

**The Future of Urban Circular Economies:
Stakeholder perspectives on the circular ambitions of the BPAO Phase II area
development case study in the Lutkemeer polder**

Master Thesis



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Colophon

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Preface

Before you lies my master's thesis on The Future of Urban Circular Economies: Stakeholder perspectives on the circular ambitions of the BPAO Phase II area development case study in the Lutkemeer polder. This thesis is a result of dedicated research from January to September 2022, which has been written to fulfill graduation requirements of the Master's degree in Spatial Planning: Planning, Land and Real Estate Development from Radboud University in Nijmegen.

I chose the topic of circularity and more specifically circular area development due to my interest in a more sustainable and forward-thinking approach towards developing our urban built environment. I believe that circularity can be one of the avenues and possible solutions towards future-proofing our urbanizing planet.

Acknowledgement

Conducting this master's thesis was not an easy endeavor. I had huge support from many people over the course of this research process.

I would like to thank my thesis supervisor Dr. Iulian Barba Lata for his expert advice and feedback that helped guide me throughout my research.

I would also like to thank all the respondents/participants for their time and efforts contributing immensely to this research study, which enabled me to collect the necessary data. I would like to thank my internship organization SADC and more specifically Pieter van der Horst for believing in me and giving me the support/guidance necessary to carry out this research study on one of their area development projects.

Finally, I would like to thank my fiancée Taylor, my family, and my friends for their unwavering support and motivation during my studies. Without all of you, I would have not been able to complete this research.

I hope that you enjoy reading my thesis!

Dane Sokol

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Summary

Problem statement – There is currently a socio-spatial problem regarding the Business Park Amsterdam Osdorp (BPAO) Phase II area development. This development is taking place in a sensitive geographical area that is undergoing a transition from an economic function of agriculture to a business park/urban logistics hub. This social friction shows a disconnect between the future development vision of how some citizens see and value the Lutkemeer polder and the future development vision of how national, provincial, and local government sees and values the Lutkemeer polder. This socio-spatial phenomenon illustrates the varying perspectives and interests from a variety of stakeholders who are impacted or impacting the BPAO Phase II development.

Objective – The main objective of this research is to explore and better understand what a ‘circular area development’ is from the perspective of various stakeholders involved. In further relation to my specific case study, the focus is to explore and investigate the socio-spatial relational gap that exists between the residents, businesses, and government regarding the BPAO Phase II development. This is to better understand what values stakeholders attach to the circular ambitions which inform the BPAO Phase II development.

Methods – The research methods consisted of desk research on documents and a field observation that provided context on the case study of Lutkemeer polder area related to the BPAO Phase II development, the history and development up until the present day, as well as future visions, plans and policy documents. The second research method came from sixteen in-depth semi-structured interviews conducted with various key stakeholders related to the BPAO Phase II case study. The third research method was document analysis on the BPAO Phase II plans that MUST and TAUW created.

Results – The key stakeholder perspectives were mixed with some being hopeful and optimistic about the circular ambitions of BPAO Phase II whereas other stakeholders were critical and pessimistic. There are varied and unique perspectives from key stakeholders who have a myriad of education/experience on circularity which in turn illustrates BPAO Phase II as hopefully ambitious in integrating circular design and function principles into the development but also critical on the feasibility and realization of the circular ambitions.

Conclusion – From the main themes that were discovered from key stakeholders, the results show that circularity, and in this case study ‘circular area development’ is still not understood. Lutkemeer polder is historically significant with a focus on keeping the ‘green’ with BPAO Phase II having a material, Blue-Green Infrastructure (BGI), and biodiversity focus to realize the circular ambitions. From the planning documents analysed, there is a desire to integrate and connect with the local community through recreational and social functions of BPAO Phase II but is hampered with the bottom-up resistance caused by the top-down governance steering resulting in little to no communication amongst key stakeholder groups (public, private, and market actors).

Discussion – Many recommendations have been identified which were split into societally relevant conclusions and academic relevant conclusions. Recommendations for practice revolves around circular area development being a catalyst for consensus building with the use of conflict management-based participation of all stakeholders in the knowledge sharing of circularity through sustainable initiatives. Recommendations for science is to conduct further research on the unique phenomenon of circularity and circular area development using different research philosophies and methodologies on the BPAO Phase II case study with comparisons to others.

Keywords – Circular area development, Circular economy, Communicative planning, Governance, Stakeholder perspective(s)

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1 Introduction

1.1 Prologue

Cities are currently consuming 60-80% of the world's natural resources and producing 50% of the global waste (Williams, 2021, p.1). As urban areas continue to grow and consume resources, they are going to have to find more sustainable ways to develop and re-use building materials to avoid further degradation of the natural ecosystem that coexists with cities.

There is a transition currently taking place from traditional forms of urban development to more sustainable forms of urban development. The traditional form of urban development is where infrastructure, such as residential and commercial buildings, are built using a linear approach. This linear approach consists of extracting resources from the earth, using these resources to create building materials, and subsequently using the materials to build structures. Upon the end of its useful life, the building is demolished, and the materials are transferred to a land fill.

The sustainable form of urban development is where the materials that would have ended up in a landfill are re-integrated into the material lifecycle. This closed loop system is the concept of circular economy (CE) whereby resources such as building materials do not end up as waste. This closed loop system would lead to a decreased ecological footprint for cities (Williams, 2021, p. 1).

Integrating CE into urban area developments which can be considered a 'circular area development' is the next step in the pursuit of future-proofing sustainable urban development. There is a circular area development project which will be used as a case study to explore the concept itself. This project is currently being undertaken by my thesis internship organization Schiphol Area Development Company (SADC). The project/case study is Business Park Amsterdam Osdorp (BPAO) which is located in the Nieuw-West district of Amsterdam (SADC, n.d.-a). More specifically, the second phase of BPAO was studied. In this thesis the case study explores stakeholder perspectives and the values that they attach to the BPAO Phase II development. The research question is:

How do the values that stakeholders attach to the circular ambitions inform the BPAO Phase II development?

1.2 Problem statement

There is currently a socio-spatial problem regarding the BPAO Phase II development. The BPAO Phase II development is taking place in a sensitive geographical area that is undergoing a transition from an economic function of agriculture to a business park/urban logistics hub. A part of the local population feels the Lutkemeer polder is being threatened and marginalized or pushed aside to make way for this business park. For the past few years, there have been activists protesting and occupying the Lutkemeer polder, even going so far as to chain themselves to excavators (NH Amsterdam/AT5, 2022, February 28; Van Zoelen, 2020). There is one well known citizen activist group, Behoud Lutkemeer (Keep Lutkemeer), who's aim is to oppose and resist the development of BPAO Phase II (Behoud Lutkemeer, n.d.-c). There were even issues in the past regarding bribes and corruption of government officials in the rezoning of the Lutkemeer polder (Behoud Lutkemeer, n.d.-b; Overdevest, 2020).

This social friction shows a disconnect between the future development vision of how some citizens see and value the Lutkemeer polder and the future development vision of how national, provincial, and local government sees and values the Lutkemeer polder. This socio-spatial phenomenon illustrates the varying perspectives and interests from a variety of stakeholders who are impacted or impacting the BPAO Phase II development. The Lutkemeer polder has been an area used as an agricultural economic function for decades and now is struggling with transitioning towards a new type of economic function, a business park/urban logistics hub. Below elaborates on the top-down policies and visions set out by all levels of Dutch government, the bottom-up initiatives of collective action groups and citizen cooperatives opposed to the BPAO Phase II development, and the circular visions of SADC in implementing circular principles in their area developments.

Top-down policies & visions

The Lutkemeer polder has increasingly been in the crosshairs of many different governmental and non-governmental organizations with varying interests and visions for this area. With rapid urbanization coming from Amsterdam and Schiphol, the Lutkemeer polder has been targeted as an ideal area for further urbanization to increase economic output of this Dutch region (Gemeente Amsterdam, n.d.-e). This is elaborated in the Dutch national government's (SVIR) Structuurvisie Infrastructuur en Ruimte (Structural Vision Infrastructure and Spatial Planning) adopted in 2012.

This vision outlines the national and international economic importance the Dutch national government has attached to the Amsterdam Metropolitan Area. This means attracting international companies to strengthen the economic position of the Netherlands (Gemeente Amsterdam, n.d.-e). Moreover, the provincial government in 2010 adopted a Structuurvisie Noord-Holland 2040 (North Holland 2040 Structural Vision) whereby densifying, transforming, and restructuring is crucial to optimize existing areas, shown in Figure 1. This is further identified in the (BBG) Bestaand Bebouwd Gebied (Existing Built-Up Area) plan where the Lutkemeer polder was designated as Schiphol-related work location for business parks (Gemeente Amsterdam, n.d.-e). In addition to the Structuurvisie Noord-Holland 2040, the province of North Holland also adopted the (PRVS) Provinciale ruimtelijke verordening structuurvisie (Provincial Spatial Ordinance Structural Vision) which has consequences for municipal zoning (Gemeente Amsterdam, n.d.-e). This ties into the Structuurvisie Amsterdam 2040 Economisch Sterk en Duurzaam (Amsterdam 2040 Structural Vision: Economically Strong and Sustainable) which was adopted by the municipality of Amsterdam in 2011, mentioning that the Lutkemeer polder is specified for Schiphol-related logistic companies. Around the zoned area for BPAO Phase II is a part of ‘De Hoofdgroenstructuur’ (The Main Green Structure) which is greenery that Amsterdam wants to safeguard, displayed in Figure 2 (Gemeente Amsterdam, n.d.-f). The Lutkemeer polder is one of four polders that make up ‘Tuinen van West’ (Gardens of the West) which was incorporated in 2007, exhibited in Figure 3 (Gemeente Amsterdam, n.d.-f). There has been a decline in importance for agriculture as an economic carrier but there is a growing need for recreational qualities which Tuinen van West has. The last governmental body is a district or ward of Amsterdam, Stadsdeel Nieuw-West (New West City District) which created a Nature Vision adopted in 2010, focusing on the ecological values/corridors of the Lutkemeer polder where 150 animal species are legally protected, presented in Figure 4 (Gemeente Amsterdam, n.d.-g).

Bottom-up initiatives & visions

Due to the increase in the desire for spatial-economic transformation of the Lutkemeer polder, there has been an increase for the resisting of such a transition from multiple citizen organizations and activist groups. Behoud Lutkemeer are an organization of citizens who oppose and since 2018 have been campaigning to stop the BPAO Phase II development in the Lutkemeer polder (Behoud Lutkemeer, n.d.-a). Land van Ons is a cooperative group of people and organizations who legally

acquire land to be used for agricultural purposes. Furthermore, Land van Ons has been involved with (in partnership with Voedselpark Amsterdam explained below) attempting to purchase the land in the Lutkemeer polder that is designated for the BPAO Phase II development (Land van Ons, n.d.). Voedselpark Amsterdam is a cooperative group of people and organizations who are petitioning to purchase the land in the Lutkemeer polder that is designated for the BPAO Phase II development for the purpose of turning it into an eco-agricultural landscape park (Voedselpark Amsterdam, 2022).

Clashing of visions

From all levels of government there is a desire to strengthen the economic output and attractiveness for the Amsterdam Metropolitan Region, specifically the logistics industry related to Amsterdam Airport Schiphol. To realize that vision, Schiphol Area Development Company was created in 1987 to develop high quality business locations (SADC, n.d.-b). SADC commissioned two consultancy firms, MUST: an urban planning consultancy firm (MUST, n.d.) and TAUW: an engineering consultancy firm (TAUW, 2022) who created plans for BPAO Phase II. These plans (which will be elaborated on in sections 4.3, 4.4 and 4.5) incorporate circular principles which SADC utilizes to build their area developments. This comes from their Sustainability Conditions Land Issue document (SADC, 2018). These custom circular principles are seven pillars of the circular economy (CE) that SADC has adopted from Metabolic (Energy, Materials, Water, Biodiversity, Wellbeing, Social Activity and Culture, Economic Resilient Systems), shown in Figure 5. The first pillar is *materialen* – materials are used in a way where they can be continuously recycled). The second pillar is *energie* – all energy is based on renewable sources. The third pillar is *water* – water is extracted in a sustainable way and source recovery is maximized. The fourth pillar is *biodiversiteit* – biodiversity is structurally supported and strengthened by all human activities in a circular economy. The fifth pillar is *menselijke activiteiten en cultuur* – human society and culture are strengthened by human activities. The sixth pillar is *welzijn* – the health and well-being of humans and other species must be structurally supported by the activities of the economy. The last and seventh pillar is *veerkrachtig en flexibel economisch systeem* – human activities generate added value that cannot be expressed only in financial value. With all these varying visions and interests from different stakeholder groups (public, private, and market), this

demonstrates the current ‘social friction’ seen through the collective action protests and overall societal resistance towards the BPAO Phase II development.

1.3 Societal relevance

As explained above, understanding the various stakeholder perspectives on the BPAO Phase II development is key to further recognize how actors perceive the concept of ‘circular area development’ and the values that they attach to the circular ambitions ultimately informing said development. This research could help future greenfield area developments who are situated in a geographically sensitive area such as the case study of BPAO Phase II in the Lutkemeer polder to a smoother transition from peri-urban agriculture function to a business park/urban logistics hub function. Moreover, by researching a case study such as the BPAO Phase II development, there may be recommendations that are relevant to helping or solving the current struggle between party interests who have varying visions/ambitions of how they would like the Lutkemeer polder to be developed, and ultimately fit this case study into the broader scope of the transition to a circular economy.

1.4 Academic relevance

As stated by Pomponi & Moncaster (2016), “literature on CE in the built environment is still in its infancy” (p. 711). Furthermore, there is a knowledge gap regarding social contexts, social identities, institutions, and CE transitions in urban areas (from Fratini et al., 2019; Moreau et al., 2017; Korhonen et al., 2018; as cited in Heurkens & Dabrowski, 2020, p. 13). Due to this knowledge gap, there is a need for new governance interactions between various actors which highlights the institutional barriers for circular transitions (from Ghisellini et al., 2017; Fischer and Pasucci, 2017; as cited in Heurkens & Dabrowski, 2020, p. 13). My academic goal is to connect with past theories and the future research studies of the topics that I am currently researching. My study investigates the link between society and the space that we develop in a unique context of the BPAO Phase II circular area development. Few existing studies have explored what makes a greenfield area development circular using a stakeholder perspective approach. I will help bridge the gap between the concept of *circular area development* (Van Bakel, 2020; Van den Berghe & Vos, 2019; Witkamp, 2020; Van der Ven, 2021) and the underpinning of critical theory approaches of *communicative planning theory* (CPT) brought on by the *theory of communicative action* (TCA) from Jurgen Habermas (Bohman & Rehg, 2017; Habermas, 1981; Inglis & Thorpe, 2019; Innes &

Booher, 2015; Mattila, 2020), *governance* (Steurer, 2013), and *public interest in planning* (Alexander, 2002; Dadashpoor & Sheydayi, 2021).

These concepts are unique and specific to my case phenomenon of the BPAO Phase II area development. The research findings will further clarify what the concept of circular area development entails (as this is a phenomenon that is not yet clearly defined). Gaining knowledge from key stakeholders on what they think makes the BPAO Phase II development circular based on their unique perspectives will aid in this clarification. Bridging/connecting the academic gap by understanding stakeholder perspectives to understand what a circular area development is will be underpinned by grounding additional theories in this case study: understanding the communicative planning which stems from Habermasian communicative action and rationality as a form of planning with additional critical theoretical foundation of governance and public interest in planning.

1.5 Research aim

The aim of this research is to explore and better understand what a ‘circular area development’ is from the perspective of various stakeholders involved. A stakeholder (in this case) is any party who is impacting or impacted by the BPAO Phase II development. In further relation to my specific case study, the focus is to explore and investigate the socio-spatial relational gap that exists between the residents, businesses, and government regarding the BPAO Phase II development. This is to better understand what values that stakeholders attach to the circular ambitions inform the BPAO Phase II development and illustrate what a ‘circular area development’ is in the eyes of various stakeholders.

The research findings hope to provide some sound societally and scientifically relevant recommendations that could shed light on this unique socio-spatial phenomenon for further research and analysis, as well as actionable ‘next steps’ which can be used by government bodies, academic scholars, planning industry professionals, and citizens who may be interested in pursuing this topic and/or case study further.

1.6 Research questions

Main research question:

How do the values that stakeholders attach to the circular ambitions inform the BPAO Phase II development?

To answer the main research question, the following sub-questions were made:

- Who are the key stakeholders of the BPAO Phase II development?
- What do the stakeholders value regarding the BPAO Phase II development?
- What are the barriers and/or resistance to the BPAO Phase II development?
- What are the circular ambitions of the BPAO Phase II development?

2 Theoretical framework

2.1 Circular area development

Circular economy (CE)

To understand the concept of circular area development, we need to first define the concept of the circular economy. The concept of a CE has been defined in many ways in academic literature. Kirchherr, Reike, & Hekkert, 2017 gathered 114 definitions of the CE finding that the concept revolves around reduce, reuse, and recycle. Additionally, building off van Bakel's (2020) analysis on CE literature, I will use the definition from the Ellen MacArthur Foundation (EMF) to define CE (p. 22):

“A circular economy is an industrial system that is restorative or regenerative by intention and design. It replaces the ‘end-of-life’ concept with restoration, shifts towards the use of renewable energy, eliminates the use of toxic chemicals, which impair reuse, and aims for the elimination of waste through the superior design of materials, products, systems, and within this, business models.” (EMF, 2013, p. 7).

The current state of academic literature on CE focuses on the closing of material loops regarding city metabolism of creation and disposing of various wastes. Bolger & Doyon (2019) use a comparative case study of Melbourne and Malmo to explore strategic planning and urban governance in facilitating a CE. Korhonen et al. (2018) identify and develop many definitions of the concept CE and find that CE is done by the physical material and energy flows in production-consumption systems. Williams (2019), builds off of previous research delving into CE and resource management in a city (p. 2759).

Area development

The second concept needed to understand circular area development is defining area development. The concept of area development is a term that can have varied interpretations and definitions. Through my literature review of area development, I was able to find more material regarding the concept of area development by searching using the Dutch translation, ‘gebiedsontwikkeling’. The Dutch central government defines area development (gebiedsontwikkeling) as various parties working together (government [national, provincial, & local], companies, and residents) (Rijksoverheid, n.d.). Taken from Van Bakel (2020), area development is an intricate process

where public and private stakeholders carry out the development of an area (p. 25). Furthermore, the development of an area can be split into either real estate development (single building by private sector) or spatial plans (development of larger regions by public sector). According to Heurkens (2018), area development is in between both categories explained above (as cited in Van Bakel, 2020, p. 25). Another definition of area development by De Zeeuw (2011), “area development is the art of connecting functions, disciplines, parties, interests, and financial flows, with a view on the (re)development of an area” (p. 406). Area development is a complex multifaceted and lengthy process of building up a large spatial area.

Circular area development

As mentioned above in the Academic relevance section, the concept of circular area development is a term that is not yet clearly defined in academic literature and in practice among spatial planners. Just as the concept of area development is, the concept of circular area development seems to be a Dutch phenomenon. More literature was found searching for ‘circulaire gebiedsontwikkeling’ than ‘circular area development’ on academic literature databases. The master’s thesis from Van Bakel (2020) of TU Delft explains circular area development as a circular designed and circular functioning environment whereby material use and waste is minimized by keeping the process as local as possible in the area development (p. 4). Van Bakel uses the brownfield area re-development of Noordelijke IJ-oever West in Amsterdam as a case study to explore the circular principles influencing the area. An author who is leading the way in the concept of circular area development is Dr. Karel Van den Berghe of TU Delft. Van Bakel’s master’s thesis explained above continues Van den Berghe’s study of the circular area design and circular area functioning of two circular area developments in the Netherlands (Van den Berghe & Vos, 2019). Additionally, Dutch graduate students used the term circular area development in their master’s theses on the case studies of the Campina building in Eindhoven built by Bouwfonds Property Development and the post-industrial redevelopment of the Werkspoorkwartier in Utrecht respectively (Witkamp, 2020; Van der Ven, 2021). Based on the above explanations it can then be understood that there is no current unified definition on what circular area development is, but at the very least circular area development can be described as an area development being built which is implementing CE principles in the design and function of said development.

