Social Sustainability in Corporate Real Estate

A study of the implementation process of social sustainability goals in corporate real estate office projects in the Netherlands

Thesis report (P5)

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Preface

Before pursuing my studies in Delft, I attended Penn State University in the United States, primarily to play field hockey and to gain the experience of studying abroad. I recall taking various courses, but the one that left a lasting impression on me was a class that focused on sustainability in the built environment, which covered topics such as the urban heat island effect. At the time, I struggled to contextualise this subject within a specific academic path, yet it subconsciously guided me towards where I am today. I had already made the decision to continue my academic journey at TU Delft, and prior to applying for the Bachelor of Architecture, I explored several other programs. During this exploration, I had a conversation with a family friend who had completed the Bachelor of Architecture and the Master of Real Estate & Housing at TU Delft and worked as a project developer. Hearing her talk about her profession and projects influenced my decision to apply for Architecture.

Throughout my studies at TU Delft, I appreciated the persistent focus on sustainability. The built environment contributes significantly to environmental pollution and climate change. The future presents us with the opportunity to address these challenges and make a significant positive impact on our surroundings. I learned that sustainability encompasses not only environmental considerations but also economic and social dimensions. I became especially interested in the topic of social sustainability, because it relates directly to people and focuses on the environment we live in, both now and in the future. The built environment should serve as a resilient place where everyone feels welcome and where the needs of both individuals and communities are met. From this perspective, my graduation thesis on social sustainability aims to contribute to this essential discourse.

I would like to thank my supervisors, Monique Arkesteijn and Céline Janssen, for their guidance throughout this process. Monique's direct approach was exactly what I needed, pushing me to think critically. Céline assisted me in navigating the complexities of social sustainability and taught me to be flexible and adaptable in qualitative research, which can be particularly challenging for someone like me who values structure and organisation. Next to that, I want to thank Marleen van der Sluis-Kleijn, who was my supervisor at CBRE, where I did my graduation internship. Marleen is an experienced senior workplace consultant at CBRE and helped me navigate through this research. Your support and enthusiasm made me really enjoy the second part of this research process. Additionally, I want to thank the whole workplace strategy team at CBRE, for their help, bringing me along in all their projects and the fun activities. But most of all, for making me feel welcome and excited to go to the office.

Bes Bovelander

Abstract

Implementing strategies within corporate real estate (CRE) projects effectively is a challenge, often resulting in a gap between intended strategy and realised outcome (Winch, 2010). Especially social sustainability strategies are challenging, as this pillar of ESG remains underrepresented and sustainability certifications for buildings mainly focus on the environmental side (Chethana et al., 2017; Alawneh et al., 2019; Kempeneer, 2021). This study addresses the problem of strategy implementation, focused on social sustainability goals in corporate real estate office projects in the Netherlands. The study explores the underlying factors that influence this implementation process throughout the project lifecycle. The main research question is: *To what extent do underlying factors influence the implementation of social sustainability goals throughout the project lifecycle of corporate real estate office projects in the Netherlands?* To answer this question, this study employed a multi-method research approach, combining both exploratory and qualitative methods. A systematic literature review and content analysis established a theoretical framework for social sustainability in CRE, including categories, subcategories and indicators. The empirical part of the study involved a multiple case study of three corporate real estate office projects in the Netherlands, from which data was collected through document analysis and in-depth interviews. The case studies illustrate how a lack of specificity in the vision phase complicates implementation. The vision phase marked a crucial shift, as projects articulated detailed goals and indicators addressing a wide range of social sustainability categories. However, compared to literature, these indicators lacked robustness. This study identified multiple drivers and barriers that influence the implementation process of social sustainability goals. Although there were clear underlying factors that affected the implementation process, such as social and economic performance, barriers—most notably financial and spatial limitations—impeded the complete achievement of social sustainability objectives. Notably, the desire to give social sustainability top priority occasionally conflicted with environmental objectives, making decision-making more difficult. A fundamental challenge identified is the disconnect between strategy formulation and implementation, which significantly complicates the realisation of these goals. It was seen that clear guidance and communication between the project phases is essential for tackling these barriers. In conclusion, this study critically underscores the necessity for a cohesive approach that bridges the gap between strategy formulation and implementation. Without a robust strategy that translates into clear, actionable indicators, organisations may struggle to achieve ambitious social sustainability outcomes.

Keywords - social sustainability, corporate real estate, strategy formulation, strategy implementation, project lifecycle, underlying factors

Executive summary

Introduction and aim

In recent years, corporations have increasingly recognised the importance of Environmental, Social, and Governance (ESG) factors in managing real estate assets (Izyumov, 2023). However, most sustainability assessment tools in the built environment predominantly focus on environmental aspects, often neglecting contextual, social, and cultural components (Doan et al., 2017). For instance, Chethana et al. (2017) found that social sustainability rarely accounted for more than 20% of the credit points in major international green building rating tools. This highlights a significant underrepresentation of the social dimension (Alawneh et al., 2019; Kempeneer, 2021). The process of effective strategy implementation has been researched before. Mintzberg and Waters (1985) stated 3 decades ago that the intended strategy is often ending up in an unrealised strategy. Uncertainties, evolving threats, and opportunities often cause these goals to diverge from the final outcomes (Winch, 2010). This issue is particularly pronounced in the implementation of sustainability strategies, which remains filled with uncertainties (Alyami et al., 2012; Doan et al., 2017).

This study focuses on the implementation of social sustainability goals in corporate real estate office projects in the Netherlands. The primary aim is to explore what influences the gap between the social sustainability goals set and the realised asset. The study addresses the following main research question: *To what extent do underlying factors influence the implementation of social sustainability goals throughout the project lifecycle of corporate real estate office projects in the Netherlands?*

Methodology

To answer the research questions, a multimethod research approach is employed, combining exploratory and qualitative. Desk research was conducted through a systematic literature review and content analysis to build a framework of social sustainability in corporate real estate. The empirical phase included a multiple case study approach to examine the implementation process of social sustainability goals in three cases: Booking.com, CBRE, and J&J. The case studies included document analysis and in-depth interviews to identify drivers and barriers influencing the implementation process. A cross-case analysis was performed to compare the findings across the selected cases and situate them within a broader context.

Findings

Social sustainability remains a broad and evolving concept, with no clear implementation strategy for buildings. Its dual nature—comprising both tangible and intangible aspects—complicates its measurement. Based on the desk research, this study provides a conceptual framework (figure 1) for social sustainability in CRE office projects.

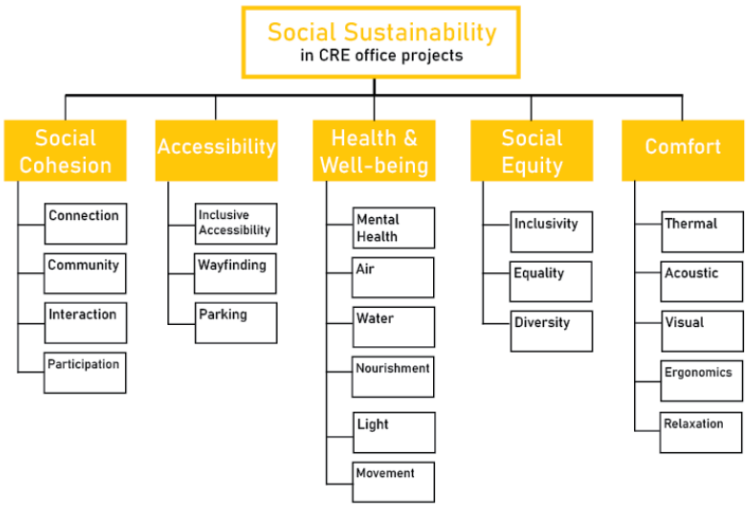

Figure 1 Framework based on literature and content reviewed (by author, 2024)

Previous studies have already identified multiple drivers and barriers for corporate (sustainability) strategy implementation. For example, Engert and Baumgartner (2015) highlighted success factors for implementing corporate sustainability strategies. This study builds on such findings, incorporating insights from the three case studies. The results reveal a range of factors that influence the implementation of social sustainability goals in CRE projects. The case studies demonstrate that a lack of specificity in the vision phase often leads to difficulties during implementation. In the beginning of the project, the ignorance of social sustainability in corporate real estate was noticed. Each case showcased an evolving commitment to social sustainability in the vision phase, with unique goals; however, the integration of these goals was inconsistent and lacked robustness. Underlying drivers, such as social and economic performance, were evident, yet barriers—particularly budget constraints and spatial limitations—hindered the full realisation of social sustainability goals. Notably, the ambition to prioritise social sustainability sometimes clashed with environmental goals, complicating decision-making processes. A fundamental challenge identified is the disconnect between strategy formulation and implementation, which significantly complicates the realisation of these goals. It was seen that clear guidance and communication between the project phases is essential for tackling these barriers. In conclusion, this study critically underscores the necessity for a cohesive approach that bridges the gap between strategy formulation and implementation. Without a robust strategy that translates into clear, actionable indicators, organisations may struggle to achieve ambitious social sustainability goals.

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1. Introduction

1.1 Introduction topic

The process of effective strategy implementation has been researched before. Mintzberg and Waters (1985) stated 3 decades ago that the intended strategy is often ending up in an unrealised strategy. Winch (2010) also defined this process and highlighted the difference between the project's mission and realised asset. During the implementation process different factors influence the outcome.

In recent years, the global community has increasingly recognised the critical importance of addressing pressing issues such as climate change, which stands as a key challenge on a global scale. The phenomenon of global warming has catalysed a heightened focus on sustainability within the real estate sector. Alongside environmental concerns, the world faces challenges such as pandemics and widespread social protests (Izyumov, 2023). The growing levels of risk and vulnerability due to social exclusion, escalating urban poverty, urban conflict and violence, terrorism, natural disasters, and climate change highlight the necessity of addressing these challenges within a social framework (Izyumov, 2023). While the construction industry significantly contributes to global warming and environmental degradation, it also plays a crucial role in society by meeting people’s needs, improving quality of life, and driving economic growth (Doan et al., 2017).

Corporations are progressively acknowledging the importance of Environmental, Social, and Governance (ESG) factors in managing their real estate assets (Izyumov, 2023). As work is a vital anchor point in our society, sustainability in our work environment is an important area to explore (Kobal Grum et al., 2022). Extensive research on sustainability in the built environment, including offices, has been done, resulting in over 100 definitions and more than 600 assessment methods (Vieira de Castro et al., 2019). However, most sustainability assessment tools in the built environment focus predominantly on environmental aspects, often neglecting contextual, social, and cultural components (Doan et al., 2017). Chethana et al. (2017) reviewed major international green building rating tools and found that social sustainability rarely accounted for more than 20% of the credit points. Although ESG considerations are gaining importance in real estate (Izyumov, 2023), the social dimension remains underrepresented, necessitating further investigation (Alawneh et al., 2019; Kempeneer, 2021).

There is a difference between desired goals and actual performance. Within the built environment, a hierarchical dynamic exists where decisions made by architects, engineers, and consultants significantly impact users who are often excluded from the design process (Atanda, 2019). This highlights the disconnect between design decisions and their effects on end-users. At the project’s inception, various goals are established based on multiple interests, but these goals often diverge from the realised asset due to uncertainties and evolving threats and opportunities (Winch, 2010). Additionally, there are still many uncertainties regarding sustainability strategy implementation building projects (Alyami et al., 2012; Doan et al., 2017).

1.2 Research focus

The focus of this study is sustainable strategy implementation in office projects, focussing solely on the social part of sustainability. To achieve the desired social sustainability goals, it is crucial to understand the integration throughout the project lifecycle. Additionally, the

underlying factors that influence the implementation process throughout the project lifecycle are of significant importance as they shape the project's outcome.

1.3 Research scope

This research originated from an interest in corporate real estate and sustainability. Literature reveals that social sustainability is often overlooked in ESG considerations (Doan et al., 2017). Consequently, this research focuses on social sustainability goals in corporate real estate. This study is specifically scoped to examine corporate real estate office buildings in the Netherlands.

1.4 Societal relevance

This study addresses the need for successfully implementing social sustainability within the built environment and focuses on corporate real estate office projects. The office environment has a significant impact on the performance of the employee (Rasheed et al., 2021). Research on employee productivity, including factors such as health and wellbeing, has focused on single aspects improving the performance. By focussing on strategy implementation, this study aims to enhance the overall social sustainability of an office, including all goals relating to social sustainability. The findings of this study have the potential to influence policy-making and corporate strategies, encouraging the adoption of more holistic sustainability practices that consider the social dimensions of office development. This, in turn, can lead to more resilient offices, improving the performance and experience of employees.

1.5 Scientific relevance

From a scientific perspective, this study contributes to the growing body of literature on sustainability in the built environment by addressing the underrepresentation of social sustainability. This research will gather data on social sustainability practices within corporate real estate, specifically focusing on office buildings in the Netherlands. By collecting and analysing this data, the study aims to provide a comprehensive overview of the integration of social sustainability goals throughout the project lifecycle. Another key aspect of this research involves an analysis on the underlying factors that influence the strategy implementation process of social sustainability. By examining these dynamics, this study will offer insights into the practical challenges and opportunities. This approach not only fills a critical gap in the existing research but also offers valuable insights that can inform future studies and practical applications in the field of strategy implementation.

1.6 Research aim and objectives

The main aim is to explore the difference between the social sustainability goals set as the project mission and the realised asset (figure 1.1), identifying the underlying factors that influence this process. The research objectives are;

1. Review literature on social sustainability in corporate real estate offices
2. Understanding the integration process of social sustainability goals in corporate real estate office projects
3. Identifying factors that influence the implementation of social sustainability goals in corporate real estate office projects

Figure 1.1 Conceptual model (by author based on Winch (2010), 2024)

2. Theoretical Background

The main topics that require a broader understanding are corporate real estate projects (2.1), strategy formulation (2.2), strategy implementation (2.3), sustainability (2.4), social sustainability (2.5) and sustainability frameworks and certifications (2.6).

2.1 Corporate real estate projects

Corporate real estate (CRE) is defined as real estate owned or held by an organisation with the intention of housing its operations (Gartner, 2024). CRE projects have changed from being seen as implementation tasks to being seen as strategic initiatives (Hjelmbrekke et al., 2017). Projects are required to contribute to the client organisation's strategic goals, and the decision for starting on a project should be in line with the organisation's broader goal (Haddadi et al., 2017).

The project life cycle of CRE is made up of various project stages, also referred to as phases. The standard project life cycle starts with project initiation and a project assessment, including a feasibility study (Cho & Gibson, 2001). This is followed by the development of a program, leading to a schematic design. The design is then refined until a final design is achieved. Upon completion of the final design, construction documents are prepared, and construction begins, working towards the delivery of the project (De Geus et al., 2019). Extending this timeline, Olanrewaju et al. (2022) also identifies an operations phase following the construction phase. The operations phase begins when the project is in use, encompassing maintenance and facility management. A standard timeline of a project includes therefore the front end, vision, design, execution and utilisation phase, shown in figure 2.1.

Figure 2.1 Timeline CRE project (fictitious length of phases) (by author, 2024)

For this study, five stages in the project lifecycle will be used to analyse the implementation, which are shown in figure 2.2.

Figure 2.2. Stages used in research (by author, 2024)

2.2 Strategy formulation

Within strategic management there are two phases; strategy formulation and strategy implementation (Mintzberg & Waters, 1985). Where strategy formulation concerns the process of formulating a strategy, which includes analyses and objectives, strategy implementation is about the execution of the formulated strategy (Winch, 2010). Strategy formulation is part of the front end of the project life cycle. The front end of a new project includes multiple objectives, including project initiative, project purpose, concept and alternatives analysis (Williams et al., 2019). This strategic decision-making process is characterised by the relationship between the client organisation and its economic and social environment. During

the definition process, the project mission can be defined as a set of goals with quantifiable indicators. Part of the strategy formulation happens during the vision phase, when producing the brief. There are certain obstacles in the briefing process that affect how decisions are made. De Geus et al. (2019) point out what the barriers are for clients and users in producing the brief, and with that it gives a reason for what drives the decision-making of different stakeholders. Barriers identified for the organisation are centred around resources, in which the quality and strategic goals are lessened due to costs. As for the employee, barriers have to do with either exclusion or needs. The first barrier arises when ignoring employees and keeping them out of the formulation process, which can result in issues like social exclusion or inaccessible buildings (Luck et al. 2001; Ormerod & Newton, 2005). Social exclusion can be tackled by stimulating diversity and social interaction, which are seen as success factors (Jensen, 2011). Secondly, the needs of the employees or organisation should be aligned with the workplace, preventing space-related issues (Jensen, 2011; Nordquist et al., 2016). Another issue regarding formulation that is mentioned in the literature review of De Geus et al. (2019) is the knowledge gap or lack of communication between the building professionals and the client, in which the organisation is responsible for the employee (Luck et al. 2001; Jensen, 2011; Khosrowshahi, 2015; Nordquist et al., 2016).

The project mission is not always equal to the realised strategy. This is due to the high levels of uncertainty in the beginning of the project, some goals turn out not to be feasible, new opportunities present themselves or stakeholders change their mind (Winch, 2010). This difference between the project mission and the realised assets is projected in figure 2.3. It is often the case that this intended strategy, or a part thereof, is abandoned, resulting in what is named an unrealised strategy (Mintzberg and Waters, 1985). Numerous factors can contribute to the partial or complete non-realisation of the initial strategic intent, this process is part of strategy implementation.

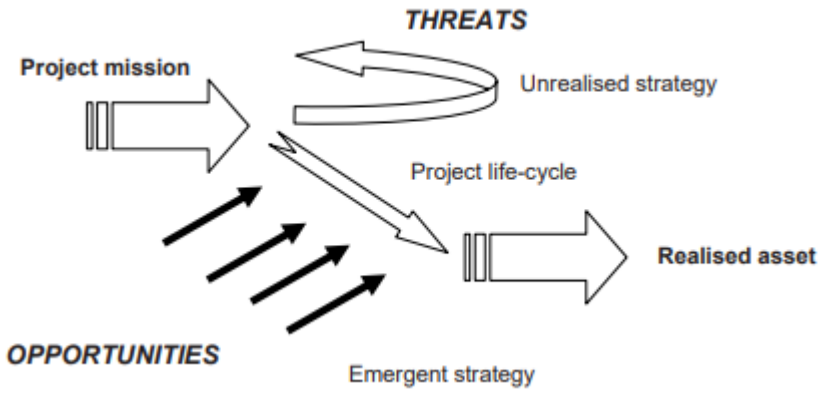


Figure 2.3. Project mission and realised asset (Winch, 2010)

2.3 Strategy implementation

Strategy implementation is a complex process (Hrebiniak, 2006). Effective implementation is essential for the success of any business strategy. In fact, the challenges associated with executing a strategy often originate not from the planning phase, but rather from the actual implementation process. Engert & Baumgartner (2015) state, aligning with other researchers, that organisations and managers are often better developed in strategy formulation and unable

to manage strategy implementation. It is essential to emphasise that implementation should be understood as a process rather than a consequence of a single decision or action (Hrebiniak, 2006) . Rather, it is the outcome of a continuous sequence of interconnected decisions and actions occurring over a period of time. The strategy implementation process throughout the lifecycle of a project is influenced by different factors. Among these are threats and opportunities to strategy implementation, there are internal and external events that disrupt or benefit the execution of the original strategic goals (Candido & Santos, 2019). Such influencing factors may, in some cases, lead to modifications in the initial strategic intent, resulting in a realised strategy that differs from the original plan. In other cases, threats may entirely prevent the intended strategy from being executed, leaving it as an unrealised strategy.

Guerra-Lombardi et al. (2024) developed a framework for strategy implementation of corporate sustainability (figure 2.4). Their study focused on hotels, however the framework identifies a structure that is also relevant to different contexts. The emphasis on the operational process, where this strategic approach holds the greatest influence, is particularly significant. Implementation factors may arise from both external and internal environments of the organisation, as well as from the operational process itself. These factors can function as either drivers or barriers to successful implementation, leading to essential practices that may either align or are unaligned from the original goals of the corporate strategy system (Guerra-Lombardi et al., 2024).

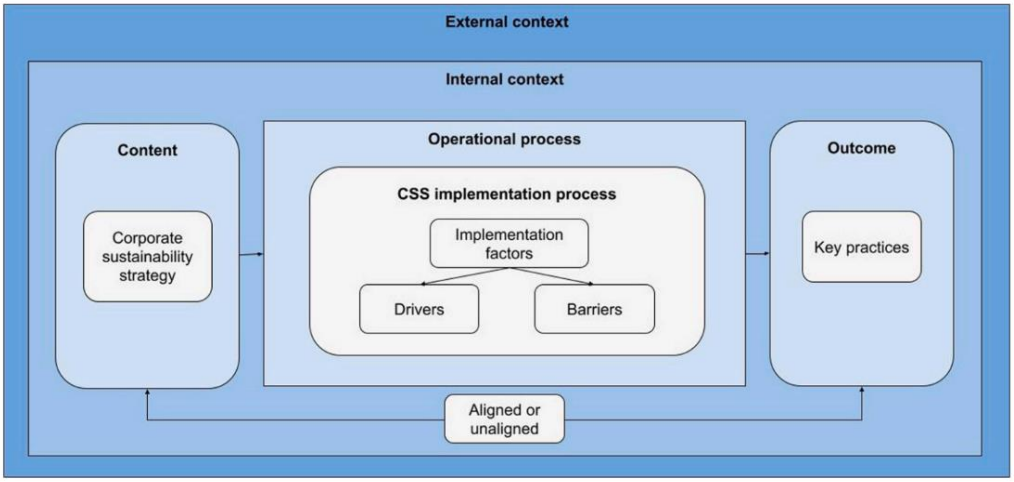


Figure 2.4. Corporate sustainability strategy implementation (Guerra-Lombardi et al., 2024)

Previous research on strategy implementation has already identified multiple drivers and barriers. Engert & Baumgartner (2015) conducted a case study identifying success factors for corporate sustainability strategy implementation. The identified success factors often act as a barrier to successful implementation of strategy, but only when adequately executed, they act as success factors in strategy implementation in corporate sustainability. This is also identified by Engert et al. (2016), as they developed a list of factors that either hinder or support corporate sustainability integration. The drivers and possible hindering factors are listed in appendix VI.

Successful strategy implementation is known to have many barriers. Many researchers have identified or collected these barriers. In 2006, Hrebiniak published an article on the obstacles

that impede strategy implementations. These obstacles are found based on his own experience as a consultant over two decades and an empirical study in which data was collected from 443 managers. Although the main focus of the study are obstacles for the implementation process, it is mentioned that some obstacles can also act as drivers, when executed correctly. Another study identifying barriers is done by Engert et al. (2016). In this study 114 scientific journals are analysed identifying factors that influence the integration process of corporate sustainability into strategic management. They make a separation between drivers and factors that can either be a driver or a barrier. In 2019, Candido & Santos (2019) also did a study on strategy implementation, in which they analysed how this is affected by strategy implementation obstacles. In order to analyse its relation to each other, they identified a list of strategy implementation obstacles. Through an extensive literature review, they created a long list of obstacles, also including Hrebiniak (2006). All identified barriers, and reversed drivers, are listed in appendix VI.

According to White (2009), the basis of corporate sustainability is the interrelation between economic growth, environmental protection, and social responsibility. As this research focuses on social sustainability within offices, the concept of workplace is relevant. The goal of workplace management is to successfully implement the needs of the employees (Danivska & Appel-Meulenbroek, 2022). The workplace touches upon many other fields of research, including environmental psychology, ergonomics, sustainability, circular building, and so forth (Van der Voordt, 2024). The development of workplace research emphasises how important it is for workplace management to use information from many academic fields (Tagliaro et al., 2023). Relevant fields of research are relating to the workplace environment, for example ethnographic (Holck & Villesche, 2018), health and well-being (Lindberg et al., 2018), stress (Thayer et al., 2010), preference (Appel-Meulenbroek & Kemperman, 2018), social interaction and networking (Zhou, 2018) and space syntax (Koutsolampros, 2018). In order to understand the strategy formulation and implementation for corporate social sustainability, an analysis on the concept of social sustainability is needed.

2.4 Sustainability

The best known concept of sustainability originates from the Our Common Future report by the United Nations. This defines sustainability as "meeting the needs of the present without compromising the ability of future generations to meet their own needs" (United Nations Brundtland Commission, 1987). Since this report has been released, sustainability has generally been categorised in environmental, economic and social sustainability, often referred to as the three pillars of sustainability. (Stender et al., 2019).

In 2004 the United Nations introduced the concept of Environmental, Social and Governance goals (ESG goals) to raise awareness for environmental, social and governance issues on the financial market (Kempeneer, 2021). The interest for ESG issues has emerged due to the financial crisis and the Paris Climate Agreement in 2015. Along with that, ESG is becoming more apparent in regulatory and legal requirements (Kempeneer, 2021). ESG factors are defined as non-financial performance indicators that measure the environmental, social and governance of an organisation (Izyumov, 2023). By incorporating ESG, organisations are forced to have a holistic approach on operations.

Corporates are increasingly recognising the importance of ESG factors in real estate management (Izyumov, 2023). Companies that incorporate ESG tend to perform better

financially (NYU Stern, 2020), and integrating these factors into portfolio optimisation can lead to improved returns (Chen et al., 2021). Izyumov (2023) argues that ESG strategies can enhance financial performance, reduce environmental impact, and improve social responsibility. Additionally, enhancing workplace health and well-being can directly and indirectly influence profitability through reduced health insurance costs, increased productivity, and lower illness rates (Zhang, 2017). Research shows that practices like improved ventilation, lighting design, and temperature control can boost worker productivity by up to 36.6% (Loftness et al., 2003; NSR/IUCRC, 2004), while also enhancing employee health, satisfaction, and happiness (WGBC, 2013).

Another significant global turning point in the fields of sustainability and sustainable development was the adoption of the 2030 Agenda in 2015. The agenda created a clear, comprehensive framework for development that gives equal weight to the environmental, social and economic pillars of sustainability. This includes the Sustainable Development Goals (SDGs) and their targets (figure 2.5) (Diaz-Sarachaga et al., 2018).

Figure 2.5. Sustainable Development Goals (UN, 2015)

2.5 Social sustainability

There are numerous approaches to social sustainability, definitions include either subjective-objective, non physical-physical and intangible-tangible factors (Atanda et al., 2018). Due to different definitions and context specific interpretations, social sustainability is a broad and multidimensional concept. Researchers from different disciplines have tried to put down a definition of social sustainability in the built environment regarding a specific context. However, multiple definitions of social sustainability can be found by different researchers who tried to define the concept (Kobal Grum et al., 2022). Under the term social sustainability, the following definitions can be found.

Dempsey et al. (2011) define social sustainability within the urban context as encompassing two main dimensions: equitable access and the sustainability of the community itself. In other words, ensuring that all members of the community have fair and equal opportunities to resources, services, and amenities. Furthermore, the community itself involves fostering a

sense of cohesion, well-being, and quality of life. Also in the urban context, Weingaertner et al. (2014) highlight the importance of values such as equity, democracy, culture, social justice, and human needs in defining social sustainability. Hall (2011) says that the main factors influencing the achievement of social sustainability are accessibility to facilities, safety, friendliness, education, and a high standard of living. Murphy (2012) also defines conceptual categories, but points towards the following: social cohesion, awareness of sustainability, equity, and involvement. Lastly, according to Lami et al. (2021) social sustainability from an organisation's perspective can be defined as the ability to take into account the social well-being, education, financial stability, and personal safety of society and its members while also taking into account demographic and economic justice.

