

Sustainable public real estate by optimising usage of available space

Discovering the barriers and possibilities of mixed-use development and sharing governmental office buildings in The Hague



Rijksvastgoedbedrijf
Ministerie van Binnenlandse Zaken en
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Colophon

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Preface

The one-year graduation research performed to obtain the Master of Management in the Built Environment (MBE) of the Faculty of Architecture, Urbanism, and Building Science at the Delft University of Technology comes together in this thesis. This study will explore the possibilities and barriers of sharing governmental office buildings and mixed-use development to utilise available real estate more efficiently.

Nowadays, sustainability demands are of great importance for the built environment. For this graduation project, I am curious about the contribution that real estate management could make to the sustainability debate. It has become standard to enhance the sustainability of existing buildings through different technical interventions, which are not my field of expertise. From that, the thought arises that fewer square metres should be more sustainable. Therefore, using real estate more efficiently on a portfolio level should be more sustainable. On the other hand, I am interested in the role of public real estate in an urban area and how it could be deployed to add public value.

Combining my interest and the view of my tutor Alexandra den Heijer, the hypothesis came forward that it should be possible for public organisations in the city of The Hague to share real estate and facilities. During the exploratory talks with the Rijksvastgoedbedrijf, for which I did this study, the ambition to open up governmental real estate came forward. This all resulted in this study about potentially sharing governmental real estate with other (public) parties.

I want to thank my mentors, Alexandra den Heijer and Tom Daamen from the TU Delft, for their continued assistance and support during the project. Moreover, I thank Thomas van Dijk and Kees Wassenaar for supervision within the Rijksvastgoedbedrijf. Also, I would like to thank all the interviewees from the Rijksvastgoedbedrijf, the municipality of The Hague, and the other organisations, for their participation.

At last, I would like to thank everyone else who made this study possible. Hopefully, you will appreciate reading this graduation research.

Sincerely,

Tim van der Vlist

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Abstract

The built environment is constantly exposed to societal, political, and economic changes. The COVID-19 pandemic was of major influence on the usage of office buildings. Since hybrid working became the norm, governmental offices struggled with low occupancy rates after the pandemic. This study is based on the underexposed side of sustainability, namely efficient usage of square metres through potentially sharing real estate and focuses on the public real estate portfolio and strategic management of the Rijksvastgoedbedrijf (RVB), specifically their office buildings. The RVB has two strategic goals for its portfolio, firstly to enlarge the public value of the governmental real estate and secondly to improve the services in a safe, sustainable, and innovative way. Hypothetically, value can be added to the urban context by including other functions through mixed-use development or sharing office buildings with other organisations. The main research question is: To what extent can the Rijksvastgoedbedrijf share governmental office buildings within the city of The Hague, focussing on (semi-)public organisations and mixed-use development, to optimise the utilisation of available real estate? This study consists of a literature review that provides a framework of definitions and processes. The second part is empirical research based on the DAS model and consists of interviews and document analysis. The DAS model aims to determine the approach to achieve the desired real estate portfolio by analysing the current and future supply and demand. This study has found that sharing real estate with other public organisations and mixed-use development could contribute to utilising available office space more efficiently in The Hague. However, when considering sharing governmental real estate with other public organisations, several barriers emerged. Safety concerns and unresolved financing issues are the two major barriers for sharing real estate. To be able to translate the barriers and possibilities to actual real estate adjustments, further research should be done for the portfolio.

Keywords – public real estate, DAS model, efficient use of real estate, sharing real estate, mixed-use development

Abbreviations

CID	=	Central Innovation District
RVB	=	Rijksvastgoedbedrijf

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1.0 Introduction

The built environment is constantly exposed to societal, political, and economic changes. Corporate real estate is an excellent example of real estate that is susceptible to these changes and is defined as the property owned or leased by an organisation to support the execution of the business model (CoreNet, 2015). Specifically, changing sustainability requirements due to the energy transition and changing end-user demands enormously impact corporate real estate portfolios. Additional risks include climate change, rapid urbanisation, socioeconomic crises, and governance hiccups (Yigitcanlar & Teriman, 2014). The enormous transformations that our cities, societies and the environment have been going through in the last few decades and their consequential impact must be reflected in future-proof real estate. Several studies show that these external influences on the corporate real estate market influence the office environment and reflect the desire of corporations to decrease their ecological footprint (Hou et al., 2021; Lambert, 2021). The current corporate real estate portfolios are expected to not comply with the compelling prospective sustainability demands and requirements. In addition, the COVID-19 pandemic significantly influenced the usage of office buildings (Balemi et al., 2021); empty offices became the image of national lockdowns. These lockdowns enabled a form of hybrid working, including working at the office, remotely at home, and online (Markowski, 2021). The demand for and usage of office buildings are highly influenced by the introduction of hybrid working and will likely get lower in the medium and long term. Since these impacts affect the usage of office buildings (Balemi et al., 2021), these challenges must be faced within a more effective and resilient real estate portfolio strategy.

Not only are corporate real estate affected by these changes, but public real estate is also subjected to challenges. However, compared to corporate real estate, the concept of public real estate is more specific. According to Den Heijer (2021), public real estate is defined by four aspects. Public real estate serves a public purpose, accommodates a public function, is funded by taxpayers' money and is publicly accessible. As stated by Tennekens et al. (2017) and in line with the definition of Den Heijer (2021), public real estate is governmentally owned and non-commercial. Therefore, real estate is capital-intensive and greatly influences governments' revenue and debt policy (Wojewnik-Filipkowska et al., 2015). This relates to Teuben et al. (2007), which defines public real estate as more society-oriented than market-oriented. Because of government ownership, their real estate has a public purpose and function. To preserve and improve that purpose, proper real estate management is required.

According to Van Montfort and Noort-Verhoeff (2017), real estate management is defined as *“the management of a corporations' real estate portfolio and services to the needs of the core business (processes), in order to obtain maximum added value for the business and to contribute optimally to the overall performance of the corporation”*. Essential components of proper real estate management, according to Wojewnik-Filipkowska et al. (2015), are an analysis of the requirements of stakeholders and surrounding conditions, a general strategy with partial strategies for main areas, a real estate strategy for all levels, an investment and finance strategy, and an organisational and technical strategy. Table 1.1 shows three levels of execution within real estate management that can be distinguished. Business goals flow through these different levels of importance to create alignment in strategy (Van Montfort & Noort-Verhoeff, 2017). Therefore, the strategic information needs to be converted into more tactical and operational information to be executed.

Table 1.1: *levels of execution in real estate management* (Van Montfort & Noort-Verhoeff, 2017)

level	execution
<i>strategic</i>	portfolio management
<i>tactical</i>	object management
<i>operational</i>	property management

The definition of public real estate management is almost equal to the definition of corporate real estate management. However, it is crucial to notice the non-commercial factor of organisations that possess or manage public real estate. This is typically seen in governmental organisations (Tennekens et al., 2017). Within public real estate management, the real estate manager's role is shifting from a task maker towards a more strategic role. This incorporates the integration of facility management and real estate management. According to Van Montfort and Noort-Verhoeff (2017), public real estate management relies on several principles. Reliable and sufficient basic information is an important principle that creates a base for further actions. In addition, it is essential to have clarity regarding the starting point to set a foundation for the long-term perspective. This perspective should be created using the life-cycle approach, which considers the stakeholders' needs, interests,

and conditions (Van der Voordt & Arkesteijn, 2016). Balancing financial and social interests in this approach is essential since public real estate is governmentally owned. This public aspect of the real estate causes social interest to be subjected to political influences. Hence, it is beneficial to consider the broader urban context of real estate. Another critical principle within real estate management is risk management, using a risk profile to mitigate risks (Van Montfort & Noort-Verhoeff, 2017).

At a strategic level (Van Montfort & Noort-Verhoeff, 2017), an organisation determines its strategic real estate policy and portfolio management. An adequate strategic real estate plan prevents ad-hoc decisions and includes a long-term vision. It enables an organisation to develop a concrete and appropriate real estate portfolio with optimal use of real estate and, thus, efficient use of public funds in the longer term. According to Wojewnik-Filipkowska et al. (2015), real estate is *“a long-term and complex asset which can be perceived from financial, physical, functional and many other viewpoints”*. Public real estate management consists mainly of asset management, which is linked to the tactical level of real estate management (Van Montfort & Noort-Verhoeff, 2017). Asset management is the management of individual real estate objects in relation to strategic ambitions. It consists of related functions, such as planning, organising, staffing, and controlling, to accomplish the organisation’s goals through efficient and effective use of resources (Wojewnik-Filipkowska et al., 2015). On an operational level, the main objective is managing the eventual use of the assets (Van Montfort & Noort-Verhoeff, 2017). Within public real estate, there are three possible conditions for the use of properties (Wojewnik-Filipkowska et al., 2015). The first is direct service property, which includes real estate that is mandatory for the execution of the business model. The second is tenanted property, which is more discretionary on behalf of the users. The third is vacant property, a company surplus that could be reserved for future use. Nowadays, the role of real estate management is shifting from asset intensive towards more information intensive. It is expected that because of this shift, more studies will be performed in the field of adaptive reuse in real estate management, concerning comprising sustainability, the life-cycle approach, land-use policies, urban resilience and governance, new use and financing models within the circular economy approach, adaptability, and future value (Van der Voordt, & Arkesteijn, 2016). To objectify assets for research, they can be categorised by a minimum of one characteristic (Den Heijer, 2021), such as location, owner, function type, construction period, heritage status and size. These assets are comparable and connected within a portfolio, enabling a portfolio to be defined by similar functions, similar locations, or similar owners.

This research will focus on the public real estate portfolio and strategic management of the Rijksvastgoedbedrijf (RVB), specifically their office buildings. The RVB is the governmental real estate agency of the Netherlands. The agency’s core business is maintaining, developing, and building governmental buildings and terrains (Rijksvastgoedbedrijf, 2022g). For this type of public organisation, it is essential to adapt the current real estate stock towards a future-proof portfolio. This research will be on the strategic level of public real estate management within the RVB (Van Montfort & Noort-Verhoeff, 2017). With the focus on a public real estate owner comes social responsibility. The portfolio’s expenses are paid by the government, funded with taxpayers’ money. Since the governmental office buildings are financed with taxpayers’ money, it is only fitting to look into opportunities to open unutilised spaces for external parties. Opening up governmental office buildings comes with several challenges, for instance, security. Securing the safety of government employees and confidential documents has a significant priority. In addition, the end users are of great importance for the future of the (public) office buildings. Their wishes and demands must be taken into consideration, of which the changing workflow is a significant aspect. Co-working spaces, in which innovation plays a part, influence the workflow inside and outside the office environment (Bergebégal-Mirabent, 2021). An optimisation of the floor plans or a redesign of the office buildings could contribute to a future-proof portfolio, which is a primary goal of the RVB. (Rijksvastgoedbedrijf, 2022c) The world is changing, and a social course has been taken towards globalisation, digitisation, and a more sustainable economy. An active approach is required to realise the ambition of making the entire portfolio of the RVB more sustainable. This applies to a greater extent for the circularity of the portfolio. The RVB wants property management of the government offices and tenders to be fully circular in 2030. By 2050, this must apply to the entire real estate stock and all activities of the RVB itself. (Rijksvastgoedbedrijf, 2019)

Not only the COVID-19 pandemic but also the current energy crisis influences the use of office buildings. The costs of energy rise to historically high levels, which changes how society looks at the use of real estate in terms of heating and energy usage. Non-sustainable energy use and under-utilisation of real estate will result in relatively higher expenses. Over the last decade, international organisations have put considerable effort into converting their real estate portfolio into more sustainable constructions, mainly due to European regulations

for sustainability (European Commission, 2014). However, these efforts do not include optimising the utilisation of the office building itself. The user demands in hybrid working must be met together with the adjustments to make office buildings more sustainable. Therefore, a balance between the user demands and the wish for a more sustainable real estate portfolio should be found. Hypothetically, inefficient and ineffective real estate utilisation could lead to a less sustainable office building.

As previously stated, hybrid working influences the utilisation of office buildings. These developments force public real estate owners, such as the RVB, to reconsider the usage of current real estate on a tactical level. Since working at home has become a more significant part of office culture, offices are expected to have a lower occupancy than before the pandemic (Balemi et al., 2021). This partial real estate vacancy could potentially serve a public purpose (Tennekens et al., 2017), which aligns with the RVB's public function. Its real estate is funded by taxpayers' money and could potentially add value in the urban context. The Finns show a great example by creating office hubs, where an office is shared by civil servants and does not belong to a specific group of servants. This way, the required square meters are reduced, decreasing the ecological footprint. The RVB has taken steps in this direction by housing several ministries in one building; however, in Finland, all civil servants can already work in all buildings. (Rijksvastgoedbedrijf, 2022d) Hypothetically, value can be added to the urban context by including other functions through mixed-use development or sharing office buildings with other organisations. In practice, the most common combination of mixed-use development is a dual mix of market housing and office development (Foord, 2010). One of the advantages of mixed-use development is its contribution to urban diversity and vitality (Louw & Bruinsma, 2006).

Sharing real estate and mixed-use development could result in more efficient use of the RVB's real estate, potentially leading to financial and sustainability benefits. Following these developments, this study will focus on assessing the possibility of sharing national governmental office buildings and their facilities, such as restaurants and meeting rooms, with different levels of government, the national police, and semi-public organisations. These (semi-)public organisations were chosen given the nature of their funding. To determine the potential of sharing real estate and facilities as an added value in the urban context, the scope of this research will be the city centre of The Hague. The majority of government office buildings are located in The Hague, along with several other (semi-)public organisations. This study, focussing on the potential of sharing real estate of the RVB, is based on the underexposed side of sustainability, namely efficient usage of square metres. Consequently, the main research question is formulated as follows: To what extent can the Rijksvastgoedbedrijf share governmental office buildings within the city of The Hague, focussing on (semi-)public organisations and mixed-use development, to optimise the utilisation of available real estate?

2.0 Research approach

The main research question can be demonstrated in a conceptual model, shown in Figure 2.1. The conceptual model shows the relation between the potential of sharing real estate with the efficient use of real estate in the context of government office buildings in the centre of The Hague. The researched relation has a positive nature.

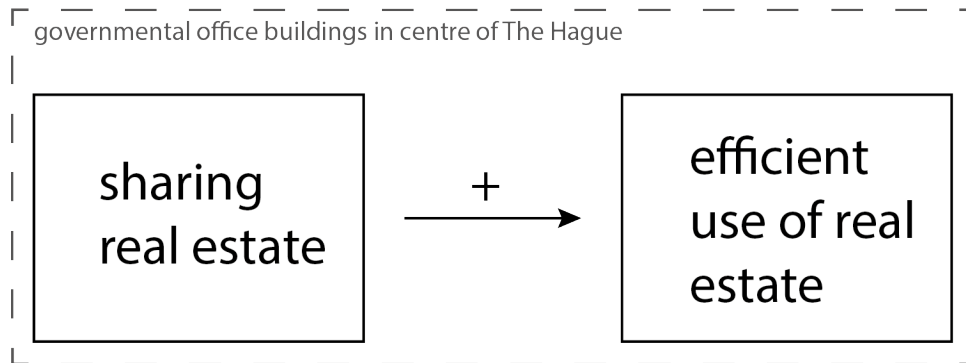


Figure 2.1: conceptual model (own image)

2.1 Conceptual framework

Strategic alignment of a real estate portfolio is essential. According to Arkesteijn and Binnekamp (2012), “Public real estate portfolios have very specific characteristics and there is clear evidence of political influence on the quality and location of building included in them”. The DAS model can be used to analyse a portfolio strategically and is considered an adequate method to define a real estate strategy (Den Heijer, 2021; De Jonge et al., 2009). Hence, the DAS model is used as a framework for the execution of this study.

This model, shown in Figure 2.2, uses the perspectives of current demand, current supply, future demand, and future supply to develop a real estate portfolio strategy. From these perspectives, several actions follow to evaluate the portfolio and determine the current (mis)match, exploring the changing demand, determining the future (mis)match, weighing and selecting the future alternatives, and finally, creating a step-by-step plan to adjust the portfolio. According to Den Heijer (2021), the first step of the DAS model is to assess the current situation of a real estate portfolio. The second step is to explore the changing demand for the real estate. In the third step, future models are generated, and in the last step, projects to transform within the real estate portfolio are defined.

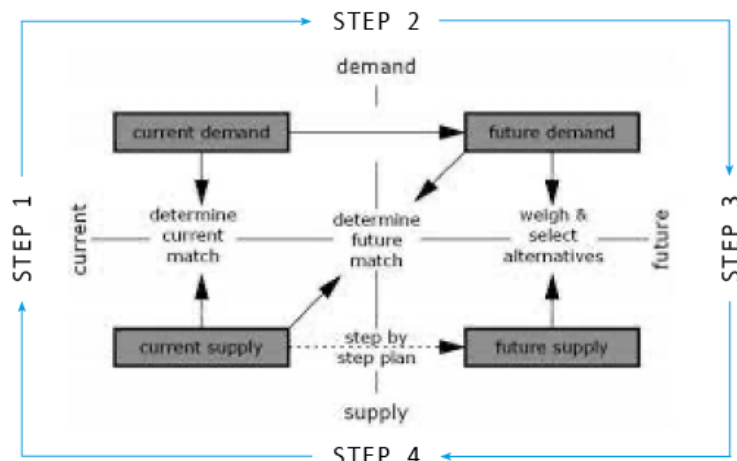


Figure 2.2: DAS model (Den Heijer, 2021; De Jonge et al., 2009)

The ultimate purpose of the DAS model is to determine the approach to achieve the desired future real estate portfolio. The four steps of the DAS model, including their main goals and questions, are shown in Table 2.1. This study will focus on assessing the current, desired, future, and potential situation of the RVB’s real estate portfolio. The current supply of the government office buildings in the portfolio is reflected in the current situation. The desired situation concerns the changing demand for governmental office buildings, and the future situation

involves the influence of the demand on the current situation. Lastly, the potential situation entails the possibilities for the future supply of government office buildings.

Table 2.1: *four steps of the DAS model* (Den Heijer, 2021; De Jonge et al., 2009)

	main goal	main question	
step 1	assessing the current situation	<i>What is the current real estate situation?</i>	current situation
step 2	exploring the changing demand	<i>What are trends for the future real estate situation?</i>	desired situation
step 3	generating future models	<i>What are the goals for the future real estate situation?</i>	future situation
step 4	defining projects to transform	<i>What is the potential for the future real estate situation?</i>	potential situation

Researching the DAS model, the multi-perspective view from Den Heijer (2021) could be added to analyse the RVB. These four perspectives are organisational, financial, functional, and physical, which all significantly influence public real estate. In public real estate management, the aim is to optimise all four perspectives. The organisational perspective influences the organisational and cultural goals of a public company and the structure of a company. The financial perspective contains the economic and financial goals of public real estate, such as land value, operating costs, project costs, public finance and property prices, and the feasibility of real estate. The perspective of functionality covers the social and functional goals, which includes the eventual use of the real estate, such as employment, number of employees, diversity in population, number of visitors, number of users, and well-being. The functional perspective is about the capacities and effects of a real estate portfolio. It directly covers the built environment aspect, which are the number of square meters, mobility, number of levels, CO2 emission, energy use, and density. It is about the physical environment and all the features included.

2.2 Research questions

The RVB has an extensive real estate portfolio, mainly situated in The Hague's centre. It houses about 50.000 civil servants in 860.000 m2 of office buildings. Changing workflows and sustainability demands lead to significant consequences for the usage of office buildings. The theory of solid, liquid, and gas can help understand those changing workflows. The main aim of the RVB is to create a 'future-proof' real estate portfolio, which now mainly focuses on sustainability measures. The study aims to provide insights into possibilities of sharing or mixed-use development of the office buildings of the RVB in the centre of The Hague. According to Den Heijer (2021), the main goal of the DAS model is to portray the steps needed for the desired future situation. To answer the central question of this study, four sub-questions are stated in Table 2.2, following the four steps of the DAS model (Den Heijer, 2021; De Jonge, 2009).

Table 2.2: *sub-questions according to DAS model steps*

DAS model step	sub research question
step 1: <i>current situation</i>	What is the current state of the governmental office portfolio in The Hague?
step 2: <i>desired situation</i>	What is the vision on future governmental office buildings?
step 3: <i>future situation</i>	What are the possibilities and barriers for sharing real estate and mixed-use development in governmental office buildings?
step 4: <i>potential situation</i>	In what way are individual projects influenced by the vision on governmental office buildings, mixed-use development and the possibilities and barriers for sharing real estate?

2.3 Research method

This study is interested in the possibility of sharing governmental office buildings of the RVB in The Hague to optimise the utilisation of available real estate. For the execution of this study, a qualitative approach is chosen by conducting desk research and performing case studies. The techniques used in this study are semi-structured interviews, document analysis and literature review. The research design is shown in Figure 2.3. The aim is to determine the future match within the RVB's real estate portfolio using the DAS model.

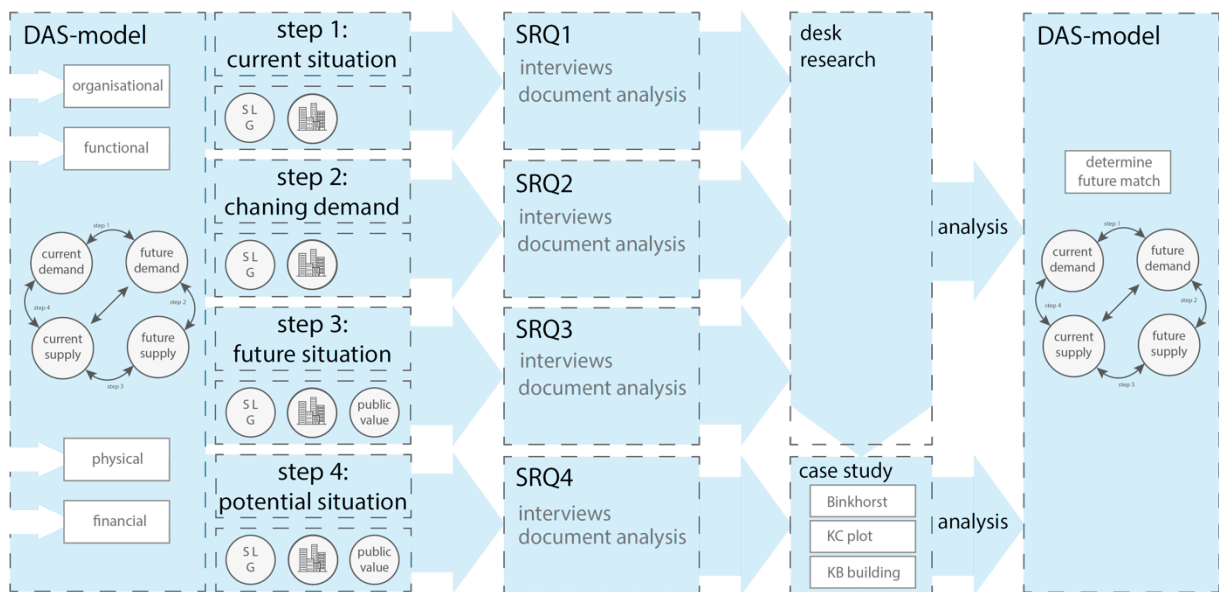


Figure 2.3: research design (own image)

2.3.1 Literature review

In the first part of the study, the focus is on investigating existing subjects, concepts, theories, methods, and studies done within this field of research. The literature review is used as a base for the empirical part. The literature review defines the concepts of public value, urban development, and the theory of solid, liquid, and gas.

2.3.2 Empirical research

In the second part of this study, empirical research is done through desk research and a small case study. To answer the first two sub-questions, the research method is desk research by interviews and document analysis. The fourth sub-question is answered by conducting a case study about three projects in The Hague through interviews and document analysis. In Table 2.3, the used methods and techniques per research question are stated.

Table 2.3: research technique per research question

question	method	technique
SRQ1: What is the current state of the governmental office portfolio in The Hague?	desk research	interviews documents analysis
SRQ2: What is the vision for governmental offices for the future?	desk research	interviews documents analysis
SRQ3: What are the possibilities and barriers for sharing real estate and mixed-use development in governmental office buildings?	desk research	interviews documents analysis
SRQ4: In what way are individual projects influenced by the vision on governmental office buildings, mixed-use development and the possibilities and barriers for sharing real estate?	case study	interviews documents analysis

2.3.3 Data collection

Through interviews and document analysis, data is gathered. Through multiple interviews, information about workflows, stakeholder demands, and organisational goals will be researched. These interviews would be conducted with various actors and stakeholders of public real estate. To conduct the interviews, the consent of the participants before the interview is necessary. Mainly, it is for the participation in the interview, but also the processing of the data. The participants will have to sign a consent form to give permission to use their data.

Interviews

Experts from different organisations will be interviewed for the different interview categories. This research will contain four types of interviews to adapt the question to the field of expertise of the interviewees, which are

stated in Appendix B. The first category (Qa) is a set of questions for the public actor’s housing experts, focusing on their views on hybrid working and sharing real estate and facilities. The second category (Qb) is a set of questions focusing on the policy of the municipality of The Hague to understand their view on the urban context of governmental offices and the role of the Rijksvastgoedbedrijf. The third category (Qc) questions the RVB’s policy concerning hybrid working, mixed-use development, and sharing real estate and facilities. The fourth set of questions (Qd) is for policy employees and focuses on policies for governmental office buildings. The list of interviewees from the different organisations is stated in Table 2.4.

Table 2.4: Overview of interviewees

	type	institution	area of expertise
#1	Qa	Leiden University	housing
#2	Qa	TU Delft	housing
#3	Qa	DGDOO	housing
#4	Qb	Municipality of The Hague	economic policy
#5	Qb	Municipality of The Hague	office policy
#6	Qa	Municipality of The Hague	housing
#7	Qc	Rijksvastgoedbedrijf	portfolio management
#8	Qc	Rijksvastgoedbedrijf	rental
#9	Qc	Rijksvastgoedbedrijf	planning and control
#10	Qa	Province of South-Holland	housing
#11	Qa	UWV	housing
#12	Qd	DGDOO	hybrid working policy
#13	Qd	Rijksvastgoedbedrijf	hybrid working policy
#14	Qc	Rijksvastgoedbedrijf	portfolio management
#15	Qa	National Police	housing
#16	Qc	Rijksvastgoedbedrijf	housing
#17	Qc	Rijksvastgoedbedrijf	asset management

The interviews will be semi-structured, leaving room for steering and follow-up questions if needed. The primary purpose of a semi-structured interview is for it to be semi-standardized. Then there is a minimal difference between the different interviews taken, which is beneficial for the research. The interview protocol of the semi-structured interview, stated in Appendix A, served as a guide but still leaves space for flexibility to ensure that the respected expert’s full view is revealed (Knox & Burkard, 2009). Interviews can be conducted both face-to-face in the office and online.

Documents analysis

In order to understand the view of the RVB on specific issues, desk research will be executed. Policy documents will help to determine specifics about the current and future supply and demand for its real estate. Also, the policy documents of the municipality will be analysed to gather information about the context of the governmental offices and the municipality’s view of specific areas.

Cases

A case study will be done to understand the governmental office spaces' functioning and the RVB's potential to add public value. The cases are chosen in collusion with the supervisors and experts from the Rijksvastgoedbedrijf, shown in Table 2.5. Jaap Gasille, the portfolio manager of the government office buildings in The Hague's centre, advised researching the Binckhorst, the KC plot, and the KB building. All three cases are located in the Central Innovation District (CID) or the Binckhorst. So, the study will focus on these two areas in The Hague.

Table 2.5: Explanation of the chosen cases

case	explanation
<i>Binckhorst</i>	The Binckhorst is a development project of the RVB in a developing area. The company sees potentials to develop the buildings not only as offices, but also contribute public value to the urban area.
<i>KC plot</i>	The KC plot is a potential development of the RVB, for which the municipality set the demand of a lively plinth and interaction with the surrounding area. This means public value could be added to the area.

<i>KB building</i>	The KB building is a property of the RVB near the central station. It is a large building which has a big influence on the station area. Therefore, it could be interesting to add public value on this location to increase the liveability in the area.
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2.3.4 Data analysis

Throughout the research process, actions will be taken according to the FAIR principles from Wilkinson et al. (2016). It states that data should be Findable, Accessible, Interoperable, and Reusable. Findable means that the research itself should be findable, and all used sources should be findable. The sources are referred to in the APA 6th style, making them traceable and interoperable. To find this study, it will be uploaded to the TU Delft repository, making it accessible. In order to make the study interoperable and reusable, English will be the language used throughout the research. However, if the preferred language of the interviewee is Dutch, the interviews will be conducted in Dutch. Also, specific sources would be in Dutch because of the Dutch context of this study. All findings from the interviews and document analysis will be translated into English.

