Self-evaluation Research Centre NoorderRuimte 2013-2018

share your talent. move the world.
Six years ago, NoorderRuimte was assessed for the first time by an external visitation committee. The Research Centre existed at that time for four years and saw the visitation with some shudder. We had never heard of a research piramide and our strategy was described as ‘opportunistisch focus’. However, it turned out that there was a good basis. Over the last six years we have built on that basis, and here and there we have adapted the foundations.

Now there is a vibrant and well-organized Research Centre that I am proud of as leading Dean. Researchers, students, teachers and the field of work are happy to connect with NoorderRuimte. We have a clear focus on the built environment, with four themes leading. Multidisciplinary work has become a trademark. We are well embedded in the region, but also have a strong national and international network with which we work together in various projects. NoorderRuimte has a beautiful and visible location at the Zernike Campus where researchers, programme bureau and students collaborate and collaborate. Here we regularly find inspiring sessions and every six months we are proud to share our research results at our symposium.

Now that we are at the end of the current strategic period, it is a good time to ask an external commission to make a judgement. Both the positive points and the development points that will undoubtedly emerge will be used in the formulation and our ambition for the next strategic period.

The panel that carried out our midterm review three years ago indicated at the end that we could ‘snakken’ a bit more, a beautiful Gronings word for bragging. This self-assessment shows that we have also taken good steps in this.

Dorothea van der Meulen
Leading Dean Research Centre for Built Environment NoorderRuimte
5.1 Introduction 55
5.2 Current situation 55
5.3 Reflection and development points 58

6 Looking ahead to the new strategic plan 61

Annex I the lectoraten of NoorderRuimte 65

ANNEX II Innovation Workplaces of NoorderRuimte 66 Annex III

Literature references 67

ANNEX IV outputs and activities 68
In this chapter we will deal with the context within which the Research Centre operates and the main developments since the Visitati on in 2012. Chapters 1 to 5 are then treated as standard per chapter. The self-evaluation is concluded with a preview of the next strategic plan.

0.1 Internal Context
NoorderRuimte is one of the six Research Centres/Centres or Expertise of the Hanze University with about seventy employees. Of the three centres of knowledge, NoorderRuimte is the largest. In addition, there are three larger centres or Expertise. The number of PhD students in NoorderRuimte is striking; this is currently 20. The next year a significant part will complete the PhD project (see Figure 4).

NoorderRuimte is a collaboration between the following lectoraten:

<table>
<thead>
<tr>
<th>Lectoraten with The associated sectors</th>
<th>Connected with</th>
</tr>
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<tbody>
<tr>
<td>Facility Management</td>
<td>Institute for Facility Management</td>
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<tr>
<td>Lector facility Management</td>
<td></td>
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<tr>
<td>Lector Healthy City (I.O.)</td>
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<tr>
<td>Real estate</td>
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<td>Lector Real Estate</td>
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<td>environment in transition</td>
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<td>Lector Living Environment in transition</td>
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<td>Spatial transformations</td>
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<td>Lector spatial transformations</td>
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<td>– Energy Spatial transformations –</td>
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<tr>
<td>Water earthquake resistant &amp; promising Groningen</td>
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<tr>
<td>Lector Building earthquake proof</td>
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</table>

Table 1 Lectoraten in NoorderRuimte

1 Formerly Shrinkage & Living Environment
NoorderRuimte focuses on the themes of earthquakes, durability, health & well-being and liveability, always in relation to the built environment. Figure 1 shows the extent to which the themes contribute to the spearheads of the Hanze University, namely energy, Healthy Ageing and entrepreneurship. These contributions are provided by both NoorderRuimte projects in these areas, as well as through joint projects with the centres or Expertise. See also Cross-Overs in 1.2.

**Figure 1** contribution of NoorderRuimte-themes to the Hanse-spearheads

Within the Hanze University we are strongly committed to innovation workplaces (IWPs). These are the learning communities in which education, research and professional practice are linked. NoorderRuimte has always been at the forefront as regards these learning communities. At the time of the previous visitation we had already gained extensive experience in the form of three workshops sustainability, human & Environment and the shipyard. Over the past few years we have developed the workshops to the bureau NoorderRuimte (bNR). At the Hanze University of Applied Sciences, bNR is one of the most appealing examples of a learning community. In 2.2.3 we will go further on bNR.

### 0.2 External context

#### Regional context

NoorderRuimte is strongly anchored in the north of the Netherlands. The NoorderRuimte-themed earthquakes is a very specific northern Dutch theme. The other three themes, sustainability, health & well-being and liveability, also have clear issues in Noord-Nederland. Around all the themes we developed rich regional networks. These networks have been formally organised for a number of themes (e.g. Knowledge Network shrink North Netherlands) or are we affiliated with a formal network (eg Building). For the other themes, the networks are organised around the projects we carry out (e.g. Healthy WorkPlace).

A number of regional and national developments have influenced NoorderRuimte in recent years:

- The increase (and decrease) in the earthquakes in Groningen and in relation to this the ambition to switch to other sources of energy than natural gas.
- Demographic changes, which, among other things, result in a decrease in the number of inhabitants and the growing distantgreying in parts of the Northern Netherlands.
- The growing focus on climate adaptation and the establishment of the Global Center on Adaptation in Groningen.
- The increasing focus on sustainability (including sustainable energy) and circularity.
- The increasing attention for healthy ageing.
- Increasing attention to the impact of the built environment on Health.
- The consequences of the economic crisis and the recent developments in the real estate market.

In addition, northern programmes such as the Noordelijke Innovation Agenda and the national programme Groningen are important for NoorderRuimte. Chapter 1 goes deeper into this.

#### National and international context

In recent years, the national and international Network of NoorderRuimte has expanded considerably. Based on the meerjarenambitie of NoorderRuimte, it has been deployed on strong connections with national and international professional and scientific organisations, universities, companies and governments. Broader partnerships have emerged from existing national and international contacts. The Dutch Earthquake engineers Associatio N was founded from the earthquake Resistance & promising Groningen.

#### Internationale Projecten

<table>
<thead>
<tr>
<th>Thema</th>
<th>Internationaal project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aardbevingen</td>
<td>SeasEQquake</td>
</tr>
<tr>
<td>Duurzaamheid</td>
<td>Making City</td>
</tr>
<tr>
<td></td>
<td>WaterCOG</td>
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<tr>
<td>Gezondheid &amp; Welzijn</td>
<td>M-NEX</td>
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<tr>
<td>Leefbaarheid</td>
<td>Global Center on Adaptation</td>
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<td>Ruimte voor mij</td>
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<td>EDIT</td>
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Table 2 Examples of international projects
0.3 Developments since the last visitation

As indicated in the past six years, NoorderRuimte has been strongly developed into a sturdy and well-running Research Centre for the built environment aimed at impact on professional practice, education and research. The team of Lectors, (lecturer) researchers, PhD students and support has grown considerably (See Figure 3 and Figure 4) and is well-worked together. The defined themes provide clarity about what NoorderRuimte does and does not do and wants to do.

Within the Lectoraten is built Onderzoekspiramides. The NoorderRuimte Bureau has become an innovation workshop, which is consulted as best practice within the Hanze University. The external network is sturdy and is actively involved in the bottom faceook. In these development steps, north latitude has also been based on the advice and recommendations of the Visitation Committee from 2013. Before we discuss the different standards, we outline table 3 lists the main previous opinions and recommendations and what actions are Taken.
The Knowledge centre wants to make further focus on the research lines. [...] The panel advises the Knowledge Centre to first, together with the field of work, to answer the question of the functionality of the research lines in this case. Then Can, if desired, further tightening and redrawing the working field, together with the Research Lines take place.

The Knowledge centre has made a decision not to set up an advisory board but put on strong networks in T e and get continuous feedback. Depending on the theme and subject, externals are consulted. ThisChoiceisCobased Experiences at other knowledge centres.

In recent years, northern space has clearly expanded the networks and especially because there are considerably larger projects and are being implemented. In addition, a number of projects are specifically focused on the network, such as the Knowledge Network shrinkage in the north of the Netherlands and various innovation workshops. Cooperation with the other knowledge centres and centers of expertise have also expanded the network.

<table>
<thead>
<tr>
<th>Subject</th>
<th>Opinions and recommendations from Visitation Report 2013</th>
<th>By Made development</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard 1 Research and program</td>
<td>In 2015, a jointly written Position Paper was written with the mission. This Position Paper was updated in 2018/19. As Chapter 1 describes, the Position Paper is of great value for Northern space. The research is sharpened with the choice of four clear themes, always in relation to the built environment. We regularly Flip These themes with our Field Partners. The Position Paper has four Central themes. ThisThemeareaslighteningfromthepreviousResearch Lines in combination with the new theme earthquakes. The practice is now that the themes are guiding and that projects are brought into it.</td>
<td></td>
</tr>
<tr>
<td>Standard 2 Research Organisation</td>
<td>The panel advises the Knowledge Centre to further focus on the research lines. [...] The panel advises the Knowledge Centre to first, together with the field of work, to answer the question of the functionality of the research lines in this case. Then Can, if desired, further tightening and redrawing the working field, together with the Research Lines take place.</td>
<td></td>
</tr>
<tr>
<td>Standard 3 Quality of research</td>
<td>The panel advises the Knowledge Centre to quickly Create clarity around the WCCP approach. Expect management by making the work field clear beforehand whether it is an onDeroekz carried out by the Knowledge Centre or a (graduation) work of a student. In the latter case the quality can be significantly less.</td>
<td>By Made development</td>
</tr>
<tr>
<td>Standard 4 OUPUt and Impact</td>
<td>Create free space outside individual research for the systematic conceptualization of research results into new practice theories and Field development instruments in line with the mission. In This free space, more could also be done with. The results of graduation research where the student is already gone, but the research is not yet Publicable/ripe for wider distribution.</td>
<td>This remains an aspect that needs attention or may not be fully realised. Opposite theActivitiesmadebydevelopedinthefree space ‘ does not allow external revenues. As far as the student surveys and results are concerned, these are now almost always part of longer running research lines. This will result in better harvesting of the results, knowledge stacking and attention to the Guaranteeing the results.</td>
</tr>
</tbody>
</table>
1 Standard 1: Research programme and profile of NoorderRuimte

The research unit has a relevant, ambitious and challenging research and a research programme with associated goals that are geope rationalized in a number of indicators.