It can be noted that a common way of defining social sustainability has been depicting the main concepts that together form the term social sustainability. Based on the extensive overview of literature, social sustainability can be defined as a dynamic concept centered on enhancing the human experience by ensuring that individuals and communities can thrive in a supportive and inclusive environment. It focuses on fostering a sense of belonging and quality of life through equitable access to opportunities and resources. This multidimensional concept integrates both tangible and intangible factors, which both emphasises the importance of the overall experience and performance of people.

It has been found that the governance and environmental pillars are often more advanced in real estate management than the social pillar (Gajsek et al., 2022; Sharif, 2023; Aljazaerly et al., 2024). In deviation from these findings, CBRE (2021) has defined all three pillars in relation to corporate real estate (figure 2.6). They describe the social pillar as how a company interacts with its employees, suppliers, customers, and the communities in which it operates. It includes among others considerations around labour practices, diversity and inclusion efforts, adherence to human rights, customer satisfaction, and the safeguarding of data protection and privacy.

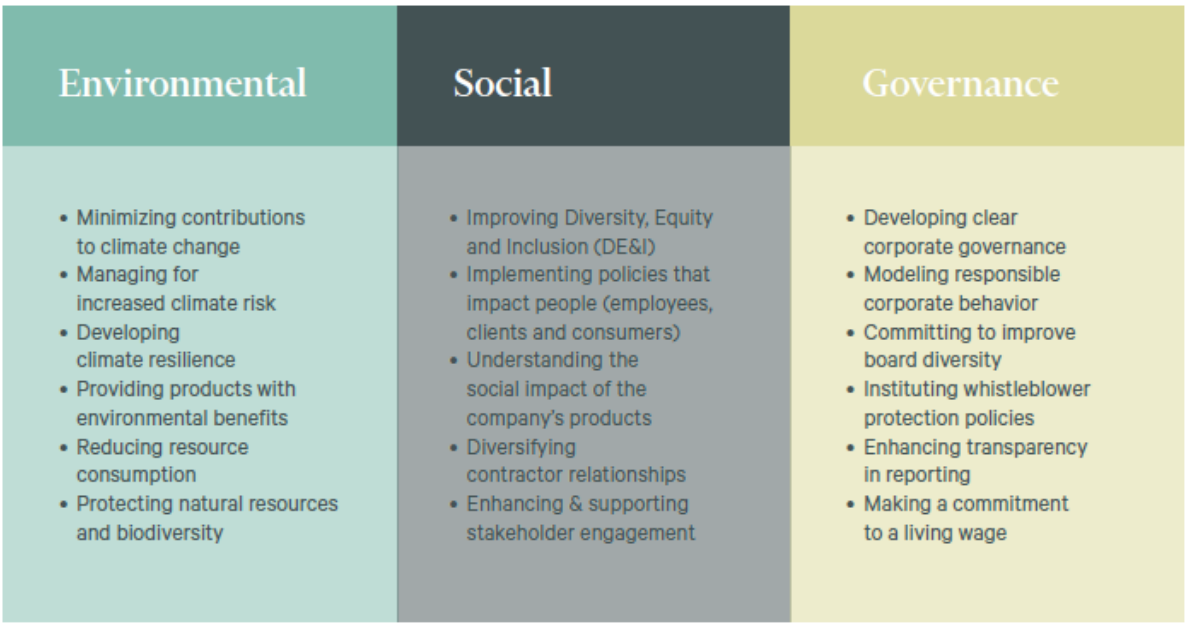


Figure 2.6. Definition ESG (CBRE, 2021)

In this research, it is important to acknowledge that social sustainability goes beyond the concepts of user experience. Even while these components are important, social sustainability includes a wider range of features that support the overall social context of workplaces. It involves understanding how workplace behaviours, regulations, and design can affect office dynamics and social cohesion in addition to individual experiences. Given that employees are essential to the success of corporate real estate projects, this study focuses especially on the employees. Furthermore, a comprehensive strategy that takes into account the interactions between different social challenges and how they affect employee experiences is necessary for social sustainability. By integrating all social features into a framework of social sustainability, this research aims to provide a comprehensive understanding of how corporate real estate can contribute to the employee as an individual and to the office environment.

2.6 Sustainability frameworks & certifications

As concerns regarding environmental and social issues intensify, coupled with growing demands from stakeholders and regulatory bodies, organisations are compelled to adapt. Consequently, these organisations face increasing pressure to mitigate their environmental impact and enhance their societal contributions by integrating corporate sustainability practices and developing appropriate sustainability strategies (Accenture, 2011). There is an increasing interest in including and portraying corporate sustainability into organisations (Engert et al., 2016). A way of doing this is the use of sustainability frameworks and certifications.

To guide organisations in integrating sustainability into their strategies and operations, overarching sustainability frameworks have been developed (Eizenberg & Jabareen, 2017). These frameworks outline principles, goals, and guidelines for achieving sustainability. A conceptual framework, as defined by Jabareen (2008), consists of interrelated concepts that enhance understanding of a subject. An example is the UN's Sustainable Development Goals (2017), which help organise the complexities of sustainability by identifying key categories and their relationships. While frameworks provide a broad approach, sustainability certifications are specific and prescriptive, detailing measurable criteria for achieving defined levels of sustainability performance (Danivska et al., 2019; Sharif, 2023).

The definition of sustainability in buildings is often linked to existing sustainability certification systems (Cucuzzella, 2015), which enhance building quality and performance (Feira, 2019) and are gaining international popularity. Currently, there are over 600 tools to assess environmental, social, and economic sustainability (Vieira de Castro et al., 2019). Researchers analyse and compare these systems, referring to them in various ways, such as green building rating systems (Doan et al., 2017), sustainable assessment systems (Berardi, 2012), and sustainable building assessment methods (Cole, 2005). Certification systems evaluate building performance using a framework of standards and indicators, often employing a scoring system for numerical evaluation (Danivska, 2019). Given that sustainability encompasses multiple definitions, various methods exist for its valuation and measurement. Additionally, numerous agencies evaluate and rate organisations on ESG factors, but the lack of a leading agency results in inconsistent measurements and ratings (Kempeneer, 2021).

Goubran (2019) analysed well-known certification systems (BREEAM, LEED, Green Star, CASBEE, and SBTool) and found that while energy is a primary focus, the connections between economic, social, and environmental aspects are often overlooked. He notes that

economic, institutional, and social features are rarely included in these systems. Other researchers (Stender, 2019; Kempeneer, 2021) also highlight that the emphasis is mainly on environmental sustainability, with less attention to social sustainability. Recent certifications, such as the WELL Building Standard introduced by the World Green Building Council (WGBC) in 2014, focus specifically on social sustainability. Other examples include the Living Building Challenge and Fitwel (Danivska et al., 2019). These certifications promote user health, well-being, and satisfaction based on academic literature. Research by CBRE (2017) indicates (table 2.1) significant interest in WELL-certified buildings, which had 3,500 registered projects worldwide by 2019 (Danivska et al., 2019).

Wellness affecting building selection	Percentage
No impact	28
Marginal preference for WELL-certified buildings	39
Strongly favour WELL-certified buildings	27
Will only occupy WELL-certified buildings	6

Table 2.1. Occupiers Interest in WELL-certified buildings (CBRE, 2017)

The integration of sustainability, particularly social sustainability, into strategy formulation and implementation of building projects is complex and multifaceted. According to Arroyo (2014), this process for commercial buildings often centres on cost reduction or obtaining credits from sustainable assessment tools. The involvement of multiple stakeholders further complicates the process, as it brings diverse perspectives and sometimes conflicting interests (Goubran, 2019). Goubran (2019) analysed various studies on the implementation of Sustainable Development Goals (SDGs) and identified several gaps and hurdles. He found that the agenda for implementing programs and policies is limited, with a lack of priority given to local factors. Goubran (2019) concluded that the limitations of current implementation and certification are primarily related to costs. As many drivers and barriers are known for (sustainable) strategy implementation, this study focuses on the integration and implementation of social sustainability strategy within corporate real estate office projects.

Integrating sustainability, especially social sustainability, into the strategy formulation and implementation of building projects is complex. Arroyo (2014) notes that for commercial buildings, this process often focuses on cost reduction or acquiring credits from sustainability assessment tools. Goubran (2019) also identified in his study on SDGs, that current implementation and certification challenges are primarily cost-related. Given the known drivers and barriers to (sustainable) strategy implementation, this study will focus on the implementing process of social sustainability strategies within corporate real estate office projects.

3. Methodology

This chapter explains the design of the research. It presents the questions and research methods, dividing the research into two parts: desk research and empirical research. Furthermore it describes the data analysis and research ethics.

3.1 Research questions

The aim of this study is to understand the integration process of social sustainability goals and to identify the underlying factors that influence the implementation process throughout corporate real estate office projects. Therefore the main question and subquestions of this research are:

To what extent do underlying factors influence the implementation of social sustainability goals throughout the project lifecycle of corporate real estate office projects in the Netherlands?

SQ1. What are existing frameworks structures used to categorise social sustainability goals in corporate real estate?

SQ2. Which categories, subcategories, and indicators of social sustainability in corporate real estate are defined in literature?

SQ3. How do existing certification systems for social sustainability in corporate real estate align with the identified categories, subcategories and indicators?

SQ4. How do corporate real estate office projects integrate social sustainability goals throughout the different stages of the project lifecycle?

SQ5. What drivers and barriers influence the implementation of social sustainability goals in corporate real estate office projects?

3.2 Type of research

This study used a multimethod research approach, consisting of both exploratory and qualitative research focusing predominantly on collecting information. The study started with a desk research to provide an overview of social sustainability in corporate real estate. Consequently this is used as the foundation for the empirical research to analyse the integration and implementation process of the social sustainability goals in three corporate real estate office projects.

3.3 Research methods

This study used desk research to gather knowledge on framework structures, categories, sub categories and indicators of social sustainability in corporate real estate. This is done through a systematic literature review and a content analysis. During the empirical part, this study uses multiple case studies to map the process of integration of social sustainability goals in corporate real estate projects. This includes a document analysis to provide an overview of the integration process, and in-depth interviews to identify the drivers and barriers that influence the implementation process. A cross case analysis is done to compare the cases and put the findings into a broader context.

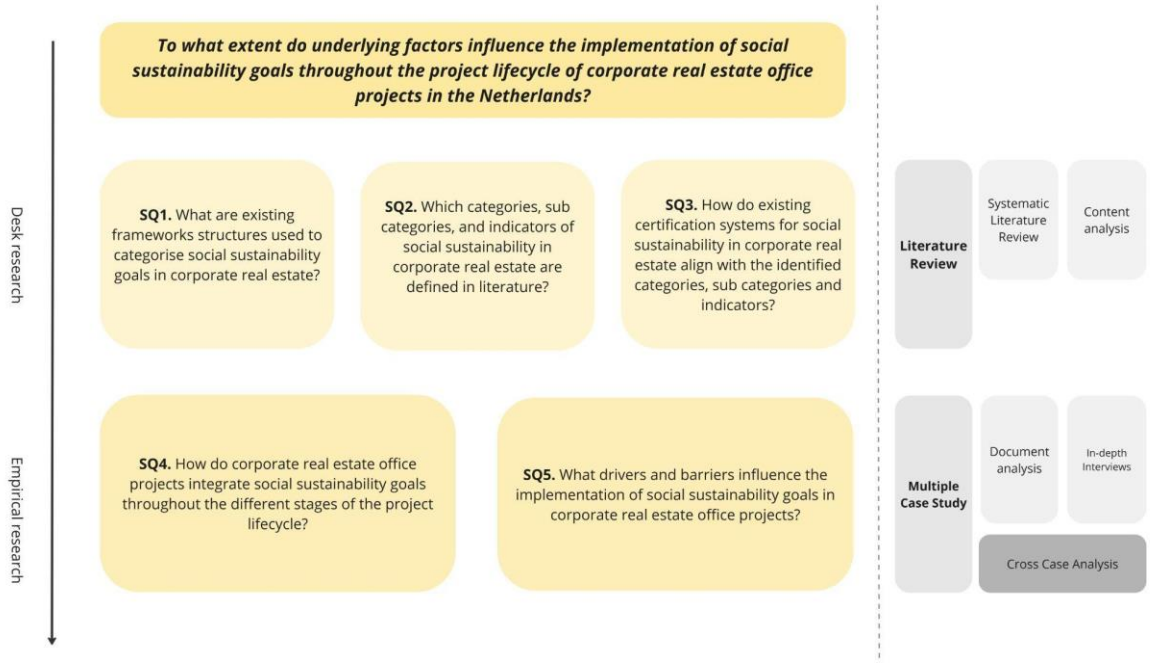


Figure 3.1. Research methods (by author, 2024)

3.4 Desk research

3.4.1 Systematic literature review (SLR)

In order to create a foundation of knowledge on social sustainability, background information regarding this topic was needed. A SLR is a careful and organised way of reviewing literature that helps ensure reliable and unbiased findings. This method involves a clear process for finding, selecting, and evaluating relevant studies, and then comparing the results. This SLR used a search protocol and exclusion criteria, followed by an analysis of the findings.

Search protocol

The main concepts used were social sustainability, corporate real estate and framework. In this SLR multiple variations of these concepts are used to broaden the search context and expand the results (table 3.1).

Social sustainability	Corporate real estate	Framework
Social value	Built environment	Structure
ESG	Building	Strategy
Socially	Property	Model
Social equity	Portfolio	Assessment
	Real estate	Criteria
	Asset	Concept
	Development	
	Office	
	Workplace	

Table 3.1. SLR: concept variations (by author, 2024)

These variations came together in the following search query:
TITLE (("framework" OR "structure" OR "model" OR "assessment" OR "criteria" OR "concept*") AND ("social sustainability" OR "social value" OR "ESG" OR "socially" OR "social equity") AND ("built environment" OR "building*" OR "property" OR "portfolio*" OR "real estate" OR "asset*" OR "development" OR "office*" OR "workplace" OR "corporate"))

The database of Scopus was used, because Scopus only contains peer-reviewed journals and high-quality articles. The search was conducted on May 2, 2024 and generated a result of 160 documents.

Exclusion criteria
Not all the 160 results were relevant. Based on several criteria, some documents were removed. 4 of the 160 results were documents published before 2000, therefore these were excluded as they did not contain recent research on these topics The remaining 156 results were scanned on title and abstract. In this second round of screening, 145 documents were excluded. The reason for exclusion were the following:

- Not accessible
- Theoretical work is in completely different context
- Exclusively dealing with socially responsible investments
- Exclusively dealing with corporate social responsibility

The remaining papers have been mostly published 2020 and 2023. This indicates that this is a recent topic and that the research field is still limited. The remaining papers that were analysed are listed in appendix I.

3.4.2 Content analysis
Not all relevant literature on social sustainability is scientific. Therefore, this study conducted a content analysis on the different certifications systems. There are existing building assessment tools that include social sustainability indicators (BREEAM, LEED). Along with that, there are specific certifications on social sustainability indicators (WELL, Fitwel). Both of these are analysed and the results are compared to the results of the SLR. The results support the empirical part of this research.

3.4.3 Knowledge base
The desk research was executed to ensure the knowledge base was sufficient for the empirical part of the research. All findings from the desk research were bundled to provide an all-encompassing understanding of social sustainability. Based on these findings a framework is developed that is used in the analysis of the empirical part of this research.

3.5 Empirical research
3.5.1 Multiple case study
In order to identify the underlying factors that influence the implementation process of social sustainability goals throughout the project, this study carried out a multiple case study. This method provided the advantage of both analysing within the case itself and across the cases. To increase the validity and reliability of the findings, this study analysed three cases to identify similarities and differences. The multiple case study included an in-case analysis, consisting of a document analysis and in-depth interviews. Consequently, the cases are compared in a cross case analysis.

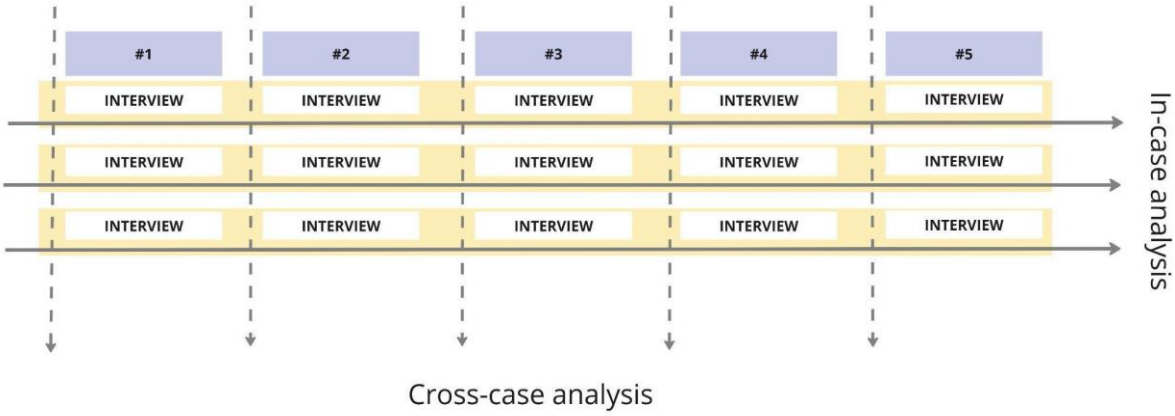


Figure 3.2. In-case and cross-case analysis (by author, 2024)

The in-case analysis was structured into five stages, in which five phases within the project life cycle were chosen (table 3.2). Each case was analysed according to these stages.

Stage	#1	#2	#3	#4	#5
Phase	Front end	Vision	Pre design	Final design	Use

Table 3.2. Stages analysis

3.5.2 Case selection

Three cases were selected in this multiple case study. The research scope was corporate real estate office projects in the Netherlands. In order to collect the right and useful data, the following selection criteria were applied when selecting cases:

- A corporate real estate office project, focussing on the organisation that is the occupier
- Within the Dutch context
- Project that is recently finished (between 2019 and 2024)
- Project that is owned by a company that values and includes social sustainability goals
- The project can either be newly built of redeveloped

The selection of interesting cases that aligned with the selection criteria was done with help from the CBRE, where a graduation internship was completed. As a large corporate real estate consultancy organisation, CBRE had a large range of possible projects. The chosen cases (table 3.3) fulfilled all the requirements and were selected by means of available information and connections. Along with that, a consideration regarding social sustainability goals was made. The three cases are expected to all highly value social sustainability goals, at least at the beginning of the project.

Booking Campus City, head office Booking.com Amsterdam
The Core, CBRE office Amsterdam
Johnson & Johnson office Leiden

Table 3.3. Selected cases

3.5.3 Document analysis

For the in-case analysis, a document analysis was done first. For each stage, the documents (table 3.4) have been gathered and analysed. The desk research has provided an overview of the integration of social sustainability goals in corporate real estate and created a framework, which is used to structure this analysis. By comparing the different stages to each other, the process of integration was mapped for each of the cases.

Stage	#1	#2	#3	#4	#5
Phase	Front end	Vision	Pre design	Final design	Use
Documents	Sustainability/RE rapports	Vision/Programme of Requirements	Masterplan/sketch design	Definite design	Evaluation reports

Table 3.4. Documents per stage

3.5.4 In depth interviews

In-depth interviews were held to identify the factors that influence the implementation process of social sustainability goals. The analysed integration of social sustainability goals was used to form the interview questions and explore the intention behind decisions made during the process. The goal was to identify what drivers and barriers have influenced the implementation process of social sustainability goals. The in-depth interviews were semi-structured and consisted of a similar structure. However, for each interview questions were specifically adapted based on the findings from the document analysis. Questions were prepared beforehand, but the participant was free to elaborate on other topics as well. Interviews were held with one participant from each stage, focussing on that phase of the project (table 3.5).

Stage	#1	#2	#3	#4	#5
Phase	Front end	Vision	Pre design	Final design	Use
Documents	Sustainability/RE rapports	Vision/Programme of Requirements	Masterplan/sketch design	Definite design	Evaluation reports
Role	Director/manager real estate	Workplace consultant	Architect/interior designer	Project manager	Facility manager

Table 3.5. Roles per stage

The built up of the interview included the following parts; introduction, project goals and social sustainability goals. The standard interview questions and interview protocol can be found in appendix V.

3.5.5 Cross case analysis

The findings from the three cases are compared to find similarities and differences across the cases. The comparison is done for each of the chosen stages, focussing on the integration of social sustainability goals and the implementation process.

3.6 Data analysis

3.6.1 Document analysis

This study begins by analysing all the gathered documents from each project, for which similar documents from each stage were collected to create an overview of the social sustainability goals formulated at the beginning and the process. The framework created in the desk research serves as a guide to structure the analysis. This analysis takes into account the unique terminology and indicators used by each project and categorises them accordingly. The goal is not to fully align the framework with a certification system but to identify the objectives at each stage, highlighting the differences between them. The findings from this study form the interview questions. For each stage of each project, the interview questions were altered to focus on the differences between stages and to gain an in-depth understanding of the implementation process.

3.6.2 Coding

This study employs a hybrid coding approach that combines deductive and inductive coding to identify drivers and barriers relevant to the study's context. To initiate this process, a preliminary set of codes based on drivers and barriers found in corporate sustainability strategy implementation is used, creating an initial codebook of potential drivers and barriers. This deductive phase grounds the coding process in established knowledge, allowing for a systematic exploration of known themes. During the coding process, predefined codes were applied where relevant, while remaining open to new themes that emerge from the data, which is a characteristic of inductive coding. As drivers or barriers specific to the current study's context become evident, new codes were developed to capture these insights and integrate them into the analysis. This dual approach facilitates the inclusion of both previously identified themes and unique, context-specific factors. Throughout the process, this study refines and adapts the codes to ensure they accurately represent the data.

3.7 Research ethics

This study was designed and carried out in a way that did not cause unnecessary harm or required unwarranted risks that could have an adverse effect on society, the environment, human research subjects, or even researchers themselves. This research included the participation of humans, making it human research. Therefore, approval from the Human Research Ethics Committee (HREC) was acquired. This application included a HREC risk-assessment checklist, informed consent materials and a data management plan. Before the participants were interviewed, they signed an informed consent, aligning with TU Delft standards.

4. Desk Research

4.1 Systematic literature review

4.1.1 Research aim

This systematic literature review explores the existing literature on social sustainability in corporate real estate. It answers the first two subquestions through the analysis of framework structures, social sustainability categories, subcategories, and indicators, providing a comprehensive knowledge base to support the empirical research.

4.1.2 Findings

This study analyses 11 papers to identify the framework structures and indicators used for social sustainability (appendix I). Six papers present a framework, which will be discussed, while eight papers identify multiple indicators. Additionally, some papers address existing assessment frameworks, such as BREEAM and LEED, which are reviewed during the content analysis.

4.1.3 Framework structures

The six papers providing frameworks all address social sustainability within the built environment, covering building, workplace, residential, and urban growth levels. While most use the term "framework," some refer to it as a "theoretical model" or "conceptual framework" (Cuthill, 2010). Two researchers incorporate assessment components: Sharif (2023) presents a rating framework, and Fatourechi et al. (2020) offer an assessment framework based on criteria without specific context.

Cuthill (2010) develops a social sustainability framework to address the lack of emphasis on regional responses to sustainable development amid rapid urban growth. This framework highlights key components, such as social capital, social infrastructure, social justice, equity, and engaged governance, emphasising their interconnectedness (figure 4.1). The study concludes that the concept of social sustainability forms an umbrella under which the different components come together and a preventative approach enhances social sustainability more effectively than reactive measures.

Stender et al. (2019) focus on integrating social sustainability into building assessment tools, discussing the challenges and opportunities in promoting it. They propose a framework of indicators related to social cohesion, participatory processes, and accessibility (figure 4.2).

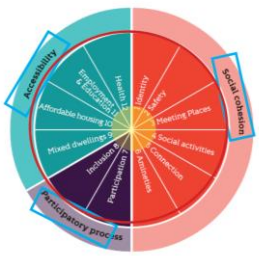
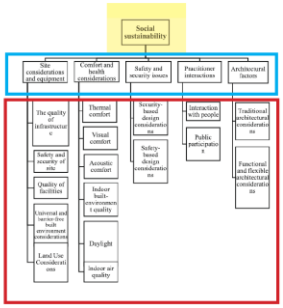


Figure 4.1 & 4.2. Social sustainability frameworks (Cuthill, 2010 & Stender et al., 2019)

Fatourechi et al. (2020) develop a social sustainability assessment framework for residential buildings in Iran to address the previous neglect of social aspects. They gather literature to identify key social criteria for sustainability assessment and employ a multi-criteria decision-making strategy to rank these criteria and subcriteria. This research results in a hierarchical framework of social sustainability (figure 4.3).

Grum and Babnik (2022) present a theoretical model that comprehensively addresses the psychological aspects of social sustainability in the workplace. Their model emphasises the relational development among individuals, organisations, communities, and society in achieving social sustainability (figure 4.4), arguing that social sustainability cannot be separated from other sustainability dimensions.



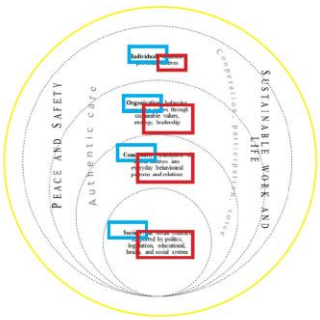
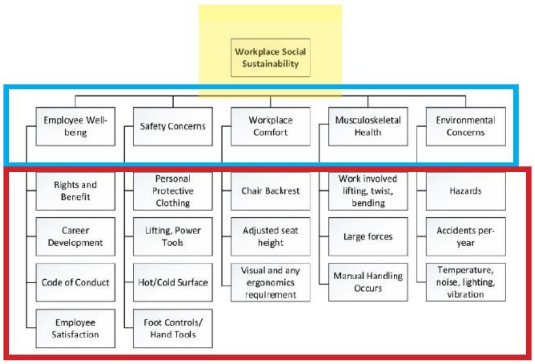


Figure 4.3 & 4.4.. Social sustainability frameworks (Fatourehchi et al., 2020 & Grum & Babnik., 2022)

Gajsek et al. (2022) aim to enhance social sustainability in organisations by linking ergonomics methods and tools to workplace practices. They utilise the workplace sustainability framework developed by Lin et al. (2021), which includes 17 indicators connecting social sustainability and ergonomics (figure 4.5).

Sharif (2023) studies social sustainability indicators at the building level in Jordan. This research identifies key social sustainability indicators. Sharif develops a social sustainability framework with three main categories: environmental friendliness, comfort and convenience, and social blend (figure 4.6), which includes multiple indicators.



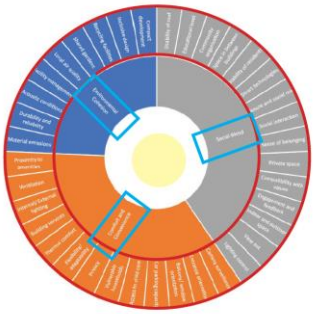


Figure 4.5 & 4.6. Social sustainability frameworks (Gajsek, 2022 & Sharif., 2023)

The analysis of these various framework structures reveal that most frameworks share a similar structure, consisting of main categories and indicators for each category. The analysis identifies key aspects: the core concept of social sustainability is highlighted in yellow, main categories in blue, and indicators in red. Notably, the frameworks by Lin et al. (2021) and Sharif (2023) provide a clear and concise overview of these elements.

