

DEVELOPING STRATEGIES FOR GREEN BUSINESS PARKS

INSIGHTS FROM PERCEIVED VALUE AND WILLINGNESS TO PAY

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PREFACE

I hereby present my thesis for the Master of Science in Real Estate at the Amsterdam School of Real Estate. The subject of my thesis fascinates my during my daily work and I am eager to take the next steps to implement some of the results in my projects.

First, I would like to acknowledge my employer Schiphol Area Development Company (SADC) for the opportunities provided in my career. I began five years ago without a background in real estate and was able to develop as an area developer. Their support and trust in me allowed me to achieve certain goals, such as completing the MSRE and gaining an academic background in real estate.

I want to thank my supervisor, Arthur Marquard. He was willing to join my plan to complete this thesis within a five-month timeframe. His enthusiasm and role as sparring partner, helped me in the definition and enhancement of my plan, research, and final results. I would like to thank several colleagues at SADC with whom I had valuable discussions at the outset of my research, which helped in refining my research question. I would like to express my gratitude to the experts who contributed to refining the principles of a green business park, Rinus Vader and Arjan van Timmeren. Additionally, I extend my appreciation to all respondents who enthusiastically participated in the interviews and generously shared their insights. Lastly, I want to thank my partner, Herman, for his support and role as sounding board throughout this process.

My research seeks to provide new insights on area development, with the aspirational goal that all business parks are transformed into green business parks in the future.

Jozien van der Wal April 2025, Amsterdam

MANAGEMENT SUMMARY

Business parks can be found in many regions across the globe. These business parks are crucial for the economic functioning of a country, area, or city. Unfortunately, a lot of the times business parks are grey areas with little green, a lot of pavement, and big and square buildings. However, a lot of people work at a business park and are impacted by the state of these locations. There is a rise of business parks that try to do things differently, with a focus on green space, climate resilience, and livability.

To gain deeper insight into green business parks and the stakeholders involved in the development of buildings within these parks, this research addresses the following question: How can strategies for green business park development be determined based on willingness to pay and the perceived value of green business parks of investors, developers, and end-users?

A literature review on green business parks led to a definition for this research. Seven principles were developed and tested with experts: climate resilience, water, energy, landscape values, biodiversity and ecology, people and health, and products and materials. Green business parks are logistic business parks built according to these principles. Green business parks must have the organizational and management structure to implement and maintain these principles.

Twelve interviews were conducted with investors, developers, and end-users active on business parks in The Netherlands. These interviews aimed to investigate the willingness to pay and perceived value of these actors for the principles of a green business park using a hypothetical business case. Perceived value was divided into four dimensions: social, economic, emotional, and functional.

Key findings show that stakeholders have the highest willingness to pay and perceived value for energy, products and materials, and people and health, though their priorities differ: investors focus on biodiversity and ecology, developers on water, and end-users on landscape values. Climate resilience scores lowest across stakeholders and is a principle that should get attention of the area developer. The study highlights the need for integrating all seven principles into the (re-)development of business parks to enhance sustainability. The results reveal consensus on the social and functional perceived value of green business parks. There is agreement on the long-term economic perceived value, although there is disagreement regarding short-term economic perceived value. The results also suggests that area developers play a crucial role in ensuring consistent standards and providing performance data to aid decision-making.

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1 INTRODUCTION

1.1 CAUSE

Schiphol Area Development Company (SADC) develops green business parks that are nature inclusive, focus on wellbeing, and are climate adaptive. The clients who buy plots, go through a process of building design together with a project- and sustainability team from SADC. In this process there are sometimes discussions about the demands SADC has on the building that is designed, such as green facades, solar panels, and ecological demands. Without creating this 'value added plan', it is not possible for a client get approval to purchase the plot. In the end, a building is designed that exceeds the preliminary expectations of the client and SADC. Which results in clients being enthusiastic about the business park and their own development. Inviting colleagues from all over the world to experience the site and gaining excitement from the wildlife visible from their office. Experiencing this process and observing the enthusiasm of clients has inspired to conduct research into their perceived value of green business parks and their willingness to pay for green business parks.

1.2 THE VALUE OF BUSINESS PARKS

Worldwide there are a lot of business parks. A definitive number cannot be given but is in the ten thousands. The Netherlands has about 3,800 business parks, which is about 2.5% of the Dutch land area (Planbureau voor de Leefomgeving, 2023). Despite representing a small percentage, business parks significantly impact the environment. This is partly due to the activities carried out and the scale of building and area (Nefs, 2023; Rademacher De Vries & STEC Groep, 2019). At the same time business parks in particular can contribute to climate goals and biodiversity (Raad voor de Leefomgeving en Infrastructuur, 2023). For example, business parks can focus on restoring biodiversity, restoring ecological connections, and on landscape quality. In addition, an average of 28% of total Dutch employment is on business parks (STEC Groep, 2023). Developing sustainable, green business parks could create a situation where interventions on a small percentage of land area meet climate goals on a larger scale and enhance the working environment for a significant portion of the workforce.

There are a lot of different definitions of business parks in literature, such as industrial park, industrial zone, logistics park, and more. This makes it difficult to compare developments of business parks worldwide. There are differences in sectors present, jobs, and intensity of space use on business parks. Some business parks have a lot of logistics, and others have industrial use or recycling. There is a differentiation in location, size, and type of businesses. In this research we focus on business parks that have an A-grade location, such as close to an airport or seaport. These business parks have, due to their top tier location, a higher price for land than business parks on a lesser preferred location.

There is no uniform description of a green business park in the literature. Some business parks focus on energy and climate adaptation, and others focus on ecology and well-being (S. M. Atwa et al., 2017). In this research, we will develop a definition and framework for green business parks.

1.3 PROBLEM DEFINITION

Research on why investors, developers, and end users invest in green business parks is limited. This includes purchasing land on a green business park, constructing a building that meets the requirements of a green business park, and establishing operations on a green business park. Studies particularly focus on consumers and their motivations for buying a property located in an area with similar characteristics to a green business park, such as the amount of green space.

Daams et al. (2016) showed that the proximity to attractive natural spaces has a positive effect on housing prices. Houses within 500 meters of an attractive natural space show a price increase of 16%. The research focused on the perceived attractiveness of natural spaces in this study. Zhou et al. (2021) researched consumers' purchase intention for houses near urban parks based on perceived value. The study shows that perceived value is a crucial predictor of purchase intention. Other research show that consumers have a higher willingness to pay for green roofs they can access (Teotónio et al., 2020). Consumers who have more knowledge of the advantages of green infrastructure are also prepared to pay more for it. This is also shown in research by Kalfas et al. (2022) where they found that knowledge of climate issues causes consumers to value green space more highly.

Research on real estate funds shows that investors make their choice of sustainable investments primarily based on emotion rather than analysis (Heeb et al., 2023; Hornuf et al., 2022). Tam et al. (2016) showed that 80% of building professionals are willing to pay a maximum of €208 per sqm. for green roofs. Respondents valued the improvement of the aesthetics of real estate the most.

There are certain drivers of sustainable investment, such as personal motivations and policy (Möslein & Sørensen, 2018; Omarova & Jo, 2022). Policy developments (such as EU Taxonomy) or certificates (such as LEED or BREEAM) can also drive the willingness to pay of investors, developers, and end users. Papari et al. (2024) showed that EU Taxonomy promotes the investments in urban nature-based solutions. Especially external green, such as parks and urban green areas, receives a lot of investment (nearly 40%). Research showed that commercial buildings with certificates have a positive relationship with the cashflows and values of properties (Darko et al., 2017). Tenants are more willing to pay a higher rent for a building that has a certificate (Leskinen et al., 2020).

1.4 OBJECTIVE

This research intents to develop strategies for green business park development based on willingness to pay and perceived value of green business parks by investors, developers, and end-users.

1.4.1 Social relevance

The research offers guidance for green business park developers on key focus areas in development. It can provide insight for redevelopment of business parks into green business parks and what aspects are 'quick wins' to develop because they have a high perceived value and/or willingness to pay. The research helps understand client motivations, enabling area developers to select the best strategy for each client.

1.4.2 Scientific relevance

As mentioned above, few studies have been conducted into willingness to pay for green business parks. The main focus of research is on housing. This research provides insight for this theme in relation to a different type of real estate and in relation to the larger scale of a business park.

1.5 RESEARCH QUESTION

In this research the following research question is answered:

How can strategies for green business park development be determined based on the willingness to pay and the perceived value of green business parks by investors, developers, and end-users?

1.5.1 Sub questions

To answer the research question, the following sub questions have been formulated:

- 1. What is the definition of green business parks, willingness to pay, and perceived value? (Theoretical framework)
- 2. What are the perspectives of investors, developers, and end-users? (Theoretical framework)
- 3. What are drivers of sustainable investment? (Theoretical framework)
- 4. Which methods can be used to determine willingness to pay? (Research methodology)
- 5. How is the value of green business parks perceived? (Research interviews)
- 6. How is the willingness to pay for principles of green business parks determined based on perceived value? (Research interviews)

1.6 RESEARCH METHODOLOGY

To give insight in the research methodology, we use the TPA-methodology developed by Van Hoek-Gerritsen (2018). TPA stands for Theory, Practice, and Analysis.

Based on literature research the theoretical framework will be developed. The first three sub questions are answered in the theoretical framework. These include definitions of green business parks, willingness to pay, and perceived value, perspectives of investors, developers, and end-users, and drivers of sustainable investment.

In the practical framework, the research approach is described. In this research we will define the practical framework as the methodology. This is based on findings in the theoretical framework and two interviews with experts: Rinus Vader, strategic advisor at Royal HaskoningDHV, and Arjan van Timmeren, Professor Environmental Technology & Design at TU Delft. The last three sub questions are answered in the methodology. The research is exploratory in nature, as it aims to gain insights into behavior and perceived value. Qualitative research fits best with research of exploratory nature (Baarda et al., 2021). Qualitative research is done with semi-structured, in-depth interviews. The interviews will be held with twelve respondents: four investors, four developers, and four end users.

Teotónio et al. (2020) surveyed consumers regarding their willingness to pay for green roofs and green walls. They made sure that the knowledge of respondents of these green infrastructures

was aligned and showed examples of these green infrastructures in their survey. During the interviews image elicitation will be used. This method will make sure all respondents have the same type of green business park in mind with the same aspects. The images are generated based on the definition of a green business park, stemming from the theoretical framework, using artificial intelligence. Image elicitation benefits the generalizability of the research. There will be one predetermined business case to acquire a plot on a green business park. The questions following this business case are predetermined.

