Covid-19 and the workplace

An explorative study of employee experiences
during abrupt workplace change

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PREFACE

This master thesis presents the one-year graduation research that is part of the master track Management in the Built Environment of the master Architecture, Urbanism and Building Sciences of the Delft University of Technology.

The relation between people and the Built Environment had my interest since the beginning of the studies. Designers and Facility managers construct the physical environment in which people move and interact. Nevertheless, people are complicated creatures, with personal preferences, based on experiences and actions that are conditioned by the physical environment. I believe that, in order to manage or design the built environment to the best of our abilities, it is critical to try to understand the motives and effects the environment has on people.

I would like to thank my mentors Paul Chan and Tuuli Jylhä from the TU Delft and Els Bronckhorst from Savills. Moreover, I would like to thank the interviewees for sharing their experience so broadly and deeply to a stranger, and the professionals at Savills I used as a critical sounding board during the conceptualisation of the research.

Enjoy reading!

Leenke Jense

ABSTRACT

In response to the global Covid-19 pandemic, access to office workplaces became more restricted, and employees were ushered to work from home. Current scientific literature does not fully address the link between abrupt change in the workplace and the impact of this on employees. More generally, research on the employee perspective and employee experiences is often not performed in the context of change in the workplace. Therefore, this study aims to investigate the experiences of abrupt change regarding the workplace due to Covid-19 in depth. It analyses the individual and organisational factors that help deal with this abrupt change. The study adds to research on gradual organisational change, and contributes to knowledge about the added value of the office as a workplace, and employee perspectives on change processes.

Preliminary interviews give insight into the lived experiences of employees concerning the abrupt change process and experiences of working from home. Next, an embedded case study analyses employee expectations and preferences through semi-structured interviews.

The research findings provide new insight in the abrupt change experience. The motivation and productivity of employees is harmed due to lack in variety of work activities and a monotonous way of interacting with colleagues, both formally and informally. Working from home resulted in a decline of informal interactions. The reduced contact resulted in a reduced feeling of involvement in the organisation. This is disadvantageous to the change process, as communication between the organisation and the individual help foster the transition during abrupt change.

To improve the abrupt change experience, the study recommends a 5-step implementation plan for organisations. The process helps to better align employee preferences and expectations with organisational objectives. A more employee-oriented approach in workplace strategy creation is recommended. This would incorporate employee preferences in the process of change, to ensure employee wellbeing and enhance competitive advantage during abrupt change.

Keywords: employee experience, abrupt change, workplace, organisational change

EXECUTIVE SUMMARY

Introduction
In December 2019, the first cases of an aerosol virus SARS-CoV-2, better known as Covid or the Corona-virus, were discovered in Wuhan, China (WHO, 2020). To stop the spread of the virus, the Dutch government implemented measures that included the partial closure of schools, universities, restaurants, and asked people not to travel and work from home.

The virus creates abrupt changes in the workplace, by bringing a halt to working in the office environment. The knowledge based workplace has always been susceptible to changes, due to technological developments and trends. Working from home is already a trend possible through technological developments and knowledge-based environments, as well as flexible office spaces and activity-based working (V. Gibson & Luck, 2006; Harris, 2015). The Covid epidemic suddenly enforces the socio-technological context to incorporate changes and adjust them quickly. Changes in the configuration of Corporate Real Estate, and therefore the workplace of employees, have cultural and emotional impacts on the entire organisation (Mandel et al., 2014).

From the systematic literature review it can be concluded that there is a gap in knowledge on abrupt change in the workplace and its impact on employees. Moreover, research on the employee perspective and employee experiences is lacking in the research on change in the workplace. As the Covid epidemic forces employees to work from home, the trend and growing demand for new ways of working and a reflection on the way the workplaces are configured is needed. It is essential to understand how the employee experience of abrupt workplace change is created, what influences it and how this can be implemented in workplace strategies in order to provide better workplaces in the future.
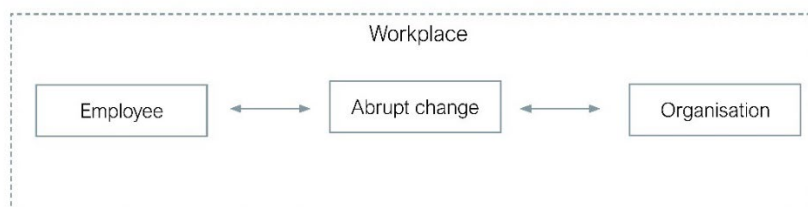

Figure 1 Key concepts of the research

This study focuses on the impact of abrupt change on employees and the organisation at the workplace (Figure 1). The gap in knowledge and a deeper understanding in abrupt change experiences will be explored through this study. The aim of this research is to *Investigate experiences of abrupt change regarding the workplace due to Covid-19 and analyse the individual and organisational factors that help deal with this abrupt change.*

The following five objectives operationalise the research aim:

1. Review previous studies on organisational change, the workplace and employee experiences, to develop a conceptual framework to explore abrupt change experiences;
2. Explore the abrupt change experiences caused by Covid-19;

3. Investigate employee preferences and expectation for future workplace use;
4. Analyse individual and organisational factors that influence the abrupt change experience;
5. Analyse the coping strategies of individuals and organisations to deal with abrupt workplace change.

Methods

In order to meet the research aim and answer the main research question, a theoretical framework is developed based on a theory study. The theoretical framework constructs the abrupt change experience, as stated in research objective 1. To answer objective 2 – 5, the concepts of the theoretical framework are analysed through empirical research, consisting of a preliminary study and an embedded case study in corporate real estate. The findings of the empirical research are used to analyse the effects of the change and the factors that influence the change process, experiences, expectations and preferences. The theoretical framework is shown in figure 2, the empirical research design in figure 3.
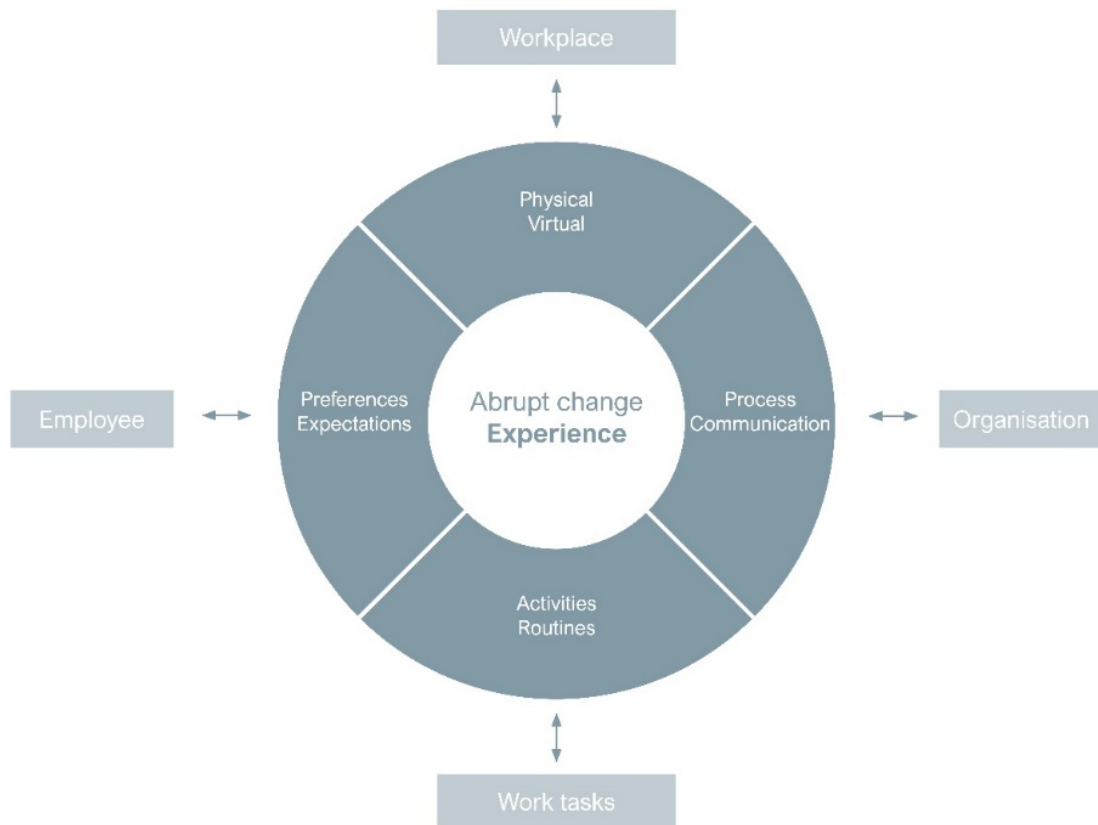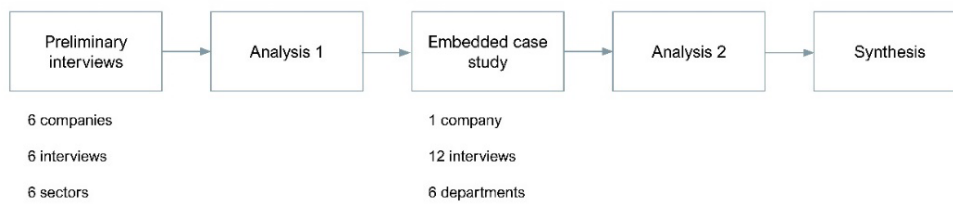

Figure 2 Theoretical framework

Figure 3 Empirical research design.

Findings

The critical aspects in the employee workplace change experience consist of the change in work routine and interaction. The work activities, including meetings, are included in the work routines. The lack in variety of work activities when working from home is caused by the monotonous way of interacting with colleagues, both formally and informally, harming the motivation and productivity of employees. A large part of informal interactions is left behind and not replaced as a result of the working from home restrictions of Covid 19. The negligence of contact and thereby reduced feeling of involvement in the organisation is advantageous since communication between the organisation and the individual help foster the transition of abrupt change.

The individual coping strategies can be divided into two categories: focus on the temporary aspect and looking ahead to the future. Preferences regarding the future workplace are based around the expectation that the abrupt change to working from home will be referred and employees will go back to the office, albeit with the opportunity to work from home. The main reason to come back to the office is interaction with colleagues, followed by concentration and the physical office facilities and identity (figure 4).
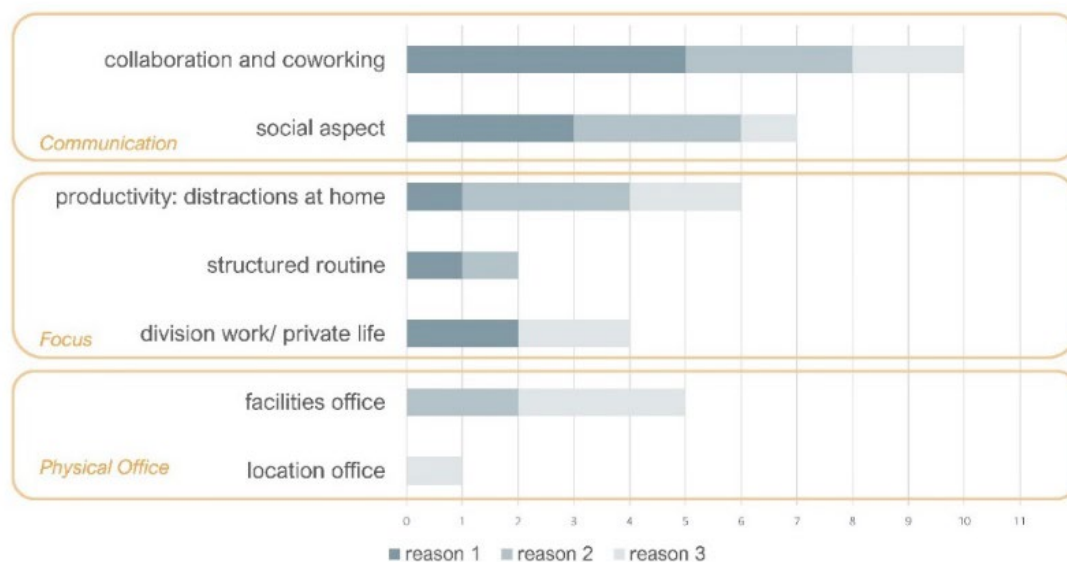

Figure 4 Results on the question of why come to the office.

Figure 5 Factors that influence the abrupt change experience.

Recommendations

The framework of the abrupt change experience has been altered to include factors that influence this abrupt change experience, as can be seen in figure 5. The factors that influence the change experience are both tools that the organisation can use in creating the strategy, as well as aspects that should be accounted for since it can diminish the intended outcome. Based on the research findings, the following implementation plan is made for organisational and facility managers in the corporate sector and recommends how to apply the abrupt change experience in practise.

1. Acquire insight in employee preferences and expectations.
2. Focus on health & well-being.
3. Facilitate interaction in different ways.
4. Incorporate flexibility in the strategy.
5. Communicate transparently and involve employees in the change process.

A strategy on how to deal with abrupt change should incorporate the 5 key-points and align these key-points with the organisational goals. Lastly, the strategy should convey the identity of the organisation, and involving the employees as being part of that organisation. It is beneficial for both the organisation as well as individual employees to align the preferences and expectations with the organisational goals and involve employees in the change process.

Covid-19 provided an abrupt change, that gave the opportunity to study change experiences and what factors contribute to the experience. The research is done from employee perspective. This study on how an experience of abrupt workplace change is created, can contribute to the wider research on gradual change through trends and new ways of working. Covid-19 provided a context in which change occurred quick and profound. For future research, it would be interesting to study the implement ability of the abrupt change experience onto organisational change and new ways of working strategies.

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I. INTRODUCTION

This section treats the research motive and systematic literature review on change management and the workplace. The literature review leads to the problem statement, research aim & objective, research framework and report structure.

1.1 Motive

In December 2019, the first cases of an aerosol virus SARS-CoV-2, better known as Covid or the Corona-virus, were discovered in Wuhan, China (WHO, 2020). Since the first registration of Covid in the Netherlands on February 27, unprecedented measures to reduce the spreading of the virus have been taken by the Dutch government (RIVM, 2020). These measures aimed to halt the spread by (partial) closure of schools, universities, cinemas, restaurants, and the government highly encouraged people not to travel and work from home if possible.

External change – in this case covid-19 – increases the importance of attention to the relation of physical space and people. The change happened in a context where the attention for space-use was already increasing, through technological developments, new ways of working and a generally faster pace of (organisational) change.

Changes in the configuration of Corporate Real Estate, and therefore the workplace of employees, have cultural and emotional impacts on the entire organisation (Mandel et al., 2014). In the case of Covid, the change is abrupt and during the lockdown of spring 2020, absolute. While working from home, both individuals and organisations have to deal with the abrupt change and are forced to reconfigure the work activities, processes and operations. This reconfiguration provides an opportunity to raise fundamental questions as 'Do we even need the office?', 'Why do we need the office?' and 'How do we work?'.

Working from home is already a trend possible through technological developments and knowledge-based environments, as well as flexible office spaces and activity-based working (V. Gibson & Luck, 2006; Harris, 2015). These new developments and trends add up to the performance criteria indicate the complexity in which the work environment needs to be designed and managed (Haynes & Nunnington, 2014). In order to incorporate trends in the changing business environment, organisations need to be "agile" and facilitate connectivity (Harris, 2015). As Van Meel (2011) states, the 'new ways of working' concepts discussed in the last decades and implemented nowadays, are far from new: the concepts derive from the 1970s or earlier. New ways of working through communication and information technologies no longer limit the work environment to the physical office, extending the organisational spheres to other environments (Delbridge & Sallaz, 2015; Haynes & Nunnington, 2014). However, it is more likely the socio-technological context that hinders the implementation of the concepts (van Meel, 2011).

The Covid epidemic suddenly enforces the socio-technological context to incorporate changes and adjust them quickly. The workplace context changed abruptly in a day. The work needs to continue; thus, processes need to adapt quickly as well.

1.2 Systematic literature review

To study changes in the workplace, a systematic literature review has been conducted on the subject of organisational change and the workplace. After excluding papers based on pre-defined selection criteria, 32 papers were included

for analysis. The systematic literature review and analysed papers will be elaborated upon in the theory study of this research.

In the analysed papers, a distinction can be made regarding the starting point of change. In the case of transformations and relocations, adaptations in organisational change and new ways of working can be easier to anticipate and experiences better perceived, but are not always improved (Chilton & Baldry, 1997; Christersson et al., 2017; Duffy et al., 2011; Hongisto et al., 2016; McElroy & Morrow, 2010; Rothe & Heywood, 2015; Smollan & Morrison, 2019; Sundstrom et al., 1982). On the other hand, change in New Ways of Working or organisational change can lead to alterations in the workplace (Gerdenitsch et al., 2017). It is argued that these new ways of working are driven by potential cost savings through space-use efficiency (Lahtinen et al., 2015). Furthermore, in the analysed papers, there is an increasing attention for socio-materiality, the interaction between people and space, in organisational change (Skogland & Hansen, 2017; Valand et al., 2014). Moreover, participation and involvement of employees in the change process could contribute to successful implementation of organisational change (Smollan & Morrison, 2019; van Diermen & Beltman, 2016).

1.3 Problem statement

In the literature, there is an increasing attention on gradual change in the workplace. However, the abrupt change of Covid-19 starts outside of the influence of the organisation and demands both employees and the organisation to quickly adapt to changes, including the contextual change of working from home and changes in work tasks regarding interaction with colleagues and clients outside of the organisation.

If work is done within an organisational structure set in a context of the workplace, what happens if one element is subtracted? What happens to work activities, the way we work and organisational identity if it is removed from its workplace. That is the unexpected opportunity that the Covid epidemic provides. Herein, the elements of the workplace and the organisational change are the most prominent.

From the systematic literature review concerning organisational change and the workplace it can be concluded that there is a gap in knowledge on abrupt change in the workplace and its impact on employees. Moreover, research on the employee perspective and employee experiences is lacking in the research on change in the workplace. As the Covid-19 epidemic forces employees to work from home, the trend and growing demand for new ways of working and a reflection on the way the workplaces are configured is needed. It is essential to understand how the employee experience of abrupt workplace change is created, what influences it and how this can be implemented in workplace strategies in order to provide better workplaces in the future. The Covid-19 epidemic makes a socio-material approach profound, since both the physical environment and the emotional wellbeing of people are affected, and organisational change is enforced from the socio-materiality, instead of organisational demands. The covid-19 epidemic and responses to it present a whole new context where new concepts are not just hindered, but even create a direct demand for re-conceptualizing of 'the way we work'.

1.4 Research aim & objectives

This research builds on the existing knowledge of organisational change and workplace. The research aim is as follows:

Investigate experiences of abrupt change regarding the workplace due to Covid-19 and analyse the individual and organisational factors that help deal with this abrupt change.

The following five objectives operationalise the research aim:

1. Review previous studies on organisational change, the workplace and employee experiences, to develop a conceptual framework to explore abrupt change experiences;

2. Explore the abrupt change experiences caused by Covid-19;

3. Investigate employee preferences and expectation for future workplace use;

4. Analyse individual and organisational factors that influence the abrupt change experience;

5. Analyse the coping strategies of individuals and organisations to deal with abrupt workplace change.

Key concepts of the research

The research is framed in regards to the following key concepts, as shown in figure 6. The model shows the relation between the three key concepts of the research, namely the employees and organisation, and abrupt change intervening both aspects. The workplace is the context in which the abrupt change takes place. The change concerning the workplace is abrupt and external since it is caused by the rapid rise of Covid-19. These concepts are key in order to achieve the research aim and objectives.
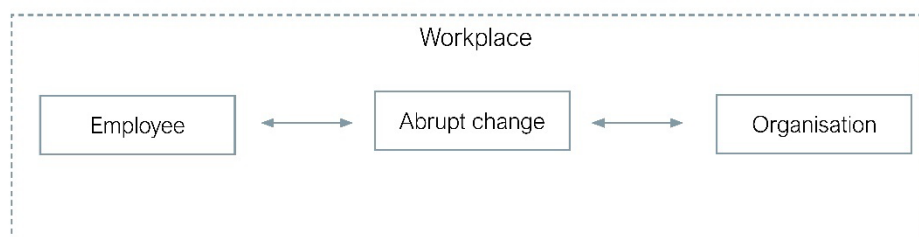

Figure 6 Key concepts of the research

1.5 Relevance

Societal relevance

The government-initiated workplace restrictions due to the covid-19 pandemic affect all global office environments and all office workers, regardless of tenure. The change in workplaces, and thereby a change in the ways of working, brings about new challenges such as routine-changes and distractions from the private home-atmosphere that cannot be put aside and have a direct effect on the emotional wellbeing of all office workers.

Before the covid-19 outbreak, there already was a need for re-conceptualizing the office environments, since there is widespread criticism on the widely implemented open office plans. Insights into the experiences of employees in the workplace, and the way covid-19 influences these experiences, help to design and manage offices that put employees' wellbeing first.

Scientific relevance

The changes caused by the covid-19 crisis correspond with the already ongoing research on the added value of the corporate real estate. This research corresponds with the goal of Corporate Real-Estate that is adding value to the corporate's business through using their Real Estate and the shift of Corporate Real Estate Management from building-orientation to people-orientation (CoreNet Global, 2015; Jylhä et al., 2019, p. 1; Krumm et al., 1998; Lindholm & Leväinen, 2006). Studies on change management have focused on gradual change, caused by new ways of working, transformations and relocations. Nevertheless, the employee experiences, in combination with workplace change, have not been studied at large. This research aims to address the gap in knowledge on abrupt change in combination with employee experiences and the workplace.

Change management and organisational change is a relatively new topic in scientific literature, as well as the socio-material approach to organisational change (Skogland & Hansen, 2017; Valand et al., 2014). This study contributes to the research on organisational change from a socio-material perspective in case of abrupt workplace change.

Dissemination and audiences

This research is aimed at corporate real estate organisations who wish to understand better the relation of employee behaviour and the physical workplace. The research is directed at the employee, placing the employee, and not the organisation, in a central position.

> The research aims to analyse the relation and interplay between employees and the organisation, set in the workplace. Therefore, the research can be used in the domain of Real Estate Organisations and Real Estate Consultants. Organisations can implement the knowledge in their organisation to enhance the outputs of the employees. For consultants, the knowledge researched in this master thesis can help when advising companies with Real estate strategies.

1.6 Research questions

Main research question
Regarding the problem statement, review on previous research, the goal and objectives as discussed in the introduction, the main research question is as follows:

What are is the experience of abrupt change regarding the workplace due to Covid-19 and how do individual and organisational factors help deal with this abrupt change?