4.1.4 Social sustainability categories

Eight papers from the systematic literature review provide indicators of social sustainability within the built environment, identifying main categories and indicators for each. Due to varying definitions of social sustainability, researchers present different indicators for assessment, but some agreement exists among them. Researchers also use different terminology for similar concepts. This study analyses these terms to compare them and develop key categories. First, key categories based on the literature were determined, then indicators for each category were selected. The categories and indicators relate to the specific contexts of the studies, resulting in a variety of synonyms. Table 4.1 presents the eight papers and their main categories.

Author(s)	Main categories	Research method	Context
Cuthill (2010)	- Social justice & equality - Social infrastructure - Engaged governance - Social capital	Action research: stakeholder involvement	Urban growth
Stender et al. (2019)	- Social cohesion - Accessibility - Participatory process	Focus group, case studies and document analysis	Building projects
Fatourechi et al. (2020)	- Site consideration and equipment - Health and comfort considerations - Safety and security issues - Practitioner interaction - Architectural factors	Fuzzy Analytic Hierarchy Process: input from experts	Residential buildings
Kempeneer et al. (2021)	- User behaviour - User well-being - Psychological and social well-being - Social rights and wellness - Environmental justice	Literature review	Real estate investments
Gajsek et al. (2022)	- Employee well-being - Safety concerns - Workplace comfort - Musculoskeletal comfort - Environmental concerns - Social rights and wellness - Environmental justice	Literature review and case studies	Ergonomics and workplace practice
Wen et al. (2022)	No main categories	SLR, Bayesian networks, semi-structured interviews, questionnaires	Green building projects
Sharif (2023)	- Environmental friendliness - Comfort and convenience - Social blend	Desk research, Delphi, AHP	Building level
Aljazaerly et al. (2024)	- Accessibility - Social networking and interaction - Safety and security - Sense of attachment - Participation - Quality of neighbourhood - Quality of home	Literature review and ase study	Urban development

Table 4.1. Selected documents SLR (by author, 2024)

Analysing the literature reveals eight themes of social sustainability. These themes are listed in table 4.2, along with the synonyms identified in the various documents.

Category	Synonyms
Social cohesion	*Practitioner interaction, social networking & interaction, sense of attachment, community & participation, participatory process*
Accessibility	*Social infrastructure, accessibility & satisfaction, infrastructure & facilities*
Health & well-being	*Health & comfort, user well-being, psychological & social well-being, employee well-being, health & safety, social well-being*
Social equity	*Social justice & equity, social rights & wellness, equity*
Comfort	*Health & comfort, workplace & musculoskeletal comfort, comfort & convenience*
Safety & security	*Safety concerns, safety, health & safety, security assurance*
Environmental issues	*Environmental justice, environmental concerns, environmental friendliness, eco-prosumption, sustainable urban forms, environmental education*

Table 4.2. Analysis categories found on social sustainability (by author, 2024)

4.1.5 Social sustainability subcategories and indicators

The main categories are analysed and compared, all recorded in an Excel sheet. Some subcategories are derived from the synonyms found in the papers. Additionally, other subcategories and indicators are analysed per category. Whereas the main categories overlap in most studies, the indicators vary widely. This has to do with the different context of each study, where the indicators refer to specific topics of the context. This shows that categories can be used at a broad level, but that the indicators per category are context specific. For some categories, like social cohesion, there is overlap between the identified indicators. For other categories like accessibility there is less overlap. Most studies clearly point out healthy indoor environment quality in health & well-being, but safety & security receive a range of different indicators. All the indicators found in literature are listed in appendix II.

4.2 Conclusion SLR

It has become clear that social sustainability is a broad and context specific concept. The SLR has provided two main findings that are relevant for the further process of the research. The first one is a method for structuring all aspects of social sustainability. In the literature multiple frameworks are provided, with all similar structures. This framework structure consists of a core of social sustainability, main categories and subcategories (figure 4.7).

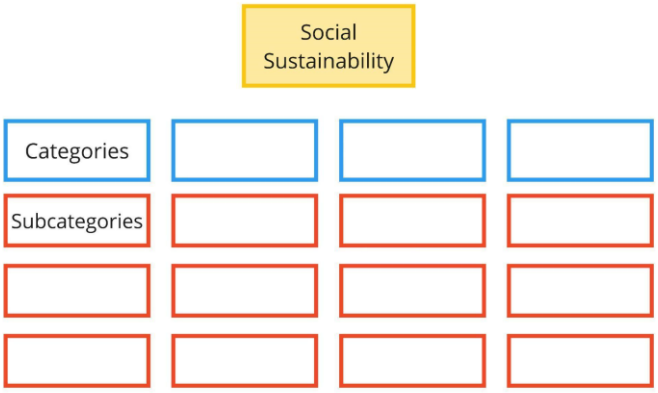


Figure 4.7. Framework structure (by author, 2024)

The second finding regards the classification of the main categories. Although many synonyms are used for some categories, the literature identified seven main categories: social cohesion, accessibility, health & wellbeing, social equity, comfort, safety & security and environmental issues. Moving forward, these categories will be used to analyse different certifications and to allocate different subcategories and indicators. Apart from the categories, the subcategories and indicators are context specific and therefore generalised from the literature coming from different types of context.

4.3 Content analysis

Danivska et al. (2019) highlight a shift in the built environment's sustainability focus from traditional environmental concerns to broader social sustainability, particularly health and well-being. This shift has spurred the development of new certification systems, including the WELL Building Standard and Fitwel (figure 4.8) that cover more social sustainability indicators. This content analysis reviews relevant certification systems used in the Netherlands, focusing on both general sustainability certifications and those specific to social sustainability in buildings.

	LEED v2	Leed O +M v3	Leed O +M v4	BREEAM In-Use v1	BREEAM In-use v2	BREEAM In-Use	WELL v1	WELL v2	Fitwel v1	Fitwel v2	Living Building Challenge 1.3	Living Building Challenge 2.0	Living Building Challenge 3.0	Living Building Challenge 4.0
	2004	2009	2018	2008	2013	2015	2014	2018	2012	2018	2006	2009	2014	2019
Indoor air quality & Ventilation	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Lighting & Daylight	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Thermal comfort	x	x	x	x	x	x	x	x		x			x	x
Look & Feel			x			x	x	x	x	x	x	x	x	x
Location & Amenities	x	x	x	x	x	x	x	x	x	x			x	x
Noise & Acoustics			x	x	x	x	x	x	x	x				
Office layout			x	x			x	x	x	x			x	x
Biophilia & Views		x		x	x	x	x	x	x	x		x	x	x
Safety & Security	x	x	x	x	x	x	x	x	x	x	x	x	x	x

Figure 4.8 Health & Wellbeing in sustainability assessment tools (Danivska et al., 2019)

BREEAM-NL

BREEAM (Building Research Establishment Environmental Assessment Method) is an internationally recognised sustainability assessment method, with BREEAM-NL being its Dutch adaptation introduced in 2009. Developed by the Dutch Green Building Council, BREEAM-NL evaluates the comprehensive sustainability performance of built environments (BREEAM-NL, 2024; DCGB, 2021). The system promotes sustainability in energy efficiency,

health, and future-proofing, aligning with global Sustainable Development Goals (BREEAM-NL, 2024). Achievable ratings include pass, good, very good, excellent, and outstanding. While a complete overview of BREEAM indicators is not publicly available, secondary literature reveals some social aspects (Sharif, 2023; Adewumi et al., 2024). All identified social sustainability indicators within BREEAM are categorised in appendix II.

LEED

LEED (Leadership in Energy and Environmental Design) is a globally recognised certification system for green buildings, developed by the U.S. Green Building Council (USGBC) and launched in 2000. It provides a framework for creating healthy, efficient, and cost-effective buildings that enhance environmental and human health (USGBC, 2024). Each category contains multiple components where credits can be earned, contributing to a final score that determines the rating—certified, silver, gold, or platinum (Ministerie BZK, 2010). As a complete overview of LEED indicators is not publicly available, information is drawn from secondary literature (Danivska et al., 2019; Sharif, 2023). All identified social sustainability indicators are categorised in appendix II.

WELL

The International WELL Building Institute (IWBI) developed the WELL Building Standard, a performance-based framework for evaluating and certifying elements of the built environment that impact health and well-being. WELL establishes criteria across ten fundamental themes (figure 4.9), integrating scientific and medical research to enhance occupants' physical and mental health (WELL, 2024). WELL v2 was shaped by insights from over 150 concept advisors, enhancing solutions for health and well-being. In 2020, IWBI formed a Governance Council of global thought leaders to ensure the standard's integrity and market transformation. The Council confirmed that WELL v2 meets four criteria: evidence-based, verifiable through third-party checks, implementable via pilot testing, and open to external feedback.

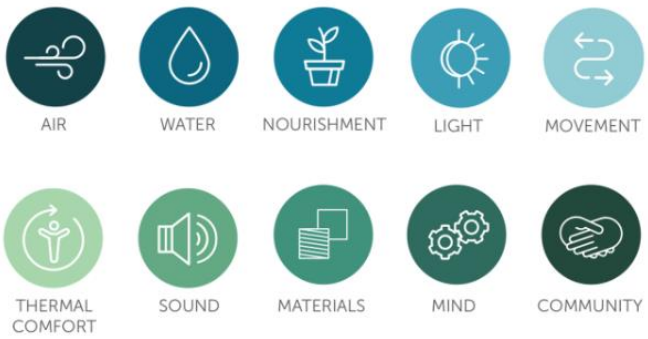


Figure 4.9 WELL categories (WELL, 2024)

The latest version of the WELL Building Standard, WELL v2, launched in 2018, categorises features as preconditions or optimisations. Preconditions are mandatory for certification, while optimisations are optional and earn additional points (WELL, 2024). WELL uses a points-based system, allowing projects to earn up to 110 points across ten core concepts, with an eleventh concept, innovation, offering further points. Certification levels are determined as follows:

- Silver: all preconditions met.

- Gold: all preconditions met plus a substantial number of optimisation points.
- Platinum: all preconditions met with the highest optimisation points.

WELL v2 projects are classified as owner-occupied, where the owner occupies the space, or WELL Core, where the owner occupies a smaller portion while leasing the rest. This study focuses on WELL Core, conducting a thorough analysis of all preconditions and optimisations. All identified social sustainability indicators are analysed and categorised (appendix II).

Fitwel

Fitwel is a global certification system that optimises health in buildings and communities (Fitwel, 2024). It leverages extensive research to inform health-promoting design and operational strategies, aiming to enhance occupant well-being and productivity by addressing health behaviours and risks. Fitwel focuses on health impact categories to improve well-being through comprehensive strategies. The certification process begins with selecting scorecards based on project type, such as commercial offices. Each scorecard includes over 55 strategies across seven health impact categories (Fitwel, 2024). Projects earn points based on these strategies, and certification levels range from one to three stars, determined by total points. A documentation review verifies performance, and frequent recertification ensures ongoing compliance and improvement (Fitwel, 2024). All identified social sustainability indicators are analysed and categorised (appendix II).

Design for All

Design for All (DfA) is a design philosophy that aims to create products, environments, and systems usable by everyone, regardless of age, ability, or status. Based on universal design principles, DfA integrates accessibility into the design process from the outset, promoting inclusivity and usability (Interaction Design Foundation, 2024). By addressing diverse user needs, DfA seeks to eliminate barriers and enhance the overall user experience, ensuring that technology, spaces, and services are accessible and functional for all. In real estate, particularly in offices, DfA is vital for fostering inclusive work environments. Offices designed with DfA principles consider various needs, incorporating features like adjustable workstations, accessible entrances, clear signage, and ergonomic furniture. This inclusive design not only meets accessibility standards but also supports a more productive workplace. All identified social sustainability indicators are analysed and categorised (appendix II).

4.4 Conclusion content analysis

4.4.1 Main categories

Most tools feature a ranking system with various categories. While some main categories overlap among the analysed tools, differences exist, and multiple terms are used to describe the same category. To clarify, the main categories identified in the SLR are used to analyse the certification systems.

4.4.2 Subcategories

The social sustainability categories from each tool were listed in an Excel sheet and classified according to the main categories from the SLR. This analysis reveals that the most subcategories and indicators relate to health and well-being, particularly detailed in WELL and Fitwel. Accessibility, safety and security, and social cohesion also have some subcategories and indicators, while social equity appears only in the Living Building Challenge. Environmental issues overlap with the tools' environmental aspects. Notably, health and well-

being, along with comfort, are well-represented and primarily supported by WELL, whereas categories like social cohesion and equity are more literature-based and less frequently included in tools.

4.4.3 Indicators

Certification tools offer more indicators than those found in the literature frameworks due to their specific focus on building assessment. They provide detailed indicators for implementing subcategories, with some subcategories having multiple indicators. While some indicators are intangible, others are clearly defined. Notably, some indicators emphasise workplace design, while others pertain to facility management and governance.

4.5 Conclusion desk research

The goal of this desk research is to establish a knowledge foundation for the empirical part of the study, which involves a multiple case analysis of the integration process for social sustainability goals. A thorough understanding of various social sustainability aspects is essential for analysing the selected projects.

The SLR provides a framework structure and main categories for social sustainability. While many studies interpret these categories differently, there is considerable overlap. Notably, the literature primarily focuses on categories without universally accepted subcategories or indicators. The content analysis offers insights into these subcategories and indicators, as certifications used to assess buildings require specific measures. Social sustainability remains an evolving and broad concept, lacking a clear implementation strategy for buildings. It encompasses both tangible and intangible aspects, complicating measurement. Based on the reviewed literature and content under the term social sustainability, the framework illustrated in figure 4.10 is created.

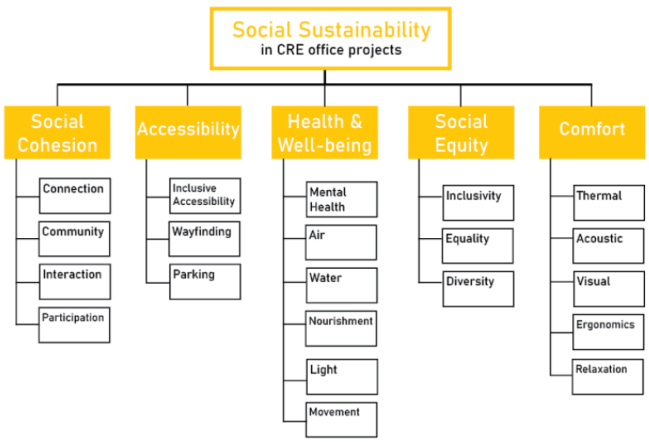


Figure 4.10 Framework based on literature and content reviewed (by author, 2024)

From the seven categories found in the SLR, only five are included in this framework. The environmental issues are not included, because this study only focuses on the social aspect. This study excludes safety and security as they primarily pertain to neighbourhoods and building regulations (e.g., fire hazards), which are requirements rather than goals. The

remaining categories include subcategories and indicators sourced from literature and content. While academic literature defines main categories more clearly, it often lacks comprehensive subcategories and indicators when researched under the term social sustainability.. Existing assessment tools, such as the WELL standard, incorporate many social sustainability indicators across various categories. As a certified standard based on extensive peer-reviewed studies, this study will not delve deeper into these indicators. Notably, some categories overlap, particularly between health and well-being and comfort, as comfortable environments typically enhance both physical and mental health. This study compiles a list of indicators per subcategory (appendix II). Each project will pursue social goals uniquely, so the framework will serve as a guide for analysing the integration process rather than creating a measurement tool for social sustainability. To further scope the framework, it is focussing on the occupier, therefore only the occupier goals are included. This means that the goals related to the casco or building location are not included.

5. Empirical Research

First, this study performs a document analysis for all cases, using documents and websites listed in appendix III. The data collected from this analysis provides an overview of how social sustainability goals are integrated throughout the project lifecycle. This information is compared to the framework developed from the literature. In this comparison, the study highlights the main and subcategories mentioned in yellow, distinguishing between those that are included and those that are not. Existing indicators from previous phases remain white, while eliminated and partially eliminated indicators are marked in red (table 5.1). This forms the first part of the in-case analysis.

Mentioned in this phase
Not mentioned in this phase
New indicator mentioned in this phase
Existing indicator from previous phase(s)
Eliminated indicator in this phase
Partly not accomplished indicator in this phase

Table 5.1. Legend integration social sustainability goals

As discussed in the methodology chapter, this study selected three cases for the multiple case study. To understand the integration process of social sustainability goals and identify the drivers and barriers in the implementation process, a document analysis and in-depth interviews within all three case studies were conducted. The cases are chosen based on the selection criteria described in the methodology. This study conducted five interviews for each case. The participants for the interviews are selected based on their role (table 5.2).

Stage	#1	#2	#3	#4	#5
Booking.com (BO)	Manager Real Estate & Workplace (Booking.com)	Workplace consultant (CBRE)	Lead architect interior design (HofmanDujardin)	Project manager (CBRE)	Program manager (Booking.com)
CBRE (CB)	Managing director (CBRE)	Director workplace strategy & innovation (CBRE)	Interior designer (CBRE)	Project manager (CBRE)	Facility manager (CBRE)
J&J (JJ)	Workplace experience manager (J&J)	Workplace consultant (CBRE)	Architect interior design (Arcadis)	Project manager (CBRE)	Facility manager (J&J & Sodexo)

Table 5.2. Interview participants

In the in-case analysis findings and quotes from these interviews are referred to by case and stage. So the interview with the project manager from the Booking.com case is referred to as BO#4. The interviews collected data on the implementation of social sustainability goals, revealing drivers and barriers. Throughout the in-case analysis the identified **drivers** and

barriers are marked bold and in colour. In the cross-case analysis the three cases are compared to each other. The goal of the cross-case analysis is to find similarities and differences across the three cases, which results in an overall view on the implementation of social sustainability goals.

5.1 Booking.com

Figure 5.1. Booking.com (Image by Matthijs van Roon)

5.1.1 Introduction

The first case study analysed the Booking.com headquarters, located at 'Oosterdokseiland' in Amsterdam. This project was initiated by Booking.com in response to the company's rapid growth and the need for a modern, flexible workspace that reflects its innovative spirit (BO#1). Designed to accommodate nearly 5,000 employees, the office aims to create an environment that fosters a community.

5.1.2 About the commissioner

Founded in 1996 in Amsterdam, Booking.com has evolved from a small Dutch start-up into a global travel company. As a part of Booking Holdings, the company's mission is to make it easier for everyone to travel and experience the world (Booking.com, 2024).

5.1.3 Project initiative

In light of its rapid expansion, Booking.com recognised the pressing need for a new office facility to support its workforce primarily concentrated in Amsterdam (BO#1). To address this challenge, the company initiated plans in 2016 to develop a new office building at 'Oosterdokseiland,' with the goal of completion by 2020. Booking.com had 11 smaller offices around Amsterdam that were consolidated into one big office. The associated operational and financial benefits of this consolidation was also part of the initiative of the new building (BO#2).

5.1.4 Timeline

The new Booking headquarters was initiated in 2016, and started with a development of the building, designed by the well-known architect UN Studio. In the front end of the project, multiple parties came together to create a vision for the new Booking.com headquarters, which

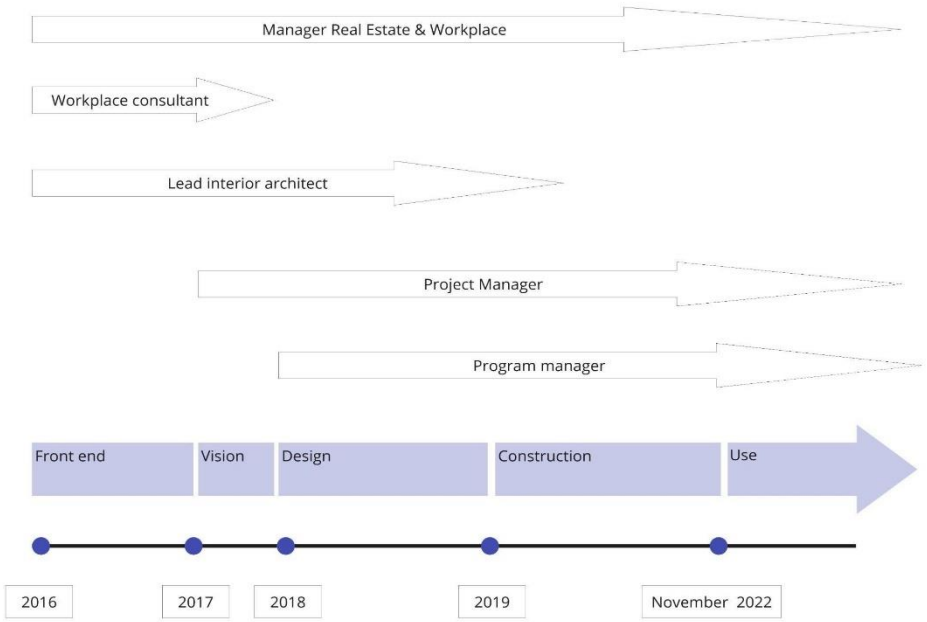


Figure 5.2. Timeline and involvement interviewees Booking.com (by author, 2024)

was delivered in 2018 (figure 5.2). During the development, the question arose on how to shape the interior and how to accommodate all the Booking.com employees. This is where

the leading interior architect took on the lead in creating a design that aligns the Booking vision and the building. Booking.com aimed to deliver the whole project in 36 months, but due to delays (on the side of the developer) the project was delivered in 60 months, opening in November 2022 (BO#4). Since the building has opened, there are still ongoing projects to optimise the building. This is called the demand management process, led by the program manager. The demand managers collect information and data on the use of the building and the experience of the employees (BO#5).

5.1.5 Structure project

In the front end of the project, Booking.com appointed a steering committee (“stuurgroep") to lead the project (figure 5.3). In order to represent the employees of Booking.com, they set up meetings with all business units to brainstorm what the vision for the new building should be (BO#1). They formed a spirit team, consisting of 9 senior managers at Booking.com (Booking holding, 2023) and appointed CBRE to lead the project (BO#4). Multiple parties worked together to create a vision for the new office, which included Booking real estate, Booking facilities, the spirit team, CBRE (first as workplace consultant and later as project management) and the head architect UN Studio. During the development of the building, a lead interior architect was appointed to design the interior. Together with workplace consultants from CBRE a layout was developed and the lead interior architect created a masterplan. The lead interior architect appointed 10 layer architects, who all designed a part of the interior, like the greenery, light and wayfinding (BO#3).

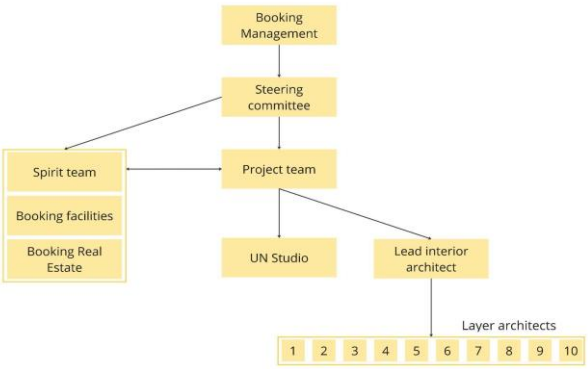


Figure 5.3. Project structure Booking.com (by author, 2024)

5.1.6 Front end phase

Integration

In the run-up to this project, Booking.com emphasised a holistic approach to sustainability that includes multiple social practices. When comparing the social sustainability goals to the framework (figure 5.4), it is seen that only accessibility and comfort are not being mentioned in the front end phase. Regarding social cohesion, the subcategory participation is specifically mentioned in the form of stakeholder engagement (Sustainability report Booking.com, 2023, p.13). This involved engaging with a broad range of stakeholders, including employees, customers, business partners, governments, and regulatory bodies. By conducting performance reviews, surveys, and creating employee resource groups, the company actively invested in the alignment of its goals with those of its stakeholders. The consolidation of multiple Booking.com offices into one large office contributes to the community among Booking.com employees. Another goal of Booking.com is employee well-being, as they recognise the need for comprehensive support systems that address the physical, emotional, and mental health of its employees (Sustainability report Booking.com, 2023, p. 26). Lastly, Booking.com mentioned to promote diversity, equity and inclusivity within the workplace. The company aimed to create a work environment that advances and celebrates diversity, ensuring that all employees feel valued and respected (Sustainability report Booking.com, 2023, p.24).

#1 Front end - Booking		
Category	**Sub Category**	**Indicators**
Social Cohesion	Connection	
	Community	One Booking office (Interview BO#2)
	Interaction	
	Participation	Stakeholder engagement (Sustainability Report (2023), p.13)
Accessibility	Inclusive accessibility	
	Wayfinding	
	Parking	
Health & Well-being	**Mental health**	Wellbeing of employees (Sustainability Report (2023), p.26)
	Air	
	Water	
	Nourishment	
	Light	
	Movement	Physical health of employees (Sustainability Report (2023), p.26)
Social Equity	**Inclusivity**	Inclusive environments (Sustainability Report (2023), p.24)
	Equality	Equity for all employees (Sustainability Report (2023), p.24)
	Diversity	Diverse workplaces (Sustainability Report (2023), p.24)
Comfort	Thermal	
	Acoustic	
	Visual	
	Ergonomics	
	Relaxation	

Figure 5.4. Social sustainability goals front end Booking.com

Implementation

During the front phase, four drivers were identified. First of all, when looking at the initiative of the project, it was seen that the social cohesion was enhanced by the consolidation of having one large office instead of multiple smaller offices. The driver that influenced this decision is **cost reduction**, as it lowers the operational costs (BO#1, 3:06). Secondly, Booking.com feels the **responsibility** to include as much sustainability as possible because their core business (travel) is not sustainable. *"Travel is of course not sustainable, right? It is more of a polluter you could say. So we try to contribute to sustainability as much as possible in other ways"* (BO#1, 5:09). When looking at social sustainability specifically, Booking.com states that their employees are the centre of attention, whom it must not lack of anything (BO#2, 11:20). In this mindset, the ambition of Booking.com is to deliver the best **quality** for their employees and aim to be at the top of the **competition** and attract new talent (Sustainability report Booking.com, 2023, p.24).

Reflection

The front end phase highlights both the commitment to social sustainability and notable gaps in the integration of indicators. While the organisation emphasises its aim to provide the best quality for employees, the absence of accessibility and comfort is noticeable. These aspects are critical components of a high-quality work environment and play a significant role in employee satisfaction. Also, the lack of attention to comfort, despite its recognised importance in social sustainability, raises questions about quality as a driver. Furthermore, quality can be seen as secondary driver to responsibility and competition as these drive the desire of quality.