Interviews

The interviews will be transcribed and analysed using Atlas TI software, a qualitative research tool for large amounts of data, which can be used for coding and analysing transcripts and field notes (NYU libraries, n.d.). For the different types of interviews, a different set of codes will be used for the analysis. The codes are defined by the researcher and aim to enhance the meaning of the transcript. Themes and categories are identified from the data using the codes. First, the transcripts are read, and codes are created using open coding methods. These codes capture the essence of the data from the transcript. After that, codes are grouped into more significant categories, from which the categories become themes and, eventually, assertions.

2.3.5 Ethical considerations

Considering the ethical concerns of this study, some issues must be dealt with carefully. For instance, human participation is represented in interviews. The interviewees' perspective is essential for this research and determines many of the outcomes. Their objective truth must be carefully processed into data and carefully interpreted. It could be necessary to double-check with the participants to see if the interpretation of the data is correct. Interviews could be referred to anonymously, whereby only the necessary information is stated in the results. However, no guarantee could be given that the participants are not traceable. These points of attention should be made clear to the interviewees in the consent form and through transparent communication. The consent form is included in Appendix C.

2.4 Scientific relevance

This study's subject is relevant since different kinds of societal changes affect the usage of government office buildings. This research will identify how public actors can efficiently utilise available office space. Thereby, the theory of solid, liquid, and gas by Den Heijer (2021) could be adjusted from universities to office buildings. It can contribute to understanding the organisation of office buildings. Later, the theory can be applied to the DAS model from De Jonge et al. (2009) by defining the functions for the current and future demand. Thereby, considering the city context makes the outcome more integrated into the urban area. This study investigates the options for efficient usage of public real estate by exploring sharing real estate and mixed-use development within governmental office buildings. Sharing real estate is not often applied in practice since little research is executed on the subject. Since their activities are paid for by taxpayers' money (Den Heijer, 2021), the government is responsible for setting an example. It, therefore, means that every decision needs to be justified. Influenced by the political agenda, sustainability is an important aspect. Efficient and effective buildings are thus significant for the public company's business models. A cost and benefit analysis could contribute to making the decisions in a real estate portfolio.

3.0 Theoretical framework

This part of the study covers the literature related to the subject. Research about office buildings, changing workflows, urban development, mixed-use, and social sustainability are discussed in this chapter.

3.1 Office buildings

Because of the real estate sector’s slow character, it is important to consider future trends. To be adaptive and to have a future-proof portfolio, the real estate strategies must be aligned with the possible future(s) originating from these trends.

3.1.1 Corporate Real Estate

Thelen et al. (2019) presented, in the name of a world-leading engineering firm Arcadis, a report on the future of the European built environment. This report included eight trends, which are climate resilience, circularity, energy-positive buildings, cognitive buildings, flexibility, vitality, and health, 24-hour economy and performance-based buildings. These trends, shown in Table 3.1, are mostly derived from the sustainability issue the world is facing nowadays.

Table 3.1: trends for corporate real estate (Thelen et al., 2019)

Trend	Specifics
<i>Climate resilience</i>	<ul style="list-style-type: none"> ● Spatial planning will release the pressure on coastal areas and intensify population densities inland ● Urban areas will be redesigned to resist extreme weather events ● Towards 2030, buildings will have greener exteriors ● After 2030, climate resilience principles will gain city-wide implementation
<i>Circularity</i>	<ul style="list-style-type: none"> ● In 2050, all building components can be leased instead of owned by the building owners ● From 2050, all buildings will be designed to be fully deconstruct able and therefore rather circular instead of linear in terms of life cycles ● From 2030, use of recycled and renewable materials will increase ● Most of the buildings are still built with traditional building materials due to their cost advantages
<i>Energy positive buildings</i>	<ul style="list-style-type: none"> ● All buildings built after 2020 are built near net zero and can be self-sufficient in terms of energy use ● Towards 2030, the norm for new buildings is at least Near Zero Energy Buildings (BENG) ● In 2030, a large part of the built environment is either able to generate sustainable energy itself or will make use of large-scale heat networks from regional industrial activities
<i>Cognitive buildings</i>	<ul style="list-style-type: none"> ● The buildings in 2050 can fully monitor the building’s use, energy management and climate control by using mobile devices and applications ● By the time of 2030, buildings will offer an increasing number of smart services, but are still rather individual systems rather than one interlinked system
<i>Flexibility</i>	<ul style="list-style-type: none"> ● In 2050, all buildings are designed in such a way to accommodate multiple adaptations and functions during their projected lifecycle ● In 2030, this flexibility translates into mixed-use buildings, flexible floorplans and -office space
<i>Vitality and health</i>	<ul style="list-style-type: none"> ● It is argued that the users’ health is at the centre of building design and management in 2050 ● Towards 2030, increased awareness of the influence of environmental aspects on health and performance is raised
<i>24-hour economy</i>	<ul style="list-style-type: none"> ● Office buildings will go beyond their core function and provide living and working space in the new 24-hour economy ● This service, being able to connect 24 hours a day 7 days a week, stimulated by the will of freedom, asks more of an organisation's real estate (e.g., flexible and extended opening hours)
<i>Performance focused</i>	<ul style="list-style-type: none"> ● In 2050, buildings will play a supportive role for people’s daily life in terms of food, water, information and even culture ● The performance of the building (e.g., sustainability, energy, and employee) will heavily determine the value of the buildings ● Towards 2030, there is an increased focus on building certifications such as BREEAM, GRESB and LEED to measure and stimulate the building’s sustainability performance

An open-space floor plan can be one of the most important characteristics or criteria for a future-proof office building. For its users, an open floor plan provides a more flexible workspace. In the case of sustainability, an open floorplan is more adaptable to changes and modifications (Hertzsch et al., 2012). This flexibility contributes to the influence of hybrid working, where the users work a part of the week remotely from home and the other part of the week at the office (Balemi et al., 2021). Another change mentioned in the research of Tieleman (2021) was the transformation towards more functional and communal meeting places rather than work only. It described the changing ambience and the way users experience the buildings.

3.1.2 Co-working spaces

The increasing competitive pressures and dynamic preferences have resulted in a fast-paced and uncertain working environment. Due to these circumstances, organisations are looking for alternatives to integrate flexibility with the purpose of becoming adaptive and responsive to change. Co-working space is one of those alternatives for flexibility. (Echeverri et al., 2021) According to Weijs-Perrée et al. (2018), co-working space is a phenomenon caused by the urge of workers for an environment that stimulates networking and collaboration possibilities. Co-working spaces, therefore, are collaborative environments that feed innovation and creativity under the slogan “working alone together” (Berbegal-Mirabent, 2021). Four key areas for good co-working spaces are geographical location, physical space, business models and inclusive communities.

The initial motivation for co-workers to work in a co-working space is the search for a workplace outside their home. It allows them to work in an inspiring work environment with affordable accommodation. In addition, accessibility and atmosphere are the most important characteristics of a specific co-working space. It means good accessibility by car and public transport, a semi-open layout, and a homelike interior should be provided. (Weijs-Perrée et al., 2018) As seen across the cases from the research of Echeverri et al. (2021), organisations are implementing co-working as the main office location or as a temporary or complementary space solution. This is executed through six different strategies, which are Swing Space, Expansion Space, Core and Flex, Touchdown Space, Testing Market, and Temporary Projects and Staff.

3.1.3 Resource sharing

For any collaborative attempt to succeed, sufficient allocation and sharing of resources is essential (Samaddar & Kadiyala, 2006). Research from Jiang et al. (2015) found that goodwill trust matters more to tangible than intangible resource sharing. In contrast, competence trust matters more to intangible than tangible resource sharing. For this theory, it matters to understand that there are barriers and enablers for resource sharing between companies. Thereby, trust is both a barrier and an enabler.

3.2 Hybrid working

The workflow transformation amplified by the COVID-19 pandemic has changed how companies and employees work and will continue. This requires constant reinvention of how businesses operate and causing actions never seen before, generating deep changes in the workplace environment (De Lucas Ancillo, & Del val Núñez, 2021). Therefore, the idea of the workplace will never be what was expected before COVID-19, where reinvention of work, technology and safety are key points in its transformation process. According to Hardy et al. (n.d.), traditional associations between work and place are no longer. It means the connection between a person and the traditional desk has been broken. Many employees now have access to better-quality office space and resources for undertaking work across the regions. A flexible and sustainable real estate strategy has evolved, delivering greater savings and giving employees more freedom of choice over where they work and live.

For this thesis, the definition of hybrid working from SER (2022), which is the Dutch Social Economic Council, is used. The council defines hybrid working, or place and time independent working, as a mix of working from home and working on location. Hybrid working is an approach to working in which workers have a certain scope to make conscious choices regarding the location where they do their work. This could be at the company’s office location, at home, or elsewhere, such as a work hub, public café, or public transport. Workers have the option of performing their work independently of location and independently of time. Employees can shape their working hours themselves, leading to an easier combination of work and private life. However, hybrid working goes beyond individual workers since it is about how cooperation is organised and how co-workers cooperate place and time independently. Thereby, an understanding with managers and collaborating colleagues is an important condition for success.

3.3 Solid, liquid, and gas

To understand the use of office buildings, a concept theory of solid, liquid, and gas usage could be applied. In the research of Den Heijer (2021) on the campus of the future, the concept of solid, liquid and gas are stated. Solid is defined as “traditional,” representing fixed structures, hierarchy, exclusiveness, and the need for territory. Liquid is defined as a “network”, which includes flexible structures, multidisciplinary, open, and interconnected, with shared spaces. Gas is defined as “virtual”, representing individual autonomy, mobility, freedom, and the possibility to work anytime and anywhere, online or externally. This theory explains workflows in different forms, but it is influenced by several aspects. The way of working is affected by organisational levels, time schedules in the workweek, and the places where an individual carries out their work (Den Heijer, 2021). In Appendix E, the associations, advantages, and disadvantages of the different states of solid, liquid, and gas are shown divided over the four perspectives from Den Heijer (2021) organisational, functional, physical, and financial.

The theory of solid, liquid and gas does not stand for a hard division. Some tasks or parts of the week are more solid, and some are more liquid or gas. Solid stands for the own desk at the office, which feels like home with a familiar feeling to the company and co-workers. Liquid covers flexible office space with a different workplace for each activity. There is a lot of room for social interaction. Gas encompasses the fact that employees can search for a private and work-life balance. Executing work is possible at any time and any place, even online. The theory of solid, liquid, and gas is visualised in Figure 3.1, where solid is the core, which stands on its own. The liquid surrounds the core and could potentially overlap with another company’s liquid workplace. Outside the liquid work environment, there is the gas work environment visualised by the circles, which means that executing the work could be executed at home or in public transport. The gas work environment is overlapping with other company’s gas work environment since it covers public space available for everyone. (Den Heijer, 2021) The different circles in Figure 3.1 represent different companies, which could overlap in gas and liquid workspaces.

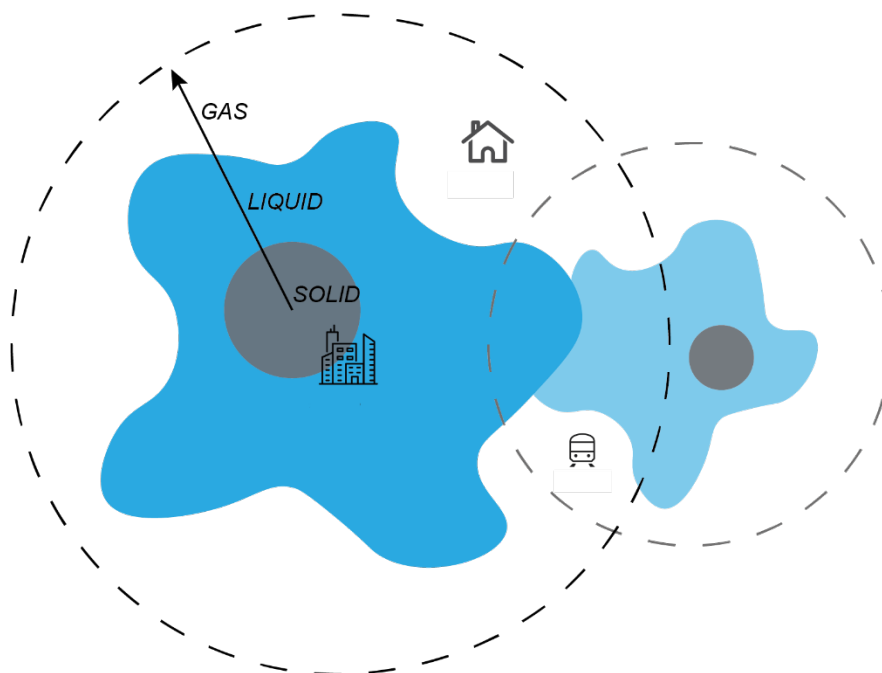


Figure 3.1: visualisation of solid, liquid and gas (based on Den Heijer, 2021)

Concluding from Den Heijer’s (2021) theory on solid, liquid and gas, the translation is done to a measurable description for office spaces, shown in Table 3.2. For several indicators, the state of solid, liquid and gas is described to translate it to the daily workflows of employees.

Table 3.2: solid, liquid and gas for office spaces (Den Heijer, 2021)

	<i>solid</i>	<i>liquid</i>	<i>gas</i>
<i>workplace</i>	Own office	Flexible office: activity based	‘Work where you want’
<i>meetings</i>	Face-to-face in a meeting room	Face-to-face at the office	Face-to-face or online: anywhere

<i>food</i>	In a cafeteria at the office	In a restaurant at the office	Somewhere near the workplace
<i>building</i>	Organised floorplan	Flexible floorplan	Open floorplan
<i>access</i>	Authorized access	Access only for employees	'Open' access
<i>identity</i>	Small scale: 'everybody knows each other'	More public spaces which allow interaction	Mix of work and private life

3.3.2 Examples

To better understand the transition from solid towards more liquid or gas, several example office spaces are described. It encompasses the possibilities for a more liquid or gas office building. Also, within a building, there could be a difference in solid, liquid, and gas rooms or places.

'Stadskantoor', Utrecht

It is a flexible system. If it is busy at Civil Affairs on the first floor, the counters on the second floor can also be used (De Nieuwe Draai, n.d.). Much has been done to improve the accessibility of the Municipal Office. On the office floors, the design offers possibilities for all kinds of ways of working. In addition to regular desks, there are more informal workplaces with sofas, meeting rooms and concentration areas. Each floor has an informal 'living room'. You can also work in the restaurant, whether alone or together. The sharing ensures that 2,500 workplaces are enough for 3,200 full-time employees (Kraaijvanger, n.d.). The lower floors of the municipal office are intended for public functions. The interior of Stadskantoor Utrecht has been designed for a modern office concept with flexible, personal workplaces. Three floors will be set up as a plaza for meetings, eating and meeting. The Stadskantoor building is moving from a solid state to a more liquid state, which allows flexibility inside the building (Den Heijer, 2021).

'Atrium city hall', The Hague

The Atrium is the meeting centre in the city hall for the citizens of The Hague and visitors to the city. Cultural, educational, social, and commercial exhibitions and events are organized (Atrium, n.d.). Translating this example to the principle of solid, liquid and gas from Den Heijer (2021), it could be that opening a city hall for events is about making the building host more gas activities. The building becomes more multifunctional.

'Het Platform / De Nieuwe Stad', Amersfoort

The office complex's design aligns with the philosophy of 'real estate as a service'. "No square meters are rented, but a real estate concept: for a fixed amount, you get a workplace including all services" (Consultancy.nl, 2020). Twynstra Gudde mainly uses one of the two floors on Fridays, which are organized around green courtyards. After all, the agency's consultants regularly work for customers - depending on the applicable corona measures and possible remote assignments. The rest of the week, the floors are arranged so that they mainly function as a co-working space.

'Property as a service' is the vision behind this concept (F-facts.nl, n.d.). Within a week, the number of people working in the office fluctuates at Twynstra Gudde, with a large peak on Friday. On that day, the company rents more workplaces than other working days. On other days, others can use these workplaces. From Monday to Thursday, the part that Twynstra Gudde does not use as co-working space is rented out to self-employed persons, small entrepreneurs, and project teams. The flexibility also lies in the possibility of disposing of 75 per cent of the agreed purchase during the term of the contract. Scaling up is also possible. The building can therefore grow and shrink with the user. This building allows flexible workflows, which move the state of the building from solid to liquid (Den Heijer, 2021).

'Rijksontmoetingspleinen', National Government

From the National Government there is a concept of meeting spaces in government offices. In those spaces, meeting is central for all government employees, which mostly would be in the form of a restaurant. There is a degree of openness in those spaces from being available to all the employees in the building, to available to all employees of the government, to available to all people who want to make use of the spaces. (Paul Pegels, personal communication, 22 November 2022) These office buildings then will allow a mix of functions and people, which is a more gas state according to the theory of Den Heijer (2021).

3.4 Urban development

According to Christensen (2014) the urban development process is understood as a series of events carried out by a group of actors, which consists of ‘the starting point’; ‘concept development’; ‘the planning process and the permits’; ‘the preparation of land’; ‘the construction of buildings’; and ‘the sale, rent or use of the area’. Public value is not solely created by the public sector. Its outcomes can be generated by the private sector, the voluntary sector and informal community organisations. A potential role of the government is to harness the powers and resources of all three sectors, which are the state, the market, and civil society, behind a common purpose and strategic priorities, to pursue public value goals. (Benington, 2009)

Sustainable urban development is perceived as improving a city’s quality of life, including ecological, cultural, political, institutional, social, and economic components. This is without leaving a burden on future generations, e.g. the result of reduced natural capital and excessive local debt (Yigitcanlar, & Teriman, 2014). Quality of life (QOL) is often seen as something to be pursued as a matter of public policy, through public means (Lloyd, & Auld, 2003). From the perspective of key stakeholders, better urban design adds value in economic, social, and environmental terms (Carmona et al., 2002). According to Benington (2009) there, classical economics distinguishes three types of value. Between. The first is exchange value, which reflects an item’s price on the open market. The second is labour value, which reflects the amount of human effort invested in its production. The third is use value, which reflects how useful an item is to a given person or situation.

3.4.1 Public value

Benington’s (2009) own definition of public value, therefore, extends beyond market economic considerations, and encompasses ecological, political, social, and cultural dimensions of value, which all add value to the public sphere. The definitions of those values are shown in Table 3.3. Since the focus mostly lies on outcomes, public value focuses attention on, and is measured over, the medium- to longer term. Governments, dictated by electoral cycles, inevitably tend to focus on the shorter term, but public managers are also responsible for focusing on longer-term public value. (Benington, 2009)

Table 3.3: Benington’s definition of public value (Benington, 2009)

value	meaning
<i>ecological</i>	adding value to the public realm by actively promoting sustainable development and reducing public “bads” like pollution, waste, global warming
<i>political</i>	adding value to the public realm by stimulating and supporting democratic dialogue and active public participation and citizen engagement
<i>economic</i>	adding value to the public realm through the generation of economic activity and employment
<i>social and cultural</i>	adding value to the public realm by contributing to social capital, social cohesion, social relationships, social meaning and cultural identity, individual and community well-being

In a sense space and the leisure activities it supports represents a commodity available for purchase, sale, or rental to anyone with adequate financial resources. Unfortunately, while the goals of property development and economic growth fulfil certain aspects of the urban agenda, such a prime focus reduces the likelihood for the equally important social responsibility of enhancing QOL for residents through means other than capital investment (Lloyd, & Auld, 2003). Occupiers benefit from the better performance, loyalty, health and satisfaction of their workforces and from the increased prestige that their better-designed developments command with guests and clients (Carmona et al., 2002).

3.4.2 Leisure spaces

The increasing commercialisation, privatisation, and commodification of public spaces and facilities in cities and suburbs have succeeded in attracting eager consumers willing and able to pay for leisure experiences. However, conversely, many people find access to these new or redeveloped leisure spaces is limited, if not impossible (Lloyd, & Auld, 2003). Public authorities benefit by meeting their clear obligation to deliver a well-designed, economically, and socially viable environment and often by ripple effects to adjoining areas (Carmona et al., 2002). A key objective should be to create leisure spaces that are truly meaningful to residents and socially inclusive of different groups within the broader community (Lloyd, & Auld, 2003).

Planners and decision-makers involved in the provision of leisure-oriented spaces should seek to understand not only how planning initiatives change the physical nature of space but how leisure influences the QOL of urban residents, how people feel about and experience their leisure and the settings in which leisure occurs (Lloyd, &

Auld, 2003). Public value can be created in many ways, given the diversity of activities covered by the public sector. In some cases, the nature of the production process involved first needs to be clarified to think through the ways in which public value can be added at various stages in the value chain. In other areas, the group of people concerned need to be explored and engaged in the discussion and definition of how they can both contribute to and benefit from the creation of public value. (Benington, 2009)

According to Gottdiener (1994), the moment is when the absolute space of political and economic domination reigns hegemonically over the social space of everyday life. As such, space is sold at often high prices, to residents who are bored, tired, stressed and in need of instant gratification. In this scenario, ongoing interactions are discouraged, the development of social values through shared meanings relating to space is severely limited, and QOL deteriorates. There is a need for users to reclaim space and reassert design according to the multiple purposes of social space and users of social space. (Lloyd, & Auld, 2003)

There is no doubt that artificial, regulated, themed leisure environments offer opportunities for creative interaction in space (Lloyd, & Auld, 2003). Everyday users benefit from the economic advantages of successful regeneration, including new and retained jobs, but also through access to a better-quality environment and an enhanced range of amenities and facilities (Carmona et al., 2002). Though urban regeneration is accompanied by an improvement in the liveability and safety of neighbourhoods, including a decrease in unemployment, the socio-economic situation still is quite vulnerable. The displacement of economically vulnerable residents within the city will not fundamentally change the employment structure and participation in the labour market. This requires active cooperation involving schools, housing associations, and e.g. organisations of local businesses to avoid a situation that special qualities referring to the social and urban fabric are modernised or bulldozed away. (Mak, & Stouten, 2014)

This could be achieved by providing new or refurbished existing local spaces designed and managed for repeated use and ongoing social activity, not just for transient use and consumer activity (Lloyd, & Auld, 2003). These perceptions seem to reflect the perceived audience for the development, and the degree to which stakeholders recognise a wider social role for their developments (Carmona et al., 2002). Returning social value to the public spaces dominated by global corporate values and facilitating the processes shown to enhance QOL (Lloyd, & Auld, 2003) However, research must go beyond counting heads and observing behaviour. It must illuminate the lived experience of individuals and groups in relation to public leisure spaces and highlight the differences that characterise 'community' in contemporary society (Lloyd, & Auld, 2003).

3.5 Mixed-use

In theory, mixed-use forms part of a wider strategy for sustainable development and a theory of good urban planning. Grant (2002) argues that although mixing uses seems like a relatively straightforward concept, an elaborated view of the objectives and strategies of advocates of mixed-use reveals at least three conceptual levels, shown in Table 3.4.

Table 3.4: *objectives and strategies of the advocates of mixed-use* (Grant, 2002)

level	objectives and strategies of the advocates of mixed-use
1st	increasing the intensity of land uses by, e.g. encouraging a mix of forms and tenures of housing, which would have the effect of increasing overall density
2nd	increasing the diversity of uses by encouraging a compatible mix, whereby commonly a mix of commercial or office uses with residential uses is seen as a mix that may generate synergy effects
3rd	integrating segregated uses is about overcoming regulatory barriers, that mostly concerns environmental impacts, noise or traffic

The three conceptual levels reveal the ambiguity of mixed-use in the sense that they refer to various contexts in which mixed-use is discussed: environmental, social, design and institutional (Grant, 2002). In practice, the most common combination of mixed-use development is a dual mix of market housing and office development (Foord, 2010). Furthermore, Foord (2010) suggests that it is paramount that *“uses visibly activate(d) the ground floor level of buildings and the street environment in a positive and integrated way”* in order to obtain the desired effect, regardless of the spatial scale. The mixed-use related compact city development is often preferred because it was said to contribute more to sustainable regional development stated by Bontje (2004). It led to new concentrations of employment and housing areas in or close to the existing built-up areas. Adding to vitality

and sustainable regional development, Rabiński et al. (2009) stated four conditions for generating a diverse city environment, shown in Table 3.5.

Table 3.5: four ‘indispensable conditions’ for generating ‘exuberant diversity’ in a city’s streets and districts (Rabiński et al., 2009)

conditions for generating diversity in a city	
1.	The district, and indeed as many of its internal parts as possible, must serve more than one primary function: preferably more than two. These must ensure the presence of people who go outdoors on different schedules and are in the place for different purposes but who are able to use many facilities in common.
2.	Most blocks must be short; that is, streets and opportunities to turn corners must be frequent.
3.	The district must mingle buildings that vary in age and condition, including a good proportion of old ones so that they vary in the economic yield that they produce. This mingling must be close-grained.
4.	There must be a sufficiently dense concentration of people for whatever purposes they may be there. This includes dense concentration in the case of people who are there because of residence.

The basis on which the Dutch governments support mixed-use development in planning policy statements illustrates the two general reasons for advancing mixed-use development according to Louw and Bruinsma (2006). The first is to reduce the need to travel by providing for a range of needs within close proximity. A concentration of activities enables diversity in possible activities. Thereby it is important to notice that the focus with mixed-use lies on a broad audience, which means it can never reach a fully satisfactory service to all, as stated by an employee of Boelens de Gruyter, a Dutch project developer (Togethr, n.d.). A second general reason for Dutch governments to stimulate mixed-use development is their contribution to urban diversity and vitality. Mixed-use development offers opportunities to improve the quality and attractiveness of the urban area, for instance, by increasing activity during the day, in the evening, and during the weekends. Mixed-use development could also positively influence crime and security. (Louw, & Bruinsma, 2006) Another advantage of sharing real estate in a mixed-use development is the direct financial advantage. This is due to the fact that companies could rent fewer metres since all facilities are shared with other parties in the building. The younger generation seems more used to sharing real estate. According to the employee at Boelens de Gruyter, the younger generation is more flexible in nature, which makes them much more open to working in a mixed-use environment (Togethr, n.d.).

3.6 Social sustainability

Enhancing the vitality and sustainable development from Rabiński (2009), social sustainability contributes to a healthy urban environment. Dempsey et al. (2011) state that social sustainability is a wide-ranging multi-dimensional concept, with the underlying question, ‘what are the social goals of sustainable development?’. McKenzie (2004) defines social sustainability as an occurrence when the formal and informal processes, systems, structures, and relationships actively support the capacity of current and future generations to create healthy and liveable communities. Thereby, socially sustainable communities are equitable, diverse, connected, and democratic and provide a good quality of life. According to Rogers et al. (2012), the concept of sustainability must be defined broader to include meeting human physical, emotional, and social needs. The paper states that equity considerations have considerable potential to reduce poverty and increase well-being. Thereby, well-being is multidimensional and context-specific and must be approached in a way that preserves cultural diversity and societal autonomy while considering general human needs.

Urban development is strongly led by the public sector. Therefore, promoting social sustainability issues within the urban development context is largely assumed to be a role of the public sector. Also, more specifically, local authorities are seen as responsible, but other groups such as politicians, party networks, lobby groups, business interests, landowners, developers, and residents also have responsibilities in that complex process of governance (Weingaertner, & Moberg, 2014). According to Chiu (2004), social sustainability covers four categories. The first is social preconditions to environmental sustainability, which consist of values, habits, rules, and lifestyle. The second is liveability, which consists of the quality of housing and living environment. The third is equitable housing distribution and consumption, which consists of affordability, accessibility, and policies. The fourth is social relations, which consist of landlord-tenant relationships, social integration and cohesion, and ‘neighbourliness’. The ‘Bristol Accord’ named by Dempsey et al. (2011) details a common European approach to sustainable communities in cooperation by the EU member states. Sustainable communities are here defined as “places where people want to live and work, now and in the future. They meet the diverse needs of existing and

future residents, are sensitive to their environment, and contribute to a high quality of life. They are safe and inclusive, well planned, built and run, and offer equality of opportunity and good services for all”.

“Social sustainability is a positive condition marked by a strong sense of social cohesion, and equity of access to key services, including health, education, transport, housing, and recreation” (McKenzie, 2004). Thereby, the development of urban areas should improve the quality of life for all people in a socially sustainable manner. At the same time, it should cultivate an environment that encourages integration while allowing for culturally and socially diverse groups to cohabit according to Weingaertner and Moberg (2014). Several socially sustainable aspects are stated in Table 3.6.