Research sub-questions
In order to answer the main question, the following sub-questions are formulated:

1. How can the abrupt change experience regarding the workplace be defined?

Purpose:	Review previous studies on organisational change, the workplace and employee experiences, to develop a conceptual framework to explore abrupt change experiences.
Method:	A literature review

2. What are the employee experiences of abrupt workplace change caused by Covid?

Purpose:	Explore the abrupt change experiences caused by Covid.
Method:	Semi-structured preliminary interviews

3. What are the employee expectations and preferences of future workplace use, after response to Covid-19?

Purpose:	Investigate employee preferences and expectation for future workplace use.
Method:	Single case study through semi-structured interviews

4. What individual and organisational factors influence the abrupt change experience?

Purpose:	Analyse individual and organisational factors that influence the abrupt change experience.
Method:	Preliminary study and single case study analysis

5. What are the coping strategies of individuals and organisations to deal with abrupt workplace change?

Purpose:	Analyse the coping strategies of individuals and organisations to deal with abrupt workplace change.
Method:	Preliminary study and single case study analysis

I. Introduction

Research framework

The relation between the sub-questions of the research in regards to the method are shown in figure 7. Sub-questions 4 and 5 are investigated after analysis of the preliminary interviews and the embedded case study and uses both research methods as input. The methodology of the research are summarized in table 1. The research goals are linked with the question, research methods and expected data output.
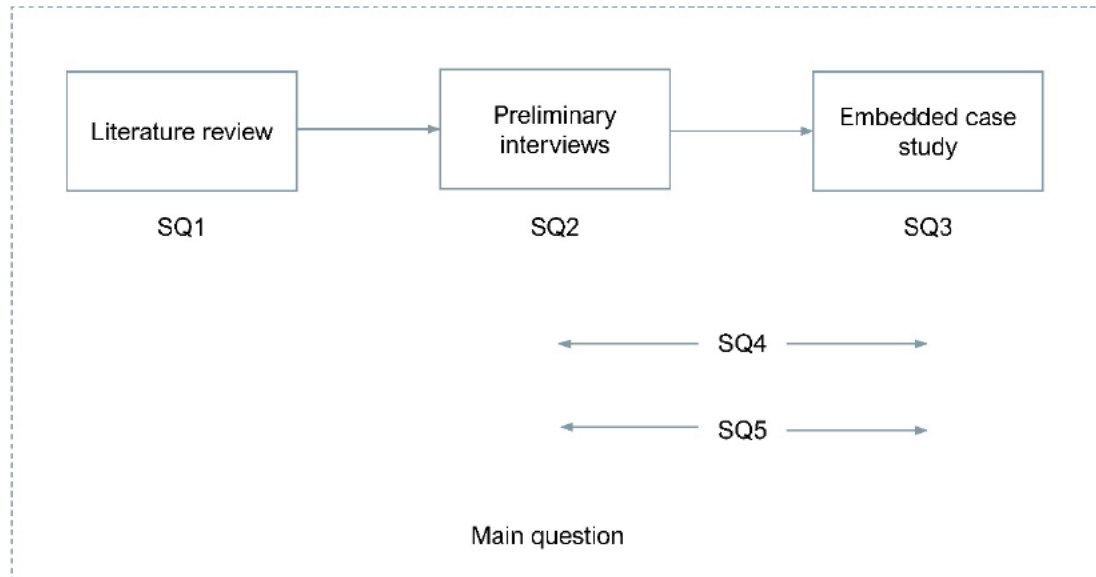
Figure 7 Relation between the research-elements in regards to the research method

Table 1 Research framework

Element	Question	Objective	Research type	data collection	data output
SQ1	How can the abrupt change experience regarding the workplace be defined?	Review previous studies on organisational change, the workplace and employee experiences, to develop a conceptual framework to explore abrupt change experiences;	Desk research	Literature review	A theoretical framework that will guide the analysis of the empirical research
SQ2	What are the employee experiences of abrupt workplace change caused by Covid-19?	Explore the abrupt change experiences caused by Covid-19;	Exploratory empirical research	Preliminary study	Comprehension of employee workplace experiences during the Covid-19 workplace changes
SQ3	What are the employee expectations and preferences of future workplace use, after response to Covid-19?	Investigate employee preferences and expectation for future workplace use;	Empirical case study research	Semi-structured interviews in embedded case-study research	Expectations and preferences of the workplace after response to Covid, within the case study environment

SQ4	What individual and organisational factors influence the abrupt change experience?	Analyse individual and organisational factors that influence the abrupt change experience;	Empirical research	Preliminary study and case study analysis	description of factors that influence the employee workplace experience
SQ5	What are the coping strategies of individuals and organisations to deal with abrupt workplace change?	Analyse the coping strategies of individuals and organisations to deal with abrupt workplace change.	Empirical research	Preliminary study and case study analysis	Description of coping strategies that are derived from the case study and exploratory interviews
MQ	What are is the experience of abrupt change regarding the workplace due to Covid-19 and how do individual and organisational factors help deal with this abrupt change?	*Investigate experiences of abrupt change regarding the workplace due to Covid-19 and analyse the individual and organisational factors that help deal with this abrupt change.*	Synthesis & validation	Synthesis & validation	Conclusion, discussion & reflection

1.7 Structure of the thesis

The thesis is divided into sections. The structure of the thesis is as follows: After this first introductory section, the second section presents the literature study, which consists of the systematic literature review and a theory study on organisational change, the workplace and employee experiences. The section ends with the construction of a theoretical framework.

The third section covers the empirical research methods, including the research strategy and research tactics used to collect and analyse the data.

Section four shows the empirical research results from the preliminary study and case-study interviews. The fifth section discusses the findings and implementation recommendations; section 6 provides the conclusion and discussion. Finally, chapter 7 reflects on the thesis in regards to the master programme and the research process.

II. LITERATURE STUDY

1. Systematic literature review

A systematic literature review is conducted to come to a comprehensive problem statement on change management in corporate office workplaces. As developed in medicinal sciences, a systematic literature review is 'pragmatic' management research style: the transparent and thorough method reviews literature and accumulates and evaluates knowledge from different types of studies (Tranfield et al., 2003). The systematic literature review focuses on the critical terms of change management in combination with the physical place of office work. The aim of this systematic literature review is two-fold:

(1) Provide an overview of what has been studied thoroughly in the field of workplace change and its relation with actors using the workplace.

(2) Identify a knowledge gap that would be valuable to bridge.

The following chapter provides the overview of the systematic literature review, thereby addressing the first research aim. The second aim, the gap in knowledge, is elaborated upon in the introduction and forms the basis of the problem statement.

The systematic literature review focuses on the combination of change – both external (environmental) and internal (organisational) – and workplaces. The workplace is defined as the physical place where office work is conducted. This can be but is not limited to, an office environment. The type of work in the systematic literature review is general office work. Therefore other workplaces than an office environment are excluded from the search.

1.1 Literature study method

Search strategy
The search engines used are the databases of Scopus and Web of Science. Several test searches were run in February-April 2020 to find a complete search for the systematic literature review. The last search is run on May 6, 2020.
Both change management and corporate office workplaces have different phrasing that is used in the literature. The search terms included synonyms to obtain a complete set of papers from the databases, from the perspective of change as well as the workplaces (figure 8). Both American and British spelling is used for the key terms.
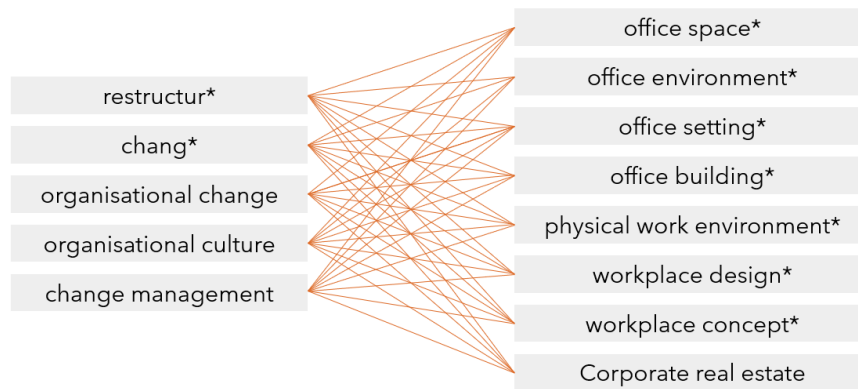
Figure 8 Search terms of the systematic literature review

The initial search, immediately limited to journal articles in the English languages, yielded 3 861 hits in Scopus and 2 575 articles in Web of Science. A lot of the papers are reviewed manually to exclude workplaces such as hospitals and universities.
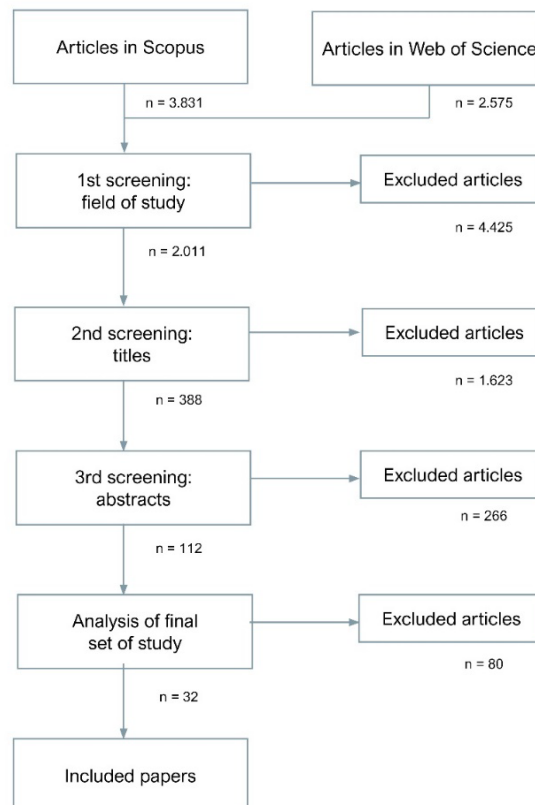
Figure 9 Screening process of the systematic literature search.

The papers are screened in different phases. The exclusion of papers is based on the criteria mentioned in table 2 and shown in figure 9. Initially, both databases are screened based on fields of study and duplicates removed. Then, the titles of the papers are scanned. The third phase included the review of abstracts. In the fourth phase, the full papers are screened.

Table 2 Criteria for inclusion and exclusion of papers

Theme	Inclusion criteria	Exclusion criteria
Context	Workplace situated in the office environment	Workplace environments outside the office
	There is an abrupt change in the organisation, either organisational or in the physical workplace	There is no abrupt change within the organisation
Research type	Empirical studies	Papers other than empirical studies, such as literature studies, theoretical papers, reviews, position papers, etc.
Language	English	Languages other than English
Methods	A clear description of methods and measures	Data-collection method not transparent
Subject	The relation of the workplace and employees are considered, implicitly or explicitly	The impact or experiences of employees are not mentioned or implied
Target group	Subjects are knowledge-workers, and the sample is not limited to a specific societal group.	Subjects are no knowledge worker and/or are limited to a specific societal group such as the elderly and/or special-needs groups

1.2 Findings

The approach to the systematic literature review used in this research is finding intersections, as described by Ridley (2008, p. 84). After the paper selection, 32 papers remained for the final sample of studies for the review. The included papers are from different disciplines of studies. Out of the 32 studies, 21 papers were published since 2015, indicating that the research-area of change management and the effects on the workplace is an upcoming research area.

Strategic alignment

In order to achieve strategic alignment within the company organisation and the office, the social and physical structures need to be examined (Skogland, 2017). There is a constant need for realignment of the workplace and the organisation, in order to add value to the organisation.

Warren et al. (2007) argue that there is a mismatch with the potential of the workplace strategies CRE managers can accomplish and what the organisation's leadership sees fit. Therefore, the workplace is not optimally suited for the NWOW. Jylhä et al. (2019) argue that merely the delivery of new workplaces is not enough to add value to an organisation. However, a change in employee behaviour and workplace practices is required. Therefore, the workplace and change are highly connected.

The starting point of change

A change affecting the interrelation between work & workplaces can be divided into external (environmental) changes and internal (organisational) changes. Analysis of the papers reveals that there is a distinction between the starting point of the change. Change in the workplace can derive on the one hand from changing

work activities or management style, after that changing the physical space. On the other hand, the change can start with the physical space, and after that, instigate or aspire organisational change. Therefore, there are two main focus points of change in the included papers: change the workplace as a result of organisational changes (1) and obtain organisational change through workplace changes (2). A summary of the systematic literature review findings are given in this chapter. For a complete overview of the analysed papers, please look at Appendix A.

New ways of working
First, the papers discuss a change in the workplace as a result of organisational changes. In the papers analysed for this research, this included New Ways of Working, and the analysed papers are included in appendix A.
Workplace change derives from external changes, cost reduction & New ways of working (NWOW) (Gerdenitsch et al., 2017). No description of external changes is found in the analysed papers. Gerdenitsch et al. (2017) describe the concept of New Ways of Working as to include activity-based working (ABW), flexible working and activity-based flexible offices (A-FO) 's, which are activity-based workspaces in which an open-plan layout implements a desk-sharing principle. Through this NWOW, the workplace is adapted. It is argued that these new ways of working are driven by potential cost savings through space-use efficiency (Lahtinen et al., 2015). However, more attention is being paid to the perception of demand-supply fit of the user (Gerdenitsch et al., 2017).

Obtaining organisational change through workplace changes can start by either relocation (7 out of 23) or transformation (16 out of 23).

Relocation
The demand of the workplace has changed and needs to adapt in order to align the organisation's activities. Relocation can differ as a strategic process to logistical move, depending on the aspired or perceived level of change (Rothe & Heywood, 2015). In this case, as well as the transformations, adaptations can be easier to anticipate and experiences better perceived (Christersson et al., 2017; Smollan & Morrison, 2019), but are not always improved (Sundstrom et al., 1982).

Transformation
On the other hand, the workplace needs to be changed due to organisational change or new ways of working. (Gerdenitsch et al., 2017) describe the concept of New Ways of Working as to include activity-based working (ABW), flexible working and activity-based flexible offices (A-FO) 's, which are activity-based workspaces in which an open-plan layout implements a desk-sharing principle. Through this NWOW, the workplace is adapted. It is argued that these new ways of working are driven by potential cost savings through space-use efficiency (Lahtinen et al., 2015). Duffy, Graig and Gillen (2011) even go as far as to argue that in the knowledge economy, innovation will be hindered by not deploying innovative space design. Using new space concepts can kickstart new ways of working and new communication processes (Duffy et al., 2011).

Focus on the change process
In order to successfully live up to the expectations of workplace change, communication and organisational culture are both highly relevant as causes and outcomes of the process of change (Kim et al., 2017; Lahtinen et al., 2015; Smollan & Morrison, 2019). According to Van Diermen & Beltman (2016), the following critical success factors in the change process need to be taken into account: Inform and inspire employees through internal communication, assign a manager as a workplace change leader, and have face-to-face communication.

Contrary to considerable evidence that open-office spaces are disliked, positive perception of the new office space, including improvement in organisational culture, can be achieved through good communication and a participative program (Kim et al., 2017; Smollan & Morrison, 2019). Skogland & Hansen (2017) argue that apart from communication and participation, a focus on the link between the organisational aspects and physical office space in change processes benefits on two levels. First, it enhances the intended outcome. Secondly, it also enhances the process of employee meaning-making and improves organisations change processes. Organisational culture and place-making are connected since the employee experience of the change are harmful if the organisational culture and habits do not have a place in the newly designed space (Skogland & Hansen, 2017). Besides, Lindahl (2004) argues that a continuous design process needs to pay attention to the relation of the workplace and the organisation. The design attitude allows the end-user to participate in the process, thereby reducing resistance and improving value to shape the organisation (Valand et al., 2014).

Näsänen & Vanharta (2017) argue that although we have a view on effects of change on employee behaviour (McElroy & Morrow, 2010), research on how the incoherent processes of transformations take shape is lacking.

Who's perspective?
The research on change management, in combination with workplaces, mainly focuses on the perspective on the organisation and managers. This can be seen in the change processes, where managers make the design for organisational change of the organisation. This is also the case when the strategic alignment of the work and the workplace are discussed. Lindahl (2004), Langford & Haynes (2015) and Van Diermen & Beltman (2016) discuss the alignment through workplace planning as a top-down approach, where managers have a professional role and lead the change. In the case-study of Smollan & Morrison (Smollan & Morrison, 2019), the new office space was perceived positively after the employees were involved in the change-making process, communication and change in organisational culture. Nevertheless, the authors state that more studies in the impact on well-being and behaviour of employees are needed.

Furthermore, Näsänen and Vanharanta (2017) argue that merely taking 'employees' as a case study is not enough, since there are large differences with regards to different groups within the organisation, in the evaluation of immaterial aspects related to workplace change. The relation between the individual employees and the organisation needs to be taken into account.

2 Theory study

Following the systematic literature review, a theory study is done to provide the knowledge base on which the empirical research is based. The theory study is used to gain a deeper understanding of the physical and perceived environment of the research setting and helps shape the qualitative research that follows, with the help of the conceptual framework derived from the literature review.

The theory study is set up to answer the first sub-question of the research, and to get insight into the theory of organisational change, the physical workplace and employee experiences, as presented in the introduction.

2.1 Organisational change

Leavitt (1965) argues that change does not occur in isolation and identifies four interdependent variables of which the change can impact one or more other variables. These variables include the task, organisation structure, people and technology. When examining organisational change, the effects of change on one variable has an impact on other variables. Therefore the interrelatedness of the different variables is essential to keep in mind when studying organisational change.

In this research, the task consists of work activities. The structure is the organisation, the people are the individual employees, and the technology includes technological developments and New Ways of Working. In the organisational change caused by Covid-19, Covid is external. The model is shown in figure 10.
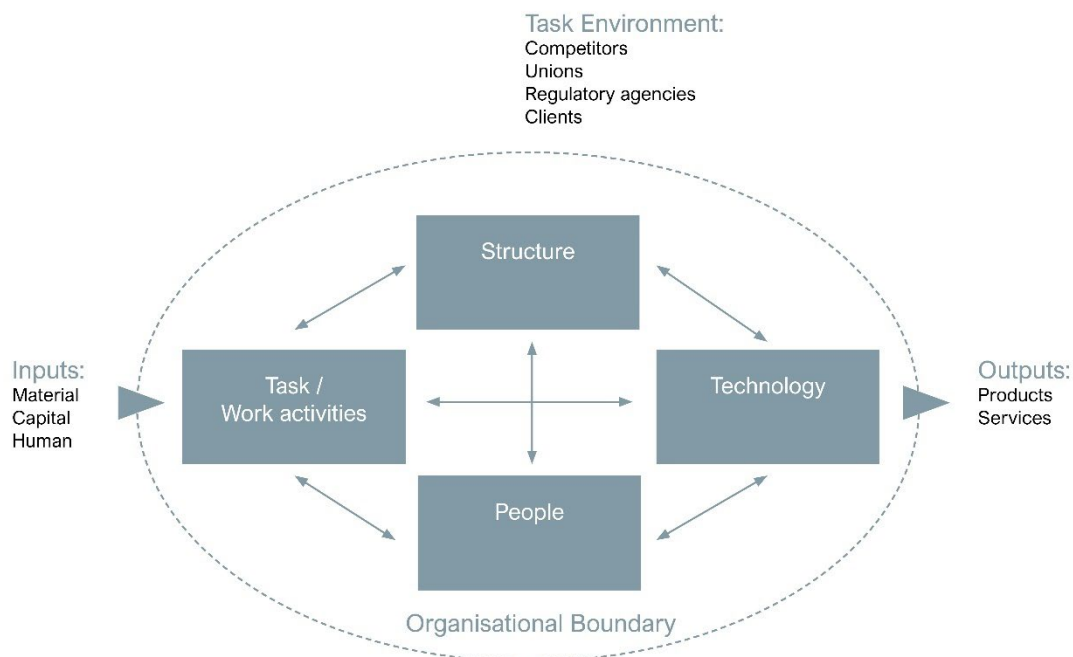
Figure 10 Variables of organisational change. Based on Leavitt (1965)

In change processes, the involvement of different parties is essential, since contradicting issues come up and challenge each other, which can create tensions and burden the change process (Näsänen & Vanharanta, 2017).

Based on the model by Leavitt (1965), organisational change is defined as a change in the operationalisation, structure, technology & ways of working and the effects of that change on the organisation or the people within the organisation. In the case of Covid and this research, the change is caused by the Covid restrictions on office environments and the measurements to work from home and social distance, as insinuated by the Dutch government.

2.2 Physical workplace

Interactions with the context
In the case of this research, the traditional physical workplace is the office of the organisation, that is the organisations' real estate. However, due to technological developments, a 'virtual workplace' develops, making it possible to shift from the office as the primary location to working from home or third places (Harris, 2015). To better understand the context of organisational change and employees, the following paragraph focuses on the workplace and workplace management.

From the organisation's viewpoint, the workplace adds value when it is contributing to organisational objectives (De Jonge et al., 2009, p. 17). The enhancement and boost of organisational objectives using real estate stress the importance of the relationship between people and real estate in the definition of a real estate strategy. In designing a real estate strategy, there is an interaction between the performances, actors involved and the strategy (Remøy & Wamelink, 2019). The one affects and is affected by the other elements, as is shown in figure 11.

Figure 11 Real estate strategy relations (Remøy & Wamelink, 2019) .

In this research, the real estate strategy is the accommodation strategy of the office workplace from the organisational perspective. The actors are the stakeholders that are affected by the strategy, in this case the office employees and users. The performance is the perception of the strategy by its actors, that is the experience.

Corporate real estate management.

The management of the office workplace, that is the organisational real estate, is done through Corporate Real Estate Management (CREM). CREM manages the real estate portfolio of organisations who both occupy and own their real estate and balances the real estate resources (costs) and performance of the organisation concerning those resources (Den Heijer, 2011). Corporate Real Estate Management aims to add value to the corporation's business by using of Real Estate, where its supply corresponds to the user-demands (CoreNet Global, 2015; Lindholm & Leväinen, 2006).

The field of Corporate Real Estate Management (CREM) is relatively new and continuously developing (V. Gibson & Luck, 2006). The transaction-based building orientation in which the real estate accommodates the organisations' tasks and activities at minimum costs, is challenged to change towards people-orientation, in which the real estate adds value to the business (Krumm, 2001; Krumm et al., 1998). According to Gibson and Luck (V. Gibson & Luck, 2006), CREM is developed in the 1980s better to manage the corporate real estate resources in large organisations and to attain their maximum value potential. In the 1990s, the link between the organisations' strategy and the real estate strategy began to shape as performance measurement systems (PMS) were developed. As of the beginning of the 21st century, the connection between the real estate requirements and the organisations experience recognized the need for more flexible, responsive corporate real estate strategies (V. Gibson & Luck, 2006). Real estate became recognized as one of the resource areas that support and derive from the organisation's strategy, next to human resources, finance and information technology (Lindholm & Gibler, 2005). CREM became a separate management field, where it is urged to develop organisational strategies that are in balance with the real estate strategies, to achieve the best value-addition to the business (Lindholm & Leväinen, 2006).

Workplace trends and activities

Changes in corporate real estate management derive from developments and trends that are challenging the way people work (Haynes & Nunnington, 2014). Trends are included in the development of performance measurements systems (PMS), to measure the efficiency and effectiveness of the actions and the resources needed to support the undertaken activities (Riratanaphong et al., 2012). Riratanaphong, van der Voordt and Sarasoja (2012) followed Van Ree (2002) by identifying the trends of performance criteria in organisations, see table 3.

Table 3 Trends in performance criteria of corporate real estate (Riratanaphong et al., 2012).

Till 1950s	1960s	1970s	1980s	1990s	2000s
Effectiveness	Effectiveness	Effectiveness	Effectiveness	Effectiveness	Effectiveness
	Efficiency	Efficiency	Efficiency	Efficiency	Efficiency
		Productivity	Productivity	Productivity	Productivity
			Flexibility	Flexibility	Flexibility
				Creativity	Creativity
					Sustainability

The perspective on how the real estate adds value to the organisation has changed over time. According to the research of De Vries (2007), real estate has potential to add value to the organisation in ten ways, categorized in three objectives: (1) productivity, (2) profitability (finance) and (3) comparative advantage (distinctiveness) (figure 12). The different ways to contribute value are related to each other, in the way that an increase in one value can stimulate another value to increase as well. These values distinguished by De Vries are not to be used as an exclusive list, yet can help to identify the objectives when analysing real estate interventions (De Jonge et al., 2009).

