 (Zeeuws Archief, 2018) |

| | | Current number of inhabitants | Number of households in 2017 | Development of households 2013-2017 | Forecast households province 2017-2027 | Forecast households Primos 2017-2027 | Indication of the type of place by the municipality |
|-----------------------|-----------------|-------------------------------|------------------------------|-------------------------------------|--|--------------------------------------|---|
| Towns | Zierikzee | 10.500 | 5.130 | 160 | 195 | 410 | Growth |
| | Burgh-Haamstede | 4.500 | 2.275 | 15 | 220 | 250 | Growth |
| Medium-sized villages | Bruinisse | 4.000 | 1.645 | -5 | 65 | 20 | Growth |
| | Nieuwerkerk | 2.700 | 1.050 | -20 | -30 | -10 | Shrinkage |
| | Oosterland | 2.400 | 850 | 10 | -60 | -35 | Shrinkage |
| | Renesse | 1.600 | 815 | -25 | -10 | 40 | Balance |
| | Brouwershaven | 1.400 | 670 | -10 | -45 | -30 | Shrinkage |
| | Scharendijke | 1.350 | 570 | 5 | -45 | -30 | Shrinkage |
| | Kerkwerve | 1.050 | 380 | 0 | -20 | -20 | Shrinkage |
| | | | | | | | |
| Small-sized villages | Dreischor | 1.000 | 420 | 10 | -10 | 0 | Balance |
| | Zonnemaire | 800 | 330 | 10 | -5 | 0 | Balance |
| | Noordgouwe | 750 | 330 | 10 | -5 | 0 | Balance |
| | Ouwerkerk | 650 | 280 | -15 | -5 | 0 | Balance |
| | Sirjansland | 360 | 135 | 0 | -5 | -10 | Balance |
| | Ellemeet | 340 | 150 | 10 | 0 | -5 | Balance |
| | Noordwelle | 330 | 150 | -5 | 10 | 20 | Balance |
| | Serooskerke | 300 | 135 | -5 | -10 | 0 | Balance |
| Hamlets | Brijdorpe | 50 | 20 | | | | |
| | 12 others | 0-200 | 0-80 | | | | |
| Recreative villages | Nieuw-Haamstede | 375 | 150 | | | | |
| | Den Osse | 40 | 15 | | | | |
| | Westenschouwen | | | | | | |

7.3. Characteristics settlements (Gemeente Schouwen-Duiveland, 2018; Plaatsengids, 2020)

| | | Facilities: supermarkets | Facilities: nursery | Facilities: primary school | Facilities: high school | Facilities: general practices | Facilities: community centre | Facilities: church |
|-----------------------|-----------------|--------------------------|---------------------|----------------------------|-------------------------|-------------------------------|------------------------------|--------------------|
| Towns | Zierikzee | 3 | 9 | 8 | 1 | 4 | 1 | 5 |
| | Burgh-Haamstede | 3 | 3 | 2 | - | 1 | 1 | 5 |
| Medium-sized villages | Bruinisse | 2 | 3 | 3 | - | 1 | - | 3 |
| | Nieuwerkerk | 1 | 2 | 2 | - | 1 | - | 4 |
| | Oosterland | 1 | 2 | 2 | - | 1 | 1 | 3 |
| | Renesse | 3 | 1 | 1 | - | 2 | 1 | 2 |
| | Brouwershaven | 1 | 1 | 1 | - | 1 | 1 | 3 |
| | Scharendijke | 1 | 1 | 1 | - | 1 | - | 2 |
| | Kerkwerve | - | 1 | 1 | - | - | 1 | 2 |
| | | | | | | | | |
| Small-sized villages | Dreischor | - | 2 | 1 | - | - | 1 | 1 |
| | Zonnemaire | - | - | - | - | - | 1 | 1 |
| | Noordgouwe | - | - | - | - | - | 1 | 1 |
| | Ouwerkerk | - | - | - | - | - | - | 1 |
| | Sirjansland | - | - | - | - | - | 1 | 1 |
| | Ellemeet | - | - | - | - | - | 1 | - |
| | Noordwelle | - | - | - | - | - | - | 1 |
| | Serooskerke | - | - | - | - | - | 1 | 1 |
| Hamlets | Brijdorpe | - | - | - | - | - | - | - |
| | 12 others | | | | | | | |
| Recreative villages | Nieuw-Haamstede | | | | | | | |
| | Den Osse | | - | - | - | - | - | - |
| | Westenschouwen | | | | | | | |