2.2 Critical theories and institutional perspectives

To investigate the unique socio-spatial friction between the different stakeholders of my case study, a grounding of critical theoretical concepts was carried out that academically strengthens the current societal relationships which coalesce during the process of urban development in the circular transitions, and more specifically in my case of circular area development of a greenfield business park/urban logistics hub.

PI (Public Interest) in planning

The concept of public interest (PI) dates its origins to classical times which has been associated with democratic governing by ancient Greeks, to the Roman democracy of ‘res publica’, through to the Middle Ages and now to contemporary times (Alexander, 2002, pp. 227-228). According to Dadashpoor & Sheydayi (2021), defining the concept of PI in planning literature is difficult, fuzzy, and complex (p. 543). There are many planners and scholars who have their own definition for what PI in planning is. For this research study the implicit definition centered on the consensus-based planning procedure will be used (Dadashpoor & Sheydayi, 2021, p. 546):

“Public interest is the consensus of the various interests that are achieved in a communication process”.

This definition has roots in planning theory from Habermas’ theory of communicative action whereby PI is the result of conflict in consensus with private interests (Dadashpoor & Sheydayi, 2021, p. 551). Moreover, this communicative process should provide a logical debate between different stakeholder groups to gain consensus (from Forester, 1989; Innes, 1996; Sager, 1994; & Healey, 1992,1997; as cited in Dadashpoor & Sheydayi, 2021, p. 552).

Acting in the interest of the public (civil society) is an objective of government (Alexander, 2002, p. 228). The focus of my research study is based on Alexander’s (2002) concept and application of PI being procedural (p. 229). The approach taken is dialogical where the interest base are stakeholder groups. This application of PI is underpinned by Madisonian liberalism and communicative practice theories with a perspective of intersubjectivity for the application of a political discourse (Alexander, 2002, p. 229). One such communicative practice theory is the theory of communicative action.

Habermas' theory of communicative action (TCA)

The theory of communicative action (TCA) is a social theory thought on by philosopher Jurgen Habermas. TCA involves the analysis of communicative rationality through the mode of communication via speech (Bohman & Rehg, 2017). This form of communicative rationality branches off into 'strategic action' and 'communicative action'. In strategic action, actors are individualistic choosing the best outcome for themselves, whereas in communicative action the actors verbalize their individual goals as worthy enough to warrant cooperative behavior from others. This "ideal speech situation" as Habermas calls it, is where the communication is fully rational and free from coercion or power (from Habermas, 1984; as cited in Inglis & Thorpe, 2019).

TCA justifies the use of argumentation through what Habermas call the "reflective form" of communicative action. This "reflective form" is a part of Habermas' discourse theory which needs a pragmatic analysis of argumentation as a social practice (Bohman & Rehg, 2017). The social practice of argumentation is deeply rooted in planning, whereby urban areas are developed through communication by many various actors and stakeholder groups, with the hope of resulting in coordinated action. "The necessity for coordinated action generates in society a certain need for communication, which must be met if it is to be possible to coordinate actions effectively for the purpose of satisfying needs" (Habermas, 1981, p. 274). Coordinated action such as urban planning needs some form of communication to provide the needs of civil society, and TCA in planning elaborates on this.

TCA in planning

Habermas' TCA in planning influenced the evolution of a new theory called communicative planning theory (CPT). CPT is a theory inspired by TCA which was developed by planning theorists over the last four decades. The idea was that planning could be more democratic with the increase of communication between various stakeholder groups such as municipal government, planning firms, landowners, and citizens. This consensus building through communication from the interests of different stakeholder groups is supposed to progress towards the sharing of visions and plans for future urban areas (from Forester 1989; 1993; Healey 1992; 1997; Innes 1996; 1998; Sager 1994; as cited in Mattila, 2020, p. 4).

More recently, scholars have focused their efforts on the divisive discourse of CPT. Innes & Booher (2015), give an example from Castells (2009) who agrees with Habermas' view that communication is an action which shapes the social world including power relations. This building of communication power as a lens gives way to four current contradictions/critiques put forward by Innes & Booher (2015). 1) *Community knowledge vs science*: whereby planners may reject citizens knowledge and comments regarding urban development and exercise their expert knowledge to educate citizens (pp. 200-202). 2) *Communication power vs state power*: coming from Castells' (2009) view where norms and practices develop through the networks of shared meanings of power which guide action and are embedded in institutions. "Communication mediates the way these power relationships are constructed and challenged" (Innes & Booher, 2015, p. 203). 3) *Collaboration vs conflict*: collaboration is about conflict. How to progress with agonism at the forefront while making sure the multiple voices are not subdued is the question. Collaborative rational dialogue amongst stakeholders is an idealistic answer is the answer (Innes & Booher, 2015, pp. 203-206). 4) *Process vs outcome*: this last critique is that CPT focuses on the process rather than the outcomes, but process and outcome coincide with one another. As stated by Innes & Booher (2015), "stakeholders engage in a process because they care about the outcome" (p. 207).

Governance

The concept of governance as defined by Steurer (2013) is "formulating, promulgating, implementing and/or enforcing societally relevant rules (binding or voluntary ones) by government, business and/or societal actors, whereby the rules can apply to others or to themselves" (p. 388). The assumption is that the three actors (government, business, and civil society) are steering and regulating each other and themselves. Who is doing the steering and regulating?

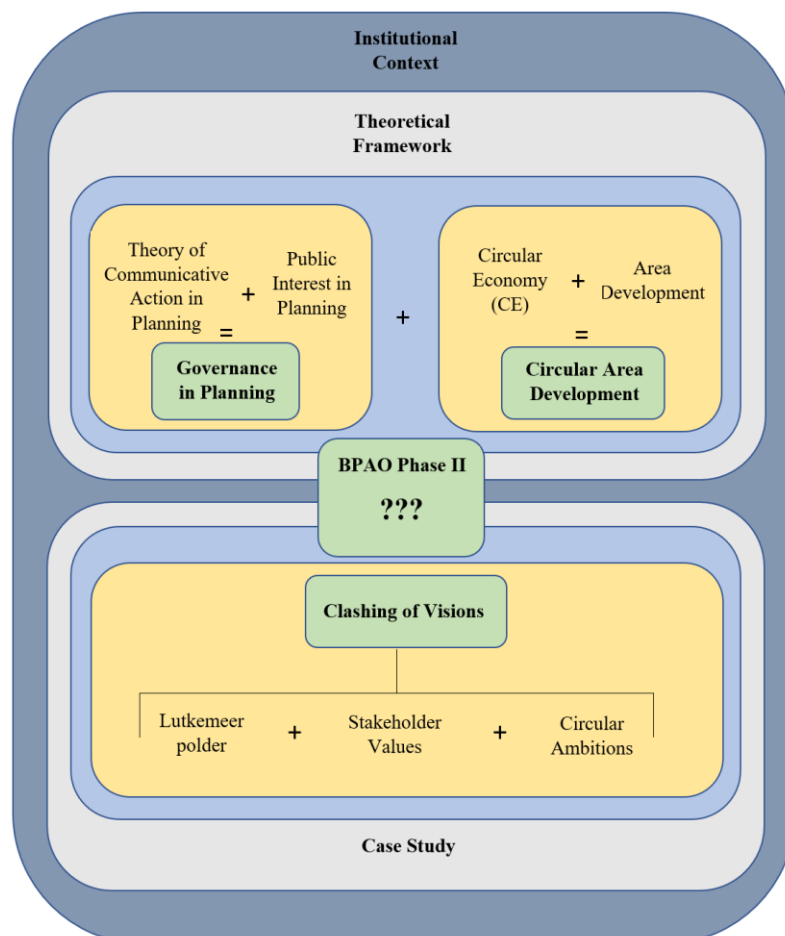
2.3 Circular area development and governance in planning

There is currently little knowledge when looking at the relationship between CE (even more so with circular area development) and governance through an institutional perspectives and socio-spatial lens. "Understanding the institutional context for a CE transition is an urgent research gap to bridge, especially considering the political tensions that the spatiality of cities and their transition agendas entail" (from Marin and De Meulder, 2018; as cited in Heurkens & Dabrowski,

2020). There is a need to better understand how social aspects of urban areas are impacted by the transition towards circularity through the opportunities and vantage points of various stakeholders (Vanhuyse, Fejzic, Dbida & Henrysson, 2021). Moreover, there has been failure to consider governance in relation to the CE through a social dimension; the opportunity to territorialize circular development and investigate spatial and land-use planning as an avenue to execute the circular transition through an institutional perspective is key (Williams, 2022).

Sustainable transitions have emerged to facilitate innovation pathways and governance frameworks towards sustainable society (Lukkarinen, Nieminen & Lazarevic, 2022, p. 2). This is done through introducing novel technologies or practices (such as circular area development) which inhibit the transition requiring context to address the myriad of spatially divergent conditions: societal, economic, environmental, and complex power relations (from Frantzeskaki et al., 2017; as cited in Lukkarinen et al., 2022, p. 2).

2.4 Conceptual model



3 Methodology

3.1 Research paradigm

My research strategy is influenced by my research philosophy. My research philosophy aligns with a critical theory paradigm. My ontological position is one of historical realism where reality is assumed to be apprehensible that has been shaped by social, political, cultural, economic, ethnic, and gender factors. My epistemological position sits within a transactional and subjectivist view, where the investigator and investigated are linked, and with the values of the investigator influencing the inquiry. This means that findings are value mediated. My methodological position is a dialogical and dialectical view where the aim of my inquiry involves dialogue between the investigator and the investigated through the utilization of qualitative techniques (Guba & Lincoln, 1994, p. 110).

My research approach is influenced by my research philosophy. My research approach is inductive. I use my conceptual framework to explore and interpret my research results as general ideas/findings which can be used for further research. My methodological choice used is qualitative. My methods for data collection consisted of desk research on policy documents related to the Lutkemeer polder and/or BPAO Phase II development, a field observation of the current state of the BPAO Phase II development, document analysis of the BPAO Phase II development plans provided by my internship organization SADC and conducting semi-structured in-depth interviews with key stakeholders. My time horizon is cross sectional with respect to the current stage of the case study/development I am researching (BPAO Phase II). I limited myself to a specific time frame focusing on the present time throughout my research period. My research paradigm fits well with my research study on stakeholder perspectives as it entails conducting interviews with respondents which is subjectivist and qualitative in nature.

3.2 Research methods

Due to my research being an in-depth case study, my research methods consisted of first and foremost desk research on documents that could provide me with context on the case study of Lutkemeer polder area related to the BPAO Phase II development, the history and development up until the present day, as well as future visions, plans and policy documents pertaining to all the above. This first research method coincided with a field observation conducted to add to the understanding of relevant visual contextual data for the BPAO Phase II case study. The second

research method and my main source of data came from the sixteen in-depth semi-structured interviews conducted with various key stakeholders related to the BPAO Phase II case study. The third and final research method was document analysis on the BPAO Phase II plans that MUST and TAUW created. Qualitative data collection and analysis is a continuous and iterative process during the entire length of the thesis research. This repetitive process is best suited for exploratory research which can be adaptable as new discoveries emerge (Silverman, 2015, p. 141). I believe that using qualitative research for my data collection and data analysis is the best method for me based on my research being exploratory in nature.

Some arguments why one in-depth case study was chosen comes from Flyvberg (2006), where they state that “social science has not succeeded in producing general, context-independent theory” (p. 223). The case study on the BPAO Phase II development is context dependent and will offer concrete knowledge on the phenomenon of circular area development within the unique socio-spatial peri-urban area that is the Lutkemeer polder, with the belief that the findings will be of more value societally for this geographical region. The academic validity was strengthened by incorporating sub-themes and theories (which have been explained above in the ‘Theoretical Framework’ section) to inform the research approach. Moreover, a “how” question is being asked (see ‘Research Question(s)’ section) about a contemporary event (circular area development in the Lutkemeer polder), and which I as the researcher have no control over (Yin, 2014). Another reason for the choice to do an in-depth case study is that a case study can focus in on real life situations and test views directly in relation to phenomenon as it unfolds (Flyvberg, 2006, p. 235).

Of the five rationales (*critical, unusual, common, revelatory, and longitudinal*) for single-case designs from Yin (2014), I chose a single case due to it being *unusual*. What makes this case study unusual is that SADC is developing the Lutkemeer polder under a concept which has not yet been properly studied or defined in the context of my case study (circular area development). Additionally, a case study such as BPAO Phase II has not been studied using the sub-themes and theories that were chosen of public interest and governance being used as an institutional perspective to aid in the view through a socio-spatial lens or dimension. The research positioning is unique and the theories that were chosen to ground this research are distinct for the topic of the case study on BPAO Phase II. There are no studies in the past that has looked at a ‘circular area

development' being developed in a peri-urban greenfield using a research strategy, approach, and methods such as this case study which makes this study unique.

3.3 Data collection

The data that was collected was done through qualitative research methods. As stated above, interviewing key stakeholders was the main source of data collected which fit the research aim of gathering different stakeholder perspectives on the circular ambitions that inform the BPAO Phase II development. The implementation of semi-structured interviews and the interview questions reflected the research aim, research problem, and research question/sub-questions (Van Thiel, 2014, p. 94). The interview protocol (as shown in the Appendix I) have main questions but allowed for some flexibility and changing of order when needed during the interviews. Furthermore, the probing questions that were asked allowed for in-depth rich data collection that was unique to each interview respondent. During the interviews, the seven questions were focused on exploring the different stakeholder perspectives and knowledge on circularity/circular economy, the values that they attach to the Lutkemeer polder, the BPAO Phase II development, and their own personal visions of the area. Questions were also asked about who the key stakeholders are and the impact that some stakeholders have on the BPAO Phase II development. Most of the interviews were conducted in person. This was better to see the emotions, facial expressions and body language which enrich the experience and data that was collected. There were two interviews conducted online which usually would hinder the data collected but that was not the case. The online interviews yielded the same quality and richness of data that was collected in person.

To support the main source of data, other sources of data were collected (all other data sources can be found in Table 2):

Zoning plan from municipality of Amsterdam

The Lutkemeerpolder bestemmingsplan (Lutkemeer polder destination plan) is a zoning plan that was used to give the research problem spatial context regarding the case study of BPAO Phase II development in the Lutkemeer polder (Gemeente Amsterdam, n.d. a-h).

Field Observation

The field observation was conducted by me the researcher to add to the understanding of the current spatial context of the BPAO Phase II case study.

Document analysis of BPAO Phase II plans from TAUW and MUST¹

Data was gathered and analysed from three separate planning documents which were authored by two consultancy firms TAUW and MUST. MUST created Beeldkwaliteitsplan BPAO fase 2: Circulaire identiteit en kwaliteit (Visual quality plan BPAO phase 2: Circular identity and quality) (MUST, 2020-a) and Stedenbouwkundig plan BPAO fase 2: Nieuwe samenhang in de polder (Urban development plan BPAO phase 2: New cohesion in the polder) (MUST, 2020-b), while both MUST and TAUW created the Definitief Inrichtingsplan BPAO fase 2 (Final design plan BPAO phase 2) (MUST and TAUW, 2022). Analysing these three documents will help show the planned circular ambitions for the BPAO Phase II case study and underpin the other primary data gathered (key stakeholder interviews). Furthermore, these three planning documents will be used as secondary data to help with triangulation which should enhance the validity and reliability of this research study.

Selected respondents

The interview respondents were selected based on having a *stake* in the BPAO Phase II development. A stakeholder is defined as “one that has a stake in an enterprise” and “one who is involved in or affected by a course of action” (Merriam-Webster, n.d.). All interview respondents have been involved in the BPAO Phase II development in some capacity either currently or in the past.

In the research proposal, there was an initial group of stakeholders (SADC, Municipality of Amsterdam, urban planning consultants, Tuinen van West, and residents/businesses of the Lutkemeer polder on the street Lutkemeerweg). There was special attention to select key stakeholders with a varied role in the case study and more generally in society (public actors such as local government, private actors such as local citizens and/or businesses, and market actors such as clients/end-users of the BPAO Phase II development) as shown in Table 1. The selection of stakeholders was to ensure validity and reliability in the research, that there was no bias, and to

¹ Disclaimer: These three planning documents are draft versions and not finalized. Moreover, the municipality of Amsterdam has not accepted these planning documents as final versions and therefore has not implemented them in the BPAO Phase II project.

gather a diverse set of stakeholder perspectives with the aim to inform the BPAO Phase II development as holistically as possible.

Table 1

Key stakeholders interviewed

Private Actors	Public Actors	Market Actors
<i>Tuinen van West</i> – 1 individual	<i>Municipality of Amsterdam</i> – 2 individuals	<i>Sustainability Consultants</i> – 2 individuals
<i>De Boterbloem</i> – 1 individual	<i>SADC</i> – 4 individuals	<i>Architectural Consultant</i> – 1 individual
<i>Land van Ons</i> – 1 individual	<i>Stadsdeel Nieuw-West</i> – 1 individual	<i>Client/End-user for BPAO Phase II</i> – 1 individual
<i>Lutkemeer polder Citizen</i> – 1 individual		<i>Urban Planning Consultant</i> – 1 individual

Other data used

The main data that was used for this research were interviews, but other data sources were used with different research methods implemented for these data sources shown in Table 2.

Table 2

Other data used for research

Type of Data	Title of Document
Planning Documents	<p>Beeldkwaliteitsplan BPAO fase 2: Circulaire identiteit en kwaliteit (Visual quality plan BPAO phase 2: Circular identity and quality) (MUST, 2020-a)</p> <p>Definitief Inrichtingsplan BPAO fase 2 (Final design plan BPAO phase 2) (MUST and TAUW, 2022)</p>

	Stedenbouwkundig plan BPAO fase 2: Nieuwe samenhang in de polder (Urban development plan BPAO phase 2: New cohesion in the polder) (MUST, 2020-b)
Zoning Plan Document	Lutkemeerpolder bestemmingsplan (Lutkemeer polder destination plan) (Gemeente Amsterdam, n.d. a-g)
Field Observation	Field observation of the BPAO Phase II case study

3.4 Data analysis

According to Van Thiel (2014), the first step once the data has been collected is to order the data (p. 142). The data analysis of the qualitative data collected from the sixteen stakeholder interviews and the other sources such as the planning documents, the zoning plan document and field observation was performed and completed immediately after data collection. The data that was analysed was ordered on the qualitative data analysis software ATLAS.ti. The decision to use this specific software came down to the comfortability and familiarity of using this data analysis software from past educational experiences. The benefits from using ATLAS.ti was that the qualitative data collected was stored in a systematic manner which made the analysis of the data easier than if ATLAS.ti was not used. As will be elaborated in sections 4.3 and 4.4, the qualitative data analysis technique of code generation using open coding and axial coding was performed on the data that was collected to be interpreted and developed into sound results and conclusions. The systematic approach of qualitative data analysis that was performed increases the repeatability (reliability) and credibility (validity) of the research results yielded.

3.5 Validity and reliability

Reliability

Van Thiel (2014) defines reliability as the accuracy and consistency of the variables being measured (p. 48). This means the results will match the level of accuracy and consistency (either coincidental due to low reliability or representative due to high reliability). Accuracy refers to the

measurement instruments used. My research used standardized data collection methods with specific protocols followed for each method. These protocols are found in the Appendices. As stated by Yin (2014), “the goal of reliability is to minimize the errors and biases in a study”.