	Objectives		
	Productivity	Profitability	Distinctiveness
Increase productivity			x
Supporting image			x
Enhancing flexibility		x	
Improving culture			x
Stimulating innovation	x		
Increasing satisfaction	x		
Enhancing synergy	x		
Reducing costs		x	
Controlling risks		x	
Expanding funding possibilities		x	

Figure 12 Ways to add value to the organisation, with the corresponding objectives (adapted from De Vries, 2007)

The objectives as described by De Vries (2007) correspond with the aims for effectiveness, efficiency and productivity, as shown in figure 12.

More recently, the attention has shifted away from a main focus on profit and effectiveness. After sustainability in the 2000s, two main trends arose as drivers for change in organisations: First, there is increasing attention for healthy offices. According to the National Human Activity Pattern Survey conducted by Klepeis, Nelson, Ott, Robinson, Tsang and Switzer (2001), 90% of the time is spent indoors. The demand for qualitative indoor environments is rising, since human wellbeing and health are next to sustainability, the rising key drivers of real estate value (PWC & the Urban Land Institute, 2016). The WELL building certificate is developed in 2014 as a quality standard of workplace-related factors that contribute to health or

wellbeing inside the environment (DGMR & BBA Binnenmilieu, 2017; IWBI, 2020). The WELL-certificate is attributed to a building when the environment meets the performance-based requirements, to pursue a healthy and happy living environment (IWBI, 2020).

Secondly, new technologies and wireless connections make activity-based working (ABW), non-territorial working and flexible working more prominent New Ways Of Working (NWOW) – methods, aimed to stimulate employee productivity by aiding in tasks and activities (van Meel, 2015). Activity-based working is based on flexibility in the workplace configuration, existing of multiple possible flexible workplaces based on activity-type and preference of the employee (Appel-Meulenbroek & Janssen, 2011; Babapour, 2019). Implementation of activity-based flexible offices (AFOs) is driven by the aim to reduce occupancy costs as well as achieving strategic value through productivity and flexibility increases (Babapour, 2019; Lahtinen et al., 2015; Riratanaphong et al., 2012).

2.3 Employee experience

Space vs Place
The workplace is more than a physical environment. The physical environment is designed according to the need for activities and interactions (Harrison, n.d.). Employees experience the workplace since the physical environment has the possibility to evoke meaning out of the space. Gibson (1986) described this as the theory of 'affordances', in which space is not perceived as neutral, but as opportunities to enhance possibilities for actions or meaning. Spaces evoke responses, and people use these responses to act upon it.

Bourdieu (1990) describes the link between the physical world and a person's 'being' and social construct as the concept of '*Habitus'* or practical sense. Habitus is a system of dispositions that is developed *"through processes of socialisation and determines a wide range of dispositions that shape individuals in a given society"* (Navarro, 2006, p. 16). Therefore, habitus can be described as a cloak that wraps around the identity of an individual, enhancing meaning to physical events.

Extracting meaning from the physical environment and social events is also shown in the distinction between space and place. *Space* is referred to as the three-dimensional environment, the structure of 'the real world', while *place* holds a deeper meaning and includes emotional and sentimental attachments (Chow & Healey, 2008; Harrison, n.d.; Lentini & Decortis, 2010). Lefebvre (1991, p. 26) describes social space as being a social product, that is the setting of everyday practices.

Lived Experiences
From the perspective of people, in this master thesis, the employees, the lived experiences of the social spaces are elaborated upon. The concept of 'lived experiences' is linked to the science of Phenomenology, as founded by Husserl (Barnacle, 2004). Phenomenology studies the meaning of lived experiences of a phenomenon or concept for a group of individuals, aiming to clarify situations, meanings and experiences of daily life that happen typically without conscious awareness in order to describe the essence of the experiences (Creswell, 2007, p.

57/58; Seamon, 2000; van Manen, 2017). The phenomenological approach is further described in the methodology chapter of this master thesis.

The word 'Experience' in the English language does not have a direct equivalent in other languages: it refers either to subjective or objective events (Paley, 2014; Wierzbicka, 2010). In the context of Heidegger's theory, when the experience revers to the objective event, this is *Erfahrung,* while subjective experiences are expressed as *Erlebnis* (Inwood 1999, as cited in Paley, 2014). Within this theory, an example of an objective event is the objective event of missing the train, while the subjective perception of the experience is the emotions that come up as a result of the objective event. The theory of Heidegger is now distinct in the difference between experiences and perceptions. The experience is the objective event, while the perception is the interpretation, reaction and emotion as triggered by the experience.

'Lived experiences' are concerned with the latter, reflecting on events in the physical environment and enhancing meaning from it. The difficult part of lived experiences is not to objectify, but to "*understand a phenomenon as a living moment in its living meaningfulness*" (van Manen, 2017, p. 4). Therefore, both the phenomenon that creates experiences and the perceptions that create meaning are relevant for the research. Thus, the experience is the objective event, and the 'lived experience' is the perception of the person involved in the experience. Therefore, lived experiences are referred to in this thesis as the perceptions.

2.4 Workplace experiences

After analysis of the three main concepts, the following paragraph looks into previous studies on employee experiences and the workplace, what contributes to a well-performing workplace and the first insights in to the change of Covid-19 on the workplace.

Workplace satisfaction

Various companies do research on the demands and experiences of employees in the office environment. Every two years, the research department of Savills investigates 'what workers want'; what do employees consider important in the workplace. A survey, distributed in 11 European countries among 11.000 office workers is conducted on the physical aspects of the workplace (Savills, 2019). The research on office experience can be used in the competitive business environment where attracting and retaining talent, the 'war on talent', is a growing challenge. When asked for factors that are taken into account when deciding to join a company or staying at the current employer, 69% of the respondents consider the workplace as the most crucial factor. In comparison, colleagues (11%), the manager (13%) and other (7%) aspects are less considered (Savills, 2019). The study subdivides the workplace in the office itself, the length of commute and location. These categories are then subdivided into the elements that, when combined, shape the quality of the workplace.

The research combination of the satisfaction shortcoming of the workplace aspects concerning the degree of importance plus how the respondents adhere to the aspects determines the top 15 aspects shown in figure 13. The top 11 of the aspects related to the office space. Element number 14, the length of commute, is

perceived as essential and at present satisfactory in the Netherlands (81% of respondents).
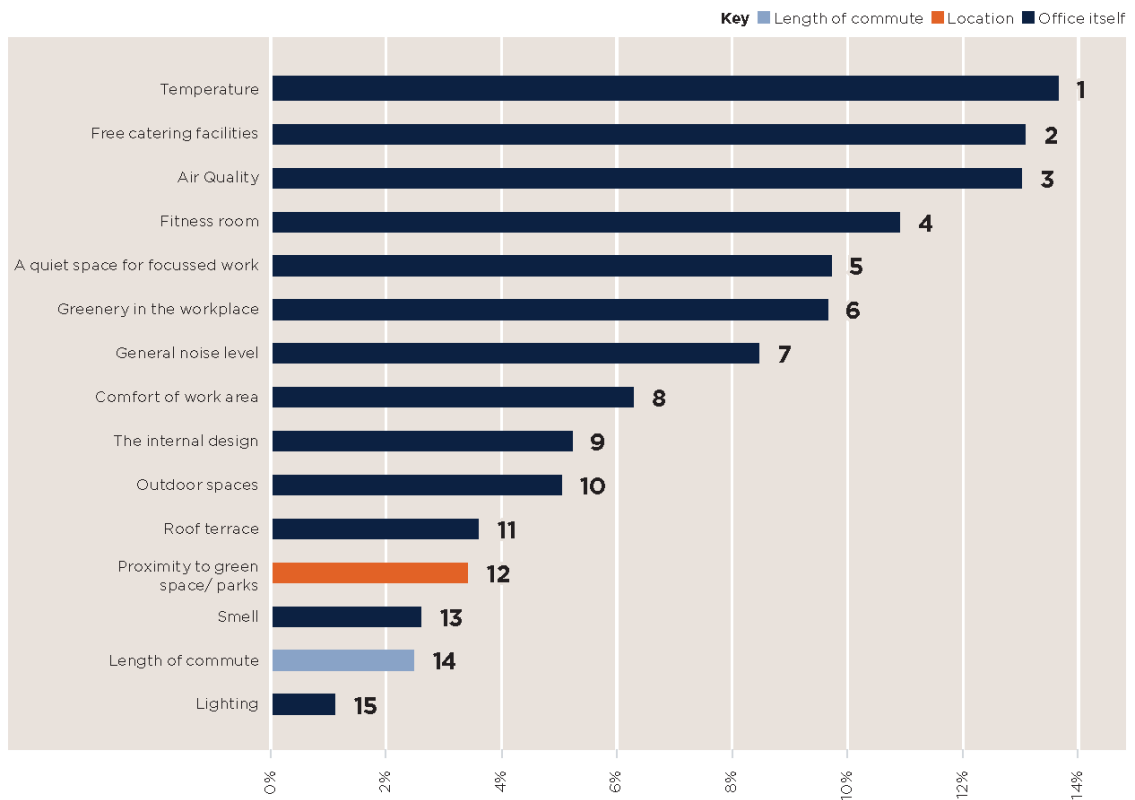
Figure 13 Findings of key elements based on inconsistency in satisfaction and importance (Savills, 2019).

Savills zoomed in on the 'what workers want' research to focus on the elements that include working from home (Savills world research, 2020). From this research, the most important aspects that the respondents valued the most in the workplace are extracted and shown in figure 14. The dark blue elements are related to transportation to the office place and are therefore not relevant in a situation where working from home is the norm.
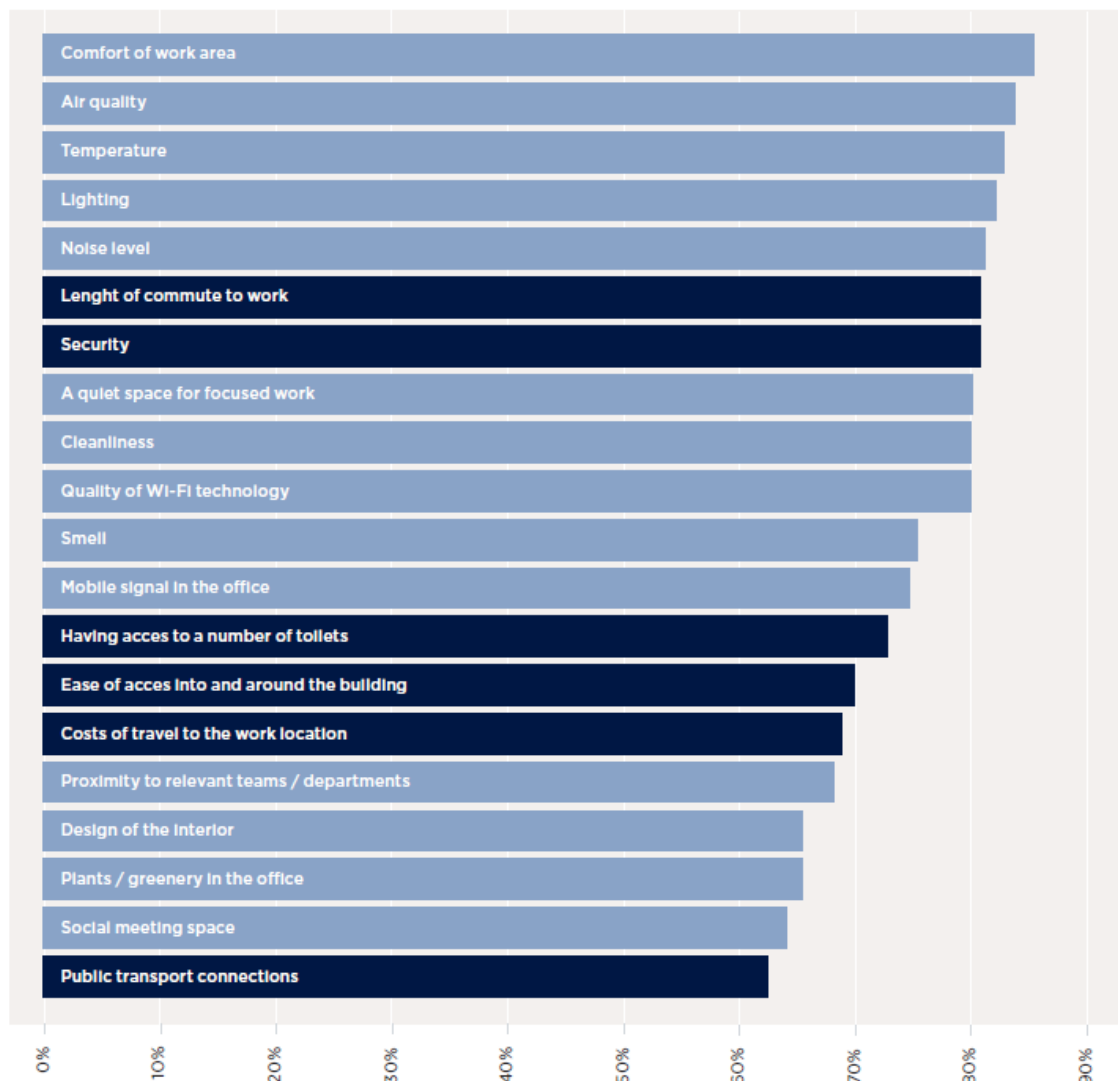
Figure 14 Most important aspects that form the ideal workplace, as researched by Savills (Savills world research, 2020).

Leesman is a company specialized in surveys on the employee experience in workplaces. Their business model is set-up through the benchmarking of the results of a company with their database of over 700.000 employees with the Leesman index. Leesman measures Employee Workplace Experience (EwX). The assessment of the workplace experience focuses on the Activities, Impact and Features (Leesman, 2020a). The Activities and Impact scores from the survey form a standardised performance on a 0-100 scale, the Leesman index (Lmi). The average Lmi (data at 31-12-2019) is 63.1, with workplaces that score higher than 70 are high performing workplaces (Leesman, 2020a).

According to Leesman (2018), the experience of the employees are subjective, yet this is not a problem: What is important to the employee is their experience, which is their perception of reality. Therefore, the organisation should focus on the employees' perception of reality, instead of reality, as well. It is the perception that matters.

Not only the physical workplace contributes to the employee's perception; Process, Behaviours, Needs & preferences, Organisational structure and dynamics,

expectations and external influences impact the employee workplace experience as well.

Figure 15 The Leesman Workplace Experience Framework (Leesman, 2018).

Furthermore, Leesman (2019) states that a well-performing workplace needs to support the three sentiment clusters 'Doing, Seeing and Feeling' in which doing represents 'getting things done', seeing the image and sustainability, and feeling the pride and culture. The workplace impact measures are based on the activities, service features and physical features, to which the sentiment clusters are acknowledged. Leesman calls activities and features that have all three sentiment clusters' super drivers', which are the most substantial workplace impact elements (figure 15).
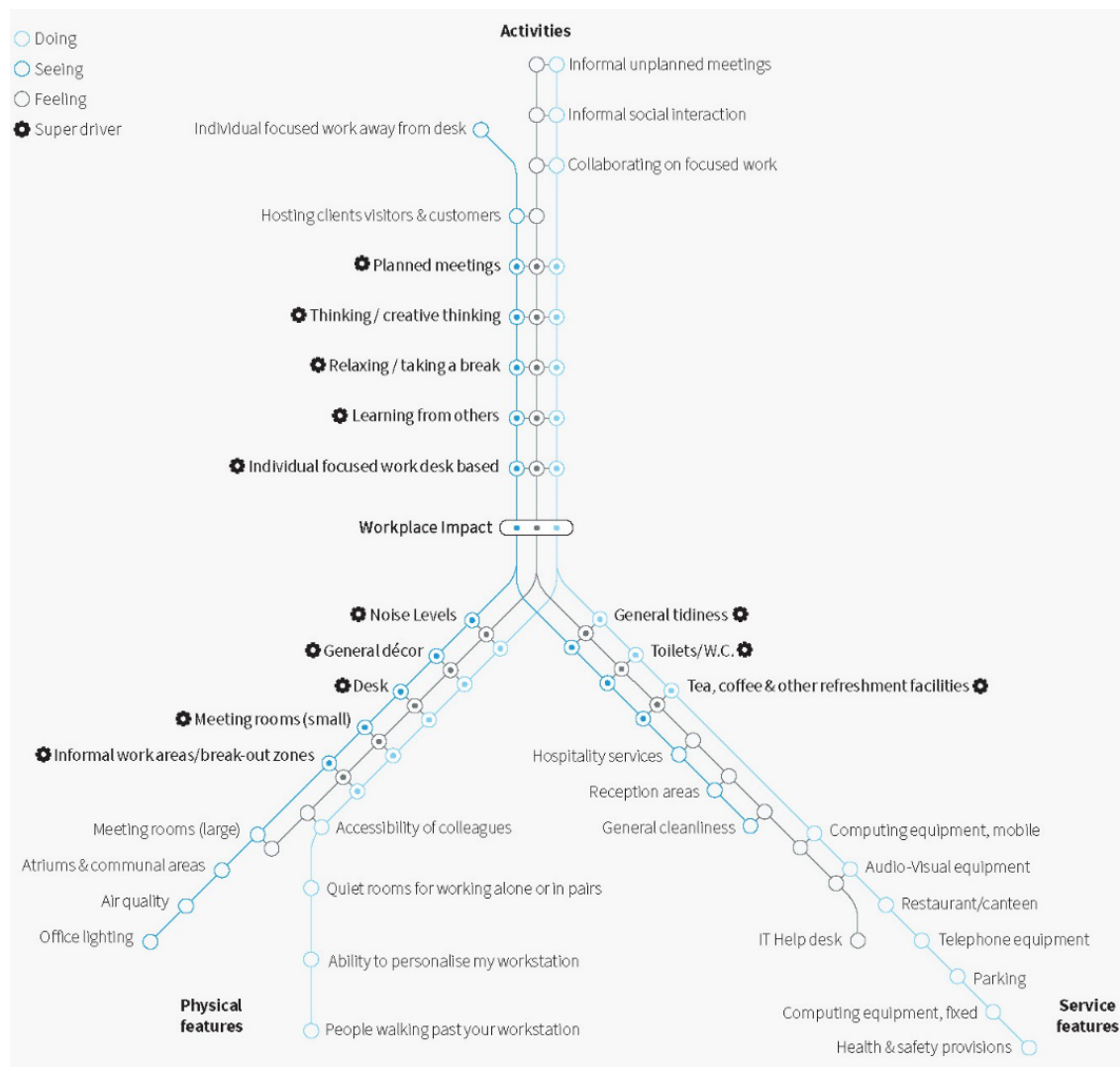
Figure 16 The employee experience journey show the activities and features that drive the workplace impact (Leesman, 2019).

The large database provides insights into the aspects that contribute to a well-performing workplace Lmi. Data from the Lmi database dated at 2019 show that the size, shape, layout or density of the space are not constraining the Lmi-score, yet the advantageous and well-attributed use of space providing the employee demands are ingredients for a well-performing workplace. Regarding designated or flexible workplaces: the majority of highest-scoring workplaces in the Leesman database have incorporated flexibility in their workplace strategy, ranging from fully flexible (34%) – predominantly flexible (34%) – predominantly designated (19%) to fully designated (13%). The flexible and designated workplaces show different patterns when looking at unique activities and features, as shown in figure 16, yet the results are not in favour of one type of flexibility strategy. The Leesman (Leesman, 2020a)report concludes that high performing workplaces understand the employees needs with clarity and are able to implement the key activities and features to the preferences of their employees.

Covid-19 experiences
During the time of the research, with the Covid-measurements set in place, the Dutch government urged employees to work from home as much as possible. Before 2020, 39% of employees had the opportunity to work from home, and only 14% of employees worked from home on a structural basis (Savills world research, 2020).

In a webinar, Leesman presented the first finding of the employee experience of working from home during Covid. The emphasis of the survey is on the means to be able to work productively, and on the experiences of the employees (Leesman, 2020b). However, the perceptive element is lacking. For example, when discussing the impact on the organisation, the accessibility to software and information, and possibilities for knowledge-sharing are analysed, but the perceptions of employees are not discussed.

Research conducted by Tilburg University and Veldhoven company analysed the effects of working from home in the first weeks of the lockdown (Tilburg University, 2020). Veldhoven and van Gelder (2020) state that the experience of working from home suits no universal approach, but must be adapted to individual needs. Furthermore, on average, there are more advantages to working from home than experienced disadvantages, both on the stern (productivity) and soft (well-being plane).

The approach to not see the Covid-situation as a crisis but an unwanted experiment in which many people see the advantages. However, there are also disadvantages to working from home. In the policy-making of working from home, the focus on the elimination of these disadvantages is important. The three main disadvantages brought forward by this study in the Netherlands are the amount of virtual work and little variety in daily activities (1), the disappearance of the meaningful content of the work, i.e. the work content or quality of work relationships (2) and the lack of the right means and facilities to be able to conduct the work correctly (3). (Veldhoven & Gelder, 2020)

2.5 Framework of abrupt change experience
The key elements presented in the introduction, as well as the findings from the literature review, make up the theoretical framework of the research. This framework is depicted in figure 17.
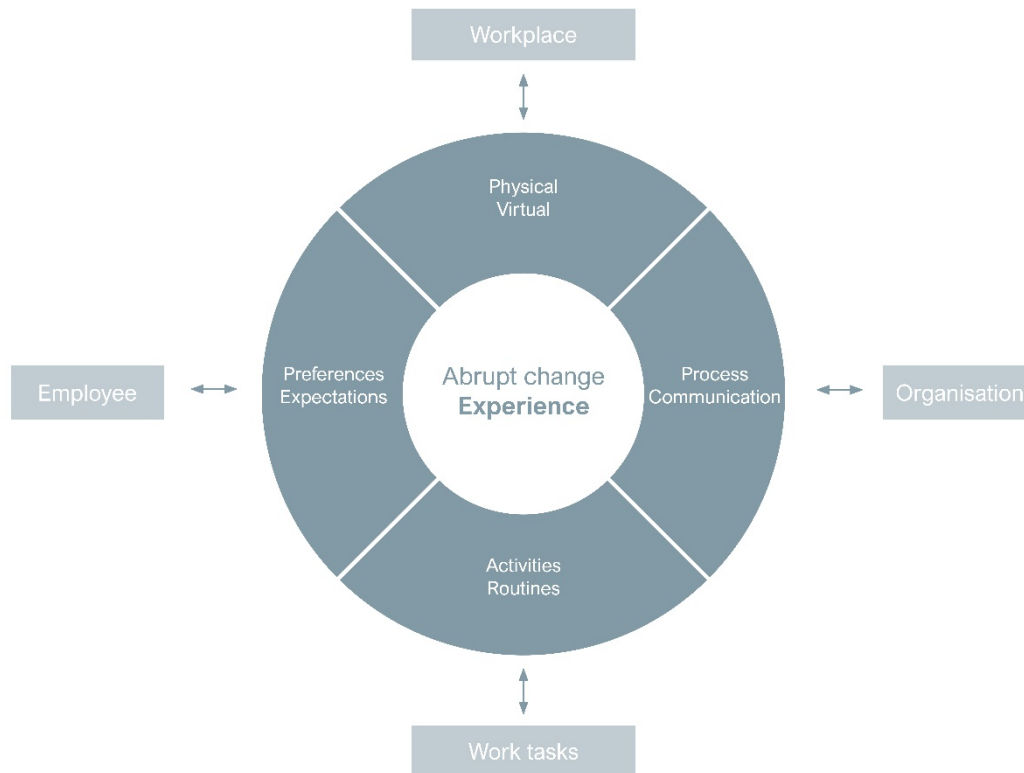
Figure 17 Theoretical framework

The image provides a framework of what elements build up the abrupt change experience. Employee and organisation provide input into the experiences. Work tasks and the workplace are the context in which the experience takes place. Therefore, the four aspects influence the elements in the circle.