1.1 Introduction

NoorderRuimte focuses as a Research Centre on improving the built environment in relation to its users. This core has remained unchanged for the past period, as this focus also appears to be seamlessly connected to those of our WERKVELDPartners. We have developed the research programme and profile in full.

An important step in this was the creation of the Position Paper in 2015, with the participation of the entire team of lecturers, researchers and field partners. The VisItatieaanbevelingen, the developments in our field and field and the strategic policy of the Hanze University were the starting point of this process. The Position Paper is then operationalized in the strategic plan and in the annual plans of the Knowledge centre.

The current programme with the four themes has since been ‘like a house’. In Practice, we also see that it works. It helps us focus on sometimes difficult choices and has a very broad support within the Research Centre and our partners. Our research programme once again showshave a very good connection to regional and (inter) national calendars.

In 2018 the Position Paper rebalanced. This has led to a number of points, including change in naming (see section 1.2), but not to the fundamental variations. Simply because it is still a powerful, good working concept/good working strategy.

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2 For NoorderRuimte the ‘Work field’ or ‘professional Practice’ also explicitly includes residents. See the Report Work field State and the Besides professional organisations also about residents cooperatives and collectives.
1.2 Current Situation

**Mission and Vision**

It is the mission of NoorderRuimte to investigate and improve the interaction between people and the built environment, in the socio-spatial context of the northern Netherlands. This
- We define the built environment as an area (buildings complex, village, town), building (building, technical installation, indoor, outdoor) and infrastructure.
- We see man in his role as a user of the built environment. For example, a user can be KLA NT, entrepreneur, employee, patient, ‘prosumer’ or resident who carries out activities in and around the built environment.
- is our focus on (re) design as a creative process, which transforms a current undesirable situation into a desired future. In Our research we involve both the advantages and disadvantages of this situation (s). This method allows us to continually improve our design results and spread the innovations to other areas within the field.

Our 2020 Vision aims to position people in the direction in the north of the Netherlands , in particular in their role as a user (e.g. customer, entrepreneur, employee, patient, ’prosumer’, inhabitant), and thus contribute to a better built Environment.

In doing so, we strive for a built environment with resilience. A resilient built environment is an environment that is ready for truly sustainable changes. Not only is it able to cope with situational changes such as earthquakes or overstr, but it can also respond to the (new) needs of its (new) users after these changes.

In all this, practice is always central: focussed on acting to realize changes.

In addition to responding to the challenges in the north, we are also encouraging the positive elements in our area, in particular by improving the chances of the high quality climate in the northern Netherlands. To exploit. With clever (re) design solutions we want to contribute to a Bloeiende Northern economy.

Together with our field partners we form a learning Community. We are trying to create a learning cycle in which organisations, residents and owners can participate in their issues. The design research results of this learning cycle benefit both Research Centre and field of work.

Our main Onderzoeks methology is the design methodology, such as diagnosis, (re) design, implementation, and/or evaluation of the added value of the built Environment for human activities (see also chapter 3).

In particular, we focus on the economic and maatschappelijke added value of the built environment in order to ensure the economic and social processes of Northern Society Improve it.

**NoorderRuimte Themes**

With the setting of the Position Paper in 2015, north Latitude has made the choice to focus on four themes:

1. Earthquakes
2. Sustainability
3. Health & well-being and
4. Liveability

These themes have been chosen because of their relevance to the Northern Netherlands and the connection to our field of work and education. However, this does not mean that the themes are only regional in significance. The issues that are being worked on are also (inter) national/interregional in significance. As evidenced by the connection to the various agendas, subsidy programmes and international congresses.

**Earthquakes**

The earthquakes have had a major impact in our region in recent years. This is not just about the actual earthquakes and the damage that they entail, but also about the continuous uncertainty and the threat of a zwaardere quake that hangs the inhabitants. Add to this the struggle for recognition and handling, and it is clear that the earthquakes have an impact on things like wellbeing, quality of life, living conditions, the image of the north, the value of real estate and our cultural Heritage.

The same region also has to do with selective population shrinkage. It is therefore important that solutions of earthquake issues focus not only on building up buildings, but that there is also a simultaneously eye for liveability effects, health and economic activity. That is why The theme of earthquakes in addition to the research line earthquake-resistant building also has a research line on the preservation and enhancement of the quality of liveN and this while maintaining the Groninger identity.

**Sustainability**

In our field of work, attitudes, business models, and products and services in relation to the transformation of our built environment have changed fundamentally in recent years. New construction, renovation and restoration projects are increasingly focusing on energy efficiency, the environmentally friendly generation of energy, sustainable building and efficient use of raw materials.

The sector wants to meet the challenges such as the increase in Bevolking, the progressive individualization, the growing use of raw materials and the changing demographics. These challenges play at both a regional and global level.

NoorderRuimte opts for a positive approach, by highlighting and exploiting the developments in this area as an opportunity and the strengths of our region. We do this through three objectives:

a) Support people and communities in improving their own built environment;

b) Smart raw materials use; and c) using the Natuur as a source of inspiration for the (through) development of integral design approaches.

**Liveability**

Within the theme of sustainability we focus our attention on both the rural area and the urban area in the north of the Netherlands. The ‘escalator effect’ is where cities grow, while the rural cores see their young inhabitants depart in search of training and career prospects. Through this global process of urbanisation the differences between urban area and rural areas grow, both between and within regions.
Urbanization and selective population shrinkage are both a challenge for the habitability. Here we can think of carrying capacity for the traditional (organisation of) facilities in rural areas, the herinnulling of empty (monumental) Vastgoed or issues concerning the housing market, integration, and health and safety Environment in the city.

The multitude of challenges makes it increasingly clear that an integrated approach with all stakeholders is essential for the strong resilience and liveability. Within the theme of 'liveability' we focus on three research lines, namely: organisational strength, Economy and culture & heritage.

Health & Wellbeing

The built environment can have a positive effect on people's health and well-being. It can reduce anxiety, stress, pain and depression. Conversely, a incorrectly furnished space, building or environment can lead to health problems. The theme of health & well-being is looked at both: properties of the built environment that have a positive impact on humans and the elimination of properties that have a negative impact. In this context, it is about healing BrabaxGen, evidence-based design, health gains and positive health. Our goal is to increase awareness among designers, users and decision makers, thereby enhancing health and well-being in buildings and the built environment. ThEMA focuses on four research lines: Care (cure), care (care), workplaces and cities.

Themes Give direction

After setting the Position Paper and the themes laid out therein, it was of course the challenge to use the themes in the daily PRAktijk also. That proves to work well. The themes have become the guiding principle in the organization and for making choices. For example, the Steering committee decided to say goodbye to the lectoraten Smart Mobility and MarineWetlands. Studies and the Lectoraten real estate and social real estate have been merged. The Steering Group is also based on the Position Paper in the choices to do or not to make certain projects. For the further operationalization of the programme of NoorderRuimte, we refer to the strategic Annual plan and the impact indicators (see table 5). Also the NoorderRuimte Bureau follows the themes from the Position Paper and has therefore abandoned the original research lines. In the guidance of students within BNR, the themes are also leading, up to the concluding poster symposium.

At the same time, NoorderRuimte remains open to adapt to developments in the environment. The theme 'contraction' has been replaced by 'liveability' and the Lecto spatial transformations 'Energy' now also with the term 'sustainability'. In order to get enough new developments and fresh ideas, there is sometimes also a reasoned deviation from the Position Paper. However, this is a deliberately bestliut, based on a clear idea of what we want to achieve with it. An example is the research line healthy city. This was not in the picture at the time of the Position Paper, but a few years later it turned out to be a very topical theme. After discussion in the steering group, this line was then developed.

Connection research on policy agendas

The legitimacy of the research of NoorderRuimte is confirmed by the connection to the various regional and (inter-) national agendas. There is not one overarching agenda, but a set of agendas where the four themes of NoorderRuimte fit well. Our Research Centre themes are particularly close to the following agendas:

Northern Vision 2040

In 2012-2013, the three northern provinces developed for the first time a common vision of the future. This vision was presented as 'Northern Vision 2040'. NoorderRuimte was one of many involved in the process of input. The AAnsloot for NoorderRuimte sits on components such as water management, international connections, energy and beautiful living.

Although no explicit implementation programme was linked to the northern vision, the vision is in the course that the three provinces sail. For example, the northern Vision 2040 has again been the guiding point for the North innovation Agenda.

Northern Innovation Agenda

The Northern innovation Agenda is an important agenda in which the forces of the northern provinces, Knowledge Instituteand other parties are bundled to address the societal challenges of our region. From its focus on the built environment, NoorderRuimte connects to the NIA themes of liveability, health & well-being, sustainability and energy systems.

Knowledge Platforms National Coordinator Groningen

The National Coordinator Groningen (NCG) is a co-operation of six Groninger municipalities in the earthquake area, the province of Groningen and the state government. The NCG works to strengthen housing and buildings and to increase the liveability and durability and strengthen the regional economy. To this end, The NCG has established two knowledge platforms: Building & strengthening and livable & promising. Lecturers of NoorderRuimte are active in these knowledge platforms.

National Programme Groningen

The National programme Groningen is a recent (end 2018) and extensive programme from the government to help the province of Groningen to cope with the consequences of the earthquakes and, on the other hand, to help strengthen the liveability and Accelerate energy transition. The total size of the programme is more than EUR 1 billion. The program has three tracks:

2. Groningen nature, Energy and Climate: CO₂, neutral public transport, klimaatadaptatieve agriculture, energy transition leader, climate-proof setting up of area.
3. Groningen economy and LabourMarket
The Knowledge Platform demographic transition, developed by platform 31.