A combination of the theoretical framework and the results of the methodology will give an answer to the research question how strategies for green business park development can be developed based on willingness to pay and perceived value of green business parks by investors, developers, and end-users. This is done in the final part of the TPA-methodology: analysis.

1.7 SCOPE AND GENERALIZABILITY

We focus on business parks that are located at A-locations in this research. This means that the outcome is not fully representative of willingness to pay and perceived value for green business parks that are not A-locations. We will generate our own definition of a green business park based on previous research and policies, because there is no general definition of a green business park. This means that some aspects of a green business park are not a part of every green business park that exists.

2 THEORETICAL FRAMEWORK

- 1. What is the definition of green business parks, willingness to pay, and perceived value? (Theoretical framework)
- 2. What are the perspectives of investors, developers, and end users? (Theoretical framework)
- 3. What are drivers of sustainable investment? (Theoretical framework)

In the theoretical framework, the first three sub questions are answered.

2.1 BUSINESS PARKS

The United Nations Industrial Development Organization (UNIDO) defines a business park as: 'A tract of land developed and sub-divided into plots according to a comprehensive plan with provision for roads, transport, and public utilities, sometimes also with common facilities, for the use of a group of manufacturers.' (UNIDO, 2019). The term business park, logistics park or industrial park is used for a broad range of concepts, such as high- tech zones, free ports, and export-processing zones. A logistics park is a gathering of multiple logistics centers and covers a large area. Logistics parks are usually used for processing, transportation, and warehousing (Xu et al., 2018). Business parks come in various forms and functions, influenced by the terminology used in economic policies of different countries and their specific objectives.

UNIDO (2019) defines three basic characteristics of business parks:

- Geographically delineated area which includes services as landscaping, utilities, and access to transportation.
- Detailed masterplan with specifications and standards for all aspects of the built environment and buildings.
- Administration or single management entity that accommodates and approves entry of new companies to the business park, enforces compliance with the rules, and promotes long-term development through forward planning.

2.1.1 Business parks in The Netherlands

In this research, we will focus on the concept of a business park used in The Netherlands. This concept has some overlap with the definition of UNIDO (2019). Business parks have existed in The Netherlands for approximately one hundred years. Increasing nuisance of environmentally harmful industries led during the twentieth century to the creation of business parks. The urban planning concept of the functional city; the separation of work, recreation, living, and traffic, around 1920, reinforced this trend. This forced companies to move to the outskirts of the city (Louw et al., 2009). Besides the functional city concept, companies want to cluster. These clusters are made of firms that are inter-related and compete and cooperate to generate wealth in a specific area (Porter, 2000). Specifically for logistics companies, collaboration in transportation, performing value added services, career mobility within geographic location, and job growth are some of the benefits of clustering (Rivera et al., 2016).

2.1.2 Policy in The Netherlands

The Integral Business Park Information System (IBIS) is an information system used by provinces and municipalities in The Netherlands. It is a database used for monitoring, creating policy, and

the development of new business parks. IBIS defines business parks as a work site (data.overheid.nl, 2019). That is a site that, because of its zoning, is intended and suitable for use by industry, commerce, commercial and noncommercial services, and manufacturing. This includes (parts of) work sites partially zoned and suitable for offices.

The term *bedrijventerrein* (business park) is part of zoning plans of The Netherlands. Various municipalities have distinct definitions for a business park. For instance, the municipality of Haarlemmermeer (2014) defines a business park (bedrijventerrein-1) as an area dedicated to business activities primarily centered on logistics, including logistics distribution, and research and development related to these companies. The municipality of Venlo (2021) defines a business park as a location with businesses within the agri-food, manufacturing, and logistics sectors. On the other hand, the municipality of Hilversum (2013) and municipality of Eindhoven (2012) define an extensive list of business activities that can be located on a business park, like distribution centers, wholesale locations, construction companies, and car rental companies.

2.2 GREEN BUSINESS PARKS

As mentioned above, during the 21st century there was a rapid economic and technological development which resulted in the construction of conventional business parks (Xu et al., 2018). These focus mainly on economic aspects and adding large surfaces of asphalt and concrete (Agudo-Sierra & Llaguno-Munitxa, 2022). This is a threat to the environment such as wildlife and ecosystems. A countermovement for these conventional business parks is the development of green business parks. Green business parks are focused on decreasing emissions, pollution, and on renewable energy. UNIDO (2021) proposed an international framework with guidelines for biodiversity preservation, rainwater management, and creation of recreational areas.

These types of business parks are the logical extension of a green building. Green buildings foster a symbiotic relationship between the environment and technology (Hou et al., 2023). The methodology of creating a green building is to minimize consumption of natural resources and unfavorable impact on the environment during the construction, design, operational, and decommissioning phase (S. Wang et al., 2024). Green buildings also want to improve comfort and wellbeing of the occupants of the building.

The shift towards creating green buildings is known as the 'going green' movement and is a big part of the global green building initiative. This initiative defines multiple standards and certifications for green buildings, such as Building Research Establishment Environmental Assessment Method (BREEAM) in the United Kingdom and Leadership in Energy and Environmental Design (LEED) in the United States (Lu et al., 2018). Institutions on green buildings state that higher costs for developing green buildings are paid off in the long run because of higher property value, improved environmental performance and therefore lower utility costs, higher rates of occupancy, and higher occupant productivity, health, and comfort (Allen et al., 2015; Dwaikat & Ali, 2016; Kats et al., 2003).

2.2.1 Initiatives in The Netherlands for green business parks

In 2022 the National Growth Fund of The Netherlands allocated 26 million euros to the program *Werklandschappen van de Toekomst* (Working Landscapes of the Future) (RIVM, 2022). The National Growth Fund was founded by the department of Economic Affairs and Climate and the department of Finance. The fund aims to invest in initiatives that support the sustainable earning

capacity of The Netherlands. *Werklandschappen van de Toekomst* was founded because of the 100,000 hectares of business parks in The Netherlands, only 1% consists out of natural elements. This means a large amount of business parks is sensitive to flooding and heat stress. Developing green business parks mitigates these risks substantially, thereby enhancing their appeal to potential employees. They also improve psychological health and increases biodiversity.

Werklandschappen van de Toekomst uses NL Gebiedslabel to measure the current sustainability level and determine ambition levels of business parks (IVN, 2024). The reports and certifications coming from NL Gebiedslabel can be used for reporting of EU Taxonomy and CSRD. NL Gebiedslabel has a scientific advisory board from the Technical University of Delft, University of Twente, Wageningen University, and VU Medical Center to validate and improve the model. NL Gebiedslabel is designed to measure sustainability and nature inclusivity, and uses 8 themes to score (NL Gebiedslabel, 2024). These 8 themes are:

- 1. Energy and climate resilience
- 2. Mobility
- 3. Soil and water
- 4. Biodiversity and landscape values
- 5. People and health
- 6. Assurance
- 7. Development principles
- 8. Products and materials

2.2.2 The seven principles of green business parks

In formulating a definition of green business parks, we constructed seven principles of green business parks. The foundation of the seven principles of green business parks is based on the themes of the NL Gebiedslabel (2024), UNIDO (2021), BREEAM Area (DGBC, 2018), Atwa et al. (2019), WELL (International WELL Building Institute, 2024), and BREEAM New Construction (DGBC, 2020). The description states indicators that are mitigated in the design of the green business park and the requirements for the building and surrounding plot. To refine the principles of green business parks, two exploratory interviews with experts were conducted on 3 and 5 December 2024. These experts were Rinus Vader, strategic advisor at Royal HaskoningDHV, and Arjan van Timmeren, Professor Environmental Technology & Design at the Technical University Delft. With their input the finalized list of aspects of green business parks was compiled.

Principles	Description
Climate resilience	Heat stress and flooding
Water	Water quality, water retention, and aesthetics
Energy	Energy performance public space and generating renewable
	energy
Landscape values	Number of trees and plants, connections of green blue
	structures, attractiveness,
Biodiversity and ecology	Nature inclusivity, strengthening biodiversity, and maximizing
	ecological quality.
People and health	Perception of green, safe, attractive, and socially cohesive
	environment, healthy and future-proof physical environment,
	Outdoor nature access, and walkable paths
Products and materials	Sustainability and circularity of products and materials.

Table 1: Seven principles of a green business park

2.2.3 Benefits of green business parks

Besides battling negative environmental impact, green business parks provide an attractive environment for employees because of their social and environmental benefits (Atwa et al., 2019). Research shows that workers appreciate a green working environment. It benefits their health, because it promotes lunch walks, reduces stress, and improves wellbeing (Gilchrist et al., 2015; Korpela et al., 2017). Simply having a view at natural elements greatly increases job satisfaction (Lottrup et al., 2015). The three most important characteristics of green spaces are 'cleanliness and maintenance', 'richness in plant species', and 'existence of water bodies' (Madureira et al., 2018). This research advises to focus more on quality than quantity when it comes to developing green spaces. Especially people with a lower socioeconomic background benefit from the access to public green spaces (Rigolon et al., 2021). The benefits of green spaces are mainly when they are accessible, for example in the form of parks, instead of being green land that is inaccessible. Nguyen et al. (2021) found that areas with a large amount of tree canopy have the highest health benefits, instead of grassland. Lansford & Jones (1995) show that the proximity to water has a significant impact on how it is aesthetically and recreationally valued.

2.2.4 Examples of green business parks

To fulfill the concept of a green business park further, we will give some examples of green business parks around the world with a description of the aspects that define it as a green business park.

Plataforma Central Iberum

Plataforma Central Iberum is located in Spain, near Madrid. The business park covers 3.45 million sqm, with 500,000 sqm allocated to green areas intended to enhance biodiversity (Plataforma Central Iberum, 2024). There are seed banks created to restore ecosystems, native species were introduced, and rainwater is stored. While collaborating with various stakeholders, including local government and companies located at the business park. All choices have been made through Nature-Based Solutions which address social changes through restoration, sustainable management, and protection of ecosystems. The results of the business park have shown that the ecosystems have recovered with a greater biodiversity and there is less heat stress on the premises.



Figure 1: Image of Plataforma Central Iberum (2024)

Ecomunitypark

Ecomunitypark lies in Oosterwolde in the north of The Netherlands. At least 50 percent of the 17 hectares of land will continue to consist of nature (Ecomunitypark, 2024). All companies that want to reside at the business park need to be a sustainable organization and share knowledge with each other. Companies are obliged to buy extra land, for a building of 1.000 sqm, the company needs to buy 2.500 sqm. The extra land is used for biodiversity. There are no rules for the building itself. Almost no plants are sown, all plants arise on their own. The site is managed with active organic management and otherwise nature is allowed to take its course. Wadis are constructed to retain water and attract biodiversity.