5.1.7 Vision phase

Integration

In 2017, Booking.com outlined their vision for the new office in an extensive document. In comparison with the framework (figure 5.5), all main categories are being mentioned and also all subcategories except for equality. For social cohesion, which was also mentioned in the previous phase, new indicators are mentioned. The vision mentions to stimulate connection, interaction and the community. One of the largest goals is to create a public park at the roof of the building to invite visitors to share the building with Booking.com and create a community-hub (Booking.com vision, 2017, p.5). In this phase a focus on accessibility was added in comparison to the previous phase. All three sub categories were mentioned in the vision document. Regarding health & well-being, multiple indicators were added in this phase, touching upon all sub categories. Equality within social equity is the only sub category that is not specifically mentioned in this phase. This does not mean that Booking.com eliminates this sub category. However, in this phase no specific indicators are mentioned, which is the case for the other two sub categories. Through a diverse selection of workplaces with multiple types of furniture it was aimed to create an inclusive environment for everyone. This should be enhanced by offering both quiet and vibrant spots. Additionally, to further strengthen the diverse environment, pump rooms and prayer rooms were included in the vision (Booking.com vision, 2017, p.34). Furthermore, to increase the inclusivity in the building, gender neutral toilets were introduced and wayfinding for visually impaired was added (BO#1, 11:19). In this phase also comfort is introduced as all subcategories are mentioned, and multiple indicators are mentioned. For relaxation four indicators were mentioned, including a game room, a bowling area, a daydream space and amenities at the rooftop park. The rooftop design received significant attention as it was envisioned to host multiple amenities, like a basketball field, bee garden, zen pods, medication sports, greenery and seating (SO documents, p.3). The desk research resulted in a total of 102 indicators (appendix II), in the Booking.com case 51 indicators were mentioned in the vision phase (appendix IV) .

#2 Vision - Booking						
Category	Sub Category	Indicators				
Social Cohesion	Connection	Connection Amsterdam (Vision document (2017), p.5)	Connection among employees (Vision document (2017), p.5)	People finder (Vision document (2017), p.17)		
	Community	Creative space for co creation (Vision document (2017), p.23)	Public park rooftop (Vision document (2017), p.5)			
	Interaction	Collaborating in work envrionment (Vision document (2017), p.5)	Event spaces (Vision document (2017), p.25)			
	Participation	Evaluation with employees (Vision document (2017), p.17)				
Accessibility	Inclusive accessibility	Accessible for everyone (Vision document (2017), p.5)				
	Wayfinding	Intuitive and easy wayfinding (Vision document (2017), p.24)	Inclusive wayfinding (Inteview BO#1)			
	Parking	Focus on bikes (Vision document (2017), p.31)				
Health & Well-being	Mental health	Encourage healthy working hours (Vision document (2017), p.14)	Mindfullness, meditation, zen (Vision document (2017), p.27)	Greenery: plants (Vision document (2017), p.26)	Outdoor spaces (Vision document (2017), p.26)	Sleep pod, massages (Vision document (2017), p.27)
	Air	Continuous air quality monitoring (Vision document (2017), p.26)	Purification systems (Vision document (2017), p.26)	No smoking policy on terraces (Vision document (2017), p.26)		
	Water	Promote hydration: make water visible (Vision document (2017), p.27)				
	Nourishment	Promote healthy eating choices: make healthy snacks attractive (Vision document (2017), p.28)	Reduce caffeine consuption (Vision document (2017), p.28)	Limit processed sugars (Vision document (2017), p.27)	Seasonal local ingredients (Vision document (2017), p.28)	Offer breakfast and dinner (Vision document (2017), p.28)
	Light	Optimize daylighting (Vision document (2017), p.26)	Circadian lightning systems (Vision document (2017), p.26)	Avoid glare (Vision document (2017), p.26)		
	Movement	Active furniture (Vision document (2017), p.27)	Provide gym, including fitness classes (Vision document (2017), p.27)	Promote use of stairs (Vision document (2017), p.27)	Physio & first aid room (Vision document (2017), p.30)	
Social Equity	Inclusivity	Offer different cuisines (Vision document (2017), p.28)	Child care (Vision document (2017), p.30)	Prayer room (Vision document (2017), p.34)	Pump rooms (Vision document (2017), p.34)	Gender neutral toilets (Interview BO#1)
	Equality	Equity for all employees* (Sustainability Report (2023), p.24)				
	Diversity	Vibrancy balanced with calm (Vision document (2017), p.16)	Diverse furniture (Vision document (2017), p.20)			
Comfort	Thermal	Control of temperature by occupants (Vision document (2017), p.26)				
	Acoustic	Quit zones (Vision document (2017), p.26)	Provide sound seperation and absorption (Vision document (2017), p.26)			
	Visual	Natural light (Vision document (2017), p.26)	Views (Vision document (2017), p.26)			
	Ergonomics	Different types of workstations, furniture (Vision document (2017), p.20)				
	Relaxation	Gameroom (Vision document (2017), p.19)	Bowling (Interview CB#2)	Daydream space (Vision document (2017), p.22)	Park rooftop (Vision document (2017), p.26)	

Figure 5.5. Social sustainability goals vision Booking.com

Implementation

During the creation of the vision, multiple drivers were identified. First and foremost, it was again mentioned that Booking.com want to create the best **quality** for its employees (BO#1&5). By using data, testing concepts and review experiences, Booking.com aims to create the best quality and best experience for its employees. Another driver that stimulates this driver is the aim of Booking.com to create an **attractive** office that lures employees to the office. The following was said on this topic: *"We acknowledge the value of face to face meetings. That is why it is so important to create an office environment that suits everybody and that we do not create a situation in which employees do not come to the office because the office environment hinders them"* (BO#1, 12:53). Furthermore, as Booking.com is a worldwide organisation with employees from all over the world, diversity is an important part of their company **culture**. The following was said on diversity and the inclusion of a prayer

room: *“At Booking 80% is international and 20% is Dutch, this is of course already in the DNA [of Booking.com]”* (BO#2, 21:30).

Lastly, Booking.com is a data driven company and their goal is to test everything before they implement anything (BO#2, 8:59). An example is the multiple workplace concepts that were tested. The project manager expressed: *“We have tested a lot. Work boxes, desk panels, good lightning, colours, literally everything has been tested. That is also in the DNA of Booking.com”* (BO#4, 37:46). This focus on testing and actual performance is seen in the behaviour towards a WELL certification. The project manager expressed on this: *“What Booking always says, we take from all those things like WELL, LEED and BREEAM, just the things that work for us and are important and we combine them and then we don't stick a label on it, we don't necessarily attach a sustainability label to it, that's not really necessary”* (BO#4, 7:45). An example of a WELL requirement that was included is a waterpoint in every area, because Booking.com wants their employees to meet each other in pantries. On the other side, Booking.com invested in connector spaces with social functions, which does not provides points in a WELL certificate (BO#4). This underscores the drivers **economic performance** and **social performance**. The goal of the designers and workplace consultants was also to include as much amenities and quality as possible. In contrast to this, the goals of the project manager were budget and time. The project manager expressed that they see the vision as a dream and not a checklist: “*If you realise 80% of that dream, that is fantastic right?”* (BO#4, 32:48).

Reflection

The vision phase of this case demonstrates a strong commitment to social sustainability as, in comparison to the relatively few goals established in the front end phase. Booking.com has articulated ambitious objectives that align with its aim to provide the best quality work environment, incorporating a wide range of indicators across all categories. The public rooftop park and bowling area seem ambitious. However, while these goals signify a creative vision, they may also verge on the edge of unrealistic. The project manager's perspective that achieving 80% of this vision is satisfactory underscores a potential disconnect between aspiration and feasibility, raising concerns for the implementation of these goals. Furthermore, in the front end phase social equity was acknowledged as a crucial element of the organisation’s sustainability goals. The vision phase marks a shift towards the incorporation of more tangible indicators. This translates into indicators such as a pump room and prayer room in the subcategory diversity. Only equality does not receive any indicators in this phase. However, some indicators within diversity also touch upon aspects of equality, such as gender-neutral facilities. These toilets are designed to create an inclusive environment, but also provide equal access for everyone. Lastly, Booking.com’s approach to WELL certification is pragmatic, focusing on what truly benefits employees rather than chasing labels. They selectively incorporate WELL features while also investing in non-certified elements spaces to enhance social and economic performance.

5.1.8 Design phase

Integration

During the design phase the lead interior architect worked with four important themes, which were spaciousness, groundedness, expression and connection. The main ambition was to create a sense of Booking home. According to the lead interior architect (BO#3, 17:50), the most important part of social sustainability was the empowerment to make healthy choices. In other words, how can you stimulate people to make healthier and sustainable choices. *“If you*

want people to take the stairs instead of the elevator, you have to hide the elevator a little and you have to create a pretty stair environment that creates an experience and makes it visible" (BO#3, 14:30). During the design phase most of the vision was realised and all subcategories were mentioned apart from equality (figure 5.7). In the subcategory connection an indicator was added, connector spaces, based on the previously stated goal 'connection among employees' (figure 5.6). The design included connector spaces at every level, where employees can meet each other. In these spaces different types of activities were offered which can also function as a relaxation indicator. In the subcategory parking, even three indicators were added, giving tangible indicators for the previously stated 'focus on biking' goal (BO#4, 40:43). Furthermore, only the elimination of indicators was seen in this phase. This is the case for the public rooftop park, sleep pods and massages, a gym, child care and bowling.

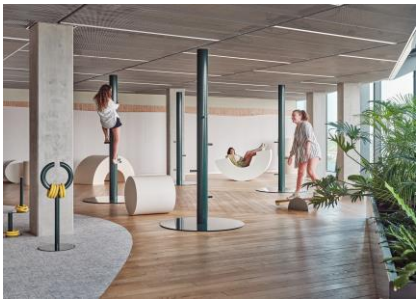


Figure 5.6 Connector space Booking.com (Booking.com, 2024)

#4 Design - Booking						
Category	**Sub Category**	**Indicators**				
Social Cohesion	Connection	Connection Amsterdam (Vision document (2017), p.5)	Connector spaces (Interview BO#3)	People finder (Vision document (2017), p.17)		
	Community	Creative space for co creation (Vision document (2017), p.23)	Public park rooftop (Interview BO#4)			
	Interaction	Collaborating in work envrionment (Floor plan DO (2022), p.2)	Event spaces (Floor plan DO (2022), p.1)			
	Participation	Evaluation with employees (Interview BO#5)				
Accessibility	Inclusive accessibility	Accessible for everyone (Floor plan DO (2022), p.1)				
	Wayfinding	Intuitive and easy wayfinding (Interview BO#4)	Inclusive wayfinding (Inteview BO#1)			
	Parking	Bicycle storage (Interview #BO4)	Bicycle repair (Interview #BO4)	Bike rentals (Interview #BO4)		
Health & Well-being	Mental health	Encourage healthy working hours (Interview BO#5)	Mindfullness, meditation, zen (Floor plan DO (2022), p.3-7)	Greenery: plants (Interview BO#4)	Outdoor spaces (Floor plan DO (2022), p.9)	Sleep pod, massages (Interview BO#4)
	Air	Continuous air quality monitoring (Vision document (2017), p.26)	Purification systems (Vision document (2017), p.26)	No smoking policy on terraces (Vision document (2017), p.26)		
	Water	Promote hydration: make water visible (Floor plan DO (2022), p.1)				
	Nourishment	Promote healthy eating choices: make healthy snacks attractive (Vision document (2017), p.28)	Reduce caffeine consuption (Vision document (2017), p.28)	Limit processed sugars (Vision document (2017), p.27)	Seasonal local ingredients (Vision document (2017), p.28)	Offer breakfast and dinner (Vision document (2017), p.28)
	Light	Optimize daylighting (Floor plan DO (2022), p.1)	Circadian lightning systems (Interview BO#4)	Avoid glare (Vision document (2017), p.26)		
	Movement	Active furniture (Vision document (2017), p.27)	Provide gym, including fitness classes (Interview BO#4)	Promote use of stairs (Vision document (2017), p.27)	Physio & first aid room (Floor plan DO (2022), p.1)	
Social Equity	Inclusivity	Offer different cuisines (Vision document (2017), p.28)	Child care (Interview BO#4)	Prayer room (Floor plan DO (2022), p.2)	Pump rooms (Vision document (2017), p.34)	Gender neutral toilets (Floor plan DO (2022), p.2-9)
	Equality	Equity* (Sustainability Report (2023), p.24)				
	Diversity	Vibrancy balanced with calm (Vision document (2017), p.16)	Diverse furniture (Floor plan DO (2022), p.3)			
Comfort	Thermal	Control of temperature by occupants (Vision document (2017), p.26)				
	Acoustic	Quit zones (Vision document (2017), p.26)	Provide sound seperation and absorption (Vision document (2017), p.26)			
	Visual	Natural light (Floor plan DO (2022), p.1-9)	Views (Floor plan DO (2022), p.2-9)			
	Ergonomics	Different types of workstations, furniture (Vision document (2017), p.20)				
	Relaxation	Gameroom (Floor plan DO (2022), p.3-9	Bowling (Interview CB#2)	Daydream space (Floor plan DO (2022), p.5-7)	Park rooftop (Interview BO#4)	

Figure 5.7. Social sustainability goals final design Booking.com

Implementation

As was also seen in the previous phases, a driver that was often mentioned was providing the best **quality** for their employees. Another driver identified in this phase is the structured **guidance** and a well-developed **strategy** to fall back on. The project manager mentioned on this topic: *"Especially for big projects it is really good to invest time in [vision development]. Because it has also been the book we fell back on every time in the years that followed"* (BO#4, 37:46).

During the design phase multiple indicators were eliminated, providing multiple barriers. A detailed design was made by the architect including for the public park at the rooftop. However, to realise this, the construction of the building has to be adjusted, which brings significant additional costs, which indicates limited **resources**. However, the main reason for the elimination of the park was that the rooftop was meant to have solar panels, following BREEAM certifications. It was expressed that the environmental goals were given more priority here than the social function of the roof, which is labelled as a **complexity** barrier (BO#1, 15:56). Furthermore, the reason that the sleep pods were eliminated was the social performance, which can also be seen as a barrier. The philosophy of Booking.com is that if amenities, spaces of furniture are not in any way improving the quality, experience or performance of employees, it is seen as an **unprofitable investment** by Booking.com and therefore excluded from the design. The sleep pods were tested by Booking.com employees at a previous location and it was seen that pods were either not used or improving the performance (BO#4, 25:33). The reason the gym and childcare were not included is because these amenities are also provided by local entrepreneurs in the **vicinity** of the building. Another reason given is that it is not feasible to realise enough capacity for all the employees. The following was said on this topic: *"You can get those things much better somewhere else than here*" (BO#4, 31:48) and *"In the realisation phase you come to the conclusion that there are 13 other childcare facilities in that region that are professionally good at this, so why would you also include it in your organisation?*" (BO#2, 27:53). Lastly, the bowling area was not possible technically, because it would cause noise **nuisance**. In order to preserve a comfortable workplace, the bowling area was not included in the final design.

Reflection

The design phase of this case reflects both progress and challenges in the implementation of social sustainability. While the design successfully captures many of the vision phase's ambitions, such as enhancing connection through dedicated spaces and promoting healthy choices, the elimination of several large-scale indicators, like the public rooftop park and the gym, highlights a gap between vision and implementation. Although some indicators were eliminated, all subcategories remained included in the design through alternative indicators. However, the eliminated indicators could have significantly enriched the employee experience and fostered a healthier lifestyle and stronger sense of community. The technical barrier surrounding the bowling area shows the complexities of reconciling vision with practical limitations. Prioritising environmental goals, such as solar panels, over social amenities further underscores the need to balance sustainability dimensions. The emphasis on testing within the design process is beneficial as it allows the organisation to align its goals with the actual needs and preferences of employees. By actively engaging in testing, Booking.com can gather valuable insights into which amenities are genuinely beneficial and which may not resonate with their workforce. For instance, the decision to eliminate features like sleep pods, based on

observed low usage, underscores the importance of a data-driven approach that prioritises employee feedback.

5.1.9 Use phase

The use phase is critical for the overall success of the project. As the manager of real estate and workplaces states, "*The moment we move in, then it actually starts. Now we receive data and see how it is used. It goes on; we constantly keep focusing on how we can optimise here*" (BO#1, 20:54). To support this, demand managers collect data on space usage and employee experiences through tablets for rating experiences and analysing meeting room reservations against actual usage (BO#5). They also monitor building occupancy patterns using employee access badges, noting, for example, that employees tend to arrive around lunchtime, likely due to the free lunch offered. Booking.com does not see that as a problem. On the contrary, they see it as a social aspect, that employees meet each other during and around lunch time (BO#5, 21:37).

No significant changes have occurred regarding the social sustainability goals in comparison to the previous phase (figure 5.8). Adjustments are typically minor and focus on changing employee behaviour. For instance, data revealed that meeting rooms were often used for one-on-one meetings instead of their intended purpose, leading to a shortage of available spaces. To address this, a change management team is developing campaigns to encourage appropriate usage (BO#5, 5:15). Some layout adjustments have been made based on data and stakeholder input. Two years into the use phase, additional phone booths and focus boxes were added to enhance acoustics and provide privacy. Furthermore, as Booking.com noticed that the building never reaches its maximum capacity, they plan to replace more workstations with collaboration spaces to align with the hybrid working preferences of employees, making the office more attractive (BO#5, 30:37).

#5 Use - Booking						
Category	**Sub Category**	**Indicators**				
Social Cohesion	**Connection**	Connection people to each other and to Amsterdam (Vision document (2017), p.5)	People finder (Vision document (2017), p.17)			
	Community	Creative space for co creation (Vision document (2017), p.23)				
	Interaction	Collaborating in work envrionment (Floor plan DO (2022), p.2)	Event spaces (Floor plan DO (2022), p.1)			
	Participation	Evaluation with employees (Interview BO#5)				
Accessibility	**Inclusive accessibility**	Accessible for everyone (Floor plan DO (2022), p.1)				
	Wayfinding	Intuitive and easy wayfinding (Interview BO#4)				
	Parking	Bicycle storage (Interview #BO4)	Bicycle repair (Interview #BO4)	Bike rentals (Interview #BO4)		
Health & Well-being	**Mental health**	Encourage healthy working hours (Interview BO#5)	Mindfullness, meditation, zen (Floor plan DO (2022), p.3-7)	Greenery: plants (Interview BO#4)	Outdoor spaces (Floor plan DO (2022), p.9)	
	Air	Continuous air quality monitoring (Vision document (2017), p.26)	Purification systems (Vision document (2017), p.26)	No smoking policy on terraces (Vision document (2017), p.26)		
	Water	Promote hydration: make water visible (Floor plan DO (2022), p.1)				
	Nourishment	Promote healthy eating choices: make healthy snacks attractive (Vision document (2017), p.28)	Reduce caffeine consuption (Vision document (2017), p.28)	Limit processed sugars (Vision document (2017), p.27)	Seasonal local ingredients (Vision document (2017), p.28)	Offer breakfast and dinner (Vision document (2017), p.28)
	Light	Optimize daylighting (Floor plan DO (2022), p.1)	Circadian lightning systems (Interview BO#4)	Avoid glare (Vision document (2017), p.26)		
	Movement	Active furniture (Vision document (2017), p.27)	Promote use of stairs (Vision document (2017), p.27)	Physio & first aid room (Floor plan DO (2022), p.1)		
Social Equity	**Inclusivity**	Inclusive environments (Vision document (2017), p.34)	Offer different cuisines (Vision document (2017), p.28)	Prayer room (Floor plan DO (2022), p.2)		
	Equality	Equity* (Sustainability Report (2023), p.24)				
	Diversity	Vibrancy balanced with calm (Vision document (2017), p.16)	Diverse furniture (Floor plan DO (2022), p.3)			
Comfort	**Thermal**	Control of temperature by occupants (Vision document (2017), p.26)				
	Acoustic	Quit zones (Vision document (2017), p.26)	Provide sound seperation and absorption (Vision document (2017), p.26)			
	Visual	Natural light (Floor plan DO (2022), p.1-9)	Views (Floor plan DO (2022), p.2-9)			
	Ergonomics	Different types of workstations, furniture (Vision document (2017), p.20)				
	Relaxation	Gameroom (Floor plan DO (2022), p.3-9	Daydream space (Floor plan DO (2022), p.5-7)			

Figure 5.8. Social sustainability goals use Booking.com

Reflection

While the manager of real estate and workplaces emphasises that the process truly begins upon moving in, the lack of significant changes compared to the previous phases raises questions about the effectiveness and flexibility of the original design. This could indicate either a reluctance to implement large-scale adjustments or that the existing design sufficiently meets the needs of employees. Despite the absence of major changes, some minor adjustments have been made based on data insights, such as the addition of phone booths and focus boxes to enhance privacy and acoustic quality. This does however benefit the employee experience.

5.1.10 Conclusion Booking.com case

In conclusion, this case reveals both the aspirations and the complexities inherent in implementing social sustainability goals. The ambitious goals outlined throughout the phases underscore a commitment to creating a high quality workspace that reflects the company's innovative ambition and prioritises employee experience. The ambitious nature of the objectives may indeed inspire innovation and drive implementation; however, they also risk creating a disconnection between vision and reality. This disconnect is illustrated by the elimination of several proposed features during the design phase. The underlying drivers, such as social and economic performance, compete with barriers like limited resources and complexities. The emphasis on environmental sustainability overshadowed social amenities, raising questions about the balance of priorities in pursuing a holistic approach to sustainability.

A remarkable finding was that in spite of the strong focus on quality for the employee within this project, Booking.com did not care much about the WELL certification. They only implemented the features that were important to them. This underscores the underlying drivers of social performance and economic performance, also explaining the barrier of an unprofitable investment. It can be concluded that the ambition of Booking.com in implementing social sustainability goals is limited by the necessity of results that benefit the organisation in any way.

5.2. CBRE

Figure 5.9. The Core, CBRE (CBRE, 2024)

5.2.1 Introduction

The second case that is studied is the head office of CBRE, called The Core. The building is located in the Schinkel area in Amsterdam and is a 50-year-old Peugeot garage that was transformed into a new office space by and for CBRE. The building gained a second life and the new office got an authentic ambience (figure 5.10).

5.10 The Core, CBRE (CBRE, 2024)

5.2.2 About the commissioner

CBRE provides commercial real estate services. In the Netherlands, their core business includes: Advisory and Transaction Services, Property Management, Project Management, Investment Management and Valuation. CBRE claims to handle a client-centric approach, emphasising to understand the unique needs of each client, aiming to deliver customised solutions that align with their business objectives and real estate strategies (CBRE, 2024).

5.2.3 Project initiative

CBRE Nederland has experienced remarkable growth over the past decade, both in the number of employees and the amount of the services provided (CB#1). When the organisation first moved its office to the Zuidas district in Amsterdam in 2011, CBRE employed around 240 people. However, with continued expansion, the workforce has more than doubled, reaching over 600 employees by 2019. This rapid growth soon revealed the spatial limitations of their previous office, which could no longer accommodate their expanding team and evolving needs (CBRE, 2018). The board of CBRE took this into consideration and recalibrated its goals and ambition regarding their accommodation. Early on before the end of the contract, the board started creating a programme of requirements which assisted the search for a new location. Two of the leading goals in this search were sustainability and collaboration (CB#1, 4:05). As a result, in 2016, CBRE initiated a search for a new office location that could better support its dynamic workforce and offer the flexibility needed in a modern, collaborative work environment.

5.2.4 Timeline

The front end phase started in 2016 by searching and selecting a new location (figure 5.11). After the new location was decided on, the vision phase was entered in 2018. What is different in this timeline from the basic timeline, is an extra phase defined after the vision phase, which is the definition phase. In this phase research has been done on the workplace and what strategies to use (CB#2, 29:16). The workplace strategy that is developed in this phase, will be the foundation for the layout of the office design. Based on this, a first version of the design was created. After that, the design was constantly developed based on stakeholder feedback (CB#3, 24:52). Due to the narrow time frame and the project being an internal commission, the vision, definition, design and construction phase were intertwined according to the project manager (CB#4, 2:50). In February 2019, the new office was delivered and the use phase started.

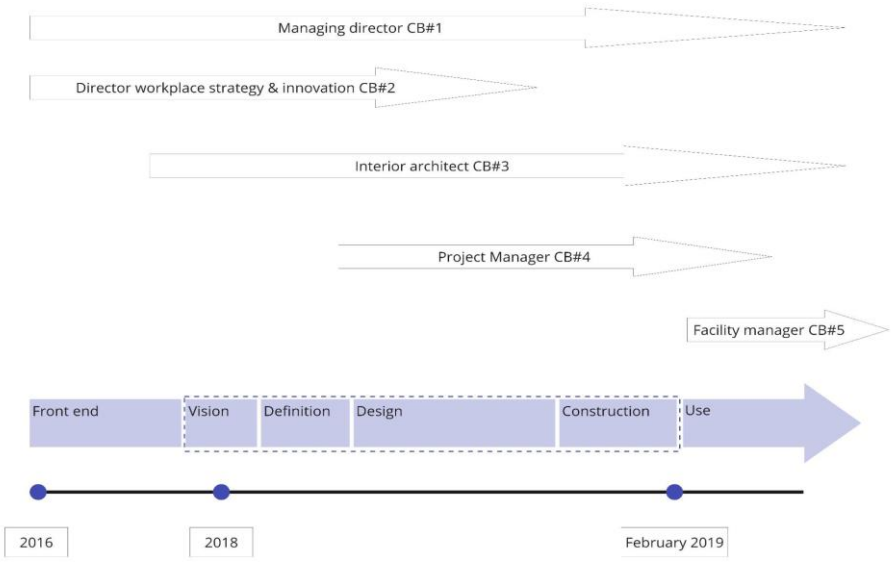


Figure 5.11 Timeline and involvement interviewees The Core (by author, 2024)

5.2.5 Structure project

The project was controlled by the steering committee (“stuurgroep”), which consisted of internal stakeholders (figure 5.12). This includes the two managing directors, who are responsible for the daily management of CBRE in the Netherlands and the director of workplace strategy and innovation. Below the steering committee, there is a focus group (“klankbordgroep”) that collected input on CBRE in the future and created a manifest (CB#2, 4:50). The manifest was the foundation for the specific vision document created for The Core. Below the focus group was a project team that was involved throughout the whole project. The focus group was supported by ambassador groups to safeguard the needs of the employees. Together with the focus group, the project team developed the vision document based on the manifest. Every sub team of the project team, translated the overall vision into a specific vision for their expertise regarding The Core (CB#2, 4:50).

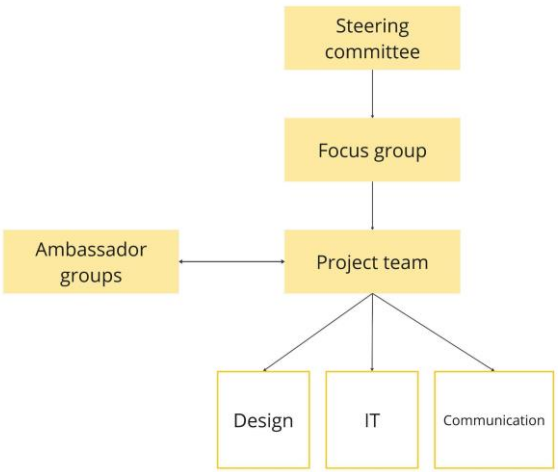


Figure 5.12 Project structure The Core (by author, 2024)

5.2.6 Front end phase

Integration

CBRE stated a set of goals regarding ESG in the ESG agenda 2021. Along with that, the new year's presentation (2023) includes their vision and ambition as an organisation. In these documents all five categories from the framework are mentioned (figure 5.13). Regarding social cohesion, CBRE mentions the importance of community engagement by serving and enriching the local community around the building (ESG agenda, 2021, p.17). Accessibility is mentioned as an important pillar during the site selection process, as this is thought of as a crucial topic for the attraction of the right talent (ESG agenda, 2021, p.16). During the selection procedure of a new location, a set of KPI was developed based on sessions with the focus group and project team (CB#2, 6:55). Furthermore, the connection between employee health and the built environment was a significant focus for CBRE. The company acknowledged that a culture of wellbeing is essential for organisational success. CBRE aimed to optimise employee health and comfort by enhancing the physical workspace and implementing well-being initiatives (ESG agenda, 2021, p.18). Diversity, equity, and inclusion (DEI) were emphasised regarding social equity. CBRE recognises the importance of selecting sites that support diverse labour pools to actively enhance workforce diversity (ESG agenda, 2021, p.16). For equality, they started multiple years ago to integrate this in their policy. The way CBRE translated this is through its mobility plan, meaning employees are not provided with a bigger car when they have a higher position. Furthermore, CBRE wanted to include equality in the functionality of their office. Their vision was and still is that every employee is treated equally in the office and should be able to function within their role (CB#1, 6:01). This is translated to the directors not having their own office or workplace, all desks are shared.