Table 3.6: *social sustainability aspects in an urban context* (Weingaertner and Moberg, 2014)

social sustainable aspects	
	<ul style="list-style-type: none"> ● Accessibility (e.g. access to employment, open spaces, local services, resources) ● Social capital and networks ● Health and well-being ● Social cohesion and inclusion (between and among different groups) ● Safety and security (real and perceived) ● Fair distribution and income, employment ● Local democracy, participation, and empowerment (community consultation) ● Cultural heritage (e.g. local heritage and listed buildings) ● Education and training ● Equal opportunities and equity ● Housing and community stability ● Connectivity and movement (e.g. pedestrian-friendly, good transport links) ● Social justice (inter-generational and intra-generational) ● Sense of place and belonging ● Mixed use and tenure ● Attractive public realm ● Local environmental quality and amenity

Sustainability of community relates to the collective aspects of social life. To explore that social life at the neighbourhood level, several specific inter-related measurable aspects of community sustainability are identified by Dempsey et al. (2011). These five aspects are social interaction and social networks in the community, participation in collective groups and networks in the community, community stability, pride or sense of place, and safety and security. Adding to the concept of social sustainability, well-being is a major concept. Rogers et al. (2012) describe well-being as a multidimensional concept. It is a network between health, education, work and leisure, agency and political voice, social relationships, stable ecosystems, physical and economic security, and material living standards. The elements which contribute to comprehensive well-being, shown in Table 3.7, are universal in concept but context-specific in implementation. It enlists the human needs that must be met, including physical as well as emotional or social well-being. While there is no shortcut to sustainability, there are several important routes by which societies undertake significant shifts in a sustainable direction, as shown in Tables 3.7 and 3.8. Societies generally undergo major changes in the presence of one or more of these common drivers.

Table 3.7: *elements of comprehensive well-being, box 1* (Rogers et al., 2012)

element	human needs
<i>physical well-being</i>	<ul style="list-style-type: none"> ● Nutritious food ● Clean water ● Adequate shelter ● Health ● Security ● Material goods needed for decent life ● Energy source ● Income source ● Exercise, relaxation, and rest
<i>emotional and social well-being</i>	<ul style="list-style-type: none"> ● Strong families ● Strong community and social interactions ● Social equality with others ● Ability to trust others ● Identity, autonomy, and self-determination

	<ul style="list-style-type: none"> ● Freedom to move about and choose job, home, and social relationships ● Political voice and empowerment, education, knowledge ● Fulfillment and creative outlet ● Time and space for recreation ● Connection with nature and beauty ● Belief system and sense of meaning ● Hope for the future
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Table 3.8: *mechanism of societal transition, box 2* (Rogers et al., 2012)

mechanisms of societal transition	examples
exposure to new ideas	<i>worldviews, beliefs, religion, values, information, advertising</i>
exposure to new ways of learning	<i>television, internet, film, books, arts, education, advertising</i>
external control/influence by others	<i>political, military, economic, cultural</i>
migration	<i>emigrants learn from their new social environment; societies learn from incoming immigrants</i>
socioeconomic shifts	<i>new modes of subsistence, new economic systems, urbanisation, globalisation</i>
environmental changes	<i>absolute constraints on our activities, including depletion of resources, loss of biodiversity and ecosystem services, ecological functioning, pollution, and changing climate</i>

These non-physical factors and physical factors are an addition to the elements for well-being in the concept of social sustainability, shown in table 3.9. According to Dempsey et al. (2011), the following enumeration shows 'local' services and facilities as opposed to more 'regional' services such as hospitals, post offices, chemists, supermarkets, banks, corner shops, primary schools, restaurants, pubs, library, sports or recreation facility, community centre, facility for children, public open or green space.

Table 3.9: *non-physical and predominantly physical factors for social sustainability* (Dempsey et al., 2011)

<i>non-physical factors</i>	<i>predominantly physical factors</i>
<ul style="list-style-type: none"> ● Education and training ● Social justice: inter- and intra-generational ● Participation and local democracy ● Health, quality of life, and well-being ● Social inclusion (and eradication of social exclusion) ● Social capital ● Community ● Safety ● Mixed tenure ● Fair distribution of income ● Social order ● Social cohesion ● Community cohesion (i.e. cohesion between and among different groups) ● Social networks ● Social interaction ● Sense of community and belonging ● Employment ● Residential stability (vs turnover) ● Active community organisation ● Cultural traditions 	<ul style="list-style-type: none"> ● Urbanity ● Attractive public realm ● Decent housing ● Local environmental quality and amenity ● Accessibility (e.g. to local services and facilities/employment/green space) ● Sustainable urban design ● Neighbourhood ● Walkable neighbourhood: pedestrian friendly

“Social sustainability is a life-enhancing condition within communities, and a process within communities that can achieve that condition” (McKenzie, 2004). To achieve that condition, certain services and facilities are needed. Empirical research stated in the paper of Dempsey et al. (2011) conducted in the west of England identified eight services and facilities most frequently used when locally provided. These ‘every day eight’ are food shops, newsagents, open spaces, post offices, primary schools, pubs, supermarkets, and secondary schools.

4.0 Empirical research

This chapter entails the empirical research of this thesis, which is gathered through document analysis and interviews. The study entails the municipality of The Hague's policy, the Rijksvastgoedbedrijf's policy, an analysis of the Rijksvastgoedbedrijf's office portfolio, an analysis of the public actors in The Hague, the barrier and possibilities of sharing real estate and mixed-use development, and the expectations of the Rijksvastgoedbedrijf's role.

4.1 Policy municipality The Hague

According to Persaud (2019), cities can use the factor of organising capacity to promote the development of their knowledge hub. Focus is a necessary element to grow into a successful knowledge hub, whereby 'leaders' in the form of business drivers are needed in developing a knowledge cluster. There remains continuous uncertainty regarding support from governments during the development of the knowledge cluster. Also, a certain flexibility is needed in governance in the development of a successful knowledge cluster. Adding on this, Rodrigo (2021) states that densification is used as a steering instrument for society to realise added value. Thereby, municipalities can use the control options through densification for socially added value. Hereby a distinction can be made between social added value where the municipality has an executive role and social added value that must be provided in private real estate to be realised because it influences the steering roles of municipalities and private parties. In the case of mixed-use developments, there needs to be heavily invested in facilities to turn an object into a mixed-use to make a building. Investors sometimes find it difficult to do so participate, without knowing what the rewards will be (Toogethr, n.d.).

Economic policy

According to an economic policy employee of the municipality of The Hague there are three themes regarding the economic focus: safety, impact economy, and legal and policy. In the interview was stated that there are *"Four economic areas or priority areas. One of them is the Central Innovation District. But we also have the Binckhorst, the international zone, and Scheveningen."* Adding to this, *"If I put it in plain words, the CID is more business knowledge and the other one is more creative and social innovation."* A big part of the economic policy is the policy campus area, which relates to the fact that *"every university in the Netherlands can actually develop a theme here"*. Having the governmental departments nearby, social topics can easily be addressed.

Office policy

The office policy employee of the municipality of The Hague stated the following about the office market in the city. *"What you see, is that, if you just look at the supply. That it continues to decline, and it is now at about 5-6%."* Whereby, there is a need for *"frictional vacancy, which is actually, say, a vacancy that is defined as a kind of minimum vacancy, so that searchers on the market still have something to choose from."* The interviewee explains the situation: *"because what you see in The Hague, is that of the transactions, 70% is movement within The Hague."* So, there is little to no office space available for new parties, *"What we do not have is more affordable space for offices or businesses, and that is actually a pitfall or weakness."* Thereby, the fact is that *"all buildings are somewhat empty and buildings that are 100% empty are buildings that are located in the periphery where no one wants to sit."*

"So, you actually see, that has been reinforced by corona, more and more companies making a move from the periphery to locations that are centrally located and well connected by public transport. And that's where the qualitative aspect comes into play, right, so your quantitative shortfall. In terms of quality, you actually see that parties want more and more offices at those public transport locations with large floors, close to the facilities, and simply sustainable with state-of-the-art climate control systems." This is a development seen by the municipality, which they would like to increase the demand of those high-quality offices. In the interview was stated the following: *"If you then look at our office policy, then I say well, I want new offices, at the station. Preferably CS, large with floors of a thousand square meters. And, as far as I'm concerned, that should just be collected from offices. So, imagine that you can simply accommodate parties, market parties, from 500 m² at the station."* Adding to this, the municipality wants to increase the number of collective office buildings since the supply of office buildings for smaller businesses in the station area is low, as stated in the interview: *"Well, no, in The Hague you actually only have the WTC as a large collective office. But there they also rented parts, say larger areas, to larger users. That is actually the only collective office we have and then we have those FLEX offices in a number of offices."*

Spatial policy

According to the municipality the ambition for them is to influence the public space in the city to increase liveability by qualitative public space: *“Want to be more controlling and that concerns public space”* and *“a responsibility that as a government we must actually ensure that there is enough green space and good public space for the new and existing residents, but also the social facilities”*. Thereby, the spatial goals are to create an attractive city, space for work, and an urban economy, with an emphasis on tourism.

“Around the stations is very attractive because it is accessible, but it is expensive.”, the municipality notices the scarcity of high-quality locations for office buildings and housing but will put in the effort to realise the demanded real estate: *“That is also a problem in The Hague. It is a scarce space, but we can actually make space there for the housing impulse, but also because there is already workspace there.”* To realise this goal, the municipality states that it would be easier to tackle it as an urban development since it would be easier to create a lively environment: *“You wish you could talk about entire areas, but they are often plots anyway.”* Thereby, the role of the Rijksvastgoedbedrijf could contribute to a lively urban area since there is a large number of government offices in the city centre and the CID: *“So, it is precisely that connection, and that is where the municipality and the Rijksvastgoedbedrijf can reinforce each other, because the Rijksvastgoedbedrijf is a dominant party, the municipality is, of course, a party that has a steering function from its public-law resources. So, all the plans that are made, they come to the municipality anyway and we have workshops sitting around the Table together and so at some point we can simply provide input on that development.”*

4.1.1 Binckhorst

Since 2016, the Binckhorst business park has been slowly transformed. It will be a green and water-rich area, attractive to work and live in (Municipality of The Hague, 2023a). The area is conveniently located near the city centre, a highway, and a railway line. The atmosphere in the Binckhorst could be defined as rough, tough, and raw. The municipality would like to maintain this character, but the goal is to create an innovative, creative, and modern character. The Binckhorst consists of four sub-areas, which are Binckhaven, Trekvlietzone, Mercuriuskwartier, and Binckhorst Noord, as shown in Figure 4.1. The total amount of inhabitants in the Binckhorst neighbourhood is 2.715 in 2022 (AlleCijfers, 2023).



Figure 4.1: four sub-areas in the Binckhorst (Municipality of The Hague, 2023a)

The Municipality of The Hague (2020) is working on four strategic goals to achieve economic growth for the Binckhorst, shown in Table 4.1. Broad economic growth contributes to broad social challenges in The Hague and the region (Municipality of The Hague, n.d.-b). The municipality wants every resident to be able to participate, whether as an entrepreneur or employee, practical or university-trained, everyone should be able to use their talents. Thereby, an attractive residential and social climate can be even more emphasized. This makes the city attractive for residents, businesses, and international organisations. The Hague’s economy must be able to respond to global challenges, such as digitization and technological innovation, and climate concerns. A strong local economy makes the city resilient and more resistant to economic fluctuations, whereby all residents benefit from that.

Table 4.1: municipality's goals for economic growth in Binckhorst (Municipality of The Hague, 2020)

goals for economic growth in Binckhorst	
1.	<i>making the city more attractive</i>
2.	<i>making the economic structure more resilient</i>
3.	<i>providing entrepreneurs with growth opportunities</i>
4.	<i>creating sufficient housing in attractive working environments</i>

Economic policy

According to the economic policy employee of the municipality, there should be a focus on employment in the Binckhorst area: *"Because when it comes to economics, we actually want to keep as much workspace or business space, as much as possible."* (Interview #4). *In two of the four zones, there is an emphasis on working: "The entire Binckhorst is divided into zones and there are two that work its primacy, so two of the four we said; here working is more important than living."* (Interview #4), in other parts there will be more focus on housing and public space: *"There's a whole part that where we're going to actually program more homes and there comes a park."* (Interview #4).

Thereby, the municipality wants to keep the character of the Binckhorst, which is a creative industry: *"And, they also have a number of breeding grounds, so there are artists who work because this is the atmosphere of the Binckhorst. That's a rough atmosphere and it's kind of hip, that's actually something that jumps out at these groups."* (Interview #4), *"But for example, around the shopping harbour where it is only concentration of entrepreneurs and creative entrepreneurs, such as the caballero factory."* (Interview #4).

Office policy

The office policy employee of the municipality notices differences in price between the CID and the Binckhorst, which forces certain companies to move into the Binckhorst area: *"And indeed, a different price level. So, when you see those companies moving in that direction, which is of course not so bad in itself. The only thing is that in terms of accessibility profile, it is different again, so."* (Interview #5). The Binckhorst is less well accessible than the CID, which could be a disadvantage.

4.1.2 Central Innovation District

The Central Innovation District (CID), shown in Figure 4.2, is the area between and around The Hague Central, Hollands Spoor and Laan van NOI stations. The CID is the economic heart of The Hague and the region and has enormous opportunities. The area already provides work for almost 80.000 people and has 30.000 students. 45.000 people live in the area, in 23.000 homes (Municipality of The Hague, 2023c). Thereby, the CID houses a unique mix of organisations: knowledge institutions; larger and smaller companies; governments; non-governmental organisations (NGOs); innovative breeding grounds and other organisations.



Figure 4.2: map of sub-areas in the central innovation district (Municipality of The Hague, 2023c)

The aim is to develop the area into a sustainable, economic, innovative, liveable, and inclusive part of the city. This includes excellent accessibility and international appeal. The functions of living, working, recreation, travelling and shopping are mixed. In a way that there are areas with an emphasis on tranquillity, urban bustle and a mixture of both (Municipality of The Hague, 2023c). Described in the structural vision as rest, bustle, and

noise. It is important that companies, government, schools, and universities are close to each other and exchange knowledge. The municipality's goals for the CID are stated in Table 4.2.

Table 4.2: goals for the Central Innovation District (Municipality of The Hague, 2023c)

theme	goals
<i>living and working</i>	Approximately 20.500 homes will be added for 35.000 new residents. Approximately 640.000 m2 of new offices and 255.000 m2 of commercial and social facilities are expected. The functions are not put together in groups, but rather distributed over the entire area.
<i>accessibility</i>	The number of journeys people make to get to and from work is doubling due to the developments. In the public space, the pedestrian is put first, followed by the cyclist and public transport. The cars that will soon be driving in the area are mainly local traffic.
<i>innovation</i>	In addition, substantial investments are being made in knowledge and innovation by parties based in the area. This will enable this area to develop strongly and participate on the international stage.

According to the CID The Hague and Municipality of The Hague (n.d.), the Central Innovation District already provides the majority of the city's employment, and we see knowledge and economic innovation clustering here in particular. That is why we concentrate a large part of the city's growth here. As an instrument for economic growth. In the coming years, there will be invested heavily in this area. In quality of life, housing, mobility, and sustainable energy management. The aim is to initiate a movement that will eventually lead to a global and innovative economic hub where work is done on a better, safer, and more just world in a digital age. With plenty of opportunities for entrepreneurs, employment, and sustainable economic growth from the DNA of The Hague. It is important that all those involved can use the same vision as a guideline. According to the Municipality of The Hague (2023d), the area consists of a lot of stone and little green. There are many offices and few facilities on the ground floor of the buildings. As a result, people experience the area as unpleasant, especially in the evenings. The Prince Bernhard Viaduct is an important connection between the city centre and the neighbourhoods around it. A good connection between these areas is currently not possible due to the many entrances and exits and the long terminal building near the viaduct. That is why the municipality wants to make the area more attractive for living and working with: more space for greenery; cycling and hiking trails; a narrower Prince Bernhard viaduct; more functions in the area, such as catering, services, homes, offices, and education; a better connection between The Hague Central Station, the city centre and the Beatrixkwartier, Rivierenbuurt and Bezuidenhout-West districts; possibly a roof over the Utrechtsebaan and over the train tracks with greenery and (play) facilities.

The vision of the Municipality of The Hague (n.d.) is that in 2040, the CID has developed into an attractive international hub from which the whole of The Hague benefits. A global meeting place for people with different ambitions: IT professionals, researchers, small and large (social) entrepreneurs, artists, policymakers, talent, and others who want to make a difference for a better, fairer, and safer world in a digital age. A dynamic environment is distinguished by the high quality of life and the combination of high densities, natural environment, and slow traffic.

The Central Innovation District will be a sustainable, economical, liveable, and inclusive heart of the city with excellent accessibility and international attraction. The College of Mayor and Aldermen wants to get more people to work and strengthening the economy in The Hague is therefore a priority. In the CID is committed to sustainable economic growth through more activity and a broadening of the economic structure. This we do, among other things, through the economic and financial spin-off of The Hague as the International City of Peace and Justice to reinforce. The station environments are the anchor points of the CID; they are the economic focal points with the highest building densities. We will be making major strides in these areas in the coming years put in the improvement of node value, strengthening of the knowledge economy, realizing sustainable, centre urban residential environments, increasing spatial quality and amenity value and strengthening of the social structure and social consistency. (Municipality of The Hague, 2019)

The station environments are the anchor points of the CID; they are the economic focal points with the highest building densities. The Municipality of The Hague (2018) will be making major strides in these areas in the coming years put in the improvement of node value, strengthening of the knowledge economy, realising sustainable, centre urban residential environments, increasing spatial quality and amenity value and strengthening of the social structure and social consistency. Adding to this the policy campus will be strengthened around the central station where a large number of governmental institutes are situated, see Figure 4.3.



Figure 4.3: clustering of governmental offices (Municipality of The Hague, 2018)

Economic policy

The Central Innovation District is called the economic heart of the city, in which a large part of employment opportunities is: *“most of the jobs here are concentrated around the three station areas”, “the number of jobs there is around 60.000”*. This includes a variety of companies and educational institutes: *“You have Leiden University, The Hague University of Applied Sciences De Eros and Mondriaan and you have an annexe of TU Delft, so a total of just over 30.000 students in this area, WO, HBO and MBO.”*, *“And you have a number of important corporations, the Beatrix quarter, but also innovation hubs that hack security Delta that a cluster of companies that work on cybersecurity, you also have The Hague tech where YES Delft is located.”*, *“There is also a concentration of companies working in ICT.”*, and *“There is a link there with security, but sometimes with policy because there are people who work in gov tech.”*. The eventual goal for the area is to make it function as an innovation district, but this is not yet occurring: *“They don't work as an innovation district yet because they don't work together. They are only in close proximity in the area, but we are also working on stimulating cooperation between these parties.”*.

Besides the large number of jobs, the Central Innovation District also should contribute to the current housing crisis: *“So, the main goal is, yes, that we create a top economic environment, but we also want to create homes for everyone, so also to meet the requirements of the 20.000 homes.”*, which includes affordable housing: *“30% must be social housing, and another 20% must be affordable, so 50% of housing development is affordable.”*. This should enhance the urban environment of the city: *“It has developed from an economic story to a whole city, urban story.”*. This has an economic consistency: *“That means 30.000 residents come here, but we also want to create around 25.000 jobs in The Hague in the Central Innovation District.”*.

Office policy

The municipality wants to mix the office buildings with other functions and qualitative public space: *“So, it will also be a less car-oriented area, so more pedestrians and public transport connections.”*, *“And we also have for this number of residents and office use, we also want to offer more facilities, so both social and commercial facilities.”* (Interview #5). Besides the qualitative challenge, there is a quantitative shortage of office buildings in the station areas: *“And if you just look at the quantitative sense, you see that, certainly strongly the CID, and I'm talking about the office area around Hollands Spoor, CS and Avenue van NOI, that there is scarcity.”* (Interview #5).

4.2 Policy of the Rijksvastgoedbedrijf

This chapter will focus on the future demand of the public company, in this case, the Rijksvastgoedbedrijf. Thereby, the main question is: ‘What are the goals for the future real estate situation?’. The company’s goals will be taken into account for this subject. Also, the cases for this research, proposed by the Rijksvastgoedbedrijf, will be explained in this chapter. The Rijksvastgoedbedrijf, or the central government real estate agency, manages the buildings and land of the national government and the Ministry of Defence (Rijksvastgoedbedrijf, 2023b). The service falls under the Ministry of Domestic Affairs and Kingdom Relations and is responsible for the management and maintenance of the largest and most diverse real estate portfolio in the Netherlands, including the Caribbean part of the Netherlands. The four perspectives from Den Heijer (2021) are used to amplify the goals and objectives for the Rijksvastgoedbedrijf’s real estate portfolio, with a focus on office buildings.

Organisational

The Rijksvastgoedbedrijf aims for a 'future-proof portfolio' (Rijksvastgoedbedrijf, 2022c). To achieve the goals shown in Figure 4.4, the Rijksvastgoedbedrijf uses a mix of measures based on the 'trias energetica', which is saving and generating energy, generating renewable energy around our own buildings, and green purchasing (Rijksvastgoedbedrijf, 2019b). In the case of office space, the Rijksvastgoedbedrijf is going to reduce the total amount of square meters for the upcoming five years (Facto, 2022).

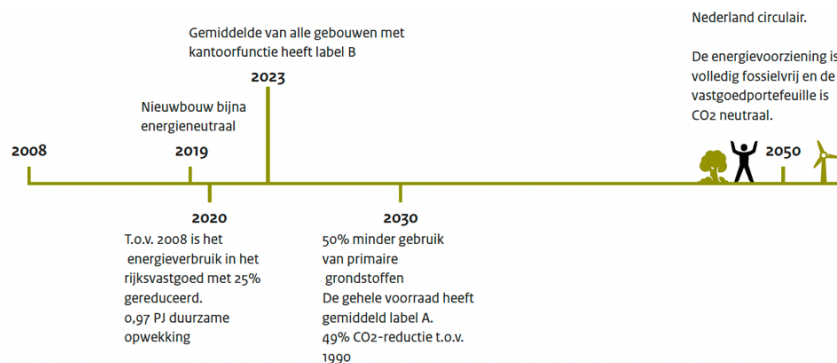


Figure 4.4: Rijksvastgoedbedrijf's strategy for a circular office stock (Rijksvastgoedbedrijf, 2019)

The government buildings will be energy neutral in 2050. To achieve this ambition, the Rijksvastgoedbedrijf is already installing solar panels and charging points for electric cars. Also, circular construction, sustainable procurement, and wind turbines on land are ways to be more sustainable (Rijksvastgoedbedrijf, 2022b).

Financial

The Rijksvastgoedbedrijf has made the extra investment costs insightful with its calculation tool of sustainability measures (Rijksvastgoedbedrijf, 2019b). In their calculations, the financial consequences of energy saving are not considered.

Functional

The need for office space is accompanied by a great deal of uncertainty for the future. Experience gained through the COVID-19 crisis from working at home and its advantages and disadvantages. It could have started a trend, which permanently reduces the need for office space. Also, it could be that employees are returning to the office on a large scale or that the office becomes a place for meetings. (Rijksvastgoedbedrijf, 2020)

Real estate is increasingly no longer an isolated entity but is seen as part of the built environment (Rijksvastgoedbedrijf, 2019b). Cities and regions ask property owners to contribute to the realisation of their ambitions for social inclusion and sustainable innovative mobility. This new form of cooperation requires a specific approach, which is not always within the regular approach. A question stated by the Rijksvastgoedbedrijf (2022d) is, what would the city want from a building? Perhaps the new building will have to play a different role than originally intended. Residents do not want a black colossus, but a building with an open plinth. Maybe governmental offices should open the staff coffee bar to the whole neighbourhood?

Physical

The planning of the real estate interventions at the government offices influences portfolio quality. In recent years, because of the shrinking government and more time, place, and device independent working (TPAW), the office space of the governmental offices has been reduced. In the next few years, size will not decrease any further. There are master plans for each region to realise this transition developed for government offices, some of which have already been implemented or will continue until 2023. Drastic measures must be taken to make existing buildings more sustainable, such as adjusting the facades. Scheduling these major renovations is done by making an assessment based on portfolio strategy, the technical lifespan of the property, the customer and user requirements, environmental developments, and the possibilities for users elsewhere. (Rijksvastgoedbedrijf, 2019b)

For the governmental office buildings, the 'Expertgroep Fysieke Beveiliging' (2021), or in English the expert group for physical security, states the framework and security measures. Different types of areas, which represent

different functions and user groups, all have different security requirements. The different types of areas, or zones, are stated in Table 4.3. In the case of sharing real estate and facilities, zone 0 is already public, zone 1 is potentially able to open up, zone 2 is difficult to share, and zone 3 is out of the question to share with other users since it is an extra secured environment.

Table 4.3: *different safety zones for governmental offices* (Expertgroep Fysieke Beveiliging, 2021)

	<i>functions</i>	<i>description</i>
Zone 0	<i>public domain (own terrain)</i>	preventing and controlling undesirable influences
Zone 1	<i>public area</i>	A; offering a safe work- and residence area for visitors and employees, where no structural business activities take place B; an area where the government has direct and physical contact with civilians and everything included in zone 1A
Zone 2	<i>work area</i>	safe work area where structural business activities take place
Zone 3	<i>special work area</i>	A; extra secured work area for classified business activities B; extra secured work area for very critical business activities

4.2.1 Future offices

From an organisational perspective, the Rijkvastgoedbedrijf has a vision for their governmental office buildings. The portfolio strategy of the Rijkvastgoedbedrijf (2019a) including the strategy for governmental offices, shown in Table 4.4, is created in 2019 and covers until 2023 when a new strategy will be prepared. The Rijkvastgoedbedrijf's mission is to use real estate for the realisation of governmental goals in cooperation with, and with an eye for, the environment. Thereby, the Rijkvastgoedbedrijf has two strategic goals. The first goal is to enlarge the public value of governmental real estate by creating financial, spatial, social, and ecological value. The second goal is to improve the services to the client in a safe, sustainable, and innovative way. These strategic goals are a part of Rijkvastgoedbedrijf's vision for the future. On the one hand, due to technological and social developments, the Rijkvastgoedbedrijf (2019a) expects a further decline in the number of m² office space in the longer term. In the case of office organisations, this includes a reduction in administrative functions and, in addition, Time, Place and Device Independent Working (TPAW) will reduce the demand for m² in the office buildings. On the other hand, durability requirements are set to guarantee the future-proofs of the office portfolio's safety, security, flexibility, social interaction, accessibility, health, and use value. These requirements come from the users, which cover the primary process), the Rijkvastgoedbedrijf, which covers the financial aspects, and DGDOO, which covers the policy and social developments. (Rijkvastgoedbedrijf, 2019a)

Table 4.4: *portfolio strategy for governmental offices* (Rijkvastgoedbedrijf, 2019a)

	<i>ambition</i>	<i>theme</i>
portfolio transcending	the portfolio is for the user	<ul style="list-style-type: none"> well-being and productivity of employees operational management: functional, affordable, and safe
	the portfolio has social value	<ul style="list-style-type: none"> region and city level: broad value development and environmentally conscious and area-based work building level: social relevance value development
	the portfolio is sustainable	<ul style="list-style-type: none"> energy saving and energising circular biodiversity, water, and soil quality
	the portfolio is flexible	<ul style="list-style-type: none"> flexible real estate and multiple land use
	the Rijkvastgoedbedrijf is progressive	<ul style="list-style-type: none"> innovation smart real estate
portfolio specific	accessibility	<ul style="list-style-type: none"> location building
	integral accessibility	<ul style="list-style-type: none"> inclusive society
	sustainability	<ul style="list-style-type: none"> goals

A research group of intergovernmental organisations made a recommendation for collective offices as a meeting place for civil servants and citizens (Studiegroep Interbestuurlijke en Financiële verhoudingen, 2022). The Netherlands has an increasing need for inter-administrative contact and cooperation between public organisations to be able to realise all social tasks. At the same time, citizens need a recognizable and approachable public government for many subjects in the public service sector. It is precisely physical meeting

opportunities between administrators, civil servants, citizens, and social organisations that are important to be able to face today's problems and challenges. Collaboration and contact can be achieved by offering recognisable public meeting spaces in collective offices that are set up for this purpose, thus developing 'government collective offices'. The covers the question of how real estate can be used in a smarter way and create a more productive working environment. This could lead to more efficient use of square meters and energy and benefit from co-interaction through low-threshold collaboration in 'meeting places for civil servants'. This development connects to the recommendation from the College of Rijksadviseurs (2022) for governmental office buildings, shown in Table 4.5. This includes the improvement of hybrid working conditions and flexibility for social purposes.

Table 4.5: *recommendations future governmental offices* (College van Rijksadviseurs, 2022)

recommendation	description
1. <i>back to basics</i>	Balance the needs of organisations and individuals. Base housing policies on the specific duties of each individual organisation.
2. <i>every phase of life has different needs</i>	Focus on the needs of the organisation and of employees to work alternately at home, at the office or elsewhere. A positive work experience is closely related to the well-being of the employee.
3. <i>improve conditions for hybrid working</i>	Create better conditions for virtual and physical work in both the digital and physical space. Let the different activities, which are part of the organisation's task, come back in physical spaces. Provide a better connection between the physical and virtual worlds.
4. <i>an adaptive work environment with room for experimentation</i>	Explicitly opt for an experimental phase throughout the Netherlands, in which pilots are concretely tested with concepts for the social, physical, and virtual domains. Only after this experimental phase can any new frameworks be considered.
5. <i>flexibility for social purposes</i>	Introduce a flexible shell to absorb both contraction and growth of the government real estate portfolio. This way you prevent undesirable vacancies and create space for social goals.
6. <i>contact with the immediate environment</i>	Pay attention to the physical (living) environment of the property. The context also determines the quality of a building and vice versa, a building also contributes to the quality of its immediate surroundings.
7. <i>view at the local level</i>	As a government, make sure you have a face at a local level. Central government real estate can play a role in reducing the distance between the government and society by making the activities approachable and by making the government and its civil servants more visible in society.
8. <i>involving designers is essential</i>	Involve designers in determining (spatial) conditions and strategic real estate decisions. Designers can explore the future and investigate how we should deal with it now when designing and programming offices differently.