Figure 2: Image Ecomunitypark (IVN, 2023)

Greenport Venlo

Business park Greenport Venlo is located near Venlo in the south of The Netherlands. The business park consists of 400 hectares business park and 400 hectares nature area (Greenport Venlo, 2024). More than thirty percent of the total surface area will be uncultivated, this means rainwater can sink into the soil. The measures help prevent flooding and ensure that during dry periods the soil does not dry out as quickly. Specific areas are created with a special herb mixture to attract insects and birds. The ponds attract various species of birds, such as swans, ducks, and cormorants. An incentive scheme was developed for residents near Greenport Venlo

to get financial support for green measures for their own land. There are eight wind turbines on the business park and solar panels on roofs of buildings deliver power for 19.000 households.



Figure 3: Image Greenport Venlo (2024)

2.3 LOGISTIC REAL ESTATE MARKET

As mentioned above, a business park can consist out of several types of real estate. For this research, we will focus mainly on logistic real estate on business parks. Since the 1970s, logistic activities have increased, which resulted in an increased demand for logistic real estate. This led to the rise of a specialized logistic real estate industry within the commercial real estate industry (Raimbault, 2022). In the early days, logistic real estate was mainly traditional warehouses used for storage. Nowadays, they are distribution centers with a large footprint and increasing demand for technology (Sakai et al., 2020). Logistic real estate can have tree functions: cross-docking, storage, or a combination of both. Cross-docking means that goods are shipped directly to the client, without storing it in between.

2.3.1 Location theory for logistic real estate

Companies make the decision for a specific location based on classical location factors such as labor- and logistics costs (Louw et al., 2009). Other factors, such as representativeness of business parks, local policy, and quality of living- and work environment are becoming more important.

Research shows that the decision to relocate is determined by location- and company specific factors that 'push' the company from the present location and 'pull' them into a location that is attractive to the company (Van Dijk & Pellenbarg, 2000; Van Wissen, 2000). Later research, done by Kronenberg (2013), shows that the company specific factors have the highest influence on the decision to relocate. Specifically for logistic companies, the accessibility to ports (seaports, airports, etc.) and highways, zoning, population density, and the price of the land is crucial in the decision-making process (Gingerich & Maoh, 2019; Sakai et al., 2020).

2.4 PERCEPTIONS OF INVESTORS, DEVELOPERS, AND END-USERS

Key players in the logistic real estate industry are developers, investors, and end-users. The process of real estate development is long, involves a lot of money, and the risks are large. The

return rate for both developers and investors needs to be appropriate to compensate for these risks (Brill, 2022; Nappi-Choulet, 2006).

2.4.1 Investors

Investment can be defined as investing money in assets other than savings, such as stocks, bonds, real estate, and other titles, to achieve certain objectives and results, including investment income and/or capital appreciation (Van Gool et al., 2020, p. 27). When the owner of real estate is primarily concerned with the services and products that the property can provide him as a means of production, we count this as real estate investment. The services of the property, such as housing, are paramount, rather than the investment aspects.

In the last years, more climate events due to climate change have occurred in the world. This resulted in a higher risk premium by investors for some real estate investments in areas that are susceptible to climate events (Clayton et al., 2021). Sustainability has become increasingly prominent in the decision-making process for real estate acquisitions, among others because of these climate events. ESG strategies have emerged in the last years and a now in the core of many companies (Jackson & Orr, 2021). Real estate investment companies are mainly driven by regulations and accountability. Since the property market is a market that reacts slowly to changes, sustainability strategies are slowly adapted by the players in the market.

2.4.2 Developers

There are many definitions of real estate development, but at its core it is about bringing together management, ideas, capital, land, and labor to create a new real estate product (Van Gool et al., 2020, p. 247). It is not only about creating a building, but also about creating new spaces with specific functions. Developing real estate requires extensive knowledge of the real estate industry, thorough research, and knowledge of current and future market trends.

Real estate development and real estate investment are closely related. In many cases, the developer creates an investment product. In recent years, there have been a number of cases where the two fields have explicitly sought to cooperate and strengthen each other (Van Gool et al., 2020, p. 247). Real estate developers and investors need each other: a real estate investor needs real estate projects to invest in, and a developer needs buyers for real estate developers tend to align their products with the standard of the investor (Guironnet et al., 2016).

2.4.3 End-users

The end-user or operator of logistic real estate can be a third-party logistics provider or a shipper. A shipper can need different facilities based on their core-activity, such as manufacturing, retail, or wholesale (Sakai et al., 2020).

Baglio et al. (2020) define several features that are relevant for logistic real estate to assess the quality of a building. It is not only a combination of physical characteristics, but also aspects such as technical specifications, utilities, and location. These features are internal areas, utilities, technical specifications, maintenance costs, management, external spaces, location connections, and surroundings. Location can be defined as the most important feature because it is the key to having a distribution network that is efficient. It can also increase the value of the

building if the location is an asset to the operations, for example when the building lies close to a highway.

2.5 DRIVERS OF SUSTAINABLE INVESTMENT

In the past years, environmental changes and climate change have peaked interest of stakeholders in the real estate market. Since 1924, corporate social responsibility has been introduced in the activities of organizations (Chiţimiea et al., 2021). Corporate social responsibility encourages companies to look beyond their responsibility for profit, including themes as nature and society. There can be several drivers of sustainable investment defined, such as sustainability strategies, personal values, and policy.

2.5.1 Sustainability strategies

Research indicates that stakeholders in the real estate market consider green certifications to enhance value both at portfolio and asset level (Christensen et al., 2022). Value-added strategies should include regular monitoring and benchmarks. One of the drivers is the reputation of an organization when having a solid sustainable strategy. This could improve their relationship with stakeholders such as competitors, customers, investors, or suppliers (Aboulamer, 2018). In contrary, when an organization does not have a solid sustainable strategy, it could be regarded as less attractive customers and punished by investors.

2.5.2 Personal values

Research shows that if people have a high environmental awareness, they will more likely engage in sustainable environmental conduct (Kaiser et al., 1999; Omarova & Jo, 2022). It has been proven that high environmental awareness is a first step in addressing environmental issues (B. Wang et al., 2022).

Investor beliefs have an impact on asset prices and portfolio allocations (Giglio et al., 2021). Luz et al. (2024) found that investors that have a pro-sustainable belief will invest more in assets that perform positively on sustainability than those that perform negatively on sustainability. Climate fears, resulting in a change of belief, also have a significant impact on portfolio decisions of investors. Anderson & Robinson (2021) found that investors rebalanced portfolios towards green investments after a climate fear. These fears outed not only on a business level, but also on a personal level: they started to recycle more than their neighbors.

Responsibility consciousness influences the relationship between developers' green redevelopment intentions and their green redevelopment behavior (Zhang et al., 2021). When developers recognize their shared responsibility for green redevelopment, their likelihood of converting intentions into actions increases.

2.5.3 Policy

The European Green Deal helps shaping the European Union into a resource-efficient, competitive, and modern economy. The Green Deal was presented in December of 2019 and provides a roadmap to make the EU economy sustainable. The goal is to become the first climate-neutral continent in 2050 and decrease greenhouse gas emissions with 55% by 2030, compared to 1990 (European Commission, 2019).

To reach these goals, it is crucial that investments are directed towards sustainable projects. To do this, a clear definition and common language of the concept 'sustainable' is needed

(European Commission, 2024). In 2018 the creation of a classification system for sustainable economic activities was called for by the *commission action plan on financing sustainable growth*, this is now known as EU Taxonomy. This allows companies to share a definition of sustainable economic activity, which helps the EU in scaling up sustainable investments. It protects from greenwashing, mitigates market fragmentation, creates security for investors, and helps companies becoming more climate-friendly (European Commission, 2024).

Investors are already using EU Taxonomy to focus their capital on projects and businesses that are more sustainable. This will have an impact on corporate investment patterns and strategies (Möslein & Sørensen, 2018); if a company focusses on EU Taxonomy, there will be more opportunities to attract green finance. This can drive the feasibility of sustainable real estate projects.

2.5.3.1 Corporate Sustainability Reporting Directive

The Corporate Sustainability Reporting Directive (CSRD) went into effect on January 5th, 2023. CSRD strengthens and modernizes rules regarding environmental and social information companies need to report (Directive (EU) 2022/2464). CSRD focuses on 4 key principles: double materiality, long-term goals, non-financial indicators, and limited assurance. The introduction of double materiality means that organizations need to report on the impact of climate-related opportunities and risks on the organizations' value and external impacts on the environment of the organizations' activities (Deloitte, 2022).

CSRD is mandatory for the fiscal year of 2025 for all large companies that meet two of the following criteria: revenue higher that €50 million per year, balance sheet total of more than €25 million, or more than 250 employees. Small and medium-size enterprises are obligated to comply to CSRD from fiscal year 2026.

Preliminary research shows that CSRD can motivate companies to show and improve their sustainability efforts (Mattila & Sasi, 2023). Deloitte (2022) named it as a 'booster' and 'game changer' for the real estate industry. Real-estate firm can use CSRD to attract capital focused on Environment, Social and Government (ESG) performance.

2.6 PERCEIVED VALUE

2.6.1 What is the definition of perceived value?

Perceived value is a concept that has emerged in literature at the end of the 20th century (Sánchez-Fernández & Iniesta-Bonillo, 2007). Value creation has gained more interest by marketing researchers in industry and academia in the 21st century. Value is one of the keyelements of marketing. Slater (1997) stated that the value perceived by the customer is a reason for the existence and success of organizations. In practice, organizations recognize perceived value as a key factor in their strategic management.

The definition of perceived value by Zeithaml (1988) is widely used in literature. Which is the general evaluation of the utility of a good or service by an individual, which depends on their perception of the 'received' and 'given' component. Some individuals want high quality and others want volume, this can be identified as the 'received' component. For the 'given' component, some individuals are concerned with time and effort spent, and others with money

spent. This means different individuals can have different perceived values for the same good or service.

2.6.2 What dimensions of perceived value exist?

Sweeney & Soutar (2001) developed a perceived value scale with 19-items (PERVAL) and four dimensions. These four dimensions of perceived value that can be identified: social, economic, emotional, and functional. Social value relates to the social acceptance received as a consequence of product choice, economic value is the cost-benefit and financial value involved, emotional value relate to affectivity and feelings produces by the product, and function value as the way the product achieves its physical or functional goals. They found the PERVAL-scale to be a good predictor of perceived value and to be able to determine which values drive purchase behavior and attitude. The four dimensions specifically helped significantly in explaining behavior and attitude.