#1 Front end - CBRE		
Category	**Sub Category**	**Indicators**
Social Cohesion	Connection	
	Community	Community engagement (ESG Agenda CBRE (2021), p.17)
	Interaction	
	Participation	
Accessibility	Inclusive accessibility	
	Wayfinding	
	Parking	
Health & Well-being	**Mental health**	Well-being programs and policies (ESG Agenda CBRE (2021), p.18)
	Air	
	Water	
	Nourishment	
	Light	
	Movement	Physical workplace (ESG Agenda CBRE (2021), p.18)
Social Equity	**Inclusivity**	Create inclusive culture (ESG Agenda CBRE (2021), p.16)
	Equality	Equity (ESG Agenda CBRE (2021), p.16)
	Diversity	Diversity (ESG Agenda CBRE (2021), p.16)
Comfort	Thermal	
	Acoustic	
	Visual	
	Ergonomics	
	Relaxation	

Figure 5.13 Social sustainability goals front end CBRE

Implementation

A driver mentioned to implement social sustainability goals is **attracting** the right talent by offering an accessible and qualitative office to their employees (ESG agenda (2021), p.16). Furthermore, CBRE mentions they wanted to integrate ESG into all of their services, aiming to be the centre of excellence within their field (New year's presentation, 2023, p.6). This is labelled under **competition**.

Reflection

While CBRE wants to set ambitious social sustainability goals and aims to lead by example, there remains a noticeable gap between their ambition and actual goals. When comparing the social sustainability goals mentioned by CBRE to the framework from literature, more goals

could have been added regarding comfort and accessibility. Especially because it is expected that they have in house knowledge on the office environment. Despite recognising the importance of community engagement and employee well-being, the lack of explicit comfort ambition for their office, a critical aspect of social sustainability, raises questions about their centre of excellence approach. The lack of comfort could result in an office environment that is not inclusive and supportive for its employees.

5.2.7 Vision phase

The vision for the new office was created based on the manifest, which partly consists of goals coming from the top management layer and partly from a DNA group. The DNA group collected views from employees, especially young professionals. The goal was to create a balanced vision that guarantees equality and serves all employees (CB#2, 8:10). To create a pioneering office in the field of social sustainability, the CBRE director of workplace participated in a WELL course, which in 2017 was not as well-known as it is today. From the then 100 features, 60 of them were building related. With these features and other known features, the director contacted universities in the Netherlands to find out which of these were actually measurable increasing performance, which resulted in 31 features (Interview CB#2). These features were then again tested in the old office, which resulted in five selected themes, based on their significant benefits in the performance of employees. These themes are daylight, connection to greenery, activities, nourishment and mindfulness (CB#2, 19:00). So instead of following the WELL standards and focussing on checking boxes to obtain a certification, CBRE aims to create an environment that not only contributes to overall business performance, but also enhances employee satisfaction.

Integration

It was seen that at the heart of CBRE's social sustainability goals in the vision is the ambition to create social cohesion and to foster an environment that promotes interaction and collaboration (figure 5.14). Within social cohesion, all subcategories are mentioned. CBRE defined their office layout by identifying different worker types, as noted by the director of workplace strategy *(CB#2, 29:16): "Who are you in the office, are you an office lover, or are you a digital nomad?"*. CBRE recognised diverse preferences and created four distinct zones. The downstairs area fosters interaction with an open workspace and breakout spaces for focused work. In contrast, the upstairs layout prioritises individual work, placing meeting rooms centrally to enhance tranquillity around workstations. By introducing communal spaces like a cafe, CBRE wants to encourage casual meetings over lunch and also social events that enhance community spirit within the organisation (The Core Visie (2018), p.14). CBRE aims for an open and inviting café making it an essential hub for employees to connect and recharge. In the middle of the office they also aim to create an open workplace that supports interaction, innovation and allows its employees to inspire and energise each other (The Core Visie (2018), p.5). Another goal is to create a client lab that should further embody social cohesion by providing a dedicated space for face-to-face meetings and collaborative events, reinforcing the importance of personal connections in the workplace (The Core Visie (2018), p.17). In order to enhance the connection between employees, CBRE developed a CBRE 360 mobile app (The Core Visie (2018), p.28). It enables users to locate colleagues, reserve workspaces, and access a range of services.

Accessibility was also mentioned in the vision, especially focussing on enhancing wayfinding and parking (figure 5.14). The goal for wayfinding was to use a digital form, using screens

(The Core Visie (2018), p.19). The goal for parking focussed mainly around a mobility plan (The Core Visie (2018), p.48). Another topic at the heart of CBRE's social sustainability goals is a healthy work environment. This touched upon the health and wellbeing of the employees. Therefore, CBRE's vision prioritised the establishment of a healthy balance in office life. All subcategories of health & wellbeing were mentioned. Indicators that were included in the vision document were greenery, mindfulness, ventilation, water facilities, health nourishment, light specifics and fitness options (CB#2, 19:00).

Social equity remains important to CBRE, but no specific indicators are stated. The only inclusive indicator touches upon comfort. The director of CBRE mentioned that they appointed ambassadors that look at comfort for everyone. The following was said about thermal comfort: *“What is comfortable for one, may not be comfortable for someone else. We want to finetune this more. If someone is in menopause or pregnant, they might have a different perception of comfort, for which we should organise or design the building.”* (CB#1, 11:18). Furthermore, regarding comfort all subcategories are taken into account. Within the subcategory relaxation, an energy room with massage chairs and a game room are suggested (The Core Visie, 2018).

The desk research resulted in a total of 102 indicators (appendix II), in the CBRE case 33 indicators were mentioned in the vision phase (appendix IV) .

#2 Vision - CBRE					
Category	**Sub Category**	**Indicators**			
Social Cohesion	**Connection**	Connection between employees (CORE Visie (2018), p.13)	CBRE app (BU presentatie (2018), p.28)		
	Community	Co-working (CORE Visie (2018), p.12)	Co-creation (CORE Visie (2018), p.17)	Cafe (CORE Visie (2018), p.14)	
	Interaction	Social events (CORE Visie (2018), p.38)	Open workplace (CORE Visie (2018), p.5)	Client lab (CORE Visie (2018), p.17)	Break out spots (CORE Visie (2018), p.21)
	Participation	Include employees in vision creation (Interview CB#2)			
Accessibility	Inclusive accessibility				
	Wayfinding	Wayfinding for customer (CORE Visie (2018), p.16)	Screen at table (CORE Visie (2018), p.19)	Open and inviting entrance (CORE Visie (2018), p.14)	
	Parking	Monitoring available parking spaces (CORE Visie (2018), p.48)	Mobilityplan: bike rental, car sharing (CORE Visie (2018), p.48)		
Health & Well-being	**Mental health**	Contact with green (CORE Visie (2018), p.23)	Mindfullness (CORE Visie (2018), p.39)		
	Air	Ventilation (Interview CB#4)			
	Water	Standard water in client lab (CORE Visie (2018), p.19)			
	Nourishment	Healthy snacks available: febo/juice wall (CORE Visie (2018), p.14)	Free coffee in cafe (CORE Visie (2018), p.27)	Fridge in client lab (CORE Visie (2018), p.19)	Healthy lunch (CORE Visie (2018), p.39)
	Light	Arcadian light (Interview CB#4)	Daylight (Interview CB#2)		
	Movement	Fitness options (CORE Visie (2018), p.39)	Yoga classes (CORE Visie (2018), p.39)		
Social Equity	Inclusivity	Create inclusive culture* (ESG Agenda CBRE (2021), p.16)			
	Equality	Equity* (ESG Agenda CBRE (2021), p.16)			
	Diversity	Diversity* (ESG Agenda CBRE (2021), p.16)			
Comfort	**Thermal**	Thermal comfort (Interview CB#1)			
	Acoustic	Different zones (CORE Visie (2018), p.42)			
	Visual	Arcadian light (Interview CB#4)			
	Ergonomics	Different workstations (CORE Visie (2018), p.25)			
	Relaxation	Energy room with Massage chair (CORE Visie (2018), p.25)	Gameroom: ping pong table / table footbal (CORE Visie (2018), p.39)		

Figure 5.14 Social sustainability goals mentioned vision CBRE

Implementation

In the vision document, CBRE outlines a transformative approach to workplace environments, stating that every place of work should serve as a source of **competitive advantage**. By focusing on productivity, health, wellness, safety, and employee engagement, CBRE asserts that the workplace performance is directly linked to business performance (The Core Visie, 2018, p.12), labelled under **economic performance**. The document emphasises the creation of optimal workspaces that **attract** talent, set exemplary standards for clients, and incorporate the latest trends and innovations in workplace design. Regarding the innovations for The Core, on the site of CBRE the following statement is posted: "*The real estate world is quite traditional, so we asked ourselves the question: If we want to innovate, what are the innovations we want to implement?"* (Wouter Oosting, Executive Director, CBRE Nederland, 2021). Other drivers mentioned to integrate social sustainability goals were **participation** of employees during the vision development, a well-developed **strategy** and vision, good **communication** internally of the vision, aiming for the best **quality** for the employees and the right **knowledge** on board.

Reflection

When reflecting on the vision phase of CBRE's approach to social sustainability, it is clear that the organisation is striving for a better understanding of what truly is a socially sustainable workplace. Rather than pursuing a WELL certification as a checkbox, CBRE emphasises actual performance indicators that enhance employee satisfaction and business outcomes. This focus on functional indicators aligns with their aim to create a pioneering office that promotes social cohesion and employee well-being. However, while significant progress has been made in all subcategories, the absence of specific social equity indicators remains a concern. The conceptual nature of these indicators may complicate achieving social equity. Furthermore, no inclusive accessibility goals were mentioned, complicating accessibility within the office environment.

5.2.8 Design phase

Integration

Based on the vision and the workplace concept, the first version of the design was created. It is seen in the different versions of the design that small changes are made, but that the layout and design is overall the same (figure 5.15). When comparing the final design with the vision, it can be noted that in the health & wellbeing and comfort category changes are seen in the form of added and eliminated indicators. In the health & wellbeing category, CO2 sensors were added as indicators to air and prominent stairs were added to movement. However, more indicators were eliminated, seen in the subcategories water, nourishment and movement. Healthy lunch in the lunch area and healthy snacks in the cafe are part of the design. However, the juice wall, extra fridges and free coffee in the cafe were eliminated. The gym was also eliminated from the design. Yoga classes are labelled as partly eliminated from the design. There is no dedicated room assigned for yoga classes, but they were included in the client labs, which are flexible spaces and can be transformed into a yoga facility (CB#2, 26:50). Lastly, the energy and game room were also eliminated during the design phase.

#4 Design - CBRE					
Category	**Sub Category**	**Indicators**			
Social Cohesion	**Connection**	Connection between employees (CORE Visie (2018), p.13)	CBRE app (BU presentatie (2018), p.28)		
	Community	Co-working (The Core DO (2018), p.3)	Co-creation (The Core DO (2018), p.3)	Cafe (The Core DO (2018), p.3)	
	Interaction	Social events (CORE Visie (2018), p.38)	Open workplace (The Core DO (2018), p.3)	Client lab (The Core DO (2018), p.3)	Break out spots (The Core DO (2018), p.3)
	Participation	Include employees in design creation (Interview CB#2)			
Accessibility	Inclusive accessibility				
	Wayfinding	Wayfinding for customer: digital (Interview CB#3)	Screen at table (CORE Visie (2018), p.19)	Open and inviting entrance (The Core DO (2018), p.3)	
	Parking	Monitoring available parking spaces (CORE Visie (2018), p.48)	Mobilityplan: bike rental, car sharing (CORE Visie (2018), p.48)		
Health & Well-being	**Mental health**	Contact with green (The Core fase 5 (2018), p.20)	Mindfullness: zen area/library (CORE Visie (2018), p.39)		
	Air	Ventilation (Interview CB#4)	CO2 sensors (Interview CB#4)		
	Water	Standard water in client lab (The Core DO (2018), p.3)			
	Nourishment	Healthy snacks available: febo/juice wall (The Core DO (2018), p.3)	Free coffee in cafe (Interview CB#3)	Fridge in client lab (The Core DO (2018), p.3)	Healthy lunch (CORE Visie (2018), p.39)
	Light	Arcadian light (Interview CB#4)	Daylight (Interview CB#2)		
	Movement	Fitness options (Interview CB#4)	Yoga classes (Interview CB#2)	Prominent stairs (The Core DO (2018), p.3)	
Social Equity	Inclusivity	Create inclusive culture* (ESG Agenda CBRE (2021), p.16)			
	Equality	Equity* (ESG Agenda CBRE (2021), p.16)			
	Diversity	Diversity* (ESG Agenda CBRE (2021), p.16)			
Comfort	Thermal	Thermal control (Interview CB#4)			
	Acoustic	Different zones (The Core DO (2018), p.3&5)	Acoustic ceiling (Interview CB#4)		
	Visual	Arcadian light (Interview CB#4)			
	Ergonomics	Different workstations (The Core fase 5 (2018), p.16&21)			
	Relaxation	Energy room with massage chair (Interview CB#2)	Game room: ping pong table / table footbal (Interview CB#2)	Zen space/Library (Interview CB#3)	

Figure 5.15 Social sustainability goals mentioned final design CBRE

Implementation

General drivers for implementation of social sustainability goals mentioned during this phase were **legal compliance**, aiming for better **quality** for the employees, strong **leadership** and clear **guidance** on how to implement.

During the design phase, changes were made based on feedback from stakeholders and improvements from the design team (CB#3, 26:22), however, social sustainability indicators were also eliminated. The interior designer mentioned that during the design process **many people were involved**, all having their own opinion and interest, which started as a good form of co-creation but ended up being more of a barrier with conflicting interests (CB#3, 8:20). In the vision phase, the fitness facility at the office was especially seen as an important amenity, since the area does not provide other options. As a counter reaction, CBRE mentioned that they tested who would use the facility and this turned out only to be a small amount, therefore

they decided it was an **unprofitable investment** (CB#2, 26:50). Another reason mentioned was that there was not enough **space** in the chosen building to include this. The project manager mentioned: *"In the end, it was just crossed out because there simply wasn't room for it"* (CB#4, 11:23).

Both the intended energy room and game room were eliminated. The game room in the client lab included a ping pong and football table. A barrier for implementation was the noise **nuisance** coming from a game room, as the client lab is next to workstations and the walls are curtains (CB#4, 23:50). Also, the project team was **unwilling** to think about other options to include a game room and an energy room (CB#2, 38:10), this barrier is labelled under reluctance to change. Other reasons mentioned were **limited resources** (CB#4), **reluctance** and **space** issues (CB#2, 23:50), as the client lab was needed to use for other activities, like lunch meetings and workshops (CB#1 & CB#4). However, another indicator for relaxation and mental health was added, which was a library on the first floor (figure 5.16). The library was designed to foster silence (CB#3, 22:40).

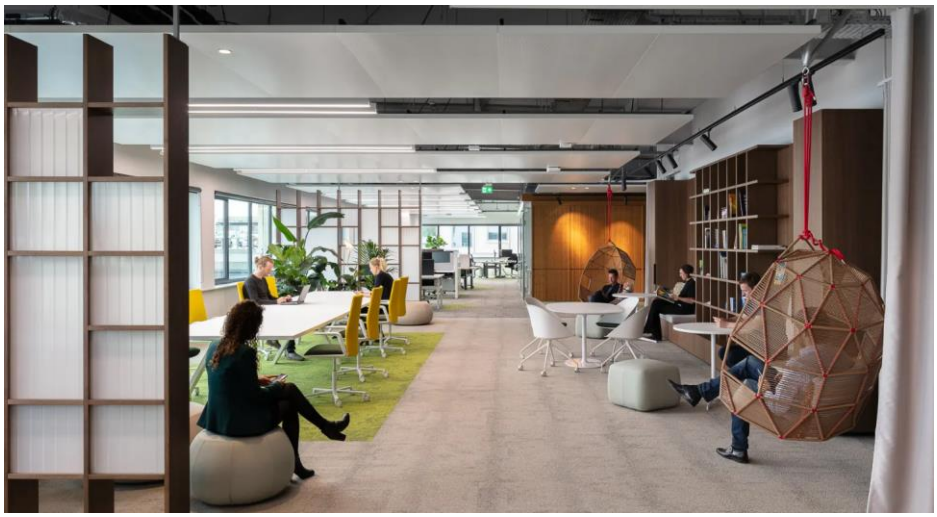


Figure 5.16 Library CBRE (CBRE, 2018)

Reflection

In the design phase, CBRE's commitment to social sustainability is evident, yet it also reveals significant challenges. While the integration of indicators related to health and wellbeing, such as CO2 sensors, demonstrates responsiveness to employee needs, the reduction of key indicators, particularly in the nourishment and movement subcategories, signals a step back from their initial ambitions. It is remarkable to see that in the nourishment and movement subcategory multiple indicators were eliminated, as activities and nourishment came forward as important factors from their own research. The inclusion of prominent stairs (figure 5.17) was intended to promote movement; however, it falls short of encouraging the same level of physical activity as a dedicated fitness facility would. Especially, since most workstations are on

Figure 5.17 Prominent staircase (by author, 2024)

the ground floor. The decision to eliminate spaces for relaxation and recreation, such as the energy room and game room, highlights the tension between stakeholder interests and practical constraints, including budget limitations and concerns about noise. While the design ultimately incorporates a library to support mental health, the lack of a comprehensive approach to comfort and relaxation raises questions about the overall effectiveness of the design in fostering a supportive workplace. In reflecting on the design phase, it is crucial to note that the social equity category remains unchanged from the vision phase, with no concrete indicators implemented. Despite CBRE's aspirations for inclusivity and diversity, the lack of specific, measurable indicators in this area raises concerns about their commitment to fostering a socially equitable workplace. This stagnation suggests a missed opportunity to translate their vision into tangible actions that would promote social equity among employees.

5.2.9 Use phase

The Core that was delivered in 2019 is different from The Core today. That is because after the delivery of the building and during the use phase, multiple changes have been made overtime (figure 5.19). First of all, employee feedback was added to the participation subcategory and social equity is finally given attention in this phase. Where the previous phases were lacking actual indicators, the topic is mentioned in the use phase. CBRE invested in policies and programs regarding social equity (CB#1). An example of this is the diversity week, in which each day represents a different culture. This included awareness through email and menu during the lunch.

In contrast, during the use of the building it also became clear that some design choices are not working or used in the right way and therefore were in need of change (CB#2 & CB#4). For example, the CBRE app was introduced as a connecting factor, by showing who is present at the office, what meals are served and to make reservations for meeting rooms. However, due to **technical** challenges and the wrong **use** of the app, it did not work as intended. The project manager mentioned: *"Previously, people literally stayed up until 12 at night to be able to sign up for a workspot the next day because there was no spot otherwise" (CB#4, 19:54).* Not everyone was using the app, therefore some people had access to workplaces while others did not. Furthermore, within accessibility CBRE designed a digital wayfinding system with tablets on the walls that showed floor plans and indicated room numbers. Nowadays, these tablets are being used for narrowcasting (CB#3, 18:10), losing their wayfinding functions. Another indicator eliminated in the use phase is yoga classes. CBRE decided to have flexible spaces that can transform into a yoga facility. In the beginning of the use phase, yoga classes were organised. However, CBRE noticed there was only a small number of participants. They tested who would participate and this showed it was only a select group of the same people, therefore they decided this was an **unprofitable investment** and to not include it anymore (CB#2, 26:50).

The biggest changes were seen within the comfort category, regarding the workplace concept. The workplace strategy did not work out as it was designed. The concept in which the employees chooses a workplace based on the level of interaction or individual working did not work due to the growth of the organisation and the need of the employees to sit with their team (CB#3, 26:22). The workplace strategy has now changed to team spots and no distinction is made anymore in type of working. There are still different types of zones, but not as intended. The open library that was designed for mental health and relaxation was being used as a meeting space, losing its calm function. CBRE noticed that there was a need for more meeting

rooms, so they transformed the library into a closed meeting space (figure 5.18) (CB#2, 32:50). When asking why the library was not used as a relaxation space, it was said that it did not fit within the **culture** of CBRE, as employees did not just take a break during work hours, this was described as follows: *"I am not just going to sit here and relax a bit in the boss's time"* (CB#2, 33:34).

Figure 5.18 Library transformation into meeting room (by author, 2024)

#5 Use - CBRE					
Category	**Sub Category**	**Indicators**			
Social Cohesion	**Connection**	Connection between employees (CORE Visie (2018), p.13)	CBRE app (Interview CB#3)		
	Community	Co-working (The Core DO (2018), p.3)	Co-creation (The Core DO (2018), p.3)	Cafe (The Core DO (2018), p.3)	
	Interaction	Social events (CORE Visie (2018), p.38)	Open workplace (The Core DO (2018), p.3)	Client lab (The Core DO (2018), p.3)	Break out spots (The Core DO (2018), p.3)
	Participation	Employee feedback (Interview CB#2)			
Accessibility	Inclusive accessibility				
	Wayfinding	Wayfinding for customer: digital (Interview CB#3)	Screen at table (CORE Visie (2018), p.19)	Open and inviting entrance (The Core DO (2018), p.3)	
	Parking	Monitoring available parking spaces (CORE Visie (2018), p.48)	Mobilityplan: bike rental, car sharing (CORE Visie (2018), p.48)		
Health & Well-being	**Mental health**	Contact with green (The Core fase 5 (2018), p.20)	Mindfullness: zen area/library (CORE Visie (2018), p.39)		
	Air	Ventilation (Interview CB#4)	CO2 sensors (Interview CB#4)		
	Water				
	Nourishment	Healthy lunch (CORE Visie (2018), p.39)			
	Light	Arcadian light (Interview CB#4)	Daylight (Interview CB#2)		
	Movement	Yoga classes (Interview CB#2)	Prominent stairs (The Core DO (2018), p.3)		
Social Equity	**Inclusivity**	DEI week & policies (Interview CB#1)			
	Equality	DEI week & policies (Interview CB#1)			
	Diversity	DEI week & policies (Interview CB#1)			
Comfort	**Thermal**	Thermal control (Interview CB#4)			
	Acoustic	Different zones (The Core DO (2018), p.3&5)	Acoustic ceiling (Interview CB#4)		
	Visual	Arcadian light (Interview CB#4)			
	Ergonomics	Different workstations (The Core fase 5 (2018), p.16&21)			
	Relaxation	Library (Interview CB#3)			

Figure 5.19 Social sustainability goals mentioned use CBRE

Reflection

The use phase of The Core reveals a significant evolution from the original design, marked by a responsiveness to employee feedback and changing behaviours. This adaptability demonstrates flexibility from CBRE; however, it also raises critical questions about the initial alignment of the design with the actual needs of employees. While the introduction of social equity initiatives, such as the diversity week, signifies progress in addressing previously overlooked areas, the reliance on employee feedback highlights a reactive rather than proactive approach to workplace design. The challenges faced with the CBRE app and the digital wayfinding system illustrate the pitfalls of implementing technology without sufficient user engagement and support, leading to dysfunctionality. The transformation of the open library into a meeting space further underscores the disconnect between design intentions and actual usage patterns.

5.2.10 Conclusion CBRE case

In conclusion, the ambitious vision of CBRE regarding social sustainability, driven by the desire to set an industry standard and attract top talent, is noticeable in especially the

categories social cohesion, health & wellbeing. However, this analysis reveals a critical gap when compared to literature. The lack of indicators for social equity and comfort raises concerns about the inclusivity of their environment. The challenges faced during the design and use phases, particularly the elimination of key features and the reliance on reactive adjustments based on employee feedback, suggest that the initial vision may not have fully aligned with the real needs of their workforce. On the other side, CBRE is driven by economic and social performance, as they tested all features of the WELL. Moreover, the obstacles encountered, such as company culture, limited space and resources, highlight the complexities in translating a vision into a functional reality. Thus, while CBRE's aspiration to be at the forefront of social sustainability, their strategy lacked a holistic approach as not all subcategories, like social equity and comfort, were fully realised.

5.3 Johnson & Johnson

Figure 5.20 Johnson & Johnson, R building Leiden (HTV Bouwtechniek, 2023)

5.3.1 Introduction

The third case study focuses on the new office project undertaken by Johnson & Johnson (J&J) in Leiden, the R building. This office is part of the Bio Science park and includes laboratorium spaces and offices and adds approximately 13.500 m2 to the campus (Johnson & Johnson, 2024).

5.3.2 About the commissioner

Johnson & Johnson is a global healthcare organisation, known for its contributions to medical innovation and healthcare solutions. Founded in the USA in 1886, J&J has grown into a global healthcare company with offices in multiple countries (Johnson & Johnson, 2024). The organisation operates across three primary segments: pharmaceuticals, medical devices, and consumer health products. In the Netherlands, J&J operates several offices, including locations in Leiden, Breda, and Amsterdam, employing thousands of professionals. The Leiden facility, in particular, is concentrated on the company's biopharmaceuticals and vaccine research, contributing to the development of treatments for both local and global markets (Johnson & Johnson, 2024).

5.3.3 Project initiative

Office development at J&J is driven by significant headcount changes or the need for building refurbishment (JJ#1, 5:55). In Leiden, break options and lease terminations lead to the exit from certain buildings, alongside a headcount increase, which led to the decision to develop a new office. This project aims to optimise cash flow by consolidating smaller offices (JJ#1, 5:55).

5.3.4 Timeline

The project began in 2019 and was delivered in 2023 (figure 5.21). The manager of workplace experience at J&J was involved from the start through use, which is six months post-delivery in this case (JJ#, 1:37). J&J's established workplace experience program guided a concise vision phase, during which a standard space calculator determined necessary spaces. The local facilities team and a workplace consultant collaborated to create the requirements for the Leiden office. In the design phase, these requirements were transformed into floor plans and interior designs by the architect, with ongoing input from the project manager. Following completion, a post-occupancy evaluation assessed usage and employee satisfaction, involving the workplace consultant and facility managers (JJ#5, 19:20).