The recommendation from Table 4.5 about the view at the local level is relevant to the liveability research from STIPO (2023) executed in the assignment of the Rijksvastgoedbedrijf from which the lessons learned are stated in Table 4.6. This led to several recommendations on different spatial levels from neighbourhood to workplace, shown in Table 4.7.

Table 4.6: *lessons learned from liveability research* (STIPO, 2023)

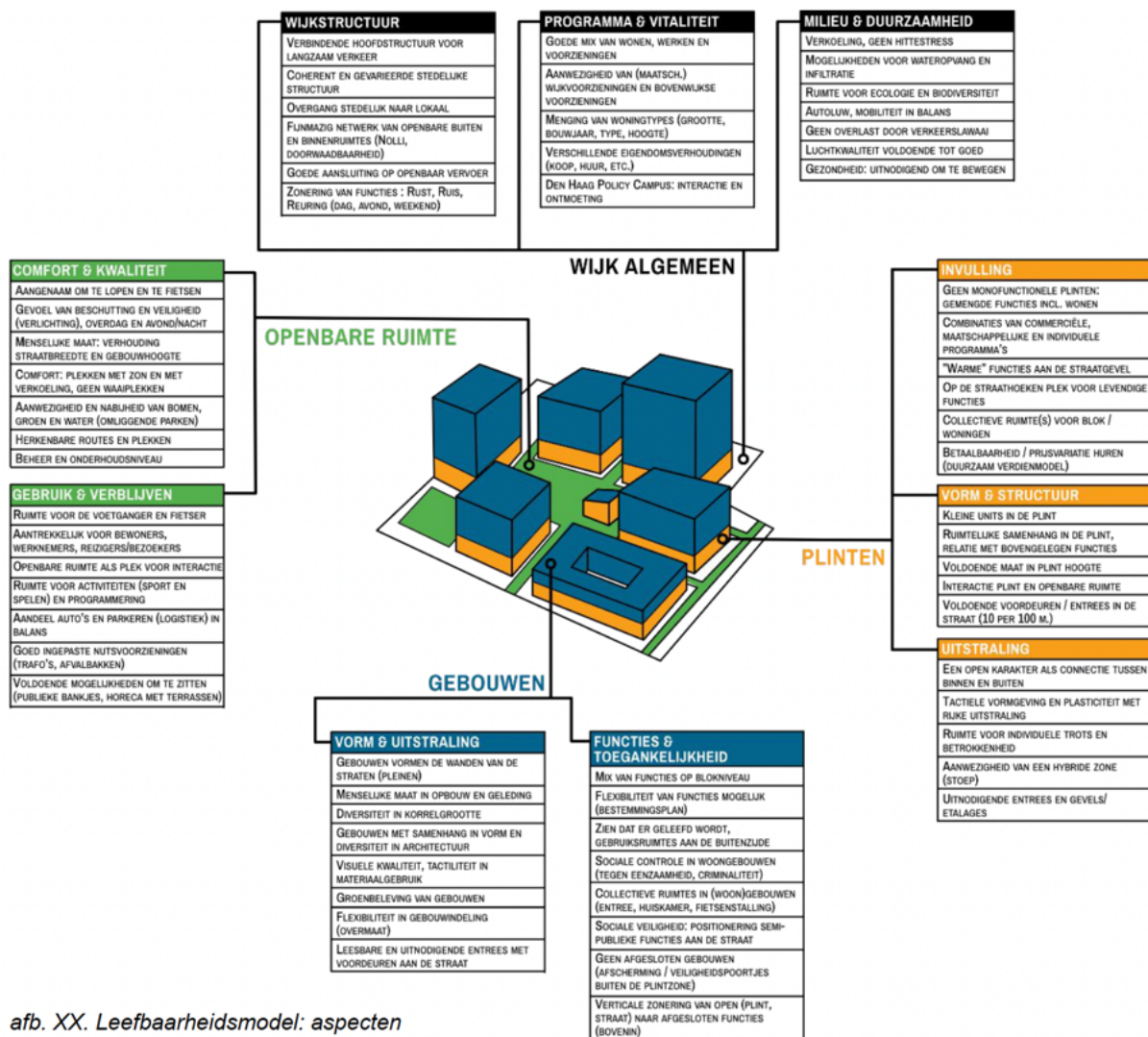
lessons learned
<ul style="list-style-type: none"> • Create a low-traffic network • Provide various amenities • Give the area an identity • Program the public space • Create flexible spaces and places • Green in the streets • Enough seats (paid and unpaid) • Provide permeable buildings • Create active skirting boards with a human scale

Table 4.7: *recommendations from liveability research* (STIPO, 2023)

level	recommendation
neighbourhood in general	<ul style="list-style-type: none"> • Vision on cohesive functioning • Careful transitions with the environment • Good function and amenities mix • Water system sustainably leading
public space	<ul style="list-style-type: none"> • Network of activities and places • Space for greenery and accommodation

	<ul style="list-style-type: none"> • Safety and security
plinths	<ul style="list-style-type: none"> • Principles for lively skirting • Ambition map for public plinths
buildings	<ul style="list-style-type: none"> • Permeability • High-rise buildings with a human dimension • Quality framework
orgware	<ul style="list-style-type: none"> • Flexibility within a solid framework • Area organisation and co-creation • Placemaking

The liveability research (STIPO, 2023) resulted in a liveability model as a framework, see Figure 4.4, to incorporate liveability standards into future projects for the Rijksvastgoedbedrijf on multiple levels, namely neighbourhood, public space, buildings, and plinths.



afb. XX. Leefbaarheidsmodel: aspecten

Figure 4.5: liveability model (STIPO, 2023)

4.2.2 Hybrid working

Regarding a functional perspective, the Rijksvastgoedbedrijf must consider new hybrid working forms and the consequences these developments have for their real estate. The Rijksvastgoedbedrijf (2022f) defines hybrid working "a way of working in which you have the space to make conscious choices about how, when, with whom, and where you work: at an office, on location, at home or elsewhere.". Within this definition, offices will continue to be places where the national government is visible in society and where citizens, organisations, and civil servants meet physically or hybrid (Rijksvastgoedbedrijf, 2022f). More and more work locations of the government are being transformed towards new hybrid working standards, including more lively and attractive

offices. To encourage meetings between colleagues and partners from society, the RVB has created a national network of attractive and directly accessible offices with meeting squares. The change in the use of offices can lead to a more compact office portfolio since the occupancy rate of governmental offices is low (Rijksvastgoedbedrijf, 2022f). The average occupation of offices is between 20 and 40 per cent, see Figure 4.6. This resulted from research, which also concluded that 75 per cent of civil servants want to work 50 per cent of the time at the office. Therefore, the Rijksvastgoedbedrijf (2022f) has chosen to provide an accommodation standard for the government offices, which includes a new lower limit of 0.5 FWTE with the ambition to reach an average government-wide housing standard of 0.7 FWTE per FTE by 2027.

Rijksdienst en hybride werken
 Bronnen: *pasaanbiedingen en medewerkersonderzoeken*

>75% wil maximaal 50% van de werktijd naar kantoor

>90% voelt zich vaardig in hybride werken

Gebruik kantoren ligt tussen 20% en 45%

Hiermee is de Rijksdienst vergelijkbaar met andere grote organisaties

Figure 4.6: research for occupancy of office space with hybrid working (Rijksvastgoedbedrijf, 2022f)

For the future office environment considering the influence of hybrid working, the Rijksvastgoedbedrijf (2022f) distinguishes three types of working environments, which are social, digital, and physical, see Table 4.8. The reasons for the Rijksvastgoedbedrijf (2022f) to adapt the office spaces to hybrid working standards is firstly to create a lively and attractive office environment where people like to come, where employees can meet and therefore shape the boundless collaboration well. Also, it is already a wish and a given for many parties. This combined with the fact that the current and expected need for and use of office space by employees is significantly lower than the supply, makes change inevitable.

Table 4.8: types of work environment (Rijksvastgoedbedrijf, 2022f)

work environment	description
<i>social</i>	The social working environment focuses on the relationship between the Rijksvastgoedbedrijf as an employer and its employees and what expectations and responsibilities may be imposed on both sides. The team in which an employee works plays an important role in this. The government wants to be and remain an attractive employer; an employer where the employee with his talents is central and can develop in a working environment that is socially safe, healthy, inclusive, and pleasant. Hybrid working contributes to this but also poses challenges.
<i>digital</i>	Digital developments are moving at lightning speed. Young generations are growing up with smartphones, tablets, and a digital identity. Mobile devices are also indispensable in the office. The digital work environment plays a crucial role: without excellent digital connections, applications, devices and security, hybrid working is not possible. Thereby, it is essential that we respond to developments that are occurring and future solutions that can contribute to hybrid working.
<i>physical</i>	In 2027, every civil servant will be able to carry out the work adequately at the location that best suits it at that time. In hybrid working, the physical working environment consists of the home workplace, the office environment and working elsewhere, such as on the train.

4.2.3 Mixed-use

The physical perspective is of importance for integrating governmental office buildings in the urban context. The Rijksvastgoedbedrijf has investigated possibilities to incorporate mixed-use buildings into its portfolio. There are four possible reasons for wanting to realise a mix of functions, shown in Table 4.9 (Rijksvastgoedbedrijf, n.d.-b). According to the College van Rijksadviseurs (2019), mixing functions are becoming increasingly relevant since mixing creates cross-pollination; mixing reduces mobility; mixed areas are more liveable; mixed areas are more adaptable; mixed-use makes it easy to share; mixing is in demand in the market; mixing can give a boost to neighbouring neighbourhoods. So mixed-use has numerous advantages, but the Rijksvastgoedbedrijf (n.d.-b) also stated several reasons to include multiple functions in their real estate, shown in Table 4.9.

Table 4.9: four possible reasons for the Rijksvastgoedbedrijf to incorporate mixed-use (Rijksvastgoedbedrijf, n.d.-b)

reasons for mixed-use	
1.	the municipality sets a percentage of function mix as a 'development requirement/condition' based on economic and/or social goals for the area. An important argument is the desire to create more liveliness
2.	the Rijksvastgoedbedrijf and its clients see benefits in the function mix for the primary process of the user(s) and/or want to contribute to a social task.
3.	the Rijksvastgoedbedrijf sees benefits in the function mix from the perspective of sustainable real estate value: reduction of operating risks such as vacancy, marketability of real estate, but also more efficient use by sharing (e.g. logistics) facilities.
4.	area partners want to make optimal use of key locations based on overlapping NOVI social goals, such as multiple uses of space.

The College van Rijksadviseurs (2019) has created the 'Metromix', see Figure 4.7, which is committed to the development of a limited number of unique urban mixed environments that play a structural role in the region fulfilling the economic ecosystem. It includes fifteen guiding principles covering the why, location and context, the what, spatial instrumentals, and the how, money and organisation.

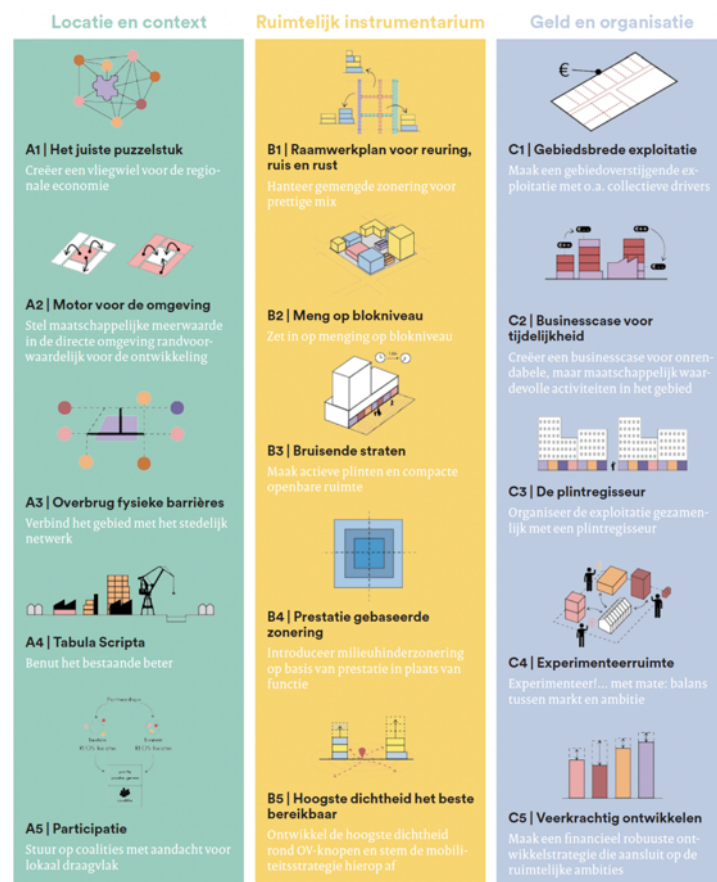


Figure 4.7: metro mix (College van Rijksadviseurs, 2019)

4.2.4 Financier

From a financial point of view mixing functions and sharing real estate and facilities have major consequences. The Rijksvastgoedbedrijf has investigated certain investment types including public value and real estate value. Area investments require commitment from the parties involved. A classification model shown in Figure 4.8, named the 'rings model', has been developed as a basis for the analysis of the financial action framework in relation to area investments. This model distinguishes between the different types of area investments that the Rijksvastgoedbedrijf must deal with and the motivation that must be provided to obtain a commitment for this. (Rijksvastgoedbedrijf, n.d.-a)

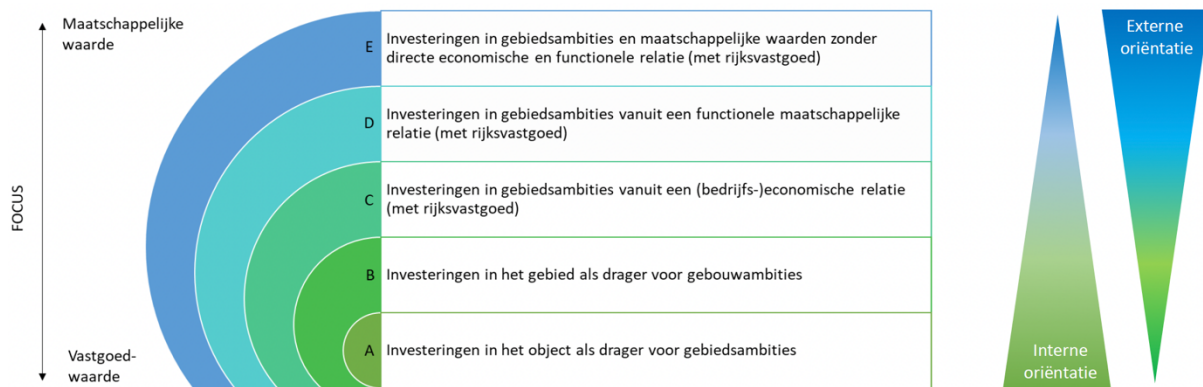


Figure 4.8: rings model for investment types (Rijksvastgoedbedrijf, n.d.-a)

Area investments are about the interaction and the impact that own real estate activities have on the environment in which the real estate objects are located. To make area investments possible, clients and framers must agree on the goals that will be realised with the investments (support). In addition, clients must have the resources available to achieve these goals (capacity). Finally, clients must ultimately really choose to make these available resources available for these goals (capacity). In area projects, the Rijksvastgoedbedrijf, together with partners, tries to find a development task from which socially added value can arise. In addition, the Rijksvastgoedbedrijf has a task to find commitment for users of real estate and policy departments for the role of the government in these area projects. Therefore, the rings in the model provide a classification for presenting the various investment components associated with an area project to the appropriate parties. Ultimately, what matters here is obtaining a conclusive business case for the area project. (Rijksvastgoedbedrijf, n.d.-a)

4.3 Portfolio analysis

In this research the current situation covers market research for office buildings. There will be focus on the Dutch office market, The Hague's office market, and Rijksvastgoedbedrijf's office building portfolio.

4.3.1 Market analysis

This market analysis looks into the Dutch office market and The Hague's office market.

Dutch office market

The office market remained stable in the first half of 2022 compared to the first half of 2021, despite declining vacancy rates (Cushman & Wakefield, 2022). The Dutch office market rebounded in 2021 after the difficult year of 2020. Despite that working from home was the norm during the year, office take-up in 2021 reached the level before the Corona pandemic. Now, businesses first started to proceed with the housing plans from before the pandemic. A large group of office users are still struggling with their housing. They have not yet made a choice about any shrinkage in the use of space or investing in the current housing. (NVM Business, 2022)

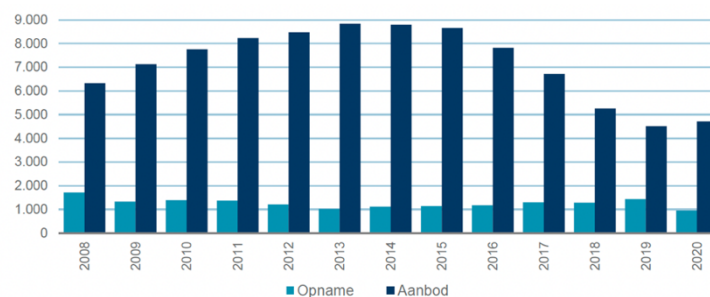


Figure 4.9: supply and intake of the Dutch office market (Cushman & Wakefield & Municipality of The Hague, 2021)

The organisations that had benefited from the Corona situation needed new office space to facilitate their growth. While the traditional organisations still had no idea what the office of the future would look like and so kept their locations for the time being (Spring Real Estate, 2022). This flow of more and less office space is not strange, since it could be seen in all major Dutch cities over the last fifteen years, shown in Figure 4.10.

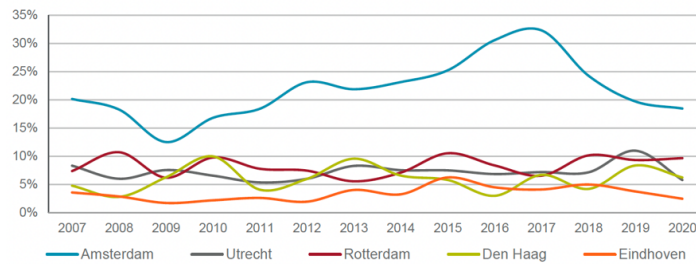


Figure 4.10: intake office space in five major Dutch cities
(Cushman & Wakefield & Municipality of The Hague, 2021)

In the Netherlands, 6% of all office space that companies rent is unnoticed, which consists office space that has been rented out but is not being used. It concerns 3.3 million square meters of unused surface, shown in Figure 4.11. This is caused by the fact that a hybrid working week of three days in the office and two days at home is expected to emerge. This translates to lesser use of existing office space. Many employers are therefore going to focus on a more even office occupancy over the working week. (Omgevingsweb, 2022)

SOORT LEEGSTAND	OPPERVLAKTE (M2)	PERCENTAGE VAN TOTALE KANTOORRUIMTE
Verborgen	3,3 miljoen	5,9%
Officieel	4,3 miljoen	7,4%
Totaal	7,6 miljoen	13,3%

Figure 4.11: vacancy of Dutch office spaces (NOS, 2022)

The Hague's office market

After the Central Innovation District (CID), most office space has been taken up in the centre sub-area of The Hague. In 2020, this sub-area will register a take-up of 8.000 m² of office space, which amounts to a share of 12% of the total take-up, see Figure 4.12. On average, this share was 18% over the past five years and 16% over the past 10 years. A major transaction has also taken place within the centre sub-area, the national government has taken up 6,000 m² of office space on Lange Voorhout (Cushman & Wakefield & Municipality of The Hague, 2021).

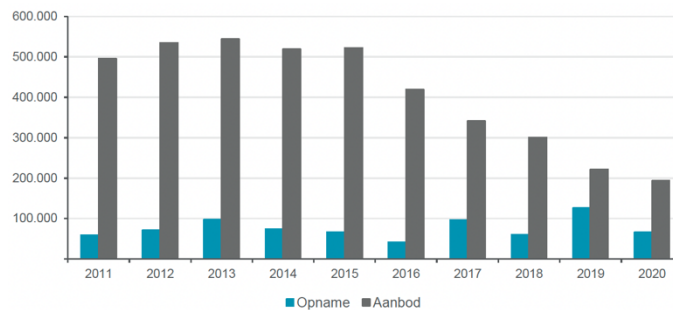


Figure 4.12: supply and intake of The Hague's office market
(Cushman & Wakefield & Municipality of The Hague, 2021)

As shown in Figure 4.13, the CID and centre sub-area, are the two office market areas closest to the central station of The Hague.

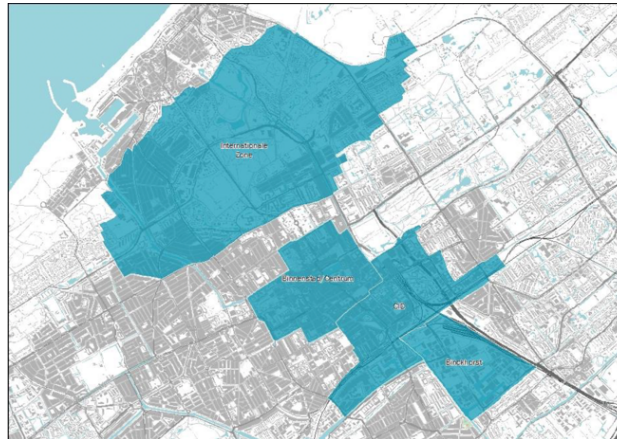


Figure 4.13: office market areas in The Hague
(Cushman & Wakefield & Municipality of The Hague, 2021)

During the period from 2016 to 2020, the municipality of The Hague transformed approximately 405.000 m² of office space, the vast majority of which has been allocated to residential use with approximately 53% and approximately 36% has been demolished (Cushman & Wakefield & Municipality of The Hague, 2021).

4.3.2 Rijksvastgoedbedrijf's office portfolio

The Rijksvastgoedbedrijf is a public real estate company regulating the buildings and grounds of the Dutch central government and defence force. The service falls under the Ministry of Home Affairs and Kingdom Relations and is responsible for the management and maintenance of the largest and most diverse property portfolio in the Netherlands (Rijksvastgoedbedrijf, 2022a). Its current office portfolio amounts to 2.4 million m² GFA and consists of 225 buildings, of which approximately 49% of these buildings are rented and 9% have a monumental status (Rijksvastgoedbedrijf, 2019). The percentage per size of GFA is displayed in Table 4.1. A third of the total office stock is situated in The Hague. 750.000 m² houses about 50.000 officials (Jaap Gasille, personal communication, 24 January 2023).

Table 4.10: the size of office buildings in the portfolio (Rijksvastgoedbedrijf, 2019)

BVO	%	m ²
< 5.000 m ²	8%	192.000 m ²
5.000 – 30.000 m ²	48%	1.152.000 m ²
> 30.000 m ²	44%	1.056.000 m ²
total	100%	2.400.000 m²

Relative to the small office buildings, the middle and bigger office buildings cover the biggest part of the office stock in percentages, but especially in absolute numbers, which is visualised in Figure 4.14. It shows the fact that the Rijksvastgoedbedrijf has big properties for their offices.

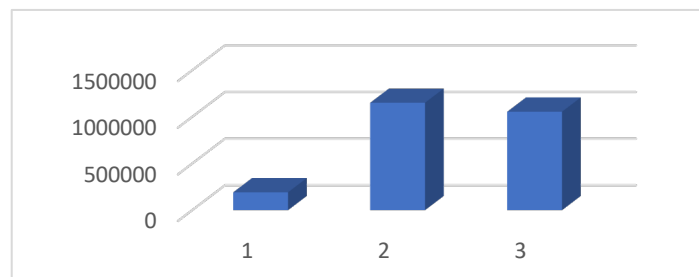


Figure 4.14: visualisation of total square metres of office buildings (Rijksvastgoedbedrijf, 2019)

To be able to understand the size of the Rijksvastgoedbedrijf's office portfolio in The Hague and the individual office buildings, a quantitative analysis is done. In Figure 4.15 the locations of all 32 office buildings, see Table 4.11, are portrayed on a map. Most buildings are situated nearby the central station, in the centre area or the Central Innovation District.

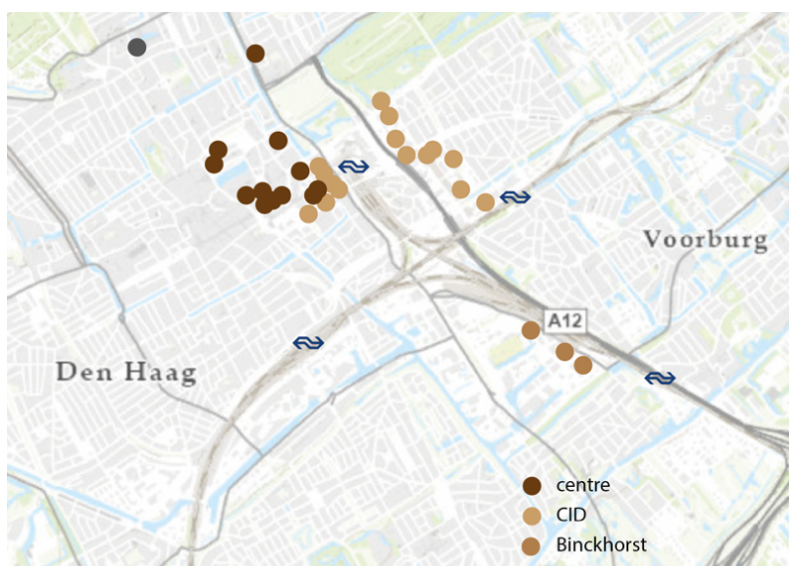


Figure 4.15: governmental office buildings located in The Hague (own image)

Table 4.11: list of all governmental office buildings in The Hague (...)

	city	adress	GFA 0.7 (m2)	location
#1	's-Gravenhage	Turfmarkt 244	1.211	centre
#2	's-Gravenhage	Grote Beerstraat 34	2.656	Binckhorst
#3	's-Gravenhage	Henri Faasdreef 312	2.985	district (CBS)
#4	's-Gravenhage	Alexanderveld 5	3.954	international zone
#5	s-Gravenhage	Kalvermarkt 32	4.141	centre
#6	's-Gravenhage	Plein 4	6.368	centre
#7	's-Gravenhage	Prins Clauslaan 18	7.435	CID
#8	's-Gravenhage	Bezuidenhoutseweg 20	8.909	CID
#9	's-Gravenhage	Lange Voorhout 7	9.150	centre
#10	's-Gravenhage	Schennkade 100	10.301	CID
#11	's-Gravenhage	Bagijnestraat 40	10.868	centre
#12	's-Gravenhage	Kneuterdijk 1	10.880	centre
#13	's-Gravenhage	Juliana van Stolberglaan 10	11.023	CID
#14	's-Gravenhage	Kalvermarkt 32	11.208	centre
#15	's-Gravenhage	Schedeldoekshaven 101	11.748	CID
#16	's-Gravenhage	Kalvermarkt 38 H	12.067	centre
#17	's-Gravenhage	Schedeldoekshaven 131	12.113	CID
#18	's-Gravenhage	Prinses Beatrixlaan 116	16.321	CID
#19	's-Gravenhage	Bezuidenhoutseweg 30	18.011	CID
#20	's-Gravenhage	Muzenstraat 31 -107	23.885	centre
#21	's-Gravenhage	Prinses Beatrixlaan 450 -512	24.622	CID
#22	's-Gravenhage	Maanplein 32	28.526	Binckhorst
#23	's-Gravenhage	Wilhelmina van Pruisenweg 52	31.765	CID
#24	's-Gravenhage	Koningskade 4	34.916	centre
#25	's-Gravenhage	Prinses Beatrixlaan 2	36.907	CID
#26	's-Gravenhage	Regulusweg 1	53.536	Binckhorst
#27	's-Gravenhage	Bezuidenhoutseweg 73	56.196	CID
#28	's-Gravenhage	Rijnstraat 50	61.239	CID
#29	's-Gravenhage	Parnassusplein 5	64.506	CID
#30	's-Gravenhage	Korte Voorhout 7	69.652	centre
#31	's-Gravenhage	Rijnstraat 8	84.809	CID
#32	's-Gravenhage	Turfmarkt 147	122.280	centre
	totaal		864.188	

4.3.3 Optimisation on reducing square metres

The Rijksvastgoedbedrijf is investigating the possibility to reduce the accommodation standard from 0.7 to 0.5. When this is done a new necessary GFA can be determined by diminishing the current square metres in the same ratio as 0.7 reduces to 0.5. In the first column of Table 4.12, the new demand for square metres is shown for each building. The second column of Table 4.12 shows the difference between the current square metres and

the new demand of square metres, which would possibly be the surplus of square metres in the portfolio with a total of 246.899 m². Now the third column in Table 4.12, shows the new demand for square metres cumulative from small to large, and the fourth column shows the new supply of the surplus, cumulative from large to small. This shows that the total square metres of the 22 smallest buildings, which is 177.419 m², could almost fit in the surplus square metres of the 10 largest buildings.