The knowledge agenda is structured around four themes:

1. **From the KKNN, the knowledge agenda is shrink represented (provinces, municipalities, Kennisinstituten)**

   - The Hanze University is co-initiator of the Knowledge network Krimpen Noord-Netherlands (KKNN). In 2015, the National science Agenda was launched by THE Ministry of OCW. The aim of this agenda is to focus Dutch research on a number of important topics ('routes'). NoorderRuimteCLOSEPOSITIENUMBER offromthisroutes, as 'OnRoadtoResilient'.

   - 'Circular economy' and 'quality of the environment'. Lectors of our Research Centre are affiliated with the various voorbereidingsoverleggen of THE NWA.

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3. **Knowledge Agenda shrinkage Northern Netherlands**

   - The Hanze University is co-initiator of the Knowledge network Krimpen Noord-Netherlands (KKNN). In this network all relevant players of the three northern provinces with regard to population shrinkage are represented (provinces, municipalities, Kennisinstituten, housing corporations, care institutions, ...). From the KKNN, the knowledge agenda is shrink-developed, first in 2012 and renewed in 2017. The knowledge agenda is structured around four themes: liveability and care, economic vitality, urban-rural relations and spatial inequality. At the national level, the knowledge agenda of KKNN is in line with 2017 the Knowledge Platform demographic transition, developed by platform 31.

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4. **Sustainable Development Goals (SDGs)**

   - The sustainable Ontwikkelingsdoelstellingen (Robert Edison - sustainable Development goals) have been adopted by the United Nations As the new global sustainable development agenda for 2030. The Robert Edison comes back to subsidy programmes and policies at European, National and regional level. TheHanzeUniversity has made part of its policy letter. NoorderRuimte is particularly close to goals 3 (health and well-being), 11 (Sustainable Cities and communities) and 13 (Climate action).

5. **Crossovers**

   - That our four themes can overlap will not surprise you. It is precisely in these crossovers that opportunities for cooperation from different disciplines are created and an integral image arises. We are convinced that an enriched integral image can enhance our societal impact: a better built environment for people.

   - An example of a crossover is the research ‘torque opportunities’. In doing so, it has been investigated how residents in the earthquake area can take advantage of the strengthening of their dwelling (theme earthquakes) in order to make the dwelling even more sustainable (theme sustainability).

   - Figure 6 illustrates a number of other cross-overs in NoorderRuimte.

   - Cross-overs are also mentioned outside our own knowledge centre. In particular, the energy and healthy ageing spearheads offer many points of cooperation. A recent example is the Preparation of the Lectoraats application Healthy City, in collaboration with the Centre of Expertise Healthy Ageing. In addition, there are several ongoing research projects carried out jointly, such as the Zero on the Meter Project and the PhD research "rooms and services for palliative care".

   - "I have experienced the multidisciplinary research as very positive. As a student of psychology I was stuck in my research, but through the contact with among other students facility Management I discovered a completely different way of looking, other techniques. That is why we are interfacing at the NoorderRuimte Education, research and professional practice in the implementation of our practice-oriented research."

   - Cindy Jack, former bNR student, student psychology

   - "It has been very enriching to work at the cross-over of our four themes. At the beginning it was sometimes difficult to get an overview of what was going on in the other areas. But that is precisely what makes NoorderRuimte unique.

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Growing through ' expansion '

In line with the policy of the Hanze University, we want to make future growth through strengthening the current themes and lectoraten. So not every time new lectoraten set up, but ' expanding ' by lectors with their own research line add to existing Lectoraten. In this way, the onderzoekspiramide (see figure 10) is reinforced. A first example of this extension is the research line ' healthy City ' within the lecturer facility Management. In cooperation with, among others, the municipality of Groningen and the UMCG.

Contributions to national Programme Groningen

The NPG offers on all traces connecting points for the themes of NoorderRuimte. In the coming period, we want to transform this opportunity into concrete projects in cooperation with our WERKVeldpartners.

Further expanding crossovers

As described, NoorderRuimte works together with the centres of Expertise Energy and Healthy Ageing. We want to strengthen this cooperation further. Also with the centre for ONdernemerschap We see interfaces that we want to expand further, for example in the coherence between liveability and the labour market.

1.3 Reflection and development points

As has been said, NoorderRuimte has a clear research, which is well suited to regional and (inter) national issues and to the strategy of the Hanze University Groningen. The subdivision of research themes is clear and works well for all stakeholders.

In addition, we certainly also have a number of development points and wishes for the foreseeable future.

Shaping the next strategic period

The Position Paper and the strategic plan of NoorderRuimte are 2015. This means that we have reached the end of our strategic period. We have achieved most of the ambitions of our current plans, there is now a need for a new plan. In Chapter 6 we give a preview.
2 Standard 2: Research organisation of NoorderRuimte

The way in which the unit is organised, the use of people and resources and the internal and external collaborations, networks and relationships make the realization of the research possible.

2.1 Introduction

NoorderRuimte is a very well running organization. We even dare to claim that our Research Centre works like a oiled machine. The control and organizational structure is clear and efficient. We try to bepe the administrative burden to a minimumken. Our organisational form is described as ‘informal professional’, which means that the lines are short and accessible, there is an ambitious atmosphere and our bar is extremely high. The Position Paper is the basis for the control of NoorderRuimte and this strategy is also always the basis of decision-making in our knowledge centre.

2.2 Current Situation

2.2.1 Organisational structure and control

The organisation of NoorderRuimte has three different lines, namely the organisational, the content and the thematic (see Figure 7). The organisational line is driven by the daily management and steering Committee. The leading Dean, the leading Lector and the Program Manager form the daily board of the NoorderRuimte. They lay Verantwoording to the Steering Committee, which consists of the deans of the schools involved and is chaired by the leading dean. The leading Dean is fully responsible for the Knowledge centre, she is accountable to the Executive Board. ElKe Dean is fully responsible for education and research in his/her school and manager of the lecturers of his/her schools.

The leading lector is responsible for the content coherence of the Knowledge centre. Each lecturer is responsible for a research group that is active in R & D, education and practice. The program Manager supports the lectors in the execution of their complex tasks and sends the program office. Each year the Steering Committee adopts an annual plan and budget for the Knowledge Centre. In addition, with the lector in the context of the HR cycle, agreements are made about the expected results and progress and assessment interviews are held. Progress is reported regularly in the Steering Committee.
The management of the themes of the Research Centre is thematically held by four stakeholders (see Figure 7): Two lecturers (research), an educational manager (education) and a network manager (field of work). The lecturers monitor the content of the theme. The education Manager monitors the connection with the education and the network Manager the connection to the Work field. This approach gives the Schools involved in NoorderRuimte the opportunity to continue to know the connections of education, research and the fieldwork on the four themes. One of the two lecturers involved is the theme tractor. In 2015, additional research funds were awarded to NoorderRuimte, which allowed us to raise the appointment of these four themed tractors to 0.8 FTE.

2.2.2 Lectoraten, themes and the onderzoekspiramides

Lectoraten
At present the NoorderRuimte has five lectoraten. All researchers are part of a research group of a lecturer. A number of researchers are linked to several research groups. Each year the Lector decides on the basis of the researcher’s progress and the developments within the research line or the researcher the next academic year is also part of the research group.

In recent years, Lectoraten have been discontinued and have been completed (see Figure 8). The Steering Committee advises the executiveboard on the termination of Lectoraten and the development of new Lectoraten. The Position Paper is the basis for the decisions of the Steering Committee. Last period, this has led to the termination of the Lectoraten Marine Wetlands and Smart Mobility since they did not or did not contribute enough to The four themes of NoorderRuimte. In addition, it has been decided to remerge the embedded lecturer in Social real estate with the research property to strengthen the onderzoeksrand of this lecturer. Furthermore, the name of the Lector & Living Environment has been changed to the environment in transition.

Themes
Within the four NoorderRuimte themes are always at least two lectoraten active, see below MatrIX. Through this cooperation we give shape to our aim to work multidisciplinary in NoorderRuimte. The thematic groups define the strategy for the further development of the theme. The themes are guiding in NoorderRuimte, with all contentast decisions on Research, the balancing is made whether it is appropriate within a theme or not. In addition, a 90/10 rule is used, so that there is also room for new developments that may later become a new theme Uitgroei.
Networks and Themes

Around each theme, NoorderRuimte has a strong and active network, or it is one of the determining partners in a formal network organisation.

- For the theme earthquakes, this building, the Innovation Center for future-proof building. The Hanze University is one of the founding fathers of building.
- From the theme of sustainability, the regional, national and international Network of the GloBal Center on Adaptation (GCA) is important. The Hanze University, together with the municipality of Groningen and the University of Groningen, is the most important partner of the GCA in Groningen.
- Within the theme Health & well-being, we are several strong networking actionF that are linked to the two long-running innovation workshop that we organize, namely Health Space Design and Healthy Workplace.
- For the theme of liveability, the knowledge network of the North Netherlands is of great importance. Together with the RUG, Noorder space has set up this network and has now grown to 1,500 professionals.

“There are many questions in NoorderRuimte. They have a lot of contact with companies and civil society organizations that are potential clients for our Studenten. It is not a fictitious issue. It is about real problems. And right there lies the power of Research Centre NoorderRuimte. By bringing education and research together, added value is created towards Society.”

Antoinette Bos, former team leader Real Estate & brokerage, Hanze University Groningen

Onderzoeksparamide

Within the Hanze University, the policy is aimed at establishing full-fledged onderzoeksparamides. This policy is in 2015 as follows byRtaald in our Position Paper: The minimum number of persons per theme must consist of a leading lector (0.8 FTE), a postdoc (0.8 FTE), two PhD students (1 FTE), teacher researchers (1 FTE), and supportive Staff (0.4 FTE). Apart from the postdoc, this is amply filled in for each theme.