Individuals as well as the organisation provide input for the abrupt change experience. An individual employee has unique preferences and expectations. The organisation as a collective of individuals and the entity that makes up the managerial organisation, sets up policies and strategies, influences the abrupt change experience through process guidelines and policies, and communication.

The workplace as well as the work constitutes the contexts where the abrupt change experience takes place. Regarding the work tasks, this includes work activities, for example arranging meetings and writing reports, as well as work routines. The workplace is both the virtual environment where work is shared and people interact, and the physical workplace, both the office, home and third locations.
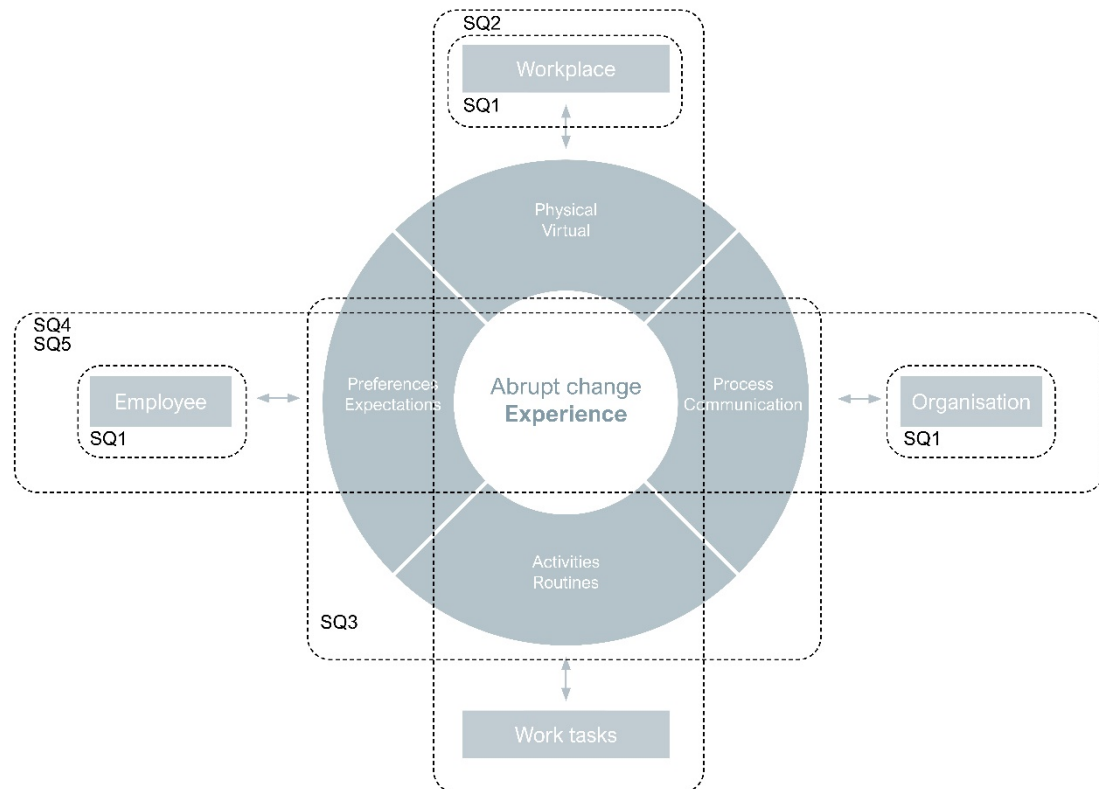
Figure 18 Research approach in relation to the theoretical framework.

The theoretical framework guides the empirical research. The research sub-questions, as described in the introduction, correspond with aspects from the theoretical framework. To provide clarity for the structure of the empirical research, the research approach in relation to the theoretical framework is shown in figure 18. The research goals, corresponding with the sub-questions as shown in the figure, are repeated below:

1. Review previous studies on organisational change, the workplace and employee experiences, to develop a conceptual framework to explore abrupt change experiences;

2. Explore the abrupt change experiences caused by Covid-19;

3. Investigate employee preferences and expectation for future workplace use;

4. Analyse individual and organisational factors that influence the abrupt change experience;

5. Analyse the coping strategies of individuals and organisations to deal with abrupt workplace change.

III. EMPIRICAL RESEARCH METHODS

The following section describes the methodology and methods used to answer the research sub-questions and the main research question. The section consists of: the system of inquiry, research strategy and research tactics.

III. Empirical research methods

The methodology of the research is structured based on the conceptual model described in the book *Architectural Research Methods* by Groat and Wang (2013). This conceptual model constructs the methodology of research from broad to specific, as shown in figure 19. The outer framework describes the systems of inquiry, which characterises the paradigms or worldview of the researcher. In this framework, this includes the school of thoughts. The worldview and school of thoughts influence the researcher in framing the research questions and the strategies and tactics of the research. The strategy-level relates to the research design, which includes the research plan and structure of the study. Tactics are specified as the techniques used to collect and analyse data.
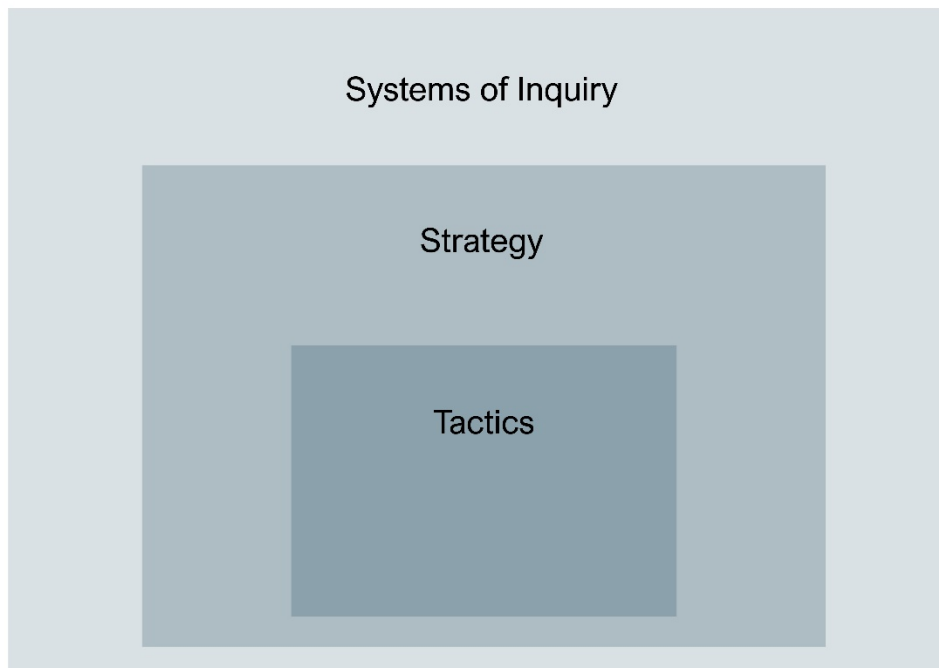
Figure 19 Methodological framework of the research (Wang & Groat, 2013).

1 System of inquiry

This research is an empirical study, aiming to produce knowledge and formulate explanations. The problem is knowledge related, and the goal is to better understand the relationship between employees and their workplace.

As this master thesis is part of the master track Management in the Built Environment, perspectives from the fields of social sciences are considered for the research methodology and related to the Built Environment.

The perspectives of social sciences and the built environment are combined in the socio-material approach, stating that daily life and organisations are shaped through a mix-up of the social and material elements (Orlikowski, 2007). Within the framework of socio-materiality, the study of employee experiences follows the perspective of phenomenology, being the interpretive study of human experiences, aiming to clarify situations, meanings and experiences of daily life that happen typically without conscious awareness (Seamon, 2000). Phenomenology seeks the qualities, values and impressions of experience to reach meaningful

insight and full depth understanding of a phenomenon (Barnacle, 2004; Van Manen, 2017). A phenomenological approach acknowledges the holistic depth of the subject's experiences and *"involves a belief that shared understanding is possible"* (Wang & Groat, 2013, p. 95).

2 Research strategy

2.1 Research approach

The empirical study is conducted through qualitative research. In qualitative research, the aim is to understand behaviour, meanings and the social context (V. D. Goodman, 2011). This corresponds with the research aim, that is to investigate experiences of abrupt change regarding the workplace due to Covid-19 and analyse the individual and organisational factors that help deal with this abrupt change. Therefore, in-depth qualitative research is the key to this research, in which the subjects are able to express their opinion freely.

2.2 Research design

The empirical research is set up into two parts (figure 20). The preliminary study aims to explore the abrupt change experiences caused by Covid-19. Therein, the main focus is on the contexts of the workplace and the work tasks, as is shown in the research design in the theoretical framework, figure 17. The exploration of the contexts of which the changes takes place, provides a deeper background of knowledge of employee preferences and expectations, as well as factors that influence the abrupt change experience.

| Preliminary interviews | → | Analysis 1 | → | Embedded case study | → | Analysis 2 | → | Synthesis |

6 companies

6 interviews

6 sectors

1 company

12 interviews

6 departments
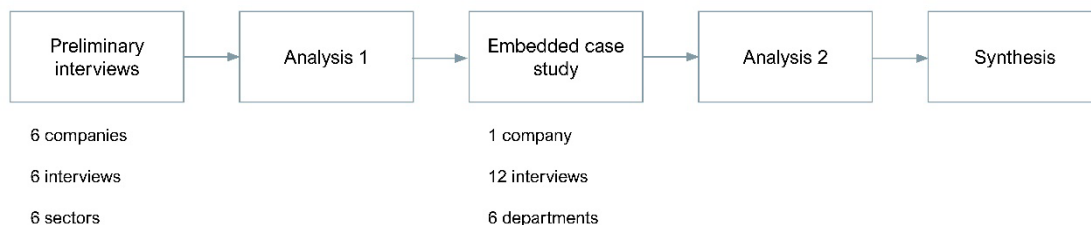
Figure 20 Empirical research design.

For the preliminary study, six employees from different companies in varying sectors are interviewed with the help of a semi-structured interview protocol. After analysis of the interviews, the findings provide input for the second phase of the empirical research, which includes an embedded case study.

Employee preferences and expectations for future workplace use are investigated in a case study. A case study gives the opportunity to study a phenomenon within a bounded setting or system (Creswell, 2007). This is especially useful when the outer limits of the real-life context and the phenomenon are not clear-cut (Yin, 2018).

III. Empirical research methods

As described by Yin (2018), there are four types of case-study design, categorized on single-or multiple case studies and single or multiple units of analysis (figure 21). In this categorisation, this research consists of an embedded case design.
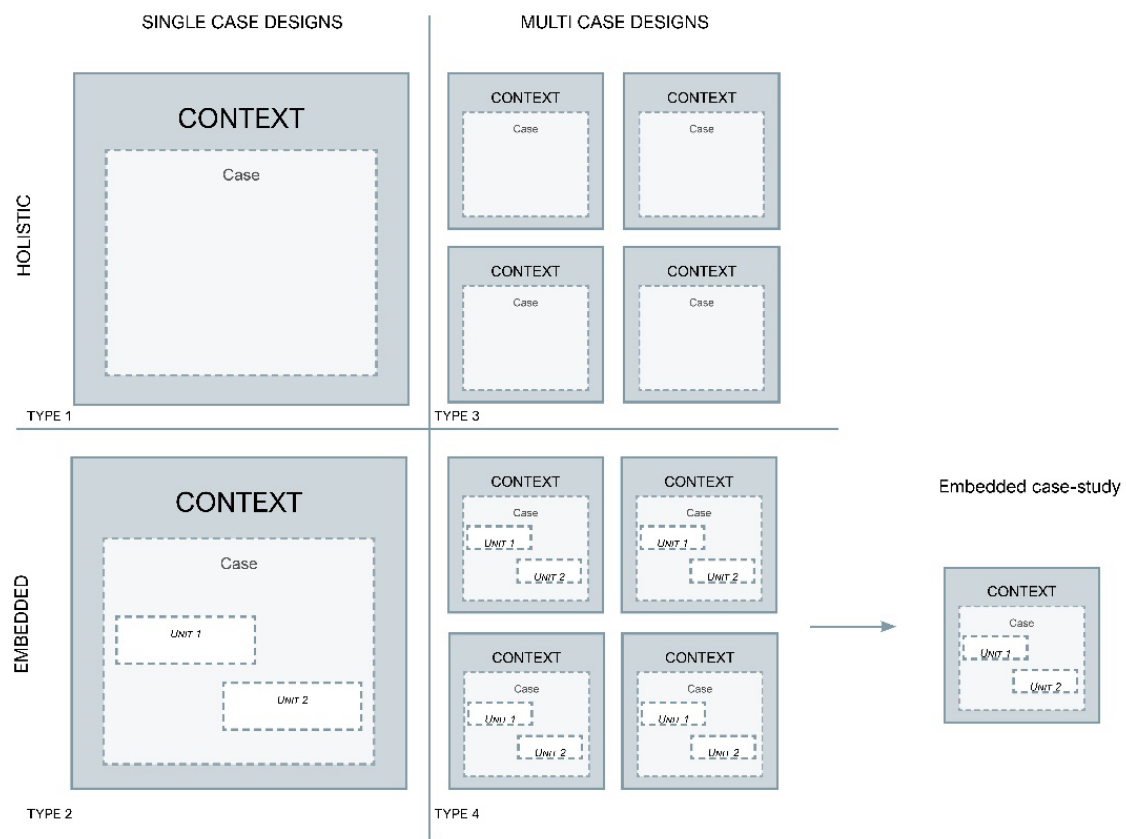
Figure 21 Research case study design, own illustration based on (Yin, 2018)

The embedded case study contains a nested entity (Saldaña, 2013): Within one single case company, twelve interviews are conducted in six different departments. In the theoretical framework, the workplace and work tasks provide the contexts of the abrupt change experience. Therefore, the departments are units of analysis since the work tasks and activities provide different units of context. Experiences of interviewees outside the unit of analysis are not taken into account in this research.

Analysing the findings from the embedded case study, as well as the preliminary interview findings and the literature review, leads to synthesis of the empirical research.

The interviews for both research elements are conducted at the time of the second lockdown of Covid-19 in the fall of 2020. This allowed the researcher to obtain data on the employee experiences and expectations, while the Covid-19 changes still take shape.

2.3 Company selection

Selection criteria

As previously mentioned, the setting of this research is the office workplace. The case study is on user-experience of employees in an office environment, where there is no distinction of a characteristic group of employees. The companies are selected based on the criteria illustrated in table 4. Case study criteria are fundamental to ensure the validity of the research through consistency and feasibility.

Table 4 Company selection criteria.

Aspect	Requirement	Explanation
Location	The selected cases must be located in the **Netherlands.**	Defining a country for the case study accommodates the process of data gathering, through conducting interviews in the native language (Dutch). Furthermore, the findings from the interviews are easier to compare since they are embedded in the same political, social and economic context.
	The organisation's location is in the Randstad region, preferably in a **large city** such as Amsterdam, Rotterdam or The Hague.	The context of large cities are chosen since the experience of Covid-measures could differ between the city and the countryside. In offices within the cities, the m2 per employee could be a more pressing issue as well.
Organisation	Middle- to large size organisation **80 – 200 employees** at 1 location.	The organisational culture is embedded in the organisation, and not defined by a small group of people. In a larger organisation, policies and management are more structured and set in place.
	Before Covid, there was a culture to go to the office. Working from home could have been an option, yet the office was the main workplace.	The change of the Covid-measures to work from home needs to be considerable. When the home already was the workplace where the employee spends the majority of the time, the change is not substantial.
Building	The primary function of the building is **office**.	Experience of change in the office environment is studied. Co-working spaces, flex-work and other workplace situation, are not included in this research.
Employee	The employees' role at the organisation of the case study is within the field of technology, consultancy, finance, law, management, ICT or other **knowledge-intensive fields.**	As is concluded from the theory review, the research focuses on knowledge workers. The employee is defined as a knowledge worker; therefore, the employee must work in a knowledge-intensive field.
	The organisation is **the only employer** of the employee interviewed for the research.	Having more than one job and working at more than one organisation can influence the employee's experience of the Covid change process and expectations of the organisation.

Company selection

Based on these selection criteria, six companies in different sectors are approached for the preliminary study. The chosen sectors are based on the variation within the different cases, and all qualify based on the selection criteria. The companies selected are middle- to large size organisations. From each company, one employee is interviewed. The experiences of employees in different sectors help investigate the experience of abrupt change happening in different contexts and varying work activities. The company profiles are shown in table 5, and the company criteria in relation to the selected companies are shown in table 6.

III. Empirical research methods

Table 5 Company profiles

Company	Sector	Employee profile
1	Engineering consultancy	Project manager
2	Chemical engineering	Project manager
3	Municipality	Municipal worker
4	Law	Junior attorney
5	Tech	Project manager
6	Real estate consultancy	Senior consultant

Table 6 company criteria in relation to the selected companies

Aspect	Requirement	I	II	III	IV	V	VI
Location	The selected company must be located in the **Netherlands.**	x	x	x	x	x	x
	The organisation's location is in the Randstad region, preferably in a **large city** such as Amsterdam, Rotterdam or The Hague.	x	x	.	x	x	x
Organisation	Middle- to large size organisation **80 – 200 employees** at 1 location.	x	x	x	x	x	x
	Before Covid, there was a culture to go to the office. Working from home could have been an option, yet the office was the main workplace.	x	x	x	x	x	x
Building	The primary function of the building is **office.**	x	x	x	x	x	x
Employee	The employees' role at the organisation of the company is within the field of technology, consultancy, finance, law, management, ICT or other **knowledge-intensive fields.**	x	x	x	x	x	x
	The organisation is **the only employer** of the employee interviewed for the research.	x	x	x	x	x	x

Case-study selection

After the preliminary study, 3 companies were approached to participate in the embedded case study. Due uncertainty of Covid-19 measures and focus on the work tasks, only one of the approached companies was willing to participate in the case study, making the main research a single embedded case study. Within the case study, the different department, and related contexts of work tasks and groupings within the company, the case study provides nested units of analysis, as is mentioned in the research approach.

2.4 Quality check

The quality of the case study through the construct validity, external validity and reliability are ensured through the case study tactics and design (Yin, 2018) (Table 7). In explanatory and causal research, internal validity is assessed as well (Yin,

2018). Since the nature of the research exploratory, the assessment of internal validity is not evaluated.

As suggested by Yin (2018), the interview is replicated across the different companies and within the same company with the help of a case-study protocol to find patterns and match the patterns with the previously found literature and with the interviews. Although case study research doesn't allow statistical generalisation, the value of the research is set in the study of a particular case or site through the development of themes and descriptions and is generalizable by argument (Christersson et al., 2017; Creswell, 2007).

Table 7 Quality case insurance tests, based on (Yin, 2018)

Tests	Case study tactic
Construct validity	• Use multiple sources of evidence • Define key concepts during the data collection phase
External validity	• Use replication logic in a multiple-case study • Definition of case study selection criteria • Posing 'how' and 'why' questions during the interviews
Reliability	• Use a case study protocol • Maintain a chain of evidence

3 Research tactics

3.1 Preliminary interviews

Approach

Qualitative research aims to gain an in-depth understanding of the workplace experiences of the workplace on employees. The purpose of the exploratory interviews is to obtain an in-depth comprehension of the employee lived experiences of workplace change during the first half-year of Covid-19 measures.

The interviews are conducted in a semi-structured manner, where the interviewer poses a series of questions in the interview protocol or schedule. Nevertheless, the question sequence can be varied, and the interviewer can pose a follow-up question as the interviewer sees fit, since the questions are directed open-ended (Bryman, 2012). The subjective lived experiences can be derived from the subject through lengthy interviews, where the researcher and participant work together to understand the most profound meaning of the experience, and helps the researcher to understand the experience from the viewpoint of the participant (Green & Plowright, 2019, p. 198).

The number of interviews held is six. The interviews give insight into the in-depth workplace experience of employees during the transition of working from the office to working from home, and the gradual return to the office.

Data collection protocol

The interview is conducted with the help of an interview protocol, as included in Appendix C. Although the interviews are semi-structured, the interview protocol

ensures that the same pre-defined themes are covered in the individual interviews. Therefore, the interview protocol consists of themes rather than structured questions.

The interview starts with an introduction of the interviewers' research purpose and introduction of the interviewee. Next, the work routine & - activities, change process, physical workplace concepts and expectations are addressed in no specific order. In the end, the interviewee has the opportunity to speak freely or elaborate on the topics discussed.

 A one-pager with the research abstract and potential research questions have been added to the email approaching the participants.

The interviews are conducted through Microsoft Teams in English or Dutch after Informed Consent is given. The interview audio is recorded and transcribed to analyse and interpret the findings.

Data analysis
The data obtained from the interviews are transcribed and coded with the use of the software Atlas.ti.

Codes, defined by the researcher, are added to enhance meaning from the interview, through pattern detection, categorisation, analysis and theory building (Saldaña, 2013, p. 3). The interviews are analysed according to the method of grounded theory, a systematic approach to qualitative data analysis, consists of multiple stages of analysis, leading to the development of a theory 'grounded' in the research data (Saldaña, 2013). Within the grounded theory, Thematic Concept Analysis is used in which transcripts are analysed to identify emerging themes and categories from the data (Burnard et al., 2008).
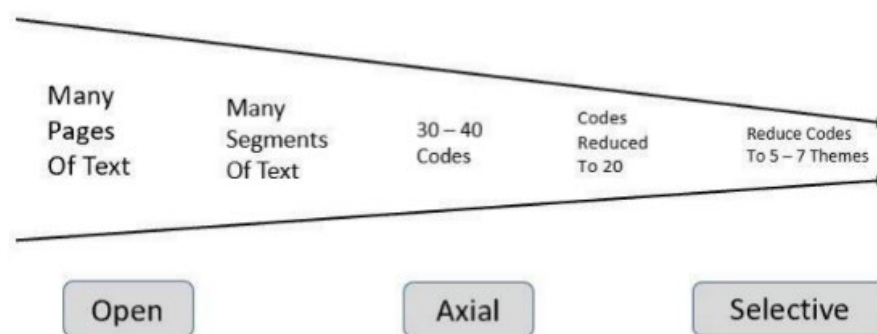
Figure 22 The Coding process (Williams & Moser, 2019).

As described by Saldaña (2013, p. 3), the codes are constructed by the researcher, symbolizing and attributing meaning to significant parts of the data for later categorisation and analysis. Saldana (2013, p. 21) describes the coding process, in which the preliminary jottings are transformed into the final codings throughout multiple stages. The coding process uses open, axial and selective coding (figure 22), in which open coding identifies emergent themes, axial coding aligns, refines and categorizes and selective coding integrates the codes into expressions filled with meaning (Williams & Moser, 2019). Furthermore, the process of coding aims

to explore the relationships between the codes, so that meaningful themes can be derived from the interview-data.