Table 4.12: optimization on reducing square metres

GFA 0.5 (m ²) surplus		demand supply	
865	346	865	246.899
1897	759	2.762	246.553
2132	853	4.894	245.794
2824	1.130	7.719	244.941
2958	1.183	10.677	243.811
4549	1.819	15.225	242.628
5311	2.124	20.536	240.809
6364	2.545	26.900	238.685
6536	2.614	33.436	236.139
7358	2.943	40.794	233.525
7763	3.105	48.557	230.582
7772	3.108	56.328	227.477
7874	3.149	64.202	224.369
8006	3.202	72.208	221.220
8392	3.356	80.599	218.017
8619	3.448	89.219	214.661
8652	3.461	97.871	211.213
11658	4.663	109.529	207.753
12865	5.146	122.395	203.090
17061	6.824	139.456	197.944
17587	7.035	157.043	191.120
20376	8.150	177.419	184.086
22690	9.075	200.109	175.936
24940	9.976	225.050	166.861
26363	10.544	251.412	156.885
38241	15.295	289.653	146.341
40141	16.055	329.794	131.045
43743	17.496	373.537	114.990
46077	18.429	419.613	97.494
49752	19.900	469.366	79.065
60579	24.230	529.945	59.165
87345	34.935	617.289	34.935
617.289	246.899	177.419	175.936

To determine if this is a valid option for the future of the government office buildings in The Hague other policies except only reducing the total square metres should be considered. But this analysis shows that there is a lot of possibility and space within the current real estate portfolio.

4.3.4 Trends

A possible change in the workplace norm could impact the total demand for square metres, but it is not the only influence on the portfolio. Other current trends were recently set out in the memorandum “Medium-term Office Housing in The Hague”, which was discussed with the Minister of Housing and Spatial Planning on April 4th (Rijksvastgoedbedrijf, 2023a). In this document the first exploration of a forecast for the next four years is set. A primary goal is securing a sufficient supply of high-quality and sustainable buildings that can be used effectively for the primary process now and in the future. Moving departments and clearing out space is needed to be able to renovate the buildings and make them more sustainable. Despite the stricter housing standards, including the use of hybrid working, there is insufficient or no room to move around. This is partly due to an anticipated and sustained growth in the number of civil servants. Part of the solution lies in the rapid development of the buildings on the Binckhorst, the Monarch and the KC plot. The plan will soon be worked out in more detail, as the governmental departments are now formulating their estimated demands for the upcoming four years.

4.4 Public actors in The Hague

This research focuses on the present public actors in the city of The Hague, their real estate portfolio, and their view on hybrid working and sharing real estate and facilities.

4.4.1 Context of The Hague

Within the centre of The Hague there is a number of public real estate owners, which are clustered in the east side of the centre near the train station, see Figure 4.16. These public actors are making use of office spaces or workspaces. All of them use real estate in the centre area, which is illustrated in Figure 4.16. The size of the owned buildings is stated in Table 4.13.

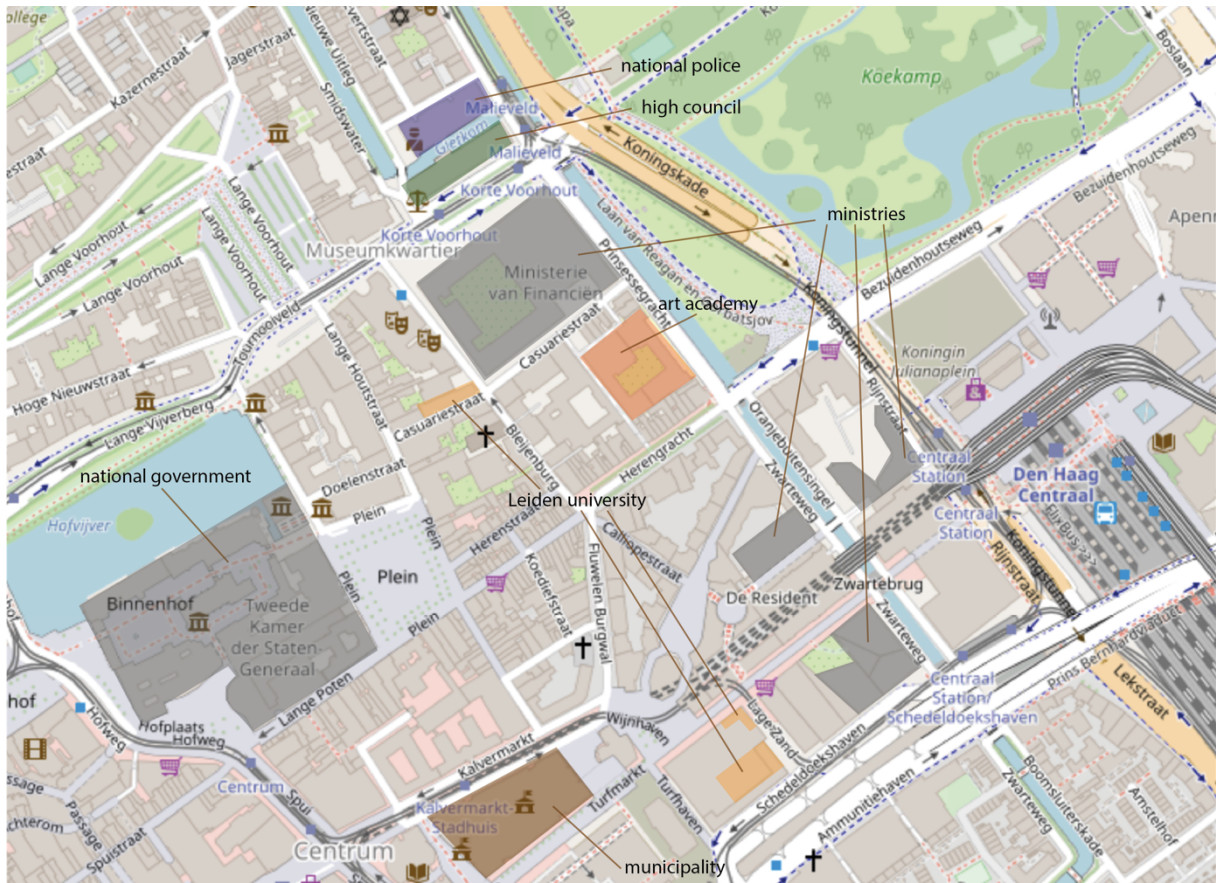


Figure 4.16: public actors in the centre of The Hague (own image)

Table 4.13: square meters from public actors in the centre of The Hague

public actor	square meters	source
Rijksvastgoedbedrijf	864.188 m2	
province	16.000 m2	(OTH Architecten, 2022)
municipality	131.000 m2	(Wikipedia-bijdragers, 2022)
national police	10.215 m2	(KadastraleKaart, 2022)
university of Leiden	3.833 m2	(KadastraleKaart, 2022)
high council	15.000 m2	(Hoge Raad, 2016)
academy	10.708 m2	(KadastraleKaart, 2022)
total	1.050.944 m2	

Thereby, the hypothesis is that public actors in the centre of The Hague could exchange office space to a certain extend. It is of importance to take the barriers into account within the collaboration. The public actors collaboratively could reach a social goal, which is to reduce the costs of office spaces. An amount of resource sharing could contribute to using square meters more efficiently. The Rijksvastgoedbedrijf (2022e) wants to build a potential 250.000 m2 of office spaces in the centre of The Hague. If only 10 per cent of the already existing square metres, which is about 94.000 m2, could be released through more efficient use, already half of the required space is fixed. So, there is a lot of potential for sharing space and co-share resources.

4.4.2 Public actor's real estate

For this research a number of public actors is interviewed about their real estate policy concerning occupancy rates, hybrid working, and their view on sharing real estate and facilities. The list of public actors is stated in Table 4.14. Most of them are housed in the centre of The Hague. DGDOO is the organisation representing the clients of the Rijksvastgoedbedrijf for their office space housing. UWV is also added since it is a semi-public organisation, which could be interested in sharing real estate and facilities with other public parties.

Table 4.14: list public actors for this research

list of public actors

- Leiden University
- DGDOO
- Province of South-Holland
- UWV
- National Police
- Municipality of The Hague
- Rijksvastgoedbedrijf

Occupancy

From the interviews with the public actors a general observation on the occupancy rates of their office buildings could be stated. All actors struggle with low occupancy rates, varying from 30 to 60 per cent, as shown in Table 4.15. The given numbers indicate that most of the interviewed public actors have an occupancy of beneath the 50%. Not all participants measured the occupancy of their office buildings but gave an estimation in the interview, so the stated numbers are indicative. Also, the assumption is that these numbers nine to five working hours but it was not questioned. Low occupancy numbers were already found by the Centre for People and Buildings in 2014, who mentioned that offices with flexible workplaces have on average a significantly higher average occupancy rate than offices with fixed workplaces, respectively 59% and 45%. The often-mentioned target of 70% is ambitious and is not often achieved in practice (CFPB, 2014). According to a Dutch measurement bureau (Measuremen NL, 2022), the average occupancy of workspaces is lower since the COVID-19 pandemic, which is 35% - 50%. This is in line with the occupancy rates of the interviewed public organisations.

Table 4.15: occupancy rates at public actors

public actor	occupancy rate
Leiden University	30%-40%
DGDOO	40%-50%
Province of South-Holland	50%
UWV	<60%
National Police	low
Municipality of The Hague	<50%
Rijksvastgoedbedrijf	30%-35%

**overview of the given indications from the interviewed institutions
 **in the interviews it is explained where these numbers are based on*

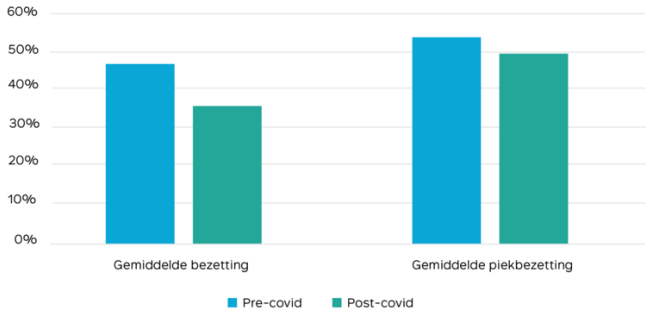


Figure 4.17: occupancy of workspaces in Dutch office buildings (Measuremen NL, 2022)

Hybrid working policy

The use of the office buildings is influenced by the new developments of hybrid working. Therefore, it is of importance to understand how the public actor’s office space is organised and adapted to the changes in hybrid working. The theory of solid, liquid, and gas (Den Heijer, 2021) is used to understand how their office space is organised. In terms of solid results from Table 4.16, most organisations try to avoid fixed workplaces, but they notice that employees prefer a form of solidness, such as having a ‘home base’ at the office where they can meet their colleagues. When focusing more on the liquid side of office spaces, shown in Table 4.17, it is clear that there is a lot of flexibility. Liquid, or activity-based working, is mostly the main focus of the office policy. Gas, shown in Table 4.18, is understood as the possibility to work virtually, at home, and elsewhere. Most companies facilitate in this but do focus on it in their policies.

Table 4.16: ‘solid’ at public actors’ offices

public actor	solid
Leiden University	● No, you have your own corridor, or your own floor or part of a floor.

	<ul style="list-style-type: none"> I want to meet my real estate colleagues here every day.
DGDOO	<ul style="list-style-type: none"> The Hague is a somewhat difficult example because that is where the ministries sit with the ministers, and they are looking for their own building and identity from their portfolio. And for the rest they are all single-tenant buildings. So only one user often with one with a minister. But you do notice that people attach to a certain basis.
Province of South Holland	<ul style="list-style-type: none"> People miss their home base. That is what is very important to us. So not just like, I don't want to look for a place, but I just want to, I work at facilities management, I work at human resources, I'm going to wing 3a, you'll find your colleagues there.
UWV	<i>did not mention</i>
National Police	<ul style="list-style-type: none"> Well, who has a separate room, the unit leadership and the corps leadership and then we're done.
Municipality of The Hague	<i>did not mention</i>
Rijksvastgoedbedrijf	<ul style="list-style-type: none"> You probably go to your own office where you are stationed.

Table 4.17: 'liquid' at public actors' offices

public actor	liquid
Leiden University	<ul style="list-style-type: none"> And here we have a mix, we have phone booths, phone booths, conference rooms, we've increased some of those. So, we make office rooms and we make open office landscapes. Everyone chooses for themselves. Everyone is mobile here, everyone has a laptop, and you can sit anywhere. Your institute or department is located there so that you can meet your own colleagues there.
DGDOO	<ul style="list-style-type: none"> This does not mean that the building and organisations are permanently linked to each other. Because we notice that people no longer come to the office, but still want to meet each other now and then, so we want to facilitate that you don't always have to go to your place of employment, but to other places.
Province of South Holland	<ul style="list-style-type: none"> They have emptied parts of the building and classified it as a collaboration space. So, the diversity of workplaces, so a screen place, but also a meeting place, actually that you have a number of working methods together.
UWV	<ul style="list-style-type: none"> Then we really are all on the activity-based work. So, that is really the case within the UWV, so to speak, landing is something we do in a number of places, we have those flex zones for that. But most of it is just activity related, you come to the office and there are different facilities there, but you land in a spot of your division because you have to meet your colleagues again. To the office to meet your people, your colleagues, otherwise, you don't have to come to the office anymore.
National Police	<ul style="list-style-type: none"> Well then that is actually largely liquid.
Municipality of The Hague	<ul style="list-style-type: none"> The idea here is to do fifty-fifty, work meets concept and meets more, to meet here than to work.
Rijksvastgoedbedrijf	<ul style="list-style-type: none"> Enter without knocking Because you know those workplaces with a computer with a screen. That is becoming less and less and the need for meeting places in all kinds of variations is increasing.

Table 4.18: 'gas' at public actors' offices

public actor	gas
Leiden University	<ul style="list-style-type: none"> So, we very often also meet here in teams online. We believe that everyone should be able to work mobile. So, everyone gets a laptop, that they can work at home, work in the office, on the train, or wherever they feel like. We offer physical workplaces.
DGDOO	<ul style="list-style-type: none"> Most people can't handle that to work so loosely here and there. That will be in certain contexts, but not as a starting point. And that everyone everywhere and nowhere, including their ministers, that's not going to happen, also because you have a certain level of security. In the upcoming collective labour agreement, it is proposed to move away from the place of employment. Because my place of employment is now here in this

	building, there is quite a chance that your home address will become your place of work.
Province of South Holland	<i>did not mention</i>
UWV	<ul style="list-style-type: none"> • Because everyone can work from home, right?
National Police	<ul style="list-style-type: none"> • That's a basic team desk consisting of meeting functions, offices, and build-up rooms, right? This is just gas.
Municipality of The Hague	<i>did not mention</i>
Rijksvastgoedbedrijf	<ul style="list-style-type: none"> • So, in that sense you can already see that all those steps we have taken, they are quite far and now you actually see that because of that hybrid working in the fact that the way we are now having meetings, that was always an ambition for corona, but that did not get off the ground and corona has given it a boost. • This hybrid working is completely new, because before Corona it was called time, place and device independent working and before that the new way of working.

4.5 Sharing real estate and facilities

According to a policy employee of DGDOO there is a big potential for saving a lot of money through sharing real estate and facilities between public actors: *“And that's just square metres. Then you also get ICT and facilities. So, let's say, you can save 500 million just like that. We as the national government can save that, and then the municipality can save some more. The province can save some money. So, I think that with those 4 parties, you will really arrive at a high amount, hear where you relatively in the only thing you have to do is to work together in housing.”* (Interview #3). But it is more complicated than this advantage. Therefore, this research focuses on the barriers and the possibilities of sharing office space between public actors in the city of The Hague. In the conducted interviews, the view of the public actors on sharing real estate and facilities is questioned. This analysis uses the codes ‘barrier’ and ‘possibility’ in Atlas TI for quotes on these subjects. First, the general view on or experience with sharing real estate and facilities of the public actors is discussed, concluded from the quotes in Table 4.19.

Leiden University - Leiden University is positive about sharing real estate and facilities with other similar organisations, such as the TU Delft. This will be realised in a university building in The Hague together with a couple of organisations. All participating organisations have a slightly different office landscape, but there are a lot of similarities which make it possible to share.

DGDOO - The representative organisation of governmental departments sees that a lot of public organisations are struggling with low occupancy rates. It sees faith in sharing real estate and facilities with those organisations to make more optimal use of the vacant real estate. This could be done by opening up office buildings for other institutions.

Province of South Holland - The province also sees opportunities in sharing real estate and facilities with other public organisations, but it should be investigated to understand how this could be arranged practically.

UWV - The UWV has a collaboration partnership with other semi-public institutions, where empty office floors are offered to one another. But the main position it takes is that it will not hold on to real estate to support another organisation. When a building is no longer necessary for its own business, it is repelled.

National Police - On a small scale, some smaller police departments are housed within municipalities or together with other emergency services. The next step for the National Police is thinking about collaborating more with chain partners on real estate. Thereby, the same motivation for executing their public duty should be present in the organisation.

Municipality of The Hague - On the issue of housing refugees, the municipality already sees a lot of collaboration with other public parties, such as the CAO, the refugee organisation, and neighbouring municipalities.

Rijksvastgoedbedrijf - Between several departments, there is the concept of entering without knocking, which contains the ability of civil servants to use other governmental offices than their department's building. This originated from the thought of hybrid working, which creates a lot of opportunities for

sharing real estate and creating a lively urban environment. Also, the Rijksvastgoedbedrijf sees some practical benefits of sharing real estate for optimally using the existing buildings. Similar organisations or companies with opposite work patterns could be interesting to share real estate and facilities with.

Table 4.19: position of public actors towards sharing real estate and facilities

public actor	quotes
Leiden University	<i>We are also going to set up: the 'University Building The Hague'. And underneath that only logos of TU Delft, Leiden University. And the Open University will also participate.</i>
	<i>Everyone wants their own. The OU, the UNL, and the TU Delft, each have its own office landscape and offices.</i>
DGDOO	<i>Everyone suffers from vacancy, because not everyone comes to the office anymore, and that will no longer happen. So, my idea is still to share the space we have, eventually with municipalities, provinces and ZBOs, so the state, province, and municipality or ZBOs. If the four of us can use the existing real estate among ourselves, then we can just repel 30%.</i>
	<i>And I would really like to open the buildings to others at times when we are not using them. I think that is a social function that we have as a national government.</i>
Province of South Holland	<i>But research should really be done, also with other provinces or municipalities or indeed in The Hague. Yes, but what do you do and how can we help each other further? And where are those places for what?</i>
	<i>You don't actually just walk in. Unless you register, but then set up a floor or a part of your building where you can receive people from municipalities of the government institutions.</i>
UWV	<i>We also have some kind of make a point. That is our marketplace for housing and we will also offer that at some point. For example, if we have an empty floor somewhere, don't forget that we at least make the first reference to our ZBO colleagues that we have a floor there and that it is available. That way we occasionally manage to rent something from each other.</i>
	<i>Through our service centre they can book a consultation room and then call a client there, but yes, that is in a shielded secure zone on the ground floor and that is really aimed at clients, isn't it?</i>
	<i>That is complicated and that is why we consciously choose to dispose of square meters.</i>
National Police	<i>So, what you see, at police stations with small police stations, there are often others in the control rooms, which are of course, police, fire brigade and what's that called...</i>
	<i>And what the next step is that we start thinking yes, how do you deal with it, are there still a few issues to go, how can you facilitate your cooperation with your chain partners and can you then move towards shared use of housing, right?</i>
	<i>Is your view on your social task, in the field of housing, perhaps influencing the way in which you use together.</i>
Municipality of The Hague	<i>You can see that in the reception of the refugees. That is regionally controlled, but that is really regionally controlled, so you see that we Wassenaar, Rijswijk so much and The Hague pull together in that.</i>
Rijksvastgoedbedrijf	<i>Not only from a function of safety and liveliness and things like that, but also double use. That you can also create added value in it. Of yes, if you don't need those places, you might say you can use them for another purpose. But that is still early days, that development, especially with the hybrid work and there are possibilities, but that is quite a bit of a long shot.</i>
	<i>If you ask me about my own opinion of this, I think we should work together towards a system in which it is easier to give external parties a place within the built environment of the government. I say that because renting to external parties is in any case much more interesting in terms of financial profile than leaving it empty or having some kind of discount promotion applied to the situation for another government department, whereby your real estate sub is used optimally.</i>
	<i>So, from my point of view, and as I also see that the role of the RVB is, namely, to make the best possible financial use of the real estate that we own and to make it as profitable as possible, then I think, okay, we have to make it easier to give external parties a place in our government real estate.</i>
	<i>Enter without knocking</i>
	<i>If you assume that government buildings of the national government are also just social real estate, you can talk to each other there. And that can also be with municipalities. Well, the best part of the time, your properties are empty part of the time. Are you willing to do that, I think that is really possible from a substantive aspect and from a social aspect. Only that is ultimately also a consideration with safety aspects and management aspects</i>

	<i>I do understand, for example, consultancy companies. Of course, they have Friday as an indoor day. But I don't think that's really feasible from a security and information security perspective either.</i>
	<i>The government meeting centres that they now have are actually a long way towards allowing external parties to enter as well.</i>
	<i>And if you just moved somewhere and you have always been solitary housed and then you hear yes, that part will be added in half a year? Yes, then you naturally have that people who are already there in that building look a bit strange that outsiders suddenly walk into their building, don't you?</i>

4.5.1 Barriers

From the conducted interviews, several barriers are gathered following the answers given by all public actors in the interviews, shown in Table 4.20. The nine main barriers will be discussed in this section.

Core business - It appeared from the interviews that aiding other parties in their real estate needs is not part of the core business activities. For the UWV it is about supporting their clients via their real estate. Putting the energy into housing other parties could be a distraction from its core business. From Rijksvastgoedbedrijf's perspective, the core business is to house their clients, organised in the office system in cooperation with the DGDOO. Sharing real estate and facilities should not harm the housing of these clients.

Comparability - From the interview with the National Police, it came forward that sharing real estate and facilities could not be achieved if there is no common ground in their safety and security policies and their financial system. The Rijksvastgoedbedrijf stated that parties that would share real estate, should have similarities in their activities. Thereby, it is most practical that all included parties need the same facilities. Leiden University and the UWV stated that their real estate function is not fitted to be shared with other public parties. Leiden University has atypical real estate, which could only be shared with similar parties, such as other universities.

Financing - There is a common insecurity about the financing of shared real estate and facilities. All questioned public actors have doubts about the payment of the shared space. Thereby, it is unclear which party is responsible for what part of the space. It is stated as one of the biggest barriers in sharing real estate and facilities. This does not necessarily include a shortage of means to afford the management and maintenance of the shared real estate and facilities. However, it entails contractual uncertainties and payment arrangements between the involved parties.

Image - From the conducted interviews with DGDOO and the Rijksvastgoedbedrijf, the term image came forward. Sharing real estate and facilities should not harm the image of the government and individual institutions. Also, it could be seen the other way around, where other parties would not want to be associated with the image of the government.

Individuality - Stated as one of the barriers for users is the sense of individuality. It is about the feeling users have towards the office space. Users want to have a connection with their working environment. Sharing real estate and facilities with other parties diminishes to the way an office space is their work environment.

Organisational - According to DGDOO, there is a fear of letting go of square metres within the national government. Once office space is pushed offed or rented out, the fear of not having them when the space is possibly needed in the future. This is supported by a lack of financial need to push off the vacant space.

Position - When the government offers office space to other parties to use, it puts itself in a competitive position with market parties that offer office space.

Property management - In both the interviews with the Province of South Holland and the Rijksvastgoedbedrijf, the point of property management is discussed. The Rijksvastgoedbedrijf would not like to have the burdens of the management of the shared real estate and facilities. This delivers an extra workload for the company. Also, the province mentions the question of responsibility in property management.

Security - Throughout almost all the interviews, the topic of security came forward the most. This included physical security, but also the feeling of safety and information safety. DGDOO states that it is important for governmental organisations to keep an eye on who uses their office buildings. This is also named by the province, which states the question of registering everyone who wants to use the shareable real estate space. It is also named as one of the aspects where previous attempts were stranded. The UWV has buildings and services which are not suitable for cooperation with other parties because of the presence of confidential documents. This is a part of information security which is also seen as a barrier by the Rijksvastgoedbedrijf, but they also state the physical barriers caused by the security demands for the governmental offices. The National Police states that similar security demands are a requirement for sharing real estate and facilities.

Table 4.20: barriers for sharing real estate and facilities by public actors

public actor	quotes	barriers
Leiden University	<i>Individuality, this is our room</i>	Individuality
	<i>And our buildings are a mix of, which is atypical obsolete real estate. You can't share that very well with someone else.</i>	Comparability
DGDOO	<i>But there is a very big fear if you say well, I don't need them, then you will lose them and you will never get them back. So, everyone just holds on and everything is empty.</i>	Organisational
	<i>That's the safety. So how do I keep an eye on who enters my building?</i>	Security
	<i>How are we going to arrange that financially?</i>	Financing
	<i>You have to think about that, because you talked about stimulating the local economy, you have to be careful not to compete with the existing entrepreneurs.</i>	Position
	<i>What do you still find acceptable to be associated with?</i>	Image
	<i>Own spot. Fear of losing your own place or of sharing</i>	Individuality
	<i>And yet see no financial need to reduce in meters</i>	Organisational
Province of South-Holland	<i>We have also been working on that, but it has never really taken place due to the complexity in terms of security.</i>	Security
	<i>And how do you do that and with whom and who manages it?</i>	Property management
	<i>So how are you going to register that and who is your contact person or do you leave it completely open.</i>	Security
	<i>Is it free, or do you have to pay for it?</i>	Financing
UWV	<i>Information security</i>	Security
	<i>So, our buildings and our services make our buildings somewhat less suitable for these types of cooperation plans.</i>	Security
	<i>We are not going to continue to hire a hub, so to speak, to facilitate others, you know, that is not our goal as UWV, is it, we are to serve the clients.</i>	Core business; financing
National Police	<i>You do need to have a common policy when it comes to safety and security.</i>	Security; comparability
	<i>How do you handle the funding?</i>	Financing
	<i>The public parties have different financing systems</i>	Comparability
Rijksvastgoedbedrijf	<i>In the end, it is also about behaviour to a large extent.</i>	Individuality
	<i>Also, the largest component in particular is safety. That is the largest component that you often encounter besides the financial component.</i>	Security; financing
	<i>Practical limitations, so the gates, the passes, and things like that.</i>	Security
	<i>Many government services still want a shielded environment.</i>	Individuality; security
	<i>Conventional in the sense of, we have to have our own office, we have to have access to all floors because then we have everything under control.</i>	Security; individuality

<i>You don't want to harm the image of the government and you don't want to harm the housing situation of the government department that is there.</i>	Image; core business?
<i>But yes, if it is also publicly accessible again. Yes, then that does something to me, because then I won't have the same conversation there if I know that there may also be a journalist. Or that there could just be that random someone else sitting there.</i>	Security
<i>So, if you can just wander the halls with your audience, what does that mean for our work? Because whoever is sitting next to me can just watch now. Yes, if you make it accessible, you can't. Anyone can listen in on what I call.</i>	Security
<i>In itself I have nothing against it, only you want to make sure that we don't also have those problems, that we contain the risks. Which can. We do rent out more to third parties.</i>	Property management
<i>I think maybe the most exciting thing is to start opening it up.</i>	Fear
<i>And also have a similar need for space. Look, you can't say that you put all the desks aside on Friday and, well, do other activities there and then put it back on Monday.</i>	Comparability
<i>Certainly, in the current political context, in which, of course, trust in society also becomes important and therefore also visibility. That is becoming increasingly important. Because as an organisation I would like to be identified that I am in a government office. I don't know whether an external party would really enjoy being in a government office.</i>	Image
<i>As soon as everyone could enter there, right, including journalists, you can no longer discuss work there.</i>	Security
<i>And, you also have to look at why we were created for what our mission is, from the Rijksvastgoedbedrijf. In principle, we are here for the users from the national government and if other parties join us, be my guest, as long as the right agreements are made.</i>	Core business

4.5.2 Possibilities

From the conducted interviews a couple of possibilities for sharing real estate and facilities came forward. The quotes about these possibilities are stated in Table 4.21, from which seven general possibilities could be concluded.

Activity - The Rijksvastgoedbedrijf sees sharing of real estate and facilities as an opportunity for activity on eye level for social control in an area. This could benefit the liveability in an urban environment.