At the level of NoorderRuimte, the entire onderzoeksparamide looks schematically as figure 10. On theme level can build up pyramid differences. The internal resources are created equally distributed, but the amount of external resources obtained varies by theme.

In comparison with the other knowledge centres, Noorden has relatively many PhD students, partly thanks to acquired external financing.

It should also be noted that since a number of years in NoorderRuimte, a distinction has been made between teacher researchers focusing on research and, on the other hand, teacher researchers who are linking research – education – Work field (shaded shaded in Figure 10). Over the last few years we have found that a good connection with education and the field of work is of benefit to the employees who are particularly focused on this.
Financing of the Onderzoekspiramide
The Hanze University of Applied Sciences provides the basic financing of the knowledge centres and centers of Expertise. By acquiring external resources, the onderzoekspiramide is enlarged.

NoorderRuimte, E R has been able to acquire external resources between 35 and 40% in recent years.

The following aspects are covered:
- We know more funding sources to tap into. In addition to the specific research grants for HBO (especially touch), we have also successfully submitted applications in recent years to the Netherlands Organisation for Scientific Research, the Netherlands Organisation for Health research and care innovation ZonMw, the top consortia for knowledge and Innovatie and the Dutch department of Enterprising Netherlands.
- We have grown strongly in the number of international subsidy projects. We have successfully made applications for the following international regulations:
  - Horizon 2020
  - Interreg VB
  - Interreg VA
  - Joint programme Initiative
  - Erasmus
  - Cost Action
- We collect a large part of our external funding from our network (see Figure 11).

2.2.3 NoorderRuimte Office and Innovation Workplaces
In 2013, the NoorderRuimte Bureau was launched, as the successor to the thematic workshops of NoorderRuimte. The NoorderRuimte Bureau is the innovation workshop of the Research Centre and is regularly consulted within and outside the university as best practice. Every semester about 75 to 100 students, together with lectors, teacher researchers and field Partners, research within BNR. These are both second-, third- and fourth year students and sometimes a master student. For a whole or half semester they are junior employees of NoordoRiumte and working at the locations of NoorderRuimte. The students come from many different courses, each semester there are students from fourteen to fifteen courses that work together within the Four themes (see Findlement 12). The Research Centre is not only the client for the students, but invests also in the Personal Development from the students. This happens by Workshops, Group coaching and individual guidance by the bNR team. In addition to the Coordinator, this team consists of four teachers of the intensive schools involved in NoorderRuimte. They have not only a role in NoorderRuimte, but are also the connection after the schools.

Under the umbrella of office NoorderRuimte still flourishes a number of innovation workshops, bNR can be considered as a hub for these IWPs (see also annex II). Long-Term IWPs are Healthy WorkPlace, Health Space Design, Muriqan (EMS Dollard Region in transition) and Green Campus.

As mentioned above, both second-, third- and fourth year students are investigating for NoorderRuimte. Two courses are part of the regular curriculum. In the second year of built Environment Z, the students jin a period of work in an outdoor workshop, of Which BNR is one.
In Real estate & Makelaardij, the Derdejaarsvak Research & Advice (Vastgoedlab) is carried out entirely in NoorderRuimte. The other students are trainees and graduations who are in the third or fourth year of their training. In addition, there are sometimes students from other colleges and universities (University of Groningen, Saxion Hogeschool, Radboud University) who are graduating from NoorderRuimte.

Lastly, it should be noted that NoorderRuimte is the only knowledge centres/CoE honours certificated, which means that students can graduate honours (see also 4.2.2).

2.2.4 Support by programme Bureau and staff offices

The support of NoorderRuimte is organized centrally. The programme office supports the lecturers and researchers on the following components:

- Calendar Management
- Communication, both strategic and operational
- Financial administration, both strategic and operational
- Organisation events
- Quality assurance
- Acquiring external resources, both strategic and operational

In addition, the Programme Office is assisted by staff of staff offices. These employees work part of the week in NoorderRuimte, which makes them well-embedded within NoorderRuimte. This centrally organized programme agency Met embedded staff support is effective and decisive, which is highly valued by all concerned.

2.3 Reflection and Development points

NoorderRuimte has a clear and well functioning organisation. Roles and responsibilities have been invested in the DUI. A lot is achieved with relatively few resources. Innovation Workshop Office NoorderSpace accompanies a large number of students in a well-oiled process each semester. The onderzoeksirimades are getting more and more form. It is clear that the Organisatie is regularly looked at in NoorderRuimte as an example research centre. NoorderRuimte is developing in the field of work. Lectors and researchers are active in a large number of networks, several of which are managed by NoorderRuimte. Development points are particularly related to the organisation of the themes and the construction of the onderzoekspiramides.

By development organization of the themes

As has been said, the classification in four themes is well landed in NoorderRuimte. Nevertheless, we continue to strive for improvements in organisation and implementation. We look at what works well in one theme (way of organizing the network, what kind of IWP, What funding sources) and whether that is useful in another theme. We don’t go for ‘one size fits all’ but we use the variety of different themes.

1. We want a more robust control model for the four themes. The Afgelopen years have shown that the model is vulnerable to personnel changes within the school’s management. The management of the four themes has an important role to play in the education Teamleider (see 2.2.1). Unfortunately, there was a high level of afgelopen at this position at the schools where NoorderRuimte is linked. New team leaders must be reworked and often prioritise education because matters are more urgent. From the north of the area we will investigate whether it is possible to involve college teachers in the theme organisation. Potential offers these advantages, the university lecturer is responsible for a part of the curriculum and can be alert with colleagues on opportunities that arise for teaching and research interlinking.

2. With the outdoor and Vastgoedlab, NoorderRuimte has a structural connection with the education of the built environment and real estate & brokerage. There is the ambition to set up such an education unit with the training facility Management.

3. Further strengthen the position in the networks related to the themes. In doing so, we also involve the ambition to strengthen our position by more strategically dealing with our network by tying and making better use of defining players in our field of work.

By Development Onderzoekspiramides

Furthermore, our onderzoekspiramides is not yet a perfect pyramid, witness the ‘narrow neck’ in Figure 10. We will realign in the coming years, in particular, to expand the number of postdoctoral and college (head) teachers. This also contributes to career prospects for PhD students and teacher researchers.

For the growth of the onderzoekspiramides we are mainly dependent on external financing. In this context, support for the acquisition of external resources should be further professionalized.

Organisation of guidance of StudentenonderzoEK

NoorderRuimte will continue to engage in discussions with the relevant schools on the challenges that are involved in organising student research to be affordable. NoorderRuimte is not the only one, given that the number of innovation workplaces Hanzehogeschool-wide has increased significantly in recent years. It is therefore expected that there will be additional policy in the coming years on innovation workplaces and the relationship with schools and knowledge centres.
3 Standard 3: Quality of research

The research unit meets the standards that apply in the field of research.

3.1 Introduction

NoorderRuimte has a rich diversity of research. The research varies from a junior employee who carries out an assignment at the NoorderRuimte Office to a PhD student who works on the dissertation and everything in between. There are a number of different domains in which different methodologies are used and these domains work together in interdisciplinary research. One important aspect that applies to all investigations in NoorderRuimte is that the quality of each bottom faceOek is secured with a palette of different quality instruments. Supervision and peer review, both internally and externally, play an important role in this.

Referring to the model of pillar, the quality of our research in NoorderRuimte consists of three pillars: practically relevant, methodically thorough and ethically responsible. In particular, the practical relevance is a strong point of NoorderRuimte. No research is carried out without a practical question. The network partners of our Research Centre supply issues and are co-financiers of PhD projects. Results of research are then shared with the Work field and with education through various agreements and channels. Also methodical thoroughness and ethical accountability are aspects that have full attention within the research groups, as the next paragraph shows.

3.2 Current situatie

3.2.1 Design methodology

In line with the mission and vision, the methodology of NoorderRuimte is aimed at improving the (re) design of the built environment. The traditional design process is used as an overarching framework:
1. A skinlE (undesirable) situation
2. A determination of the advantages and disadvantages of the current situation
3. A process in which a future (desired) situation is (re) designed
4. The implementation of this process
5. A future situation
6. A definition of the prospect and NADElen of the future situation
7. An evaluation (in which the desired and the unwanted situation are compared with one another)
NoorderRuimte uses the design processes she studies as a chance to learn. The end point of an accepted design process is for us the starting point for a next design process through which we can innovate. And since learning is the core of our methodological approach we stack up as true knowledge. This makes our methodology cyclical (see Figure 13). Our multi-annual commitment to projects and partners contributes to the possibility of multiple learning cycles and longitudinal research.

Within the design activities, NoorderRuimte designs research activities. The centre of gravity of these research activities is in phases 2, 3, 6 and 7. Sometimes an investigation occupies one phase, sometimes phases are combined. Examining all the steps in the design cycle is also done, usually in the form of a number of switched surveys. This methodology gives space to research in which each phase is examined separately, for example research from a PhD student to civic initiatives for the redevelopment of vacant buildings in a shrinking region, or From a bachelor-Scriptant that calculates the feasibility of redevelopment of an empty old church. In addition this methodology lends itself also for a comparison between the D-phases. For example, research by a PhD student on the behaviour and satisfaction of patients and employees in an ‘old’ and a ‘new’ built environment of an outpatient clinic.

A special feature of the Research Centre is that in this cycle we can use zones I desired changes in the social system for the redesign of a new technical system, if this redesign of the technical system can use To describe changes in the social system.

For more information refer to the Position Paper (SEE ANNEX III).

3.2.2 Research Smet methodology

Depending on the research question and the different phases of the above-mentioned cycle, researchers from NoorderRuimte have a wide range of onderzoeksmethodologieën. Both quantitative and qualitative methods are used, often in a mixed methods approach. Within the qualitative research, researchers often use design-oriented research (design of technical or social systems), action research (together with stakeholders to address an issue) and qualitative dataanalyse (interviews with Residents or users). The quantitative research often uses lab and field experiments (vibrating table, water pavement, virtual reality, physical adaptations), practice measurements (earthquake sensors, WaalErkwaliteit) and various forms of surveys (digital questionnaires, structured interviews, etc.). For the processing of the data different generic (Atlas Ti, SPSS, Analyzer, R) and specialised tools (virtual reality, databases) are using.