Consistency refers to the repeatability of the research being undertaken. Consistency according to Van Thiel (2014) is harder to achieve than accuracy, especially if the research concentrates on people as a source of information (p. 48). A good portion of my data is from people and repeating the same study with different people has the possibility of producing different results which is why I have used the method of triangulation which I will explain further below that enhanced the validity and reliability of my research study (Van Thiel, 2014, p. 48).

Validity

Validity has two types: internal and external. Internal validity is the vigorousness of the research study and whether the effect that was really measured was intended to be measured (Van Thiel, 2014, p. 49). A hypothesis was not tested so internal validity was not as important as external validity. External validity is about being able to generalize the research study (Van Thiel, 2014, p. 49). This research study was an in-depth case study that relied on qualitative data so external validity was more important than internal validity. My aim was for my case study to be generalizable through my theoretical propositions. In other words, as Yin (2014) states, “your goal will be to expand and generalize theories (analytical generalizations) and not to extrapolate probabilities (statistical generalizations)”. Although my research was looking at a unique case study (BPAO Phase II in the Lutkemeer polder) with a concept that has not been defined yet (‘circular area development’), I made sure to implement the method of triangulation.

Triangulation

Using the method of triangulation is of significant importance to enhancing the validity and reliability of my research study (Van Thiel, 2014, p. 52). Triangulation is about implementing many sources of data and ways to collect data so that the academic integrity of the research study stays strong. Van Thiel (2014) lists four ways triangulation can be applied which has examples from my research study included in brackets (p. 52):

- 1) *Several measurement instruments are developed* (interviews, document analysis, field observation, and desk research)

- 2) *Several data sources* (Policy/planning/vision documents, interview respondents, observation)
- 3) *Inter-researcher comparison* (compared my research with fellow school and work colleagues who were also completing their master's thesis)
- 4) *Multiple research methods implemented* (*desk research* on the case study, *interviews* with key stakeholders, *document analysis* of BPAO Phase II plans, and *field observation* of the case study)

Sources of interference

According to Van Thiel (2014), there are three sources of interference that can weaken the reliability and validity of a research study (pp. 51-52). The first source of interference is *the researcher as a source of interference*. During my scientific schooling (pre-Master's in Human Geography at Radboud University 2019-2020 and more specifically Master's in Spatial Planning at Radboud University 2021-2022) I formed what is known as a research philosophy. As explained in the '3.1 Research Paradigm' section, my epistemological position sits within a transactional and subjectivist view, where the investigator and investigated are linked, and with the values of the investigator influencing the inquiry. This means that findings are value mediated. My methodological position is a dialogical and dialectical view where the aim of my inquire involves dialogue between the investigator and the investigated through the utilization of qualitative techniques (Guba & Lincoln, 1994, p. 110).

Myself as being the source of interference have remained conscious of my research philosophy and the possible private opinions and norms that I as the researcher can form. As I am human, there can be biases or mistakes made during the research process. I have done my best to limit this interference by being duly informed through good schooling and making myself aware of who I am as a researcher.

The second source of interference is the *measurement instruments as a source of interference*. Of the measurement instruments that have been used in this research (interviews, document analysis, field observation, and desk research), they have been developed well. Protocols have been created that have standardized the data collection process, especially for my main source of data which comes from the interviews. The execution and application of the instruments can be valid and reliable due to the protocols created for data collection. This means that a Standard Format

Interview Protocol (found in Appendix I) was created and while conducting the interviews asking the same main questions to every respondent so that the data can be compared and considered reliable with true accuracy and consistency.

The third and final source of interference are the *units of study as a source of interference*. The units of study are people who were interviewed. There is a possibility that interview respondents might give socially desirable answers or reply in a politically correct way to the research questions that I ask them. To reduce this source of interference triangulation was used. This means that if there is some interference in this regard, then as the researcher can rely on the other instruments that have been deployed, the other data sources used, the inter-researcher comparison with fellow colleagues, and the multiple research methods implemented.

3.6 Ethics

There are four ethical principles that a researcher should be aware of (from Diener and Crandall, 1978; as cited in Bryman, 2016, p. 125). The *first* ethical principle to consider is *if there is harm to participants*. During this research study, there was extra caution and attention paid to limit the harm done to participants. This was accomplished by making sure there was proper preparation with creating a Standard Format Interview Protocol (found in Appendix I), contacting the potential interview respondents via email, and not pressuring or coercing anyone to take part in this research study when they did not want to. During the interviews, I was mindful as the researcher to be professional and not cause any undue mental stress caused by the interview process itself. The places and settings where the interviews were conducted were appropriate and comfortable for each interview respondent. All interview respondents who participated volunteered and ultimately no harm was done to any interview respondent to collect the data.

The *second* ethical principle to consider is *if there is a lack of informed consent*. Every interview that was conducted came with an informed consent section (as shown in the Standard Format Interview Protocol found in Appendix I). During the interviews, the purpose of the interview was explained to the respondents as well as explicit asking for permission so that the interview could be recorded, at which point the interview respondents agreed and signed the document. For the two interviews that were conducted online, I have recorded verbal confirmation and informed consent.

The *third* ethical principle to consider is *if there an invasion of privacy*. As explained above (and shown in the Standard Format Interview Protocol in Appendix I) before and after each interview with a respondent, I verbally assured them that their privacy will be ensured and identity anonymized. Moreover, the interview respondent's privacy during the interview process was respected if need be.

The *fourth* and final ethical principle to consider is *if deception was used*. During this research study, there was no deception used towards any interview respondent to collect the data. All interview respondents were contacted via email and/or phone if they would voluntarily participate in this research study. At the beginning of conducting the interviews, the purpose of the interview and details of this research study was clear and explained to all interview respondents.

SADC thesis internship

When SADC hired me as an intern, the intention was for myself to research and study 'circular area development'. The purpose of the internship with SADC was to gain practical experience through the mix of a 'thesis internship' and 'work placement'. My external supervisor from SADC was Pieter van der Horst, who ensured that there were the necessary facilities to be able to conduct this thesis and perform the internship properly. There was an initial desire to complete a comparative case study analysis between various 'circular area developments' in the Netherlands, but due to the thesis contract with SADC only being six months long the decision was to simplify what was going to be studied. When the discovery of BPAO Phase II occurred, there was initial intrigue and curiosity due to the current situation with societal resistance towards the development. SADC did not commission me to conduct a research study on one of their development projects (BPAO Phase II). As an independent researcher I came to them willingly of my own freewill and out of my own interest and curiosity to study the unique phenomenon of 'circular area development' within a case study of what I believe is a geographically sensitive area. To maintain impartiality, the adhering to the four ethics principles explained above while being neutrality during the whole research process was paramount. This was especially the case during the data collection process as some of the respondents work for SADC. There is confidence that due diligence was accomplished and that everything has been done to keep the academic integrity of this research study. There was an appropriate and proper distance between the researcher (me) and SADC (as the internship organization) so as not to be biased in any part of the research process.

4 Case study

To understand the BPAO Phase II development, we first need to look at the history of the Lutkemeer polder and the current spatial structure/functional layout of the area (shown in Figure 9). All information provided is from the current Lutkemeerpolder bestemmingsplan (zoning plan) that was adopted on April 24th, 2013, accessible at ruimtelijkeplannen.nl (Gemeente Amsterdam, n.d.).

4.1 History of Lutkemeer polder

The Lutkemeer polder has a history of being transformed. Figure 6 shows three images in time where the area evolved and so did the function. From raging flood waters to the construction of the Ringvaartdijk and ‘Lutke Meer’, to subdivided agricultural land, this area transitioned to accommodate the urbanization of neighbouring Amsterdam. By late 20th century there was more pressure to change the agricultural function of the polder to an urban function (Gemeente Amsterdam, n.d.-b). The Lutkemeer polder currently sits in ‘Tuinen van West’ (Gardens of the West) an urban agriculture and recreation area incorporated in 2007 and located between Amsterdam, the Haarlemmermeer ring canal, Halfweg and Haarlemmerweg (Tuinen van West, n.d.-a). The goal of Tuinen van West and its four polders is to investigate and show the possibilities of a circular economy in the recreation and (urban) agriculture area by encouraging entrepreneurs to be involved in sustainable and circular agricultural projects (Tuinen van West, n.d.-b). There are now many agricultural businesses and private residence who live in Tuinen van West and more specifically in the Lutkemeer polder whose lifestyle ascribes to the values of a peri-urban area. Right next to this peri-urban area adjacent to the Lutkemeer polder is a ‘green wedge’.

‘Groene Scheggen’ (green wedges) of Amsterdam

Amsterdam currently has 8 ‘green wedges’ of landscaped area around the city. This was brought on by a dream of Cornelis van Eesteren 80 years ago through the (AUP) Algemeen Uitbreidings Plan (general expansion plan). He wanted every Amsterdammer to be within ten minutes of a green area full of natural vegetation (De Amsterdamse Scheggen, n.d.-b). The 8 ‘green wedges’ are shown below in Figure 7. Currently these 8 park landscapes are under threat from a continued expansion of urbanisation and homebuilding (De Amsterdamse Scheggen, n.d.-b).

The Lutkemeer polder is in direct contact with the border of Scheg van West, one of the green wedges of Amsterdam. The Scheg van West has been used for agriculture for hundreds of years. The area of Scheg van West covers part of Haarlemmermeer and the polders between Geuzenveld-Slotermeer and Osdorp which is shown as number three in Figure 7 (De Amsterdamse Scheggen, 2019).

SADC, GEM, BPAO, and De Boterbloem

Due to the Lutkemeer polder's proximity to Schiphol/Amsterdam Airport and the municipality of Amsterdam, there is a strong relationship, influence, and intended spatial activity/land planning within the area (Gemeente Amsterdam, n.d.-a). This is shown by the formation of Schiphol Area Development Company (SADC) in 1987. SADC is a public-private organization comprised of four equal shareholders (Municipality of Haarlemmermeer, Municipality of Amsterdam, Province of North Holland, and Schiphol Group). The purpose of SADC is to develop high quality business locations in the Amsterdam logistics area to strengthen the region's competitive position (SADC, n.d.-b).

One of the business locations that SADC is developing is Business Park Amsterdam Osdorp (BPAO) which is in the Lutkemeer polder. BPAO is split into two phases (Phase I and Phase II). Phase I is almost complete and Phase II is starting the construction phase. BPAO Phase II is a greenfield business park/urban logistics hub being developed on what was previously peri-urban agricultural land. Before the start of BPAO Phase II, there was a decision to create a Gemeenschappelijke Exploitatie Maatschappij (GEM) Lutkemeer C.V. (Limited Partnership). This joint exploitation company was created by SADC and the municipality of Amsterdam (with SADC having 80% share while the municipality of Amsterdam has 20% share) to execute the development of BPAO Phase II (Gemeente Amsterdam, n.d.-h).

Next to BPAO Phase II is an organic care farm 'De Boterbloem' (The Buttercup) owned and operated since 1997 (De Boterbloem Interview Respondent, personal communication, June 25, 2022). It is located right next to the BPAO Phase II development on Lutkemeerweg as shown in Figure 8. The land which BPAO Phase II development is being constructed on was willingly sold by the owner(s) of De Boterbloem to the municipality of Amsterdam. The municipality of Amsterdam then leased the land back to De Boterbloem on the conditions that when it comes time to start building BPAO Phase II, De Boterbloem would have to stop their farming activities to

make way for the business park (GroenLinks, n.d.). Most recently out of a negotiation of goodwill, GEM Lutkemeer gifted De Boterbloem two hectares of land to continue their farming (SADC Interview Respondent, personal communication, June 22, 2022).

Civil society collective action groups and citizens cooperatives

Due to the current spatial development situation, there has been some collective action by citizens and more specifically activist organizations who are protesting as well as a citizen cooperative who is attempting to buy the land where BPAO Phase II is being developed. The *first* collective action group is called *Behoud Lutkemeer* (Keep Lutkemeer). This is an organization of citizens who have been opposing and campaigning to stop the BPAO Phase II development in the Lutkemeer polder since 2018. The claim is that the Lutkemeer polder has scenic and historical value with fertile soil for growing produce and that it should not be touched or changed by the development of a business park/urban logistics hub (Behoud Lutkemeer, n.d.-a). There was a report that Behoud Lutkemeer commissioned which was conducted by Schutt and Amelung (2020) from Wageningen University and Research (WUR) on the natural capital of the Lutkemeer polder. The conclusion was that there are important ecosystem services present in the Lutkemeer polder such as food production, air purification, recreation, and the monetary effect of greenery on house prices which are valued at 1.5 to 8.6 million euros per year (Schutt & Amelung, 2020).

The *second* group is a citizen cooperative called *Land van Ons* (country of ours). This is a group of people and organizations who legally acquire land to be used for agricultural purposes. Furthermore, Land van Ons has been involved with (in partnership with Voedselpark Amsterdam explained below) attempting to purchase the land in the Lutkemeer polder that is designated for the BPAO Phase II development (Land van Ons, n.d.). The *third* group is a collective action *Voedselpark Amsterdam*. This is a cooperative of people and organizations who are petitioning to purchase the land in the Lutkemeer polder that is designated for the BPAO Phase II development for the purpose of turning it into an eco-agricultural landscape park (Voedselpark Amsterdam, 2022).

4.2 Case study field observation

As stated by Yin (2014), “observational evidence is often useful in providing additional information about the topic being studied”. In this instance the observation took place in the ‘field’ and the object of observation was the BPAO Phase II case study.

The case study field observation took place on Thursday May 19th at 14:00. The duration of the observation was one hour. The location of the observation was on the site of BPAO Phase II development in the Lutkemeer polder. The participant was me and there were notes taken down as the observation was being conducted.

Descriptive notes summary

The words used to describe what was being observed was *flat*, *wet* (it was raining), *dirt/mud*, *water canals*, *trees*, *shrubs*, *construction*. A great deal of time was spent walking around and taking in the visual of the current spatial quality of the BPAO Phase II development. The plots that are designated for future buildings that will be inhabited by the clients/end-user businesses were empty. All that was observed was flat land with some grass growing where the plots were. Figure 25 gives a good image of the empty flat landscape of BPAO Phase II. There were canals dug which separated the plots from each other and Bromostraat. This is shown in Figure 20. On the side of BPAO Phase II where Lutkemeerweg is, there were businesses and private residences that were backing onto the land that was being prepped for construction. Snapshots of this side of BPAO Phase II is shown in Figures 21, 22, and 23. There is also a picture taken by me which shows the ‘circular underlayer’ of Bromostraat which was finished being constructed depicted in Figure 24. There is more information on this process elaborated in section 4.4.3 Definitief inrichtingsplan BPAO fase 2. Another image shown in Figure 26 shows the south-western border of BPAO Phase II facing towards Etnastraat. What separates BPAO Phase II and Etnastraat is an existing water canal with vegetation on both banks of the waterway. The north-east facing side of BPAO Phase II had a berm of dirt and on the other side a neighbouring farm field. The north-west facing side of BPAO Phase II had the heavily wooded nature reserve (Groene As). While the field observation was taking place, there were construction workers on site who were working.

Reflective notes summary

The reflective portion of the case study took place directly after the one-hour field observation of the BPAO Phase II development. What was noticed the most was the calmness of walking around. There wasn’t much noise aside from the odd plane taking off or landing which was a constant reminder of the proximity this area is to Schiphol Amsterdam Airport. There was a good sense of the plot sizes and how close the BPAO Phase II development is to the neighbouring

areas from all directions. It was good to see the case study in the current stage that it was in because it is a crucial turning point between what was in the past (which the historical context was felt) and what is planned for the future (which is going to visually change the spatiality of the area dramatically).

4.3 Interviews

As shown in Table 1 there were sixteen interviews conducted with a diverse group who are stakeholders in the BPAO Phase II development. These stakeholders were organized based on their societal function (public, private and market actors) which is inspired by Steurer's (2013) government, civil society, and market spheres. Moreover, the interview respondents have been anonymized due to the sensitive nature of the case study, and to protect all sixteen respondents from any potential harm to their personal and/or professional reputation.

ATLAS.ti analysis of interview transcripts

While analyzing all sixteen interview transcripts, an initial round of open coding was completed as well as coding based on the interview questions that were asked to each respondent. 901 codes were then created from sixteen interviews. Some codes were cleaned up and merged into codes that were similar. Next the codes were arranged into their respective code groups based on the interview questions were asked and new code groups/themes that I started to discover as the data analysis was underway. The next step was to then re-analyse the code groups that were formed and create themes from these code groups. The codes that were the most mentioned by multiple interview respondents were:

- *Key Stakeholder: Municipality of Amsterdam* (14 codes from 14 interview respondents)
- *Key Stakeholder: SADC* (13 codes from 13 interview respondents)
- *Stakeholder Impacted by BPAO Phase II: Local Residents* (10 codes from 10 interview respondents)
- *Green* (9 codes)
- *Stakeholder Impacting BPAO Phase II: Municipality of Amsterdam* (7 codes from 7 interview respondents)
- *Key Stakeholder: Clients/End-users of BPAO Phase II* (6 codes from 6 interview respondents)
- *Key Stakeholder: Local Residents/Citizens* (5 codes from 5 interview respondents)

Listing the most mentioned codes is important because this gives a preliminary idea of what several interview respondents felt. This then gives good insight into understanding the BPAO Phase II case study and what key stakeholders were thinking. All these codes (apart from *Green*) had to do with the D.1 stakeholder questions from the Standard Format Interview Protocol (found in Appendix I). This might have been due to the way the question was asked.

4.3.1 Findings from the interviews

Ten code groups were created that were related to the five interview categories that were formed for my interviews. Furthermore, five new code groups were discovered as codes were being analysed and grouped. And lastly three codes groups were formed based on underlying feelings of interpretation from the interview respondents' answers.

Code groups related to five interview categories

Introduction and background of respondents

The codes that were grouped into this category was a mix of varied professional and educational experience. Some industries of where the interview respondents have experienced education and career experience were in *architecture* and *urban planning*, *engineering*, *law*, *medicine*, *management* and *economics*, and *environmental science*. This diverse data gathered from all sixteen interview respondents reflects the very different perspectives that I attempted to uncover to understand the BPAO Phase II case study as holistically as possible.

Circularity

There was a noticeable number of interview respondents talking about *material re-use* or *recycling* when asked about their knowledge of the circular economy. There was also a visible number of *critical* and *pessimistic* comments about circularity being *difficult to comprehend*, *hard to implement*, *industry unpreparedness* and the term which I never heard of until now '*circular washing*'.

BPAO Phase II circularity

There were not many interview respondents who talked about circularity related to the BPAO Phase II development. There were some mentions of *potential*; *materials*, *energy*, and *water reuse*; and *circular functions* of the roofs.

Values of:

Lutkemeer polder

The things that the interview respondents valued the most about the Lutkemeer polder was that it was *historically significant* due to the reclamation from a lake to agricultural farmland. The Lutkemeer polder is known for *agriculture* and the polder itself as an area geographically is *small*. Visually a lot of interview respondents commented on the polder's *natural* attributes of *greenery*. Positionally the polder is *peri-urban* which sits on the edge of the city of Amsterdam and brushing up against an arm of the 'Groene Scheggen' (See section on the 'Groene Scheggen' (green wedges) of Amsterdam). This Lutkemeer polder has had *economic production value* of *historically agriculture* and now presently attempting to *transition* to other forms.