2.6.3 Green perceived value

Green perceived value is defined by Chen & Chang (2012) as the customer's appraisal of the benefit of a service or good between what is given and what is received based on their sustainable expectations, green needs, and environmental desires. Organizations offer environmentally sustainable products to improve the green perceived value of their brand. Green perceived value is most important for green users, mainly linked to the social value of green goods or services.

2.6.4 Perceived value and willingness to pay

Sabyrbekov et al. (2020) show that even when willingness to pay (WTP) is low, the perceived value of green spaces might be high. They suggest that just assessing WTP to value green spaces might lead to undesirable outcomes and advise a combination of non-monetary and monetary valuation.

The perceived value of a good or service by a customer, has influence on their willingness to pay. A higher perceived value often translates into a higher WTP (Demirgüneş, 2015; Ligas & Chaudhuri, 2012). Kung et al. (2021) showed that of the four dimensions of perceived value, social value has the highest influence on WTP in the case of a premium price of pork. Other research shows the influence of green perceived value, through green purchase intention, on willingness to pay more (Toklu & Ozturk Kucuk, 2016).

2.7 WILLINGNESS TO PAY

2.7.1 What is the definition of willingness to pay?

WTP is frequently used in research. There are multiple definitions of WTP in literature. The OECD (2008) defines WTP as an individual's stated price that they are accepting to pay for avoiding diminution or loss of an environmental service. Biswas & Roy (2016) define WTP as an individual's maximum willingness to pay for a service or product. The WTP method has been used many times in literature to estimate the economic value of non-market ecological services and goods (Bamwesigye et al., 2020; Seip & Strand, 1992). In the past, studies using WTP to research non-market ecological services and goods have been performed for green real estate projects (S. Wang et al., 2024), green roofs (Teotónio et al., 2020), urban green (Kalfas et al., 2022), forests (Bamwesigye et al., 2020), and more.

2.7.2 Willingness to pay and green real estate

S. Wang et al. (2024) researched the WTP for green buildings. They found perceived usefulness and perceived usability to be of influence of the WTP for green buildings. In this study, perceived usefulness was defined as the degree the respondent believes green buildings can provide economic benefits and perceived usability as the extent to which a respondent can use green buildings. Other research found that consumers have a high WTP for green roofs they can access (Teotónio et al., 2020). In this research WTP was measured as an increase in monthly housing expenses, such as mortgage or rent. The research found that knowledge of accessibility of green roofs and the benefits of green roofs have a high impact on WTP. Oyewole et al. (2019) found that the WTP of developers in green building features is above average. They want to pay the most for features that are less capital intensive, such as using natural ventilation and locating air intake away from pollution sources. Galuppo & Tu (2010) surveyed multiple investors and developers on their perception of green buildings. More than half found that building energy-efficient building's occupants to pay additional costs for these green buildings. Lack of consumer awareness was also a concern for the respondents.

2.7.3 Willingness to pay and green space

Kalfas et al. (2022) show that knowledge of environmental issues and income are key factors for consumers' WTP for green spaces. Besides, the benefits of urban or suburban green space have a positive impact on WTP. These benefits are described as improving the quality of life, with values as aesthetic value and providing oxygen. However, Sabyrbekov et al. (2020) found that there is no relation between attachment to nature and a higher WTP for green spaces. Nordin et al. (2020) found that there are three main factors or urban green spaces that influence the WTP of consumers. Those are proximity, quantity, and quality of the urban green space.

2.7.4 Willingness to pay, sustainability, and investors

In the last years, there has been more research into the willingness to pay of shareholders and investors for sustainable, social, or environmental investments or causes. Wiencke (2013) shows in his research on WTP for green buildings on the commercial real estate market by firms, that the premium they want to pay is between 1,3% and 7,9%. The research also states that the number of employees in a firm, has a stronger influence on WTP than the size of the real estate portfolio of a firm. Especially in industries that are employee-intensive, such as financial service, green buildings are relevant in attracting highly skilled employees. Other research shows that firms active in the real estate industry have a higher WTP and substantial interest for green buildings (Eichholtz et al., 2010).

2.8 LITERATURE REVIEW TABLE

To organize the theories and research discussed in the theoretical framework, a literature table was constructed with important articles to three specific constructs: perceived value, willingness to pay, and drivers of sustainable investment.

Author (Year)	Title	Methodology	Key findings
Perceived value			
Sweeney &	Consumer	Developing a four-	The PERVAL scale and four dimension
Soutar (2001)	perceived	dimensional scale of	have reliable and consistent
	value: The	perceived consumer value;	psychometric characteristics. All four
	development	PERVAL.	value dimensions were identified as
	of a multiple		significant contributors to the
	item scale		explanation of attitudes and behavior.
Chen &	Enhance	The study employs four key	Green perceived value is expected to
Chang (2012)	green	concepts—green	have a positive impact on green trust
	purchase	perceived value, green	and green purchase intentions, whereas
	intentions:	perceived risk, green trust,	green perceived risk is anticipated to
	The roles of	and green purchase	negatively affect both. Allocating
	green	intentions—to formulate a	resources to enhance green perceived
	perceived	comprehensive model	value and mitigate green perceived risk
	value, green	aimed at enhancing green	can effectively strengthen green trust
	perceived	purchase intentions.	and green purchase intentions.
	risk, and		
	green trust		
Willingness to p	bay		
Sabyrbekov	Nature	Adress value of public	Evaluating the value of urban green
et al. (2020)	affinity and	urban green space in a	spaces involves using both non-
	willingness to	non-monetary and	monetary and monetary methods within
	pay for urban	monetary approach.	different institutional frameworks.
	green spaces		
	doveloping		
Kalfas et al	Willingness	Identify willingness to pay	The willingness to pay is influenced by
(2022)	to Pay for	using contingent valuation	the henefits of green spaces awareness
(2022)	Urban and	method for suburban and	of environmental issues and income
	Suburban	urban green spaces by	levels
	Green	Greek residents.	
Wiencke	Willingness	Corporate real estate	Benefits of green buildings appreciated
(2013)	to Pay for	survey among 145	by most of respondents. Building and
	Green	participants.	financial service firms, along with public
	Buildings:		corporations and authorities, show the
	Empirical		highest willingness to pay. Premium of
	Evidence		1,3% to 7,9%.
	from		
	Switzerland		
Drivers of susta	ainable investme	nt	
Aboulamer	Adopting a	Explaining potential	Positive externalities within a circular
(2018)	circular	market equity growth	economy framework can result in
	business	through the finance-	financial benefits for shareholders.
	model	marketing model of	
	improves	consumer life value when	
	market equity	adopting a circular	
	value	economy.	

Luz et al. (2024)	Beyond preferences: Beliefs in sustainable investing	Utilizing an incentive- compatible coordination game to elicit investors' pro-sustainable beliefs.	Investors with pro-sustainable beliefs invest in sustainable assets and invest more in assets with positive sustainability performance.
Mattila & Sasi (2023)	Towards a Sustainable Future: An Examination of Corporate Responses to the CSRD in the Real- Estate Sector	Semi-structured interviews with experts and case companies.	Companies are positive in regard to CSRD and take an imitative response to save costs and resources. Case companies considered sustainability essential for survival, particularly in terms of cost-efficiency and building legitimacy.

Table 2: Literature table

2.9 CONCEPTUAL FRAMEWORK

To illustrate the relationship between various variables discussed in the theoretical framework, we constructed a conceptual framework. This conceptual framework shows the link between perceived value (and it dimensions) and willingness to pay. With an influence of perceived value on willingness to pay, as shown in multiple research papers (Demirgüneş, 2015; Kung et al., 2021; Ligas & Chaudhuri, 2012; Toklu & Ozturk Kucuk, 2016). Drivers for sustainable investment, meaning sustainable strategy, personal motivation, and policy, and perspectives of investors, developers, and end-users are moderators on this relationship between perceived value and willingness to pay.



Figure 4: Conceptual framework

2.10 CONCLUSION

We conclude chapter 2 with answering the first three sub questions of this research:

- 1. What is the definition of green business parks, willingness to pay, and perceived value? (Theoretical framework)
- 2. What are the perspectives of investors, developers, and end-users? (Theoretical framework)
- 3. What are drivers of sustainable investment? (Theoretical framework)

We define green business parks as a logistical business park that is developed according to the seven principles developed in this research. These principles are climate resilience, water, energy, landscape values, biodiversity and ecology, people and health, and products and materials. Green business parks are able to provide the necessary organizational and management structure to implement and maintain the principles.

Willingness to pay can be defined as the maximum amount of money an individual is willing to pay for a service or good. Perceived value is the general evaluation of the utility of a good or service by an individual. Perceived value can be subdivided into four subcategories, being functional, emotional, social, and economic perceived value. Perceived value has an influence of the maximum amount of money an individual is willing to pay for the service or good. Meaning both willingness to pay and perceived value are related. Research into residential real estate shows that customers are willing to pay more for green aspects of real estate and nearby green or natural facilities. It is to be expected that this effect can also be seen on green business parks.

In this chapter, we have dived deeper into the perspectives of investors, developers, and endusers that might be active on a green business park. Investors have a more long-term point of view when it comes to their investments. They want to receive a certain return on investment. The shown impact of climate change in recent years, made it a more important subject in real estate investments. Developers are in the business of creating a new real estate product. They have a shorter-term vision than investors, mainly focusing on the development of the property. However, developers and investors need each other. The investor needs an investment that the developer builds. This means that the sustainability requirements of investors trickle down in the development of new properties. End-users, primarily logistics companies in a green business park, focus on their operations, including technical specifications and employee facilities.

We identified several drivers of sustainable investment. A sustainability strategy can help implementing internal policy to reach certain sustainable goals. The personal beliefs of professionals can also have a significant impact on sustainable investment. We found that personal values regarding the environment, can drive sustainable action in business decisions. Lastly, policy can have an impact on sustainable investment. EU Taxonomy and the recently implemented CSRD are designed to increase awareness and responsibility among companies. Using CSRD can help real estate companies in attaining ESG funds.

In the next chapter, we will define the methodology used in this research to answer the last three sub questions of this research and ultimately answer the main question.

3 METHODOLOGY

A methodology to address the last three sub-questions is detailed in chapter 3. Chapter 4 provides an analysis of the data, generating results that answer the sub-questions.