Different - Parties with an opposite work pattern could possibly share real estate within governmental office according to the Rijksvastgoedbedrijf. Commercial organisations which mainly go to the office on Friday could use the empty governmental office buildings.

Financial - Financially it is more beneficial to rent out vacant office space for the Rijksvastgoedbedrijf than to leave it empty or give it to a party for a reduced price. Also, a given opinion is that it should be made easier for the agency to rent out unused square metres to other parties since it is financially more beneficial.

Location - The interviewee of DGDOO stated that most of the governmental real estate is located in triple-A locations, which are appealing to many companies. This creates a lot of potential to rent out governmental office buildings.

Public value - According to the policy employee of DGDOO, it also is the responsibility of the government to add public value. This could be realised through their real estate.

Separation - According to DGDOO and the Rijksvastgoedbedrijf, it is of importance for governmental offices to be able to be shared, that there is a clear separation of the involved parties, physical and contractual. Physically, it means that logistical routes have to be organised separately and that other parties have to be in clustered areas in the building, and not splintered through the building.

Contractually, it means that the financial part and the management of the building should be organised securely.

Similar - The Leiden University, the National Police, and the Rijksvastgoedbedrijf all agree that there should be similarities between the involved parties when sharing real estate and facilities. This mainly is about sharing space with similar type of organisations regarding the core business.

Table 4.21: possibilities for sharing real estate and facilities by public actors

public actor	quotes	possibilities
Leiden University	<i>Except for someone who looks like you, like another university, so we bring that in.</i>	Similar
DGDOO	<i>And then you could do something else socially with those spaces that you reject.</i>	Public value
	<i>Then you would have to make physical separations in buildings. That people, but that others externally can only use a certain part of the building and that is always more than now, because now nothing is used.</i>	Separation
	<i>Almost all of these parties have their real estate at Triple-A locations.</i>	Location
National Police	<i>But you could then overlap the portfolios a bit more in relation to real estate within RVR.</i>	Similar
Rijksvastgoedbedrijf	<i>Then I think you should, and then I may be a pioneer in this idea, but then you shouldn't look at a province or a municipality to try to house it in a government office or vice versa.</i>	Different
	<i>But then you would have to reason more like okay, which party have the exact opposite profile of us. So, then you would have to think no, we can't, for example, a commercial cooperative, for example, that often come to the office on Friday.</i>	Different
	<i>So, we thought of okay, we might be able to realise a Government Meeting Centre there where fellow civil servants from far and wide can arrive throughout the country to meet. Because you then still have eyes and ears at ground level, from the office you have eyes and ears at ground level, so you still embrace the idea of creating quality of life.</i>	Activity
	<i>To see to what extent, you can still make your space available with smaller entrepreneurs in the evenings, at weekends and those kinds of concepts. He is now thinking for us to see to what extent we can generate added value in this way.</i>	Public value
	<i>If you ask me about my own opinion of this, I think we should work together towards a system in which it is easier to give external parties a place within the built environment of the government. I say that because renting to external parties is in any case much more interesting in terms of financial profile than leaving it empty or having some kind of discount promotion applied to the situation for another government department, whereby your real estate sub is used optimally.</i>	Financial
	<i>So, I think the main gain is in plinths, in isolated layers in a block, but not really speckled through a building.</i>	Separation
	<i>We are indeed going to give them a floor, which we are putting on the market. We'll give it to the party. An interesting issue and at competitive rates. That is part of it. Because we are operating in a normal market. So, we should also be able to use market-based rates.</i>	Financial
	<i>So, make sure you just keep your things but arrange it very well financially. Adhere to market and government law, look at security, look at accessibility, look at your appearance indeed, you don't want to have a brothel in a plinth, because that could still have a negative image or negative image, right?</i>	Separation

4.5.3 External use of real estate

Some public parties still make use of real estate outside of their own portfolio. Leiden University rents rooms for exams: *"We still rent rooms for taking exams, physically."* (Interview #1). Also, the Rijksvastgoedbedrijf frequently uses external meeting rooms since the meeting rooms are regularly fully booked: *"We use external locations because the meeting rooms down here are always full."* (Interview #13). This contributes to having a flexible part of their needed office space: *"But then there is the flexibility of renting from other parties, which is nice."* (Interview #13)

The UWV sometimes has to deal with short-term assignments, for which they could find it interesting to rent out office space to external parties: *"Well, that would of course be nice if, like us, you get another assignment that is short-term, as with the parliamentary inquiry centre in the past. Then a project suddenly arises that you can say, our colleagues, they have a hub somewhere that we can use. Because then you don't have to realise anything yourself anymore. So, that could very well be. As long as a volume is large enough, then it becomes interesting again, doesn't it? That is indeed all those parties, say things like that together, needs to end up on such a hub, then it can be interesting."* (Interview #11).

4.6 Mixed-use in governmental office buildings

Sharing real estate and facilities is not the only way, a governmental office can use their vacant square metres. Part of the real estate can be part of mixed-use development. This part discusses the barriers and the possibilities of mixed-use within the Rijksvastgoedbedrijf's real estate portfolio.

4.6.1 Barriers

The same concern about safety are present with mixed-use development, as is present with the issue of sharing real estate and facilities: *"What about safety?"* (Interview #9), *"But in general, I see a lot of challenges in terms of safety. That would be my main concern. And, I think the average user oversees that, so if there are certain frameworks for that of how you can possibly minimize that kind of thing. Look, security don't even set it to zero now, but that you then look at what that means for the building, the environment and therefore the user and that you draw up frameworks for that."* (Interview #17). Therefore, it is important that all risks are noticed when considering mixed-use: *"In itself, I have nothing against it, only you want to make sure that we don't also have those problems, that we contain the risks. Which can. We do rent out more to third parties."* (Interview #9). Even with certain experiences, it is seen as the major barrier: *"The biggest and the most important seems to me to be safety, because what would I say against me in my experience with the government as long as you can explain things well and make them tangible, it falls or does not fall on finances."* (Interview #17). The main concern about safety in mixed-use arises from not having control over the entire building: *"Conventional in the sense of, we have to have our own office, we have to have all floors at our disposal, because then we have everything under control."* (Interview #8).

Also, there are some financial aspects that need to be considered when involving mixed-use development in the Rijksvastgoedbedrijf's real estate. First, it is important that other functions are developed following demands: *"Only, of course, you don't want to build for vacancy."* (Interview #7). Secondly, state aid must be avoided, which means not all functions could be supported by governmental money: *"But there will be other challenges later on, at what rate are you going to rent out those spaces and then you enter the wonderful world of state aid and that kind of terminology, so that you are a bit mangled by your own regulations."* (Interview #7). Lastly, it is not the goal to optimize profits with these developments, but it should not generate costs: *"I don't need to make a profit. But it is good to realise that we cannot just start using public money for policy goals other than those we are of."* (Interview #9). Financially, this means it is complicated to organise other parties within the same buildings as governmental departments since that is organised within a system: *"And the main barrier is that we have a lot of those buildings, we think of those buildings in terms of the National Housing System, and that is the financing method."* (Interview #8), *"And we cannot rent to the market according to the Government Housing System. But then we just have to draw up a regular rental agreement, as you do with everyone. I cannot include the components of the National Housing System in that regular rental agreement."* (Interview #8).

Including other functions into the real estate portfolio is not the core business of the RVB: *"Nor is it our core business."* (Interview #17), so it should be managed to include the knowledge and skills within the organisation: *"As long as this is thought through very carefully and ultimately the expertise and knowledge and skills can be brought in here or can be adjusted."* (Interview #17). This should not harm the current task of the RVB, which is

housing governmental organisations: *“Of course, we always think in terms of risks, you don't want to harm the image of the government and you don't want to harm the housing situation of the government department that is there.”* (Interview #8). Thereby, the main concern is that the housing of departments is influenced by the other functions: *“My concern is mainly for the continuity of the business operations of the ministries that are our users in those buildings, and they have certain standards, they have certain wishes for their work. And there is the most important thing for their safety.”* (Interview #17).

4.6.2 Possibilities

There is an understanding of advantages taken from mixed-use development: *“If we have the opportunity to do so from an urban planning perspective, I am of the same opinion, because mixing functions, I think, simply strengthens the location.”* (Interview #8). It adds value to the office buildings: *“The argument was mainly based on the existing real estate we have there, so you want to strengthen the existing real estate you have.”* (Interview #7), *“And yes, there are plenty of examples of mixed-use versus single use, of course, in which you say that certain activities, products, services, whatever you do in those spaces, reinforce each other, that you then must think about how you profile that and which functions reinforce each other.”* (Interview #8). Thereby, the biggest potential is seen in adding functions within the plinth of the buildings: *“And you can only commercialise such a plinth when there is much more traffic, much more commotion in such an area.”* (Interview #7), *“So, I think the main gain is in plinths, in isolated layers in a block, but not really speckled through a building.”* (Interview #8), *“Look, you can imagine that if you have a plinth in an interesting walk-through location.”* (Interview #8).

It also already exists in certain governmental office buildings: *“Look, what you can do, of course, is that you have a plinth in all those buildings below. And that includes, not here, but at the Turfmarkt, for example, and there are just a few shops below and at other buildings. Of course, you can look at if you are building new buildings, can't you, well, like with the knot in Utrecht, you have a kind of hey there, they also have that in the Rijnstraat, of course, that there is a lot to it, which is just rented out externally. Here it has that Hoflounge and there are just restaurants in it. That is not specific to civil servants. But that's just those renting that from us, say that space. So of course, you can create spaces that are not suitable from the inside, say from the ministry, but in which you make sure that the ground floor is rented out to parties and that you make sure that you do things there that are also fun for the public so that such a building is not just an office building that only benefits those residents. But that you do something with that plinth. But what you do for the neighbourhood also for the liveliness in the area.”* (Interview #13), *“What makes it very possible at Rijnstraat 8 is that the design allows it, but also the contract and that it is my job what the contract forms are on the building. So, we have a consortium that takes on the entire management of the entire building, so they can also provide that customization, they do that, and they charge it to us.”* (Interview #17).

As in the example of the Rijnstraat, contractually, it is best to separate the other functions from the governmental office spaces: *“So, rather what you can think of is, we have to develop that in such a way that we have our office part there. And that another party becomes the owner or at least the concession holder of those homes. That's one. That is a very important demarcation.”* (Interview #9), *“I mean, you must, of course, if possible, ensure that you act jointly as a government and that you do indeed ensure that you do indeed operate as a central government real estate company with an eye towards the environment.”* (Interview #9).

4.7 Role Rijksvastgoedbedrijf

In the research of Vermeer (2020) about the role of the Rijksvastgoedbedrijf, it was concluded that on the hand, the Rijksvastgoedbedrijf must deal with the multiple interests of its clients, policy context, and frameworks, and on the other hand, the agency must consider the urban environment in which local market developments, area characteristics, emergent developments and spatial requirements that are guiding, which includes a dynamic field of players. Also, the Rijksvastgoedbedrijf is required to adequately respond to changing market conditions. Thereby, it is important to secure the housing needs of the government, which is a matter of demand in urban areas. The increasing popularity of transportation hubs and sustainability developments is prompted by the tightness in the market, the transformation to mixed-use areas that take place here and its own policy in the field of sustainability.

4.7.1 Municipality's perspective

From The Hague's municipality's perspective, it is seen that the Rijksvastgoedbedrijf has a main task: *“The role of the RVB is really nothing more than ensuring sufficient accommodation for those ministries.”*, whereby the

municipality thinks it is important to notice that *“The government is a major property owner, but also the largest employer in The Hague.”* This fact creates expectations for the area: *“What we expect from them is that, yes, they open a little bit more. Or at least I am talking from the economics side, from the innovation side, and the innovation area would never succeed if you had close organisations, so the question is whether it requires a change also in the organisation inside because we are talking about innovation policy.”* (Interview #4).

This should not only include opening up in terms of collaboration but also in terms of mixing uses in urban development: *“We expect that they are more open to a desired mix for the city and for their yes, that is not just a mono-functional building, as most are. (Interview #4)”*. Thereby, a direct mix of real estate could be an option: *“Not only the plinth but also in the tower, we can have homes above government offices or market offices with government offices.”* (Interview #4). But the municipality also sees that this does not lie in the capacity of the Rijksvastgoedbedrijf: *“Anyway, the Rijksvastgoedbedrijf is not waiting for homes in its portfolio with everything that comes with it, they are also not waiting for a retail plinth on the ground floor, are they? Although the Rijksvastgoedbedrijf actually says that it is very important to them to improve the quality of life, you naturally see the same moment that the safety requirements are increased.”* (Interview #5). This, together with new safety threats, make the Rijksvastgoedbedrijf of doing the opposite in the view of the municipality.

The municipality states that the presence of the government should be considered when developing the centre area: *“But we see with the dominance of the Rijksvastgoedbedrijf that we notice in practice that we notice in practice that the Rijksvastgoedbedrijf also has that intention, but that it still has to show in practice whether it will succeed, yes or no?”* (Interview #5). The big amount of real estate in the area owned by the Rijksvastgoedbedrijf, means that it is best to do an integrated development and work together: *“Anyway, there you are again with the Rijksvastgoedbedrijf because they have property, they are now just sitting at the Table. To make a program there yourself and then you are generally talking that area development is generally just integrated developments.”* (Interview #5), *“So, it is precisely that connection, and that is where the municipality and the Rijksvastgoedbedrijf can reinforce each other, because the Rijksvastgoedbedrijf is a dominant party, the municipality is, of course, a party that has a steering function from its public-law resources. So, all the plans that are made, they come to the municipality anyway, and we have workshops sitting around the Table together and so at some point we can simply provide input on that development.”* (Interview #4). Related to this perspective, from the research of Vermeer (2020) it was also concluded that within the Rijksvastgoedbedrijf there is a trend towards more area-oriented governmental real estate. It steers towards shared outcomes and coalitions within a common context and around shared themes and interests.

Another view on the Rijksvastgoedbedrijf came from the office policy employee of the municipality: *“You can also see the Rijksvastgoedbedrijf as an investor, because they will of course, become and remain the owner.”* (Interview #5). This means that the Rijksvastgoedbedrijf could act more actively in case of mixed-use in their portfolio: *“And can therefore act in a steering manner and can therefore also work towards that job opinion, the Rijksvastgoedbedrijf could do with that. But that means that the Rijksvastgoedbedrijf must therefore make the move that they accept that their portfolio also includes other types of functions there in the plinth, retail or catering, possibly homes in the tower.”* (Interview #5). There are certain opportunities for the Rijksvastgoedbedrijf and the municipality to make the area more liveable: *“Especially on the ground floor, but that you actually do at area level. And that should actually be done in collaboration, so the Rijksvastgoedbedrijf and the municipality should also give things substance.”* (Interview #5).

4.7.2 Rijksvastgoedbedrijf’s perspective

From the interviews with experts of the Rijksvastgoedbedrijf, a couple of perspectives are seen on the role of the Rijksvastgoedbedrijf in mixed-use development and sharing real estate and facilities.

Rental

“The Rijksvastgoedbedrijf realises and manages the real estate of the users and uses buildings and sites in fact for the realisation of economic, but also social added value based on the policy objectives that we receive.” (Interview #8), as stated by an employee of the Rijksvastgoedbedrijf, which works in the department of the rental excess real estate, on the main tasks of the agency. To create added social value, the Rijksvastgoedbedrijf should adjust their workflows: *“But that requires a different role than the one we currently have. And that’s something where we, through pioneers that you have, within the company are having that discussion and trying to kick the ball forward and later you will see that the policy frameworks will be created there.”* (Interview #8). This could be realised from the concept of optimising the use of the real estate and making it easier to rent out excess real

estate: “So, from my point of view, and as I also see that the role of the RVB is, to make the best possible financial use of the real estate we own and to have it render as good as possible.” (Interview #8), “If you look at the bigger picture, what role does external renting play as a supplement to the use of government real estate, then I think we should make that easier and that should always be investigated.” (Interview #8). According to Vermeer (2020), the agency model on which the Rijksvastgoedbedrijf is based stimulates the current object-oriented and customer-oriented approach, which leaves out the involvement of other users or adjacent objects.

Planning and control

Also, an employee in the department of planning and control states that the core business of the Rijksvastgoedbedrijf: “What we can say, our goal is to house civil servants, that's just our primary process. That's why we get our money.” (Interview #9), which could intervene with doing something extra for public purposes with the real estate. It is possible to do something extra if it is needed to realise an office building: “If it is strictly necessary from the Environment and Planning Act to apply a function mix, then we will do so, but with the aim of building that office in the back of our mind.” (Interview #9), but it should be noticed that the money destined for housing of civil servants cannot be used for other purposes: “That is not our role and we have therefore not received the money from the departments for that purpose. And now you come up with something like budget law of the House of Representatives, don't you? They determine where policy means to go.” (Interview #9). Developing office buildings is always done with attention to the surrounding area and no goal of profit maximization: “We always do it with an eye for the environment.” (Interview #9), “Because we have since moved away from the idea that we should have profit maximization.” (Interview #9). As seen by Vermeer (2020), the focus of the Rijksvastgoedbedrijf is on the facilities function of the Rijksvastgoedbedrijf, accommodation costs and multiple task discipline. There is little attention to possible economic and social returns that can be achieved in the longer-term.

“I think it's more convenient, personally I think, I will again, but I'm not a space expert, but it would be easier, I think, to just divest a few properties and put some more departments together. Instead of keeping all the buildings and then doing a large part of those buildings, half for the public and half for civil servants.” (Interview #9), this view aims at repelling real estate instead of committing it for a public purpose. It is based on the idea of sticking to the core business: “Then you stick to your original task, which is to serve government officials with housing. Why would you want everything else, because holding real estate is not our primary goal. Sometimes you may not be able to avoid it and you certainly cannot avoid the function mix with homes, because that is really the future, I am convinced. When it comes purely to government offices, I think of guys, our job is to house government officials here. That's where our entire logistics, our entire facilities, everything is organised. So why would you turn it into a function mix for existing offices, eh? If you have so much space that it could really be office content, then you could also say, I only do half of the offices.” (Interview #9).

Portfolio management

According to a portfolio manager states that it is an unknown territory for the Rijksvastgoedbedrijf to create or participate in mixed-use developments: “Achieving that function mix is not something that is very common in the world of the Rijksvastgoedbedrijf. So, sometimes that is also a bit of pioneering and looking at what rules and possibilities and impossibilities do we run into.” (Interview #14).

Asset management

The opinion of an asset manager for governmental offices regarding mixed-use and sharing real estate is that it could add value for society and that a government should play its part: “That is simply of added value for society, and I think that we as a government do have a role to play in that.” (Interview #17). On the other hand, there are some barriers to achieving this, since these developments could not yet be achieved by the Rijksvastgoedbedrijf: “Namely, would I personally object to something? No, but as a professional I don't think that can be done one on one. I'm pretty sure it can't be done in one. And you also must look at why we were created for what our mission is, from the Rijksvastgoedbedrijf. In principle, we are here for the users from the central government and if other parties join us, be my guest, if the right agreements are made.” (Interview #17).

5.0 Case study

This chapter examines the fourth step of the DAS model (Den Heijer, 2021; De Jonge et al., 2009). It is about the potential situation, whereby projects are defined to transform through a case study. A case study is executed to discover the consequences and potentials of sharing real estate and mixed-use development for individual governmental office buildings. Also, policies from the municipality and the Rijksvastgoedbedrijf are considered. This case study includes three locations, which are the Binckhorst, KC plot, and KB building. These cases were chosen in accordance with the RVB since they see the potential of adding public value by including other functions or organisations.

The main task of the Rijksvastgoedbedrijf is to maintain, develop, and built governmental buildings and terrains (Rijksvastgoedbedrijf, 2022g). The RVB manages about 860.000 m² of governmental office buildings in The Hague, divided over 32 buildings of various sizes, which house approximately 50.000 civil servants. It is a large portfolio and has a big impact on the city. The majority of the office buildings is located in the city centre or the CID, and some are located in the Binckhorst. Hybrid working had a major influence on office space use. Within governmental real estate, the focus is on activity-based working, or a liquid workplace. When considering the gas state, it is made possible for all civil servants to work everywhere and anywhere. A solid workplace, where employees have their own office is no longer possible within governmental offices. Those office buildings are struggling with low occupancy rates of about 40-50 per cent. These low occupancy rates are also seen by other public actors in The Hague. Several public organisations stated in the interviews that they already occasionally make use of external real estate for some business activities. This mostly arises from a shortage of a certain function within their own real estate. The government office portfolio has an insufficient supply of high-quality and sustainable buildings that can be used effectively for the primary process now and in the future. After a turbulent period, due to the COVID-19 pandemic, the Dutch office market rebounded (Cushman & Wakefield, 2022). Now, companies are struggling to establish their plans since there is a lot of uncertainty regarding hybrid working developments (NVM Business, 2022). Furthermore, several other trends influence future office buildings, specifically climate resilience, circularity, energy-positive buildings, cognitive buildings, flexibility, vitality, health, 24-hours economy and performance-based buildings (Thelen et al., 2019).

Experience gained through the COVID-19 crisis from working at home and its advantages and disadvantages. It could have started a trend, which permanently reduces the need for office space (Rijksvastgoedbedrijf, 2020). Also, it could be that employees are returning to the office on a large scale or that the office becomes a place for meetings. The planning of real estate interventions at government offices influences portfolio quality. In recent years, because of the shrinking government and more time, place, and device independent working (TPAW), the office space of the governmental offices has been reduced (Rijksvastgoedbedrijf, 2019b). It is also stated that real estate is increasingly no longer an isolated entity but is seen as part of the built environment (Rijksvastgoedbedrijf, 2019b). Cities and regions ask property owners to contribute to the realisation of their ambitions for social inclusion and sustainable innovative mobility. The RVB already has to deal with a shortage of real estate due to sustainability issues and expected growing numbers of civil servants. Moving departments and clearing out space is needed to be able to renovate the buildings and make them more sustainable. Despite the stricter housing standards, including the use of hybrid working, there is insufficient or no room to move around. This is partly due to an anticipated and sustained growth in the number of civil servants.

The investigated areas as the context of the cases are the Binckhorst and the Central Innovation District. Since 2016, the Binckhorst business park has been slowly transformed. It will be a green and water-rich area, attractive to work and live in (Municipality of The Hague, 2023a). The area is conveniently located near the city centre, a highway, and a railway line. The atmosphere in the Binckhorst could be defined as rough, tough, and raw. The total amount of inhabitants in the Binckhorst neighbourhood is 2.715 in 2022 (AlleCijfers, 2023). The CID is the economic heart of The Hague and is a mixed area with offices, housing, and commercial space. It is the area between and around The Hague Central, Hollands Spoor and Laan van NOI stations. The area already provides work for almost 80.000 people and has 30.000 students. 45.000 people live in the area, in 23.000 homes (Municipality of The Hague, 2023c).

5.1 Binckhorst

The Binckhorst area has a creative and modern character. The municipality has the goal create office space for small businesses, which connects to the area's character. In 2027 there will be 5000 homes but lacks public space since the area is now car dominated (Pepels et al., 2022). Also, there is a lack of neighbourhood amenities since

it is now mostly focused on small businesses. Within the area, the RVB has three buildings: 'Haagse Veste IV', 'Universe', and 'Grote Beer', shown in Figure 5.1. The RVB has the ambition to connect their offices to the surrounding neighbourhood (Pepels et al., 2022). When looking at a neighbourhood in general it is important to take the environment into account in terms of cohesiveness, a careful transition, and the accurate mix of functions (STIPO, 2023).

The buildings of the Rijksvastgoedbedrijf are located on the railway, on the edge of Voorburg and on the edge of Binckhorst. The former KPN buildings together have a surface area of more than 40.000 square meters GFA. The purchase is in line with the policy of the Rijksvastgoedbedrijf to own buildings for financial reasons and to make their buildings more sustainable. The other purchased objects concern 'Haagse Veste IV', which is approximately 38.000 square metres of office space, and approximately 2.600 square metres of commercial space at Grote Beerstraat 34. The buildings are currently empty and must first be renovated before they can be used. (Ministry of Internal Affairs, 2023) Within the limited space of the Binckhorst, various social issues have to be solved, such as sufficient (affordable) homes, climate-adaptive and healthy environment, and reuse of existing buildings. This requires an integrated approach. Mixing functions such as (collective) living, working and a social program can contribute to an integrated approach. In addition, functional opinion can help in facilitating community building, the environment and urbanity. The government's real estate can contribute to current social challenges through temporary and more permanent development. (Ministry of Internal Affairs, 2023)



Figure 5.1: RVB's office buildings in the Binckhorst area (Municipality of The Hague, 2023a)

Four goals for the Binckhorst are stated by the municipality of The Hague (2020b): making the area more attractive, making the economic structure more resilient, providing entrepreneurs with growth opportunities, and creating sufficient housing in attractive work environments. Thereby, broad economic growth contributes to broad social challenges in The Hague and the region (Municipality of The Hague, n.d.-b). An attractive residential and social climate should be even more emphasized. This makes the city attractive for residents, businesses, and international organisations. Thereby, the municipality wants to maintain Binckhorst's character, which is about the creative industry.

Within the limited space of the Binckhorst, various social issues have to be solved, such as sufficient (affordable) homes, climate-adaptive and healthy environment, and reuse of existing buildings. This requires an integrated approach. Mixing functions such as (collective) living, working and a social program can contribute to an integrated approach. In addition, functional opinion can help in facilitating community building, the environment and urbanity. The government's real estate can contribute to current social challenges through temporary and more permanent development. (Ministry of Internal Affairs, 2023) From a municipal perspective, the Rijksvastgoedbedrijf is expected to open up in the city of The Hague. On the one hand, it is expected to physically and functionally make their buildings more open. A main barrier, which was named by all interviewed actors, is security. Public organisations have to manage the safety of users and information within their office buildings. Sharing real estate or mixed-use development could potentially create risks in maintaining security. Hereby, it was stated in an interview that sharing real estate could not be achieved with companies that differ in terms of security demands. When users are logistically separated, sharing real estate could be easily done. There are two possible views on sharing real estate with between organisations. On the one hand, it could be suitable to share

real estate with similar types of organisations. On the other hand, sharing real estate with organisations with an opposite work pattern could be suitable.

5.1.1 Haagse Veste IV

The 'Haagse Veste IV', shown in Figure 5.2, has 38.000 square metres and is recently purchased by the RVB for the housing of civil servants. Thereby, the RVB aims to deploy their portfolio for the well-being and productivity of employees, including functional, affordable, and safe buildings (Rijksvastgoedbedrijf, 2019a). According to Thelen et al. (2019), flexible office buildings are the future, which is strengthened by the hybrid working developments (De Lucas Ancillo, & Del val Núñez, 2021). Reasons for the Rijksvastgoedbedrijf (2022f) to adapt their office buildings up to hybrid working standards is mainly to create a lively and attractive office environment where people like to come, where employees can meet and therefore shape boundless collaboration well. From a municipal perspective, the national government is expected to open up their organisation in the city of The Hague. It is expected that the government connects with other organisations in the city to exchange knowledge. Hereby, innovation is the main goal for economic development in the city.



Figure 5.2: 'Haagse Veste IV' (JLL, 2015)

According to Hertzsch et al. (2012), an open-space floor plan can be one of the most important characteristics or criteria for a future-proof office building, which is the goal of the RVB (2022a). For its users, an open floor plan provides a more flexible workspace (Hertzsch et al., 2012), which also leads to higher occupancy rates according to research from the CFPB (2014). In the case of sustainability, an open floorplan is more adaptable to changes and modifications (Hertzsch et al., 2012). That adaptability makes it easier to rent out excess parts of the building to other organisations and physically separating them from the governmental offices. Since the 'Haagse Veste IV' still has to be adjusted to the wishes and demands of the RVB, it is possible to insert a flexible open-space floor plan. Now, the building does not have an open-space floor plan, shown in Figure 5.3.



Figure 5.3: ground and first floor Haagse Veste IV (JLL, 2015)

From the perspective of the municipality, the national government should be open to interaction with other organisations in the city to achieve innovation, which could be achieved by sharing their real estate with other organisations. Financially, from the interviews it is seen as beneficial to rent out vacant space since most of the public real estate is located in attractive locations. Research from Jiang et al. (2015) found that goodwill trust matters more to tangible than intangible resource sharing. Therefore, it could be logical for the national government to share their buildings with other public organisations. Thereby, seen in the interviews, a barrier for several organisations is individuality. This includes the desire for having real estate and facilities available for themselves only.

When looking at the building itself, it should be permeable to increase liveability in an area, which means there should be a connection with the direct environment. Also, the human dimension should be considered when determining the volumes. The plinths have the potential to increase liveability in an area by creating a possibility for skirting, which makes an area lively. To achieve this there should be created a coherent ambition plan for public plinths. And lastly, within a building, flexibility could create liveability. Also, co-creation and placemaking are concepts which could boost an area. (STIPO, 2023) A major benefit of sharing real estate, seen from the interviews, is increasing activity in a building. This could create more liveliness in an area, which adds public value. Dempsey et al. (2011) identified eight services and facilities most frequently used when locally provided. These 'every day eight' are food shops, newsagents, open spaces, post offices, primary schools, pubs, supermarkets, and secondary schools. So, to increase the liveliness in the area, some of those functions should be considered. With the variable border of the 'Haagse Veste IV', the chance of connection with the surrounding area is bigger. Within spaces the spaces between the buildings parts, multiple uses and interactions make the office connect with the city, which serves the common interest (Pepels et al., 2022).