7.4. Facilities and values of the settlements (Plaatsengids, 2020)

| | | First mention | Share of pre-war buildings | Monuments (national and municipal) | Protected townscape | Ring village 'Ringdorp' | Front street village 'voorstraatdor' | Hit by the 80 Years' War | Bombed during WOII | Deaths 1953 flood | Major material damage 1953 flood disaster | Tradition of 'strao' |
|-----------------------|-----------------|---------------|----------------------------|------------------------------------|---------------------|-------------------------|--------------------------------------|--------------------------|--------------------|-------------------|---|----------------------|
| Towns | Zierikzee | 948 | 24% | 947 | yes | - | - | yes | | 24 | | - |
| | Burgh-Haamstede | 1229 | 16% | 49 | - | yes | - | | yes | 10 | | yes |
| | Bruinisse | 1468 | 21% | 2 | - | - | yes | | yes | 1 | | - |
| Medium-sized villages | Nieuwerkerk | 1233 | 11% | 8 | - | yes | - | | | 288 | yes | - |
| | Oosterland | 1354 | 22% | 6 | - | - | - | | yes | 65 | yes | - |
| | Renesse | 1300 | 10% | 24 | - | yes | - | yes | | | | yes |
| | Brouwershaven | 1232 | 33% | 61 | yes | - | - | yes | | 3 | | - |
| | Scharendijke | 1504 | 22% | 3 | - | - | - | | | | | yes |
| | Kerkwerve | 1317 | 10% | 2 | - | yes | - | yes | | 3 | | yes |
| | Dreischor | 1206 | 44% | 33 | yes | yes | - | | | 32 | | - |
| Small-sized villages | Zonnemaire | 1374 | 41% | 7 | - | - | - | | | | | - |
| | Noordgouwe | 1396 | 47% | 24 | yes | yes | - | | | 1 | | - |
| | Ouwerkerk | 1233 | 9% | 7 | - | yes | - | | | 91 | yes | - |
| | Sirjansland | 1573 | 19% | 2 | - | - | - | | | | | - |
| | Ellemeet | 1236 | 17% | 1 | - | - | - | yes | | 1 | | - |
| | Noordwelle | 1109 | 36% | 13 | - | yes | - | yes | | | | yes |
| | Serooskerke | 1752 | 22% | 3 | - | yes | - | yes | | 15 | | yes |