- Which methods can be used to determine willingness to pay? (Research Methodology)
- 5. How is the value of green business parks perceived? (Research interviews)
- 6. How is the willingness to pay for aspects of green business parks determined based on perceived value? (Research interviews)

3.1 CHOSEN METHODS RESEARCH

In this research, the methodology of a semi-structured interview is chosen. In these types of interviews, there is a list of main- and sub questions to be asked, referred to as interview schedule or interview list (Clark et al., 2021). Questions are framed on an open way to stimulate the respondent to give a detailed response. Semi-structured interviews give more freedom to the interviewer and ask questions in reply to the response of the respondent. It remains important that the interviewer asks all the questions in the interview list to be able to compare answers of respondents.

3.1.1 Image elicitation

Since there is no clear definition of a green business park in literature and constructed green business parks vary in the principles used, there is a need to define a green business park in the interviews. To do this, several methods were reviewed. One of the methods is using vignettes. Vignettes can lead to a more focused discussion because a specific situation is outlined and allow respondents to express opinions and comments. (Clark et al., 2021; Hazel, 1995). Richman & Mercer (2002) state that using vignettes in interviews can allow respondents to explain their views or experiences in their own words and disclose practical reasoning. Vignettes are mainly used for sensitive topics and to compare perceptions of different groups. Since we want to get insight into business decisions, this type of method is not preferred.

Image elicitation is a method linked to vignettes and uses photos in the interview to generate discussion. Harper (2002) states that using images in an interview can serve several purposes: it may prompt the respondents to remember situations or people, it engages respondents with familiar objects and settings, and it can help grounding the interviewers' questions. This research will use a realistic business case of a green business park at an undisclosed location in the interviews together with images generated using Artificial Intelligence. If the respondent is familiar with the location, decisions could be made in regard to other, intervening, variables than that of the green business park. The images are based of the seven principles of a green business park, developed in the theoretical framework.

3.2 OPERATIONALIZING THE RESEARCH

3.2.1 Drivers of sustainable investment

As mentioned in the theoretical framework, there are several drivers for sustainable investment. One of those is the sustainability strategy of the company itself. In the interview, respondents are asked to elaborate on the sustainability strategy of their company and what the influence of EU Taxonomy or CSRD is. We will also ask the respondent if there is a set amount of money allocated for sustainable aspects of developments. To get more insight in the reasoning behind decisions made in the business case and in the day-to-day business of the respondent. The respondent is asked to what extent their personal beliefs influence the decisions made (Heeb et al., 2023; Hornuf et al., 2022). We showed in the theoretical framework that there is a connection between investors, developers, and end-users. To get more insight into this connection and, for end-users, the connection with the employee, we will ask the question to what extent the end-user (for investors and developers) or employee (end-user) influence the decisions made.

3.2.2 Respondents' definition of a green business park

Since there is no clear definition of a green business park, the respondent is asked what he or she defines as a green business park. Asking the respondent for a definition is based on the start of a Socratic-Hermeneutic interview, helps understand the respondent's perspective on the research focus (Roulston, 2010). This also gives insight to what extend the respondent is familiar with green business parks in their day-to-day business.

3.2.3 Perceived value and WTP

To get more insight into perceived value and WTP, we use two direct methods: best-worst scaling and constant sum scaling (Breidert et al., 2006; Louviere & Islam, 2008). The decision for direct methods instead of indirect methods (such as a discrete choice experiment) was made because the principles of a green business park are not differentiable in several clear attributes. This type of research works best with products that can be easily differentiated, such as pizza or juice (Louviere & Islam, 2008). Trying to use a discrete choice experiment would lose context of the principles when they are merged into one attribute or a few attributes.

With the best-worst scaling, the respondent is asked to provide the two best and two least important principles for the respondent and their company. The constant sum scaling gives insight in the significance of every principle for the respondent. Respondents are asked to divide a maximum number of points (usually 100) to certain defined aspects. In this research, the respondent is asked to invest a maximum amount of €100,000 to the principles. It should be pointed out that by using both types of methods could have a carry-over effect, this should lead to more, not less, agreement in the responses (Louviere & Islam, 2008).

3.2.4 Dimensions of perceived value

To measure the dimensions of perceived value, this research uses questions from PERVAL (Perceived Value Scale) which is developed by Sweeney & Soutar (2001) and discussed in the theoretical framework. PERVAL is widely used in literature to measure the dimensions of perceived value. The scale was developed to access the perceived value of a consumer durable good. Since not all questions are applicable to green business parks, a selection was made out of the questions from PERVAL and supplemented with questions from Zhao & Chen (2021) and

Petrick (2002). The questions will be implemented as statements, to which the respondent needs to respond if they agree or disagree.

3.2.5 Experience with green business parks

The interview concludes with asking the respondent to their experience with green business parks in their day-to-day work. This question is asked at the end to make sure the respondent is not prompted to think of green business parks they encountered in real life which can impact the neutral business case. Asking the question can also give some insight into successful and unsuccessful strategies that are currently used in developing green business parks.

3.2.6 Overview of defined questions

To structure the interview, some questions regarding the drivers of sustainable investment are asked in the first part of the interview that gives general information. This is because the questions regarding sustainability strategy and CSRD, fit more into this part of the interview.

Theme	Questions
General / drivers of sustainable investment	 What is your role within your company? Where are you in the decision-making process of your company? What is the sustainability strategy of your company? To what extent do governmental policies (such as CSRD or EU Taxonomy) impact the sustainability strategy? Is there a percentage of the total amount in projects that your company is involved in that is allocated to 'green' subjects?
Respondents' definition	 How would you define green business parks?
Measuring WTP	 You have the ability to spend a €100,000 on the principles. How do you divide the amount? What would you define as the two most important and two least important principles?
Measuring perceived value	What would you define as the two most important and two least important principles?
Drivers of sustainable investment	 What are your personal experiences and beliefs that impact your decision? To what extent does the client or end-user of the building impact your decision? (investor/developer) To what extent do your employees impact your decision? (end-user)
Social perceived value	 Investing in the green business park would improve the way my company is perceived
Economic perceived value	 Investing in the green business park would be economical Investing in the green business park is worth the money
Emotional perceived value	 Investing in the green business park would make me feel good I would enjoy investing in the green business park
Functional perceived value	 Green business parks are beneficial to improve health conditions of people working there Green business parks improve the quality of living of the people working there Green business parks improve working comfort for people working there
Experiencing green business parks	 Do you encounter green business parks in your day-to-day work? Do you have a positive or negative experience with green business parks?

Table 3: Overview of defined questions

3.3 DESIGNING THE BUSINESS CASE

The business case is based on the theoretical framework, in which is stated what important location factors are for logistical companies and end-users. This includes access to labor, closeness to ports, and proximity of likeminded businesses (Gingerich & Maoh, 2019; Louw et al., 2009; Sakai et al., 2020). The description of the green business park is based on the principles of a green business park as elaborated on in the theoretical framework. The price per sqm. is based on research by Konings (2021) on the price of land per sqm. for logistical real estate in the Amsterdam Metropolitan Area. This research concludes that the proximity to Schiphol Airport has a high impact on the price per sqm. The average price of the six business parks closest to Schiphol Airport is €312.50 per sqm. To keep the scenario simple, a price of €300 per sqm. was chosen.

The images used in the image elicitation were created with an AI-tool called Midjourney.ai. The prompts used to create these images were:

- Photorealistic image of multiple logistic distribution centers that are climate resilient. It has an attractive landscape with trees, grass, plants. People are walking outside. There is attention for ecology and biodiversity.
- Create a photorealistic image of a logistic distribution center with walls made of plants and grass. There are a lot of trees and space for ecology. It is an attractive landscape. There is a small waterbody for employees to look at. The roof of the building has solar panels. People are walking outside.
- A green business park.

Multiple images were generated using these prompts. The images that best fit the description of a green business park and looked most realistic were chosen to use in the business case.

The business case will be recited in the interview, while showing both the text and images, to the respondent. On the next page, the business case can be found.

3.3.1 Business case

You have the opportunity to acquire a plot of land on a green business park located at an Alocation, near important ports. On the green business park, there are several internationally active logistic companies located. It is a green field location, which means the plot is ready for construction. Currently, around 50% of the plots are sold and are built on. You can acquire the plot for €300 per sqm. Imagine that you are in the process of acquiring the plot of land. It fits all needs of your company or the client your company serves, such as location or plot size.

Below you find some images of buildings constructed on the green business park, following seven principles important for the development of the green business park constructed by the seller. The green business park is designed according to these principles. The principles need to be incorporated into the design of the building. You have the ability to decide to what extent.

The seven principles are climate resilience (i.e. battling heat stress and flooding), water (i.e. water quality and retention), energy (i.e. generating renewable energy), landscape values (i.e. attractiveness and number of trees and plants), biodiversity and ecology (i.e. nature inclusivity and strengthening biodiversity), people and health (i.e. outdoor nature access, perception of green, and healthy environment), and products and materials (i.e. sustainability and circularity).



3.4 STRUCTURE AND QUESTIONS OF THE INTERVIEW

All interviews follow the same structure, following the scheme below. The interview questions can be found in Appendix 1.



Figure 5: Overview interview structure

3.5 RESPONDENTS

In total twelve respondents were interviewed for the research. This includes four investors, four developers, and four end-users. Some developing investors were interviewed during the research and classified as 'investor' because of the long-term viewpoint of the respondent. In the table below is an overview of the respondent, the company they work for, and the type of company. Respondents were chosen randomly, but active on at least a national scale in The Netherlands. Both large and small companies were chosen.

Respondents were invited in December 2024 and January 2025 and interviews were held in the period from January 3rd until February 7th, 2025. Respondents were approached via e-mail and interviews were held mainly via Microsoft Teams. Two interviews were held face-to-face. The invitation e-mail can be found in Appendix 2. When inviting the respondents for the interviews, they were informed that the interview was partly based on a 'case-study'. This method was used in research by Cheah & Koay (2022) so respondents could relate to the term to their prior knowledge.

Name	Company	Type of company
Marcel Fleminks	Savills IM	Investor
Niek van Genugten	Frasers Property Industrial	Developing investor
Friso Rienks	Montea	Developing investor
Jakko van Wijk		Developing investor
Richard Elich	DHG	Developer
Michele Janner	Necron	Developer
Rinus Verhey	Heembouw	Developer
Harm van der Weiden	CTP	Developer
Jan-Willem van Loon	Studio Anneloes	End-user
Mark van Onna	Bleckmann	End-user
Martijn van Schaik	DHL	End-user
Jasper van der Vlies	Kuehne + Nagel	End-user

Table 4: Overview respondents

3.6 DATA ANALYSIS

After completing the interviews, the interviews were transcribed and analyzed. Every respondent was asked for permission to record the interview, either in Microsoft Teams or with a recorder. The interviews were transcribed and sent for approval to the respondents. After approval, the transcriptions were used in the data analysis. The data analysis was performed using Atlas Ti, Stata, and Microsoft Excel.