3.2.3 Quality criteria: Practically relevant, methodically thorough and ethically responsible

Given the framework of the design and research Smet methodology, what are the quality criteria that are used in NoorderRuimte? When is ‘good quality’ research? This question was central to a strategic day of NoorderRuimte (November 2017) with the theme peer review. The classification in practically relevant, methodically thorough and ethically justified from the ‘report pillar’ proved to the researchers recognizable and well usable.

Practical relevance

Practical relevance is a central criterion for NoorderRuimte. We know from each other that research questions are developed in consultation with the practice. The questions examined must be relevant to the practice and the results should be useful for practice. In research Dien t by Operation (impact/valorisatie) in professional practice, society and education to be leading. Residents are an important part of this practice for NoorderRuimte.

Methodically thorough

The research at NoorderRuimte is methodically thorough.

- During the research, experienced researchers should be involved (for students that are the lecturers, for PhD candidates that are the promoters).
- Adequate people and resources (not more projects than capacity, do not conduct research outside of expertise).
- Onderzoeksontwerp have formal quality and build on existing knowledge (students receive reports from predecessors, literature research is standard).
- Onderzoeksontwerp complies with vakgebiedspecifieke standards.
- The results are unambiguous and plausible.
- The research has an effect on the knowledge domain (but see Nuance below).

Above all, the substantiated choice for the research method is considered important, as different methods are used in NoorderRuimte. Factors made at made Choice a role

Games are the research question, the type of system (in NoorderRuimte, both technical and social systems are examined), the expertise of the researchers and the ability to combine methods for stronger results.
The Research Group on Earthquake resistant structures of the NoorderRuimte Research Centre is close to the matter and that is a good thing. They do sound undersearch and know what lives among the residents, know the practice, the local contractors and engineers. They can measure and monitor on-site in the field. We work with them together when it comes to research on the effectiveness of reinforcement measures. *

Prof.dr.ir. Jan Rots, Professor of Structural Mechanics TU Delft

Some nuances ring:
- The contribution to the knowledge domain is mainly realised by Lectors, postdoctoral and PhD students. In practice-oriented research by teacher researchers and students is often not sent on a scientific publication. It is usually chosen to disseminate knowledge via trade publications.
- In practice, in terms of methodical thoroughness, a difference is made in rigour between research by PhD students and (teacher) researchers (‘Research with the Big O’) and that of students (‘research with the Small o’).

Ethically responsible
Every research should be ethically justified, including in NoorderRuimte. In line with the code of Conduct on scientific integrity, we expect that we are honest, independent and impartial. We have an eye for ethical dilemmas. Typical dilemmas in our field are, for example, the independence of the researcher with regard to the client, which tax you may ask of onderzoeksdeelnemers, and the desire to Confidentiality/from theopdeEight Giventhe

The social importance of publishing. Such issues are resolved through moral consideration and can also be submitted to the Ethics Advisory Committee of the Hanze University since 2018.
We consider that careful handling of research data and privacy is important and is also centrally facilitated. Where possible we make our research results open source/open access available.

3.2.4 Quality assurance of research
Based on the quality criteria for NoorderRuimte in the previous paragraph, how is that quality realised and secured in practice? In NoorderRuimte This happens in a number of different ways that contribute jointly to the quality culture.

Peer Review
Peer Review is the heart of the quality assurance of research in NoorderRuimte. Peer Review is understood in a broad sense, so wherever parts of the research are exposed to the critical gaze of others. The search for feedback on the EERider mentioned quality criteria. Not that those criteria are finished as a check-out list, but as the subject of discussion.

Table 4 gives a number of ways in which peer review is organized within NoorderRuimte. For an extensive description of various peer review practices at lectoraats level, see Appendix 9 of the Self-evaluation of the lecturer spatial Transformations – energy.

PhD students and postdoctoral WETENSchappelijke quality
PhD students, postgraduates and lecturers are the (over) carriers of the scientific quality of research in NoorderRuimte. In the past years, NoorderRuimte has appointed more (international) PhD candidates with a view to Uitbouand strengthening the scientific quality.
PhD students receive guidance from their PhD supervisors and their lecturers. In addition, they often follow training through their university’s graduate school and exchange among themselves through PhD-Networks. All these activities promote the development of the scientific quality of research in NoorderRuimte. In doing so, the policy of the Hanze University and the focus of NoorderRuimte ensure that the research remains practical relevant.
Via guidance of teacher researchers, junior researchers and students by these scientists, the scientific quality is again translated into the establishment and execution of practice-oriented research.

The PhD students of NoorderRuimte have also organized themselves. As a group they meet regularly for exchanging tips, shut up and write sessions and giving feedback. The highlight is the annual PhD days.

“I am the promoter of a PhD student of NoorderRuimte. The application for his research was well worked out and was also very seriously assessed before the promotion process was agreed. It’s nice that the contact with NoorderRuimte also gives me new Perspectives and insights! ”

Heliantthe Kort, Full Professor and Chair of building Healthy environments for Future User TU Eindhoven

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<th>Peerschermste bij NoorderRuimte</th>
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<tr>
<td>Intern peer review</td>
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<tr>
<td>Peer review binnen de onderzoeksgroep (feedback sessies, close-reading)</td>
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<td>Begeleiding door de lector</td>
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<td>Kennisdelingsbijeenkomsten (voorheen NoorderRuimte lunches)</td>
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<tr>
<td>NoorderRuimte symposium (2x per jaar)</td>
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<tr>
<td>Collegiaal peer review van subsidieaanvragen</td>
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<td>Formeel review door toetsingscommissie subsidieaanvragen</td>
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<td>Promoveerdiplomatie en promovendusbijeenkomsten</td>
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<td>Externe peer review</td>
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<td>Peer review van manuscripten die worden ingediend ter publicatie</td>
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<td>Presenteren en publiceren op symposia en congresen</td>
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<td>Table 4: Forms of peer review in NoorderRuimte</td>
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38
Quality Assurance in student research

The research carried out by students is important for NoorderRuimte. Successive student groups do every semester research within the adopted suggested research themes. By providing strategic partners with a long-term role as a client, the ‘stacking’ of student research is what is interesting for all parties.

“...The guidance from the northern area was absolutely top! We had three riders and came together every week. They informed us of News, excursions, etc. They provided our report with excellent feedback. On our final report they were, and we, Super satisfied.”

- Thomas Attema, student outside workshop SABE

Due to the importance and scope of the student research, a lot of energy is put into the quality and guidance from the north of the area. That happens in different ways:

- Far before the start of the semester, the new research Drachten are inventoried in dialogue between the Lectoraten and the field of work. Each assignment is linked to a lecturer whose researchers act as an internal client.
- A streamlined process of recruitment and selection of students. The assignments for students are published well before the semester. During Information gatherings interested students are linked to potential clients and a mutual match is considered. It occurs that students are rejected, NoorderRuimte does not have the obligation to take any student.
- A detailed introduction programme in the first weeks in which students meet the research theme, the research and the different disciplines with which they work together.
- Workshops on doing research. In general, students have already followed a learning line in the Opleiding G. In practice, however, it appears necessary to refresh a number of things now that the students who research skills actually have to apply. Moreover, has a broad influx of NoorderRuimte from many of the courses, which varies the level of inside information per student.
- Guidance by NoorderRuimte coaches and lectoraats researchers during the research process.
- Feedback from fellow students (peer review), external clients and the Supervisor vanuit The school (who does the final assessment for the training).
- And finally workshop poster and pitch, followed by the poster presentation at the busy final symposium.

Central Support

The central staff departments of the Hanze University of Applied Sciences also contribute to qualitatively good research from their own expertise. There is support in the field of research policy and quality assurance, onderzoeksinformatiesysteem, literature research, finance en grant applications. At the request of the north of the area, the advisors are present every week. Physical presence makes the lines shorter, makes it easier for colleagues to ask questions and that the staff can get to know the wonders of the Knowledge Centre.

In addition to the Ethics Advisory Committee, Harze University offers central support for the use of the Onderzoeksinformatiesysteem Pure, a research support portal and a research support newsletter.
3.3 Reflection and Development points

Reflection
Looking at its own quality criteria and quality assurance, NoorderRuimte believes that the quality of its research is good.

The practical relevance of the research is one of the strengths of NoorderRuimte and is also appreciated by our partners. This is illustrated, among other things, by the fact that NoorderRuimte is regularly asked to participate in networks and research consortia and partners to Finance research repeatedly.

Researchers in NoorderRuimte have the confidence that the approach of the practice-oriented research is methodically thorough, because of (a) the taking of scientific knowledge as a starting point, (b) A scientifically sound approach that is secured in Qualified researchers, and (c) The practice of peer reviews of projects and research products.

In the past year, a HIT SME and a TKI application of the lecturer spatialormaties as number 1 ended in the ranking of the subsidietoekennings procedure. The quality of the research approach is important in terms of the amount of points the proposal is given. This is also an indication of quality.

The WETENschappelijke output of NoorderRuimte is largely realised by PhD students, postgraduates and lecturers (SEE ANNEX IV output and activities), which is in line with our ambition. From teacher researchers and students we expect in particular that they bijdragen to articles in journals. The time and attention required for this is not always available. In particular, by more systematically harvesting the students’ output, more impact can be achieved on the Work field.

Ethical research was al on the retina of individual researchers, with the introduction of the Ethics Advisory Committee, which is now also operationalized at the university level.

Quality assurance of the student research runs well and that is where NoorderRuimte is proud. At the same time it is very intensive, NoorderRuimte invests much in it. Every semester there is again a new student population that has to be brought ‘at level’ ‘N. In this area, NoorderRuimte has the image she research budget spends on educational tasks.