BPAO Phase II

There were quite a few interview respondents who were *hopeful/optimistic/positive* mentioning often about the *good conceptual plans* with *potential* and *ambitions*. There were also frequent mentions of *integrating multiple functions* (recreation, agricultural, industrial, ecological) to the local area through *mobile connectivity of bike paths* and the 'waterpark' running through, *increasing biodiversity and nature* by incorporating *Blue-Green Infrastructure (BGI)* in *landscaping* and the *buildings*. Ghofrani, Sposito, and Faggian (2017) define the concept of BGI as:

an interconnected network of natural and designed landscape components, including water bodies and green and open spaces, which provide multiple functions such as: (i) water storage for irrigation and industry use, (ii) flood control, (iii) wetland areas for wildlife habitat or water purification. (p. 15)

There were also some interview respondents *critical* of BPAO Phase II describing the development as *not in the interests of Amsterdam citizens*, being developed *only to make money*, and a *mismatch of values/interests/ambitions*.

Future vision

The reason for asking the interview respondents what the ideal future looks like for this area (Lutkemeer polder and/or BPAO Phase II area) was to get information on each individual

respondent's dreams/visions to see if they align or are completely different from the current visions of government for the area and the current plans for BPAO Phase II. The responses were about the *social* aspects of the area. *Mixing various functions (social, economic, ecological, agricultural, etc.)* was talked about frequently while the overall sense was one of *community* and *connecting* and/or *integrating* BPAO Phase II with the *local community*. *Social cohesiveness* was the overall vision from the interview respondents.

Key stakeholders

The *municipality of Amsterdam* and *SADC* were mentioned by almost every interview respondent as a key stakeholder to the BPAO Phase II development. Fourteen out of sixteen interview respondents said that the *municipality of Amsterdam* was one of the key stakeholders of the BPAO Phase II development. Thirteen out of sixteen interview respondents said that *SADC* was one of the key stakeholders of the BPAO Phase II development. Six interview respondents stated that the *clients/end-users* as key stakeholders to the BPAO Phase II development. Only five respondents stated *local citizens/residents* as key stakeholders to the BPAO Phase II development.

Stakeholder impact

Ten out of sixteen interview respondents mentioned the stakeholder most impacted by the BPAO Phase II development was *residents/businesses on Lutkemeerweg*. Seven out of sixteen interview respondents mentioned the stakeholder impacting the BPAO Phase II the most was the *municipality of Amsterdam*.

Barriers/resistance

Many interview respondents spoke about *circular ambitions* and the *difficulty* it may be to *realize* these ambitions/plans with regards to the BPAO Phase II development. The responses also *reinforced* the current *bottom-up resistance* from *activist groups*. There is an overall symbolic battle for nature/ecology vs economy/industry and a destruction of nature for dirty industry narrative. As mentioned above there was also a visible number of *critical* and *pessimistic* comments about *circularity* being *difficult to comprehend*, *hard to implement*, *industry unpreparedness* and again the term which I had never come across until now, '*circular washing*'.

Reflection

Part E of the interview where the reflection question was asked yielded some very rich data. The interview respondents gave *genuine truthful* answers. More than half the responses were *critical* of the BPAO Phase II development. There were some pessimism directed towards the *community orchard* that has been discussed now and its role as a *social function* to *incorporate* the *local community* (residents and businesses). The *area is struggling to keep its identity* but also to *transform* and create a *new identity*. Keeping the BPAO Phase II development *ambitious* as well as *enforcing the circular ambitions* was an issue brought up. *Integration/symbiosis* and *cooperation* between *stakeholders* and being more *transparent* and *communicative* with one another. Overall, there were some doubts and worries towards the BPAO Phase II and *unsure* about what was to come from this development, but there was also a sentiment of *opportunity to develop right* with the best intentions in mind.

Code groups created from grouping individual codes

Historical/Case Study

At the center of this case study is one business that has *historically owned* the *land* and is now fighting to stop the BPAO Phase II development, *De Boterbloem*. What was *discovered* from the interview data is that De Boterbloem historically and currently been *deeply involved* in the area that is now being developed as BPAO Phase II with *support* from *collective action groups* in an attempt to stop and even most recently start a crowdfunding to buy back the land from the municipality of Amsterdam who currently owns the land.

Green

Every single interview respondent talked about the word '*green*'. This term mostly came up when the interview respondents were talking about what they *value* about Lutkemeer polder, BPAO Phase II, or their ideal future vision. Green in this case means the current, planned, and future landscaping of plants and nature. The visual quality of the Lutkemeer polder and the site of where BPAO Phase II is being developed has a visually striking green quality to it. There is an abundance of a variety of trees, shrubs, grass, etc. which is currently evident when looking at the polder (as displayed in Figure 19).

Ambitions

This is a phrase that was talked about *many times* by the interview respondents. The ‘ambitions’ revolved around the BPAO Phase II plans having *circular and sustainable ambitions* as well as the municipality of Amsterdam having *ambitions* in their *circular and sustainable urban plans*. Again, many interview respondents showed some worry and there were some doubts if the circular and sustainable ambitions would be adhered to and eventually realized.

Hopeful/Positive

There were many *positive comments* on the *BPAO Phase II development* and the personal values from the respective visions and reflections of the interview respondents. There was a lot of *excitement* and *hopefulness* that BPAO Phase II is going to *reach the ambitions* that has been set out. There was a general sentiment and hopefulness towards an *increase in cooperation* and connection between *various stakeholders*. More specifically aligning and sharing in a unified vision for the area. The words used repeatedly were *integrated, connected, increase, and better*.

Critical/Negative

There were also many *negative comments* on the future plans of the *BPAO Phase II development* and the area (Lutkemeer polder) where it is being developed. These comments came from a variety of stakeholders that cut across public, private, and market actors. Many mentioned the *fighting against other stakeholder interests*. There are several people involved in the BPAO Phase II development with many *differing priorities and interests*. Ten out of the sixteen interview respondents stated that the *residents surrounding the BPAO Phase II development* will be the *most negatively impacted* due to various *nuisances* of the *building and operation* of the *business park*. Some interview respondents mentioned that it is *difficult* for *Amsterdammers* to see the *ambitions* of the BPAO Phase II development.

There were many critical comments towards the *circularity* of the BPAO Phase II development. Phrases such as ‘*Circular Washing*’ were mentioned and that circularity is *difficult to comprehend*, is *overclaimed*, *difficult to answer*, and *difficult to achieve* in a project such as BPAO Phase II. The *circular ambitions* are *hard to meet* and can *cost a lot of money*. Moreover, *industry is ignorant* and *unprepared* to deal with *circular area development*, and lastly that sometimes *circularity is not the solution*.

Other code groups

There were smaller code groups discovered when analysing the interview data. One was *economic* due to there being an economic undertone with some mentions that the BPAO Phase II development will be *good for the local economy* and the *economic development* of the Amsterdam area. There was also a *social* element in some of the interview respondents' answers regarding the BPAO Phase II development in that there is a *societal disconnect* between *government planning policies* and the *interests of local citizens and residents of the area*. There was also some skepticism of the *social ambitions* of BPAO Phase II related to the community fruit orchard that is in the plans to be implemented. Again, there was an undertone of 'green' and focusing on the greenness related to the current and planned landscape of the Lutkemeer polder and the BPAO Phase II development.

Summary from interviews

Of the code groups that were created and elaborated above, what came out of the interview data analysis were nine themes which suffused throughout the case study. The *first theme* was *varied/unique perspectives, education, and experience*. What was fascinating about the diversity of the interview respondents was their individual perspectives which comes from their previous education and experiences ultimately forming their current worldview and specific to the case study their distinct perspective on the BPAO Phase II case study. The *second theme* revealed was the *critical, pessimistic, and negative* which were feelings felt by many interview respondents. As explained above there is some pessimism regarding what the interview respondents valued about BPAO Phase II. The *third theme* which is opposite of the second theme is a *hopeful, optimistic, and positive* which again were feelings expressed by many interview respondents when attaching values to the BPAO Phase II case study throughout the interview process. The *fourth theme* discovered was the *material and biodiversity focus*. This theme was inherent throughout all interview respondents as they explored their thoughts and perspectives on the circular ambitions of the BPAO Phase II development. The *fifth theme* was the *historical significance* of the area where the BPAO Phase II case study is being developed. What was gathered from analyzing the interview data was that the area BPAO Phase II is being developed in is historical and many of the interview respondents value the history of the Lutkemeer polder. The *sixth theme* which came out of the data analysis was the *desire to connect with local community through recreational/social*

functions. This sixth theme was apparent in many interviews whereby there is a social/recreational dimension which key stakeholders are attempting to focus their attention and efforts towards. The sixth theme segues into the seventh and eighth theme, whereby the way in which the various stakeholders perceive this desire to connect through recreational and social functions varies based on the societal role each respective interview respondent envelopes (public, private, or market). The *seventh theme* was *top-down governance steering* which directly influences and is influence by the *eighth theme* of the *bottom-up resistance/opposition* towards the BPAO Phase II. The seventh and eighth themes are a result of differing perspectives and values based on the perceived societal function attached to the BPAO Phase II case study. The seventh and eighth themes leads into the final and *ninth theme* discovered which is *no communication or collaboration* between public and private actors. There is a fragmentation of what could be a working relationship between key stakeholders but due to the varying values and desires for how the actors perceive the BPAO Phase II case study.

4.4 Document analysis of planning documents

As show in Table 2 there were three planning documents that were analysed using the ATLAS.ti coding software. The three planning documents are the beeldkwaliteitsplan BPAO fase 2: Circulaire identiteit en kwaliteit, definitief inrichtingsplan BPAO fase 2, and stedenbouwkundig plan BPAO fase 2: Nieuwe samenhang in de polder. These three planning documents make up the urban development plans from consultancy firms MUST and TAUW. These three planning documents were analysed to be triangulated with the findings and themes from the interview transcripts. The analysis was performed through the coding software ATLAS.ti using an open coding technique to create codes for text body and images of each planning document. The codes were then grouped into relevant code groups, and from the code groups code themes were then formed.

4.4.1 Beeldkwaliteitsplan BPAO fase 2: circulaire identiteit en kwaliteit

(Visual quality plan BPAO phase 2: Circular identity and quality)

The beeldkwaliteitsplan is a visual quality plan created by the urban planning consultancy firm MUST. The aim of this document is to show the integration of BPAO Phase II into the surrounding environment (physical, ecological, social, etc.). There are six ‘building blocks’ implemented into key areas shown in Figure 10 (MUST, 2020-a): The *first* building block is the forming a visual

buffer of trees to hide the buildings from view. The *second* building block is the forming a visual buffer of BGI between buildings and residents on Lutkemeerweg. The *third* building block is to implement waterways and green facades which separate the buildings and Etnastraat. The *fourth* building block is to create an ecological BGI buffer between the nature reserve Groene As (area number 2 shown in Figure 9) and buildings within the business park. The *fifth* building block is the implementation of the ‘waterpark’ as an important recreational and environmental function to connect with people and the local ecology of the area. The *sixth* building block is to implement walking and cycling routes through the business park to connect to the surrounding area.

The six ‘building blocks’ have been coupled with five main ‘rules of the game’. The five rules of the game are shown on the ‘Game Rules Card’ shown in Figure 11. The five main rules of the game are underpinned by underlying architectural rules that expand on the main requirements (MUST, 2020-a). The *first* main rule is that *circularity and sustainability are the design themes for architecture*. This means the use of green facades, ecology integral to the design, the implementation of a ‘water circulation system’ via the collection and distribution of rainwater, the usage of large roofs for solar panels and the generation of solar energy, and lastly the design focused on circular and ecological values while preventing heat stress. The *second* main rule is to *focus on a limited number of lively places with a public character*. This shows as the main entrances of the buildings facing the ‘waterpark’ in the middle and two other mobility corridors, mandatory façade zones which orients the buildings towards pedestrian routes, transparent and translucent facades, and striking architectural design for buildings along Etnastraat to invite the public. The *third* main rule is to focus on *unity and harmony through simple forms and rhythm in architecture and careful detailing*. This means simple volume of buildings with no striking façade deviations, buildings will have plinths on all sides, durable and restrained material palette relating to circular and sustainable character, each building will have one color to abide by, corners and eaves have been designed to match the chosen façade, windows and doors are laid back into the facades, rhythmic lines along facades to create simple and calm image, advertising is only allowed once per façade matching the rhythm, and parking spaces are realized on a raised deck or multi-layered parking garage. The *fourth* main rule is *clear and socially safe layout of the business park and design of the buildings*. This means avoiding fencing as much as possible, green fences carried out as much as possible, using BPAO slat fencing in places where fencing is unavoidable, the use of indirect lighting of façade surface and lighting from the interior of buildings as much as possible,

light poles and light fixtures are identical throughout the business park, the number of driveways is limited to the minimum necessary, and regarding site layout, using materials that reduce heat stress and can collect rainwater. The *fifth* and final main rule is *technical installations are an integral part of the design assignment for the buildings and the undeveloped space*. This means individual technical buildings or structures are not permitted on the site (bicycle sheds, transformers, waste disposal, etc.) and loose objects on site kept to a minimum (i.e., freestanding advertisement signs not allowed). These five main rules of the game are underpinned by underlying architectural rules that expand on the main requirements (MUST, 2020-a).

Summary of beeldkwaliteitsplan BPAO fase 2: Circulaire identiteit en kwaliteit

From the document analysis and coding of the beeldskwaliteitsplan, there were four themes that were discovered. The *first* theme was *juxtaposition*. This is due to the contrasting nature of the plans. There is the goal of integration and connectivity for the building plots and the surrounding community/area, but also of buffering and separation for the building plots and the surrounding community/area. This is shown in the design of this planning document. Two out of six ‘building blocks’ relate to integrating the three corridors and ‘waterpark’ in the middle corridor to attract pedestrians and cyclists whereas four out of six ‘building blocks’ relate to buffering and hiding the buildings from the view of surrounding residents using BGI. The *second* theme was *minimalism*. This is shown in the simplicity of the design and function of the plans. There are ambitions for no loose objects in the business park and no invasive building facades. There is continuity with the corridors for mobility of people, plants, and animals. The third theme was *Blue-Green Infrastructure (BGI)*. There is a big focus on BGI to buffer the visuals of the buildings from onlookers but also to integrate the development into the space that it will inhabit. There is repeated mention of ecological benefits. Moreover, the focus is on the planned circular and sustainable benefits which are the prevention of heat stress on occupants and visitors, the using of circular materials where possible, and BGI is the design theme for the architecture of the whole of BPAO Phase II, with an emphasis on ecology, food production, and water circulation. The *fourth* and final theme for this planning document is *social connectivity*. There were mention of three planned mobility corridors for pedestrian and cyclist traffic which connect both sides (Groene As and Westgaarde cemetery) of BPAO Phase II. The ‘waterpark’ is planned to be situated in the middle corridor acting as a social hub for gathering, leisure and recreation amongst employees of the

clients/end-users and visitors passing through. Moreover, the building entrances will be situated towards the three corridors to initiate more social connectivity.

4.4.2 Stedenbouwkundig plan BPAO fase 2: Nieuwe samenhang in de polder

(Urban development plan BPAO phase 2: New cohesion in the polder)

The stedenbouwkundig plan is an urban planning document created by the urban planning consultancy firm MUST. The aim of this document is to show the opportunity that BPAO Phase II has to integrate into an area and city (Amsterdam) that is under transition from linear to circular economy while also keeping the historical structure of the area intact. This is shown by examples of integration and connecting into the surrounding environment (MUST, 2020-b). The revision of the zoning plans and the need to adjust the planning framework to the current circular principles is explained. BPAO Phase II is a forty-five-hectare piece of land situated in the Lutkemeer polder, a green area on the urban fringe of Amsterdam which has current ecological and recreational functions. This is shown in an aerial photo provided by MUST from this planning document in Figure 12 (MUST, 2020-b).

The area that is planned for BPAO Phase II is surrounded by lots of vegetation and ecological value. There is the Westgaarde cemetery to the south-east of with a matured landscaping of large trees and underbrush. To the west is the Groene As which is an ecological wetland nature reserve with dense groves. Encompassing the Lutkemeer polder is the Tuinen van West. BPAO Phase II is now attempting to integrate into this contextual polder landscape explained above (MUST, 2020-b).

BPAO Phase II will be different

There is a section in this document that lists twelve ‘circular tasks’ that can play a role in area development via the high ambitions that GEM Lutkemeer formed for circular area development. These tasks are *rainwater, greywater, blackwater, electricity, social community, building materials, waste, organic waste, mobility, food, clay, and heat* all shown in Figure 13 (MUST, 2020-b).

New cohesion in the polder

This section explained how the Lutkemeer polder is going through a transformation and the integration of BPAO Phase II will help aid in the transition to a circular economy with the attempted connection to the local area in many through recreational functions and ecological networks. Connecting to the natural landscape that surrounds BPAO Phase II is key in the integration which will be accomplished through the three mobility corridors, and especially in the middle corridor. The middle mobility corridor is planned to have a ‘waterpark’ that can serve as the cohesive center point of the whole area. This ‘waterpark’ is a corridor of a walking and cycling path covered with landscaped green plants and blue water features. The ‘waterpark’ will connect with the natural edge and rich local ecology of the surrounding area (Groene As and Westgaarde cemetery). A visual of the planned ‘waterpark’ is displayed in Figure 15. BPAO Phase II seeks to connect with the urban plan aligning with the historical structure of the Lutkemeer polder by continuing the urban agriculture through the visioning of social events along the Lutkemeerweg side of the business park. There will be the disappearing view of the open polder landscape so softening the visual of buildings with a green buffer/screen of trees are planned. Lastly the routes and connections created via pedestrian, cyclist, and vehicle pathways help with the integration of BPAO Phase II in the Lutkemeer polder (MUST, 2020-b).

Summary of stedenbouwkundig plan BPAO fase 2: Nieuwe samenhang in de polder

From the document analysis and coding of the stedenbouwkundig plan, there were three themes that were found. The *first* theme was *circularity function*. As revealed in Figure 13, there is a plan envisioned to incorporate circular tasks into the BPAO Phase II area development. Collaborating with Tuinen van West, the business operations of the eventual Clients/End-users, and various neighbouring care farms such as De Boterbloem on Lutkemeerweg is an avenue for integrating BPAO Phase II into the area. The stedenbouwkundig plan was the only planning document that went the most into some detail on circular flows and circular area development, however it was not in-depth and just scratched the surface on circularity. The plan did offer a good starting point for what ‘circular tasks’ would fit well with the area (Tuinen van West), the development (BPAO Phase II), and the individual plots (for Clients/End-users).

The *second* theme was *economic function*. BPAO Phase II is situated in a strategic location for Schiphol and Amsterdam. This means that for logistics and distribution of goods, BPAO Phase II

is a good location. For these ‘circular warehouses’ as the document calls them, there are five factors that play a role. The first factor is the plan for all electric whereby the distribution of goods from warehouse to consumer will be powered by clean electricity from renewable sources. The second factor is the business to consumer proximity. Due to the location of BPAO Phase II, the distance to transport from urban logistics hub to consumer is shortened and limited. The third factor is the opportunity to go from bigger modes of transport to smaller modes of transport to distribute the goods. The fourth factor is fast delivery due to the proximity and location of BPAO Phase II to the population center (Amsterdam) it delivers to. The fifth and last factor are the circular flows. This will come from the Clients/End-users which will reuse and recycle their material waste flows caused from business operations.

The *third* and final theme from this planning document was *ecological, social, and recreational functions*. Connecting to the local environment via the mobility corridors and ‘waterpark’ is the planned result of these envisioned functions. There is also the connecting and integrating with surrounding existing areas: Groene As is an important ecological area with a variety of flora and fauna, Lutkemeerweg as an important social and recreational area, the softening of visual disruptions caused by the building facades by incorporating BGI on the North side of BPAO Phase II facing the Wijsentkade dike, and the ‘waterpark’ in the middle of the BPAO Phase II development to bring all three functions together which is considered the ‘heart’ of the business park.