3.7 CONCLUSION

We conclude chapter three by answering the fourth sub question:

4. Which methods can be used to determine willingness to pay? (Research – Methodology)

Willingness to pay can be measured by using a direct or an indirect method. Direct methods ask respondents more directly what an acceptable price is for them or for what aspect they would pay the most or least. Indirect methods ask this question in a more indirect way. This means the respondent is less likely to know the intentions of the questions asked, which could result in different results. For example, results can be less influenced by socially acceptable answering behavior. Indirect methods can be used best for products or services which attributes can be clearly differentiated, such as pizza. Since green business parks do not have attributes that are clearly differentiated, which is why the direct method was chosen in this research. Specifically the best-worst scaling and constant sum scaling.

In the following chapter, the analysis and findings of the interviews are discussed.

4 EMPIRICAL RESULTS AND ANALYSIS

In the following chapter, we analyze the outcomes of the interviews. We do this by following the structure of the interviews, as presented in chapter 3.4. At the end of this chapter, we will answer the final two sub questions of this research.

4.1 ROLE AND STRATEGY OF ORGANIZATION

Every respondent interviewed was at the top of the decision-making process in their organization. Either responsible for decisions or just below executive level. In the figure below, an overview of the roles of respondents can be found. Responsibilities vary from construction projects, development, portfolio management, asset management, facility management, and acquisitions. All respondents are actively involved in developments of logistical real estate on business parks in The Netherlands. Half of the respondents are also active outside of The Netherlands, in countries such as Germany, Switzerland, Poland, Spain, and Italy.



Figure 6: Overview of role respondents (ATLAS.ti, own adaptation)

All organizations have some form of sustainability strategy, such as being carbon neutral in 2030, demands for certificates, or finding solutions for renewable energy. With one organization having the goal to be 100% nature inclusive.

We want to be 100% nature-inclusive; that is the goal. We have assigned a value to this, and it is independent of money. In one project, you have to invest much more than in another project.

In terms of certificates, BREEAM is a widely used certificate for developments in The Netherlands. In ten of the interviews BREEAM was mentioned in relation to the sustainability strategy. It was not mentioned in two end-user interviews. Most respondents aim for a BREEAM Excellent or four-star rating. For some this is the standard, and for others BREEAM Very Good or three-star rating is the minimum while striving for BREEAM Excellent. In multiple interviews, respondents mentioned that there is no budget to implement sustainability in developments and/or to qualify for the desired BREEAM certificate. It is considered as an integral part of the construction costs of a development, comparing it to the roof or the foundation. Policy can be an inhibiting factor for sustainability strategies. While this is not the case in The Netherlands, in other countries legislation is not advanced enough to reach certain goals, such as zero emissions in 2030.

For us, a BREEAM certification is as natural as a roof on a building. It's just part of the overall picture. For some buildings, BREEAM certification may be more expensive than for others. But that is simply part of the cost of capital.

EU Taxonomy or CSRD is not named often as one of the main drivers of these sustainability strategies. A few respondents were not aware of CSRD. It is a topic for some of the organizations, since most of them have a requirement to report, but it is not a topic for the respondents and their position within their organization. One of the respondents mentioned that they notice that CSRD is a driver for investors to make different choices, because financing is becoming more difficult.

One of the main aspects of CSRD is the need to measure and provide data of certain ESG aspects. This is something that some organizations are actively doing. Whether it being an obligation for tenants provide certain data to the landlord, or an end-user actively measuring their own energy usage with a smart meter and in return sharing this with the landlord.

4.2 VISION OF A GREEN BUSINESS PARK

The vision of respondents of a green business park can be divided into four categories. Namely functional, measurable, organizational, and visual. The functional visions entail the working of the business park, such as accessibility, circularity, smart energy, and carbon neutrality. Besides that, there is a functional vision that is more employee focused, such as (social) facilities on-site and walking possibilities. These functional visions were shared mostly in interviews with developers and end-users.

There should be a lot of attention for the employees. (...) People should be able to relax during breaks. If you can create a business park in a park-like setting, I think you gain quite a lot. And then you adapt the buildings accordingly.

The measurable visions entail the way impact of the green business park is measured, such as with the use of e-DNA. This was only mentioned in one interview with a developer that were themselves using e-DNA in their own developments. The organizational visions describe the way a green business park is organized, with policies from the land seller, a visual quality plan, and a quality team. These stem partly from the positive and negative experiences respondents have with (green) business parks. Lastly, the visual visions describe the way the green business park is perceived. Such as green spaces, park-like settings, lots of greenery, and being an attractive place.

Most respondents mentioned a functional vision, being mentioned in nine interviews, a visual vision was mentioned in six interviews, an organizational vision in three interviews, and lastly a measurable vision in one interview.

4.3 BUSINESS CASE

4.3.1 Allocating €100,000 to the seven principles

The figure below shows the distribution of the €100,000 among the seven principles of a green business park. To get a good insight into the differences between the principles, the graph shows the mean of every principle. This shows that *energy* and *products and materials* got allocated the most money in the interviews. *Landscape values* and *climate resilience* got allocated the least money in the interviews.

Developer: One of the biggest challenges at the moment is energy, so I think of that first. If you can solve that on your plot, you are less dependent on the grid operator. (...) Landscape values (...) are important, but they must be done well and not as a 'box-ticking' exercise.

Respondents occasionally experienced challenges in assigning an amount to each principle, as they considered all principles to be equally important for development. In some cases, the €100,000 was allocated as an extra amount to spend on the development. Location was mentioned as another topic that made it difficult to allocate an amount. For example, when the green business park lies below sea level, climate resilience and water become more important. Some respondents noted that climate resilience will become increasingly important, though it is not yet widely recognized.

End-user: Energy and people and health because that directly affects my operation. The other principles can be covered in my choice of location.



Figure 7: Mean division of WTP (Own adaptation in Stata, numbers in thousands)

Since the raw data shows a wide range of allocated money, a boxplot graph was developed to show the spread of the responses. This boxplot graph can be found in the figure below. It shows that *water*, *landscape values*, and *biodiversity and ecology* have the highest outliers compared to the total. It is a representation of the responses given during the interviews. As mentioned

above some respondents noted that they found it difficult to make a decision and that all principles were found to be important to them. Other respondents noted that they expected some principles to be executed by the business park itself and not needed to be incorporated into their development. Some respondents treated the €100,000 as an extra additional spending, because all seven principles are incorporated in their own strategy. This means that some respondents focused on one specific subject.

Investor: I would describe it as an additional €100,000 to invest. (...) Biodiversity and ecology are challenging in logistics because how do you apply it? (...) What is the problem on-site, for example, a badger or bird species? You make a plan for that. (...) I would probably invest the additional €100,000 in biodiversity and ecology, but with an extensive plan.



Figure 8: Boxplot of WTP (Own adaptation in Stata, numbers in thousands)



Figure 9: Mean division of WTP divided in groups (Own adaptation in Stata, numbers in thousands)

Dividing the results in the three groups, investors, developers, and end-users, show a clear difference in importance. While investors are focused mainly on *biodiversity and ecology*, developers are mainly focused on *water*, and end-users focus mainly on *landscape values*. Developers don't have *biodiversity and ecology* and *landscape values* on their list when it comes to willingness to pay. It shows that outliers in the abovementioned boxplot are visible when comparing the groups. Developers did not allocate any money to *landscape values* and *biodiversity and ecology*.



Figure 10: Boxplot of WTP divided in groups (Own adaptation in Stata, numbers in thousands)

The boxplot divided into groups also shows a substantial difference in the allocation of money by respondents. While some principles only get money allocated by one respondent, other principles get a complete range of allocation by respondents.

4.3.2 Most and least important principles

In the second half of the business case, the respondents were asked to rank their two most important and least important principles. Every time a principle was ranked as most important, it got a score 1 and every time a principle was ranked as least important it got a score -1. This results in the scores of the graph below. *Water* and *biodiversity and ecology* were never mentioned as a most important principle and *energy* was never mentioned as a least important principle.



Figure 11: Most and least valued principles (Own adaptation in Stata)

End-user: Energy and people and health are the most important to me. We must move away from fossil fuels and switch to renewable energy sources. And we must always consider people and health, no matter what we build. We are getting fewer and fewer green spaces as humans. (...) Climate resilience and biodiversity and ecology are least important. They are difficult to achieve; you either create a business park or not.

The most important principles are *energy*, *people and health*, and *products and materials*. The least important principles are *landscape values*, *climate resilience*, *water*, and *biodiversity and ecology*. This partly matches the outcome of the allocation of €100,000, where *energy* and *products and materials* were the principles that got the most money allocated. Another thing that is noteworthy is the high ranking of *people and health*. While the principle did not get a high amount of money allocated, it is deemed to be the second most important principle for respondents.

Investor: Assuming it is not in a flood risk area, I'd say products and materials and energy are most important. The least important are landscape values and biodiversity. Looking at the building costs and the relative additional costs to make it tangible, I find it manageable. (...) Biodiversity and landscape values are relatively low-hanging fruit.

The first three principles labeled as most important, are principles that have a main impact on the plot or building itself. With *energy* and *products and materials* often being part of the construction costs and *people and health* showing a direct link with the operation inside the business and the employees. The four principes deemed least important have more impact on the surroundings and are mostly viewed in a wider perspective. The impact of these four principles is far greater when they are implemented on a wider scale, for example the scale of an entire green business park. Because the roles of the respondents are focused on the building itself, whether to invest, develop, or occupy, could have an influence on the way they deem these principles to be important.

Developer: The least important are climate resilience and water. Because I don't know what we can do about these in the development of a building.



Figure 12: Most and least valued principles divided in groups (Own adaptation in Stata)

The figure above shows clearly from what group which most important and least important principles came. Investors and developers are highly focused on *energy*, end-users are to a lesser extent. *People and health* and *products and materials* is not once mentioned by developers. End-users value *people and health* the most and both end-users and investors value *products and materials*.

4.3.3 Comparison between methods

Comparing the allocation of €100,000 and the most and least important principles show interesting differences. Among all respondents, there is agreement on the principle that gets allocated the most money and is considered the most important principle, which is *energy*. On

second place is the allocation of money is *products and materials*, which is ranked third as most important principle. *Climate resilience* gets allocated the least amount of money, matching with its last place in the ranking of principles. Noteworthy are *water* and *biodiversity and ecology*, which both are in third place of the allocation of money, but both are ranked last in importance.