An abductive analysis is used, where at first, the themes and categories "emerge out of the data" rather than a pre-defined framework (Bowen, 2006; Burnard et al., 2008; Khan, 2014). In the axial coding phase, the explored codes are related to the aspects included in the theoretical framework. The emergent themes are explored within the theoretical framework and help further align and refine the data.

The code groups and codes used to code the segments of the interviews are illustrated in table 8.

Table 8 Code groups and codes of the exploratory interviews.

Colour	Code Groups	Code	x
●	Expectations	free from experiences	4
		match with experiences	9
		mismatch with experience	7
●	Experience office	bad	10
		good	3
		indifferent	2
●	Experience working from home	bad	29
		good	18
		indifferent	1
●	Interaction	both work/personal	16
		personal	2
		work-related	8
●	Meetings	colleagues	13
		formal	6
		virtual	7

Colour	Code Groups	Code	x
●	Preferences	conditioned by org	29
		conditioned by peers	5
		conditioned by self	7
●	Transition change	Covid measures (working from home)	37
		new ways of working	32
		organisational culture	23
●	Work activities	bad	8
		good	5
		indifferent	16
●	Work routine	bad	8
		good	5
		indifferent	12
●	Workplace	home	16
		office	14
		virtual	15

3.2 Embedded case-study

Approach
The embedded organisational study is again a qualitative study since the focus of employee experiences is qualitative in essence. Furthermore, more and more research is done on the employee expectations for the office after Covid, yet a more in-depth understanding of why employees want certain aspects still needs to be defined.

This part of the employee experience is focused on expectations and preferences for the future workplace. The purpose of the embedded organisational study is to obtain comprehension of why employees will go to the office in the future and the expected effects on the organisation's culture.

Data collection

The study is conducted through semi-structured interviews with open-ended questions. The interview protocol is included in Appendix C. The questions in the preliminary interviews (1) are 'What'-focused, wherein the questions in the organisational study (2) are 'How' and 'Why' – phrased. The interview protocol is more defined than in the first phase. Firstly, this is because of the experiences and codes are the basis for future expectations. Secondly, since the interviews need to be replicable and similar in the phrasing, to compare and analyse the findings properly.

The interview protocol consists of 3 elements: general questions regarding the work activities, age and workplace-experience of the employee (1), questions based surrounding the question 'Why come to the office?' (2), and how the future office will take shape (3).
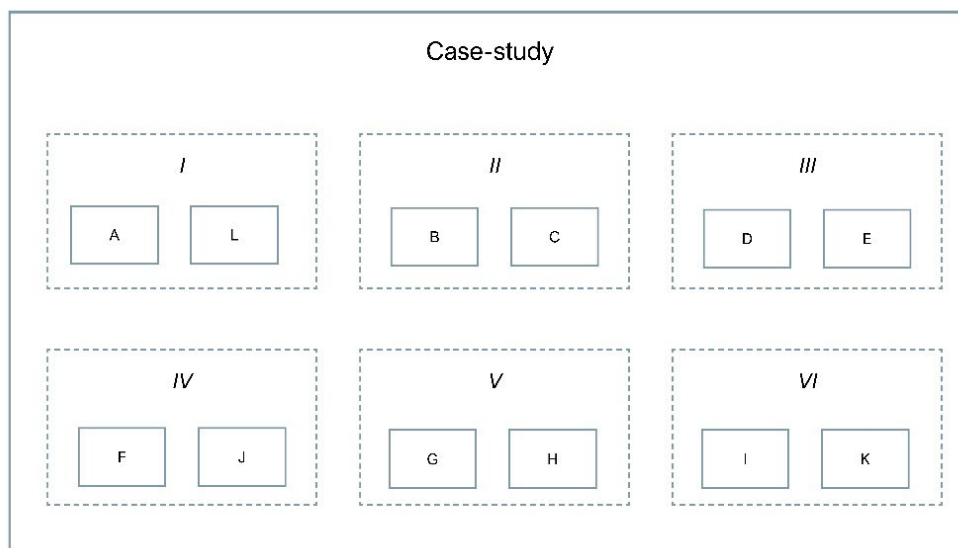
Figure 23 Case study interviewees categorised in departmental units of analysis

A total of 12 interviews have been conducted. The interviewees fall under six different units of analysis: six different departments within the office, ranging from front-office to back-office work, and internal operations (Figure 23). Furthermore, the interviewee respondents vary in age group and years of work-experience at the case study organisation (Table 9). The multiple perspectives on employee preferences and expectations within one organisation aim to give insight in the organisational culture and give the organisation a starting point for the future workplace strategy.

III. Empirical research methods

Table 9 Interviewee profiles of the embedded case study

Interviewee (no)	Department (no)	Age group (years)	Experience at current company (years)
A	I	25-30	0-5
B	II	40-50	10-20
C	II	40-50	10-20
D	III	25-30	0-5
E	III	30-40	10-20
F	IV	30-40	0-5
G	V	40-50	05-10
H	V	30-40	05-10
I	VI	25-30	0-5
J	IV	30-40	05-10
K	VI	25-30	0-5
L	I	25-30	0-5

Data analysis
The interviews are transcribed and analysed, using the same coding approach as the exploratory interviews. The general information regarding the interviewees, e.g. their age, experience and work activities are included in the codes, so that analysis of the findings can be done based on comparisons within the data.

5 Data plan & ethical considerations
A data plan consists of the collection, and thereby usage, storage and responsibility of raw and processed data. Before the data collection, a data management plan is set up. The following paragraph consists of the conclusions of the data management plan.

In the data plan, ethical considerations principles are addressed in the following areas (Bryman, 2012):
1. *"whether there is harm to the participant;*
2. *whether there is a lack of informed consents;*
3. *whether there is an invasion of privacy;*
4. *whether deception is involved."*

First, a Privacy Impact Assessment (PIA) has been made (Domingus & Rehbinder, 2018). No 'Sensitive Data' is collected (GPDR, article 9) and the research is not prone to result in a high risk for individual interviewees, concluding that no extra measures for safeguarding the privacy of interviewees are required (European Commission, 2017).

Secondly, before data collection, the Informed Consent Form is handed out to interviewees to inform participants of the purpose of the research, risks, rights and

procedures and ensure voluntary participation agreement. The Informed Consent Form is included in Appendix B.

Personal data is managed following the General Data Protection Regulation principles (GPDR, article 5). The recordings of the interviews are stored in Surfdrive and are only accessible by the research team. The recordings are deleted one year after graduation. Before processing, masking and de-identification of personal data are implemented to safeguard the privacy of participants. The interview recordings are processed into anonymized transcripts. The company of the interviewee is also anonymized; The research report only mentions the sector and position of the interviewee. Personal data of participants is not shared beyond the research team.

The FAIR Data Principles are honoured about enhancing the ability to reconstruct the collected data (Wilkinson et al., 2016). These guiding Principles prescribe the data to be (1) findable, (2) accessible, (3) interoperable and (4) reusable. The final thesis will be openly accessible through the educational repository of the Delft University of Technology, https://repository.tudelft.nl/. Furthermore, this research is conducted and written in English, a broadly implemented language in academia and applicable to knowledge representation.

IV. EMPIRICAL RESEARCH RESULTS

The following section presents the findings of the interviews after the data gathering and analysis. The identities of the interviewees have been anonymised. Quotes, if given, are translated by the researcher from Dutch to English.

First, the analysis of the preliminary interviews is described. The conclusions of these findings provided the input for the second phase of the empirical research. The second phase of the research includes the embedded single-case study and is the main element of the empirical research.

1. Preliminary interviews

The preliminary interviews were held with employees from six companies in different sectors, as mentioned in the previous section. The transcripts are coded in Atlas.ti.

1.1 Results

Change process

The lockdown in march 2020 caused an abrupt workplace change, forcing employees to work from home as from the day after the announcement from the government had been made. The announcement was made on a Thursday, and the transition needed to be quick in order for the work-activities to continue, as interviewee 1 describes:

> *"I think it was Thursday, the 12th of March. If you go back and when they when the prime minister made his announcement here, we want you all to work from home if you can. And we got an email within an hour or two of that saying, OK, tomorrow you don't come to the office unless you absolutely have to work from home. (…) But we have these scrum boards, so on my way out of the door, I took photographs of the scrum board with my phone on Thursday afternoon and Friday. They weren't any real meetings planned. I worked at home, and on Friday I made some calls just to get some help from some colleagues who had been playing around with electronic versions, digital versions of the Scrum Board and set up a scrum board in teams over the weekend. We had our first scrum on Monday morning." – Interviewee 1*

There is a difference between cases regarding the transition to the virtual workplace. It depended if employees were used to working online already, and the virtual workplace was already set up. In the tech-company, and companies with international relations, the infrastructure for digital working is already initiated before the Covid-measurements took place, resulting in a more steady and stable transition.

IV. Empirical research results

Table 10 Transition of the virtual workplace, data analysis

Construct 1 - quote	Construct 2 – code	Construct 3 - theme
"Because we work with colleagues in Mumbai, we were used to doing lots virtually. so we were having these virtual meetings, although it must also be said that was in a different environment. We had meeting rooms set up at various places. Um, we had one in the Netherlands. It's set up."– Interviewee 1	Virtual workplace partly set up	Transition virtual workplace
"We already worked with zoom for Corona. My team supports our entire sales force throughout Europe. (…) And if you really had to go deeper into the matter, then sometimes you make a zoom meeting because you could also share your screen and me, but that is because our head office is in silicon valley, I have more official meetings in the evening." – interviewee 2	Virtual workplace already set up	Transition virtual workplace
"Actually we already had beforehand that, all the meetings we did, we already did via Teams. We had Skype as a program. In fact, there was already a teams call with it. That was because we are spread over various locations."– interviewee 3	Virtual workplace already set up	Transition virtual workplace
"Before the Covid era, management thought it was all too expensive to provide that expensive service that could do graphical operations [give PowerPoint presentations while being in Teams]. Again, because it shouldn't cost a cent. It was said from ICT guys, let's do that now, let's accelerate the transition to [Microsoft Office] 365. But some people find that difficult. That did not happen. As a result, we are now completely stuck with a lot of things and the boys from ICT cannot do anything about it, but simply the management should have got things in order much earlier." – Interviewee 4	*Virtual workplace is new*	Transition virtual workplace
"We had not worked with (Microsoft) Teams before. That had to be initiated. How does that work? And all of a sudden you start to use Whatsapp to contact people. Email remains in effect, of course. It took us a couple of months, but it started to work better and better." – Interviewee 4	*Virtual workplace is new*	Transition virtual workplace

Work activities

As the interviewees indicate, the work stayed mostly the same during the first half-year of Covid measurements, including working from home. However, the activities done in order to do the work changed, since *"everybody is just spending a lot more time glued to the screen than we ever did one way or another"* (Interviewee 1).

The shift to working online was not a big problem for the tech industry, already familiar with a virtual workplace due to being an international company: *"Actually, our work has not changed at all, has not been adjusted and has simply continued"* (Interviewee 2). However, for design processes and brainstorms, the virtual workplace is not well suited.

> Interviewee: *"We set out the framework of that planning by literally sticking Post-it notes onto an enormous let's call it a calendar on the wall. (…) And we sit in the room together and we shove stickers up and we interact. And the beauty about that is, of course, when you're sitting in a room, as you can see that sheet, it's an entirety. I mean, literally takes up a whole wall of the of the meeting room. You CANNOT you cannot replicate that in in in on these 22 and 24 screens. Just can't."*
>
> Interviewer: *"Did you try? Did you have to?"*

> *Interviewee: "Yeah. But doesn't really work. And we have to do a lot more work up front to compensate for that. So they are kind of ways of compensating for it. But it doesn't work as well. It doesn't." (Interview 1)*

In existing project teams, the activities and routines of each team member are known. If the crisis continues for a more extended period and new project teams are formed with new people, interaction and attuning the work is expected to be more difficult. Moreover, interviewees give their concerns in case working from home remains the norm for a more extended amount of time (interviewee 1, 3, 6).

In the consulting-industry, the work-related with commercial acquisitions and relations with clients is also more challenging to do online, due to the limited interactions. This will be elaborated upon further with regards to interactions.

Another consequence of fewer live meetings is the increased communication over email, and then especially the confirmations of the agreements made in the call. *"In face to face meetings, you can switch faster between topics discussed, and confirm actions without having to email them again. Now, in the mails I need to confirm what was discussed." (interviewee 6)*

Work routine

The transition to working from home affected the work routines and daily life: *"I think many of us experienced, particularly the first months of working at home, quite intense, just adapting to the change. Very intense, actually. But I think it was just adapting to the change" (Interviewee 1).* Furthermore, the change in working in the office and working online has a different impact on the concentration-levels:

> *"If you have done 2 or 3 hours of Teams meetings, you are exhausted. Then you really cannot last any longer. It requires a lot of time and a completely different type of energy than if you have meetings in the physical environment." (Interviewee 4).*

Problems with concentration and distractions are caused by the fact that there are no distinct brakes at home (Interviewees 4, 5, 6). In the office, a small chat with a colleague or a walk to the coffee machine where you run into someone makes a small interruption in the workflow (interviewee 4, 5). However, interviewee 2 and 6 states that having young children at home at the time the schools were closed, these interruptions were ample and not the positive kind that helps better focus on the job.

The workflow and division of the day are resolved by through consciously making breaks.

> *"I notice that if I don't have to do that much of those very small ones, It really only has to be two, three minutes or when I have it, fifteen minutes or something. Just those moments of rest in your day when you really have less focus at a certain point." (Interviewee 5).*

IV. Empirical research results

Experiences working from home
An interesting aspect in the findings is the impact of the workplace at home on balance between work and private life.

With regards to the work-routine, there is a differentiation between interviewees that have a designated desk area (interviewee 2, 4, 6) and interviewees that work at the kitchen table (interviewee1) or mix (interviewee 3, 5). When sitting at the kitchen table, the work is interrupted more regularly. During the interview 3, the partner walked into the kitchen in the background of the screen to collect the grocery-bags and keys. During both interviews 1 and 3, kids came home and interacted briefly with the interviewee.

However, not only physical disturbances interrupt work activities. Interviewee 5 pointed out that working at the kitchen table without anyone else being in the same room can harm the work routine as well:

> *"When you are sitting at the kitchen table and you are having lunch and you hear an email coming in: Then you will quickly answer that email. While at the office, when you have lunch, you are really in the lunch room" (Interviewee 5).*

The balance work/ private life of being able to do chores (e.g. laundry) during the workday are both expressed as a pre and a con. It results in more considerable flexibility and time-efficiency (interviewee 3, 6), while also creates a distraction from work and resulting in lower concentration (interviewee 5).

A plus for working from home is having more time to bring the kids to school (interviewee 2 and 3), and join them with soccer during the lunchbreak (interviewee interviewee 3). The interviewees expressed the importance of keeping a clear division between work and breaks, preferably in another room or outside; otherwise, the work just goes on and on. Interviewee 2 expressed the routine of eating with the family at six as a clear boundary to quit working and remain in the rhythm of daily life. In contrast, interviewee 4 explained that going for a bike ride right after meetings helped make that transition from work to private life.

Additionally, the two worlds of work vs private are mixed due to the private life becoming a more prominent aspect in the work-domain: If both partners work and have young kids, one of them has to take care of the kids (interviewee 2, 3). Expressing that therefore the interviewee cannot participate in a meeting, lowers the division of work/private life and reduces formality in the office, especially in a hierarchical organisation (interviewee 3).

Interaction
Working from home as caused by Covid-19 had a large impact on interaction with colleagues and clients. All interviewees stated that they missed the unplanned run-ins with colleagues in the hallway and at the coffee machine, and walking by someone's desk. The informal contact disappears, and is not replaced:

> *"You know, you have to make a conscious decision to phone somebody, even if there is no particular reason to phone that person*

> *just to find out how they are and if there's anything bothering them."*
> *(Interviewee 1)*

The run-ins are next to the added value of personal interaction, also an information source for managers. It is a concise way to pick up problems and chat about the process of projects (interviewee 1, 3, 4, 6). As the interviewee of case 1 describes, this is replaced by making time-slots in someone's agenda for 15-20 minute meetings. The downside to this is that these meetings are planned, and everything needs to be discussed at the spot, while a more frequent unintended run-in helps with remembering "*o this is what I needed to ask you*" (interviewee 6).

Not being able to see colleagues face-to-face had an impact on the work-tasks: *"Small questions, "sparren" (brainstorming), don't work online, and the fact that you don't call someone for just 1 questions makes it more difficult*" (interviewee 5). Although the work continues and is resolved in another manner, brainstorming with colleagues and asking briefly for another opinion is lacking while working at home (interviewee 1, 4).

The more limited possibility for interaction and not having a well-suited alternative for it affects client relations and project teams. Case 1 expressed that working in a team with different companies worked fine for now since the project had started before Covid, and the team was familiarised with each other's way of working. However, the interviewee expressed its concerns regarding the duration of the Covid epidemic and how it would work if a new project team needs to start, and there is not an opportunity to bond face to face. In the consulting-industry, there is also a concern regarding the bonding with clients:

> *"Because my clients and often people who are not based in the Netherlands - and they really came to the Netherlands and then you go too, take you with you. So from the relationship and more the commercial acquisition aspect. Yes, that thickens the bond less than having them live."* (interview 6)

While talking about possible solutions for the interactions, and what it would look like in the future, the interviewees expressed concerns regarding the partial return to the office.

The change to digital communication through calling and video-chatting is expected to remain in the office. However, more calls to colleagues at home or even in the same office lead to more noise nuisance, since people call more often and over a more extended period (interviewee 3, 4, 6). Also, case 4 expressed concerns regarding the findability of colleagues in the office, when people work partially at home. *"If there are flexible office spaces and people work from home, how do I know where to find someone? We might need technology to solve this problem"* (interviewee 4).

Meetings
The brainstorming chats and catch-ups at the coffee machine show that there are less frequent informal meetings with colleagues. At the same time, the number of formal meetings appears to lower as well. Interviewee case 5 expressed that when

sending documents over to a meeting and typically meeting up to discuss it, the email was sufficient and a virtual meeting was not necessary. The duration of virtual meetings drops, since there is no informal talk at the beginning and the end of the meeting, diving straight into the items that need to be discussed (interviewee 1, 2, 4, 6). Efficiency is also obtained through the possibility to mute and turn of the camera, and engage into the discussion when needed. This time can be spent to continue working/ work on the inbox.

> "If we now have a conversation and you say I want to ask (partner company) something. Look, you call him in a moment. He can get in for five minutes and then he can drop out again. At physical meetings, then you know you have to sit for almost an hour. And I think we should make much more use of that, arranging meetings much more strongly and check the attendance per subject. And then give people the freedom to drop out afterwards, actually in a meeting." (interviewee 3)

The use of the technological development to share screens, already implemented in the tech sector, now also has changed the ways of working in the building consultancy and municipal sector. The content has not changed, but the way discussions are arranged has through the use of PowerPoint (interviewee 4) and sharing pictures and videos (interviewee 6). As interviewee case 3 specifies, the new habit of meeting virtually and thereby sharing screen has formed so quickly, that even at the time of the gradual return to the office, colleagues were meeting virtually while both being present in the office.

> "Where I have the big question mark is: I go into the office to have contact with colleagues and if I'm going to the office and the colleagues that I'm hoping to have contact with on those days are working from home, then what's the point really?" (interviewee 1)

Organisational identity
The decline in interaction with colleagues leads to a decrease in information regarding the work of other departments of what colleagues are working on (interviewee 4, 6). The involvement with colleagues decreases, while this is referred to as the identity of the company. The "vrijmibo", Friday-afternoon drinks, were replaced with virtual drinks at the beginning of Covid, yet the interaction was not the same and therefore not a success (interviewee 1, 5, 6).

The office proves to be an excellent support for the sense of togetherness. When going to the office is cut off, the responsibility and initiative to stay in touch with the organisation, and thereby with each other, rests with the management of the organisation. Much input is requested from employees on how to organize everyday things, as it is also a new situation for the organisation. The involvement with the work-tasks does not diminish as productivity does not falter, yet the involvement with colleagues and the sense of togetherness does diminish (interviewee 1, 3, 4, 5, 6). The interviewees are awaiting the Covid-19 situation and hoping to go to the office in the future, to regain the sense of togetherness there. Only in case 2, an employee of a Tech company, this was not the case. Before

Covid, working from home was already more implemented, and the personal need to physically see colleagues in order to bond was less.

The flexibility to schedule the work and trust to get the work done in time has increased as a result of Covid. As interviewee 1 states, *"in the beginning, there was the need to justify every hour we worked, everything we did. After a while, we saw that we could stop doing that since we were just as productive as before Covid and the work just got done."* All the interviewees state that there is a trust from the manager that the work gets done and there is more flexibility to, for example, take the children out of school or follow a different schedule.

> *"I am lucky to have a team that I know is doing their job, even though they are at home, so I don't have to be on top of that. It's not something they abuse".* (Interviewee 2)

In the hierarchical organisations of interviewees 3 and 5, this is a clear shift in a less formal way of working and a cultural change. Both interviewees express their hopes of this change being permanent and lasting after Covid in the future.

Corresponding with the increase in flexibility, the interviewees express their hopes that need to be present in the office will lower, and the flexibility to work from home will continue in the future. interviewees 1 and 3 elaborate upon deadline weeks during which the whole team would stay in the office late until the project was finished. In Covid, it is now proven that in order to finish the project on time, attendance in the office is not a condition and perhaps not needed in the future.
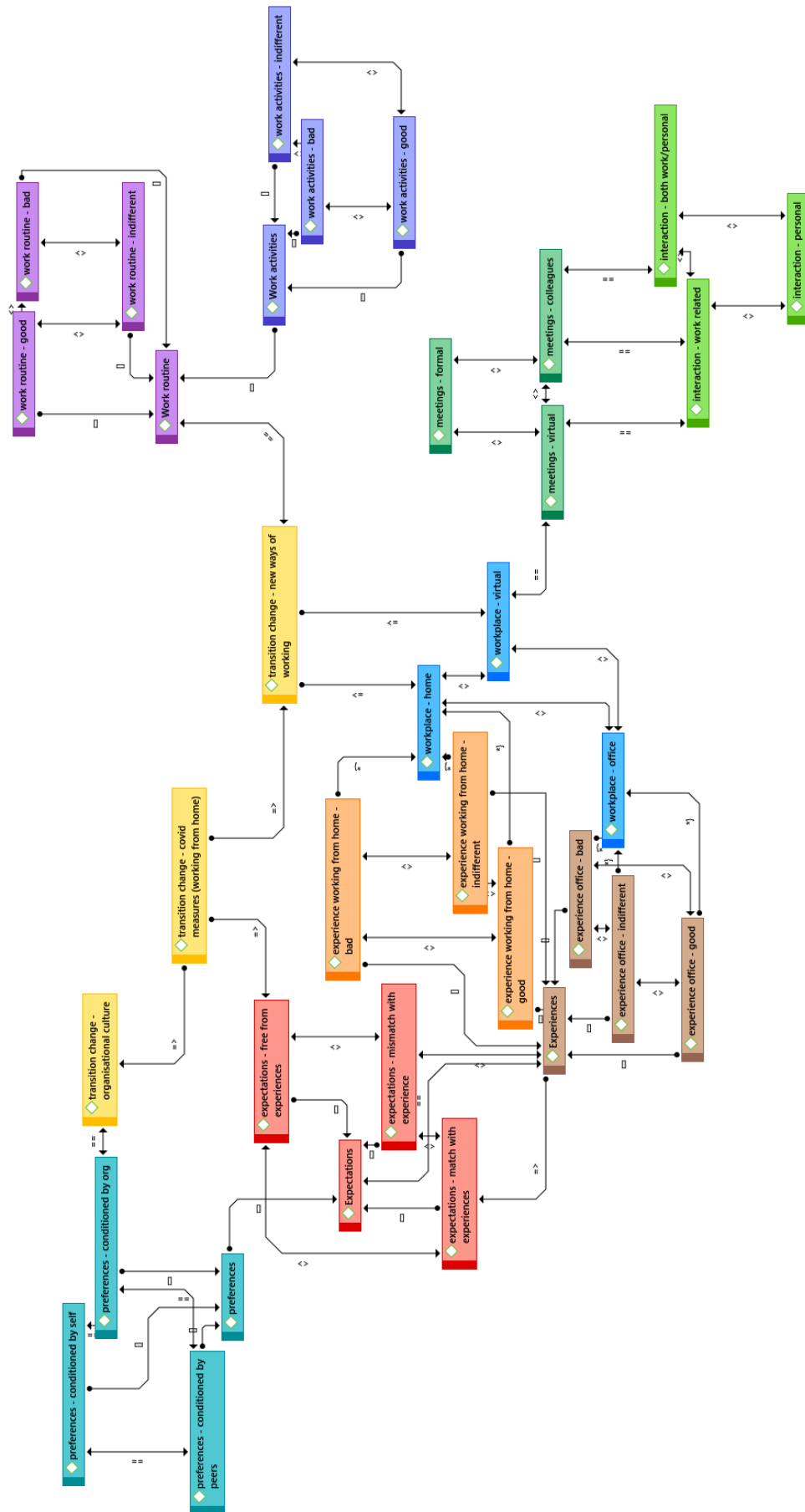
Figure 24 Codes and code group tree

1.2 Analysis & findings

As explained in the empirical research methods chapter, data analysis is done through the use of Atlas TI. After defining the codes and code groups, the relations between the codes are analysed. Figure 24 on the previous page shows the relations between the codes, for example, contradicting, excluding, supporting. The colours correspond with the colour-code groups, as shown in Table 8 in the research methods. The analysis of the codes helped as a first step to see the relations between the codes, and where the codes correspond or contradict with each other. After the analysis of the total of codes and code groups, the codes are extracted and analysed on an individual basis. From there, it can be noticed that the codes are highly connected.