5.1.2 Universe

The 'Universe', shown in Figure 5.4, is a newly renovated office building of 20.000 square metres, which was recently acquired by the RVB. In the 'Universe' building, the offices will be located on the upper floors, the ground floor will be used for functions such as the joint reception, informal meeting places, a restaurant, and a meeting centre (Architectenweb, 2021). According to the municipality, there is a possibility for the RVB to contribute to liveability in the urban area, which could be achieved by including mixed-use development in their real estate. In the interviews, there is a general feeling for the advantages of mixed-use development as it strengthens a location by adding value. This means certain activities, products, and services could reinforce each other. Thereby, the largest potential is seen in the plinths, where a number of activities could take place. An example of a public plinth in governmental real estate is also stated in the interviews. In this case, it is contractually organised in a consortium, which makes the building less of a burden for the RVB as an organisation. Safety issues are a major barrier, whereby a part of the building is not fully controlled. This means there are security risks. A general reason to stimulate mixed-use development is their contribution to urban diversity and vitality (Louw, & Bruinsma, 2006). Mixed-use development offers opportunities to improve the quality and attractiveness of the urban area, for instance, by increasing activity during the day, in the evening, and during the weekends.



Figure 5.4: universe office building (Cerius Projects bv, 2022)

5.1.3 Grote Beer

The 'Grote Beer' is 2.600 square metres big and is an additional building within the purchase of the 'Haagse Veste IV' of the RVB. The Rijksvastgoedbedrijf's mission is to use real estate for the realisation of governmental goals in cooperation with, and eye for, the environment (Rijksvastgoedbedrijf, 2019a). Thereby, the Rijksvastgoedbedrijf has two strategic goals. The first goal is to enlarge the public value of governmental real estate by creating financial, spatial, social, and ecological value. The second goal is to improve the services to the client in a safe, sustainable, and innovative way. The physical perspective is of importance for integrating governmental office buildings in the urban context. The Rijksvastgoedbedrijf has investigated possibilities to incorporate mixed-use buildings into its portfolio. There are four possible reasons for wanting to realise a mix of functions, which are mixed-use development requirements based on economic and/or social goals in an area, the RVB and its clients see benefits in mixed-use development for the primary process and/or want to contribute to a social task, the RVB sees benefits in mixed-use development for a sustainable real estate value, and area partners want to optimally use a key location based on social goals (Rijksvastgoedbedrijf, n.d.-b).

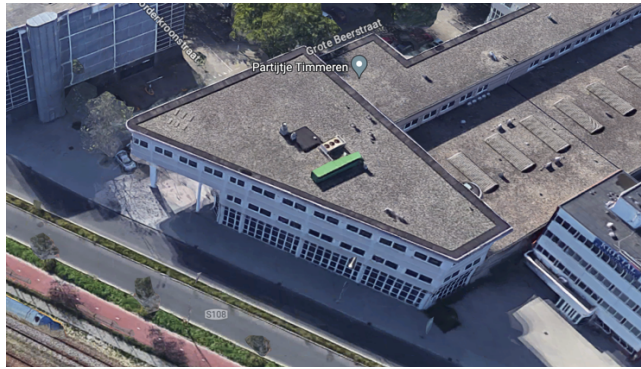


Figure 5.5: 'Grote Beer' building (source: Google Maps)

If the RVB wants to add public value with their real estate in the Binckhorst and utilise available space efficiently, it could, for instance, house small businesses in vacant parts of its real estate or create meeting spaces. This is in line with the municipality's policy and could create more activity in the area, which increases the liveability. It could contribute to developing the area and a resilient economic environment. Thereby, social sustainability is a positive condition marked by a strong sense of social cohesion in the area, and equity of access to key services, including health, education, transport, housing, and recreation" (McKenzie, 2004). Considering the public space in an urban area, a network of activities and places should be created, where there is space for greenery and accommodations (STIPO, 2023), which should improve the quality of life for all people in a socially sustainable manner (McKenzie, 2004). So, since the 'Grote Beer' is an excess building in the portfolio of the RVB it could be rented out to other organisations in the Binckhorst area, such as small businesses.

5.2 KC plot

With the realisation of Amare, the Education and Culture Complex, on the Spui in the centre will also include the Royal Conservatory getting a new home (Municipality of The Hague, 2019). The KC location, containing the old royal conservatory shown in Figure 5.6, is at a key point in the Central Innovation District (CID). In this area, the municipality strives for densification to accommodate the growth of The Hague, which is not only about building houses, but also strengthening the economic structure through space for housing, offices, facilities, and other functions (Municipality of The Hague, 2021). The municipality wants to further develop the CID area into the economic heart of the city over the next 20 years (Municipality of The Hague, 2023b). There will be offices and homes. It must become an attractive place for people and innovative companies. With good facilities and a pleasant outdoor area. Due to its strategic location in the CID, the KC location has a lot of potential for high-quality development. (Municipality of The Hague, 2021)



Figure 5.6: old royal conservatory (Architectuur.ORG, 2023)

The goal of the municipality is to redevelop the CID area into a sustainable, economic, innovative, liveable, and inclusive part of the city. This includes excellent accessibility and international appeal (Municipality of The Hague, 2023c). It should be a mixed-use area with an emphasis on tranquillity, urban bustle and a mixture of both, described as rest, bustle, and noise. It is important that companies, government, schools, and universities are close to each other and exchange knowledge. The station environments are the anchor points, which are the economic focal points with the highest building densities (Municipality of The Hague, 2018) In the area, the goals

are to improve the node value, strengthen the knowledge economy, realising sustainability, centre urban residential environments, increasing spatial quality and amenity value and strengthening of the social structure and social consistency. The municipality wants a mix of office buildings and other functions with a qualitative public space.

In 2019, the municipality of The Hague and the Rijksvastgoedbedrijf in an administrative agreement. Arrangements have been made to meet the office needs of the government in part to accommodate at the KC location (Municipality of The Hague, 2021). The ANWB is also planning to build a new office at the KC location. An auditorium, a shop and catering establishments can also be opened here for the public. Different types of facilities and jobs together in one place fit in with the plans that the municipality has for this area (Municipality of The Hague, 2023b). In the past period, the municipality, together with the Rijksvastgoedbedrijf and the ANWB, is investigating the possibilities for one combined development (Municipality of The Hague, 2021). The existing building of the Royal Conservatory will be demolished, and two buildings will be built back on the location, a building with a building height of approximately 45 meters along the Utrechtsebaan and a building of approximately 91 meters on the corner of Beatrixlaan and the Juliana van Stolberglaan (Municipality of The Hague, 2021). There is space along the Beatrixlaan for a new green pocket park, on top of the underground parking garages. This spatial design adds high-quality green living space to the area, it increases the permeability of the location, and it improves the connection between the Beatrixkwartier and the central station (Municipality of The Hague, 2021).

The KC plot is a development of the RVB for future civil servant housing. The building is located in the CID, which is the economic heart of The Hague. The municipality's aim is to develop the area into a sustainable, economic, innovative, liveable, and inclusive part of the city, where living, working, recreation, travelling and shopping are mixed. Therefore, the demand for this location's development is including a lively plinth. To add public value in line with the municipality's aim for the CID, the RVB could, for instance, contribute to the social well-being of users by creating space for recreation (Rogers et al., 2012). This could be realised by adding public functions to the plinth to increase liveliness. This could be in line with the realisation of the park next to the building.

5.3 KB building

With the possible relocation of the 'Koninklijke Bibliotheek', the royal library shown in Figure 5.7, the current location is open for possible redevelopment, still with the possibility of housing the royal library (Municipality of The Hague, 2019). Hereby, the redevelopment provides for a differentiated metropolitan program that contributes to the continuation of the 'Haagse Loper' in the station area. In addition, the plot will be developed in conjunction with the Grotius towers and the existing viaduct over the train tracks. Redevelopment of the current location will contribute to this the ambitions of the station area. The main goals are the intensification of the building volume, a varied programmatic design, an active urban program along the continued 'Haagse Loper', and improved architectural appearance of the buildings.

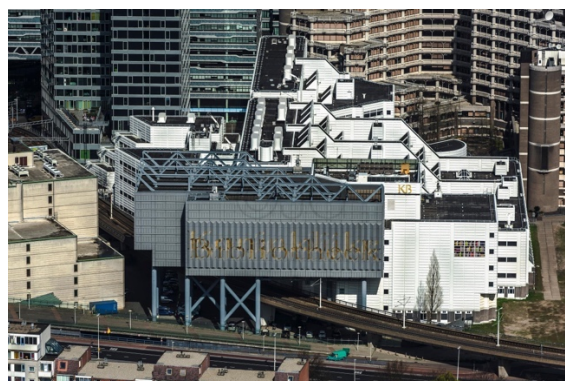


Figure 5.7: royal library (Flying Holland, 2018)

The KB building, the royal library, is situated nearby The Hague's central station. A number of observations of the area are shown in figure 5.7. During the day, this is a crowded area since many office buildings are located near the station. A large number of other (public) organisations is located in this area. The area does not have an attractive public space. The future of the project is unclear since there is little known about its future functions. A possibility for the RVB is to include space for other public organisations in this building. The building could, for

instance, open up for students at Leiden University to study in a library area. From the interview with Leiden University, it appeared that students have a need for study places for focused work. Also, the building could, for instance, be a landing location for civil servants from the national government or other public organisations since it is located near the central station. Also, more related to the municipality's goals for the CID, public functions could be included in the plinth of the building to increase the liveliness of the station area. So, there are many possibilities for the RVB to add public value to this location by opening up.

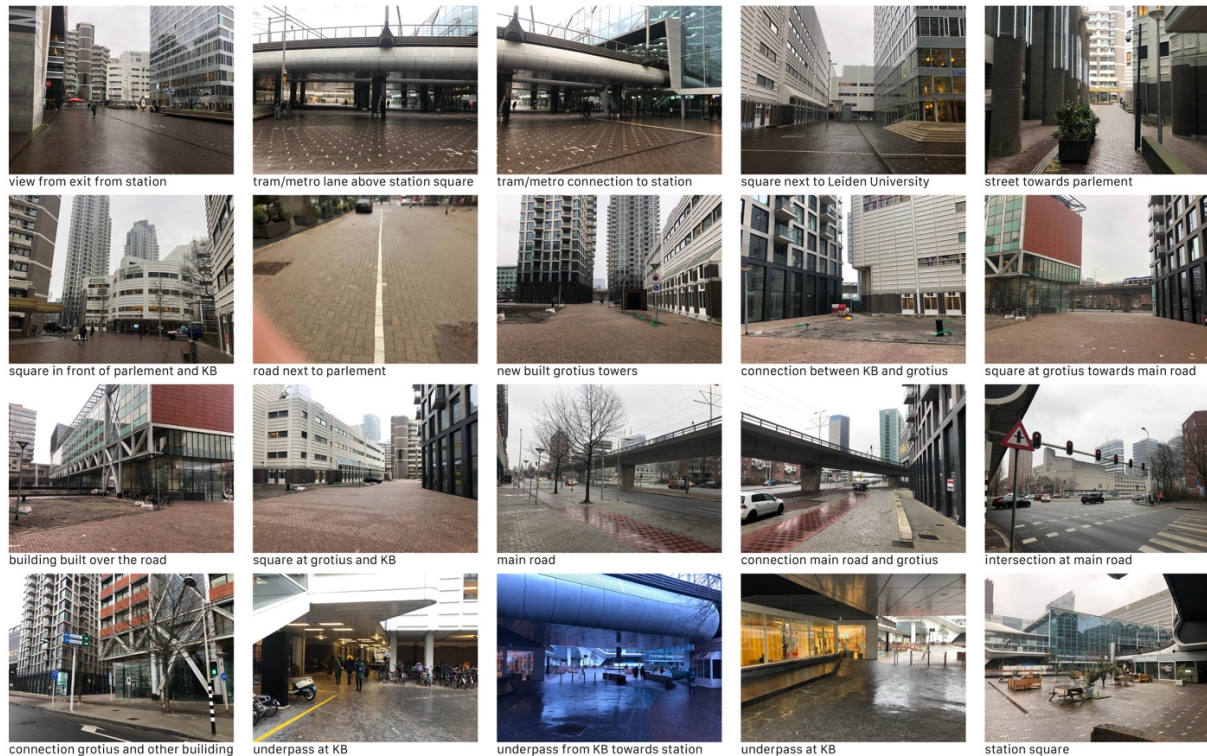


Figure 5.8: observations of station area

6.0 Conclusions

6.1 Main findings

The purpose of this study is to discover the barriers and possibilities of sharing real estate and mixed-use development within governmental office buildings. The RVB's office portfolio was examined based on qualitative research about the current and future supply and demand. The DAS model is used as a research framework. And document analysis, semi-structured interviews, and a case study were used to obtain the answers to the four sub questions and main research question.

6.1.1 Current situation

Following the first step of the DAS model regarding the assessment of the current situation, the first sub-research question was stated: What is the current state of the governmental office portfolio in The Hague? This aimed to describe the current supply of office buildings, the urban context, and the office market. In a quantitative analysis, it was stated that the RVB has 32 governmental office buildings in The Hague with a total of 860.000 m². The size varies from 1.000 m² to 120.000 m² per building. Many properties are in the Central Innovation District or the city centre. A few buildings are in the Binckhorst area. Through document analysis, policy documents of the municipality were used to study the context. The CID is the area around the three train stations and is seen as the economic heart of The Hague as it contains. The Binckhorst is a predominately business area, containing mostly creative companies. It became clear from the conducted interviews that governmental offices struggle with low occupancy rates after the pandemic, as seen in other public organisations. So, the government office portfolio has an insufficient supply of high-quality and sustainable buildings that can be used effectively for the primary process now and in the future. Hybrid working influences governmental office space use. There is a focus on activity-based working (liquid), and it is possible for all civil servants to work everywhere and anywhere (gas). A solid workplace where employees have their own office is no longer possible within governmental offices.

6.1.2 Desired situation

Following the second step of the DAS model about exploring the changing demand, the second sub-research question was stated: What is the vision for governmental offices for the future? This aimed to describe the policies of the Rijksvastgoedbedrijf and the municipality of The Hague for (governmental) office buildings in the CID and the Binckhorst. From an organisational perspective, the RVB aims for a future-proof portfolio. Document analysis pointed out that the Rijksvastgoedbedrijf has two strategic goals for its portfolio. The first goal is to enlarge the public value of governmental real estate by creating financial, spatial, social, and ecological value. The second goal is to improve the services to the client in a safe, sustainable, and innovative way. Financially, the RVB does not have budgets for executing its own policies. The core business is housing civil servants with the client's housing budgets. The RVB aims to increase investments in sustainability measures with the means available. With a focus on area development, area investments are possible. Thereby, clients and framers must agree on the goals that will be realised with the investments. In addition, clients must have the resources available to achieve these goals.

From a functional perspective, the Rijksvastgoedbedrijf must consider new hybrid working forms and the consequences of these developments on their real estate. Office buildings are being transformed towards new hybrid working standards, including more lively and attractive offices. To encourage meetings between colleagues and partners from society, the RVB has created a national network of attractive and directly accessible offices with meeting squares. From a physical perspective, it is of importance to integrate governmental office buildings in the urban context. The RVB has investigated possibilities to incorporate mixed-use buildings into its portfolio. Increasing the liveability in an urban area via governmental real estate is always a consideration of the RVB since they develop with a focus on the environment. Moving departments and clearing out space is needed to be able to renovate the buildings and make them more sustainable. Despite the stricter housing standards, including the use of hybrid working, there is insufficient or no room to move around. This is partly due to an anticipated and sustained growth in the number of civil servants. Policy documents show the municipality's goals for the Binckhorst, which are creating an attractive area, a more resilient economy, growth opportunities, and sufficient housing. Also, the municipality wants to maintain the character of a creative business area, which was also stated in an interview. The goal of the municipality is to redevelop the CID area into a sustainable, economical, innovative, liveable, and inclusive part of the city. It should be a mixed-use area with an emphasis

on tranquillity, urban bustle, and a mixture of both. It is important that companies, government, schools, and universities are close to each other and exchange knowledge.

6.1.3 Future situation

Following the third step of the DAS model about generating future models, the third sub-research question was stated: What are the possibilities and barriers for sharing real estate and facilities and mixed-use development in governmental real estate? This part aimed to discover the possibilities for sharing real estate and mixed-use development in governmental office buildings. When considering sharing governmental real estate with other public organisations, there are several barriers that came forward from the conducted interviews. Safety concerns and unresolved financing issues are two major barriers to sharing real estate. From a financial point of view, the unclarity is about the responsibilities of which party pays for the real estate and the additional issues. The main concern about security includes physical safety and protecting information. Also, allowing other organisations into governmental real estate is losing control of the office building, which is partly about security and partly about maintenance. On the other hand, there are several possibilities for sharing real estate. A financial benefit is seen in renting out vacant real estate. It could be possible to share real estate with similar types of organisations or organisations with opposite work patterns. A condition for sharing real estate is a proper logistical separation of the involved parties. A major benefit of sharing real estate is increasing activity in a building, which could add public value through liveliness in an area. Safety concerns are seen to the same extent as mixed-use development. The control of governmental real estate is reduced. The RVB's core business does not cover mixed-use development, which means it could not be realised by its budget for civil servant housing. Also, engaging in mixed-use development should not distract the RVB from executing its core business. Looking at the possibilities, there is a general feeling for the advantages of mixed-use development as it strengthens a location by adding value. Certain activities, products, and services could reinforce each other. The largest potential is seen in the plinths, where several activities could take place.

6.1.4 Potential situation

Following the fourth step of the DAS model about defining projects to transform, the fourth sub-research question was stated: In what way are individual projects influenced by the vision of governmental office buildings, mixed-use development and the possibilities and barriers for sharing real estate? This part aimed to define the practical consequences of sharing real estate and mixed-use development for three cases. Therefore, the municipality stated in an interview that the RVB should be included in integrated development, especially in the city centre and the CID. In addition to this, according to the municipality, there is a possibility for the RVB to contribute to liveability in the urban area, which could be achieved by including mixed-use development in their real estate. The RVB is expected to open up and physically make its buildings more open. The national government should be open to interaction with other organisations in the city to achieve innovation. From the RVB's own perspective seen in the interviews, there are several expectations about its role in mixed-use development and sharing real estate and facilities. It is not their main task to add public value since their core business is to house civil servants. Now, mixed-use development is only done when it is necessary to fulfil the core business. But it is stated that governmental office development is always done with attention to the urban area. There are several options to include other organisations in projects of the RVB based on literature, the municipality's policy, and the RVB's ambitions. Different locations have various options to increase liveliness in the surrounding area studied through a case study combining literature and document analysis with interviews. Some are more suited for sharing office space with other organisations, for a mixed-use development with commercial functions, or for renting out to other organisations in the area.

6.2 Main conclusions

This study aimed to explore certain options for the efficient usage of government office buildings. Therefore, the main research question is: To what extent can the Rijksvastgoedbedrijf share governmental office buildings within the city of The Hague, focussing on (semi-)public organisations and the concept of mixed-use, to utilise available real estate more efficiently?

6.2.1 Quantitative

The Dutch office market is recovering after the COVID-19 pandemic, which had a major influence on the use of office buildings all over the world. During the lockdowns, office buildings were empty, and office space was used differently due to hybrid working developments. The transition from working in a solid office environment towards a more liquid and/or gas environment was accelerated over the last years. Working online, at home, or elsewhere became alternatives for working at a traditional office building. The Rijksvastgoedbedrijf also has to deal with these environmental changes. The RVB must maintain, develop, and build governmental buildings and terrains, which includes about 2.4 million square metres across the country, of which 864.188 square metres is situated in the city of The Hague. In The Hague, public organisations have a total of about 1 million square metres of office space.

After the COVID-19 pandemic, employees partly came back to the offices, but according to the RVB 75% wishes to work at home for 50% percent of the time. This is also seen in the occupancy rates of the public organisations stated in conducted interviews, which in most cases is estimated to be below 50%. This shows that there is a large amount of unseen vacancy of public real estate in The Hague since the buildings are not optimally used. These vacant parts could be used for other purpose. Additional to this vacancy, the RVB desires to change the workplace norm from 0.7 to 0.5, which results in less workplaces per employee. This is based on the changing requirements due to hybrid working. Within the portfolio, this could realise almost 30% of available space which the RVB could use to move departments, in order to renovate buildings and make them more sustainable. Also, based on early estimation, the national government expects a growth in the number of civil servants. Therefore, more office space is needed. So, on the one hand there is a surplus of available office space in the current situation, but an increase in demanded office space is expected for the future situation.

6.2.2 Qualitative

Low occupancy rates of governmental office buildings show that the supply of office space does not fit the demand of civil servants. Employees have changed preferences concerning the form of hybrid working, including working at the office, remotely at home, and online (Markowski, 2021). Therefore, constant reinvention of how businesses operate is required, generating deep changes in the workplace environment (De Lucas Ancillo, & Del val Núñez, 2021). According to the RVB, governmental offices will continue to be places where the national government is visible in society and where citizens, organisations, and civil servants meet physically or hybrid (Rijksvastgoedbedrijf, 2022f). New hybrid working standards include more lively and attractive office spaces. In addition to housing civil servant, the RVB has the goal to add public value with their real estate (Rijksvastgoedbedrijf, 2019a). Public authorities benefit by meeting their clear obligation to deliver a well-designed, economically, and socially viable environment and often by ripple effects to adjoining areas (Carmona et al., 2002). Thereby, a key objective should be to create leisure spaces that are truly meaningful to residents and socially inclusive of different groups within the broader community (Lloyd, & Auld, 2003). So, to add public value to make the urban area social sustainable, the RVB should increase liveability for civil servants and other users of the area, which consists of the quality of housing and the living environment (Chiu, 2004).

From a municipal perspective, it is desired that governmental offices open up more physically and as an organisation. Physically, this could be achieved through mixed-use development since mixed-use forms part of a wider strategy for sustainable development and a theory of good urban planning (Grant, 2002). Now, the Rijksvastgoedbedrijf (n.d.-b) only includes mixed-use into their building when it is necessary to achieve their main goal, which is housing of civil servant. However, the College van Rijksadviseurs (2019) states that there are multiple advantages of mixed-use development since it creates cross-pollination; mixing reduces mobility; mixed areas are more liveable; mixed areas are more adaptable; mixed-use makes it easy to share; mixing is in demand in the market; mixing can give a boost to neighbouring neighbourhoods. Louw and Bruinsma (2006) also state advantages of mixed-use development. A concentration of activities enables diversity in possible activities, whereby it contributes to urban diversity and vitality. Mixed-use development creates opportunities to improve

the quality and attractiveness of the urban area, for instance, by increasing activity during the day, in the evening, and during the weekends.

As an organisation, the national government is expected to exchange knowledge with other organisations in The Hague. The municipality of The Hague aims to create an innovation district, whereby the national government is essential. A more open position towards other organisations could be achieved through sharing office buildings with other organisations. There are a number of barriers for sharing real estate, such as security issues, financial responsibilities, fear of losing control, and lack of capacity within the RVB. But there are several possibilities for sharing real estate, such as physical separation, financial benefits, increase activity in the building, and sharing with similar or different organisation types. So, on an organisational level, the RVB should make decision about the policies for sharing real estate, how to handle with the barriers, and the risk they are willing to take.

6.2.3 To conclude

From literature, document analysis, interviews, and a case study the conclusion is that sharing real estate and mixed-use development is an option for efficiently utilising available governmental office space in The Hague. There are seen possibilities for sharing real estate and mixed-use development by interviewees from the RVB and other public organisations. The governmental office portfolio has possibilities given the large amount of partial vacancy. There are also some existing examples of commercial functions in the plinths of buildings in The Hague. But there are other developments that influence the occupancy of the real estate, such as an expected increase of civil servants and major sustainability renovations. To make it possible, there are several barriers to overcome. Of these, the most important issues are safety concerns and financial arrangements. However, there are several possibilities for sharing real estate and mixed-use development within governmental offices, which adds public value. It is also in line with the expectation of the municipality of The Hague to open up more organisational and functional. Sharing real estate and mixed-use development could be realised when all practical arrangements are worked out. Also, other public organisations have a positive view of the option of sharing real estate.

This study has found that currently there is a mismatch between the current demand for and supply of governmental office buildings as reflected in the low occupancy rates, mainly due to hybrid working developments. The city of The Hague is influenced by the presence of the national government, which means the RVB has an impact on the liveability of the city. The interviews show that the fear of losing control and creating unsafe situations is the main reason for the RVB to not open up their real estate. Where developments as hybrid working create possibilities for alternative use of real estate, more stringent safety measures complicate sharing governmental office buildings. At the moment, conservative thoughts on the use of real estate dominate. However, progressive trends as sustainability, employee demands, and liveability require a more active position of the RVB. This is difficult since these trends change faster than buildings could be adjusted. Nevertheless, as a large real estate owner the RVB should be able to contribute to society by adding public value. This study has found that partial real estate vacancy could potentially serve a public purpose, which is in line with Tennekens et al., 2017. Thereby, it is possible to share office buildings with other public organisations in The Hague or include commercial functions through mixed-use development.

On a short term, it is not expected that major changes will occur for the governmental office buildings. This is due to the capacity problem within the RVB, whereby the focus is more on the defence and justice clients. Also, fear of losing control of the office buildings has a major role in procrastinating any steps of sharing real estate. But the interviewee of DGDOO is really pushing ideas and tries to develop possibilities of sharing real estate with other public organisations. It is important to notice the social responsibility of the RVB since public real estate serves a public purpose, accommodates a public function, is funded by taxpayers' money and is publicly accessible (Den Heijer, 2021). Therefore, the RVB should create adequate office environments for civil servants compatible with the latest hybrid working developments and efficiently utilise the available real estate. It is the RVB's core business to first organise civil servants housing, but it should also add public value, which are the two strategic goals. Optimising the use of real estate contribute to the aim for a future-proof portfolio. This could be achieved through sharing real estate with other organisations or including mixed-use development into government real estate.

7.0 Recommendations

Some recommendations deriving from this study can be stated based on the four perspectives of Den Heijer (2021). From an organisational perspective, the RVB must make policy decisions about deploying governmental real estate for purposes other than housing civil servants. This has to be done in agreement with the clients. The RVB should consider the implementation of sharing real estate and mixed-use development, as it can result in a more efficient utilisation of their real estate. When choosing this approach, the RVB should make agreements with the participating organisations. Security, financing, and maintenance are issues that need to be managed through proper contracts. Thereby, outsourcing the arisen activities can be taken in consideration to limit undermining of the RVB's core business. From a functional perspective, the RVB should consider adding other functions to their offices through mixed-use development. This creates opportunities for governmental offices to add public value and could increase the activity in a building and liveability of the area. It is recommended that the RVB considers which functions could add public value to an urban area. Looking at supply and demand shortages and surpluses of public actors in The Hague, the possibilities for sharing real estate and facilities should be explored further. Partnering with other public actors is recommended because of the similar need for meeting spaces and workplaces. From a physical perspective, consequences for governmental office buildings are mostly about security separations between different safety zones. This asks for real estate adjustments for existing buildings when other organisations or functions are included. When sharing real estate with other public organisations, there needs to be a security shell placed, separating public, semi-public, and private parts of the office building. From a financial perspective, options should be considered to realise sharing real estate and mixed-use development. Mixed-use development is already included as a necessity to house civil servants. In this case, the budget from clients is used. However, this is not available if the main purpose of sharing real estate or mixed-use development is adding public value. Possibly, funds from policy departments could be appealed to. Finding financial means is a hurdle that needs to be taken in order to implement the concepts of sharing and mixed-use.

7.1 Possible gradations

Based on the findings of this study, a speculation about the gradation of sharing real estate in governmental office buildings is made consisting of three scales, basic, plus, and progressive. These scales, shown in Figure 7.1, need to be studied with examples of other similar organisations or the RVB should experiment with these possible situations to study the effectiveness.

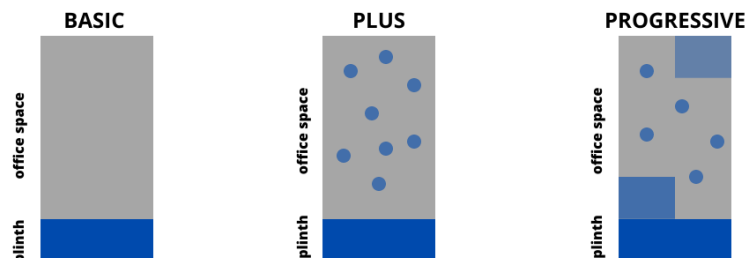


Figure 7.1: three potential scales of opening up governmental office buildings (own image)

Basic

The 'basic' situation of opening up governmental office buildings could include amenities which support civil servants, such as childcare facilities, parcel reception, barber, fitness, laundry services, etc. Hereby, the functions and services are chosen on the needs and demand of civil servants. These functions could be located in the plinth of governmental office buildings within a mixed-use development, so it mostly does not require structural interventions. Physically and logistically the functions are fully separated from the office spaces.