Investors allocate the most money to *biodiversity and ecology*, but when asked about the most important principles, they mention *energy* and *products and materials*. Interestingly, *biodiversity and ecology* is mainly mentioned by investors as a least important principle. The least amount of money gets allocated to *climate resilience* and *water*, which matches their mentioning of the least important principles.

Developers allocate the most money to *water* but find energy to be the most important principle. *Water* even gets mentioned more as a least important principle. Developers did not allocate any money to *landscape values* and *people and health*. *Landscape values* is mentioned as a least important principle, while *people and health* and *products and materials* are not mentioned at all.

End-users allocated the most to *landscape values*, which gets mentioned as a least important principle as well. *Climate resilience, water*, and *biodiversity and ecology* get allocated the least amount of money, which matches their ranking as least important principles. They find *people and health* the most important principle, which was ranked third in their allocation of money.

4.4 BACKGROUND DECISIONS

Nine of the respondents mentioned a personal intrinsic motivation to the decisions they make in their work. With one respondent mentioning '*If you do not have a pioneer who dares to think outside to box, you do not get it moving*'. The three other respondents did not find their personal motivations to be of influence on business decisions. These were two developers and one end-user. These respondents state that they follow the policy and strategy of their company and that their personal convictions are separate from their work.

I am intrinsically motivated to contribute to a better planet. This is also embedded in our organization. If you are not interested in these topics, you won't last long with us. We want to add value and not just look at the euros. That is also because we are a family business. Money is not our main goal. Of course, money must be earned, but we find it important to spend the money in places where we can add value.

When possible, investors and developers took the end-user into account in the case of built-tosuit. Functionality is one of the most important aspects for the end-user. Most developers have a higher standard for sustainability than requested by the end user.

We only make different choices if the customer wants more than what is in our specifications. If the customer wants less, we do not deviate. If the customer wants more, we are willing to invest in it, which can then be reflected in the rent.

Employees are especially important for de development from the point of view of an end-user. People are important and to be able to win the war on talent, end-users need to have locations that are attractive to employees. The way the respondents create this attractive environment for employees are different. Two of the interviewed end-users focus mainly on functionality of the location and it being at an accessible location. The other two interviewed end-users focus on creating an attractive environment as well. With one of the respondents mentioning the importance of facilities, such as walkways and places to lunch, on the business park. When those are not available the company creates these facilities themselves.

4.5 DIMENSIONS OF PERCEIVED VALUE

During the interview, several questions were asked to measure social, economic, emotional, and functional perceived value.

All respondents agreed with the statement that a business park would improve the way their company is perceived. Which is the measurement for social perceived value. One respondent mentioned:

It's better to be in a green, park-like environment than just having a green building on a bare business park.

The economic perceived value was measured with two questions whether investing in the green business park would be economic and worth the money. All respondents agreed with the first question and one respondent (end-user) disagreed with the second question. These two questions sparked remarks by the respondents. In these remarks, respondents noted that the investment would be worth the money on the long run, but maybe not on the short run. In nine of the interviews, this point was made by the respondents. All developers made this remark and three out of four end-users.

What is underappreciated is the experience, and people want to work pleasantly. (...). It is difficult to capitalize on it, difficult to express in money.

Emotional perceived value was measure with asking if it would make the respondent feel good and enjoy investing in a green business park. These were also questions that got mixed responses. With the main argument being that it is a business decision, not a personal or emotional decision. These responses were in line with the responses to the questions whether personal motivation has an influence on business decisions, which was mixed.

The last three questions entailed the functional perceived value of a green business park. Asking about improving health conditions of people working on a green business park, improved quality of living and improved working comfort. All respondents agreed with the first two questions. Two developers disagreed with the last question. With the main argument being that you don't know what happens inside the building.

You can't force people to go outside, and for the most part, they stay inside.

Decisions to invest in a green business park are business decisions and not an emotional or personal decision according to respondents in their response to personal intrinsic motivation and emotional perceived value. This would mean objective dimensions would have a greater impact on willingness to pay, since they can be a measurable argument in favor of an investment. This matches the results found: both social and economic perceived value got the most positive response from all respondents. These two dimensions are the most objective of the four dimensions in total and best measurable. Emotional perceived value is a very subjective

dimension. Functional perceived value can be very objective, but in the case of this research into green business parks, was more subjective in questions asked to respondents.

4.6 EXPERIENCE WITH GREEN BUSINESS PARKS

Eleven respondents encountered green business parks in their daily work, in all different forms. These encounters were mainly positive, stating it will create a more beautiful and pleasant business park and that it helps to distinguish your business park from others.

It would help if municipalities had experts who can think along. (...) That really facilitates the conversation.

The critical notes of green business park mainly entailed the organizational side, with sellers not having enough expertise to be a good counterpart and demands coming across as greenwashing. An interesting critical note mentioned by an end-user is that green buildings and surroundings are not always favorable for the end-user. As some operations, for example food, are negatively affected by green and the accompanying wildlife, such as insects.

I often see pictures with green facades and the surroundings as green as possible. If I have an operation where I only store food products, where you have to comply with HACCP requirements, then I do not want all that greenery. Every bug that comes in can lead to damage. That is always the compromise you have to find; you have to look carefully at the end user and what they need the real estate for. In my opinion, that is often forgotten in the desire to green business parks. Sometimes you also have to conclude that greening is not desirable.

4.7 CONCLUSION

We conclude this chapter by answering the final two sub questions of this research, being:

- 5. How is the value of green business parks perceived? (Research interviews)
- 6. How is the willingness to pay for principles of green business parks determined based on perceived value? (Research interviews)

First, we answer the question how the value of green business parks is perceived. There is an overall consensus about the social and functional perceived value of green business parks. The economic perceived value of green business parks got responses agreeing with the statements, but with clear considerations about the long-term benefits and short-term financial challenges. The emotional perceived value also received mixed response from the respondents, matching the response on the influence of personal values on business decisions. Respondents find that having these personal values can certainly drive business decisions, the actual financial decision is made purely from the stance of a professional.

To determine the willingness to pay for principles of green business parks based on perceived value. Overall *energy and products and materials* get allocated the most amount of money by all respondents. This is in line with the finding of the most important principle, with the addition of *people and health*. When looking at the three categories; investors, developers, and end-users, there is a clear distinction between categories and between allocated money and the principles found most important.

Investors allocate the most money to biodiversity and ecology, while finding *energy* and *products and materials* most important. This shows a clear misalignment, while *biodiversity and ecology* even got more 'least important' votes. Developers allocate the most money to *water* but find *energy* the most important principle and giving water some 'least important' votes. And finally, end-users allocate the most money to *landscape values* but find *people and health* the most important and giving *landscape values* some 'least important' votes. Interestingly, when combining all twelve respondents, the scores for allocating \in 100,000 and most important principles align.

All of the interviewed companies have some sort of sustainability strategy in place, whether focused on carbon neutrality in 2030 or attaining certain certifications such as BREEAM. The influence of EU Taxonomy or CSRD as policies is not yet noticed 'in the field'. The vision of respondents on green business parks ranges from purely functional to visual. The way green business parks are organized, and interventions are measured have impact on the success.

The varying experience of the respondents with green business parks show the positive impact on functionality and aesthetics, as well as practical challenges such as operational issues posed by wildlife and negative effects of greenwashing.

5 CONCLUSION & DISCUSSION

5.1 CONCLUSION

In this research, we aimed to answer the main question: *How can strategies for green business park development be determined based on the willingness to pay and the perceived value of green business parks by investors, developers, and end-users?*

To answer this question, we performed a qualitative, exploratory research into green business parks and their perceived value and willingness to pay. We created a definition of green business park consisting out of seven principles elemental to this type of business park. These principles were tested and refined after a discussion with two experts. An interview framework was developed together with a hypothetical business case. The research was conducted in twelve interviews, divided into four investors, four developers, and four end-users. All ranging from different types of companies, but mostly responsible for decision-making within their company. The results were thoroughly analyzed and conclusions were drawn. In short, the conclusion can be summarized as follows. In the next paragraph, we will discuss the strategies for green business park development that can be derived from this conclusion.

- All actors have a sustainability strategy in place and are, in certain levels, applying these strategies to their real estate (developments).
- All actors are willing to invest in the seven principles of a green business park. For some these seven principles are part of their sustainability strategy, for others some principles are an addition to their current strategy.
- Across actors the willingness to pay and perceived value for energy is the highest. Followed by products and materials and people and health.
- Across actors the willingness to pay and perceived value for climate resilience is the lowest.
- Between actors, there are differences. Investors are willing to pay more for biodiversity and ecology, developers for water, and end-users for landscape values. While investors find energy and products and materials the most important, developers energy, and end-users people and health.
- All actors attribute a high functional and social perceived value to green business parks.
- All actors attribute a high economic perceived value on the long term to green business parks. On the short term, the economic perceived value is subject to debate.

5.2 STRATEGIES FOR GREEN BUSINESS PARK DEVELOPMENT

There are certain recommendations we can make based on the conclusion above for strategies for green business park development. There is high perceived value and willingness to pay for energy and products and materials, and a high perceived value for people and health. This means these are three main principles that need to be addressed in the development of a green business parts, which can open up the conversation for other aspects of green business parks. The research shows that all actors see the importance for all seven principles to a greater or lesser extent. For some respondents, the principles are integrated into their sustainability strategy or align with certain certification requirements. In the development of a new or existing business park, all seven of the principles need to be integrated in the (re-)design of the park. It shows that all actors—investors, developers, and end-users—value the principles to varying degrees. In (re-)development projects, emphasis should be placed on energy, and products and materials, as these principles possess the highest willingness to pay and perceived value. People and health receives a high perceived value. These principles can be operationalized by obligating buildings to be energy neutral or positive, or by providing a collective energy hub. Products and materials can also be something that buildings need to comply to, for example construction in wood. The area developer should prioritize sustainable, low emission products and emissions in the public space as well. People and health is a principle where the area developer has most influence on, and thus should be an investment by the area developer. This principle can be operationalized by creating walkable, safe, and attractive green public space. Incorporating these principles helps distinguishing a green business park from a 'regular' business park. Naturally, all green business parks will have their distinct unique selling points and will prioritize different principles accordingly.

The operationalization of the principes can be divided into short term and long term goals. In which some actions can be taken right away, such as creating a greener space by planting trees and other greenery or organizing community events. Other principles need to be implemented in the vision and planning of the (re-)development of a green business park. Such as using specific materials, creating an energy hub, and creating walkable public space.