4.4.3 Definitief inrichtingsplan BPAO fase 2

(Final design plan BPAO phase 2)

Introduction

The definitief inrichtingsplan is an urban planning document created by the urban planning consultancy firm MUST and TAUW. The aim of this document is to show the final design layout plan of BPAO Phase II. This planning document is split into six parts: the introduction, four subareas covering the visual design of the ‘waterpark’, Bromostraat, the transition between the nature zone west and BPAO Phase II in the polder, the transition of Lutkemeerweg, and the plan elements such as the plants and materials. The subareas are shown in Figure 14 (MUST & TAUW, 2022).

Subarea 1: ‘Waterpark’

The ‘waterpark’ intends to have an elevated wooden boardwalk running through the length of the ‘waterpark’. There will be four aqueducts which collect rainwater from the buildings and into the circular water system of the BPAO Phase II business park. The wind watermill will be the pump that circulates all the water collected into the water system of the business park. Additionally, a wadi will pervade the ground which the ‘waterpark’ will occupy with pools of water (‘Water Mirrors’ and ‘Shot Glasses’) to hold and diffuse the water collected. A visual rendering of the ‘waterpark’ is shown in Figure 15 (MUST & TAUW, 2022).

Subarea 2: Bromostraat

The second subarea will be Bromostraat which is the u-shaped road that will be used for access into and out of the BPAO Phase II business park. Next to the road will also include pedestrian and cyclist paths along a fruit orchard to allow for use by company employees and visiting people passing by. There will be two pedestrian/cyclist paths cutting through BPAO Phase II business park (through the middle ‘waterpark’ and the north area) and connecting with Westgaarde cemetery and care farms on Lutkemeerweg, and the Groene As ecological area. The Bromostraat is depicted in Figure 16 (MUST & TAUW, 2022).

Subarea 3: Transition between Nature Zone West and BPAO Phase II in the polder

The third subarea is an area that is bordering the north and west sides of the BPAO Phase II development. The aim of this subarea is to form a natural separation while also promoting biodiversity and local ecology of the area. This is done by planting a tall treeline with low vegetation right next to a waterway, ultimately ‘green screening’ the north and west sides of the BPAO Phase II development to shield visitors from seeing the buildings. The Transition between Nature Zone West and BPAO Phase II is displayed in Figure 17 (MUST & TAUW, 2022).

Subarea 4: The Lutkemeerweg transition

The fourth subarea comprises of a waterway and an abundance of high and low vegetation and trees that visually separate the residents from Lutkemeerweg who are backing onto the BPAO Phase II business park. The aim is nuisance reduction while maximizing spatial quality through

the stimulation of biodiversity and minimizing of material usage. Figure 18 visualizes the Lutkemeerweg transition area (MUST & TAUW, 2022).

Plan components: Plants and materials

This section of the design layout plan elaborates on the plants and materials used for BPAO Phase II. The choices of components revolve around increasing biodiversity and the local ecology of the area while also sourcing out sustainable materials such as wood for the different elements and the existing soil to use as an underlayer for the circular road which is Bromostraat. This ‘circular road’ is a tangible example of circularity in practice with regards to the BPAO Phase II development that was constructed in May and June of 2022. This process used local soil and sand mixed with a binding agent to create a ‘concrete like’ road foundation before the asphalt layer was applied. This process saved removal of 40,000 cubic meters of soil from the area (about 3,200 trips with a truck). Once the lifecycle of the road is done, this foundation that was created can be milled and used again for another purpose (Park Management BPAO, May 31, 2022). This use of local material and eventual re-use is almost closing a resource loop, meaning the process still used some material that was not locally sourced and most likely will not be able to be recycled in the future. (During the field observation on May 19th, 2022, to collect case study contextual data there was a picture taken by me which shows the finished ‘circular underlayer’ depicted in Figure 24).

Furthermore, multiple trees that line the corridors, shrubs for the banks of the waterways, plants for the rough and ditches, ornamental water plants, climbing plants as a vertical greening solution (VGS) for the buildings, flowering bulbs for the lawn, and lawn plants/hedges are listed with their unique statistics to enhance the landscape. The materials for the pavement of pedestrian/cyclist/vehicle pathways, furnishings/objects such as benches, trash bins etc. detail the sustainability and circularity of the material and planned components (MUST & TAUW, 2022).

Summary of definitief inrichtingsplan BPAO fase 2

From the document analysis and coding of the definitief inrichtingsplan, there were four themes which were discovered. The *first* theme was *environment*. There are many planned designs in this document that allude to increasing the biodiversity and local ecology of the area. Examples of this is the ‘waterpark’ with all the functions of it like the aqueducts transferring the rainwater to the circular water system and the wadi with water mirrors to hold and disperse the water. Moreover,

the plan to incorporate a wide variety of plants is envisioned to enhance biodiversity. Overall, the BGI planned for BPAO Phase II is focused on making sure the local ecosystem that was in the Lutkemeer polder before increases after the business park is built. The *second* theme was *social-communal connectivity*. The way the view of the care farm De Boterbloem is planned and designed to be preserved creates a ‘linking function’ between them and the two phases of BPAO which in turn should generate a ‘local strength’ and ‘open transition’. Bromostraat is an essential access route connector for employees and visitors travelling on foot, on a bike, or in a vehicle in or out of the business park. The ‘waterpark’ in the middle of the business park has social/communal value for people to recreate and travel throughout to reach other parts of the surrounding area. The *third* theme was *natural separation and buffering*. The BGI planned between the different pathways cutting through the business park in between the Clients/End-users buildings will act as a visual buffer and separator for employees and visitors alike. There is also waterways and tree/shrub lines planned to be placed around the perimeter of BPAO Phase II to visually hide the buildings from those living in a near proximity such as residents on the Lutkemeerweg or visitors recreating on the Wijsentkade or Groene As. The *fourth* and final theme was *circularity*. The recycling of rainwater, mentioning of the ‘circular road’ using local soil as the bio bound concrete underlayer of the pathways such as Bromostraat, and the thoughtful use of sustainable wood for multiple building elements of the landscaping/public space are the only mentions of something in the plan being circular. Circularity was just touched upon and was not mentioned much or elaborated on, but it is an intended focus.

5 Discussion

To answer the main research question, we need to look at the answers for the four sub-questions.

5.1 Research sub-questions

5.1.1 Research sub-question 1

Who are the key stakeholders of the BPAO Phase II circular area development?

Public actor(s)

Municipality of Amsterdam and SADC

There are many stakeholders who impact and are impacted by the BPAO Phase II circular area development. One of the interview questions that was asked to all interview respondents (found in Appendix I) was on who they believed the key stakeholders were of the BPAO Phase II development. Fourteen out of sixteen interview respondents said that the municipality of Amsterdam was one of the key stakeholders of the BPAO Phase II development. Thirteen out of sixteen interview respondents said that SADC was one of the key stakeholders of the BPAO Phase II development. The municipality of Amsterdam and SADC were mentioned by almost every interview respondent as a key stakeholder to the BPAO Phase II development. This response shows that these two stakeholders are the most recognised and talked about amongst the interview respondents. This is logical given that the municipality of Amsterdam is the local governmental body who owns the land that BPAO Phase II is being developed on. Moreover, SADC was created to manage the development of projects such as BPAO Phase II making them a key stakeholder.

From the other documents that were used and analyzed, there was information on the municipality of Amsterdam and SADC. In the zoning plan document (bestemmingsplan) for Lutkemeer polder, the author is the municipality of Amsterdam which have the power to zone the area they govern as they see fit. This document reinforces the municipality of Amsterdam's position as one of the most influential key stakeholders of the BPAO Phase II development. In this zoning plan for the Lutkemeer polder, there is a section that explains the development of the business park phase II. The GEM Lutkemeer (which is made up of the municipality of Amsterdam and SADC) is the one

responsible for the preparation for construction, and the overall development and operation of BPAO Phase II making SADC and the municipality of Amsterdam key stakeholders (Gemeente Amsterdam, n.d.-h).

Private actor(s)

Residents

The next key stakeholder are the residents of the Lutkemeer polder. Ten out of sixteen interview respondents said that stakeholder most impacted by the BPAO Phase II development are the residents who reside for the most part on Lutkemeerweg (the street right next to the development with private dwellings and businesses backing onto the project). This response shows how significant the BPAO Phase II development will be on residents in the Lutkemeer polder.

De Boterbloem

Of the residents, the care farm that is residing on Lutkemeerweg De Boterbloem is one of the key stakeholders of the BPAO Phase II development. The ancestors of the current owner of De Boterbloem once owned the land that is now zoned for a business park. They sold that land to the municipality of Amsterdam who now owns it for the development of BPAO Phase II. De Boterbloem were allowed to continue farming on the land designated for the business park until very recently when construction started (GroenLinks, n.d.; De Boterbloem Interview Respondent, personal communication, June 25, 2022). De Boterbloem is the most significant stakeholder of the private residents because of the historical context and current relationship they have with the municipality of Amsterdam, SADC, and the GEM as an extension of SADC and the municipality of Amsterdam. De Boterbloem is physically residing next to BPAO Phase II as an immediate bordering property. This stakeholder once had ownership and control of the land that is now being transformed into a plan and vision from local government that they themselves do not ascribe to. There is a direct clash of visions between public and private actors with both parties having differing interests, values, and ideas of how they would like this area developed

The stedenbouwkundig plan explicitly refers to De Boterbloem as having three hectares of land of which two hectares are inside the planning area (MUST, 2020-b). Additionally, in ‘The Cycle at the Location’ section, there is also a mention for possible collaboration on specific circular tasks and creating a role for De Boterbloem in the context of the BPAO Phase II development.

Furthermore, in the ‘Heirs of the Lutkemeer’ section De Boterbloem is mentioned as having the three hectares reserved for preservation of the existing orchard and continuation in the capacity of a care farm function (MUST, 2020-b). This explicit inclusion in an urban development plan centered around ‘new cohesion in the polder’ that was commissioned by SADC makes *De Boterbloem* an important stakeholder in the BPAO Phase II development.

Tuinen van West

The last private actor who is a key stakeholder is Tuinen van West. This is because the BPAO Phase II development is situated in the Lutkemeer polder, a polder which is one of four polders that make up ‘Tuinen van West’ (Tuinen van West, n.d.-a). They are a key stakeholder because of their goal: to investigate and show the possibilities of a circular economy in the recreation and (urban) agriculture area by encouraging entrepreneurs to be involved in sustainable and circular agricultural projects (Tuinen van West, n.d.-b). Tuinen van West has a relationship with the residents and businesses of the Lutkemeer polder and more specifically on Lutkemeerweg and Etnastraat.

The stedenbouwkundig plan explicitly refers to Tuinen van West in their ‘Cycle of Gardens of the West’ section with the hope of collaborating on specific circular tasks and creating a role for Tuinen van West in the context of the BPAO Phase II development (MUST, 2020-b). This explicit inclusion in an urban development plan centered around ‘new cohesion in the polder’ that was commissioned by SADC makes *Tuinen van West* an important stakeholder in the BPAO Phase II development.

Market actor(s)

Client/End-user for BPAO Phase II

The last significant key stakeholder is the Client/End-user for BPAO Phase II. These are companies who are investing their time and money into establishing their business operations within a personalized plot within the business park. Moreover, the end users will be companies who come to the GEM with a value-added plan to implement their circular and sustainable ambitions in the design, function, and operation of their building and landscaping, ultimately attempting to align their ambitions with the circular and sustainable ambitions of SADC (as illustrated in Figure 5 – *Seven Pillars of the Circular Economy by SADC*).

Research sub-question 1 summary

Healey, 1997; & Taylor, 2019 state that in the communicative planning lens, “institutionalization facilitates the realization of public interest or the generalization of interests by facilitating communication between planners and stakeholders” (as cited in Dadashpoor & Sheydayi, 2021, p. 552). This means the stakeholders who were chosen for this first research sub-question (the municipality of Amsterdam, SADC, De Boterbloem, Tuinen van West, private residents, and the client/end-user of BPAO Phase II) is based on the communicative planning logic: that governmental and non-governmental actors through institutionalization and communication reach a consensus with stakeholders that reflects public interest (Dadashpoor & Sheydayi, 2021, p. 552).

5.1.2 Research sub-question 2

What do the stakeholders value regarding the BPAO Phase II circular area development?

Blue-Green Infrastructure (BGI)

One of the elements that three quarters of interview respondents valued regarding the BPAO Phase II development is the planned BGI throughout the business park. The concept of BGI was embedded with many of the interview respondents verbally using language such as *green, blue, flora and fauna, waterways, ‘waterpark’, biological and ecological, biodiversity, soil-water ecosystem, green facades, and nature inclusive*.

Ambitiousness

Another element of the BPAO Phase II development that the interview respondents valued was the ambitiousness of the plans. Some words/phrases used were: “ambition to do better, more green, more circular” (Municipality of Amsterdam Interview Respondent), super ambitious, and the hope that the ambitions from the plans are realized.

Positive (hopeful) perspectives

Most interview respondents were hopeful in their answers to what they value regarding the BPAO Phase II development. *Connecting/Integrating with the surrounding area, unique, innovative, high*

quality, an improvement, optimal, special, balanced, and the potential to push the boundaries were words and phrases used to describe and attach value to the business park.

Critical (negative) perspectives

When asking my interview question “what words would you use to describe the BPAO Phase II development”, there were some interview respondents who were pessimistic. Some words that were used was *pity, shame, devastating, circular washing, not in the interests of Amsterdam citizens, money-driven, and sorry but a chance to develop right.*

Public actor(s)

The values that public actors who were interviewed attached to the BPAO Phase II development was mixed. This group talked about how ‘green’ it will be and showing excitement for the ambitions, while there were some doubts and questioning if this business park is overly ambitious or not ambitious enough.

Market actor(s)

The values that market actors who were interviewed attached to the BPAO Phase II development was mixed as well. There was some optimism and hopefulness about the realization of the circular ambitions while also showing some pessimism and being critical on if it can be achieved. This group described more of the functional and design aspects of the business park such as the circular water system, green facades, and solar panel roofs.

Private actor(s)

The values that private actors who were interviewed attached to the BPAO Phase II development was mostly critical and pessimistic. The interview respondents did not know the technical and design details of BPAO Phase II and stated their dislike for what was being built.

Research sub-question 2 summary

What the stakeholders value regarding the BPAO Phase II development depends on each actor’s respective individual interests. These individual interests and perspectives can cause conflict within the context of the planning process for urban development such as BPAO Phase II. As a critique to consensus based communicative planning approach explained in the research sub-

question 1 summary, the conflict management-based approach is “agonistic planning”, which enables participants to debate and resolve temporary disputes which is achieved through the balancing of multiple interests (from Hillier, 2002; Lennon, 2017; Mouffe, 2013; as cited in Dadashpoor & Sheydayi, 2021). These conflicts manifest themselves as societal barriers and/or resistance which is elaborated below as the next research sub-question.

5.1.3 Research sub-question 3

What are the barriers and/or resistance to the BPAO Phase II circular area development?

Current activism and attempts to stop the development

The collective action from three civil society activist organizations/citizen cooperatives (Behoud Lutkemeer, Land van Ons, and Voedselpark Amsterdam) who are protesting the BPAO Phase II development is one of the biggest resistances to the development. These groups feel very strongly about this area that is being transformed and developed into something that does not fit what they envision for the area.

Circularity and CE are hard to define and explain

Asking all interview respondents what their knowledge of the circular economy is yielded some good information about the lack of knowledge and the difficulty to explain what circularity is, especially in the case of ‘circular area development’. There were some interview respondents who showed some knowledge and education such as giving anecdotal accounts to explain what circularity and the circular economy means to them. There was emphasis on material reuse but not one mention about closing loops on a multi-scalar approach. Moreover, the coupling of circularity with sustainable and the interchangeable nature of these two terms that were used by interview respondents and in the planning documents analyzed show how fuzzy of a concept CE is as it is constantly being related or confused with sustainability.

Pessimism about circular ambitions

The circular ambitions are just that, ambitions that have not been realized. There is some optimism that the circular plans will be realized in practice but there are also some pessimism that the circular

ambitions will fall flat. One Market Actor interview respondent gave a technical design perspective wherein they questioned how the current design and ambitions will stay relevant as area developments such as BPAO Phase II can take ten to fifteen years to finish being built. The interview respondent was questioning that the circular designs that were created ten to fifteen years ago and eventually implemented are now commonplace due to how fast technological advancements are taking place.

Research sub-question 3 summary

The barriers and/or resistance to the BPAO Phase II development demonstrate that there is social friction or conflict amongst stakeholders during the current planning process. If there were no major opposing values for how Lutkemeer polder should be developed and used, then action groups and citizen cooperatives would not be attempting to halt the current trajectory of BPAO Phase II. The other barriers of circularity and circular area development is that these concepts are not currently understood, as most recently studied by academics Van Bakel, 2020; Van den Berghe & Vos, 2019; Witkamp, 2020; & Van der Ven, 2021. Furthermore, circularity is as stated by Williams (2022), lacks conceptualization through a social, consumption, governance, infrastructure, and scalar/contextual dimensions. The overall lack of academic studies on anything related to circularity, circular economy, or circular area development shows in the information gathered from multiple data sources of this research study. The lack of knowledge on circularity is evident in the answers for research sub-question 4.

5.1.4 Research sub-question 4

What are the circular ambitions of the BPAO Phase II development?

Combining what was discovered during the data analysis of the three planning documents (listed in Table 2) and the data analyzed from the interview respondents, below are the most important circular ambitions for the BPAO Phase II area development:

Water – Reuse of water (from rain and operations of Clients/End-users business operations which create greywater and blackwater). This is shown as an example of a planned Water Circulation System

Energy – All energy comes from renewable sources. Having solar panels on all roofs in the business park is imperative

Connectivity/mobility through social/communal public spaces – designing the business park whereby employees of the businesses and visitors can enjoy public spaces such as the planned ‘Waterpark’ in the middle corridor and the incorporation of care farms to help manage the public fruit orchard

Circular architecture – building components/materials must be reused and/or recycled

Increase of biodiversity and enriching local ecology – The use and incorporation of BGI (green facades, waterways, abundance of trees and shrubs) to enhance the soil quality and flora fauna that move in and around the area

Waste – material waste and organic waste from the construction and operational phases of BPAO must be reused and recycled

Research sub-question 4 summary

The circular ambitions found which answered the fourth research sub-question illustrated that there is some understanding of what is currently known about circularity and the various elements that can be used in the design and function of an area development such as BPAO Phase II. Going off the definition of CE from EMF used by Van Bakel (2020), all resources that will be used in the building of BPAO Phase II will be recycled and/or renewable. There are ambitions for ecological regeneration for BPAO Phase II which was explored by Williams (2022) on circular development.

5.2 Recommendations for further research

Below is a list of key recommendations for further research on the topic of circular area development, and more specifically understanding the relationship between CE and governance through an institutional perspectives and socio-spatial lens.

Further research on circularity

Again, as stated by Pomponi & Moncaster (2016), “literature on CE in the built environment is still in its infancy” (p. 711). Furthermore, the concepts of circular economy and circular area development are not currently understood, as most recently studied by academics Van Bakel, 2020;

Van den Berghe & Vos, 2019; Witkamp, 2020; & Van der Ven, 2021. Therefore, it is recommended that more research studies are conducted regarding these topics:

Circularity and institutional social contexts

More particularly, there is a knowledge gap regarding social contexts, social identities, institutions, and CE transitions in urban areas (from Fratini et al., 2019; Moreau et al., 2017; Korhonen et al., 2018; as cited in Heurkens & Dabrowski, 2020, p. 13). Due to this knowledge gap, there is a need for new governance interactions between various actors which highlights the institutional barriers for circular transitions (from Ghisellini et al., 2017; Fischer and Pasucci, 2017; as cited in Heurkens & Dabrowski, 2020, p. 13). Investigating these institutional barriers may yield some results which could possibly help with solutions to solve issues related to these circular transitions such as BPAO Phase II.