Figure 25 shows the analysis of formal meetings. The experience of formal meetings is connected with the virtual workplace since that is the context where the meetings take place during corona. In its turn, the virtual workplace is related to the ways of working, since in some companies, the virtual workplace was non-existed pre-Covid. The work routines and activities are derived from these new ways of working. On the other hand, the meetings have an impact on the interactions with colleagues, since these now are more forced and consciously made, instead of spontaneous run-ins at the coffee machine.
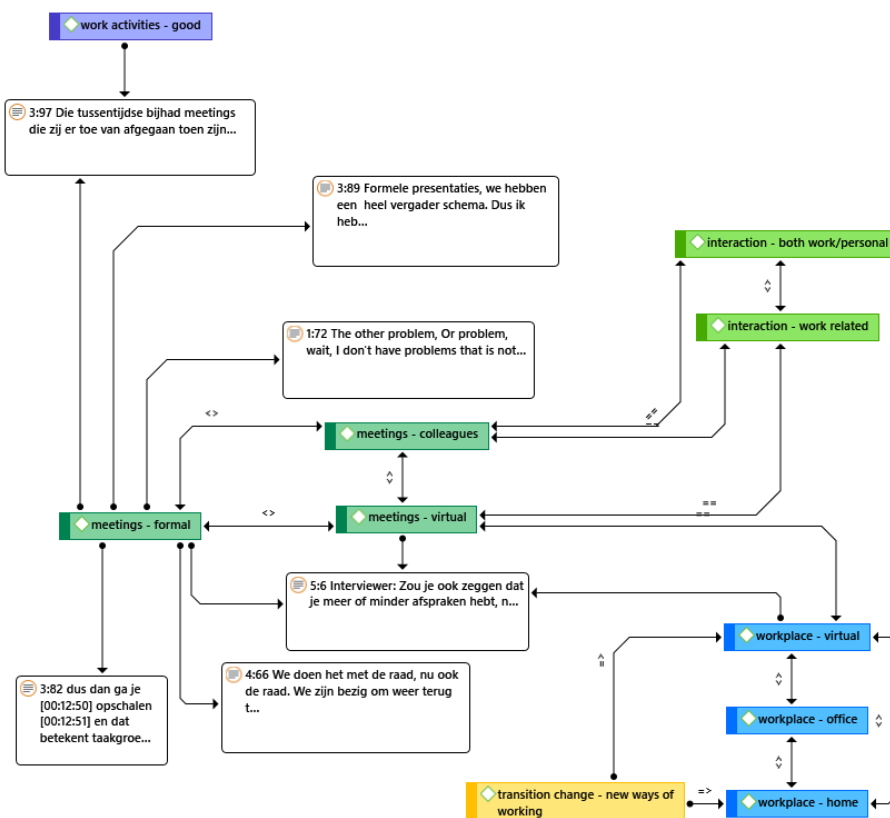
Figure 25 Analysis of quotes and codes related to formal meetings

Less interaction with colleagues has a chain of consequences as well. Firstly, it impacts the breaks of the employees, resulting in a change of work routine. Secondly, the lack of brainstorming and debating work has an impact on the work activities and the quality of the work. No chit-chats at the coffee machine lower the

motivation and pleasure the employees have in performing the work-related tasks. Furthermore, discussing work with other departments diminishes work-opportunities and the feeling of involvement with the organisation.

Working from home influences the private life on multiple levels: on the plus side, employees experience that there is more time for personal appointments and tasks, such as getting a haircut, doing groceries and laundry during office hours. In the situations where employees have young kids, they expressed that there is more time to spend with the kids, bring them to school etc. The downside of working from home is the division between public and private life since the laptop or phone is open in the private spheres. The efficiency of saving travel time has a negative consequence of having no transition between work and private life. Turning off the laptop and abruptly being at home. Employees expressed that this transition and structure is something they miss during Covid.

1.3 Summary
The ease of transition to working from home due to the Covid epidemic that started in March 2020 depended mainly on the existence of virtual workplace infrastructure. Companies where interacting virtually through meetings was already common pre-covid, had larger ease in adapting to the changes. After setting up the virtual workplace, the work continued as usual, and productivity and output did not falter.

However, the relationship changes between the organisation and the individual. Work activities change in that meetings are online, and there are maybe fewer meetings and less informal brainstorming, yet the work and productivity remain the same. However, it becomes clear that informal interactions take place at the office and are nearly impossible to replicate while working from home (the office facilitates informal interactions).

2. Embedded case study
Company 6, as described in the empirical research methods, is analysed further in an embedded case study. A total of *12* interviews have been conducted. Two employees from six departments are interviewed with the help of a semi-structured interview protocol, see Appendix C. The employees have varying ages, levels of experiences at the firm. First, the results are described by aspect. Then, the results are analysed by department in the nested units.

2.1 Results

Why the office?
After the introduction and general questions, the researcher asked the interviewers to give the top three reasons why employee want to go to the office in the future. The results of that question are summarized in figure 26.

All the interviewees mention contact with colleagues in the top three reasons to come to the office. The contact with colleagues consists both of work-related

contact, and the informal chit chats in the hallway and at the 'Vrijmibo', Friday afternoon drinks to celebrate the ending of the week and the start of the weekend.
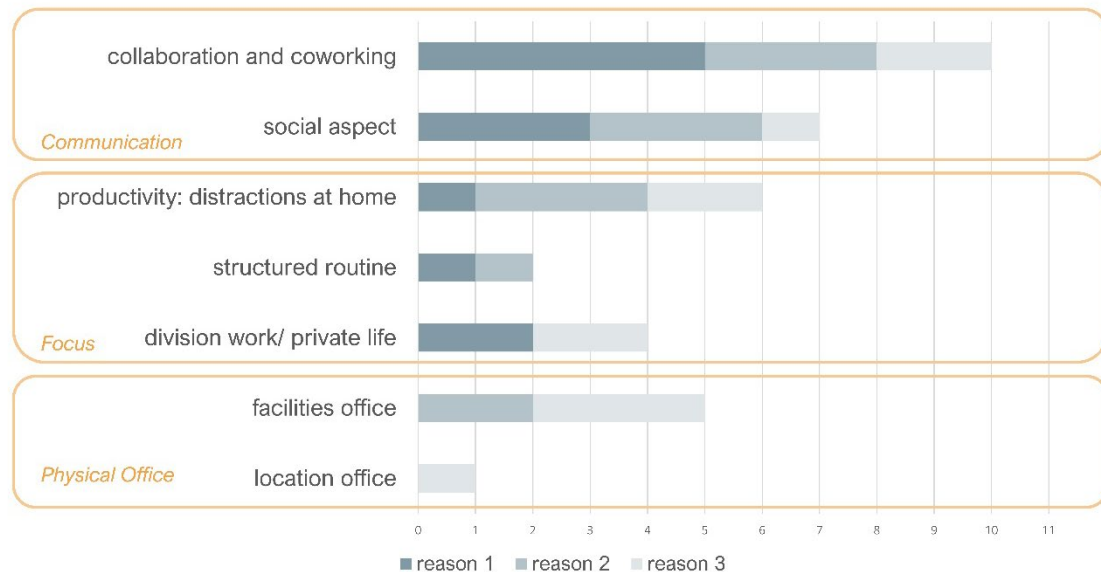
Figure 26 Results on the question of why come to the office.

Collaboration and communication imply both working together within the department and within the different departments. It is the internal consultation and the learning processes of knowledge sharing and listening to other people, as well as the creativity that develops through these processes (Interviewee A, B, F). As interviewee E states:

> *"The collaboration with colleagues in the office makes it easier for you to just explain something and pick it up together. Of course, it is not particularly about the meetings or project meeting like that. For me, it is also very much about cooperation that people are just busy with their work and while they are busy suddenly think: 'oh, how should that be or that'. Then I'm in the office, and I hear things about how things and I think: 'oh, here can I jump in' or 'here I notice that things are not going well and so on'. That is difficult to replicate when you just come together in meetings, since it is very task-oriented, while a lot of the support and helping just happen while people are at work, and that's really the reason why together in the same place is very important there." (interviewee E)*

The social aspect refers to the atmosphere in the office, the social contact and a sense of cohesion since everyone is part of the same organisation. This includes chitchats at lunch and in the hallway, as well as the sense of cohesion and being part of the organisational identity. Being in the office and surrounded by colleagues motivates to work (interviewee I, L). Contact with colleagues in the same department continues since work-related collaboration is still necessary. However, the non-business related talk before or after a meeting is not maintained when the meeting is a phone or video call, and there is a tendency to go straight to the point of the meeting (interviewee D, H). Furthermore, by not being able to go to the office, people are less aware of what is going on in different departments of the

organisation (interviewee G, H, K). running into colleagues in the office, and discussing the ongoing projects at the drinks on Friday is not only good for the sense of cohesion but also offers new collaboration and business opportunities with different departments (interviewee G, H, I).

> *"Spontaneity and being aware of what is going on within the organisation and feeling involved, say within this organisation it is more difficult if you do that when you only sit at home" (interviewee H).*

Home or office?

The preference for the office as being the primary location of the workplace instead of working outside the office is expressed in three gradations: fulltime at the office, the flexibility to work at home around one day a week, and a more hybrid form of a balance between working from home and the office.

4 out of 9 interviews express their preference of going to the office five times a week, and 2 interviewees express a hybrid form with an equal balance between the office and at home.

Even in the case that the workplace and the activities in the office do not change, the ease to work from home has increased. As interviewee H expresses, *"I now have a designated workplace at home. Previously if you were working from home, you were sitting hunched over your laptop at the kitchen table."* Although the younger interviewees confirm that the workplace facilities at home are well-suited to their needs, the office is the preferred principal workplace. Meeting colleagues at the office, albeit for informal chitchats, knowledge sharing or involvement is the main driver for the office to remain existing. Meeting colleagues on an external location could work when working together on a project. However, the identity of the organisation is strongly linked with the location, interior and environment of the office (interviewee E, I).

It is interesting to remark that the interviewees that have a role where there are more external meetings outside the office, working from home were already more set in the routine. This does not mean working from home for a full day, but more likely a couple of hours in the morning before or in the afternoon after going to the external meeting. The expectation for this routine to augment is due to the now arranged workplace at home, and the flexibility of the organisation to work productively outside the office (interviewees E, H).

Organisational identity

All interviewees stated that within an organisation, the sense of team spirit and the feeling of being part of the organisation are important. Interviewees B, C and E, who have worked for the organisation for more than ten years, expressed that the bond to the organisation is already strong and you know whom to find within the company. However, the experience of working from home due to Covid lessens the feeling of being part of that organisation of the younger interviewees (interviewee A, D, I). The experienced employees share this concern for connection and cohesion:

> *"I think that something where a lot of companies struggle with, and it is also much discussed within our company already, of how do we keep the bond within the company strong?" (interviewee C)*

Especially the Friday afternoon drinks are mentioned as a fun way to not only work hard together, but celebrate together as well and get to know colleagues (interviewee A, B, F, G, H, I, K, L).

> *"On Friday afternoons you get to know your colleagues because you hang out together. That is just fun. It is fun to hang out with colleagues" (interviewee L).*

The organisational identity and sensation of cohesion and being part of the organisation are strongly connected. When asked to describe the identity of the organisation, is apart from the entrepreneurship, lack of hierarchy and open culture, it is clear that the organisation is people-oriented. Feeling connected with the organisation is part of the organisations' identity.

> *"You feel less involved in the organisation than when you are actually in the office (...) it feels to me that once you are there, you feel more like one part than when you are at home, those are more loose links and you really only talk to a regular circle" (interviewee D).*

Work tasks
The expectations of work tasks do not differ from the work activities before and during working from home due to Covid. When comparing the answers of employees, there is a distinction that can be made with front-office and back-office workers. The different departments can see the difference, but as well the age of the interviewees: starters are more back-office oriented, and older plus more experienced employees have a more managerial function and client meetings and inter-departmental coworking meetings.

The back-office work activities remained the same during Covid and are not expected to change (Interviewee A, I). However, the front-office tasks include more meetings. During Covid, meetings take place primarily online. This experience of not meeting face-to-face provides input for future meeting strategies. After Covid, employees do not expect to return to the same percentage of face-to-face meetings. However, they think more deliberately regarding the function of the meeting (interviewee C, E, F, G, H, J).

On the one hand, the trend of more virtual meetings due to Covid are perceived positively. Interviewee C states that the communication with the office in the UK, previously done through conference calls, now have improved through the addition of calling with the camera turned on. At the same time, no travel time for a meeting for half an hour is an enormous improvement for efficiency (Interviewee E, G, H, L).

> *"I think we should definitely continue Teams, because I think it is an excellent development. Yet only for certain meetings, for example, this interview: This (meeting through teams) is actually perfect,*

> *because yes, otherwise you might have travelled to the office just for this meeting." (Interviewee B)*

In the preliminary interviews, employee 3, it became more clear that meetings where the interviewee listens in, it becomes more efficient to turn off the camera and work on other tasks at the same time. However, instead of conducting two things at the same time and attending all the online meetings, perhaps there is more room for efficiency gains. As interviewee C puts it:

> *"Meetings become more efficient and shorter because, indeed, you do not have that travel time. (..) A danger that can creep in from the online meeting when you have turned off the, and we listen in that can indeed be efficient, but then you should have done more in considering: yes, should I have attended that meeting at all?" (interviewee C)*

Also, the ease of which virtual meetings are now arranged creates an unwanted overflow. The distinction between an informal office meeting and a formal project call is less clear, both having the same virtual set-up and way of interaction. The abundance of virtual work-related meetings, therefore harms the motivation for more informal, office-related meetings. Interviewee G elaborates on the initiatives of the organisation to remain in contact with each other, through pitch-trainings and weekly presentations and online network events. For these types of events, that are not necessary for the work but contribute to the involvement with the organisation, meeting in real life is crucial. This is also the case with commercial acquisitions. Herein, relation-building is a critical aspect, and there is less bonding when interacting with a client when the meeting is online (Interviewee G).

The future office
Since the expectation regarding flex working in the case study is expected to go up slightly, yet the office is expected to remain the primary workplace of employees interviewed in the case study. The expectations regarding flexible working in the office are quite diverse and based on personal preferences. The responses can be divided into 2 categories: Everything will go back to the way it was (1), and this is an opportunity to implement better flexible working in the office (2). Before Covid, the flex working in the office was implemented out of necessity: there were not enough desks for the number of employees. The clean desk policy was however not fully executed, since in reality dossiers were left on the desks and employees have their preferred place or share their desk with a set group of colleagues (interviewee C, I).

The interviewees that expressed their experience of the work activities have not changed since Covid, expect that the office of the case study will not change a lot after Covid. On the other side, the people that embrace flexible working and see this as an opportunity to implement it more stringent are linked to the interviewees whose activities demand a more flexible workplace approach: working together in different project teams, having multiple meetings per week outside the office building, etc. However, both preferences stress the importance of keeping departments together, albeit for 4 days of the week and one day flexible with other people (Interviewee A,D, E, J)

IV. Empirical research results

> *(in the activity based flexible office) "I would keep the departments together, yes, since, again, I think people come to the office to see the colleagues with which you are in direct contact." (interviewee D)*

This corresponds with the need for collaboration and knowledge sharing in the office and the stated preference of why employees come to the office.

Since virtual meetings and calling is expected to continue after Covid, there is a growing need for facilities in the office that make that possible, since the growing amount of calls in the open office during Covid is perceived as noise pollution and annoying (interviewee A, G, I, K). Moreover, the cubicles intended for phone calls, installed in the office of the case study within the last two years, are not perceived positively, since they are small, cramped and not cosy (interviewee C, G, I).

Since the meeting rooms were already full before Covid, the expectation for rising demand for break-out, informal and formal meeting rooms, as well as the demand to call in a cosy and designed space is expected to provide a challenge in the future.

2.2 Analysis & findings

The following paragraph includes the analysis and findings of the case study results. The findings with regards to the full research, including the theory study and preliminary study, can be found in the next chapter.

The case study is conducted through interviews in different departments, to be able to analyse departmental differences and possible changes in preferences and expectations. The different departments within the case study organisation have different work tasks and activities, as well as work outputs. Therefore, the analysis of the case study results will be concerned with analysing the agreements and differences between the nested units of the case study, that are the departments.

Communication patterns

Regarding communication, the contact with colleagues is seen as a primary reason to come to the office in previous studies as well. However, the type of communication that takes place in the office is different. There is a distinction between planned formal meetings, planned informal meetings and spontaneous informal run-ins. These three types of meetings demand a different spatial configuration since the preferences for the physical space are different. Through changes caused by Covid, the work continues within departments. However, the knowledge sharing and collaboration between departments became less. The Friday afternoon drinks are not only for fun and chit-chat, but a lot of projects get discussed as well. And where there is work for one department, there might be job opportunities for other departments as well.

If it is the case that there is less acquisition is not researched in the embedded case study. But what is clear, is that the communication within the teams and departments continue, albeit less than before the change, but the communication, and feeling of cohesion with other departments is drastically reduced. The company as a whole functions in times of change as a group of little islands.

Dependency & collaboration

The interviews are grouped in this framework based on dependency on colleagues within the team on the Y-axis, and on the X-axis the degree of cross-functional collaboration, that is interaction with people outside their department. High is defined as more than one time per week, and low as less than one time per week. There is a pattern to be found between the departments and the degree of inner-department and outer-department interaction. In this framework, two interviewees from the same department correspond in the same quadrant regarding cross-functional collaboration and dependency on colleagues. This corresponds with the interviewees expressed activities and routines at the office and while working from home.
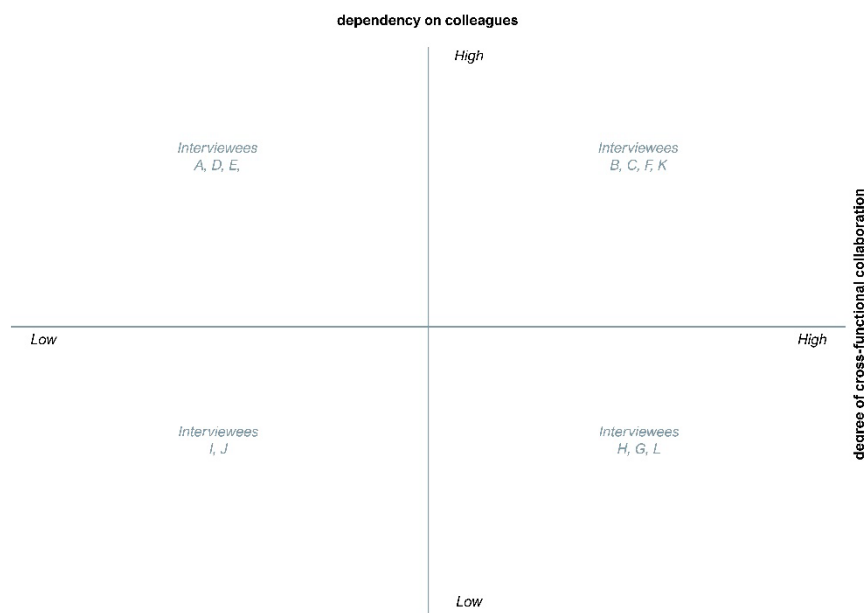
Figure 27 Interviewees analysed based on dependency on colleagues and cross-functional collaboration

The next step is to look into what dependency on colleagues and cross-functional collaboration with other departments within the firm and third parties mean regarding expectations and preferences within the office. When analysing aspects such as work-experience, the role within the team, and preferences regarding flexible workplaces in the office, no patterns can be found within this framework (figure 27). The work preference from home or the office is defined as predominately office when interviewees expressed their expectations to work from home maybe one day a week, and hybrid between working from home and the office when the interviewee stated the expectation to work at least two days per week from home. The answers regarding flex-office are defined as a flexible desk-sharing policies, that could include but is not limited to flexible-based working. The office as the main base appears to be the case when there is strong interaction within the team and outside the department.

dependency on colleagues

High

.	work experience	role	activities	home/ office	Flex-office?
A	< 3	execution	administrate	office	semi
D	< 3	execution	administrate	hybrid	no
E	> 10	manager	administrate	hybrid	yes

.	work experience	role	activities	home/ office	Flex-office?
C	> 10	manager	administrate	office	yes
B	> 10	manager	entrepreneurial	office	no
F	< 3	execution	support	office	semi
K	> 3 < 10	execution	support	office	semi

Low   High

.	work experience	role	activities	home/ office	Flex-office?
I	< 3	execution	analyst	office	no
J	> 3 < 10	manager	analyst	hybrid	no

.	work experience	role	activities	home/ office	Flex-office?
H	> 3 < 10	manager	consultant	hybrid	no
G	> 3 < 10	manager	entrepreneurial	office	yes
L	> 3 < 10	execution	consultant	hybrid	semi

Low

degree of cross-functional collaboration

Figure 28 Patterns regarding work-experiences, activities and preferences placed in the framework

In conclusion, the interviewees state that apart from personal preferences, the work tasks in the department shape the expectations regarding working from home or in the office and the future office lay-out. However, although a pattern can be seen regarding the work tasks and activities and future expectations, the nested units of analysis do not provide large distinctions. The preference regarding working from home and the future office lay-out are therefore not distinct for the different departments, yet personal characteristics and preferences play a large role in the preference and expectations regarding the office.