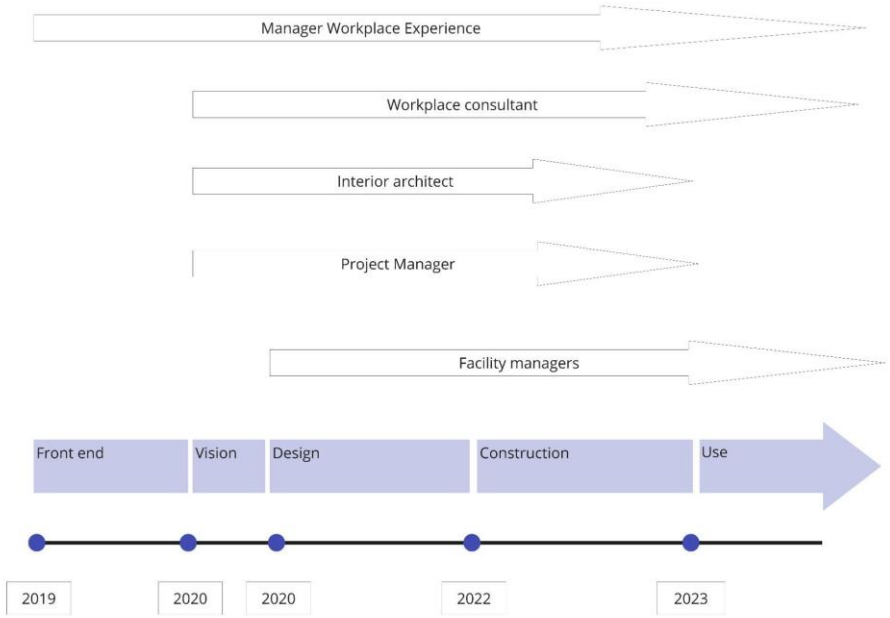


Figure 5.21 Timeline and involvement interviewees R building (by author, 2024)

5.3.5 Structure project

Within the global organisation of J&J, there is an EMEA workplace experience team, responsible for all office projects within this region, including workplace strategy and change management (JJ#, 1:37) (figure 5.22). For this project there is a steering committee ("stuurgroep"), consisting of managers from J&J. Below this there was the project team, who was responsible for the facility management team and design team (JJ#2, 6:12). The project team was supported by ambassador groups with J&J employees. The interviewed manager from the EMEA workplace experience team (JJ#1, 1:37) was part of the steering committee, project team and design team. The workplace consultant (project team) and architect (design team) both have a longstanding relation with J&J, as their organisations have done multiple other projects for J&J in the Netherlands.

Figure 5.22 Project structure R building (by author, 2024)

5.3.6 Front end phase

Integration

At the heart of J&J's social sustainability ambitions has always been the belief that "health is everything" (Johnson & Johnson, 2024). J&J's social sustainability strategy has been integrated into its core business through its ESG commitments, which aim to address social aspects of health, improve patient outcomes, and foster sustainable development (Johnson & Johnson, 2020) (figure 5.23). The company's goals are built around the idea of creating healthier communities, as they believe in a community health system (DEI report J&J, 2023, p.2). J&J's dedication to social sustainability extended to the well-being of its employees. The company believes that promoting health for humanity begins with fostering health within its own workforce. This philosophy drove J&J's investment in comprehensive health, well-being, and safety programs, which were designed to support employees' physical, mental, and

emotional health. This program covered three core areas: healthy eating, healthy movement, and healthy mind (Annual report J&J, 2020, p.7). Another goal mentioned is diversity, equity, and inclusion (DEI). J&J's DEI strategy revolves around three pillars: advancing a culture of inclusion and innovation, building a diverse workforce for the future, and enhancing business outcomes through inclusive practices (Annual report J&J, 2020, p.20).

#1 Front end - J&J		
Category	**Sub Category**	**Indicators**
Social Cohesion	Connection	
	Community	Communities (DEI report J&J (2023), p.2)
	Interaction	
	Participation	
Accessibility	Inclusive accessibility	
	Wayfinding	
	Parking	
Health & Well-being	**Mental health**	Healthy mind & wellbeing (Annual report J&J (2020), p.7)
	Air	
	Water	
	Nourishment	Healthy eating (Annual report J&J (2020), p.7)
	Light	
	Movement	Healthy body (Annual report J&J (2020), p.7)
Social Equity	**Inclusivity**	Inclusion (Annual report J&J (2020), p.20)
	Equality	Equity (Annual report J&J (2020), p.20)
	Diversity	Diversity (Annual report J&J (2020), p.20
Comfort	Thermal	
	Acoustic	
	Visual	
	Ergonomics	
	Relaxation	

Figure 5.23 Social sustainability goals front end J&J

Implementation

First and foremost, the main driver for all J&J office projects is always **economic performance**. This translated into a positive business case that should always be more positive than the old state (JJ#1, 23:12). Regarding J&J's social sustainability strategy, the management and development of human capital is mentioned.(Johnson & Johnson, 2024). J&J acknowledges that its employees are critical to long-term success, resulting in a driver of **competitive advantage**, translated into attracting, developing, and retaining top talent. Lastly, J&J is driven by creating the best **quality** for its employees as they aim to always increase the satisfaction and experience (JJ#1, 23:50).

Reflection

The goals of Johnson & Johnson's reveal a strong commitment to social sustainability, anchored by the belief that "health is everything." However, the company's goals, stated at a conceptual and global level, are not related to specific office environments and could include more social sustainability goals. While the emphasis on health and well-being is noteworthy, the lack of accessibility and comfort is remarkable, given it is also a part of a holistic form of social sustainability in office environments. Furthermore, while economic performance serves as the primary driver for J&J's office projects, this focus may conflict with other social sustainability drivers, such as quality.

5.3.7 Vision phase

Integration

J&J has created a globally implemented Workplace Experience Programme (WEP). The WEP is not only about the physical workspace but also includes people, technology, and facility strategies that enhance the overall experience of working at J&J. Themes that are specifically addressed are workplace experience, wellbeing, people, technology, facilities strategies and place (WEP, p.2). The WEP defines four types of spaces that should be included in every design, which are neighbourhoods, community spaces, operational spaces and special spaces (WEP, p.3). The neighbourhoods concept is central to J&J's workplace strategy, with the goal of creating small, interconnected communities within the office environment (WEP, p.14). These neighbourhoods ought not to be confused with city neighbourhoods, therefore

these will be referred to as office neighbourhoods. Each office neighbourhood is designed to support the needs of specific teams or groups, offering a variety of workspaces, from quiet zones to collaborative areas. This layout fosters a shared environment that encourages interaction, collaboration, and a sense of belonging (WEP, p.13). Secondly, the community spaces that are described in the WEP touch upon multiple categories of the social sustainability framework (figure 5.24). These areas are designed to foster collaboration, connection, and a sense of community among employees. Community spaces include areas for informal meetings, social interactions, recreation, and relaxation. The design guidelines suggest incorporating elements such as an energy space, recovery space, faith room, lactation room and a gym to support employee well-being and health (WEP, p.12). These spaces are intended to create an inclusive environment, reinforcing the social sustainability goals of J&J by ensuring that employees feel connected and valued. Along with that, social wellbeing at work is being stimulated through programs and promotion (WEP, p.4). During the vision phase, it has been decided amongst the project team that a WELL gold and BREEAM excellent were the goal. Not all indicators regarding these certifications were specifically found written down in documents, but it can be assumed that some indicators are included in the vision. This regards parking standards from BREEAM and WELL preconditions in the subcategories water, thermal, acoustic and ergonomics. Overall, the WEP, which can be seen as the vision of this building, mentioned all subcategories except for inclusive accessibility, wayfinding and visual. Equality was mentioned in the previous phase and not specifically mentioned in this phase. The desk research resulted in a total of 102 indicators (appendix II), in the J&J case 35 indicators were mentioned in the vision phase (appendix IV) .

#2 Vision- J&J						
Category	**Sub Category**	**Indicators**				
Social Cohesion	**Connection**	Office neighbourhood (WEP, p.14)	Reception, lobby (WEP J&J, online)	Auditorium (WEP, p12)	Global connect (WEP, p.12)	
	Community	Office neighbourhood (WEP, p.14)	Training room (WEP, p.12)			
	Interaction	Office neighbourhood (WEP, p.14)	Collaboration (WEP, p.9)	Multiple meeting rooms (WEP, p.9)		
	Participation	Pre occupancy evaluation (Interview JJ#2)				
Accessibility	Inclusive accessibility					
	Wayfinding					
	Parking	BREEAM requirements (Interview JJ#2)				
Health & Well-being	**Mental health**	Energy space (sleep pods) (WEP, p.5)	Recovery space (WEP, p.10)			
	Air	WELL (Air precondition A01-A04)				
	Water	Refreshment area (WEP J&J, online)	WELL (Water precondition W01-W03)			
	Nourishment	Healthy food concept (WEP J&J, online)	Restaurant (J&J Space program (2020), p.10)	Cafe (Workplace experience program J&J, online)	Coffee shop (Workplace experience program J&J, online)	
	Light	WELL (Light precondition L01 & L02)				
	Movement	Promote exercise (WELL, movement precondition)	Fitness (WEP, p.12)	Showers & lockers (Workplace experience program J&J, online)		
Social Equity	**Inclusivity**	Faith room (WEP, p10)	Lactation room (WEP, p.11)			
	Equality	Equity (Annual report J&J (2020), p.20)				
	Diversity	Diverse type of furniture (WEP, p.4)				
Comfort	**Thermal**	WELL (precondition thermal comfort T01)				
	Acoustic	Quiet zones (WEP, p.4)	WELL (Precondition sound S01)			
	Visual					
	Ergonomics	Adjustable furniture (WEP, p.7)	Ergonomic workstation (WEP, p.7)	WELL (Movement precondition V02)		
	Relaxation	Community spaces (Workplace experience program J&J, online)	Outdoor spaces (WEP, p.8)			

Figure 5.24 Social sustainability goals vision J&J

Implementation

The WEP aims to enhance employee experiences across its global offices. This program is designed to improve health and well-being, increase productivity, and boost overall employee satisfaction (WEP, p.1). Key drivers for this initiative include J&J's commitment to enhancing **economic performance** through cost efficiency and **quality** through improving employee satisfaction (JJ#1, 23:12), which is also seen as critical for creating an **attractive** office (JJ#2, 44:10). Lastly, J&J emphasises the importance of employee input regarding the significance of the actual impact on **social performance**. The workplace experience manager mentioned on this topic: "*If the amenity is in the building, how important is it for you? How well it's actually performing" (JJ#2, 14:52).* These are questions that J&J is constantly asking themselves and looking into, to enhance social performance.

While the organisation strives to provide high-quality amenities, their **resources** for this are limited. The workplace consultant mentioned on this: *"What is often the case with J&J [..] they have very clear space targets, their main objective is simply cost efficiency, should not cost too much, that is their main objective and that has always been very clear from the start, so many square meters per person and you have to do it within that*" (JJ#2, 9:35). Additionally, the implementation of social sustainability goals is somewhat constrained by the **standard programme**, which may not fully accommodate the specific local context of the Netherlands. The lack of a tailored vision session for this particular location has been identified as a missed opportunity to better align the WEP with local needs and preferences (JJ#2, 19:32).

Reflection

This case shows a structured approach to social sustainability through the implementation of the Workplace Experience Programme (WEP). This initiative not only addresses the physical workspace but also encompasses elements of the community, aiming to enhance overall employee experiences. While equality is not explicitly included in the WEP, the indicators related to inclusivity do touch upon aspects of equality, suggesting an awareness of the need for equitable practices within the workplace. The WEP serves as a significant driver for promoting the best quality, but it can also present certain barriers, especially when applied uniformly at global level. Furthermore, the emphasis on performance is crucial for J&J. However, the specific needs and contexts of each building can vary significantly, potentially leading to mismatches between the program's objectives and local expectations.

5.3.8 Design phase

Integration

During the design phase, the WEP has been translated into a programme of requirements for this particular office. In the category accessibility, wayfinding and inclusive accessibility are added to the design, which was initiated by the architect (JJ#3, 17:30) (figure 5.25). Additionally, the floor plan was designed to foster views outside for the employees (Tender document Arcadis, 2020). Apart from these new indicators, only the elimination of indicators was seen, in the categories social cohesion, health & wellbeing and comfort. The indicators that were eliminated are the auditorium, training room, energy space, cafe, coffeeshop, fitness and outdoor spaces. In all subcategories that suffered an elimination other indicators were still seen, meaning no subcategories are lost overall during the design phase.

#4 Design - J&J					
Category	**Sub Category**	**Indicators**			
Social Cohesion	**Connection**	Office neighbourhood (WEP, p.14)	Reception, lobby (WEP J&J, online)	Auditorium (WEP, p12)	Global connect (WEP, p.12)
	Community	Office neighbourhood (WEP, p.14)	Training room (WEP, p.12)		
	Interaction	Office neighbourhood (WEP, p.14)	Collaboration (WEP, p.9)	Multiple meeting rooms (WEP, p.9)	
	Participation	Pre occupancy evaluation (Interview JJ#2)			
Accessibility	**Inclusive accessibility**	Wheelchair accessibility (Interview JJ#5)			
	Wayfinding	Wayfinding (Interview JJ#3)			
	Parking	BREEAM requirements			
Health & Well-being	**Mental health**	Energy space (sleep pods) (WEP, p.5)	Recovery space (WEP, p.10)		
	Air	WELL (Air precondition A01-A04)			
	Water	Refreshment area (WEP J&J, online)	WELL (Water precondition W01-W03)		
	Nourishment	Healthy food concept (WEP J&J, online)	Restaurant (J&J Space program (2020), p.10)	Cafe (Workplace experience program J&J, online)	Coffee shop (Workplace experience program J&J, online)
	Light	WELL (Light precondition L01 & L02)			
	Movement	Prominent stairs (Interview JJ#4)	Fitness (WEP, p.12)	Showers & lockers (Workplace experience program J&J, online)	
Social Equity	**Inclusivity**	Faith room (WEP, p10)	Lactation room (WEP, p.11)		
	Equality				
	Diversity	Diverse type of furniture (WEP, p.4)			
Comfort	**Thermal**	WELL (precondition thermal comfort T01)			
	Acoustic	Quiet zones (WEP, p.4)	WELL (Precondition sound S01)		
	Visual	Views outside (Interview JJ#3)			
	Ergonomics	Adjustable furniture (WEP, p.7)	Ergonomic workstation (WEP, p.7)	WELL (Movement precondition V02)	
	Relaxation	Community spaces (Workplace experience program J&J, online)	Outdoor spaces (WEP, p.8)		

Figure 5.25 Social sustainability goals final design J&J

Implementation

The WEP can be seen as a driver to implement social sustainability, as J&J defined a clear **strategy** that touches upon the categories of social sustainability. Along with that, the programme provides structured **guidelines** to translate the programme into specific office projects. Due to the extensive amount of standards that were provided by J&J many social topics were discussed during the design phase (JJ#4, 17:30). Another driver seen for implementation is the **participation** of different people in the design phase. This was done through the use of ambassador groups, people from different teams that are going to be using this building. These groups allowed project team to better identify the needs and interests of the employees (JJ#4, 25:00). Besides these drivers, mainly, barriers were identified in this phase.

J&J uses a space calculator that recommends what amenities should be available based on the amount of people (JJ#1, 17:05). For example, there is a distinction made between larger locations, hub locations, and smaller locations. If the headcount is above a certain number, the location should include a restaurant. If it is below that number, the location will only include a cafe (JJ#2, 25:50). There are some basic amenities that are in almost every location because J&J believes these are always needed to ensure a certain type of quality (JJ#2, 33:30). When it comes to social equity, one of these spaces is the nurture room. In this case there was not enough **space** to include all spaces from the space calculator which resulted in some eliminations. "*It often happens that the amount of workplaces needs to go up, therefore trade-off decisions have to be made to realise the plan"* (JJ#3, 21:36). The workplace consultant mentioned the following on this: "[the community spaces], this is where it often gets cut, that space goes to the neighbourhood spaces" (JJ#2, 26:38). There is a distinction between the neighbourhood spaces (the work environment) and the community spaces, in which the work environment is given more priority than the community spaces. Spaces like the recovery and energy spaces are often eliminated first (JJ#2, 33:20). The community spaces in this case that were left out during the design phase were the auditorium, energy space, cafe, coffee shop and a gym.

The auditorium and energy space were not included in the design but a customised solution was realised by means of a flexible space. The atrium was seen as a flexible space, where a TV screen and AV can be added to function as an auditorium (JJ#4, 21:06). On the ground floor, one of the large meeting rooms is convertible into a yoga or energy space. The furniture is on wheels and can be put aside easily. An mirror wall is added to the room, along with small weights and yoga mats (JJ#4 & JJ#5).

When J&J is deciding what type of spaces get more priority there are two important factors, which are the **culture** of the country/city and the facilities found in the **vicinity** of the building. The workplace consultant mentioned the following regarding the barrier culture: *"For a faith room, it really depends on the culture and type of organisation"* (JJ#2, 36:00) and *"In Milan it may be very logical to exercise during working hours, but in the Netherlands this is actually not the case at all" (JJ#2, 28:20).* Facilities in the vicinity of the building are included in the space calculator. *"If you have the building in the city centre, maybe you don't need to do the restaurant"* (JJ#1, 30:34). The R building in Leiden is part of the Bio Science Park, which was taken into consideration during the design. During the design phase it has been decided to not include a gym in the building. The reason behind this is that there is already a gym in the university building next door (JJ#1, 17:05). Instead of duplicating the amenities, J&J sees this as an opportunity to provide some contribution to their employees to go to the university gym instead of realising a gym themselves. Therefore, J&J did not include the gym, because they see this as an **unprofitable investment**, and would rather give every employee a contribution that they can spend on their preferred type of exercise (J&J#1, 18:05). "*Some of the amenities were eliminated because we could leverage it from the vicinity of the building"* (JJ#1, 26:45). The cafe and coffeeshop were also not included in the design, because these amenities can also be found in the **vicinity** of the building.

Another barrier mentioned is the lack of **communication**. Normally, the workplace concept is developed in the vision phase and a programme of requirements is created, which can be translated into a layout and design during the design phase (JJ#2, 38:25). However, the design phase in this project was separate from the workplace consultants, therefore the translation

from the vision into the design was not complete according to the workplace consultant (JJ#2, 40:40). Certain goals set in the vision phase were not clearly communicated to the interior architect, therefore a barrier was created in integration of certain goals. This is also labelled under **separate strategy formulation and implementation**.

Lastly, J&J was opting for WELL Gold instead of WELL Platinum, which was a decision influenced by limited **resources** and **unwillingness** of the project team to invest. The following was said: *"Sometimes it's a bit tricky if you are actually making the certification because a lot of time based on the specification we would be reaching WELL certification. But the project team, it's not eager to pay for it"* (JJ#1, 24:56). This indicates that they are willing to pay for the indicators that create social sustainability, but not for the actual certification.

Reflection
The design phase includes almost all subcategories, however some key indicators are eliminated mainly based on the Workplace Experience Programme, which acts as both a driver and a barrier in this context. While it provides a structured framework and clear guidelines that facilitate discussions on social sustainability, it also imposes limitations through its standard programme and space calculator, which can restrict flexibility in accommodating certain spaces that enhance social sustainability. The decisions to eliminate key spaces, such as the auditorium, cafe, and fitness, reflect trade-offs made in response to space constraints and the prioritisation of neighborhood workspaces over community areas. Moreover, cultural considerations and facilities in the vicinity played a significant role in shaping the design choices, revealing that the effectiveness of social sustainability initiatives may vary for each location. The lack of effective communication between the vision and design teams further underscores these challenges, leading to a disconnect between the vision and implementation. Lastly, although J&J obtained a WELL Gold certification, their main aim was not the certification, but the indicators that contribute to social sustainability.

5.3.9 Use phase
The building was successfully delivered and apart from some minor maintenance issues the use phase of the building started. During the use phase, a facility management team monitors the use of the buildings and the satisfaction and experiences of the employees. The facility management team gathered data through post occupancy evaluations and on site experience (JJ#1, 20:04). One change regarding social sustainability indicators and the use of the building has to do with the flexible spaces. The energy room was combined with a meeting room, where all the furniture was made moveable, so it could be transformed into an energy space and yoga class. However, it was seen that this is not being used, for which two reasons were mentioned (figure 5.26). First of all, the meeting rooms are scarce and they are almost always booked for meetings, providing no **space** for the other function (JJ#5, 8:50). Secondly, the behaviour of the J&J employee and their **use** of facilities. The employees are not going to exercise or work on their mindfulness during working hours (JJ#5, 8:50), which is not within their **culture**. The attempt to create flexible spaces was intended as a solution to the elimination of multiple spaces. However, this approach has proven ineffective in this case. The limited availability of meeting rooms has restricted the intended use of these flexible spaces, and the workplace culture discourages employees from doing (mental) health activities during work hours.

#5 Use - J&J				
Category	**Sub Category**	**Indicators**		
Social Cohesion	**Connection**	Office neighbourhood (WEP, p.14)	Reception, lobby (WEP J&J, online)	Global connect (WEP, p.12)
	Community	Office neighbourhood (WEP, p.14)		
	Interaction	Office neighbourhood (WEP, p.14)	Collaboration (WEP, p.9)	Multiple meeting rooms (WEP, p.9)
	Participation	Pre occupancy evaluation (Interview JJ#2)		
Accessibility	**Inclusive accessibility**	Wheelchair accessibility (Interview JJ#5)		
	Wayfinding	Wayfinding (Interview JJ#3)		
	Parking	BREEAM requirements		
Health & Well-being	**Mental health**	Energy space (sleep pods) (WEP, p.5)	Recovery space (WEP, p.10)	
	Air	WELL (Air precondition A01-A04)		
	Water	Refreshment area (WEP J&J, online)	WELL (Water precondition W01-W03)	
	Nourishment	Healthy food concept (WEP J&J, online)	Restaurant (J&J Space program (2020), p.10)	
	Light	WELL (Light precondition L01 & L02)		
	Movement	Layout designed to promote healthy movement (Interview)	Promote exercise (WELL, movement precondition)	Showers & lockers (Workplace experience program J&J, online)
Social Equity	**Inclusivity**	Faith room (WEP, p10)	Lactation room (WEP, p.11)	
	Equality			
	Diversity	Diverse type of furniture (WEP, p.4)		
Comfort	**Thermal**	WELL (precondition thermal comfort T01)		
	Acoustic	Quiet zones (WEP, p.4)	WELL (Precondition sound S01)	
	Visual	Views outside (Interview JJ#3)		
	Ergonomics	Adjustable furniture (WEP, p.7)	Ergonomic workstation (WEP, p.7)	WELL (Movement precondition V02)
	Relaxation	Community spaces (Workplace experience program J&J, online)		

Figure 5.26 Social sustainability goals use J&J

5.3.14 Conclusion J&J case

In conclusion, Johnson & Johnson's approach to social sustainability throughout the various phases of this project demonstrates both ambition and significant challenges. While the use of the WEP provided a structured framework for implementing health & well-being, social cohesion and comfort into the building, it also provided certain barriers. It is noticed that this project lacks a local vision based on this general vision. The elimination of key spaces, such as the cafe and fitness facilities, reflects a prioritisation of cost efficiency and space limitations over comprehensive social sustainability goals, ultimately limiting the potential for an optimum social sustainable workplace environment. During the use phase, the attempt to create flexible spaces, like combining the energy room with a meeting room, was intended to address the elimination of amenities. However, this strategy has proven ineffective, as the scarcity of meeting rooms and the workplace culture discourage employees from utilising these spaces for (mental) health activities. Moreover, the focus on economic performance as a primary driver can conflict with social sustainability objectives, illustrating the need for a more balanced approach that genuinely prioritises employee well-being alongside financial considerations.

6. Cross case analysis

6.1 Integration

To provide an answer on how corporate real estate office projects integrate social sustainability goals throughout the project lifecycle, the similarities and differences for the case studies will be discussed. While all three cases include social sustainability goals in their corporate strategy, these goals often remain conceptual and lack tangible indicators, particularly in the front end phase. All three organisations articulate a commitment to social sustainability in these particular cases; however, the initial integration of accessibility and comfort is notably absent in all cases (figure 6.1). This is remarkable, as comfort is found in all the well-known certifications (BREEAM, LEED, WELL) and accessibility is an important part of the front end process. Only CBRE mentions accessibility during site selection but fails to translate this into actionable goals.

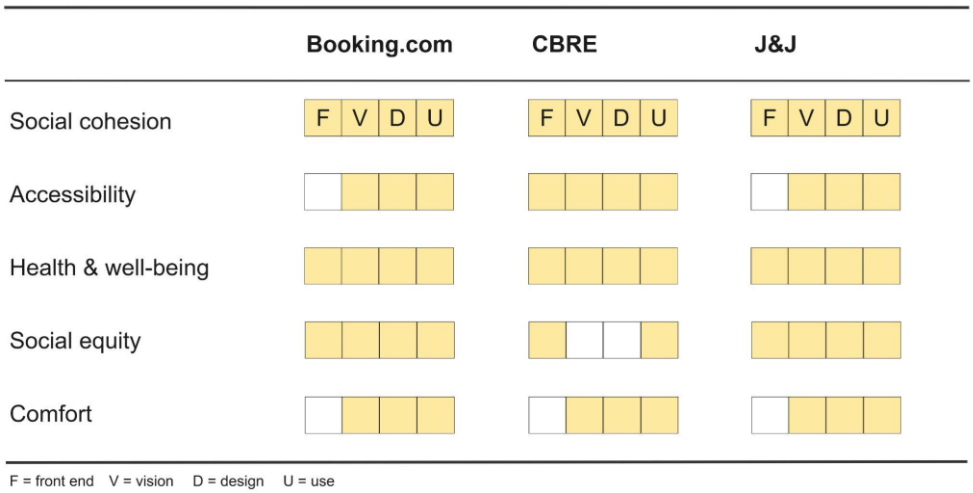


Figure 6.1 Integration main categories social sustainability (by author, 2024)

As the projects move on to the vision phase, all three cases demonstrate a more comprehensive approach to integrating social sustainability goals, with nearly all subcategories being addressed in the vision phase (table 6.1, 6.2, 6.3). This shift indicates an intention among all organisations in creating a socially sustainable work environment. However, social equity tends to be challenging, as none or a part of the subcategories are mentioned in the cases. The CBRE case lacks specific actions related to social equity until the use phase, where policies and programs are introduced. Booking.com and J&J did state tangible indicators regarding social equity in the vision phase, like a nurture room, a faith room and gender neutral bathrooms.

Moving to the design and use phase, only changes on the subcategory level were seen in the CBRE and J&J case (table 6.3). For CBRE the biggest change was seen in the social equity category, as no actions were mentioned in the vision and design phase. In the comfort category, the library got eliminated during the use phase, which was the only indicator that provided relaxation in the office. For J&J the changes were positive, as new subcategories were added. In the accessibility category, the architect added wayfinding and accessibility for wheelchairs. In the comfort category, visual comfort was added in the design phase by means of views outside.

Booking.com subcategories				
Social sustainability	**Front end**	**Vision**	**Design**	**Use**
Social cohesion (4)	2	4	4	4
Accessibility (3)	0	3	3	3
Health & well-being (6)	2	6	6	6
Social equity (3)	3	2	2	2
Comfort (5)	0	5	5	5

Table 6.1 Booking.com subcategories (by author, 2024)

CBRE Subcategories				
Social sustainability	**Front end**	**Vision**	**Design**	**Use**
Social cohesion (4)	1	4	4	4
Accessibility (3)	0	2	2	2
Health & well-being (6)	2	6	5	5
Social equity (3)	3	0	0	3
Comfort (5)	0	5	5	4

Table 6.2 CBRE subcategories (by author, 2024)

J&J Subcategories				
Social sustainability	**Front end**	**Vision**	**Design**	**Use**
Social cohesion (4)	1	4	4	4
Accessibility (3)	0	1	3	3
Health & well-being (6)	2	6	6	6
Social equity (3)	3	2	2	2
Comfort (5)	0	4	5	5

Table 6.3 J&J subcategories (by author, 2024)

The mentioned categories and subcategories are overall similar between the three cases, the main difference is seen in the amount and type of indicators used in each subcategory. In all three cases more indicators were mentioned in the vision than actually were realised (table 6.4). Booking.com mentioned the most indicators in the vision phase and also realised the most indicators. CBRE mentioned the least indicators and also realised the least indicators, although close to J&J. This is remarkable as it was expected for CBRE to mention more indicators, as their aim was to be at the forefront of social sustainability. As for the type of indicators, some indicators are aligned as there are standards, like for the air quality, thermal comfort and light specifications. However, different indicators for more intangible subcategories were seen. For example, the subcategory relaxation: J&J realised a community space where employees can take a break from work. CBRE realised a library with a zen feeling and Booking.com realised a game room and a daydream space to foster relaxation. All indicators work towards the same goal, but in a different way.