Circularity and stakeholder perspectives

Moreover, “understanding the institutional context for a CE transition is an urgent research gap to bridge, especially considering the political tensions that the spatiality of cities and their transition agendas entail” (from Marin and De Meulder, 2018; as cited in Heurkens & Dabrowski, 2020). There is a need to better understand how social aspects of urban areas are impacted by the transition towards circularity through the opportunities and vantage points of various stakeholders (Vanhuyse, Fejzic, Dbida & Henrysson, 2021). This transition towards circularity through the perspectives of stakeholders is what this research study has attempted to capture, although there is always the need to push the boundaries of knowledge collection and understanding particular phenomenon such as circular area development even further.

Circularity and governance

Additionally, there has been failure to consider governance in relation to the CE through a social dimension; the opportunity to territorialize circular development and investigate spatial and land-use planning as an avenue to execute the circular transition through an institutional perspective is key (Williams, 2022). Further investigating circular area development through the lens of land-use planning using different institutional perspectives can only add valuable insight into what is known currently about this unique and recent phenomenon. Moreover, sustainable transitions have emerged to facilitate innovation pathways and governance frameworks towards sustainable society

(Lukkarinen, Nieminen & Lazarevic, 2022, p. 2). This is done through examples such as the BPAO Phase II case study which addresses the complex myriad of spatially divergent conditions such as societal, economic, environmental, and complex power relations (from Frantzeskaki et al., 2017; as cited in Lukkarinen et al., 2022, p. 2).

Circularity and Habermasian communicative planning theories

What was recognized from the research findings was that more research is needed to study circularity using a communicative planning lens: governmental and non-governmental actors through institutionalization and communication reach a consensus with stakeholders that reflects public interest, and through the facilitating of communication between planners and stakeholders, this realization of public interest is helped by institutionalization as well (from Healey, 1997; & Taylor, 2019; as cited in Dadashpoor & Sheydayi, 2021, p. 552). Furthermore, as a critique to consensus based communicative planning approach explained above, the conflict management-based approach can be studied further in the context of circular area developments (from Hillier, 2002; Lennon, 2017; Mouffe, 2013; as cited in Dadashpoor & Sheydayi, 2021).

Further research on BPAO Phase II

There are many opportunities to continue to study circular area development related to or not related to the BPAO Phase II case study. It is recommended that this is done by conducting further research on the unique phenomenon of circular area development using different research philosophies and methodologies. These further research studies would add to our understanding of circularity and more specifically circular area development in the context of the BPAO Phase II case study through possibilities such as: quantitative data analysis on the changing of soil quality, biodiversity, and local ecology throughout the development of BPAO Phase II, looking at circularity from more of a materials perspective and completing a resource flow map of construction materials used to build BPAO Phase II, and looking at circular area development using comparative case study analysis to investigate the similarities and differences between a case study such as BPAO Phase II and others in the Netherlands and beyond.

6 Conclusion

6.1 Main research question

How do the values that stakeholders attach to the circular ambitions inform the BPAO Phase II development?

BPAO Phase II is a contentious area development project with high circular ambitions. These high circular ambitions revolve around implementing as many economic, social, and environmental designs and functions into the development as possible. This desire to holistically integrate the business park into the spatial area that it will inhabit means that there is conflicting interests and values that stakeholders attach to these circular ambitions. These are the most significant points gathered from the answers to the sub-questions which ultimately informs and describes BPAO Phase II:

1) Historically significant area struggling with its identity during a transition of economic function (from agriculture to logistics hub) and urbanized growth

The BPAO Phase II development is being built in an area (Lutkemeer polder) that is struggling with a landscape transition from peri-urban agriculture to an urban logistics hub. An area that was once a lake, then farmland, and now with the encroaching urbanization of Amsterdam, is being transformed and built-up. This complex socio-spatial area with historical context struggling with the urbanized growth of Amsterdam which is putting pressure on the landscape/way of life that was mostly unaffected for decades (the area which is now known as Tuinen van West). The social friction has only increased with time and now that BPAO Phase II has started to develop, this area currently has reached a breaking point.

2) Top-down governance and bottom-up resistance/opposition with varied and unique stakeholder perspectives, education, and experience

There is a top-down governance meaning the Public Actors are imbuing their political will and power into the Lutkemeer polder with the goal to increase the economic output of the MRA (Metropolitan Region of Amsterdam) to be more competitive nationally and internationally. The

municipality of Amsterdam are attempting to enhance the economic function of the area in their own way which is building a business park with high circular and sustainable ambitions. Due to this top-down steering there is a bottom-up resistance and opposition coming from the Private Actors. This is evident in the collective action groups and citizen cooperatives (*Behoud Lutkemeer*, *Land van Ons*, and *Voedselpark Amsterdam*) who are opposed to the business park and who are currently attempting to acquire the land that the municipality of Amsterdam owns.

3) Optimism and pessimism towards BPAO Phase II circular ambitions

There is a wide range of mixed feelings towards BPAO Phase II. These mixed optimistic and pessimistic perspectives cut across all three groups of actors (*Public*, *Private*, and *Market*). These contrasting perspectives stem from historical context of the Municipality of Amsterdam buying the land that was once owned by De Boterbloem and the strained relationship between the two Public and Private actors. Moreover, stakeholders do not fully understand what circularity is in the context of the BPAO Phase II development. Circularity and the CE is still very hard to define and explain especially attempting to implement it in the context of this case study an area development of BPAO Phase II in the Lutkemeer polder.

4) There is a mismatch of interests in what different groups value and envision the Lutkemeer polder, the BPAO Phase II development, and the ideal future

The public actors and market actors value the increase of economy activity but also are mindfully focusing on the holistic integration and aligning with what the Lutkemeer polder is (an area filled with nature and ecology). The private actors value the present landscape, the current agricultural function of urban farming, and they value ecology over economy.

5) Planned desire for BPAO Phase II to connect with local community through recreational/social functions but with little to no communication or collaboration

There is a disconnect between what some stakeholders know about the circular ambitions/plans for BPAO Phase II and what other stakeholders perceive are the plans. This comes from a lack of communication or collaboration between the stakeholders involved.

6.2 Research outcomes

From the answers to all four research sub-questions which laid the foundation for the recommendations for further research and the answers to the main research question, the main research outcomes from this case study on the BPAO Phase II development are listed below.

Circular area development and BPAO Phase II

Circular area development in relation to BPAO Phase II is shown by the key stakeholders interviewed and what they perceive as valuable in this case study. For some interview respondents their perspective on the circularity of BPAO Phase II comes from their knowledge and access of the planning documents whereas other interview respondents' perspective comes from their lack of knowledge of what the circular ambitions planned for BPAO Phase II is. The circular ambitions of BPAO Phase II are also shown in the planning documents created by MUST and TAUW. These circular ambitions for BPAO Phase II (*Water, Energy, Connectivity/Mobility through Social/Communal Public Spaces, Circular Architecture, increase of biodiversity and enriching local ecology, and Waste*) are inspired by CE principles which come from SADC via Metabolic as well as other sources such as the Ellen MacArthur Foundation (SADC, 2018; EMF, 2013).

Is just having circular ambitions which are inspired by circular principles of the CE enough for BPAO Phase II to be called a circular area development?

If we take the definition of circular area development from the 'Circular Area Development' section, there is no current unified definition on what circular area development is, but at the very least circular area development can be described as an area development being built which is implementing CE principles in the design and function of said development. This description comes from my summarized analysis on what was gathered from mostly recent graduate master's thesis studies due to the infancy of 'circular area development' of (Van Bakel, 2020; Van den Berghe & Vos, 2019; Witkamp, 2020; and Van der Ven, 2021).

Based on the research results from the stakeholder interviews, BPAO Phase II is a circular area development regarding the design but not the function due to the current building stage which is shown in Figure 19. Moreover, the planning documents explained (*Beeldkwaliteitsplan BPAO fase 2: Circulaire identiteit en kwaliteit, Definitief Inrichtingsplan BPAO fase 2, and Stedenbouwkundig plan BPAO fase 2: Nieuwe samenhang in de polder*) show the planned circular

ambitions in visual designs with accompanying supporting text. Therefore, it can be concluded that BPAO Phase II is a circular area development in design, which is informed by the interview respondents but mostly by the three planning documents created by MUST and TAUW.

PI in planning and BPAO Phase II

Public Interest in planning can be defined centered on the consensus-based planning procedure, “public interest is the consensus of the various interests that are achieved in a communication process” (Dadashpoor & Sheydayi, 2021, p. 546). With this definition in mind, the BPAO Phase II development struggles with a consensus of various interests which have been attempted to be achieved in previous communication. This is supported by the interview data that was analyzed and the current context on the case study of Lutkemeer polder and BPAO Phase II (insert Interview Respondent quote). There is social friction between civil society and government actors caused by the opposing development visions for the area that is Lutkemeer polder. This is manifested in the creation of collective action groups and citizen cooperatives (*Behoud Lutkemeer*, *Land van Ons*, and *Voedselpark Amsterdam*) who are protesting and attempting to acquire the land from the Municipality of Amsterdam. The struggle to obtain PI regarding the case study of BPAO Phase II is shown in one of the key points answering the main research question and informing BPAO Phase II in that, *there is a mismatch of interests in what different groups value and envision the Lutkemeer polder, the BPAO Phase II development, and the ideal future*. The public actors and market actors interviewed value the increase of economy activity but also are mindfully focusing on the holistic integration and aligning with what the Lutkemeer polder is (an area filled with nature and ecology). The private actors interviewed value the present landscape and current agricultural function of urban farming focusing on what they perceive is the local ecological system of the Lutkemeer polder. The struggle to obtain PI regarding the BPAO Phase II cases study is further reflected below using a Habermasian communicative rationality lens.

TCA and BPAO Phase II

As explained previously, communicative rationality is either strategic or communicative. In strategic action, actors are individualistic choosing the best outcome for themselves, whereas in communicative action the actors verbalize their individual goals as worthy enough to warrant cooperative behavior from others (Bohman & Rehg, 2017). Regarding BPAO Phase II, there is strategic action taking place by the municipality of Amsterdam, choosing to re-develop an area for

the economic benefits that they believe would be in the interest of the public. There is also communicative action wherein the public actors have verbalized their individual goals as worthy enough to warrant semi-cooperative behavior. It is semi-cooperative because as expanded upon earlier, there is resistance and barriers towards the BPAO Phase II development in the form of collective action groups and citizen cooperatives attempting to acquire the land from continued re-development. This can be continued into the social practice of argumentation, which is deeply rooted in planning, whereby urban areas are developed through communication by many various actors and stakeholder groups, with the hope of resulting in coordinated action. “The necessity for coordinated action generates in society a certain need for communication, which must be met if it is to be possible to coordinate actions effectively for the purpose of satisfying needs” (Habermas, 1981, p. 274). Coordinated action in BPAO Phase II needs some form of communication to provide the needs of civil society, and TCA in planning elaborates on this in the ‘Recommendations for practice’ section.

Governance in planning and BPAO Phase II

Both the municipality of Amsterdam and SADC as public actors are conducting the steering and regulating of BPAO Phase II and using planning as a form of power to govern and control society to their future development visions of how they see the Lutkemeer polder (Steurer, 2013). This is done through the bestemmingsplan (zoning plan) for the Lutkemeer polder which in turn effects what is allowed to be built on specified parcels of the plan. Moreover, the top-down policies and visions detailed in the Lutkemeer zoning plan illustrate a strategy that is assumed to be beneficial for the people, plants and animals that will inhabit and use the Lutkemeer polder.

Circular area development to build consensus?

As a summary for research outcomes, the main research outcome that is essential to understand is that the concept of circular area development in the context of the BPAO Phase II case study can be used as a catalyst to build consensus and create some form of communicative action amongst the stakeholders involved. There is a desire for circularity in the designs of BPAO Phase II but at the current stage of the area development, it is just that, a design with circular ambitions. There is opportunity to fundamentally rally around the idea that almost every stakeholder values what circularity is and what it could possibly provide (*Water, Energy, Connectivity/Mobility through Social/Communal Public Spaces, Circular Architecture, increase of biodiversity and enriching*

local ecology, and *Waste*). Using the knowledge that there are circular ambitions in the design and function for BPAO Phase II to build consensus building amongst the stakeholders is key in the recommendations for practice.

6.3 Recommendations for practice

The research illustrated the barriers and resistance to the BPAO Phase II development stemming from a group of civil society action groups resisting the landscape transition from an agricultural economic function to a business park/urban logistics hub economic function. There has been a lack of collaboration between the “Public” stakeholders (SADC and Municipality of Amsterdam) with the “Private” community stakeholders (Tuinen van West/Ondernemersverenigen (business association) and De Boterbloem). In the past there was some collaboration amongst stakeholders (source from multiple Interview Respondents), but this was stifled and even brought to a halt partly due to the COVID-19 pandemic and the long organizational restructuring of SADC (CEO change), and most recently with an organizational change within the municipality of Amsterdam (new alderman for Amsterdam Nieuw-West). To solve or mitigate the social barriers and resistance, a list of key recommendations for practice is put forward under an overarching key importance:

- Circular area development as a catalyst for consensus building
 - o Knowledge sharing of circularity and circular area development
 - o Communication power amongst state, market, and civil society actors
 - o Conflict management-based “agonistic planning”
 - o Participation of planning process and planning outcome

These recommendations build from using circular area development as a topic to construct consensus regarding the case study of BPAO Phase II based on the conceptual lens of communicative action, communication power, and communicative planning.

Being more transparent about BPAO Phase II and what is going to be developed may help other concerned citizens understand the process which may alleviate the resistance towards the business park. For this to take place there needs to be an “ideal speech situation”. This “ideal speech situation” as Habermas calls it, is where the communication is fully rational and free from coercion or power (from Habermas, 1984; as cited in Inglis & Thorpe, 2019). This consensus building through communication from the interests of different stakeholder groups is supposed to progress towards the sharing of visions and plans for future urban areas (from Forester 1989; 1993; Healey

1992; 1997; Innes 1996; 1998; Sager 1994; as cited in Mattila, 2020, p. 4). The catalyst for consensus building as mentioned before would be to build a dialogue around the concept of circular area development (from Healey, 1997; & Taylor, 2019; as cited in Dadashpoor & Sheydayi, 2021, p. 552). The common interest of all stakeholders involved in the case study of BPAO Phase II stems from the individual values and ambitions to be sustainable and circular. Taking this common interest to reach some public interest can take the form of various initiatives and collaborations. These collaborations are expanded on below.

Circular area development as a catalyst to build consensus

The four current critiques of communicative planning theory discourse put forward by Innes & Booher (2015) are used to frame individual recommendations as well as explain how circular area development can be implemented to build consensus amongst BPAO Phase II stakeholders.

The first critique is *community knowledge vs science*, whereby planners may reject citizens knowledge and comments regarding urban development and exercise their expert knowledge to educate citizens (Innes & Booher, 2015, pp. 200-202). There is a wealth of community knowledge in the area where BPAO Phase II is being developed. The Circular Living Lab that Tuinen van West has created should involve SADC and the municipality of Amsterdam as contributors towards the circular initiatives. The Circular Living Lab of the West is an initiative by Tuinen van West to encourage entrepreneurs to get involved in sustainable and circular small scale agricultural projects (Tuinen van West, n.d.-b). The goal of Tuinen van West and it's four polders is to investigate and show the possibilities of a circular economy in the recreation and (urban) agriculture area. Ultimately, scaling up these small circular projects to other areas of Amsterdam to learn and share experiences is the end goal (Tuinen van West, n.d.-b).

The second critique is *communication power vs state power*. This comes from Castells' (2009) view where norms and practices develop through the networks of shared meanings of power which guide action and are embedded in institutions. "Communication mediates the way these power relationships are constructed and challenged" (Innes & Booher, 2015, p. 203). A recommendation for practice would be to actively involve all stakeholders in the municipality of Amsterdam's circular policies and strategies. By actively involving the municipality of Amsterdam in the circular initiatives and ambitions of both BPAO Phase II and Tuinen van West (businesses and residents), this opens an opportunity to link with the municipality of Amsterdam's CE policy and

accompanying *Amsterdam Circular 2020-2025 Strategy* document with the activities in the Lutkemeer polder. This document outlines what Circular Amsterdam is, how Amsterdam has arrived at this strategy, and a plan of action and monitoring the progress towards CE (Gemeente Amsterdam, 2020). By focusing on the specific value chains from Circular Amsterdam of *food & organic waste streams* which would connect with Tuinen van West's *food chain/urban agriculture* and *built environment* which would connect with Tuinen van West's *circular construction*, there can be an alignment and collaboration of with the municipality of Amsterdam, Tuinen van West (businesses and residents), and BPAO Phase II.

The third critique is *collaboration vs conflict*. Collaboration is about conflict. How to progress with agonism at the forefront while making sure the multiple voices are not subdued is the question. Collaborative rational dialogue amongst stakeholders is an idealistic answer (Innes & Booher, 2015, pp. 203-206). For this collaborative rational dialogue to occur, a conflict management-based solution is recommended. The conflict management-based approach is “agonistic planning”, which enables participants to debate and resolve temporary disputes which is achieved through the balancing of multiple interests (from Hillier, 2002; Lennon, 2017; Mouffe, 2013; as cited in Dadashpoor & Sheydayi, 2021). A recommendation for this approach would be to develop voluntary ‘town hall’ meetings with all stakeholders who would like to participate and debate the current issues that the BPAO Phase II development is facing.

The fourth critique is *process vs outcome*: this last critique is that CPT focuses on the process rather than the outcomes, but process and outcome coincide with one another. As stated by Innes & Booher (2015), “stakeholders engage in a process because they care about the outcome” (p. 207). By focusing on what outcome the stakeholders of BPAO Phase II care about (revolving around the catalyzing concept and ambitions of circularity and sustainability), they will then find mutual PI within the planning process throughout the development. This can be done by creating a process of continuous stakeholder engagement meetings wherein stakeholders will engage due to their voluntary interest of the outcome of the project (BPAO Phase II).

6.4 Limitations

Research methodology

With my philosophical positioning as a researcher being qualitative in nature, that can leave some weaknesses or holes in the scientific or academic integrity of the research study. This was

explained more in the ‘Sources of Interference’ section which showed ways that I minimized the interferences. Nevertheless, some interference may have occurred which is a limitation of my research paradigm: a subjectivist view, methodological positioning being dialogical and dialectical, research approach and methodology being inductive and qualitative. Due to my methods being qualitative in nature, the research methods chosen were limited. There are other qualitative research methods that could have proven more effective and/or useful for this case study such as focus groups or in-depth participant/case study observations. Another limitation was that my time horizon was cross-sectional. This means I was time constrained and limited my time frame to the present time for my research period and the current development period of the BPAO Phase II case study. If I had more time to research this case study, the results yielded could answer the research question more completely and more in-depth.

Data collection and interview respondent sample variety

The interview respondent sample size was adequate as data saturation was reached with sixteen respondents. There were some potential interview respondents who did not respond to my invitation to participate in this research study. This was unfortunate as they could have provided a different perspective or more valuable rich information due to their relationship towards the case study. Moreover, attempts were made to contact local private residents who live on Lutkemeerweg to participate in this research study but due to Dutch privacy laws, SADC did not provide me their details and I was unable to contact them. These stakeholders would have been invaluable to this research study.