While climate resilience received the lowest willingness to pay and perceived value in this research, it is an important principles for the green business park as a whole. This means that the area developer has a responsibility to make sure this principle is implemented in the (re-)development of a green business park. This can be achieved by assessing heat stress and flood risk of the green business park and implementing measures to mitigate both.

Social and functional perceived value of green business parks is attributed by all actors. This indicates that the actors find they receive social acceptance as a result of investing in a green business park. Besides this, all actors find that the functional goals of a green business park are reached, when focusing on the employees working there. This means that the actors see a green business park as some form of prestige to be able to invest in or be located at. It shows the extra value a green business park has in the eyes of investors, developers, and end-users. This is something that can be used in promoting the green business park and be used as one of the unique selling points in comparison to a 'regular' business park. Besides that, the results on functional perceived value show that green business park deliver on their promises when it comes to the employees working there. Again, this is something that can be used as a unique selling point for a green business park compared to a 'regular' business park.

An area developer can assist actors by providing data on the performance of the green business park, thereby offering information for evaluating its economic perceived value. For example, information about energy performance and management costs, can help in providing more insights for the buyer of renter of the real estate. Besides that, gaining insight in the actual worth of the green business park in terms of the value of real estate on the green business park, would benefit the development as a whole. As the response to emotional perceived value shows, the business decisions are made with the head, not the heart. By having this data available, it helps in making decision-making more straightforward. The research shows that is crucial to have an area developer selling the land that is willing to keep strict demands when selling the land. This makes it a level playing field for all investments into the green business park. It needs to be a governmental organization of a public-private organization. Because of the (semi-)public role of the area developer, they are able to keep the demands, even in lesser economic times. The demands should not only apply to the plots, but also the public space. This way, the maximum result for the green business park can be attained. The area developer should be able to have the correct experts on their side of the table. These experts are able to be a sparring partner at the same level as the experts of the client investing in the green business park. The experts can also inspire and challenge certain proposals for the development. This applies to both green field developments, new green business parks, as brown field developments, existing (green) business parks.

It is important for the area developer to know who is on the other side of the table. Since this research highlights the importance of personal motivations and sustainable strategy on business decisions. For some actors, it is needed to focus on a specific principle that is not part of their strategy or highlight the importance of that specific principle. This research gives insight in a basic level of perceived value for the seven principles. This helps establishing some main focus principles in conversations with the client.

5.3 DISCUSSION

When developing the theoretical framework, it was apparent there was not a clear definition of a green business park. This research added to the knowledge of green business parks in all forms and created a definition with seven principles that are part of these green business parks. These seven principles have shown to be, in one form or another, recognizable for actors and part of their own sustainability strategy or used certification. The development of this research focused mainly on policies and certification used in The Netherlands, such as NL Gebiedslabel and BREEAM.

Based on the theoretical framework, we expected there to be a high perceived value and willingness to pay for the principles of a green business park. Since earlier research shows the increased perceived value and willingness to pay for green aspects in other real estate typology.

We also expected that the drivers of sustainable investment would have an influence on the responses by respondents. While this is partly true for the personal motivation and sustainable strategy, it is not for the policies. While research shows a preliminary influence of CSRD on sustainable decision-making, this was not seen in the results of this research. Respondents were either unaware of CSRD or it was not a topic of influence for them.

There is an interaction between investors, developers, and end-users. The demands investors have when it comes to sustainability impact the building developers create. These more sustainable buildings drive end-users to house more sustainable building. This is because end-users are more focused on their operation and employees.

The research showed that you need people who are intrinsically motivated to drive sustainable investments within companies. With respondents claiming their personal motivations and business decisions are detached from each other, focused more on the practical and technical sustainability. Besides that, these people need to be able to operate on these motivations.

5.4 REFLECTION

Limited availability of research regarding perceived value and willingness to pay in combination with (green) commercial real estate and (green) business parks made it difficult to be able to generate a theoretical framework on these themes specifically. Fortunately, there is plenty of research into (green) residential real estate, perceived value, and willingness to pay. This enabled the foundation of the theoretical framework and methodology in previous research. Since this research was mainly focused on residential real estate, the translation from research into methodology specifically for commercial real estate was sometimes challenging. An example is the questioning regarding emotional perceived value. While consumers purchase real estate as their home, emotion comes into play. This is to lesser extent relevant for commercial real estate since these are business decisions. This generated mixed responses during the interview.

The methodology was chosen based on the limited data about green business parks and investments on these green business parks. This means that the means to measure willingness to pay were rather limited and surveyed in a direct way, instead of indirectly measuring it via actual investment or purchase data. By asking these survey questions in interviews, there is a plus that respondents can elaborate on their response. A point of reflection is that respondents can have difficulties answering the question, either elaborating too much and not answering the question or not wanting to choose two principles but only wanting to choose one.

Respondents interviewed in the research were chosen with care, but in interviews the personal opinion of the specific respondent comes into play. Since there were only twelve interviews, there is a limited data pool to generate conclusions. The research cannot be seen as fully representative of the entire market and thus discussing the external validity of the research.

There was a high amount of consensus among respondents. Because the type of interviews were personal interviews, this could have an influence on the answers received. Meaning the answers were perhaps socially desirable and would have been different when the respondents were surveyed anonymously.

As mentioned in the methodology, using both allocating €100,000 and asking for a ranking of most and least important principles could have a carry-over effect. It was stated by Louviere & Islam (2008) that this should lead to more, not less, agreement in the responses. Looking at the overall responses to both questions there is agreement in the responses. However, when looking at the different actors, there is a difference in how both questions were answered. This of course could be due to some of the things already mentioned in this reflection, like number of respondents and socially desirable answers.

The interviews were held in a semi-structured and exploratory way. These were transcribed, analyzed using Stata and ATLAS.ti, and presented in this document. In processing the interviews, some nuances may have been lost. All interviews were recorded to retain the most nuances in the transcription. Ultimately, when presenting the results losing nuances is inevitable since we tried to generalize the results of this research.

The business case used in the research was developed as generic as possible. However, some aspects are only applicable to a specific location in The Netherlands. For example, the location

near important ports can be defined as the Schiphol region or Rotterdam region. The pricing was also based on examples from the Metropolitan Region of Amsterdam. Decisions made by actors are based on more than these generic points, this is a remark that was made by a few respondents.

5.5 RECOMMENDATIONS FOR FURTHER RESEARCH

This research generates a foundation for further research into green business parks, perceived value, and willingness to pay. Further research could entail more in-depth interviews with actors active on green business parks and built on the work done in this research. This could increase the external validity of the results.

As mentioned in the discussion, willingness to pay was measured with a direct survey method. Further research could be to analyze transactions on green business parks and compare them to transactions on regular business parks. The seven principles developed in this research could provide a starting point to determine what elements of a green business park are present. Ranking green business parks based on the seven principles could provide insight in the extra price actors are willing to pay for the plot or the development as a whole. Differences between green business parks could provide insight in the principles that have a higher perceived value and willingness to pay.

Another topic that came up during multiple interviews was the economic value of the seven principles of green business parks. The respondents agreed that there is some form of economic value to a green business park, but there is no database that provides insight in what that value is per principle or even per tree or amount of green space. Getting insights in this value could help drive these sustainable developments. Investors know what the return of their investment in these principles is, which drives developers to develop this type of real estate. This is not only the case for investor – developer relationships, but also the decision-making process within a company itself. When the economic value of these sustainable decisions can be part of the business case, it makes the decision-making process less focused on direct economic returns and introduce long term returns.

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APPENDIXES

APPENDIX 1 – INTERVIEW QUESTIONS

- 1. What is your role within the company?
- 2. Where are you within the decision-making process of your company?
- 3. What is the strategy about sustainability of your company?
 - a. To what extent do governmental policies (such as CSRD or EU Taxonomy) impact the sustainability strategy?
 - b. Is there a percentage of the total amount in projects that your company is involved in that is allocated to 'green' subjects?
- 4. What would you describe as a green business park?

[BUSINESS CASE]

- 5. You have the ability to spend a €100,000 on incorporating the principles in the development of the building. How do you divide the amount?
- 6. Which of the seven principles are the two most important and which are the two lead important for you and your company given this opportunity?
- 7. Based on what do you made these decisions:
 - a. What are your personal experiences and beliefs that impact your decision?
 - b. To what extent does the client or end-user of the building impact your decision?
 - c. To what extent do your employees impact your decision?
- 8. Do you agree or disagree with the following statements? Please elaborate on your answer.
 - a. Investing in the green business park would improve the way my company is perceived.
 - b. Investing in the green business park would be economical.
 - c. Investing in the green business park is worth the money.
 - d. Investing in the green business park would make me feel good.
 - e. I would enjoy investing in the green business park.
 - f. Green business parks are beneficial to improve health conditions of people working there.
 - g. Green business parks improve the quality of living of the people working there.
 - h. Green business parks improve working comfort for people working there.
- 9. What is your experience with green business parks in your day-to-day work?
 - a. Do you encounter them?
 - b. Do you have a positive or negative experience with green business parks?

APPENDIX 2 - INVITATION RESEARCH

Dear [respondent],

My name is Jozien van der Wal and I am working on my thesis for the Master of Science in Real Estate at the Amsterdam School of Real Estate. My research focuses on green business parks and how they are valued by investors, developers, and end users. The central question is: *How can strategies for green business park development be determined based on the willingness to pay and the perceived value of green business parks by investors, developers, and end-users?*

The research provides insights for area developers of green business parks, such as where they can best focus on in a development. This applies to both greenfield and brownfield sites. The research provides insight into which aspects are rated highest by clients of area developers, and which are rated lowest, and shows whether there is a discrepancy between advertised and valued aspects of green business parks. In addition, the research also provides insight into the drivers for investing in green business parks. The research is conducted through interviews and a case-study with a total of 12 respondents involved in the decision-making process surrounding the investment in and/or purchase of land on business parks for the purpose of realizing logistics real estate. These include 4 investors, 4 developers, and 4 end users.

It would be great to interview you for this research. Participation is

completely <u>anonymous</u> and <u>voluntary</u>. Respondents will be named in the research, but individual results will not be linked to any specific company or person. I will ask your permission to record the interview, this will not be shared with others and will be sent after transcription for review. The interview will last approximately 30-45 minutes via Microsoft Teams.

I hope you are willing to participate in my research on green business parks. In addition to making a useful contribution to the research, you will personally help me complete my master's thesis in the spring of 2025.

Best Regards,

Jozien van der Wal