7.5. Cultural values of the settlements (Gemeentearchief Schouwen-Duiveland, 2018; Haartsen, 2009; Plaatsengids, 2020)

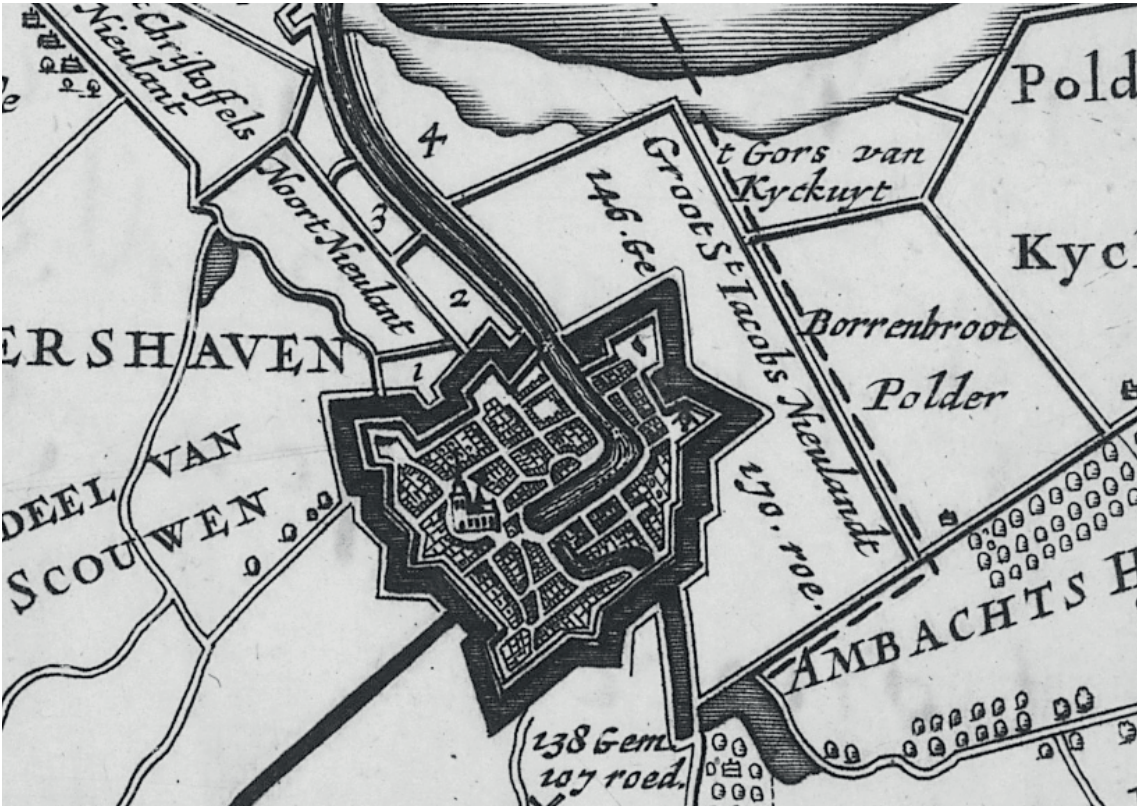
| | | First mention | Share of pre-war buildings | Monuments (national and municipal) | Protected townscape | Ring village 'Ringdorp' | Front street village 'voorstraatdor' | Hit by the 80 Years' War | Bombed during WOII | Deaths 1953 flood | Major material damage 1953 flood disaster | Tradition of 'strao' |
|------------|---------------------|---------------|----------------------------|------------------------------------|---------------------|-------------------------|--------------------------------------|--------------------------|--------------------|-------------------|---|----------------------|
| Hamlets | Schuddebeurs | 1847 | 40% | 22 | - | - | - | | | | | - |
| | Burghsluis | 1840 | 33% | - | - | - | - | | | | | - |
| | Beldert | 1504 | 25% | - | - | - | - | | | | | - |
| | Brijdorpe | 1231 | 23% | 1 | - | - | - | | | | | - |
| | Moriaanshoofd | 1752 | 7% | - | - | - | - | | | | | - |
| | Zijpe | 1847 | 13% | - | - | - | - | yes | | | | - |
| | Kapelle | 1396 | 29% | - | - | - | - | | | | | - |
| | Elkerzee | 1156 | 45% | 5 | - | - | - | | | | | - |
| | Dijkhuisjes | 1913 | 49% | - | - | - | - | | | | | - |
| | Looperskapelle | 1329 | 16% | 1 | - | - | - | | | | | - |
| | Nieuwerkerk Schutje | 1298 | 14% | 1 | - | - | - | | | | | - |
| | Koudekerke | 1311 | 100% | - | - | - | - | | | | | - |
| | Nieuw-Haamstede | 1834 | 5% | - | - | - | - | yes | | | | - |
| Recreative | Den Osse | 1636 | 1% | - | - | - | - | | | | | - |
| | Westenschouwen | 1229 | 7% | - | - | - | - | | | | | - |