Lack of previous research on circular area development

As was stated previously, circular area development is a topic that has not been studied very much. This means that the previous literature on circular area development has not been studied rigorously to yield sound conclusions which may limit the outcomes for this research study. Furthermore, the research gap that I was studying in this master’s thesis has no previous research to reference or continue concerning the relationship between CE and (even more so with circular area development) and governance through an institutional perspectives and socio-spatial lens.

Language/cultural barrier

I am an international student who conducted their master's thesis in a country that is foreign and where I am not a native speaker of the language. Conducting an English master's thesis research study in a Dutch case study and conducting interviews in English with Dutch speaking respondents is a limitation. If I conducted the interviews in Dutch, the data gathered could have yielded different results adding a depth to the research study that may not have been achieved in English. Moreover, a lot of the documents that were analysed by me had to be translated from Dutch to English. Although the translation software currently is sufficient some of the data could have been lost in translation from Dutch to English.

7 Reflection

Reflecting on the entirety of this master's thesis, there are many stages during the graduate programme that provided me with a solid foundation to achieve such an accomplishment. The first was proper research preparation, the second was the research process, and the third was research methods used.

7.1 Research preparation

During the first half of my masters, I got acquainted with the many potential thesis supervisors and topics that I might be pursue. Three topics stood out: Land-based finance for sustainable urban development, planning for active living (how do living environments stimulate active behaviour), and the future of urban circular economies which resonated the most with me. This particular topic interested me because I believe that circularity and circular area development is the best way to future-proof urban development so that we are sustainable and conscious about our built environment. My main inspirations for furthering my acquaintance with circularity in the built environment came from information provided by the Ellen MacArthur Foundation and research studies conducted by TU Delft's circular area development projects. I wanted the approach to my research to be exploratory on the topic of urban circularity but also practical in nature.

From there I wrote a thesis literature overview for the thesis topic I chose on the future of urban circular economics which familiarized myself further with the topic. Originally, I was participating in the Dual Mode programme which is a separate track from the regular track of the master's programme. The Dual Mode track entails partaking in two internships (one work internship preferably with a private industry organization and the second a thesis internship with a public organization). Unfortunately, through my searching for internships my window of opportunity ran out and I began looking for just a thesis internship that I could participate in alongside my thesis. With the help of a few professors in my academic programme, they put me in touch with multiple organizations and one of them was SADC. Ultimately, I secured a successful interview with Olav Steffers and Pieter van der Horst, the later of which ended up becoming my internship supervisor for SADC. I knew that internships (especially public or governmental organizations) facilitate data collection so SADC had the proper access to a variety of data that would be key to my thesis research. Initially there was the intention to write my thesis on a comparative case study analysis using various Dutch examples of 'circular area development' but one project that SADC was

developing caught my eye which was BPAO Phase II. That is when I switched my thesis focus from conducting a comparative case study to conducting an in-depth case study on BPAO Phase II. I was fascinated by the uniqueness of this case study being developed in a peri-urban area that is struggling with a transition of a historical economic function of agriculture well known to the Lutkemeer polder towards the development of a business park/urban logistics hub.

SMART Guide

Throughout this thesis I tried my best to adhere to the principles taught in the ‘Advanced Research Methods’ course (which was the backbone, proper prep, and jumping off point to start the research process in my master’s thesis) to guide me throughout the research process. As explained, usually students are too ambitious, so I tempered my ambitions by ascribing to the SMART criteria to guide me through my research problem, aim, objectives, and questions. I made sure there was *Specificity* in what I hoped to achieve with my thesis, that there was *Measurability* in if I have achieved my goals, whether my targets were *Achievable* given all possible constraints, my timeline to finish my research was *Realistic*, and that I was *Time-bound* in my execution. The first half of my master’s thesis which was course work coupled with professors and instructors who taught these courses, gave me the right guidance, tools and confidence which set me up for a good foundation heading into the research process of writing my thesis.

7.2 Research process

The research process of writing and completing a thesis proposal started off slow. Due to the delay in solidifying a thesis internship and not knowing if I was going to continue in the Dual Mode track or switch back into the regular track of my master’s degree, I felt what I thought was farther behind than my thesis colleagues. This was evident in the ‘Master Thesis Labs’ that I would attend alongside my thesis colleagues who were in the same cohort as me under the guidance of our thesis supervisor. At times this comparison and worry that I would somehow fail put me in a mental block. This mental block was eventually freed from the reassurance of my thesis supervisor, at which point I readjusted my focus and immersed myself in the research process of amending my research proposal and starting to collect data.

Throughout the research process I had good meetings (‘Master Thesis Labs’ as mentioned above) from the beginnings of writing my thesis proposal all the way until the last meeting before summer break where I was in the midst of writing my thesis post data collection (from January 2022 – June

2022). These meetings proved to be fruitful by helping each other and lending support if anyone was stuck. Although I was quieter in the meetings, they helped me clarify some issues that I would run into as well as any other issues we were stuck with or did not understand as we were all going through the same research process.

7.3 Research methods

Literature study

Finding literature on the concept of *circular area development* was difficult. Circular area development is a new concept that has not been studied much so there was a knowledge gap where I was only able to get so much information. There was more literature on the concepts that are apart of circular area development which was *CE* and *area development*. These two concepts were easier to find information on.

Interviews

Reflecting on the interviews that were conducted, I was pleased with the number of diverse perspectives and data I was able to gather. My initial goal was to interview ten to fifteen stakeholders and I ended up interviewing sixteen which was nice. Although, there were some possible stakeholders that I did not end up interviewing which would have been good to add to the depth and diverse perspective on the case study, but overall I was pleased with the participation and willingness from the interview respondents.

Case study

The BPAO Phase II development is a unique case study that has more depth than what I was able to convey in this master's thesis. The complex societal structure that is present with the local community of the Lutkemeer polder is deeply engrained in the historical past of the area, and I wish I had more time and resources to study it further. The current stage at which I investigated and explored the case study is in the initial development phase. Ground is just being broken, the pathways are being created and the utilities are being developed with the visual landscape of the area essentially still being a flat grass field. It would have been nice to study BPAO Phase II during the peak of construction where the greatest visual changes would occur as well as when all development is complete, and the business park is in the operational phase. To be able to see if the

circular ambitions are realized in ten to fifteen years would have been fascinating to study and I hope that others have the same curiosity that I have to study this unique case study further.

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Tables and figures

Table 1

Key stakeholders interviewed

Private Actors	Public Actors	Market Actors
<i>Tuinen van West</i> – 1 individual	<i>Municipality of Amsterdam</i> – 2 individuals	<i>Sustainability Consultants</i> – 2 individuals
<i>De Boterbloem</i> – 1 individual	<i>SADC</i> – 4 individuals	<i>Architectural Consultant</i> – 1 individual
<i>Land van Ons</i> – 1 individual	<i>Stadsdeel Nieuw-West</i> – 1 individual	<i>Client/End-user for BPAO Phase II</i> – 1 individual
<i>Lutkemeer polder Citizen</i> – 1 individual		<i>Urban Planning Consultant</i> – 1 individual

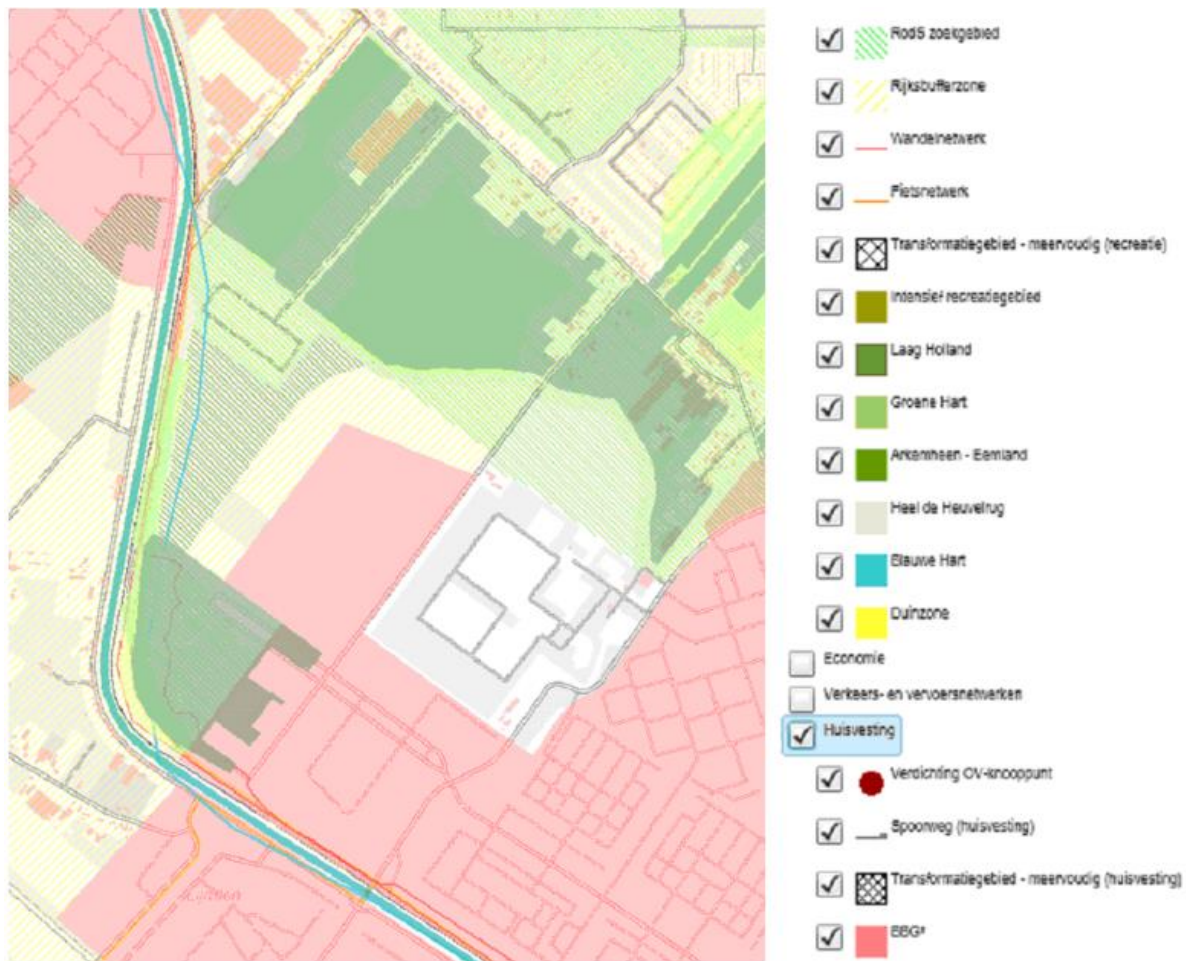
Table 2

Other data used for research

Type of Data	Title of Document
Planning Documents	<p>Beeldkwaliteitsplan BPAO fase 2: Circulaire identiteit en kwaliteit (Visual quality plan BPAO phase 2: Circular identity and quality) (MUST, 2020-a)</p> <p>Definitief Inrichtingsplan BPAO fase 2 (Final design plan BPAO phase 2) (MUST and TAUW, 2022)</p> <p>Stedenbouwkundig plan BPAO fase 2: Nieuwe samenhang in de polder (Urban development plan BPAO phase 2: New cohesion in the polder) (MUST, 2020-b)</p>
Zoning Plan Document	Lutkemeerpolder bestemmingsplan (Lutkemeer polder destination plan) (Gemeente Amsterdam, n.d. a-g)
Field Observation	Field observation of the BPAO Phase II case study

Figure 1

‘Structuurvisie Noord-Holland 2040’ (North Holland 2040 Structural Vision)



Note. The Lutkemeerpolder is envisioned as part of the ‘Existing Built-Up Area’ (BBG). From *Lutkemeerpolder bestemmingsplan*, by Gemeente Amsterdam, n.d.-e (https://www.ruimtelijkeplannen.nl/documents/NL.IMRO.0363.F1003BPSTD-VG01/t_NL.IMRO.0363.F1003BPSTD-VG01_3.2.html). In the public domain.

Figure 2

‘De Hoofdgroenstructuur’ (The main green structure)



Note. ‘De Hoofdgroenstructuur’ (The main green structure): Minimum required amount of greenery Amsterdam wants to keep. From *Lutkemeerpolder bestemmingsplan*, by Gemeente Amsterdam, n.d.-f (https://www.ruimtelijkeplannen.nl/documents/NL.IMRO.0363.F1003BPSTD-VG01/t_NL.IMRO.0363.F1003BPSTD-VG01_3.4.html). In the public domain.

Figure 3

‘Tuinen van West’ (Gardens of the West)



Note. The four polders that make up Tuinen van West. From *Lutkemeerpolder bestemmingsplan*, by Gemeente Amsterdam, n.d.-f (https://www.ruimtelijkeplannen.nl/documents/NL.IMRO.0363.F1003BPSTD-VG01/t_NL.IMRO.0363.F1003BPSTD-VG01_3.4.html). In the public domain.

Figure 4

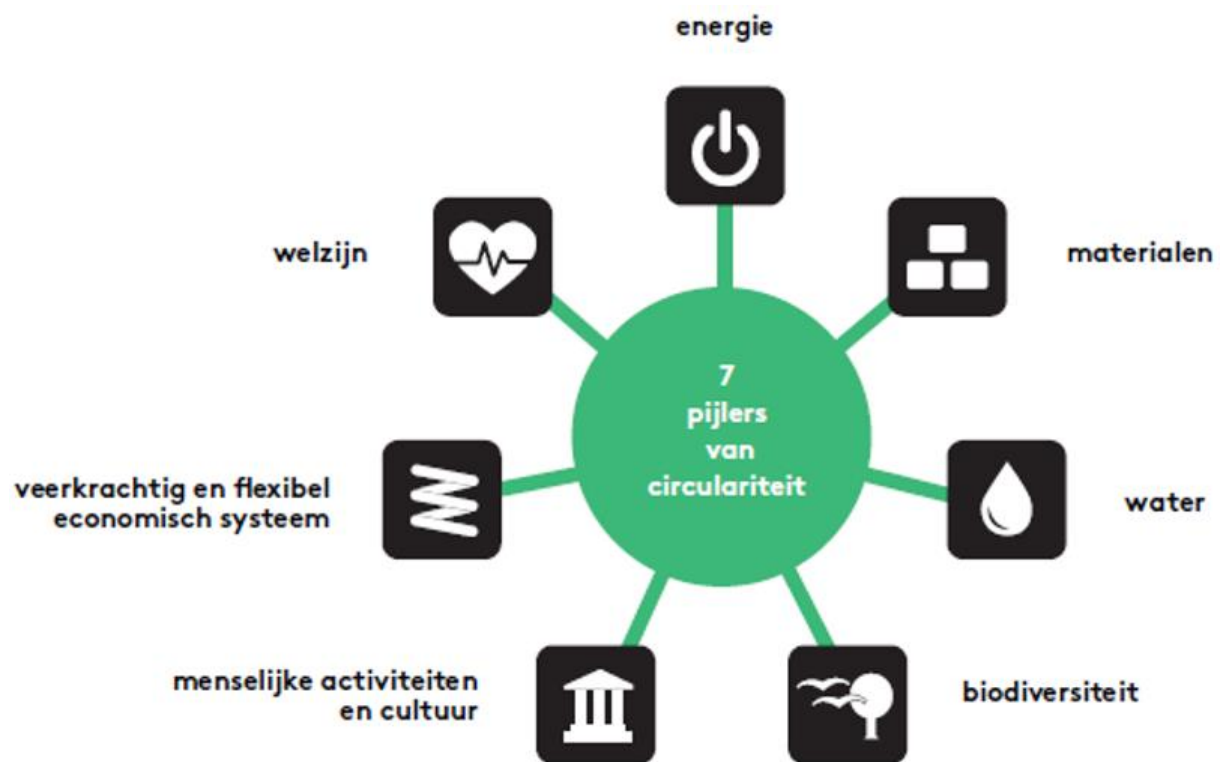
‘Stadsdeel Nieuw-West Natuurvisie’ (New West city district nature vision)



Note. Image of the Lutkemeerpolder ecological value. From *Lutkemeerpolder bestemmingsplan*, by Gemeente Amsterdam, n.d.-g (https://www.ruimtelijkeplannen.nl/documents/NL.IMRO.0363.F1003BPSTD-VG01/t_NL.IMRO.0363.F1003BPSTD-VG01_3.5.html). In the public domain.

Figure 5

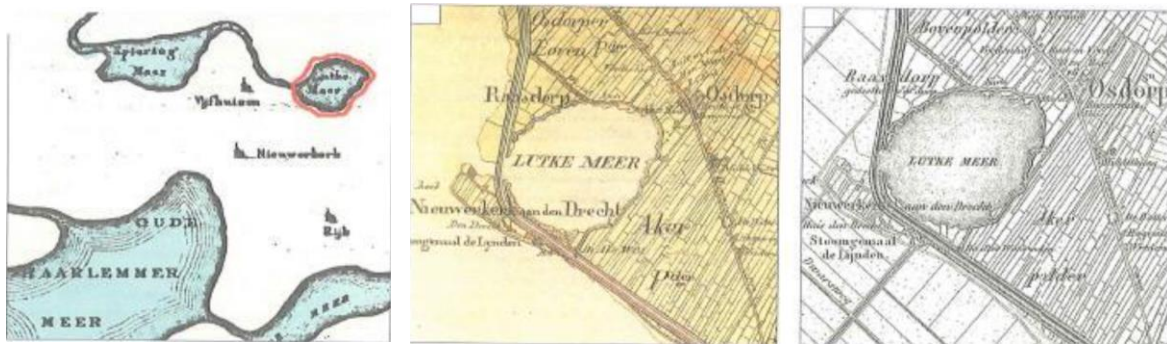
Seven Pillars of the Circular Economy by SADC



Note. Seven Pillars of the Circular Economy. From *Duurzaamheidsvoorwaarden gronduitgifte* by SADC, 2018. Internal SADC report: unpublished. Reprinted with permission.

Figure 6

The evolutionary function of the Lutkemeer polder



Note. The Lutkemeer polder evolved (left to right): a wild outpouring of water from Haarlemmermeer, to the formation of Lutke Meer (Lutke Lake), to a structured agricultural function. From *Lutkemeerpolder bestemmingsplan*, by Gemeente Amsterdam, n.d.-b (https://www.ruimtelijkeplannen.nl/documents/NL.IMRO.0363.F1003BPSTD-VG01/t_NL.IMRO.0363.F1003BPSTD-VG01_2.1.html). In the public domain.