V. FINDINGS & IMPLEMENTATION

The discussion of findings synthesises the findings from the embedded case study and the preliminary interviews with the literature review. The structure of the literature review is used, describing the three key-terms of the research: organisational change, the physical workplace and experiences.

1 Findings

1.1 Organisational change

The interplay of individuals and the organisation
In creating a workplace strategy, the interplay of the organisation and individuals through communication and participation is critical to achieving a positive perception of the workplace (Smollan & Morrison, 2019). When analysing the interplay of the organisation and individuals, it is important to stress that 'organisation' is a term that refers to the higher management of a company, as well as all individuals in a company combined. Even when referring to higher management of a firm, the managers are still individuals within the company, with personal preferences and expectations as well. Therefore, the research both looks at the interplay of the employees and higher management, as well as the individuals and the group that forms the organisation.

According to Hirst & Humphreys (Hirst & Humphreys, 2013), the organisation has power over employees when managers decide where employees need to perform their work since it affects the relationship of people and their workplace. The organisation is a powerful actor who decides on facilitating networking, representing the organisational identity and steering its employees' behaviours (Hirst & Humphreys, 2013). The tools that an organisation can employ include organisational policies and procedures. Through these tools, the organisation can the contexts of the work tasks and workplace, as well as the expectations and preferences of the employees (see the theoretical framework, figure 17).

The case study finding that the interviewees perceived the involvement and opportunity to give input for workplace-related issues to the organisational management corresponds with the literature conducted for this research. Based on the findings from the systematic literature review, the focus on user participation in the design process, well-structured communication and the connection of the organisational aspects and physical workplace improve the change and meaning-making process, leading to a better outcome (Lindahl, 2004; Skogland & Hansen, 2017; van Diermen & Beltman, 2016).

As the interviewees in this research expressed, the organisation is actively involved in creating the workplace strategy according to the demands and preferences of the users. The case study organisation is relatively small and in their own words: people-oriented, active involvement by individual employees is stimulated and rewarded in the organisation. This is embedded in the fact that if an employee speaks up or addresses something to the management of the organisation, the opinion gets heard. However, there is a strong emphasis on initiative and entrepreneurship; thus in order to be heard, people have to speak up themselves.

Coping with change
As recommended by Veldhoven and Gelder (2020), the advantages of the change should be welcomed, while the disadvantages eliminated. Based on the study, there are two perspectives when coping with the change. The first is to await the current situation until things go back to the way they were. The advantages of working from home and lessons learned to surround the aspect of more flexibility in the working hours and interposed of private life. The flexibility of working from home when wanted is preferred to take along in the future.

The disadvantages seen by the abstract change are twofold: first, the abrupt change disturbed activities and work routines, and finding a new balance took time and effort. Secondly, the disadvantages of isolation and reduced interaction are tolerated by the idea that it is temporary. The prospect of the return to office after Covid and the reverse of the change is the coping method of change. This perspective is backed up by market forecasts by corporate real estate companies and stakeholders in the field of offices. Although the future is unknown, JLL (2020) analyses the crisis of Covid-19 through comparisons of crises with the *Dot.com* bubble of 2000 and the bank crises of 2008. After the market crashes, the office demand returned to the pre-crash market rates. These analyses of previous economic from the perspective of market demand strengthen the belief in the return-to-normal after the measures are lifted.

The second perspective of coping with the disadvantages the working-from-home policy places on employees, is seeing the abrupt change as a welcome interference to change the workplace strategy. The strict measures are seen as opportunities to accelerate the gradual trends that already existed. In this perspective, there is more focus on the benefits of Covid in the long term change.

To conclude, the means to cope with change depend on the perspectives on the abrupt change. On the one hand, the abrupt change of Covid is experienced as a temporary hiccup, while on the other hand, employees welcome the abrupt changes as an acceleration of trends.

1.2 Physical workplace

The added value of the office
Competitive advantage is one of the potential ways to add value to the organisation's real estate (De Vries, 2007). Exploratory interviewee case 1 describes it as the following: *"that they expect that the physical office will be a plus in the future, where more and more offices could rely on working from home."* Based on the findings, it is expected that the workplace remains an important factor concerning competitive advantages. The office carries the identity of the organisation. Both the physical aspects, i.e. the location and interior of the office, as well as the sense of cohesion, communication facilities and informal interactive culture contribute to the competitive advantage position of an organisation. As especially younger employees prefer the office as the main workplace, to interact and learn from colleagues, the office remains a key aspect in demand to add value to the organisation and in the war of talent.

Health
As described in the theory study, the attention for health and employee wellbeing in the office environment is a rising trend (DGMR & BBA Binnenmilieu, 2017; IWBI, 2020). The need to design office environment with regards to employee health and wellbeing are more important because of Covid-19. The measure enforced by the Dutch government to keep 1,5m distance from other people, influenced the availability of workplaces during Covid-19.

V. Findings & Implementation

The possibility of the Covid-19 virus SARS-COV-2 through aerosols (small liquid particles in the air) (Buonanno et al., 2020; Schijven et al., 2020) stresses the need for ventilation in the offices (Alders et al., 2020). Furthermore, the perception of health is also crucial in the future office. In the case study, interviewees described a healthy workplace as incorporating greenery and plants, and a high comfort level. En plus, acoustic levels and the amount of control employees have on the workplace add to the perceived health and comfort level of the office environment (Ahrend, 2021).

Interaction
When comparing the findings from the single case studies to previously done market studies within the same sample, a remarkable finding is that pre-Covid, the emphasis of market studies on the workplace was the focus on the objective, physical aspects of the workplace. Interaction with colleagues is mentioned, but not specified. Since the results of this research show that the expressed reason to work at the office instead of at home is the interaction and co-working with colleagues, and therefore demands a further exploration than just merely 'interaction'.

The interviewees questioned for this research mention facilities such as informal interaction spaces, meeting rooms and offices to call in. However, the expressed reason to work at the office instead of at home is the interaction and co-working with colleagues. The configuration of the workplace depends on the type of interaction people have in the workplace. Collaboration in project teams demands a different spatial set-up than concentrated work activities such as writing reports.

Meetings
Regarding the workplace strategy for future meetings, the results of the embedded case study suggest an approach to face-to-face or virtual meetings. The strategy is dependent on the meeting size, and the purpose of the meeting, as is illustrated in figure 29. The smaller the group of people in the meeting, the greater the effectivity of an online meeting. When the meeting is task-oriented, time saved by the lack of travel and good technological facilities establishes a large efficiency. However, when the purpose of the meeting is to establish or maintain a relationship, for example, for commercial acquisition or getting to know each other for better collaboration, meeting face-to-face profits bonding. As is researched in the exploratory interviews and the embedded case study, online meetings have a tendency to go straight to the point and is not a well-suited environment for chitchat in the first few or last minutes of the meeting.

To decide on the efficient strategy for a meeting regarding larger audiences, again, starting with the purpose of the meeting is the first step of the strategy. If the meeting is people-oriented and bonding is an essential element, an informal face-to-face setting provides the best opportunity. In an informal, face-to-face setting, employees have a more significant opportunity to speak up and participate in the conversation (interviewee F). When the meeting is task-oriented, it depends on the nature of the meeting what the best strategy is. When it is a presentation or an update meeting where 1 party is giving information on a project, a virtual call services the purpose. Nevertheless,, when people in the call need to participate,

give their opinion on the matter, or a brainstorming session with the project team is discussed, a virtual call can become chaotic, and it is more difficult for people to interrupt and speak freely. In that case, a face-to-face meeting is the most efficient strategy (case 1, 3, 6: Interviewee F, H).
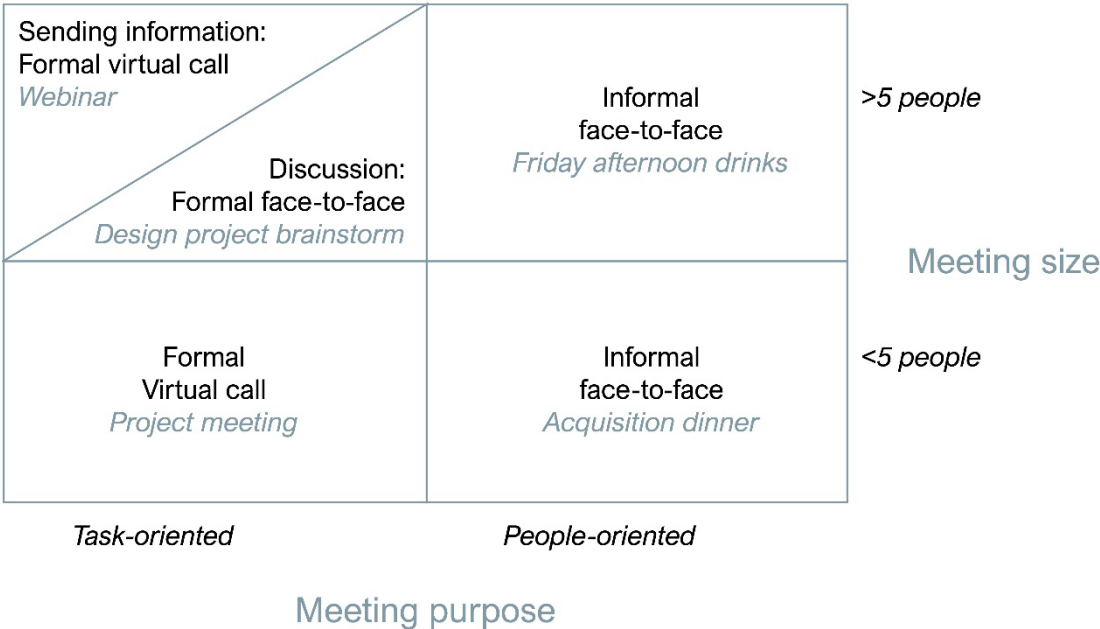
Sending information: Formal virtual call *Webinar* Discussion: Formal face-to-face *Design project brainstorm*	Informal face-to-face *Friday afternoon drinks*	>5 people
Formal Virtual call *Project meeting*	Informal face-to-face *Acquisition dinner*	<5 people
Task-oriented	*People-oriented*	

Meeting size

Meeting purpose

Figure 29 Strategy for face-to-face or online meetings

1.2 Abrupt change experience

Based on the empirical research, the theoretical framework presented at the end of the theory study (figure 17) has been adapted to include the factors that influence the abrupt change experience (figure 30).

The factors derive from the study of abrupt change caused by the Covid-19 epidemic and are variables with which patterns can be discovered in the case study. The framework is set up in a way that it corresponds to abrupt change and does not refer directly to Covid-19. This way, the framework can be used by organisational managers and facility managers as a guide to future abrupt change, and how to manage, communicate and set-up change processes.
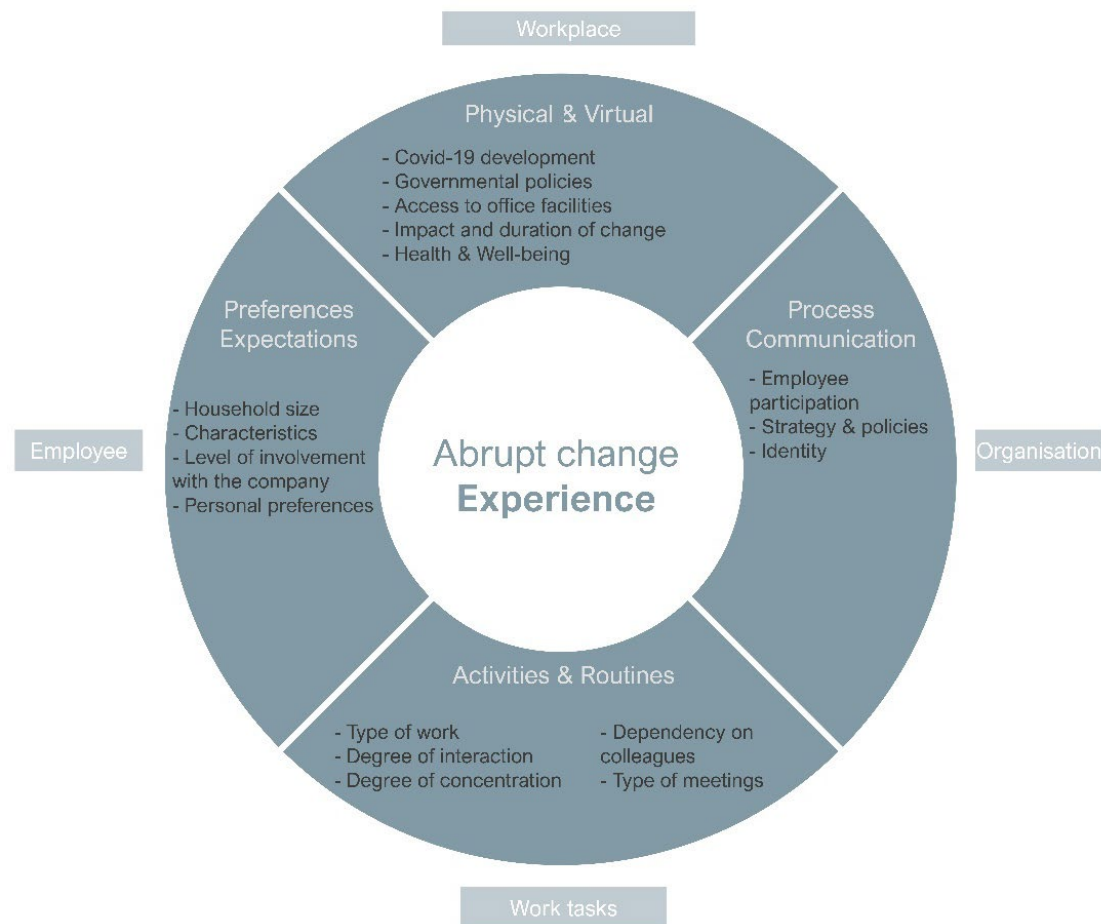
Figure 30 Factors that influence the abrupt change experience.

Workplace
The first context that frames the abrupt change experience is the workplace. Before the last decade, the workplace was only associated with the office environment. Due to technological developments, the virtual workplace has taken shape, making it possible to work from home and at third locations. The necessity of acceleration of this trend was inevitable when Covid-19 came into existence and working from home became the norm. Governmental policies had a major influence on the time in which the change needed to be configured, as well as the severity of the measures, thereby influencing the abruptness and process of the change experience.

Furthermore, health and well-being are factors in the change experience in all 4 aspects, yet specifically place in the framework under the context of the workplace, since it can be controlled and influenced in this element. The workplace is a means for health and wellbeing of the employees and the organisation, both in a positive and negative manner. Abrupt change of the environment as well as new structures require adaptation and the creation of new routines, thereby playing a large role in the experience of the employees.

Work tasks
Work tasks are activity-based. Although the tasks and the type of work did not change during the abrupt change of Covid, the increase of virtual work meetings affects the experience of meetings and facilities needed, such as the virtual infrastructure and quiet meeting places. Moreover, the perspective of virtual meetings is related to the lack in a variation of work, leading to a negative perception of the work routine and well-being.

The negative perception of work routine corresponds with the lack of physical interruptions during the workday. The research shows that interviewees actively try to go outside during breaks and call colleagues while walking, but miss the runs to the coffee-machine, chatting with a colleague, walking across the hall looking for someone to ask a question. A concern raised by the exploratory interviews is the findability in the office in the future when people are partial working from home and partial in the office since calling is more efficient instead of walking through the office to their desk. This corresponds with the research by Olsen et al. (2018), stating that physical activity is reduced if flex-working is implemented, due to the reduction of physical locations where work activities take place.

Employee
Employee factors that influenced the preferences and expectations can be divided in individual characteristics, personal preferences, in the case of Covid-19 the household characteristics, and the level of involvement in the organisational identity. Individual characteristics such as age and work experience influence the experience of abrupt change by for example the dependency on other colleagues, of the dependency of other colleagues on them. Age and experience defines the independence in performing the job tasks. Furthermore, personal preferences are related to the routines, adaptation to change. Household characteristics influence the

Moreover, the effects of the abrupt change and working from home on the well-being needs to be taken into account. As Felstead (2012) describes, workers need to manage the pressure of isolation from colleagues, as well as the intrusion of private life in the work domain. The comment that discipline is needed well to establish the division between the private and work domains is not always possible in the practise, and should be assessed individually. For example, working from home with young kids provides an extra challenge that is not solved through conducting a pre-defined approach. Therein, the organisational role is to provide guidelines and help, and the ability to listen to and respect the individuals' situation and discuss a possible, unique solution together with the individual employee.

Organisation
Lastly, organisational factors that influence the abrupt change experience are employee participation, strategy and policies, and the organisational identity. At the same time, the factors are means that the organisation can employ in the change process, to improve the abrupt change experience for the employees and for the whole organisation.

V. Findings & Implementation

As described in literature of gradual change processes, involvement of employees in the change process improves the satisfaction of the change. Although in the case of abrupt change due to Covid-19, the organisation is not the starting point of the change and has no direct input in the governmental policies, the organisation still has influence in the manner of communication with the employees and the introduction of organisational policies and strategies.

In the case study, employees expressed the demand for input in the organisational policies, both directly to the internal strategy planners through for example surveys and indirectly through the departmental manager. When the requests are heard and implemented, albeit not 100% due to differences in preferences, the feeling of trust in the organisation is enhanced, and satisfaction regarding feeling part of the organisation and feeling heard is improved.

2 Implementation

Based on the research findings, the following implementation plan is made for organisational and facility managers in the corporate sector and recommends how to apply the abrupt change experience in practise.

Before the implementation plan given, it is noted that every situation is unique. Covid-19 proved challenges that are unique for the type of virus, the way the pandemic developed and the policies that the government implemented in the different phases of the epidemic development. Although the research is done in this specific context, lessons can be learned on how to deal with abrupt change and the following recommendations provide guidelines for future abrupt changes:

1. Acquire insight in employee preferences and expectations.

   Surveys provide a great first insight in employee demands, yet as this research shows, interviews give insight in the drivers of employee preferences and expectations. Therefore, a combination of surveys and interviews is recommended to get clear, in dept insights into the employee characteristics and the drivers of employee preferences and experiences.

2. Focus on health & well-being.

   As discussed in the literature review and the empirical research, a safe workplace increases the employee comfort levels and well-being. A healthy work environment increases employee health. Furthermore, in the last years there has been increasing attention for health & well-being in the office environment. Attention and consideration into health & well-being of employees provides an added value to the workplace, contributing to organisational performance and increasing competitive advantage regarding the attraction of and maintaining talent.

3. Facilitate interaction in different ways.

   The Covid-19 epidemic has shown that the work tasks continue even though the office workplaces are restricted. The technological developments in online communication tools, for example Microsoft Teams, have made a vast increase

into the implementation and usage in the daily work activities. Quickly changing between virtual and physical meetings in the office has shown that different activities require different spatial lay-outs in the office. The increase of the abrupt change starting in the context of the work, lead to a change in work activities, leading to a change in employee experiences. For example, the increasing amount of virtual calls due to the Covid-19 measures to work more from home lead to more noise-pollution in the open-office floor plan of the case study, which in turn leads to a higher preference for smaller workplaces, activity-based working or an increase in small conference-meeting rooms where virtual meetings can be held.

4. Incorporate flexibility in the strategy.

The abrupt change of Covid-19 taught organisations and employees the need for flexible adaptation to unforeseen circumstances, and the creation for a responsive strategy. To be able to quickly adapt to a new contexts, organisational policies and strategies require to be drawn up and implemented in a quickly manner. High performing workplaces understand the employees needs with clarity and are able to implement the key activities and features to the preferences of their employees.

5. Communicate transparently and involve employees in the change process.

As examined in the literature, there is no guarantee for successful implementation of change. Nonetheless, involving employees in the change process stimulates successful implementation, due to two factors. First, understanding employee preferences and expectations leads to a better-suited applicability of the outcome of change. Secondly, when employees are involved in the process of change and are able to provide input, the feeling of contribution to the change process leads to a larger acceptance of change. In the case study, the feeling of being heard and involved in the company's strategy attributed to the feeling of being a part of the organisation's identity and enhanced the feeling of cohesion.

A strategy on how to deal with abrupt change should incorporate the 5 key-points and align these key-points with the organisational goals. The factors that influence the change experience are both tools that the organisation can use in creating the strategy, as well as aspects that should be accounted for since it can diminish the intended outcome. Lastly, the strategy should convey the identity of the organisation, and involving the employees as being part of that organisation.

Different types of organisations demand different types of strategies. The change process and content of the strategy will be different for each organisation, small or large. However, the factors of the abrupt change experience serve as generic aspects that guide a formation of the strategy. The content of the factors differ for each organisation, since every organisation has their own unique organisational goals and business objectives, as well as a different composition of employee characteristics. Therefore, the abrupt change experience framework provides a template to different organisational strategies.

VI. CONCLUSION & DISCUSSION

1 Conclusion

As defined in the introduction, the research aims to *investigate experiences of abrupt change regarding the workplace due to Covid-19 and analyse the individual and organisational factors that help deal with this abrupt change*. The five objectives help to achieve the main aim of the research, through answering the sub-questions. After that, the main question of the research can be answered. The answers to the research questions are as follows:

1. <u>How can the abrupt change experience regarding the workplace be defined?</u>

Previous studies on organisational change and the workplace have focused on gradual change, through objective organisational perspectives and the main focus on the roles of individuals and the organisation in the change process. However, to date, there is limited research done on the subjective employee experiences during abrupt change and the organisation's role in shaping the experiences.

Organisational change is defined as a change in the operationalisation, structure, technology & ways of working and the effects of that change on the organisation or the organisation's people. The workplace is always changing: New ways of working and technological developments expand the workplace to a virtual meetingplace outside an office environment. At the same time, there is a growing trend for focusing on health and well-being in the office. When studying the effects of change, the 'lived experience' of the employees are studied. The 'lived experiences' are the perceptions of the person involved in the experience and are studied to enhance meaning from the events.

The theory review on organisational change, the workplace and employee experiences provide the background information on which the theoretical framework is defined. The theoretical framework defines the abrupt change experience. It includes the variables that need to be taken into account when analysing an abrupt change in the employee workplace experience. This framework is further used to structure the empirical research and analyse its findings.

2. <u>What are the employee experiences of abrupt workplace change caused by Covid?</u>

The impact of the Covid-measures changed the physical context in which the work is executed, yet had an influence on the work activities. The ease of transition the virtual workplace depended on the infrastructure already set in place and task-related the work continued as had been done in the physical office.

On the individual level, the informal interaction was omitted and challenging to replace. The organisation's initiatives were well-perceived at the beginning of the transition, yet the lack of variety in work activities reduced the enthusiasm for organisational-initiated, semi-obligatory informal calls.

The impact of the change experiences on individual employees resulted in difficulties in the work routine, work outputs, and work division and private life. Regarding the work routine, informal contacts with colleagues structure the break,

and the different means of interaction make work activities diverse. Secondly, brainstorming and collaborating with colleagues is beneficial for work output. Lastly, the separation between work and private life is an extra challenge that needs to be considered. Consciously winding down and starting the workday, taking breaks and discussing the challenges with the organisation helps to cope with the challenges

3. <u>What are the employee expectations and preferences of future workplace use, after response to Covid-19?</u>

No clear patterns can be found in the case study's nested units, which are different departments within the case organisation. Although work-activities, the amount of cross-functional interaction and colleague collaboration differ between departments, interviewees from the same department do not necessarily share the same preferences regarding office lay-out and return to office and expectations regarding organisational strategy after Covid-19.