Another challenge is that time lines and assessment criteria vary greatly between the courses that students come from. That makes it difficult to use данные from NoorderRuimte. These topics are currently discussed in different places, for example in the Steering Committee (consisting of the deans of the most involved schools), between the lector and the training, and between the coordinator of Bureau Noorder space and team leaders of training.

As regards quality of research, NoorderRuimte is not a necessity for radical changes. There is always the ambition to improve.

Development points

Increase the number of postdoctoral
Initially, the aim was to establish a postdoc for each theme. Given the build up of the pyramid, the aim now is to have multiple mail docs per theme. The postdoctoral should play an important role in both research and the acquisition of external resources.

Increase quality student Research
The quality of the student research has been an important focus since the start of the NoorderRuimte agency. Thanks to the efforts of researchers and coaches, the quality has already gone up. Still we aspire we have to keep improving the quality. We see this as a joint effort of training and NoorderRuimte, with the aim of raising students at a higher entry level and starting their research at the NoorderRuimte. We expect that this will lead to better use of the student output for, for example, publications.
4 Standard 4: Research results and impact of NoorderRuimte

The research unit achieves sufficient relevance in the field of:
- Professional Practice and society;
- Education and professionalisation;
- Kennisontwikkeling within the research domain. The research has an adequate impact on the areas described above.

4.1 Introduction

NoorderRuimte is strongly focused on achieving impact and has experienced strong growth in recent years. We have worked hard and steered to increase the impact of all stakeholders by focusing and structurally focusing on the strategic sessions. It is clear that one research has a greater impact on, for example, professional practice, the other has greater added value for Education, while a third party makes a special contribution to The knowledge area.

In any case, the following two prerequisites must be met for impact: to have and maintain a strong and active network and to make the research results widely available. Good knowledge sharing with our network Realiseren We at Research Centre level with the following fixed activities, in addition, per project still numerous activities place:
- Every half a year a symposium with between 125 and 150 visitors from the field of work, education and research.
- Unlocking Our research results through Pure and our website, according to the principles of Open Science.
The following impact indicators are important for NoorderRuimte.

| IMPACTINDICATOREN | NoorderRuimte | | | |
|-------------------|---------------|-----------------|-----------------|-----------------|-----------------|
| **Impact indicator implementation in professional practice or Beroepshandelen** | NoorderRuimte | | | | |
| **Impact indicator satisfaction of clients and partners** | NoorderRuimte | | | | |

In the following paragraphs, we would like to examine these indicators. The separate ANNEX IV Output and activities shows an overview of all publications and activities of 2017 and 2018. The developments of the number of publications and activities over the years is as follows.

4.2 Current Situation

4.2.1 Use and impact of research results on Professional Practice and Society

Impact indicator implementation in professional practice or Beroepshandelen

Impact indicator satisfaction of clients and partners

The following examples show that research in NoorderRuimte has direct influence on the professional practice or the Beroepshandelen.

PhD student Martijn Vos conducts research at the NS to “The effect of the spatial environment on the perception and behaviour of train travellers”. His research has an impact on the new Schoonmaakaanbestedingstraject of the NS. As advisor B Etkokken, Martijn is involved in this process and brings his research results. This is one of the largest cleaning contracts in the Netherlands with a value of 25 million euros per year. The PhD student was also involved in shaping the lighting plan of The new generation of the Sprinter. These sprinters have been driving around in the Netherlands since the end of 2018.

PhD candidate Emma Zijlstra is investigating hospitality in hospitals. How can spaces in hospitals be arranged in such a way that they contribute optimally to the wellbeing of patients? Her research at the UMCG led to her being part of the project team that designed the new Dagbehandelcentrum in the oncology department. With this, her research had an impact on the designers and the design and the final users.

Research of Lector Ihsan Bal and PhD student Dimitris Dais showed that the damage to the Fraeyelemaborg (a monumental Borg in Slochteren) was caused by the earthquakes due to the gas extraction. This could not have been demonstrated until then. Long-term monitoring and detailed analyses of the researchers, the foundation that owns the Borg could submit an informed claim.
Researcher Jannie Rosemary has done a long-term research into the experience of living in villages in the province of Groningen and Drenthe. The village studies have been carried out from the perspective of the living environment, the facilities, the social environment and the organizing capacity. The outcomes and conclusions were practically translated into recommendations for new village visions and village plans for the clients. In 2016, an impact study on the conducted village surveys (see ANNEX III), this showed, among other things, that the principals have made extensive use of the advice for their village visions and that municipal village coordinators are more than previously involved. Felt in the vision and planning in the villages.

In 2017 won students from the Hanze University, led by Lector Floris Boogaard the Hanseatic City Challenge with their idea for a Water Wall. The question was how to protect the Hanseatic cities against the consequences of climate change. The water Wall consists of a vertical tubing system for storing rainwater. Two students who won the prize have started a startup aimed at realising Water walls. In September 2018 The first Water Wall ‘opened’ by the WethouderR van Leeuwarden.

Impact indicator Expert meetings and participation in networks impact indicator satisfaction customers and partners Impact indicator follow-up assignments
In the past few years, NoorderRuimte has developed strong networks in which the bottom faceDeksgaagden are being designed and research results are shared. This is partly done within the innovation workplaces (see ANNEX II, Innovation workplaces of NoorderRuimte). NoorderRuimte has also initiated a number of strong networks and participated in a large number of other formal and informal networks. Expert meetings take place within these networks under different denominators. The following examples illustrate this:

Knowledge Network contraction North Netherlands (KKNN)
This network consists of 1,600 professionals engaged in contraction and liveability, coming from governments, companies, knowledge institutions and residents collectives. NoorderRuimte organizes this network together with the University of Groningen, Waarbij NoorderRuimte is secretariat. The provinces of Drenthe, Friesland and Groningen finance the network. KKNN is strongly focused on knowledge sharing. This offers the researchers of NoorderRuimte a very good platform to share their research results on an active manner with the field of work through workshops, expert meetings, newsletters and congresses. The following activities have been organised over the last six years:

<table>
<thead>
<tr>
<th>ACTIVITIES KKN 2013-2018</th>
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<tbody>
<tr>
<td>aal</td>
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<tr>
<td>Congressen (totaal aantal bezoekers 800)</td>
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<tr>
<td>Thematisch krimpacís inclusief buidweergagen (totaal aantal bezoekers 2.500)</td>
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<tr>
<td>Expertmeetings</td>
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<td>Kennisagenda's</td>
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<td>Nieuwsbrieven en -folders</td>
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</tbody>
</table>

Table 6 ACTIVITIES KKN 2013-2018

The KKNN was started in 2010 and in 2014 as well as in 2018 an evaluation took place, among others, by an extensive survey. In 2018, more than three quarters of the respondents gave the KKNN added value for the organization of the respondent or the work of the respondent.

On Basis of the evaluations, the three northern provinces decided both times to continue the financing of THE KKNN.

Healthy Workplace
The Innovation Workshop Healthy Workplace is a joint venture of six partners; ENGIE, Health2Work, MeasureEbagája, Menzis, Planon and Hanze University Groningen. The partners contribute financially and in child to the network and determine in common the research agenda. With three partners, Living Labs are designed to experiment in real work environments. Through Community of PRACTICE meetings (expert meetings) knowledge is shared and further developed. Every year, the progress of the network is discussed with the partners and is decided on the continuation of the network.

"NoorderRuimte has brought me a job! We had to present our research results for new outpatient clinics to the client, the hospital, and there was also the architectural office. They were very impressed with my research en now I work for them."

Marte Silva, former bNR graduate and assistant designer Bij Van Manen and Black Architects

Dutch Earthquake Engineers Association
This association of professionals has recently been founded by NoorderRuimte, initiated by the Lector earthquake-proof building. The organization is part of the European Association of Earthquake Engineering. The Association will organise national activities in the field and participate in international events.

VoOrzetting Murugan AND GO! North
Murugan is a innovatiewinkelplaats in the EMS Dollard region, focused on economic strengthening of the region by exchanging knowledge, students and professionals on both sides of the border. After the first project period of one and a half years, the project was decided to continue. The Interreg VA programme also finances the project over the next four years. NoorderRuimte is secretariat of this project.

The GO! Noord-project, with data and interviews, closely maps a village or neighbourhood, after which citizens and experts can indicate which combinations of measures are effective locally to achieve a healthier environment. After the one-year initiative phase, ZonMW also funded the four-year long-track project. Also in this project is NoorderRuimte secretariat.

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4.2.2 Use and impact of research results on education and professionalisation

Impact indicator number of students and schools participating in research of the Knowledge Centre

The main impact on education is that NoorderRuimte allows many students to do good, relevant and practical research under the control of skilled lecturers and researchers and on behalf of external field partners. Every year, between one hundred and fifty and two hundred students make a research in the NoorderRuimte Bureau. These students are a period or one-semester fulltime working at NoorderRuimte. In addition, students are involved in a less intensive way in our research, as they do a little research as part of a profession, these are at least two hundred students a year. For the training facilities Menandro Management this means that all students do a part study for NoorderRuimte.

NoorderRuimte invests a lot of time in all student surveys, through coaching and content guidance, to achieve good research results (see also PARAGRAF 2.2.3.) This has added value for both the Research Centre and the students who therefore acquire better research skills and achieve good results. By these additional efforts the North is space as the only KC/CoE in The Hanseatic College that honours certified, which means that students can graduate honours. With the honours graduation version of BNR, the student chooses an extra ambitious impulse in his/her personal and professional development. BNR offers the student a challenging environment to work on his/her abilities as a blower, connector and Pioneer. The Honours graduation programme is supervised and assessed by qualified coaches from BNR.

"NoorderRuimte is a fine learning environment, there are many researchers and lecturers, so there is a lot of knowledge, you make easy contacts, organizes easy conversations. The honours project is important for my personal development: You do an HAf year research, learn how to deal with deadlines and you make an active reflection. It is a guarantee that you will learn to develop yourself." Carine van Dijken, bNR-Honoursafstudeerder and old CF student

In addition to interns and Graduationss of many various courses, Noorden also has an intensive and structural cooperation with a number of training courses via the external site and the Vastgoedlab. Through this Vastgoedlab, half of the students of the real estate Training & MakelaardiJ in their Derdejaar will conduct a semester research in NoorderRuimte.