Figure 7

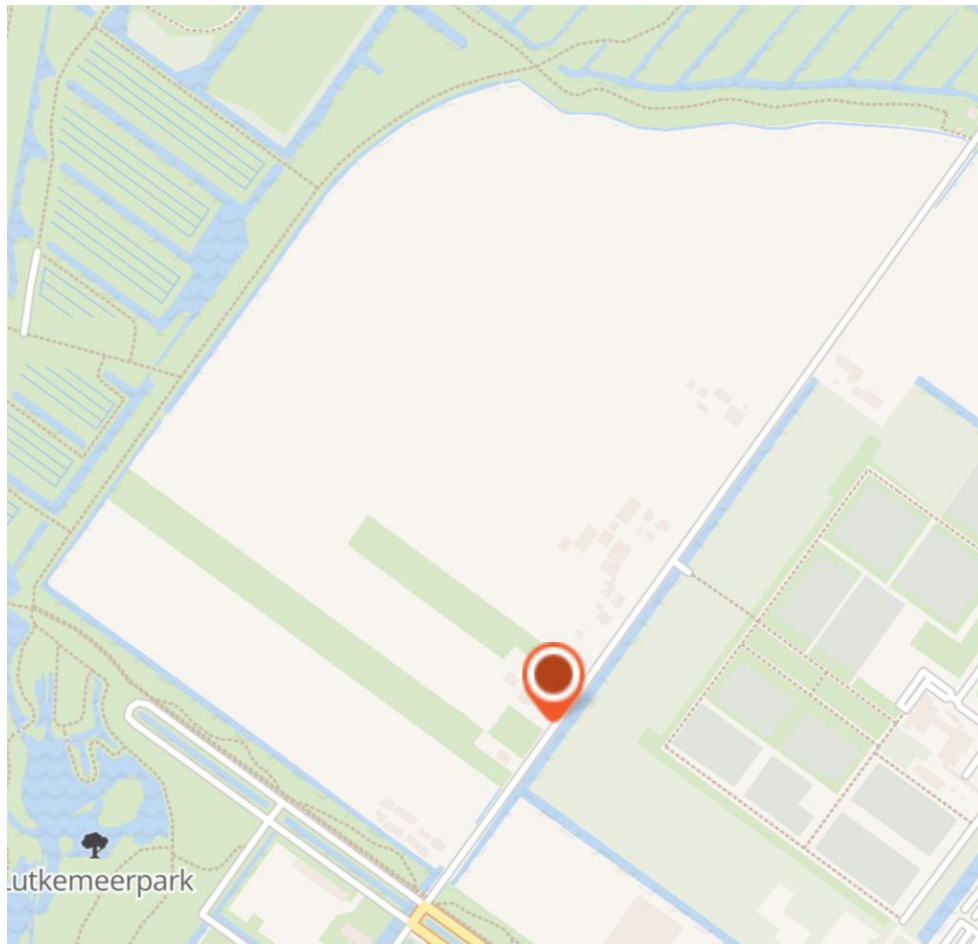
The 'Groene Scheggen' of Amsterdam



Note. Image of the 8 'green wedges' of Amsterdam. From *Manifest van de Scheggen*, by Arcam, 2019. (<https://deamsterdamsescheggen.nl/manifest-van-de-scheggen>). 2019 by Arcam. Adapted with permission.

Figure 8

Location of De Boterbloem



Note. Screenshot of the Lutkemeer polder showing De Boterbloem (shown by the red point) adjacent to the BPAO Phase II development. From Cyclex, by OpenStreetMap, 2022. (<https://www.cylex.nl/bedrijf/boterbloem-biologische-boerderij-de-10817235.html>). © 2022 by OpenStreetMap contributors, Cyclex.

Figure 9

Spatial Structure and Functional Layout of the Lutkemeer polder



Note. A visual representation of the spatial structure and functional layout of the Lutkemeer polder: 1) First phase business park 2) Dike, recreation & ecology 3) Second phase business park 4) Residential and business locations 5) Westgaarde and district yard. From *Lutkemeerpolder bestemmingsplan*, by Gemeente Amsterdam, n.d.-c (https://www.ruimtelijkeplannen.nl/documents/NL.IMRO.0363.F1003BPSTD-VG01/t_NL.IMRO.0363.F1003BPSTD-VG01_2.2.html). In the public domain.

Six ‘building blocks’ implemented into BPAO Phase II

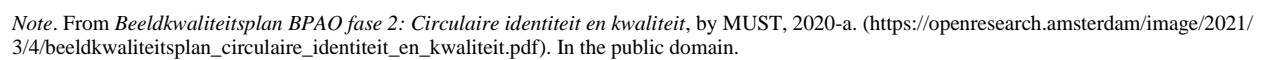


Figure 11

Game rules card

Spelregelkaart



Note. From *Beeldkwaliteitsplan BPAO fase 2: Circulaire identiteit en kwaliteit*, by MUST, 2020-a (https://openresearch.amsterdam/image/2021/3/4/beeldkwaliteitsplan_circulaire_identiteit_en_kwaliteit.pdf). In the public domain.

Figure 12

Aerial Shot of Lutkemeer polder with BPAO Phase II in the middle



Note. Aerial Shot of Lutkemeer polder with BPAO Phase II in the middle. From *Stedenbouwkundig plan BPAO fase 2: Nieuwe samenhang in de polder*, by MUST, 2020-b. (Internal report: unpublished).

Figure 13

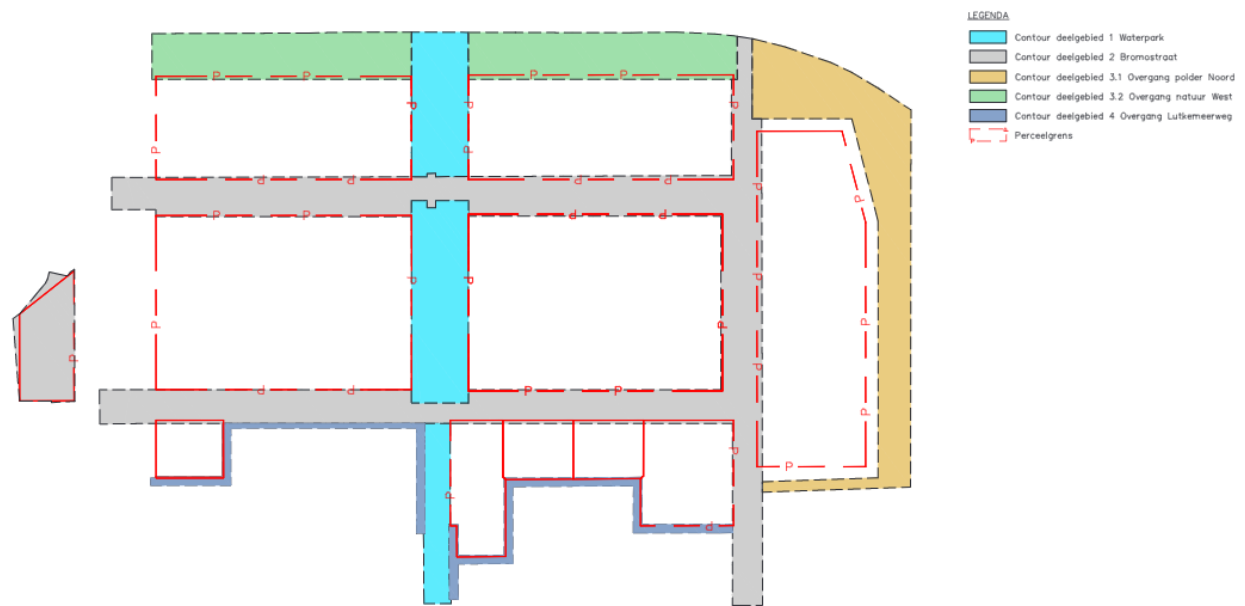
‘Circular tasks’ for area development



Note. ‘Circular Tasks’ for Area Development: rainwater, greywater, blackwater, electricity, social community, building materials, waste, organic waste, mobility, food, clay, and heat (Left to Right; Top to Bottom). From *Stedenbouwkundig plan BPAO fase 2: Nieuwe samenhang in de polder*, by MUST, 2020-b (Internal report: unpublished).

Figure 14

Subareas of BPAO Phase II



Note. Subareas of BPAO Phase II. From *Definitief Inrichtingsplan BPAO fase 2*, by MUST & TAUW, 2022 (Internal report: unpublished).

Figure 15

'Waterpark' of BPAO Phase II



Note. A rendering of the planned 'Waterpark' for BPAO Phase II. From *Definitief Inrichtingsplan BPAO fase 2*, by MUST & TAUW, 2022 (Internal report: unpublished).

Figure 16

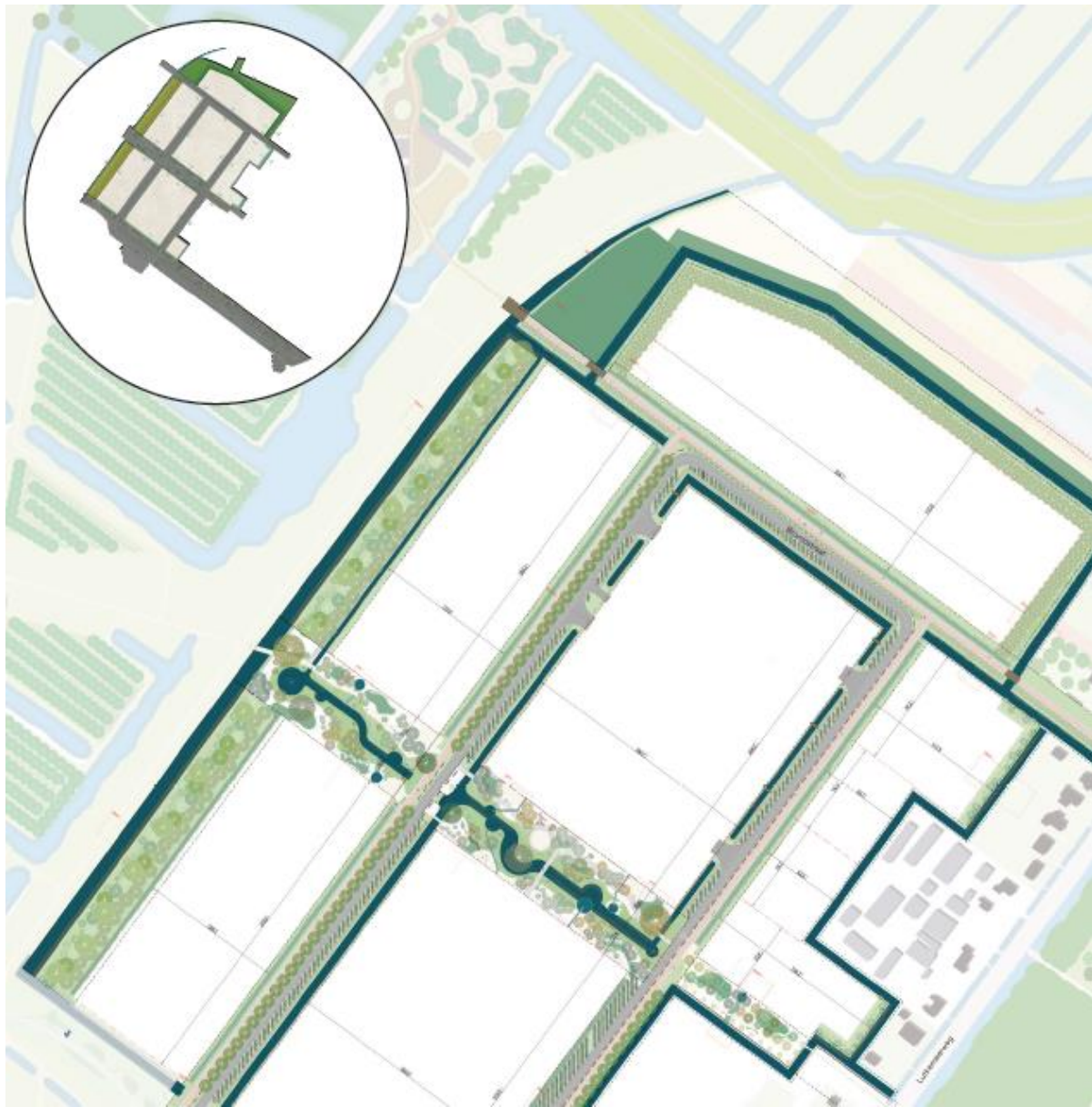
Bromostraat of BPAO Phase II



Note. An image of Bromostraat, the u-shaped access road for BPAO Phase II. From *Definitief Inrichtingsplan BPAO fase 2*, by MUST & TAUW, 2022 (Internal report: unpublished).

Figure 17

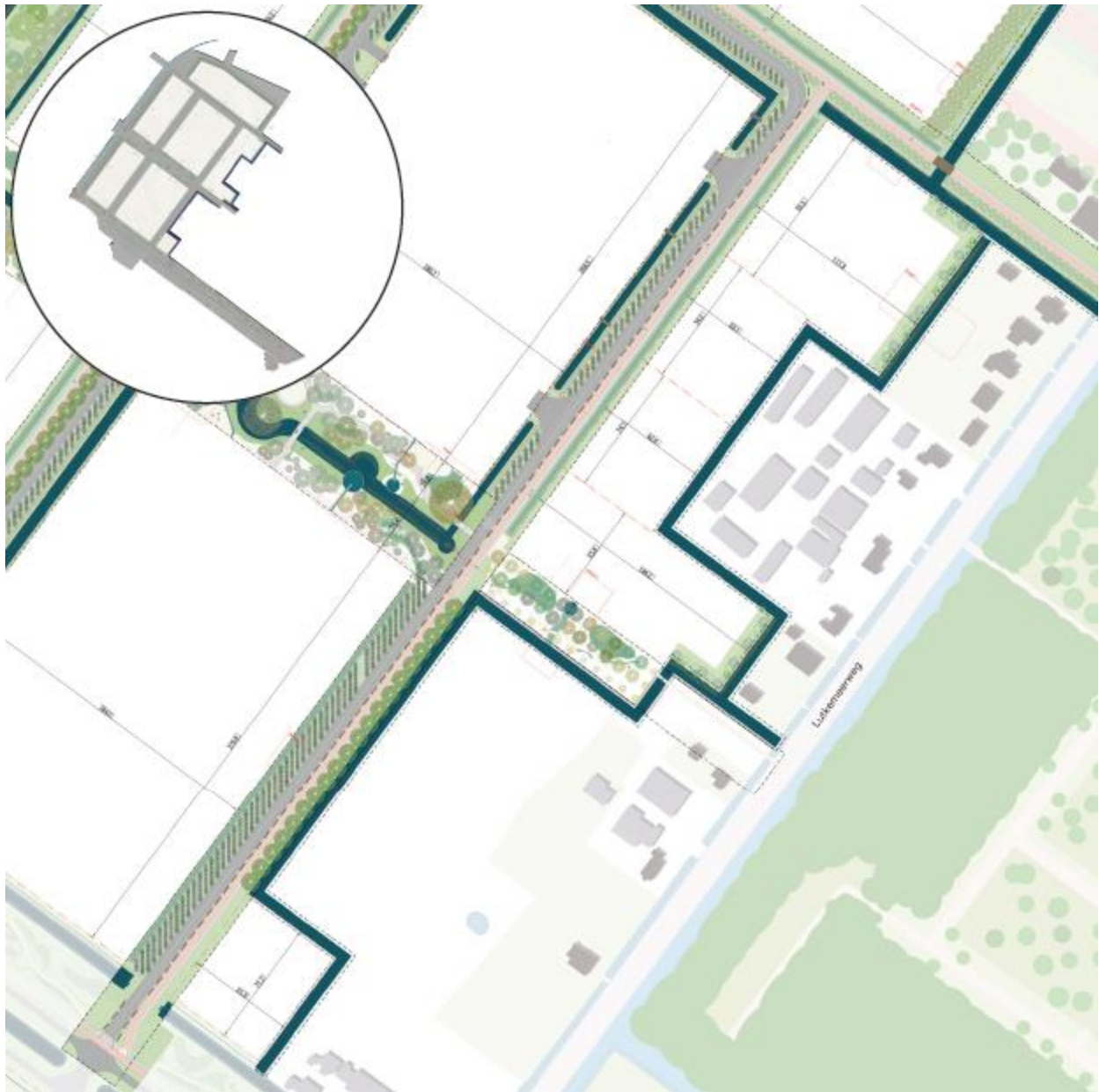
Transition between Nature Zone West and BPAO Phase II in the polder



Note. An image of Transition between Nature Zone West and BPAO Phase II in the polder. From *Definitief Inrichtingsplan BPAO fase 2*, by MUST & TAUW, 2022 (Internal report: unpublished).

Figure 18

The Lutkemeerweg transition



Note. An image of a Transition zone between Lutkemeerweg and BPAO Phase II in the polder. From *Definitief Inrichtingsplan BPAO fase 2*, by MUST & TAUW, 2022 (Internal report: unpublished).

Figure 19

Current stage of development of BPAO Phase II



Note. Photo taken by me on June 25th, 2022, which shows BPAO Phase II as an undeveloped field of grass.

Figure 20

Canal at BPAO Phase II



Note. Photo taken by me on May 19th, 2022, during the case study field observation which shows the freshly dug water canals that separate Bromostraat and the future building plots in the BPAO Phase II development.

Figure 21

A neighbouring property on the south-east side of the BPAO Phase II development



Note. A photo taken by me on May 19th, 2022, during the case study field observation which shows a neighbouring property on the south-east side faced towards Lutkemeerweg and backing onto the BPAO Phase II development.

Figure 22

Another angle showing more neighbouring dwellings adjacent to the BPAO Phase II development



Note. A photo taken by me on May 19th, 2020, during the case study field observation which shows another angle of the neighbouring properties on the south-east side faced towards Lutkemeerweg and backing onto the BPAO Phase II development.

Figure 23

Alternate snapshot of neighbouring dwellings adjacent to the BPAO Phase II development



Note. A photo taken by me on May 19th, 2022, during the case study field observation which shows more neighbouring properties on the south-east side faced towards Lutkemeerweg and backing onto the BPAO Phase II development.

Figure 24

'Circular underlayer' of Bromostraat in BPAO Phase II



Note. Photo taken by me on May 19th, 2022, which shows the 'circular underlayer' of Bromostraat being constructed in the BPAO Phase II development.

Figure 25

Snapshot of middle plots of BPAO Phase II development



Note. A photo taken by me on May 19th, 2022, during the case study field observation which shows the undeveloped middle plots in the centre of BPAO Phase II.

Figure 26

A south-western snapshot of the BPAO Phase II border facing towards Etnastraat



Note. A photo taken by me on May 19th, 2022, during the case study field observation which depicts the south-western border of BPAO Phase II with an existing waterway separating BPAO Phase II with Etnastraat.

Appendices

I: Standard format interview protocol for key stakeholders

Date: _____

Location: _____

Name: _____

Participant Company: _____

Participant Position: _____

Introduction/Informed Consent

Hello, I would like to welcome you and thank you for participating in this interview for my research study ‘The Future of Urban Circular Economies: Stakeholder perspectives on the circular ambitions of the BPAO Phase II circular area development’. This research focuses on the values that key stakeholders such as yourself assign or attach to the circular ambitions of the BPAO Phase II project. 7 questions were formed for this interview and split into 5 categories: (1) Introduction & Background of Respondent, (2) Circularity, (3) Values, (4) Power Relations between Stakeholders, and (5) Reflection.

Before we start, I would like to note that any information you provide is confidential and will be used for research purposes. Your privacy will be ensured. Are you okay that I record our interview so that I may listen to it again for data analysis?

Participant Signature: _____

Part A. Introduction & Background of Respondent

A.1 Please introduce yourself and tell me about your professional background?

Probing Questions

Part B. Circularity

B.1 What is your knowledge of the circular economy (CE)?

Probing Questions

Part C. Values

C.1 What words would you use to describe Lutkemeer polder?

C.2 What words would you use to describe the BPAO Phase II area development?

C.3 If you could envision the ideal future for this area, what would it look like to you?

Probing Questions

Part D. Power Relations between Stakeholders

D.1 Who would you describe as key stakeholders to the BPAO Phase II area development? In other words, who do you believe is impacting and/or impacted by the BPAO Phase II area development? (People, organizations, businesses, etc.)

Probing Questions

Part E. Reflection

E.1 Are there any other relevant thoughts, comments, or insights that you would like to share?

I would like to thank you for participating in this interview and contributing to my research study. I will provide you with my contact information if you would like to reach out in the future. I would also like to mention that the data from this interview will be transcribed, analysed, and coded for further study on my research topic, and again your privacy will be ensured, and this information will be confidential.

End of the Interview

II: Interview transcripts



This appendix contains confidential information.

For more information, please contact:

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dane.sokol@ru.nl

dane_sokol@hotmail.com

III: Case study field observation protocol

Field Observation Protocol

Date:	Time:
Duration of Observation:	Place:
Participants:	
Notes	
Descriptive:	
Reflective:	