7.6. Cultural values of the settlements (Gemeentearchief Schouwen-Duiveland, 2018; Haartsen, 2009; Plaatsengids, 2020)

ADDITIONAL INFORMATION CHAPTER 4



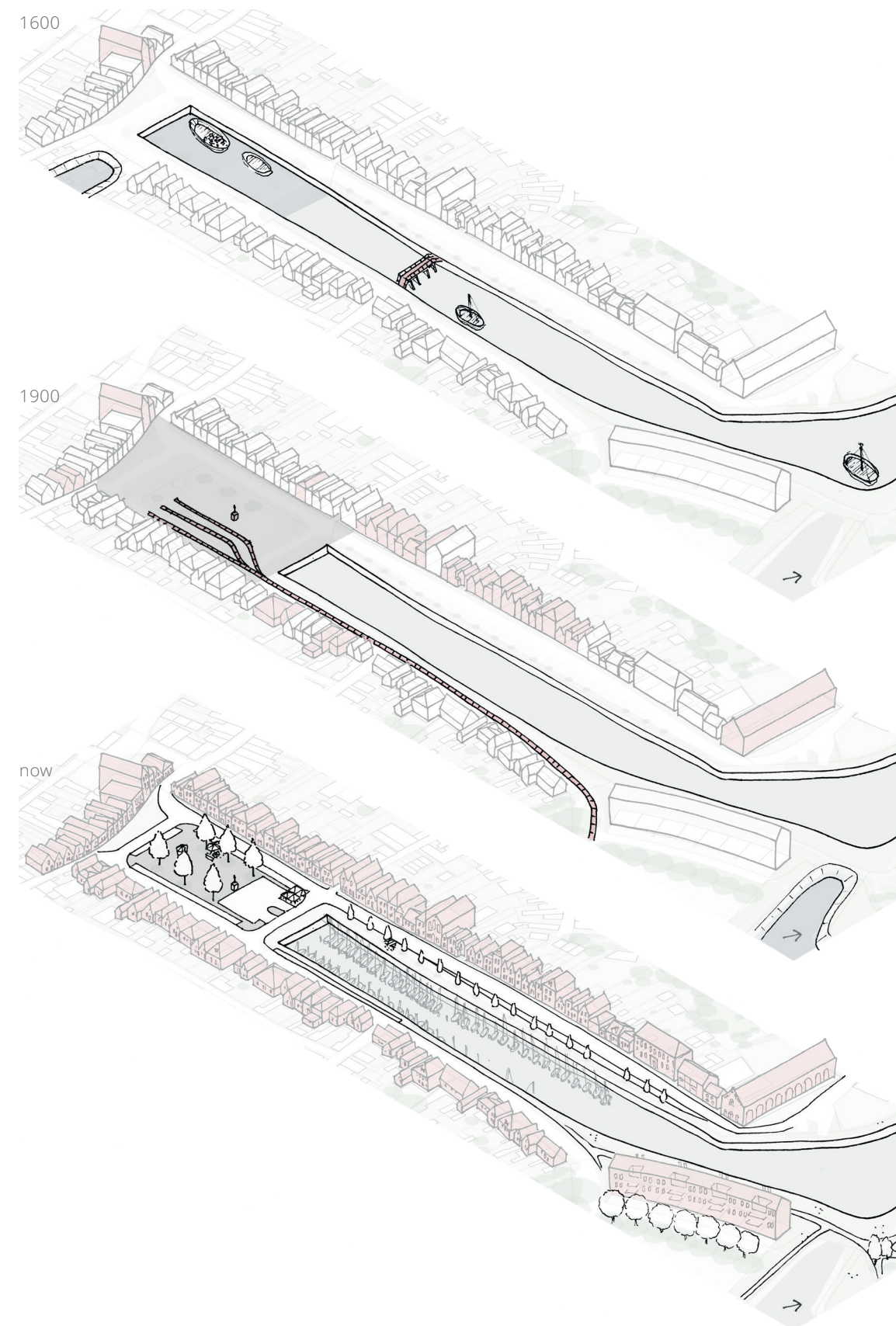
7.8. Brouwershaven 1545 (Deventer, 1545)