In the following, more detail is taken of the external site as an example of the direct impact of research on the teaching of students and the professionalisation of the teachers.

Outside Workshop

Students of the Academy of Architecture & built Environment will go to an outdoor workshop several times during their training. At an outdoor workshop, students run a period in a company or organisation to experience various professional roles in practice and to discover their interests. In NoorderRuimte, approximately 25 second-year students are doing a part-study in a long-term study. During this period the students come into contact with field partners, researchers and other student researchers and

Often they do very practical field research. The students are directly informed, who present them at the NoorderRuimte Symposium at the end of the PEPeriod. The fact that these students are already doing relevant research in their second year shows, among other things, that students from this group were in prizes several times in the poster contest.

The lecturer researchers who are involved as an internal client from the northern area use the student research as case histories for their lessons, for example within the Minor Urban Regeneration. In addition, the supervising teachers from the on-line built Environment are able to learn how to work and teach in a Research Centre and the teachers do their knowledge through the student research.

"Students carry out research in NoorderRuimte in which they gain new, innovative knowledge in addition to regular education. This knowledge is then passed on to the training because students share this knowledge with each other and teachers, from the accompanying and evaluating role, can take the new insights into Het education. This creates a beautiful cross-pollination."
The teacher at the Academy of Architecture & built Environment and the coordinator of the external site

Impact indicator contributing to the development of study programmes

The lecturers and lecturers in recent years have participated in the development of training courses, curricula and visions of different courses. Examples of these are:

- The Lector spatial transformations-Water was part of the project team for the re-development of the entire curriculum of the Academy of architecture & built Environment. This has led, among other matters, to an important part of the new curriculum.
- The Lector spatial transformations-Energy was one of the tractors for the development of the Master Energy for Society, TheMasteraccredited.northCollege YearfromStartgone.
- The FM lecturer is the driver of innovation within the Institute. Under the leadership of the Lector facility Management, a broad group of internal and external stakeholders have drawn up the new vision of the Facility Management Institute. Furthermore, Innovatiewerkplaatsen developed and is the lecturer in the content of the development of the Master Building Change. Further.
- The Lector real estate was a member of the Taskforce curriculum review in the training real estate & brokerage, he has played a crucial role in the change processes of training. Furthermore, the Lector was project leader for the accreditation of the training by the Royal Institute of Chartered Surveyors (RICS). The training of the Hanze University is the only college degree accredited by the leading international organization.
4.2.3 Use and impact of research results on knowledge development within the research domain

The cooperation between the Research Centre NoorderRuimte and RUG has the added value that one can use each other’s networks. And Lever! An interesting combination of applied and academic research. The impact of this cooperation is therefore a combination of international scientific publications and presentations at international conferences, and trade publications and presentations in the Netherlands and in the region. 

Prof. Osanyin Jason, professor of rural geography RUG and vice Dean Faculty Board of the Faculty of Spatial Sciences with portfolio research

Impact indicator recognition by scientists
Researchers from NoorderRuimte are regularly invited, on the basis of their scientific quality, to speak at Congresses, to give advice, to participate in grant applications, a scientific Congress organizing, etc. In addition Subsidieaanvrag and of the NoorderRuimte are several times high finished in the arrangement.

The following examples illustrate this recognition by the scientific field of work.

Scientific conferences
- The real estate lecturer was asked to organise the Conference of Interdisciplinary Research on Real Estate in 2018.
- At the request of the international Experts for Research Enrichment and Knowledge Exchange in 2018, the lecturer spatial transformations has the International Conference on ResilientT and Responsible Architecture and Urbanism. In this Congress, researchers from more than ten countries have presented their papers.

Invited speakers at major events
- In February 2019, researcher Peter Meister-Banda was from invited to speak at a Policy Seminar at the EU in Brussels. "As a presentation with title "Co-creating Horizon Europe."
- Lector Mark by Mobach was invited in March 2015 to speak at the EU's European Summit on Innovation for Active and Healthy Ageing in Brussels. His presentation had to be titled "Design for the better".

Advice
At the request of the Ministry of Economic Affairs, Lector Ihsan Bal is part of the "technical Committee on Acceleration inspection & Engineering" in the context of the Earthquake problems in Groningen. The Commission is made up of international scientists in the field of earthquakes.

Arrangement of Grants
- Building with Textiles – SIA touch SME, Secretariat – 1 of 17 Applications
- Near Heat – top sector energy SRL partner – 1
- Civic participation in climate adaptation – SIA touch Audience, partner – 2 of 54 applications
- SafeGo – SIA touch SME, Secretariat – 5 of 35 applications
- Zero on the Meter – SIA touch Audience, Secretariat – 9 of the 56 applications

Partner in Horizon 2020-Requests
In the past three years, north latitude has been asked ten times to participate in a Horizon 2020 application, mainly by foreign partners.

4.3 reflection and development points

NoorderRuimte HeEFT A large and diverse output and thus achieves impact in the fields of professional practice, science and education. The impact indicators articulate what NoorderRuimte is important and where it is sent.

For the next few years, NoorderRuimte doorworking (societal impact) of her research wants to put even more central. In Chapter 6 we will go deeper into this. In particular, we want to increase our impact in the following areas.

Increasing the effectiveness of research results through companiesMerschap
It would be good if more attention was also paid to entrepreneurship within Northern areas. Compared to Coe’s energy and entrepreneurship, there are few researchers and students who decide to market their research results, lookSD via a startup.

Increasing the effectiveness of research results from students
At different times, researchers indicate that more results can be achieved from the many student research that is taking place. One of the actions we have on Zettand is to increase the effectiveness of research results through companiesMerschap.

By operation within the Hanze University of Applied Sciences
As a large organisation, the Hanze University itself also has to deal with the themes of NoorderRuimte. These include issues surrounding facilities, healthy working, climatedaptatie and sustainability. It is not yet self-evident within the organisation to enable its own knowledge centres for these kinds of questions. NoorderRuimte aspires to do more in this way and also by working in the Hanze University.
5 Standard 5: Quality care of NoorderRuimte

The research unit performs regular and systematic evaluation of the research processes and results. The research unit shall, where necessary, undertake improvements to the results.

5.1 Introduction
Quality care is efficient in NoorderRuimte. The core elements such as the lectoraat evaluations, the midterm review and the Jaarplan cycle are based on a fixed schedule. In addition, there are many quality assurance tools at the project level.

5.2 Current Situation
NoorderRuimte distinguishes three main quality assurance processes:
1. Quality management of research projects
2. Quality assessment and Assurance Lectoraten Portfolio
3. Quality assurance and assessment at Research Centre level

Quality Management of research projects
NoorderRuimte has several phases and quality instruments for subsidised research projects (see table 7).

PhD research has its own quality management pathway. After the promotion site has been approved by the StuurgroEP and the Hanze University, admission to the graduate School will follow.

After the promotion site has been approved by the StuurgroEP and the Hanze University, admission to the graduate School will follow.

Focus on the promotion procedures, guidance by the Promoter and the lector and the programme of the Graduate school.

For quality assurance of student research, see the description in section 3.2.4.
Quality assessment and Assurance Lectoraten portfolio: Lectoraats evaluations

The Lectoraats evaluations are a central element in the quality care of NoorderRuimte. Over the years, they have led to various measures such as change of name, shift of focus, review of financing strategy and the merger or termination of Lectoraten.

Quality assessment and Assurance Lectoraten portfolio: Lectoraats applications

In Lectoraats applications, a similar procedure is used as in Lectoraats evaluations. The Dean is responsible, but agrees with internal and external stakeholders and the Steering Committee. The readership application is also a kind of contract: it contains the Goals vand the lecturer, which is monitored by the Dean and the Steering Group, and evaluations are evaluated in the lecturer.

Lectoraats applications are tested by the Research Centre on the Position Paper to ensure that the subject fits with the Benoemde research themes. Also the Lectoraats application will be submitted as part of the process to the Hanze University Preparatory portfolio consultation. This consultation, in which the former Commission Lectoraats applications has been entered into, looks critically at Haalbaarheid and links to the portfolio of the Hanze University as a whole.

The new Hanze University policy on Lectoraten is that preference is now given to strengthening existing lectoraten over new Lectoraten. That versusTado can by appointing a lector on a new research line in an existing lecturer, or by bringing senior researchers/post docs into position.

Quality assessment and Research Centre-level assurance

An important element in quality assurance is the level of the Research Centre is the annual plan. The annual plan is part of the Hanze University-wide cycle and is related to the five-year cycle of the strategic plan. The annual plan describes the annual activities including quality assurance and quality improvement. Over The annual plan, Viemvaandeldijks is reported and periodically consulted with the portfolio holder in the board.

Finally, NoorderRuimte, like the other Kenniscentra of the Hanze University, is evaluated in a ZESJAARLIJKSE cycle. The following steps shall be taken in a planning set by the board:

1. Midterm review (including SWOT);
2. Evaluation preview;
3. Self-evaluation (including SWOT);
4. External research evaluation;
5. Administrative handling.

The midterm review is scheduled to run in 2016, the report is part of the annexes. The current document is the self-evaluation in preparation for the external research evaluation in 2019.