During the design phase, multiple indicators were eliminated and a few were also added in all three cases. During the use phase these changes were also seen in the CBRE case. In the J&J case only one indicator, the energy space, was eliminated and in the Booking.com case no changes were seen in the use phase. As for similarities regarding certain indicators; all three cases mentioned a gym in the vision, but did not realise it. Booking.com and J&J mentioned sleep pods in the vision, but both did not realise this. Also, in all three cases, the subcategory relaxation includes an elimination of one or two indicators.

Amount of indicators

Category	Subcategory	Booking.com		CBRE		J&J	
		Vision	Realised	Vision	Realised	Vision	Realised
Social cohesion	Connection	3	3	2	2	4	3
	Community	2	1	3	3	2	1
	Interaction	2	2	4	4	3	3
	Participation	1	1	1	1	1	1
Accessibility	Inclusive accessibility	1	1	0	0	0	1
	Wayfinding	2	2	3	3	0	1
	Parking	1	3	2	2	1	1
Health & well-being	Mental health	5	4	2	2	2	1
	Air	3	3	1	2	1	1
	Water	2	2	1	0	2	2
	Nourishment	5	5	4	1	4	2
	Light	3	3	2	2	1	1
	Movement	4	3	2	1	3	2
Social equity	Inclusivity	5	4	0	0	2	2
	Equality	0	0	0	0	0	0
	Diversity	2	2	0	0	1	1
Comfort	Thermal	1	1	1	1	1	1
	Acoustic	2	2	1	2	2	2
	Visual	2	2	1	1	0	1
	Ergonomics	1	1	1	1	3	3
	Relaxation	4	2	2	1	2	1
	Total	51	47	33	29	35	31

Table 6.4 Indicators case study (by author, 2024)

6.2 Implementation

The analysis of the integration of social sustainability goals throughout the projects revealed that goals were both added and removed during the project lifecycle. The following comparison of the case studies provides an answer on the question what drivers and barriers influence the implementation process.

6.2.1 Drivers

All three organisations had a positive attitude towards social sustainability, as all it was mentioned in their corporate strategy and the mentioned categories were almost similar. However, during the vision phase, a different attitude towards social sustainability was noticed. Although all three cases mentioned almost all subcategories and showed multiple indicators, their attitude was different. The mentality of Booking.com was having no limits and providing as much as possible as long as it shows social or economic benefits. CBRE also had an ambitious attitude as they wanted to be at the forefront of social sustainability measures. CBRE was motivated by the desire to set an exemplary standard for their clients. On the other hand, J&J developed a standard programme for their vision, which is their main aim. *"And that is also part of the J&J culture, just act normal and you will be crazy enough"* (JJ#2, 44:10).

Driver	Booking .com	CBRE	J&J
Strategy	x	x	x
Culture	x		
Communication		x	
Knowledge		x	
Guidance	x	x	x
Cost reduction	x		
Leadership		x	
Legal compliance		x	
Competitive advantage	x	x	x
Quality	x	x	x
Economic performance	x	x	x
Responsibility	x		
Participation		x	x
Social performance	x		x
Attractive	x	x	x

Table 6.5 Identified drivers (by author, 2024)

In all three case studies, the organisations experienced competition, economic and social performance as drivers for implementing social sustainability goals (figure 6.5). The competition driver focussed around attracting new talent and providing quality for its employees. The economic and social performance driver was translated into testing, implementing only features that demonstrated tangible benefits in performance. This was especially seen in the Booking.com case in which every feature is being tested and data is gathered for every implementation. A primary driver for Booking.com is also the responsibility they feel to contribute to sustainability as their core business is not sustainable. Another driver that was also mentioned by all organisations is quality for their employees and creating an attractive office environment that encourages employees to come to the office. Later on, during the design phase it was seen that a well-developed strategy and guidance were important drivers in all three cases. *"Especially for big projects it is really good to invest time in [vision development]. Because it has also been the book we fell back on every time in the years that followed"* (BO#4, 37:46).

6.2.2 Barriers

All three organisations mentioned either limited budget or an unprofitable investment as a barrier for implementing social sustainability goals (table 6.6). This focused around not willing to do unprofitable investments, which is related to the economic and social performance of certain indicators. All three organisations established this by testing beforehand and afterwards. During the design phase also other barriers were seen, which was the vicinity of the building for Booking.com and J&J. The office of Booking.com is close to the city centre of Amsterdam and the J&J office is part of the Science park in Leiden. For some indicators, like the gym in both cases, existing facilities in the vicinity was given as a reason to eliminate the goals for these projects. In the J&J case, barriers were also mentioned around the standard programme, including a space calculator. This calculator eliminated spaces based on the size and vicinity of the building. For the CBRE case, space was often mentioned as a barrier, as the project was a redevelopment and therefore limited by the structure and space of that building. Another interesting barrier mentioned in this case was the separation between strategy formulation and implementation, a problem that is often described in literature (Hrebiniak, 2006). Lastly, an expected barrier was found in the Booking.com case, which was the trade-off between environmental and social sustainability. This was seen during the design phase, where a whole public roof park was designed. *"That one eventually failed because of the implementation of solar panels"* (BO#2, 29:10).

Barrier	Booking .com	CBRE	J&J
Culture		x	x
Communication			x
Limited resources	x	x	x
Reluctance to change		x	x
Separate formulation and implementation			x
Too many people involved		x	
Complexity	x		
Unprofitable investment	x	x	x
Space		x	x
Technical		x	
Nuisance	x	x	
Standard programme			x
Use		x	x
Vicinity	x		x

Table 6.6 Identified barriers (by author, 2024)

6.3 Roles

In addition to analysing the similarities and differences across the cases, a comparison can also be made regarding the roles involved in the projects. Variations were observed in the levels of knowledge and willingness to integrate social sustainability goals among the

participants. In all three cases, the director (#1), workplace consultant (#2) and architect (#3) were more involved with social sustainability goals and aware of the reason behind certain indicators. In the Booking.com case, the ambition for social sustainability was mainly coming from the manager of real estate and workplace, whose role inherently encompasses this focus. Similarly for the J&J case, where the manager workplace experience took the lead. For CBRE this push for social sustainability came from the workplace consultant, who is also the director workplace strategy within CBRE. In all three projects, the architects enhanced indicators related to comfort, health and well-being, and wayfinding. In contrast to this, the project managers in all three cases mainly focussed on ensuring that the projects remained within budget and on time. Budgetary and spatial constraints were frequently mentioned by the project managers as expected, since these considerations are integral to their roles.

6.4 WELL

As the WELL certificate is focussed around social sustainability it was discussed with all interview participants. It is worth mentioning that in all three cases the WELL certificate was considered during the vision phase, but only J&J put it down as a goal. Although this, J&J mentioned that they are more interested in the indicators as this brings quality for their employees than obtaining the WELL certificate. In the same regard, Booking.com approached the WELL certification critically, emphasising the design's alignment with employee needs rather than merely achieving certification. This focus was also driven by their commitment to delivering high quality for their employees. Similarly CBRE tested all social sustainability features from the WELL; rather than simply adopting all WELL features, they evaluated these features to ensure that only those enhancing employee performance or experience were implemented. Consequently, a barrier for CBRE in adopting all WELL features was the prevention of unprofitable investments.

7. Conclusion

The goal of this study was to identify the process of implementing social sustainability goals throughout the project life cycle of corporate real estate office projects. This research goal had three objectives:

1. Understanding social sustainability in corporate real estate
2. Understanding the integration process of social sustainability goals in corporate real estate office projects
3. Identifying factors that influence the implementation of social sustainability goals in corporate real estate office projects

The objectives are met through answering the corresponding subquestions and after that the main question. Objective 1 is linked to subquestion 1, 2, and 3. Objective 2 corresponds with subquestion 4 and objective 3 corresponds with subquestion 5.

SQ1. What are the existing frameworks structures used to categorise social sustainability goals in corporate real estate?
This subquestion was addressed through a systematic literature review, which revealed a general framework structure for social sustainability in the built environment. In this review six frameworks were found that used a structure of a core of social sustainability, along with main categories and subcategories. The findings indicate that there is consistent structure used in these frameworks that can facilitate the understanding and categorisation of social sustainability goals within corporate real estate, providing a foundational structure for further analysis.

SQ2. Which categories, subcategories, and indicators of social sustainability in corporate real estate are defined in literature?
The SLR also informed this subquestion, highlighting the context-specific nature of social sustainability. The analysis identified several main categories, including social cohesion, accessibility, health & wellbeing, social equity, comfort, safety & security, and environmental issues. This was established by analysing eight papers that came forward in the SLR. Multiple synonyms or aspects are mentioned in the literature and taken into account. Despite this, due to the variability in context across different studies, the identification of clear subcategories was challenging.

SQ3. How do existing certification systems for social sustainability in corporate real estate align with the identified categories, subcategories and indicators?
This subquestion was explored through a content analysis of relevant certification systems. The analysis confirmed that these systems generally align with the main categories identified in the literature. While not all certification systems encompass every category, they predominantly reflect the established framework. Notably, the certification systems provided specific subcategories and indicators, particularly for the categories health & wellbeing and comfort, which are more tangible. In contrast, the other categories presented more intangible subcategories, resulting in fewer indicators. This variation highlights the complexity of social sustainability within literature and certifications.

The insights gained from the content analysis, combined with the SLR, establish a robust foundation for understanding social sustainability goals in corporate real estate. A comprehensive framework was developed, including five main categories and 21 subcategories, as illustrated in figure 7.1. Additionally, a detailed list of indicators for each subcategory was compiled (appendix II). This framework serves as a guiding tool for the empirical part of this study, facilitating a structured approach to analysing the integration of social sustainability goals in corporate real estate office projects.

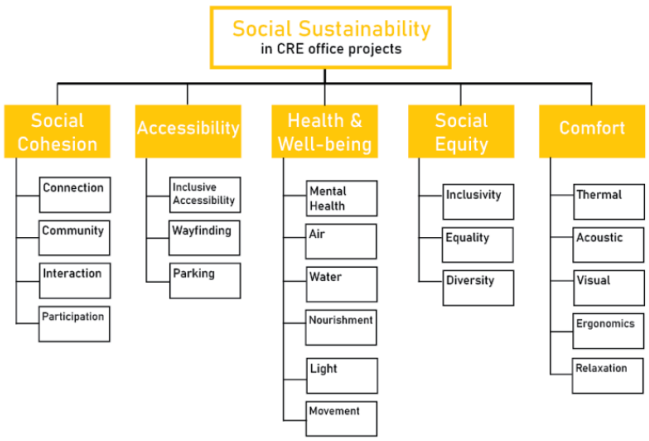


Figure 7.1. Framework based on literature and content reviewed (by author, 2024)

SQ4. How do corporate real estate office projects integrate social sustainability goals throughout the different stages of the project lifecycle?

The analysis of three corporate real estate office projects reveals significant insights into how social sustainability goals are integrated throughout the project lifecycle. In the front end phase, all projects acknowledged social sustainability through conceptual terms, identifying relevant categories. As expected, this phase lacked specificity, as concrete indicators were not yet established. The vision phase marked a crucial shift, with each project expressing a comprehensive list of specific goals and indicators that addressed a wide range of social sustainability categories and subcategories. This change indicates a growing focus on the importance of social sustainability as the project becomes more specific. Each project employed a unique set of indicators, demonstrating that while existing literature and certification systems provide a foundational understanding of potential goals, there is room for innovation and creativity in defining indicators. For example, BREEAM only describes indoor and outdoor recreational spaces to foster relaxation in the office. In this study a specific interpretation of this was seen: Booking.com wanted to include a bowling area, ended up including a climbing wall. Additionally, Booking.com included in the vision a doggy daycare, day dream spaces and a people finder, all not found in the reviewed literature.

However, compared to the indicators found in literature, the cases lack robustness of indicators in their vision. A remarkable finding is that the CBRE case mentioned the least amount of indicators in the vision phase, although the organisation aimed to be at the forefront of social sustainability. It was expected CBRE would have a more comprehensive ambition. Their vision led to the least amount of indicators realised. In the Booking.com case a structured

vision document was produced, that clearly stated the goals, providing structure in the implementation phase, resulting in more indicators realised. This underscores the importance of specifying and putting down indicators during the vision phase as it enhances the overall social sustainability of the project. This also highlights that, in accordance with Winch (2010), the social sustainability strategy is not completely in line with the realised asset. Overall, the findings emphasise that while the integration of social sustainability goals improves significantly from the front end to the vision phase, challenges remain in fully realising these goals during the design and use phases. The cases illustrate a commitment and drivers to social sustainability, but also reveal the complexities and barriers that can hinder the complete implementation of these goals.

SQ5. What drivers and barriers influence the implementation of social sustainability goals in corporate real estate office projects?
The case studies identified drivers and barriers that influence the implementation of social sustainability goals in corporate real estate office projects. All three organisations demonstrated a strong commitment to social sustainability, as evidenced by its inclusion in their corporate strategies and the alignment of their goals across similar categories. However, their attitudes during the vision phase varied. Booking.com exhibited an ambitious mentality, aiming to maximise social and economic benefits without constraints. In contrast, CBRE sought to establish itself as a leader in social sustainability, motivated by the desire to set exemplary standards for its clients. J&J, while also committed, adopted a more standardised approach, reflecting its organisational culture of pragmatism. A wide range of drivers was identified. However, some key drivers came forward across all cases. These included competition for talent, economic performance, and social performance. Additionally, a well-developed strategy and clear guidance were also identified as critical drivers during the design phase, underscoring the importance of alignment between the strategy formulation and implementation.

All cases faced barriers related to budget constraints, culture and the reluctance to engage in unprofitable investments, which directly impacted their ability to pursue certain social sustainability goals. The design phase revealed additional barriers, such as existing facilities in the vicinity that led to the elimination of proposed features, like the gym, in both the Booking.com and J&J cases. For CBRE, spatial limitations due to their project being a redevelopment caused significant challenges. Furthermore, the separation between strategy formulation and implementation was also highlighted as a barrier, complicating the translation of ambitious goals into actionable plans. Another expected barrier emerged in the Booking.com case, where a trade-off between environmental and social sustainability was seen. The decision to prioritise solar panel installation ultimately led to the elimination of a public rooftop park, illustrating the complexities of balancing different sustainability objectives. Despite these barriers, this study shows that a well-developed strategy along with guidance and good communication during the implementation process will positively influence the effective implementation of social sustainability goals.

Main question: *To what extent do underlying factors influence the implementation of social sustainability goals throughout the project lifecycle of corporate real estate office projects in the Netherlands?*

While the research creates a coherent framework for categorising social sustainability goals, the case studies demonstrate that a lack of specificity in the vision phase often leads to difficulties during implementation. In the beginning of the project, the ignorance on social

sustainability in corporate real estate was noticed. As many research has been done on categories and subcategories within social sustainability, it remains a challenging topic. Each case showcased an evolving commitment to social sustainability, with unique goals; however, the integration of these goals was inconsistent and lacked robustness. Underlying drivers, such as social and economic performance, were evident, yet barriers—particularly budget constraints and spatial limitations—hindered the full realisation of social sustainability goals. Notably, the ambition to prioritise social sustainability sometimes clashed with environmental goals, complicating decision-making processes.

A fundamental challenge identified is the disconnect between strategy formulation and implementation, which significantly complicates the realisation of these goals. It was seen that clear guidance and communication between the project phases is essential for tackling these barriers. In conclusion, this study critically underscores the necessity for a cohesive approach that bridges the gap between strategy formulation and implementation. Without a robust strategy that translates into clear, actionable indicators, organisations may struggle to achieve ambitious social sustainability outcomes.

8. Discussion

This chapter discusses the findings and conclusions of this study in relation to the literature and the broader context.

8.1 Definition

The definition of social sustainability remains complex and lacks a singular, comprehensive interpretation in the literature for this term. While sustainability is often anchored in the United Nations Brundtland Commission (1987), social sustainability is less clearly defined, encompassing various concepts that complicate consensus. Attempts to define it often involve listing these concepts, leading to varied responses from professionals. Key to social sustainability is its inclusion of both tangible and intangible aspects, many of which are subjective and shaped by individual experiences. It emphasises the importance of individuals and communities, placing people at its core. Therefore, based on the findings of this study, a suitable definition of social sustainability within corporate real estate is: ***"meeting the needs for equitable experiences, satisfaction, and performance of individuals and communities without compromising future generations."*** This study focused on the all-encompassing term of social sustainability. However, many research has been done on specific categories that fall within social sustainability or related to user satisfaction and performance.

8.2 Strategy formulation

In the examination of the integration of social sustainability goals throughout the project lifecycle, notable distinctions emerged among the various phases. The formulation of strategy occurs primarily during the initial phases, specifically the front end and vision phase (Winch, 2010). **This study indicates that strategy formulation in the vision phase plays a critical role for successful implementing social sustainability goals in corporate real estate.**

Across all three cases, differences were observed in both the quantity and specificity of the organisational goals compared to the social sustainability goals for the project. Nonetheless, Haddadi et al. (2017) assert that organisational goals should align with project goals. The analysis reveals that organisational goals typically encompass only a select part of social sustainability. Notably, J&J distinctly aligned its social sustainability objectives with its organisational goals by creating a standard programme focused on employee experience.

The majority of strategy formulation occurred during the vision phase, where the social sustainability objectives were developed and articulated across all three projects. The literature identifies exclusion of employees as a significant barrier to effective strategy formulation, particularly when employees are not involved in the goal-setting process (Luck et al., 2001; Ormerod & Newton, 2005). In each of the three cases studied, employees were either directly or through representatives engaged in the formulation of these goals. Given the inherently human aspect of social sustainability, it is crucial to involve employees when establishing social objectives within the workplace. For instance, Booking.com established a spirit team existing of nine managers from various departments (BO#4). Similarly, CBRE formed an ambassador group that focused on inclusivity and included representatives from each department (CB#2). J&J also used an ambassador group and actively involved employees in the goal formulation process through pre-occupation evaluations (JJ#1).

8.3 WELL

A barrier to strategy formulation identified by De Geus et al. (2019) is the existence of a knowledge gap among professionals. This issue initiates discussion, as the analysed cases offer varied perspectives on the matter. Initially, the interior designer from CBRE (CB#3) noted that social sustainability was not as prominent a topic in the past as it is today; however, the WELL certification was already recognised globally. The WELL certification emerged as a significant source of knowledge regarding subcategories and indicators during the content analysis. Only J&J explicitly stated that acquiring a WELL certification was among their goals. Ultimately, Booking.com also achieved a WELL certification, although it was not established as an initial goal. **However, in all three cases the WELL certification was explored but the certification was not seen as added value.** Their primary rationale was their intention to implement only those practices that best suited their needs, focusing on enhanced social or economic performance and improved employee experience. CBRE assessed all WELL features and conducted tests with their employees, ultimately adopting only those elements that yielded tangible benefits (CB#2). While Booking.com engaged more closely with the WELL certification, they critically evaluated its features and opted not to implement those that did not align with their organisational goals.

The achievement of a WELL certification does not imply that it is the sole objective related to social sustainability. J&J aims for a WELL gold certificate, but also considers the needs and experiences of their employees in this regard. The WELL certification addresses numerous aspects of health, well-being, and comfort, along with associated indicators. Although other categories are referenced, additional subcategories and indicators relevant to social sustainability can be found in various other certifications and literature. The differing opinions regarding the value of obtaining a WELL certification highlight that such certifications do not encapsulate all social sustainability goals and that these objectives may vary across organisations. *“Sometimes it's a bit tricky if you are actually making the certification because a lot of time based on the specification we would be reaching WELL certification. But the project team, it's not eager to pay [for the certification label]”* (JJ#1, 24:56).

A further finding that supports this assertion is the extensive array of indicators associated with subcategories. The desk research revealed a comprehensive list of over 100 indicators (appendix II) corresponding to the 21 subcategories established in the framework. Notably, some indicators are tangible, such as ventilation and water quality, while others are more intangible, encompassing aspects such as different types of relaxation spaces, areas for interaction, and mental health indicators. The specifics of these indicators are challenging to define and are likely to differ from one organisation to another. For instance, while both Booking.com and CBRE define mindfulness spaces, CBRE has developed a library with a zen garden, whereas Booking.com created a meditation room and J&J has created a recovery room.

8.4 Realised asset

Upon reflecting on the cases in accordance with the framework established by Winch (2010), it becomes evident that all three cases achieved an asset that diverges from the original project mission. Winch (2010) stated that threats encountered throughout the project lifecycle can lead to an unrealised strategy; however, this phenomenon does not manifest in the context of integrating social sustainability within corporate real estate offices. Each of the three cases was executed with the majority of the social sustainability goals realised. Nevertheless, the

implementation process was influenced by various factors. It is observed that the opportunities identified by Winch (2010) serve as catalysts for social sustainability, while the threats represent barriers that may hinder certain indicators from being implemented.

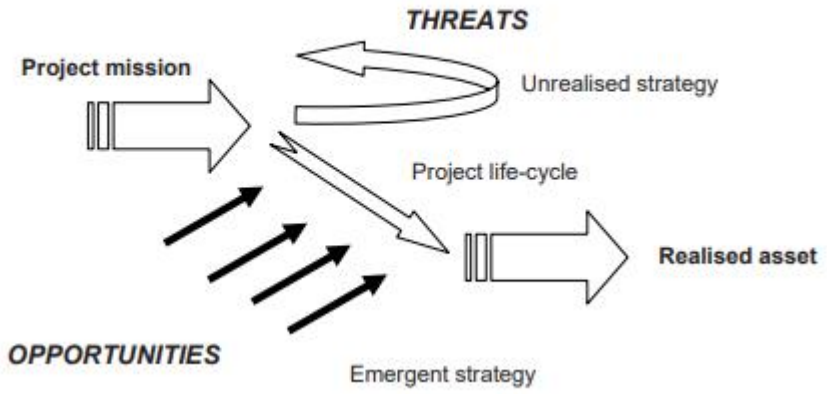


Figure 8.1. The project mission and realised asset (Winch, 2010)

8.5 Strategy implementation

In examining the integration process of social sustainability objectives throughout the project lifecycle, it became apparent that the realised asset differed from the original project mission. This discrepancy was attributed to various factors that influenced the implementation process. Guerra-Lombardi et al. (2024) similarly addressed this issue in their framework for corporate sustainable strategy implementation, which compares the content, including the corporate sustainable strategy, with the resulting outcomes. These outcomes can either be aligned or unaligned with the original strategy. The analysis revealed that the outcomes in all three cases were not completely aligned with the intended strategy. The framework by Guerra-Lombardi et al. (2024) emphasises the role of implementation factors as central to producing unaligned outcomes, distinguishing between drivers and barriers. This study identified numerous factors affecting the implementation of social sustainability goals in corporate real estate offices.

8.6 Drivers and barriers

The literature revealed multiple drivers and barriers for (sustainable) strategy implantation (appendix X). 12 out of 16 drivers were also identified in these cases along with three new drivers. The barriers showed to be more project specific, as only 8 out of the 19 barriers were identified in these cases along with six new barriers (appendix X).

8.7 Roles

The analysis reveals a notable distinction between the emphasis on drivers at the initial stages of the process and the emergence of barriers as the project approaches delivery. As a result, there is a differentiation among the various stakeholders engaged throughout the project. Managers, including directors and members of the real estate department, as well as workplace consultants, primarily participate in the strategy formulation phase, while their involvement in strategy implementation is limited. Architects, on the other hand, are often engaged in both the formulation and the implementation phases, particularly as they relate to the final design. Project managers are exclusively involved in the strategy implementation phase. This distribution of roles helps to explain why project managers tend to focus on barriers, such as budget constraints and time limitations, whereas those involved in strategy

formulation are more influenced by drivers like quality, attractiveness, and innovation. This correlates with the barrier of a separation between strategy formulation and strategy implementation (Hrebiniak, 2006). It became evident that it poses a challenge within the context of this study. This issue was particularly highlighted in the J&J case, where the workplace consultant noted that the translation from vision to design could have been better, but that there were two separate parties involved in these phases (JJ#2).

8.8 Use phase

A key observation across all three projects is that the implementation process remained incomplete at project delivery. Modifications continued during the office's use phase, driven by user feedback and data analysis. In particular, Booking.com and CBRE made specific changes influenced by employee behaviour, spatial constraints, and misuse of facilities. This underscores that the realised asset is not a final product but a continually evolving entity striving for alignment with social sustainability goals. While Guerra-Lombardi et al. (2024) established a framework for corporate sustainability strategy implementation, this study emphasises that social sustainability objectives in corporate real estate projects require ongoing adjustments during the usage phase. This dynamic process, represented in a revised framework based on Guerra-Lombardi et al. (2024) (figure 8.2), highlights the inherently human aspect of social sustainability, as performance and user experiences are inherently subjective and subject to continuous change.

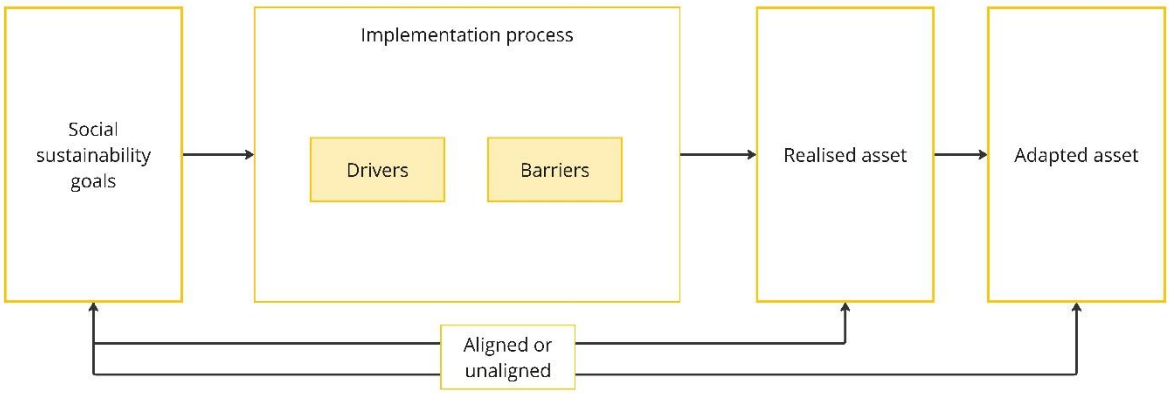


Figure 8.2. Adapted framework (by author based on Guerra-Lombardi et al. (2024), 2024)

8.10 Recommendation for practice

As previously indicated, the separation of strategy formulation from strategy implementation presents a barrier to the successful execution of social sustainability strategies. Engert and Baumgartner (2015) stated that issues arise primarily from the implementation phase rather than the formulation phase. However, findings from this study suggest that both formulation and implementation are vulnerable to barriers and require equal attention. Moreover, these two processes should not be viewed in isolation; rather, they need to be aligned. A project manager (CB#4) noted that the financial and construction implications during the implementation phase are not always thoroughly considered during the formulation process. Allocating sufficient time to the formulation phase is advantageous, as the vision document produced in this phase serves as a reference during implementation when making decisions regarding time, budget, and quality (BO#4). In order to algin the strategy formulation and

implementation, the whole process should be monitored. A program manager could be introduced to guide the strategy formulation process and navigate the project team through the implementation process.