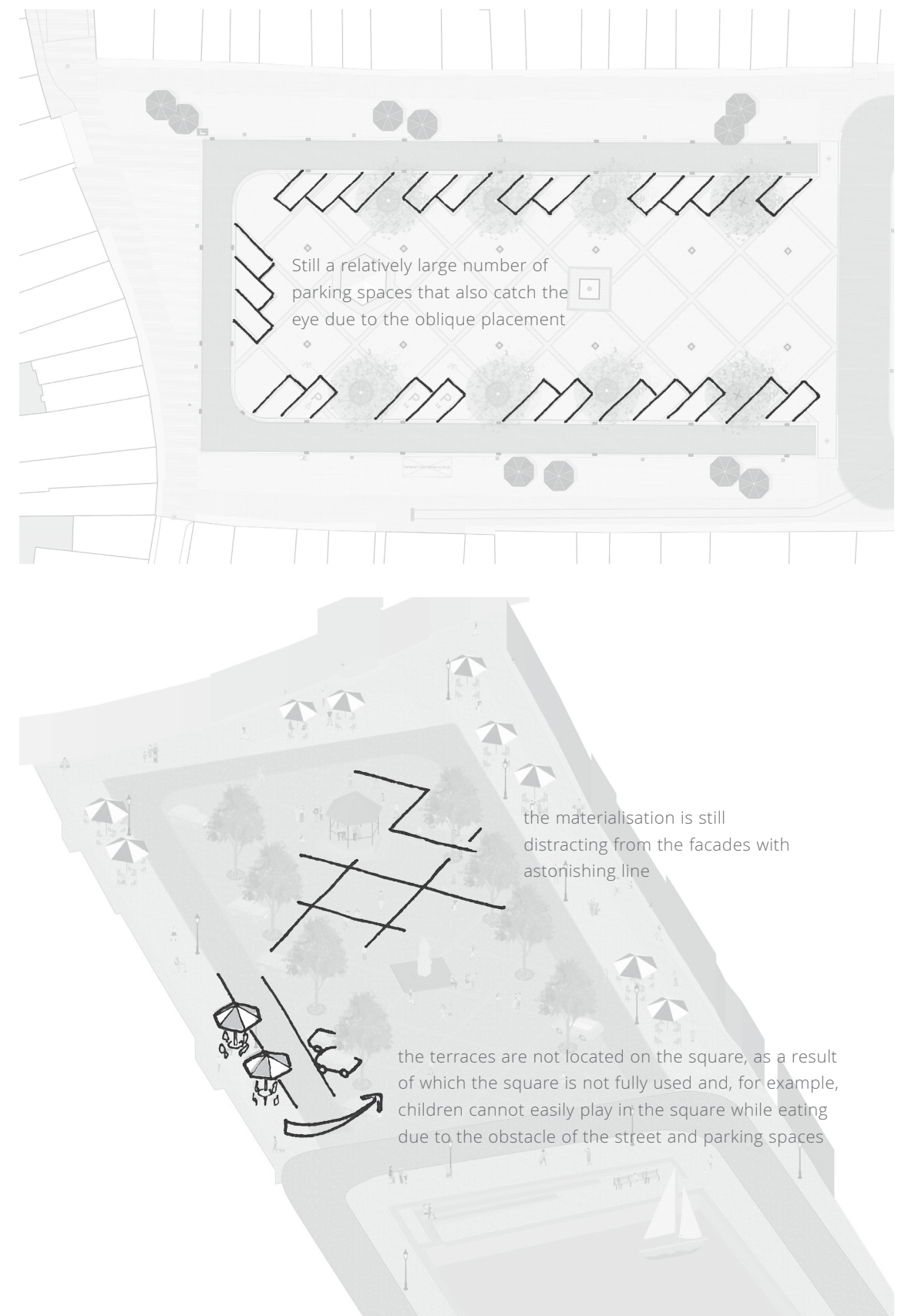
7.9. Brouwershaven 1656 (Visscher & Roman, 1655)



7.10 Brouwershaven 1866 (Kuijper, 1870)



7.11. Reconstruction central square of Brouwershaven



7.12. Final design central square Brouwershaven (Felixx Landschapsarchitecten, 2021)