Table 7: Phases and quality instruments

<table>
<thead>
<tr>
<th>Phase</th>
<th>Description</th>
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<tbody>
<tr>
<td>1. Project idea</td>
<td>Tests of Project idea by the lectors and the Steering Committee. NoorderRuimte does not use an explicit list of Portfolio Criteria in this review, but bases the choice on the Position Paper and the established Research Themes. The Steering Committee takes the final decision.</td>
</tr>
<tr>
<td>2. Concept Project plan (before) Request</td>
<td>Tests of content, methods and intended outcomes of Research plan, by Literature Research, the partners involved, p Honor Review by fellow researchers and lecturers.</td>
</tr>
<tr>
<td>3. Project plan’s request</td>
<td>a. Advice from project manager, lector, Dean of School (s) involved, controller and Grant advisor; b. Final check by the Central Review Committee; c. Approval and signature of the Executive Board for submission request;</td>
</tr>
<tr>
<td>4. Assessment Subsidy provider</td>
<td>The assessment by the subsidy provider is a rigorous selection on the quality of the application.</td>
</tr>
<tr>
<td>5. Project execution</td>
<td>a. Kick off and acquaintance; b. Execution in accordance with the project plan, under the direction of project manager; c. Financial monitoring is secured in all phases of the project by the Programme office in cooperation with the Controller of Staff Bureau financial EconomicBusiness; d. Reviewing Project products (publications, presentations, articles, etc.); e. Professional Exchange with internal and external Partners (peer and through seminars, conferences, participation in Network meetings, etc.);</td>
</tr>
<tr>
<td>6. Project completion</td>
<td>a. End product Keys to project plan; b. Grant Accountability; c. Feedback from clients; d. Feedback from students;</td>
</tr>
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</table>

The lectoraats evaluations are a central element in the quality care of NoorderRuimte. Over the years, they have led to various measures such as change of name, shift of focus, review of financing strategy and the merger or termination of Lectoraten.
5.3 Reflection and development points

The quality care of projects works efficiently and effectively. The handling of the Position Paper in the assessment of potential research projects works well in practice. At different times, ideas for a grant application or a PhD research have not been carried through because they did not fit in with the focus of NoorderRuimte.

The structural evaluation of the impact of research is a point where NoorderRuimte is still to improve. The evaluation study of the Sustainable Villages Project (SEE ANNEX III) is a good example, unfortunately such an in-depth evaluation study is not feasible for every project.

Impact assessments

Although during research projects there is continuous feedback from the stakeholders about the impact of the research, it is not currently collected in a systematic way. NoorderRuimte seeks to achieve impact assessments that are feasible, provide meaningful results and give them energy. We realize that this is the Holy Grail that is being sought in current research diligently, yet we want to take a step in that direction. Options we consider are impact assessments at project level (standardised questionnaire) and strategic level evaluations (e.g. an annual interview with strategic partners on the proceeds of the cooperation).

When we find a form in it, we make it systematically with a clear process, possibly tool, responsibilities, data collectere and data storage.
6 Looking ahead to the new strategic plan

It is noticeable that NoorderRuimte has come at the end of its current strategic plan. Many ambitions have now been realised: a strong and recognizable profile, difficult choices in terms of people and resources, more output, more money, better KWaliteit of Research, more (inter) national recognition, etc. Looking back at the last period, we can see that much has been achieved.

Formally, we only put our new ambitions on paper during the drafting of the new strategic plan in 2019-2020. The results of this visitation and the new strategic plan of the Hanze University are the guiding features. With the self-evaluation in hand and anticipating the outlines of the new strategic plan, however, we can already indicate the direction: NoorderRuimte wants to develop in the coming period into a respected and engaged knowledge centre.

We understand that NoorderRuimte, thanks to the quality of its contributions, is seen as a natural partner within The practice networks, the scientific communities, and in the relationships with the schools. Engaged means for us that the research (societal impact) will become even more the driving force behind our research.

Of course, quality and effect are now also central to NoorderRuimte, but we want to take the step to the next level. To achieve that step, we are putting the next period mainly on qualitative growth. Growth in size will be subdued. The quantitative growth of recent years will be used to achieve new qualitative ambitions in professional practice and society, science and education. In substance, we focus on cross-overs through overarching programmes to which we can contribute with our four themes and with which we can make connections with other knowledge partners. For example, we think of a program Green, Blue, Healthy & Creative Cities.

In the following, we are explaining this ambition on the main lines.

Professional Practice and Society

We want to be seen by important regional parties as a natural partner in matters of the built environment. NoorderRuimte is already involved in issues of earthquakes, sustainability, health & well-being and liveability at an early stage.

To this end, more than before, we are committing policy-defining actors to us. So besides content experts now also Aldermans, directors and chairmen. This increases the potential for impact in practice, both through demand articulation beforehand, and through the operation during and after the investigation. In addition, high-level contacts increase the chance of getting funding through the network, a part where NoorderRuimte is already well-rated.

We are going to use the facilities and collaborations of building and the Global Center on Adaptation (GCA) to strengthen our relationship with professional practice and society. Our cooperation with building allows us to connect even more strongly with the region. At the GCA we bring our expertise in the field of climate adaptation and strengthen our international network.
At national level we will review how we relate to other knowledge centres and CoE's in our domain elsewhere in the country. These have also developed in recent years and perhaps there are promising collaborations possible. The National Wetenschapsagenda offers a logical structure for this. When setting up umbrella programmes such as Green, Blue, Healthy & Creative Cities, we see good opportunities for strong connections both inside and outside the Hanze University.

We are going to give even more attention throughout the research lifecycle to the way in which research is realised in the professional practice (social impact). This will be noticeable in the planning of projects, in the impact-oriented attitude of bottom faceooekers, in the way we work together with partners and in the way we transfer research results.

**Science**

First of all, we are going to strengthen the onderzoeksplatform by retaining PhD students for the Knowledge Centre, for example in the post of postdoc, college lecturer or as an alumnus in our field. From there they work at the Inhoudelijke Reinforcement from the Research and writing of research proposals. Another important task is the ‘harvesting’ of student research. Researchers ensure continuity in transforming student products into transferable knowledge, valuable products and scientific publications.

A further ambition is to proactively build a knowledge position on a number of topics as a northern area so that we are leading the debate. With this we also contribute to our contacts with the decision makers from the Work field. On the basis of our research, we see opportunities in each theme to answer not only questions but also to determine the question.

We explicit our financing strategy, differentiating ourselves to lectoraten and themes. In any case, part of the strategy is to gain further experience in the Horizon 2020/Europe programme and thus increase our rate of progress.

**Education**

As described, the impact on education through the students is very good. In the coming period, we will also strengthen relations with education in other ways. An important part is the increase in the number of teachers who come into contact with M et Noorden, including through the use of college (head) teachers to steer the themes. We are also working on a shared knowledge agenda for education and research. As far as curriculum development is concerned, we are going to realize Sam and with the schools that every school in question has structural space for research in one of the innovation workplaces. In the coming period, special attention will also be given to the relationship with the Master's degree programme (The Masters architecture and Energy for Society and possibly new masters to be developed). The master's programme and Master's students also fit in with the qualitative growth.
ANNEX I

The Lectoraten of NoorderRuimte

A detailed description of our Lectoraten can be found at www.noorderruimte.nl:

- Earthquake-resistant and promising Groningen facility Management
- Living Environment In transition
- Spatial transformations-energy: https://www.hanze.nl/nld/onderzoek/kenniscentrum-noorderruimte/lectoraten/
- Spatial transformations-Water
- Real Estate

The research portal at https://research.hanze.nl provides insight into the various outputs and activities of THE researchers of NOORDERUIMTE.
Annex II
Innovation Workplaces in NoorderRuimte

The following innovation workplaces are active in NoorderRuimte.

Desk NoorderRuimte (bNR) is the 'hub': all students doing a period or semester in NoorderRuimte research will enter via bNR. They will then be directed to one of the following innovation work places or do their research under the flag of VAn BNR itself.

- Building
- Climate adaptation
- Energy and circular Construction
- Health Space Design
- Healthy Workplace
- Life-Cycle resistant housing
- Healthy City I.O.
- EMS Dollard Region in Transition (Murugan)
- Art contra shrinkage
- Campus Design
- VastgoedLAB
- Outdoor built Environment

Annex III
Literature references

The table below contains the literature references from the self-evaluation. The core documents of NoorderRuimte and the Hanze University are included as an appendix to the self-evaluation. The external veRwijzingen are by means of a hyperlink.

<table>
<thead>
<tr>
<th>External references</th>
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<tbody>
<tr>
<td>Building, knowledge and Innovation Centre for Future-proof building</td>
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<tr>
<td>Code of Conduct on scientific integrity</td>
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<tr>
<td>Global Center on Adaptation</td>
</tr>
<tr>
<td>Knowledge agenda contraction North Netherlands</td>
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<td>Knowledge Network contraction North Netherlands</td>
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<tr>
<td>Knowledge Platforms National Coordinator Groningen</td>
</tr>
<tr>
<td>Quality of practice-oriented research and the lecturer (arrowman et al., 2017) National Science Agenda</td>
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<tr>
<td>Northern Innovation Agenda 2014-2020</td>
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<td>Northern vision 2040</td>
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<td>Research Portal Hanze University with a.o.theResearchOutputfromKCNRStart document National ProgrammeGrongingen</td>
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<td>Sustainable Development goals</td>
</tr>
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<td>Website NoorderRuimte</td>
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<tr>
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<tr>
<td>Evaluation Lecturer Facility Management 2</td>
</tr>
<tr>
<td>Evaluation Lecter 3</td>
</tr>
<tr>
<td>Evaluation lector of spatial transformations, energy and Water 4</td>
</tr>
<tr>
<td>Evaluation lector of real estate and lecturer in social real estate 5</td>
</tr>
<tr>
<td>Between the evaluation of real estate 5a</td>
</tr>
<tr>
<td>Lectoraats Application Earthquakes 6</td>
</tr>
<tr>
<td>NoorderRuimte Introductory Resources 7</td>
</tr>
<tr>
<td>Position Paper 2025, NoorderRuimte 8</td>
</tr>
<tr>
<td>Procedure Evaluation Lectoraten 9</td>
</tr>
<tr>
<td>Midterm review report 10</td>
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<td>Strategic Plan NoorderRuimte 11</td>
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<td>Refresh in connection 12</td>
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<td>Strategic plan Hanze Hogeschool 2016-2020</td>
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Annex Iv
Output and activities
See loose attachment.