9. Limitations & recommendations

9.1 Limitations

Desk research

The desk analysis primarily concentrated on the overarching concept of social sustainability, despite the existence of a more extensive body of literature addressing its specific categories and subcategories. This research is constrained by time, focusing solely on the conceptual level. Furthermore, during the case analysis, only the identified goals of social sustainability were discussed, although additional indicators were probably also present in the projects; this study is confined to those indicators obtained through document analysis.

Case study

First of all, due to time constraints, this study examined only three cases. While these cases yield valuable insights, the significance of the findings would have been enhanced with the inclusion of additional cases. Secondly, when analysing organisational documents to ascertain the goals of the companies, it was not always possible to access the original documents from the project's initiation period. In instances where such documents were unavailable, more recent documents were utilised. These newer documents may reflect updates and modifications to these goals.

Additionally, it is important to note that currently none of the three organisations are both the occupant and owner of the buildings. However, Booking.com initially operated as the owner-occupier during the building's development, allowing them to influence the core design, which may contribute to social sustainability goals. The J&J office was also situated in a newly developed building that provided flexibility in implementing social sustainability goals. Conversely, the CBRE office is located in a redeveloped building and they do not own the building, which limits their capacity to make changes based on the owner’s interests and the existing conditions of the building. Lastly, historical observations formed the basis for data collection. All selected cases were completed between 2019 and 2023, at least one year prior to the interviews. This temporal gap raises concerns about the reliability of respondents' recollections, as their memories may have faded and they may lack clarity on certain aspects of the project's development and decision-making processes. Consequently, this raises questions regarding the accuracy of their descriptions of the process.

9.2 Recommendations

For further research on social sustainability in corporate real estate projects, it is recommended to focus on a single category or subcategory of social sustainability. This targeted approach allows for a deeper understanding and more comprehensive implementation, leading to more tangible outcomes. By concentrating on a specific area, such as health and well-being or social equity, project teams can develop specialised strategies that address unique challenges within that domain. This focused effort simplifies the implementation process, maximises resource allocation, and enables precise monitoring and evaluation.

10. Reflection

Interests

As I started this graduation process, two distinct subjects caught my curiosity, ultimately becoming the focal points of my study. First, the domain of sustainability within the built environment has been a longstanding area of interest for me. This niche aspect of sustainability has received relatively less scholarly attention, making it an interesting ground for investigation. Secondly, my personal interest was corporate real estate. Driven by a desire to explore potential career paths, I became particularly interested in gaining a deeper understanding of the CRE world. By integrating this aspect into my research, I aimed to acquire comprehensive knowledge of CRE management practices and their relationship with sustainability principles. I ended up doing a graduation internship at CBRE at the workplace strategy department, which was both beneficial for my thesis and gaining knowledge and experiences in practice.

Topic

This research focused on identifying the underlying factors that influence the implementation process of social sustainability goals in corporate real estate office projects. This topic is inherently aligned with the objectives of my master track, which emphasises the intersection of management principles and built environment practices. By exploring social sustainability, I addressed a complex concept that seeks to enhance the quality of life for individuals and communities while promoting environmentally responsible practices. The implementation of sustainability into corporate real estate projects not only reflects a growing industry demand but also aligns with the broader goals of the architecture program, which advocates for innovative design solutions that consider social, economic, and environmental dimensions. Furthermore, the insights gained from my research contribute to the conversation on effective strategy implementation within the built environment. This connection reinforces the relevance of my master track and program, as it prepares me to tackle complex challenges in the field and contribute to the advancement of sustainable practices in the built environment.

Method

The proposed method in researching this topic, consisted of a combination of exploratory and qualitative research. The explorative research to define and create an overview of social sustainability provided what was needed for the empirical part of the research. In the beginning, I wanted to include all literature on every concept within social sustainability. This was not feasible, as there is a lot. Therefore, it remained at conceptual level, which was proficient enough for this study. During the empirical part of the research a multiple case study was done. I approached this in a structured and elaborated approach. I think this was beneficial for the structure of the process, however I have learned that not everything can be structured in qualitative research. Having a more open and flexible approach was one of the feedback points from my mentors in this process. During the interviews and in processing the results, I tried to follow the process instead of forming it. I do think the structure and method used were valuable for this study, as it resulted in multiple findings.

Planning

During my P2, I struggled with finding the right focus for this study. As a result of this, I still had to find the right path after the P2 presentation. I was in the understanding that this was fine timewise and that I could do the interview and process them after P3. However, there is

only a few weeks between P3 and P4. So during this period, I had to speed up the process, as I underestimated the load of work in my planning. In the end, I managed to work through everything. However, it would have been better to have a more detailed and clear focus during my P2.

Process

Looking back at the whole process, looking for a gap and clear focus was my main challenge. Working towards my P2, I was mainly focused on social sustainability in corporate real estate. Only after P2, the concept of strategy implementation was introduced, which ended up being the main gap in this study. Due to this, an extensive body of literature on social sustainability was collected, but not as much on strategy implementation. Literature on strategy implementation was added later on, which covered the gap and provided a structure to analyse the cases. However, it would have been better if this body of literature was added before the P2. This would have been beneficial in structuring the empirical research, focussing more on specific results. Along with that, I focussed too long on the literature instead of moving forward to the empirical research. My personal belief is to only start when everything is well thought out. However, a valuable lesson I learned is that qualitative research is also about following interesting findings and anticipating during the process.

Product

In the end, I produced three interesting case studies that together provided valuable insights in the strategy implementation process focussing on social sustainability goals in corporate real estate office projects. This study creates a contribution to the already existing literature on strategy implementation.

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Appendix

Appendix I - Systematic Literature review

Title	Author(s)	Year	Journal
Strengthening the 'social' in sustainable development: Developing a conceptual framework for social sustainability in a rapid urban growth region in Australia	Cuthill	2010	Sustainable Development
Environmental and social sustainability–emergence of well-being in the built environment, assessment tools and real estate market implications	Danivska, Heywood, Matti, Zhang, Nenonen	2019	Intelligent Buildings International
The role of social sustainability in building assessment	Stender, Walter	2019	Building Research and Information
Social sustainability assessment framework for managing sustainable construction in residential buildings	Fatourehchi, Zarghami	2020	Journal of Building Engineering
Bringing the user back in the building: An analysis of esg in real estate and a behavioral framework to guide future research	Kempeneer, Peeters, Compernolle	2021	Sustainability (Switzerland)
The psychological concept of social sustainability in the workplace from the perspective of sustainable goals: A systematic review	Kobal Grum, Babnik	2022	Frontiers in Psychology
Linking the Use of Ergonomics Methods to Workplace Social Sustainability: The Ovako Working Posture Assessment System and Rapid Entire Body Assessment Method	Gajsek, Draghici, Boatca, Gaureanu, Robescu	2022	Sustainability (Switzerland)
Managing Stakeholder Concerns in Green Building Projects With a View Towards Achieving Social Sustainability: A Bayesian-Network Model	Wen, Qiang	2022	Frontiers in Environmental Science
Social equity in sustainability certification systems for the built environment: understanding concepts, value, and practice implications	Yeeles, Sosalla-Bahr, Ninete, Wittmann, Jimenez, Brittin	2023	Environmental Research: Infrastructure and Sustainability
A framework for social sustainability on the building level: a contextual approach	Sharif	2023	Construction Innovation
Sustainability assessment frameworks for delivering Environmental, Social, and Governance (ESG)	Adewumi, Opoku,	2024	Corporate Social Responsibility

targets: A case of Building Research Establishment Environmental Assessment Method (BREEAM) UK New Construction	Dangana		and Environmental Management

Appendix II - Indicators identified in literature

Social cohesion

Sub Category	Indicators	Source
Connection	Communal areas with accessible seating (availability, size)	Sailer & McCulloh (2012), Yu (2023), DfA
	Informal meeting place (availability)	Atanda (2019), Stender & Walter (2018)
Interaction	Communal areas with accessible seating (availability, size)	Sailer & McCulloh (2012), Yu (2023), DfA
	Informal meeting place (availability)	Atanda (2019), Stender & Walter (2018)
	Social events	
Community	Interaction with neighbourhood/surrounding (sessions/activity done)	
	Social events	
Participation	Engagement key stakeholders in design process (sessions of other activities done)	Atanda (2019), WELL precondition
	Public participation (sessions/activity done)	Fatourehchi et al. (2020)
	Interaction with neighbourhood/surrounding (sessions/activity done)	Aljazaerly et al. (2024)
	User feedback (Post occupancy evaluation/survey done)	Sharif (2023), Atanda (2019), WELL precondition
	Enhances user feedback (implementation, interviews, focus groups)	WELL optimization

Accessibility

Sub Category	Indicators	Source
Inclusive accessibility	Stair free entrance	Fatourehchi et al. (2020), WELL optimization
	Ramps	Fatourehchi et al. (2020)
	Automatic doors	Fatourehchi et al. (2020), WELL optimization
	Elevators	Fatourehchi et al. (2020)
	Wide doors/hallwasy	Fatourehchi et al. (2020), Fitwel
	Handrails on stairs	Fitwel
	Disabled restroom (availability)	
Wayfinding	Signage, building maps, colors, etc	WELL optimization
Parking	Parking (resonable amount)	Fatourehchi et al. (2020), BREEAM NL
	Bike (parking and accesibility)	Fatourehchi et al. (2020), BREEAM NL, WELL optimization
	Walkability : Pedastrian friendly environment	WELL optimization, Sharif (2023)

Health & well-being

Sub Category	Indicators	Source
Mental health	Mental health & well-being (promotion, sessions, workshops)	Kempeneer et al. (2021), Gajsek et al. (2022), Rashid et al. (2021), WELL precondition
	Offer mental heatlh services & education	WELL optimization
	Stress management plan	WELL optimization
	Promote healthy working hours & nap policy	WELL optimization
	Nature access indoor & outdoor	Lacoeuilhe et al. (2017), WELL optimization
	Connection to nature&place	Arizitzabal (2021), WELL precondition
	Restorive space & mindfulness available	WELL optimization
	View outside (75% of workplaces)	Fitwel
	Private outdoor space	LEED
	Provide information on health and well being resources	WELL predoncition
Air	Air quality basis	WELL precondition
	Air quality enhanced	WELL optimization
	Air monitors	WELL optimization
	Air quality awareness	WELL optimization
	Smoke free environment (inside & outside)	WELL precondition, BREEAM
	Ventilation design basis (max. 900 ppm inside)	WELL precondition
	Ventilation design enhanced	WELL optimization
	Operable windows	WELL optimization
	8 other possible optimization of small interventions	WELL optimization
Water	Water quality basis	WELL precondition
	Water quality enhanced	WELL optimization
	Monitor water quality & Legionella management plan	WELL precondition
	Drinkwater quality basis	WELL precondition
	Monitor drinkwatr quality & promote drinking water transparancy	WELL optimization
	Promote drinking water: dispenser available	WELL optimization
	Extra: moisture management, hygiene support	WELL optimization
Nourishment	Fruit is provided, fruit/vegetables are included in menu	WELL precondition
	Nutritional transparancy (ingredients & allergens)	WELL precondition
	Limit sugar & promote whole grain	WELL optimization
	Promote healthy food/drinks, not promote unhealthy	WELL optimization
	Limit artificial ingredients	WELL optimization
	Daily mealbreak & dedicated eating space	WELL optimization
	Provide meal support (storage, heating, etc)	WELL optimization
	Extra: healthy portions, nutrition education, local food access, provide gardening space	WELL optimization
Light	Indoor light	WELL precondition
	Illuminance threshold (min 30 fc at task surface)	WELL precondition
	Extra electrical light above workspaces	WELL optimization
	Manage glare form electric lightning	WELL optimization
Movement	Aesthetic and prominant staircases	WELL optimization, Fitwel
	Physical activity space	WELL optimization
	Physical activity promotion	WELL optimization
	Provide self monitoring	WELL optimization

Social equity

Sub Category	*Indicators*	*Source*
Inclusivity	Childcare support (on-site or programs/policies)	Sharif (2024), WELL optimization
	Provide historical acknowledgement	WELL optimization
	Outdoor and indoor public space	WELL optimization
	Gender neutral bathrooms (availability)	Kobal Grum et al. (2022)
	Lactation room	Vilar-Compte et al. (2021), WELL optimitzation
	Multi faith room (availability)	Díez de Velasco, F. (2014)
Equality	Create/implement DEI assessment and action plan	WELL optimization
Diversity	Compatibility with cultural values (Design respects cultural diversity and heritage)	Sharif (2023), Rashid (2021), Atanda (2019), DfA

Comfort

Sub Category	Indicators	Source
Thermal	Temperature control user (availability)	WELL optimization, Bourikan et al. (2021), Shukur et al. (2021)
	Personal cooling/heating options	WELL optimization
	Temperature (min and max) & continuous monitoring	Fatourehchi et al. (2020), WELL precondition
	Survey on thermal confort	WELL optimization
	Radiant heating/cooling (min 50%)	WELL optimization
	Monitors available with thermal information	WELL optimization
	Humidity control	WELL optimization
	Outdoor thermal comfort	WELL optimization
Acoustic	Noisiness (complaints)	Bourikan et al. (2021), Shukur et al. (2021)
	Sound isolation at walls & doors	WELL optimization
	Implement sound reducing surfaces	WELL optimization
	Privacy (sound)	Lee (2010)
	Label acoustic zones & acoustic design plan	WELL precondition
	Limit background noise levels	WELL optimization
	Reverberation time threshold	WELL optimization
Visual	Daylight (75% of occupied spaces)	Fatourechi & Zarghami (2020)
	View outside (availability)	Fitwel
	Antiglare system (availability)	Fitwel
	(automatic) shading	WELL optimization
	White light is used that does not flicker	WELL optimization
	Occupant lightning control	WELL optimization, Shukur et al. (2021)
	Extra: balance visual lightning	WELL optimization
Ergonomics	Adaptability of workstation (surface, chair, screens, orientation)	WELL precondition, Shukur et al. (2021)
	Ergonomics programming	WELL optimization
Relaxation	Indoor recreational space; games, nature, music, quit, sport (availability, min 1)	BREEAM NL
	Outdoor recreational space; games, nature, music, quit, sport (availability, min 1)	BREEAM NL

Appendix III - Case study, document analysis

Booking.com

Documents

Title	Author	Date	Document type	# pages
Sustainability report	Booking Holdings	2023	pdf	50
Booking campus vision document	CBRE	2017	pdf	37
Booking Functional Program of Requirements	CBRE	2019	pdf	145
SO sketches	HofmanDjuardin	2019	png	4
DO design	HofmanDjuardin	2022	pdf	12

Websites

Booking.com Officially Opens New Campus in the Heart of Amsterdam
Booking.com City Campus - UNStudio
Booking.com's DNA reverberates in their new tech complex | CBRE UK
This is how we designed the perfect hybrid workplace for Booking.com | CBRE UK

CBRE

Documents

Stage	Name	Writer	Year	Description
1	Nieuwjaarspresentatie CBRE	CBRE	2024	Trends, goals and vision
1	ESG agenda	CBRE	2021	ESG goals
2	Presentation BU	CBRE	2018	Vision
2	Vision document	CBRE	2018	Vision
3	Presentation	CBRE	2018	Concept design
4	The Core fase 5	CBRE	2018	Sketch design
5	The Core DO	CBRE	2018	Final design

Websites

https://www.cbre.nl
https://www.cbre.nl/insights/case-studies/cbre-the-core
https://moss.amsterdam/portfolio_page/the-core/

J&J

Documents

Stage	Name	Writer	Year	Description
1	Annual report	J&J	2020	Trends, goals and vision

1	Playbook workplace	J&J	2020	workplace ambition
2	Space planning	CBRE & Arcadis	2020	Vision/sketches
2	Space program	CBRE & Arcadis	2020	Vision/sketches
3	Floor plans SO	Arcadis	2020	Concept design
4	Floor plans tender doc	Arcadis	2020	Final design

Playbook workplace = workplace experience programme (WEP)

Websites

Johnson & Johnson: Changing health for humanity
Home | Janssen Nederland
REDC - Leiden Bio Science Park

Appendix IV – Indicators mentioned in vision phase and realised

Indicators compared to literature

Category	Subcategory	Booking.com		CBRE		J&J	
		Vision	Realised	Vision	Realised	Vision	Realised
Social cohesion	Connection (2)	3	3	2	2	4	3
	Community (3)	2	1	3	3	2	1
	Interaction (2)	2	2	4	4	3	3
	Participation (5)	1	1	1	1	1	1
Accessibility	Inclusive accessibility (7)	1	1	0	0	0	1
	Wayfinding (1)	2	2	3	3	0	1
	Parking (3)	1	3	2	2	1	1
Health & well-being	Mental health (10)	5	4	2	2	2	1
	Air (9)	3	3	1	2	1	1
	Water (7)	2	2	1	0	2	2
	Nourishment (8)	5	5	4	1	4	2
	Light (4)	3	3	2	2	1	1
	Movement (4)	4	3	2	1	3	2
Social equity	Inclusivity (6)	5	4	0	0	2	2
	Equality (1)	0	0	0	0	0	0
	Diversity (1)	2	2	0	0	1	1
Comfort	Thermal (8)	1	1	1	1	1	1
	Acoustic (7)	2	2	1	2	2	2
	Visual (7)	2	2	1	1	0	1
	Ergonomics (2)	1	1	1	1	3	3
	Relaxation (2)	4	2	2	1	2	1
	Total (102)	51	47	33	29	35	31

Appendix V - Interview protocol

Interview protocol and semi structured interviews

Case:
#
Role:

Date interview:
Location interview:
Name interviewer: Bes Bovelander
Name participant:
Organisation:

Voorafgaand aan het interview

- Uitnodiging verzonden
- Informed consent getekend
- Tijd en locatie afgestemd
- Opname klaarzetten en testen

START

Voordat we beginnen, wil ik vragen of je toestemming geeft voor dit interview en of de informed consent getekend is. Dan wil ik ook graag vragen of je toestemming geeft om de audio van dit gesprek op te nemen.

Start recording
Dan kunnen we nu beginnen. Allereerst, bedankt voor het deelnemen aan dit interview.
Ik herhaal nog een keer de vraag zodat het op de opname staat. Geef je toestemming om de audio van dit gesprek op te nemen? Het interview zal ongeveer 45 minuten duren. Ik heb een lijst met vragen voorbereid, maar als er daarnaast onderwerpen zijn die je wil aankaarten, dan hoor ik het graag. Het interview is vrijwillig, en je hebt het recht om vragen niet te beantwoorden. Na het interview zal ik de audio gebruiken om een transcriptie te maken, deze zal geanonimiseerd worden en vervolgens ook anoniem gebruikt worden in mijn thesis report.

Het doel van dit interview is inzicht krijgen over het project X, en dan voornamelijk over fase X van het project. Het onderwerp van mijn onderzoek is de S van ESG, dat houdt in dat ik naar alle sociale duurzaamheidsaspecten onderzoek en dat ik in dit onderzoek environmental en governance achterwege laat. We beginnen met een stukje introductie, daarna gaat het over de projectdoelen en als laatste de sociale duurzaamheidsdoelen.

Introductie algemeen

1. Kan je jezelf kort introduceren?
2. Hoe ben je betrokken geweest bij dit project, welke functie had je toen?
3. In welke fases van het project ben je allemaal betrokken geweest? *(laat timeline zien die ik gebruik)*

4. Wie hebben de beslissingen gemaakt in de visiefase wat betreft het ontwerp?

5. (Hoe is document X tot stand gekomen?)
    a. Wie hebben de input geleverd?
    b. Wie hebben het document gemaakt?

Project doelen
De volgende vragen gaan over het project in het algemeen, en hoeven niet gebaseerd te zijn op sociale duurzaamheid specifiek.

6. Zijn er bepaalde doelen gezet of gegeven aan het begin van de visiefase?
7. Komt de visie van het project voort uit de vastgoed en/of duurzaamheidsdoelen van de organisatie?
8. Is er een doel gezet in het behalen van certificaten? (WELL, BREEAM, LEED, Fitwel, LBC)
    a. Wat zijn drijfveren en barrières voor het zetten van doelen hiervoor?

Social sustainability goals
We zullen nu verder gaan met de vragen over sociale duurzaamheidsdoelen.

9. Wat versta jij onder sociale duurzaamheidsdoelen?

De volgende vragen gaan over de sociale duurzaamheidsdoelen in project X, over de fase X in vergelijking met fase X. Ik heb in fase X verschillende documenten van over de organisatie gelezen en ik heb ook verschillende documenten uit fase X gelezen. De volgende vragen gaan over verschillen of opmerkelijke dingen die ik ben tegengekomen.

- *Aanpassen per interview -*

10. Wat verstaat u onder sociale duurzaamheidsdoelen en welke krijgen prioriteit binnen uw organisatie?
11. Uw noemt de volgende sociale duurzaamheidsdoelen, maar waarom zijn deze XXX doelen niet genoemd? Zijn deze wel behandeld?
12. Waarom krijgen XX sociale duurzaamheid categorieën prioriteit?
    a. Zijn er bepaalde drijfveren voor het integreren van deze doelen?

13. Waarom worden XXX sociale duurzaamheid categorieën niet geïntegreerd in deze fase?
    b. Waren er bepaalde barrières waar jullie tegenaan zijn gelopen?
14. Zijn er ten opzichte van de vorige fase sociale duurzaamheidsdoelen bij gekomen of verder uitgewerkt?
    c. Wat is de reden daarvoor?

Experience (alleen voor facility manager)

- *Aanpassen per interview -*

15. Kunt u vanuit uw rol als facility manager een sociaal duurzaamheidsdoel noemen dat succesvol is gerealiseerd in dit project?
16. Kunt u vanuit uw rol als facility manager ook een sociaal duurzaamheidsdoel noemen die onverwachte uitdagingen met zich meebrengt of niet tot uiting komt als gewenst?

Afsluiting
Dan zijn we nu aan het einde van het interview aangekomen en heb ik nog twee afsluitende vragen.

17. Als je terugkijkt op fase X van het project waar jij betrokken bij was, zijn er dingen die je anders had gedaan?
18. Zijn er nog andere dingen die je zou willen toevoegen?

Dan wil ik je bedanken voor het deelnemen aan mijn interview, je tijd en de waardevolle inzichten. Als je dat wil kan ik de transcriptie met je delen, mocht je het nog willen checken.

Appendix VI - Coding

Deductive codes

Drivers

Code	Drivers	Explanation	Source
D1	Well developed strategy		Hrebiniak (2006)
D2	Orgasational culture	Sustainability-centered culture within organisation	Engert & Baumgartner (2015), Engert et al. (2016)
D3	Clear communication (internal & external)	reports on sustainability, transparEncy	Engert & Baumgartner (2015), Engert et al. (2016)
D4	Guidance for executing	Performance indicators, guidelines, roadmap, management control	Hrebiniak (2006), Engert & Baumgartner (2015), Engert et al. (2016)
D5	Employee motivaiton and qualitfication	Right people and knowledge on board	Hrebiniak (2006), Engert & Baumgartner (2015), Engert et al. (2016)
D6	Orgasational structure	Orgasational sustainability strategy	Engert & Baumgartner (2015)
D7	Cost reduction	Long term investment return	Engert et al. (2016)
D8	Innovation		Engert et al. (2016)
D9	Strong leadership	manager's behavior & attitude	Hrebiniak (2006), Engert & Baumgartner (2015), Engert et al. (2016)
D10	Legal complience	laws, legislation	Engert et al. (2016)
D11	Competitive advantage		Engert et al. (2016)
D12	Quality	quality of serivces, products, life of employees /customers /community	Engert et al. (2016)
D13	Economic performance		Engert et al. (2016)
D14	Social and environmental responsibility	expectations stakeholders	Engert et al. (2016)
D15	Risk management		Engert et al. (2016)
D16	Corporate reputation		Engert et al. (2016)

Barriers

Code	Barriers	Explanation	Source
B1	Poor or vague strategy		Hrebiniak (2006)
B2	Organisational culture	Inability to manage change due to culture , behavioural diagnosis	Hrebiniak (2006), Engert et al. (2016), Candido et al. (2019)
B3	Poor communication (Internal & external)	Poor or inadequate information sharing	Hrebiniak (2006), Engert et al. (2016)
B4	Lack of guidelines / structure / coordination		Hrebiniak (2006), Candido et al. (2019)
B5	Employees not motivated or qualification	Wrong people on board, lack of knowledge, inadequate skills or training	Hrebiniak (2006), Engert & Baumgartner (2015), Engert et al. (2016), Candido et al. (2019)
B6	Work against the organisational power structure		Hrebiniak (2006)
B7	Lack of resources	limited or no budget	Candido et al. (2019)
B8	Reluctance to change		Candido et al. (2019)
B9	Lack of leadership manager	willingness, attitude & behaviour, top down approach	Hrebiniak (2006), Engert et al. (2016), Candido et al. (2019)
B10	Inability of manager to execute	Manager is only trained to strategy formulation and plan	Hrebiniak (2006)
B11	Strategy formulation and implementation are separate		Hrebiniak (2006)
B12	Too long of an implementation		Hrebiniak (2006)
B13	Too many people involved		Hrebiniak (2006)
B14	External events		Candido et al. (2019)
B15	Not enough time available	Speed of execution process too high, delays	Hrebiniak (2006), Candido et al. (2019)
B16	Unclear responsibility and accountability		Hrebiniak (2006)
B17	Complexity	Contradiction among three dimensions of corporate sustainability , conflicting factors	Engert et al. (2016)
B18	Unprofitable investment		Engert et al. (2016)
B27	No people involved		Luck et al. 2001; Ormerod & Newton, 2005

Other

Code	Description
O1	Project structure
O2	Decision makers
O3	Timeline
O4	Initiation
O5	Ambition/goals organisation
O6	Description building/design
O7	WELL

Inductive codes

New drivers

New code	Drivers	Explanation
D17	Participation	participation of employees in design
D18	Social performance	Does it really benefit the user
D19	Attractiveness	make it attractive for employees to come to the office

New barriers

New code	Barrier	Explanation
B20	Space issues	Growth, need for more workstations/meeting rooms
B21	Nuisance	noise nuisance
B23	Use	function is changed due to different use
B24	Operational	not feasible operational
B25	Standards programme	
B26	Vinicity	Can be found in the nearby surroundings

Appendix VII – Identified codes

Code	Driver	Code	Barrier
D1	Strategy	B2	Culture
D2	Culture	B3	Communication
D3	Communication	B7	Limited resources
D4	Guidance	B8	Reluctance
D5	Knowledge	B9	Separate formulation and implementation
D7	Cost reduction	B13	Too much people
D9	Leadership	B17	Complexity
D10	Legal	B18	Unprofitable investment
D11	Competitive advantage	B20	Space
D12	Quality	B21	Nuisance
D13	Economic performance	B23	Use
D14	Responsibility	B24	Technical
D17	Participation	B25	Standard programme
D18	Social performance	B26	Vicinity
D19	Attractiveness		

Yellow = new drivers/barriers