Advantage: active public plinth that increases liveability in the area

Disadvantage: security risk of opening up the plinth for other purposes

Plus

The 'plus' situation of opening up includes the possibility for other organisations to enter and use the current governmental office space and its facilities. There could be made arrangement with potential parties that are interested in using the office space. The arrangements should include the base on which they could enter the governmental office building. This could require physical adjustments of the buildings, since external parties may

not be allowed to enter all parts of the buildings. Also, security measures should be taken to create a safe office environment for all users. For the civil servants it will take time for them to get used to the changed situation.

Advantage: vacant office space is used more efficient

Disadvantage: there is a security risk of external parties entering the building

Progressive

The 'progressive' situation of opening up governmental office buildings is renting out available space to external parties, such as commercial functions and other office users. This requires structural changes of the buildings since logistically the different organisations need to be separated. Also, arrangements need to be made about security, ownership, and finance. This participation in mixed-use development should create public value within the urban environment. This mainly could be integrated in new developments or major renovations with interest of other parties.

Advantage: increase liveliness in the urban area through mixed-use development

Disadvantage: increase in security measures needed

8.0 Discussion

8.1 Limitations

This study contributes to the discipline of Real Estate Management (REM) by exploring the possibilities of sharing governmental real estate with other public organisations and mixed-use development within governmental real estate. It mainly focusses on the possibility to optimise the use of real estate through sharing and mixed-use development. But there are a number of other options to optimise the use of governmental office buildings, such as combining partly vacant buildings and then repelling excess real estate. On a strategic level these options also should be considered for a portfolio. In this study an interview with the DGDOO is conducted. This is a representative organisation of a big number of governmental office users. The individual clients of the RVB were not involved in this research. Their view on sharing real estate and mixed-use development is important to consider since they are the eventual users of the governmental office buildings. Sharing real estate is a development for the long-term perspective.

This study has some limitations in the theoretical and empirical parts. For the literature review, limited scientific research has been found on sharing real estate and facilities. For the empirical research, semi-structured interviews were conducted. Even though this leaves room for the interview to cover more than the stated questions, there could be subjects that were not discussed during the interviews. So, it could be that not all barriers and possibilities of sharing real estate and mixed-use development came forward in this study. Plans for the future of government office buildings are confidential since it is sensitive information for the market. This means that not all views of the governmental departments could be considered for the future of the studied real estate portfolio. For the analysis of the study, there were certain limitations in processing the interviews. Since they were semi-structured, follow-up questions could have had an influence on the given answers. This cannot be filtered out with the analysis of the transcript. Also, the results of coding the transcripts could be influenced by the researcher. In a way, the researcher's bias could affect the coding process. Other researchers could have picked other parts of the transcripts or used other codes.

8.2 Further research

This study mainly focused on exploring the barriers and possibilities of sharing real estate with public organisations. What came forward from the interviews, was the possibility to share real estate with commercial organisations since some have an opposite work pattern. This would mean that they have other office days or hours than the governmental organisations therefore they should be taken in consideration. The outcome of this study is mainly based on governmental real estate owned by the RVB. The concept of sharing real estate could be more applicable to commercial real estate or other public real estate. Further research could focus on options for sharing real estate for these types of organisations. This was a qualitative study executed on a portfolio level, but to be able to translate the barriers and possibilities to actual real estate adjustments, further research should be done. The feasibility of sharing real estate or implementation of mixed-use could potentially differ per office building.

9.0 Reflection

The final chapter of this study consists of a reflection on this thesis in terms of positioning, the used methods, and a reflection on the general process.

9.1 Relevance

This study is conducted in the master track Management in the Built Environment (MBE), which is part of the master program Architecture, Urbanism and Building Science. The program is all about the interaction between people and the built environment, whereby the track of MBE entails the relationship between people and real estate. This study it is about the optimal utilisation of available governmental real estate by the potential sharing of real estate and mixed-use development. The connection with the graduation theme, user perspective, is about integrating the use of office buildings and the changing demand for office buildings. So, on one hand, the use of office space is investigated with the influences of hybrid working. On the other hand, the potential users of opened-up governmental office buildings are interviewed. This encounters several problems regarding safety, financing, and facilitating. These have to be tackled from a user perspective since the physical environment is formed by the prospects of its users.

Within the Rijksvastgoedbedrijf there is a general sense of adding public value via their real estate to contribute to social issues. Since the housing of governmental institutions is paid with taxpayer's money, there is a general sense of adding value to the public good. But the show is not yet researched. This research could contribute to exploring the potential of public value within governmental offices through sharing real estate and facilities. Also, since the Rijksvastgoedbedrijf was already thinking about possible ways to open up governmental real estate in the future, this study could be an addition to that process.

9.2 Approach

Overall the conversations with the different public actors and experts, there is a common sense that optimising the use of office space to make it more efficient is a logical step to take. This could be done by sharing unused space with other actors is seemed to contribute to the social issues. But there is not yet researched barriers and possibilities for sharing real estate and facilities. Therefore, this study could contribute to understanding the barriers and possibilities for sharing real estate and facilities. But using the DAS model as a research framework could have lost the focus of this study. The DAS model requires a broad look at a real estate portfolio. To further research the potential of sharing real estate and mixed-use development in governmental office buildings, a research method with a smaller scope could be a better option. On a more positive note, the broad scope of the DAS model helps for an exploratory study since it forms a base for further research.

9.3 Process

When reflecting on the period toward the P2 deadline, the major takeaway is that the process towards that deadline is a journey with ups and downs. It started with an interest and a clear topic about efficient utilisation of public real estate, but after a lot of conversations with different experts, it was only more complicated. There were many interesting aspects, so it was hard to find one specific niche, which could lead to the main research question. Guided by the RM2 course, the first narrowing down of the subject began and from there it constantly diverged and converged towards the topic it eventually became. The course of the graduation laboratory itself, was a bit vague. At first, it was unclear what the themes were and what was allowed. But after a while, the theme group meetings started, and it contributed to your process and developing a research proposal. It helped to get some clarity and it was interesting to see what fellow students were doing. Overall, the first half year was very interesting with all courses and electives. The process towards the P2 deadline consisted mainly of reading a lot of literature. It was challenging to find relevant literature under the pressure of time. But it was a very interesting period consisting of a lot of conversations with my tutors from MBE and the Rijksvastgoedbedrijf about defining the subject and how the research would be formed. Eventually, it all worked out and the execution of the study started.

The period after the P2 started a bit strange. It is clear what is expected to do, but it does not feel like it. So, the first period was mainly filled with exploratory conversations with employees of the Rijksvastgoedbedrijf, getting to know the company, and making concrete planning. This contributed a lot to seeing the opportunities for the study. Over time, everything started to roll, and the right information is found through document analysis and interviews. When the results are in, the analysis starts especially the interviews. A lot of time and effort is put

into transcribing interviews and coding them in Atlas TI. Critically selecting information that contribute to answering the research questions was a difficult process. It is difficult to not leave anything important out, but also not include too much contextual information. Eventually, a balance needs to be found.

Overall, the process of this research went quite well. There is much knowledge within the Rijksvastgoedbedrijf, which gave a lot of input for the desk research. Thereby, it sometimes is difficult to decide what is relevant to this study and what could be left out. Also, a lot of information about the office buildings in The Hague could not be shared since it contains confidential information concerning the future of the real estate. The document containing the security requirements could also not be shared. But eventually, something could be arranged to use the information of those documents without sharing them.

9.4 Ethical issues

The biggest ethical issue of this study was the privacy of the participant in the interviews. Thereby, it was importance to define the expertise of the interviewee without putting too many personal details in the report. All participants signed a consent form which included that the participants will be described with their functions or knowledge area and their organisation. So, this was not a big issue during the study.

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Appendix

A: interview protocols

Interview protocol [NL]

Huisvestingsstrategie publieke actoren centrum Den Haag
Instituut: Technische Universiteit Delft

Geïnterviewde (Titel en Naam):

Interviewer:

Notulist:

Gebruikte Interview Secties:

A: Vragen

B: Overig

C: Na het interview (aanvullende vragen)

Andere onderwerpen die zijn besproken:

Aanvullende opmerkingen en leads na het interview:

Checklist

- Opnameapparaat
 - Telefoon
 - Laptop (back-up)
- Toestemmingsformulier formulier
- Laptop om te typen
- Vragen uitgeprint meenemen
- Opladers

Introductie van het protocol

- **Welkom en bedanken**
- **Korte samenvatting van het doel van het interview**

In dit onderzoek ligt de focus op de huisvestingsstrategie van publieke actoren in het centrum van Den Haag. Daarbij is het doel om de toekomstplannen van de publieke actoren te achterhalen met betrekking tot vastgoed en hybride werkvormen. Daarnaast wordt er in het onderzoek aandacht besteed aan het potentieel delen van vastgoed en faciliteiten tussen verschillende actoren in het centrum van Den Haag. Mogelijkheden en barrières vanuit het perspectief van de publieke actoren ten opzichte van het delen van vastgoed en faciliteiten worden onderzocht.

- **Instemming tot opnemen van het interview**

Om het makkelijker te maken om het interview te transcriberen en een lopende conversatie te hebben, zou het handig om het interview op te nemen. De opnames worden getranscribeerd en geanonimiseerd. Wanneer dit onderzoek is afgerond zullen de opnames en de transcripties worden verwijderd. Wanneer u akkoord gaat hiermee, zou u dan het consent form willen tekenen. In dit formulier staat onder andere dat alle informatie vertrouwelijk is, en dat uw participatie vrijwillig is en u kunt stoppen met deelname wanneer u dit wenst.

- **Tijdperiode**

We hebben gepland dat dit interview niet langer dan een uur zal duren. Gedurende deze tijd hebben we verschillende vragen die wij zouden willen behandelen. Wanneer we in tijdsnood komen, dan zou het kunnen zijn dat wij u zullen sturen op het kort houden van uw antwoord.

A. Vragen

De vragen verschillen per interview categorie:

- Qa: public actors

- Qb: policy of the municipality
- Qc: policy of the Rijksvastgoedbedrijf
- Qd: governmental offices

B. Overig

Zijn er nog dingen die u wil toevoegen wat we nog niet hebben besproken tijdens dit interview?

C. Na het interview (aanvullende vragen)

Opmerkingen na het interview en / of observaties

B: interview questions

B1: Qa - public actors

1. Hoe is het bij ... georganiseerd, de theorie van solid, liquid en gas in acht nemende? Hoe zijn de werk- en studieplekken momenteel georganiseerd? En hoe wordt er omgegaan met hybride werken?
2. Wat is de toekomst strategie voor de werkplekken bij ...?
3. Wat is de huisvestingsstrategie van ...?
4. Hoe kijkt ... aan tegen het delen van vastgoed of faciliteiten?
5. Wat zijn barrières die ... ziet ten opzichte van het delen van vastgoed of faciliteiten?
6. Wat zijn mogelijkheden die ... ziet ten opzichte van het delen van vastgoed of faciliteiten?
7. Ziet ... potentie in het gebruiken van extern vastgoed voor interne functies? Zo ja, in welke vorm? Zo nee, om welke redenen niet?
8. Zijn er nog dingen die u wilt toevoegen wat we nog niet hebben besproken tijdens dit interview?

Economic policy:

1. Wat is het beleid van de gemeente Den Haag op economisch vlak?
2. Hoe vertaalt dit zich naar de gebouwde omgeving in Den Haag?
3. Wat zijn daarbij de doelen voor het CID gebied?
 - a. Waarom ligt economisch gezien de focus op dit gebied?
4. Wat zijn daarbij de doelen voor de Binckhorst?
5. Hoe zal de gemeente een rol spelen bij deze ontwikkelingen?
6. Wat vindt de gemeente van de aanwezigheid van de Rijksoverheid in Den Haag?
7. Wat verwacht de gemeente van de rijksoverheid als groot actor in dit gebied?
 - a. Welke rol ziet de gemeente voor rijkskantoren in de stedelijke omgeving?
 - b. Wat zou je kunnen doen om dit te veranderen of te versterken?
8. Hoe is het beleid rond de policy campus tot stand gekomen?
9. Wat houdt de kopgroep policy campus ontwikkeling in?
 - a. Welke partijen zijn er allemaal betrokken bij de kopgroep?
10. Hoe kijkt de gemeente tegen mixed-use gebieden binnen Den Haag?
11. Weet je specifieke gebouwen die op economisch gebied bijdragen aan de stad?
12. Zijn er nog dingen die u wilt toevoegen wat we nog niet hebben besproken tijdens dit interview?

Office policy:

1. Wat is het beleid van de gemeente Den Haag voor kantoorgebouwen?
 - a. Wat betekent dat op gebiedsniveau voor het CID?
 - b. Wat betekent dat op gebiedsniveau voor de Binckhorst
2. Welke mix in functies wil de gemeente Den Haag in de kantoorgebieden?
3. Wat verwacht de gemeente Den Haag van kantoorgebouwen voor de directe omgeving?
4. Wat verwacht de gemeente Den Haag van de Rijksoverheid als kantoorhouder?
5. Wat is de toekomstvisie voor de kantoren in Den Haag?
 - a. Voor het CID?
 - b. Voor de Binckhorst?
6. Hoe zal de gemeente een rol spelen bij deze ontwikkelingen?
7. Zijn er nog dingen die u wilt toevoegen wat we nog niet hebben besproken tijdens dit interview?

B3: Qc - policy of the Rijksvastgoedbedrijf

1. Wat is jouw rol en wat valt er binnen jouw portefeuille?
2. Wat is vanuit het Rijksvastgoedbedrijf de toekomstvisie voor de Rijkskantoren?
3. Hoe staat het Rijksvastgoedbedrijf tegenover functie mix bij Rijkskantoren?
4. Hoe is de functiemix bij het Wilhelminahof georganiseerd?
 - a. Met welke beweegredenen is dit ontstaan?
5. Hoe zijn de werkplekken binnen de Rijkskantoren momenteel georganiseerd, de theorie van solid, liquid en gas in acht nemende?
6. Hoe valt het hybride werken binnen de Rijkskantoren in de toekomst?
7. Hoe staat het Rijksvastgoedbedrijf tegenover het delen van vastgoed en faciliteiten?
 - a. Wat zijn barrières bij het delen van vastgoed en faciliteiten?
 - b. Wat zijn mogelijkheden bij het delen van vastgoed en faciliteiten?
8. Wat zijn de plannen voor Sloterdijk?
9. Welke vraagstukken zie je zelf nog voor de toekomst van Rijkskantoren?
10. Zijn er nog dingen die u wilt toevoegen wat we nog niet hebben besproken tijdens dit interview?

Rijksvastgoedbedrijf:

1. Wat is het doel van de stuurgroep hybride werken?
2. Hoe is het bij binnen de Rijksoverheid georganiseerd, de theorie van solid, liquid en gas in acht nemende? Hoe zijn de werk- en studieplekken momenteel georganiseerd? En hoe wordt er omgegaan met hybride werken?
3. Wat is de toekomst strategie voor de werkplekken binnen de Rijksoverheid?
4. Wat is de huisvestingsstrategie van de Rijksoverheid?
5. Hoe kijkt de Rijksoverheid aan tegen het delen van vastgoed of faciliteiten?
6. Wat zijn barrières die de Rijksoverheid ziet ten opzichte van het delen van vastgoed of faciliteiten?
7. Wat zijn mogelijkheden die de Rijksoverheid ziet ten opzichte van het delen van vastgoed of faciliteiten?
8. Ziet de Rijksoverheid potentie in het gebruiken van extern vastgoed voor interne functies? Zo ja, in welke vorm? Zo nee, om welke redenen niet?
9. Zijn er nog dingen die u wilt toevoegen wat we nog niet hebben besproken tijdens dit interview?

DGDOO:

1. Wat is het doel van de ICFH?
2. Hoe is het bij binnen de Rijksoverheid georganiseerd, de theorie van solid, liquid en gas in acht nemende? Hoe zijn de werk- en studieplekken momenteel georganiseerd? En hoe wordt er omgegaan met hybride werken?
3. Wat is de toekomst strategie voor de werkplekken binnen de Rijksoverheid?
4. Wat is de huisvestingsstrategie van de Rijksoverheid?
5. Hoe kijkt de Rijksoverheid aan tegen het delen van vastgoed of faciliteiten?
6. Wat zijn barrières die de Rijksoverheid ziet ten opzichte van het delen van vastgoed of faciliteiten?
7. Wat zijn mogelijkheden die de Rijksoverheid ziet ten opzichte van het delen van vastgoed of faciliteiten?
8. Ziet de Rijksoverheid potentie in het gebruiken van extern vastgoed voor interne functies? Zo ja, in welke vorm? Zo nee, om welke redenen niet?
9. Zijn er nog dingen die u wilt toevoegen wat we nog niet hebben besproken tijdens dit interview?

C: consent form

Delft, 2023.

Betreft: *Geïnformeerde toestemming deelname onderzoek naar de huisvestingsstrategie van publieke actoren in Den Haag*

Geachte heer/mevrouw,

In dit onderzoek ligt de focus op de huisvestingsstrategie van publieke actoren in het centrum van Den Haag. Daarbij is het doel om de toekomstplannen van de publieke actoren te achterhalen met betrekking tot vastgoed en hybride werkvormen. Daarnaast wordt er in het onderzoek aandacht besteed aan het potentieel delen van vastgoed en faciliteiten tussen verschillende actoren in het centrum van Den Haag. Mogelijkheden en barrières vanuit het perspectief van de publieke actoren ten opzichte van het delen van vastgoed en faciliteiten worden onderzocht.

Deze studie wordt uitgevoerd door studenten in het kader van een afstudeeronderzoek voor de mastertrack Management in the Built Environment aan de TU Delft. Daarbij is het onderzoek in dienst van het Rijksvastgoedbedrijf als afstudeerstage. Het interview wordt gedaan door de student Tim van der Vlist. Het interview duurt ca. 45 tot 60 minuten. Graag zou ik het interview op willen nemen om het achteraf uit te kunnen werken. Wij willen graag leren van uw ervaringen.

Vanuit de universiteit zijn we gewend om nog eens apart te vragen of u mee wilt doen aan het onderzoek en of u het goed vindt om dit interview op te nemen. U mag ook nu zeggen dat u liever niet meedoet. U kunt u ook later nog bedenken en uw deelname intrekken zonder opgave van reden. U mag iedere vraag die wij stellen weigeren te beantwoorden.

Als u meedoet, dan vragen we u om uw handtekening onderaan deze brief te zetten en een pdf aan ons te retourneren. Wij zetten dan ook onze handtekening. Dat doen we zodat u zeker weet dat we vertrouwelijk omgaan met uw gegevens en antwoorden. Ook krijgt uw organisatie het interviewverslag niet te zien of te horen. Wij maken een algemeen en anoniem verslag over de ervaringen van meerdere werknemers binnen uw organisatie. Als we uw woorden aanhalen, dan beloven we om uw naam niet gebruiken en zorgen we dat het niet duidelijk is wie dit gezegd kan hebben. We zullen uw naam- en contactgegevens meteen na afloop van het onderzoek vernietigen.

Als u vragen heeft over dit onderzoek, kunt u contact met ons opnemen: Tim van der Vlist, tim.vandervlist98@outlook.com, +31611267789.

Als u mee wilt doen aan dit interview, wilt u dan de onderstaande verklaring invullen en ondertekenen?

Met vriendelijke groet, Tim van der Vlist

In te vullen door de geïnterviewde & student

Ik verklaar op een voor mij duidelijke wijze te zijn ingelicht over de aard, methode, doel en belasting van het onderzoek.

Mijn vragen zijn naar tevredenheid beantwoord.

Ik begrijp dat het geluids- en/of beeldmateriaal (of de bewerking daarvan) en de overige verzamelde gegevens uitsluitend voor analyse en wetenschappelijke presentatie en publicaties zal worden gebruikt.

Ik behoud me daarbij het recht voor om op elk moment zonder opgave van redenen mijn deelname aan dit onderzoek te beëindigen.

Ik heb dit formulier gelezen of het formulier is mij voorgelezen en ik stem in met deelname aan het onderzoek.

Graag ontvang ik aan het eind van het onderzoek een korte samenvatting van de resultaten van het onderzoek. Om deze reden verleen ik toestemming om mijn naam- en adresgegevens tot het eind van het onderzoek te bewaren.

Plaats:

Datum:

(Volledige naam, in blokletters)

(Handtekening deelnemer)

‘Wij hebben toelichting gegeven op het onderzoek. Wij verklaren ons bereid nog opkomende vragen over het onderzoek naar vermogen te beantwoorden.’

Tim van der Mist

(Handtekening student)

D: overview interviews

	type	institution	area of expertise	date
#1	Qa	Leiden University	<i>housing</i>	20-02-2023
#2	Qa	TU Delft	<i>housing</i>	10-03-2023
#3	Qa	DGDOO	<i>housing</i>	13-03-2023
#4	Qb	Municipality of The Hague	<i>economic policy</i>	16-03-2023
#5	Qb	Municipality of The Hague	<i>office policy</i>	21-03-2023
#6	Qa	Municipality of The Hague	<i>housing</i>	24-03-2023
#7	Qc	Rijksvastgoedbedrijf	<i>portfolio management</i>	31-03-2023
#8	Qc	Rijksvastgoedbedrijf	<i>rental</i>	03-04-2023
#9	Qc	Rijksvastgoedbedrijf	<i>planning and control</i>	30-03-2023
#10	Qa	Province of South-Holland	<i>housing</i>	11-04-2023
#11	Qa	UWV	<i>housing</i>	19-04-2023
#12	Qd	DGDOO	<i>hybrid working policy</i>	12-04-2023
#13	Qd	Rijksvastgoedbedrijf	<i>hybrid working policy</i>	03-04-2023
#14	Qc	Rijksvastgoedbedrijf	<i>portfolio management</i>	11-04-2023
#15	Qa	National Police	<i>housing</i>	13-04-2023
#16	Qc	Rijksvastgoedbedrijf	<i>housing</i>	18-04-2023
#17	Qc	Rijksvastgoedbedrijf	<i>asset management</i>	04-05-2023

E: solid, liquid, and gas

E1: advantages and disadvantages of solid (Den Heijer, 2021)

	advantages	associations	disadvantages
<i>goals</i>	<ul style="list-style-type: none"> • Classical • Celebrating traditions, legacy, past performance, 'wall of fame' • Preserve heritage • Uniqueness, strong brand • Loyalty of employees, life-long commitment 	<ul style="list-style-type: none"> • Top-down organisation 	<ul style="list-style-type: none"> • Gated, closed community, exclusion, elite ivory tower • Limited connectedness and knowledge exchange between departments • Missed opportunities for interdisciplinary work, research, and innovation
<i>user</i>	<ul style="list-style-type: none"> • Own office, meeting room, etc. • Home, territory, privacy • Sense of belonging • Pride, status, reputation: part of exclusive club • Members only • Small scale, family, 'everybody knows each other', strong relations • Strong community sense, feeling at home at office • Supported individually, privileged 	<ul style="list-style-type: none"> • One workplace 	<ul style="list-style-type: none"> • 'You cannot use my office, meeting room, etc.' • Territoriality • Different privileges • Limited accessibility • Inflexible for change • Piles of paper on personal desks: no incentive to clean desk and threshold to share • Low utilisation rates • Vacant facilities • Less flexible for growth or changing demand
<i>m2/energy</i>	<ul style="list-style-type: none"> • More ownership and emotional attachment to place • Higher tolerance for functional/technical defects 	<ul style="list-style-type: none"> • Departments 	<ul style="list-style-type: none"> • Large footprint per user (compared to other models) • Resource-inefficient: vacant rooms heated, cooled, cleaned, maintained
<i>financial</i>	<ul style="list-style-type: none"> • Academic heritage is irreplaceable or has high replacement value: alternatives are not available or very expensive 	<ul style="list-style-type: none"> • Top-down funding 	<ul style="list-style-type: none"> • Higher total costs of ownership, caused by higher footprint, energy use, and inflexibility for mutations

E2: advantages and disadvantages of liquid (Den Heijer, 2021)

	advantages	associations	disadvantages
<i>goals</i>	<ul style="list-style-type: none"> • Multinational organisation with multidisciplinary potential • World player, also considering its size and network connections • Can respond to societal challenges and changing demand • Adaptable, flexible workforce • More shared space encourages interaction, collaboration, and innovation 	<ul style="list-style-type: none"> • Horizontal organisation 	<ul style="list-style-type: none"> • A large organisation can make individuals feel anonymous, less connected, and less loyal to the institution • Many different identities and cultures could be overshadowed by a large institution • Open institution can be a risk for safety and security • Less (social) control • Weaker (social) cohesion
<i>user</i>	<ul style="list-style-type: none"> • More user groups mix, which enriches working life and adds to diversity goals • More public space and interaction can make people feel part of a vibrant community • Being part of different teams can encourage talent development, rotation and provide career opportunities • Higher utilisation rates (lower vacancy rates) • Users can find their preferred place for each activity and move around the building • Best facilities in the institution accessible for all users 	<ul style="list-style-type: none"> • Multiple workplaces 	<ul style="list-style-type: none"> • Less territory can make people feel less at home and less visible and traceable for other • More interaction can be distracting and affect mental well-being • Less privacy and silence can affect productivity • Shared space often requires reservations or keeping other user's demands into account, which limits the freedom to use space for individuals and forces them to plan ahead • More shared spaces mean more time spent to move between locations, which affects productivity
<i>m2/energy</i>	<ul style="list-style-type: none"> • Reduced footprint and energy consumption per user • More resource-efficient than state of solid • Flexible for change in demand • More sustainable: better use of energy consuming and costly resources 	<ul style="list-style-type: none"> • Shared facilities 	<ul style="list-style-type: none"> • More shared space means more mobility, which takes energy • Suitable for all can also lead to greyscales (instead of colourful) • More mobility demands higher quality of public space and circulation space

<i>financial</i>	<ul style="list-style-type: none"> ● Costs for institution lower (than state of solid) ● More resilient for change, less costs need to be made when demand changes ● Total costs shared with more partners ● 'To share of not to be': some facilities are only feasible when they are shared, other funding streams are crucial for the 'business case' 	<ul style="list-style-type: none"> ● Multiple funding sources 	<ul style="list-style-type: none"> ● More intensively used facilities need more cleaning, maintenance, which raises the costs per m2 ● Meeting more diverse space demands (including health, safety, and security) of more user groups raises costs per m2 ● Management spends more human, financial, and energy resources on dynamics, required flexibility, and increased mobility
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E3: advantages and disadvantages of gas (Den Heijer, 2021)

	advantages	associations	disadvantages
<i>goals</i>	<ul style="list-style-type: none"> • More inclusive: work and research are more accessible for different, more diverse target groups • Allowing employees to find their own match between work and private life • Facilitating distant working from home, creating a flexible workforce 	<ul style="list-style-type: none"> • Bottom-up organisation 	<ul style="list-style-type: none"> • Less or no presence in office (can) make individuals feel lonely, disconnected, and less loyal to the institution • Lack of (social) cohesion affects the identity of the organisation • Lack of (informal) interaction affects serendipity, interdisciplinary encounters, and (possibly) innovation opportunities • Lack of personal contact and social control affect motivation and/or completion rates • Exclusively online and digital activities (can) increase the cybersecurity risks
<i>user</i>	<ul style="list-style-type: none"> • More, world-wide possibilities for talent • Maximum freedom for employees to find their own balance between work and private life 	<ul style="list-style-type: none"> • ‘Work where you want’ 	<ul style="list-style-type: none"> • Less interaction can make people loose contact with the community • Employees need to spend energy (time, money) on finding or creating a suitable workplace off-office, at home or somewhere else
<i>m2/energy</i>	<ul style="list-style-type: none"> • Less m2 and energy needed in office, so very resource-efficient, if alternative uses are found for existing buildings 	<ul style="list-style-type: none"> • Anywhere off-office 	<ul style="list-style-type: none"> • Large footprint per user (compared to other states) • Resource-inefficient: vacant rooms heated, cooled, cleaned, maintained
<i>financial</i>	<ul style="list-style-type: none"> • This state radically reduces space and energy demand (per user) in the office and could save substantial financial resources, if alternative uses are found for existing buildings • Able to reach larger groups, to make more online work (more) feasible • Able to find more (online) partners 	<ul style="list-style-type: none"> • Funding bottom-up 	<ul style="list-style-type: none"> • Many more resources needed for online office: content, training, storage, networks, licences, security, backups, etc. • More resources needed to accommodate home workplace: ICT facilities and furniture • Not easy to reduce m2 and costs, if no

	<ul style="list-style-type: none">• Resilient for changes in demand, lower transaction costs• Total costs of the office potentially much lower		alternative uses (or owners) are found for existing buildings
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