The organisation is expected to have a facilitating role, in which the freedom and flexibility experienced during Covid is a permanent feature of the organisational identity.

The main driver for going to the office is social, and work-related interaction. All interviewees expect this to go back to how the interaction was facilitated in the office before Covid-19. However, it is expected that online meetings will replace some of the meetings if this can be done. Moreover, the flexibility to work from home is seen as a welcome development that was not widely implemented in the case-study and is expressed to hopefully remain. The extent to which working from home is preferred to continue after Covid-19 differs per interviewee.

No exact list can be made stating all expectations and preferences of the interviewees. Personal characteristics and preferences influence expectations of future office-use. For example, interviewees with small children wish to go to the office to focus, while others go to the office to interact and collaborate, and prefer to do the focus-work on the one day working-from-home. Therefore, the employees' expectations and preferences in the case-study are not clear-cut and differ per person. Deliberate consideration regarding differences in opinions is needed when creating a strategy for future workplace-use.

4. <u>What individual and organisational factors influence the abrupt change experience?</u>

Individual factors are personal characteristics, preferences and contexts. For example the household size, and level of involvement with the company. Personal preferences include the amount of contact and collaboration with colleagues. The personal context also plays a large role in the experience of abrupt change. In the case of Covid-19, the household size impacts concentration levels and feeling of loneliness. In a situation of abrupt change, differences in coping with change arise. Moreover, not every employee wants to be involved in the change process and be a part of its identity. Therefore, personal preferences, contexts and effort need to be accounted for.

VI. Conclusion & discussion

The organisational factors that contribute to the abrupt change experience are the facilitation of interaction, facilitation of workplace, organisational identity, and the organisation's role in flexibility and collaboration with individuals. The factors can be both enabling as disabling the abrupt change experience. As analysed in literature and the empirical research, employee participation in the change process positively influences the change process and the outcome. The organisation can use strategies and policies as a means to guide a successful change transition.

Apart from individual and organisational factors, the context of the workplace also influences the abrupt change experience. The development, impact, and duration of abrupt change and governmental policies are outside the individual and the organisation's influence. Furthermore, the context provides an opportunity for activities and routines, which influences health and well-being. Abrupt change disturbs these contexts and therefore alter the experience of both the individual and the organisation.

5. <u>What are the coping strategies of individuals and organisations to deal with abrupt workplace change?</u>

When the informal interaction was omitted due to workplace restrictions and the working-from-home policy, both the organisation and individuals took the initiative in maintaining interaction. At the beginning of the Covid-19 pandemic, organisations hosted the Friday afternoon drinks through pub quizzes online, initiated webinars and questionnaires to remain in contact with the individuals at the organisation. As the Covid measurements developed, enthusiasm for these types of enforced informal encounters declined. The differentiation between chatting with colleagues and virtual work-related meetings is not perceived as sufficient.

The individual coping strategies can be divided into focus on the temporary aspect and looking ahead to the future. With the first category, focus on the temporality of the Covid measures is a way to see the change as a cycle that will be turned back in the future. Therefore, disadvantages experienced are just temporarily and weigh less heavy on the lived experience of employees. The second coping mechanism is eliminating disadvantages and embracing the change as an acceleration of trends, focusing on advantages and opportunities taken out of the abrupt change and taking these along in the future.

Main Question: <u>What are is the experience of abrupt change regarding the workplace due to Covid-19 and how do individual and organisational factors help deal with this abrupt change?</u>

The critical aspects of abrupt change experience consist of the change in work routine and interaction.

The work activities, including meetings, are included in the work routines. The lack of work activities when working from home is caused by the monotonous way of interacting with colleagues, both formally and informally. This harms the motivation and productivity of employees. A large part of informal interactions is left behind and not replaced due to the working from home restrictions of Covid 19. The

negligence of contact and thereby reduced feeling of involvement in the organisation is unadvantageous since communication between the organisation and the individual fosters the transition of abrupt change.

Since the context of change is an abrupt situation with new developments and uncertainties regarding the change's impact and duration, both the organisation and individual employees require to take more effort to deal with the change. The temporality of the abrupt change and the expectation to mostly go back to the situation as before, help both the organisation and the individual deal with the change.

Interviewees wish to incorporate lessons from the abrupt change process regarding flexibility, individual independence and responsibility to work deadlines. Moreover, the enforced reduction in the division between work and private has led to a broader collective understanding of private life's personal preferences and contexts.

The abrupt change stresses a better development in the analysis of organisational and individual factors and the impact work and the workplace contexts have on the experience to create a successful abrupt change experience and improve alignment between employee preferences and organisational objectives.

2 Recommendations

2.1 Recommendations for practise

The recommendations for implementation are provided in the findings & implementation chapter. Apart from the implementation recommendations, the following recommendations are made.

Value of the workplace
In the aftermath of Covid-19, organisations have to reconsider how they value workplaces. What activities & routines are facilitated? How does the organisational identity expand outside of the office workplace, and involve employees and new talent? Keeping the organisational objectives and the employee experience at the centre of the organisation's strategy establishes a constructive starting point for a future change strategy. Covid-19 provided insights into that the workplace requires adaptability and flexibility in Corporate Real Estate strategies.

Furthermore, facility managers have a quantitative and objective way to configure office space. Their value-creation for the workplace focuses on output-derived matters. This research presents the emotional journey of experiences and how these experiences are structured and gives insights into the drivers upon which value creation can be formed and stresses the importance of looking at objective matters and taking subjective experiences into account.

Interplay organisation and employees
It is beneficial for both the organisation and individual employees to align the preferences and expectations with the organisational goals and involve employees in the change process.
It is useful for employees to reflect upon the tasks, activities, and routine upon which the workplace needs and preferences are developed. Getting better insight

into the individual needs creates a supported set of requests for the organisation to facilitate and improves the collaboration between the individual preferences and the organisation that facilitates the space.

Organisations benefit from the alignment of the employee experiences and workplace facilities. The research stresses the need for employers to get insight into the composition of the employees, not merely by age or expressed preferences, but by the detailed activities that build up the week-schedules and personal preferences. It is recommended that organisations listen to employees' preferences before enforcing employees to return to the office for a certain amount of the time.

2.2 Recommendations for further research

The research is limited by the time, context, method and approach and provides recommendations for further research.

First, the amount of case studies and interviews is limited by the time frame in which this research is conducted. The research findings' validity will be greater if more cases have been studied so that a cross-case analysis of multiple contexts was possible.

Secondly, the case study research is conducted in the societal and economic context of the Netherlands and is focused on corporate organisations. For further research, it would be attractive to look outside the Dutch context and take a broader range of organisations into account, for example, educational and governmental institutions.

Thirdly, the methodology of the research consists of a qualitative study of a single case study. The exploratory interviews consisted of the study of change and experiences and are held in a single point in time. To study the experiences at multiple points in time during the Covid measures would give insight into the formation of and evolvement of experiences. Moreover, further quantitative study is necessary to analyse the validity and implement ability of the factors that contribute to the employee workplace change experience in different organisations and provide further guidelines to practice how to use the workplace strategy findings.

Moreover, the research is an exploratory and holistic approach to employee workplace change experiences. For further research, it would be interesting to narrow the scope and go deeper into forming one aspect of the experience and perceptions of it. This would mean more psychological research and is therefore not within the scope of Real Estate Management, yet would help better understand the drivers of which opinions and preferences are formed, which in the end evaluate workplaces.

Lastly, an abrupt change in the workplace has not been studied at large. Gradual organisational change is a topic of research upcoming in the last decades. The exponential growth of technological developments creates faster-changing trends in the office workplaces. It would be interesting to study the impact of the abrupt

workplace change that Covid-19 caused concerning the trends in workplace strategies, after working from home is not a governmental policy anymore.

In conclusion, Covid-19 provided an abrupt change, that allowed studying change experiences and contributing factors. The research is done from an employee perspective. This study on how an experience of abrupt workplace change is created, can contribute to the broader research on gradual change through trends and new ways of working. Covid-19 provided a context in which change occurred quick and profound. For future research, it would be interesting to study the abrupt change experience's implement ability onto organisational change and new ways of working strategies.

3 Discussion

3.1 Contribution of the research

This research is done during the Covid-19 epidemic. New developments of the number of people infected and governmental policies regulating the severity of restrictions on working in the office changed during the empirical research, resulting in adapting the research strategy during the project. The contribution of studying Covid-19 during the epidemic are twofold.

First, the interviews regarding the change experience are held during the change and without the certainty of the duration and impact of the change in the long run, making it possible to obtain the interviewees' un-partisan experiences since the experience is lived in the moment, fresh and raw. Moreover, this omitted bias of both the researcher and the interviewees regarding reflecting on the change and aggravate or diminish experiences felt at the time of the Covid-19 restrictions and the change process.

Secondly, the impact of Covid-19 has not been studied before, since before the research started, there were no cases of Covid-19 in the Netherlands and this type of aerosol virus had until this moment not have had an impact like this in the last century.

Within Design & Construction Management, this research contributes to the focus on the process of change instead of solely focussing on the outcome of change. The employee experience and involving employees in the workplace strategy enhance the prospect of a successful workplace change. It augments the performance of all stakeholders, both the employees and organisational managers. Furthermore, more focus on the flexibility and adaptability on emerging developments during the change process should be given, since the abrupt changes of Covid-19 proved to be a lesson into letting go of some control and being open and adaptable to new developments.

The Covid-19 epidemic accelerates the trend of focussing on health and well-being in corporate real estate management (CREM). This research contributes to the research on health & well-being in the office by exploring employee preferences and expectations regarding the future workplace after Covid-19. It stresses that the starting point of a healthy & productive office environment starts with research on employee preferences. Furthermore, this thesis adds to CREM-research on a workplace strategy to increase competitive advantage regarding the attraction and retainment of talent. After Covid-19, the workplace representing the organisational

identity and facilitating interaction and bringing colleagues together is still an imported value of the workplace.

3.2 Methods & approach

The first stage of the research consisted of a systematic literature review conducted to find the knowledge gap. The structured approach to tackle a large number of research papers helped define the research questions and direction. Initially, the systematic literature review was much effort, but the papers analysed to find the knowledge gap were also proven useful in the later research stages.

Since the research is exploratory, the theoretical framework was developed continuously and altered to grasp better the boundaries of what is being studied in the research. New insights in the findings provide a demand for new theoretical information and more profound theory research, which shaped the research process as being iterative.

The emergence of Covid and its consequences on society and workplaces, notably, steered the research to study abrupt external change. The wish to conduct an observational study was relatively early transformed into research that could be carried out entirely online since the process and duration of Covid remained unclear. This change in approach avoided the adverse effects of Covid on the research methodology as much as possible.

Exploratory interviews helped further define the research direction and phrasing of the questions in the single case study. The approach of conducting exploratory studies in different contexts helped create a better understanding of employees' lived experiences derived from their personal preferences or organisational context. The analysis of the exploratory interviews was rather time-consuming. First, the interview length was about one hour each. The interview incorporated the whole change process and a lengthy review of all experiences of working from home. Secondly, the transcription and open-coding was a lengthy process, yet the data collected by the exploratory interviews provided ample qualitative input for the research.

The embedded case study in a single context provided multiple viewpoints of the organisational context. The study plan consisted of multiple embedded case studies. Unfortunately, due to a new lockdown, organisations were unwilling to participate in the study and due to time constraints, the decision was made to do a single case study.

3.2 Validity of research

In the Empirical research method section of the research report, Yin (2018) defined the case study tests and tactics to ensure the case study research's validity. In explanatory and causal research, internal validity is assessed as well (Yin, 2018). Since the nature of the research is exploratory, the assessment of internal validity is not evaluated.

Construct validity
Yin (2018) defines construct validity as the identification of correct operational measures for the case study. The tactics applied in this research include using multiple sources of evidence; multiple interviews were held in both empirical

phases until saturation was reached. The interviews are compared with a variety of studies to add to the validity of the findings. Furthermore, the theoretical framework's fundamental concepts are combined with the selective codes in the data collection phase to ensure a thorough analysis of the aspects found in the literature.

External validity
The external validity of the research is concerned with the generalisation of the study. As previously defined, the method of a single case study does not allow statistical generalisation, yet through the development of themes and descriptions, the research is generalisable by argument *(Christersson et al., 2017; Creswell, 2007).*

The multiple case studies in different sectors in the exploratory interviews employ the replication logic of the study. The case study criteria are defined and can be replicated as well. Furthermore, through the phrasing of 'how' and 'why' questions in the second phase of the empirical research, the underlying reasoning of preferences is explained. The focus of the reasoning behind preferences and expectations of the interviewees makes the findings applicable beyond the single case study and the specific context of the company. However, the generalisation of the research would be greater if the research was not limited to a single case study in the second phase.

Reliability
The reliability of the research concerns the replicability of the research with achieving the main results (Yin, 2018). First, the research process and procedures are documented in the section 'Empirical research methods', widely elaborating upon the research design, data collection, and data analysis. Secondly, the theoretical framework derived from the literature study combined with the axial codes forms the selective coding. The interview protocols are included in Appendix C and helped structure the interviews. The chain of evidence is maintained by citing the documents used and referencing the interviewees. The interviewees' identities are anonymized through not mentioning more than the age and function described in the research. The research team stores the interview recordings, transcripts and data from Atlas TI following the data plan and GDPR.

VII. REFLECTIONS

1. Relevance to Master Track

The research has been done as a graduation thesis for the Management of the Built Environment master track of the Master Architecture, Urbanism & Building Sciences at the TU Delft. Management of the Built Environment is concerned with the relation between people and Real Estate. The overall master program, Architecture, Urbanism & Building Sciences, is constructed on the interaction between people and the built environment. Managers of the Built Environment manage spaces, not places: the physical environment is shaped to the opportunities of its users. Studying the effects of abrupt workplace change on the users is in line with the research of Real Estate Management where the alignment of the real estate strategy with the needs of the business and their users is studied. Moreover, the research provides insight into the emotional journey of experiences that users of space go through, and this contributes to insights into the approach of how to manage Real Estate.

2. Personal reflection

3.1 Process towards P2

The course AR3R010, the Graduation lab up until P2, started with an intense and motivating kick-start of the graduation thesis. I was immediately motivated by the fact that the interest in the interaction of people and real estate could be turned into the subject of the master thesis. After the covid-19 crisis unfolded, it became clear that this change affects the daily lives of everyone and forcing a tremendous change in the workplaces, changing the relationship between employees and the workplace and providing an opportunity to study these changes at the time of happening.

However, the covid-19 brought uncertainties and challenges. Some papers studied for this thesis become applicable for the current situation, such as Felstead's (2012) description of challenges for effective functioning while working at home, as well as understanding affordances of the home-environment regarding work and domestic activities. Not being able to study at the faculty made it more challenging to discuss the research content and process with fellow graduate students and mentors and made it possible for perfectionism to roam freely.

The systematic literature review was first set-up to narrow. After receiving feedback on the search terms, these were adapted, and a new systematic literature review was conducted. In hindsight, these search terms were too broad, since a tremendous number of papers needed to be analysed. The never-ending process of analysing papers slowed down the motivation and process of writing.

3.2 Process towards P4

Towards P4, the preliminary findings of the systematic literature review were presented at P2 but still needed finalisation. The arrangement of interviews in different cases went relatively smooth, even as the process of finding interviewees and conducting the interviews. Apart from one, the interviews went smoothly, and when asked about personal advantages and discontents regarding Covid and

working from home, the interviewees spoke frankly. Apparently, people do not mind to talk about their lives and put the Covid-situation in perspective. I think the fact that the interviewees were conducted online helped the research since the interviewees were sitting in their home environment, distancing themselves physically from the office, thus the organisation, and spoke more freely.

After the exploratory interviews, the approach and goal of the research became lost. I was struggling with the next step of the research yet could not figure it out. Finally, after P3, the change in methods to case study helped get the research back on track and work more structured toward the research aim.

The research process was more difficult than I expected beforehand. I knew that I have a tendency to be perfectionistic, and intended to suppress that by not getting stuck in a bubble, asking many questions and discussing the research with fellow students. However, Covid made this more challenging. Due to the Covid restrictions, the (partial) closure of the university, as well as a rare visit to the internship company did the thesis concerning working from home a little too close to home. Stuck in the home environment with limited interaction with fellow students made writing a thesis more individualistic. This reduced my productivity and increased the perfectionism since I am a strict critic of my work. Herein I learned that it is essential to call with fellow students, discuss issues and brainstorm together, even though it is not a spontaneous run-in in the hallway but an arranged meeting.

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IX. APPENDICES

Appendix A – Systematic literature review analysed papers

Table 11 List of papers with New Ways of Working as starting point change. Main finding as cited from the paper.

Author	Title	question	Method	main finding
(Babapour, 2019)	From fading novelty effects to emergent appreciation of Activity-based Flexible Offices: Comparing the individual, organisational and spatial adaptations in two case organisations	What are the long-term consequences of implementing A-FO's in the workplace?	(i) semi-structured interviews with 26 employees and (ii) process enquiries involving the collection of secondary data and interviews with facility management teams	"limited options for improving an AFO solution lead to lingering work environment problems. By contrast, modifying the solution through systematic processes based on employee feedback helped resolving the initial problems. Over time, this led to an increased appreciation and a sense of collective ownership of the AFO solution."
(Ekstrand & Damman, 2017)	Management of integrated workplace concepts at multiple locations	How are the implementation and management of an integrated workplace concept (IWC) in multiple office locations affected by local management practices and other contextual and cultural aspects	single case study, semi-structured interviews	"The findings indicate that when an IWC meets different local cultures and realities, the concept and its different aspects may transform in different directions – ultimately affecting concept interconnectedness and strategic value. The findings further suggest that the concept's socio-material implications vary between locations and actors at different levels. For IWCs to serve strategic aims, they must be continuously aligned and re-aligned with changing organisational strategies."
(Gerdenitsch et al , 2018)	Need-Supply Fit in an Activity-Based Flexible Office: A Longitudinal Study During Relocation	What are the effects of replacing cellular offices with A-Fos on office workers?	intervention study, survey and diary	"We found a linear increase of perceived need–supply fit, a decrease in distraction, and a significant interaction effect where workspace satisfaction and interaction across teams increased more strongly for participants reporting a better perceived need–supply fit."
(Houghton et al , 2018)	Working from the Other Office: Trialling Co-Working Spaces for Public Servants	how Flexible Work Centers can be used by Queensland Government employees, and what impact this type of work and accommodation may have on productivity, staff retention and work–life balance of employees	Four surveys, diaries and focus groups 47 trial participants from 10 different government departments	"The benefits of the flexible work arrangement and specifically the provision of an alternative work venue was highly praised and appreciated by participants and supervisors. There were noted key qualities of staff and work types that this arrangement works best for, and trust in employees was paramount. The positive results of the trial saw a continuation of the provision of the flexible workspace arrangement and investigations into further extensions of the program."
(Jayantha & Oladinrin, 2019)	Evaluating the effect of new working practices on office space usage in Hong Kong	whether NWPs influence office space usage in business organizations in Hong Kong	A survey was conducted with listed FIREB firms in Hong Kong to assess the impact of the identified NWPs on space usage	"four major NWP factors influence average space usage. Three of these factors, namely, flexible arrangement , multitasking knowledge workers and teamwork and communication , influence space usage positively. Even though the effect of the fourth factor training and networking was significant, it does not reflect a positive influence on space usage."
(Rolfö et al , 2018)	Perceptions of performance and satisfaction after relocation to an activity-based office	how do physical conditions, office use, communication, privacy, territoriality, satisfaction and perceived performance change following a company's relocation from an OPO to an ABW?	A mixed methods approach included pre- and post-relocation questionnaires and post-relocation focus groups, individual interviews and observations	"Satisfaction with auditory privacy, background noise, air quality, outdoor view and aesthetics increased significantly after relocation. Negative outcomes, such as lack of communication within teams, were perceived as being due to the high people-to-workstation ratio and lack of rules. Overall satisfaction with the physical work environment increased in the ABW compared to the OPO. Perceived performance did not change significantly. "
(Tagliaro & Ciaramella, 2016)	Experiencing smart working: a case study on workplace change ma nagement in Italy	what is needed for office space downsizing because of smart working models, in order to shrink occupancy costs and enhance worker's productivity	Case study: triangulation of different methodologies, both quantitative and qualitative Walk-throughs, observations, questionnaires, interviews and focus groups	"Inter-disciplinary collaboration between corporate real estate, facilities management and human resources departments, with employees' involvement, has been fundamental for gaining useful insights. "
(van Diermen & Beltman, 2016)	Managing working behaviour towards new ways of working: a case study	How do you manage people and their working behaviour successfully during workplace change from traditional working to NWOW?	6 interviews with the project team of the R&D department; focus group interviews with employees on personal views on expected working behaviour	"The outcomes of the research, literature review and field study clarify the critical success factors for internal communication to manage the workplace change, so it lives up to the expectations. These are: face-to-face communication, assigning the manager the role of workplace change leader and use internal communication to inform employees and inspire them."
(Warren et al , 2007)	The future @ work: delivering effective corporate real estate	how is workplace use predicted to change in the near future and what are the implications of that change for managers of those assets	survey (n=65) of senior corporate property managers throughout Australia	"The research reveals that there exists a divergence between corporate property managers' perceptions of the role of property to the organisation and the perceived role by business managers. The research also reveals that workplace use is expected to change in the near future with greater need for flexibility in design, contracts and employee behaviour. "

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Table 12 Papers that include relocation. Main finding as cited from the paper.

Authors	Title	question	Method	main finding
(Christersson et al., 2017)	Social impacts of a short-distance relocation process and new ways of working	What is the relocation process from the individual employee perspective? And what are the social impacts?	Semi-structured interviews, supplemented by diaries and participatory action research.	After the relocation, adaptation was considered easier than originally anticipated and experiences of improved inter-team collaboration were reported by most while others experienced just the opposite, pointing out to emerging individual differences.
(Lahtinen et al., 2015)	Developmental needs of workplace design practices	What is a typical workplace design process, focussing on the success factors of change management in the context of a relocation from a traditional cell-office to a multi-space office?	Single case study. Survey and interviews	the personnel was critical of both the workplace development project and the participative process. clear, common change goals, and open communication that allows constructive criticism is important in the change process.
(Nappi et al., 2020)	The interplay of stress and workspace attachment on user satisfaction and workspace support to labour productivity	how does the relationship between employees' workspace satisfaction and their respective perceptions of workspace support to labour productivity?	Web-based surveys conducted before and after a company's short-distance relocation. 2 studies	Contrary to expectations, employees' workspace satisfaction is not related to their evaluation of this workspace as supporting labour productivity. Instead, this relationship is moderated by job stress.
(Rothe & Heywood, 2015)	Demystifying the short-distance relocation process: 5 cases from Finland	What are the different short-distance relocation management approaches applied by organisations in Finland?	multiple case study, 5 organisations	The findings show that relocation can take different forms and be approached in many different ways and relocation can vary from a strategic process to a logistical move, depending on the level of change that is aimed for or that just occurs
(Smollan & Morrison, 2019a)	Office design and organizational change: The influence of communication and organizational culture	What impact does organizational culture and communication have on a change to new office space? What impact does the experience of new office space have on communication, organizational culture and the acceptance of the change?	interviews were carried out in a New Zealand law firm six months after the move to new premises.	Contrary to academic and practitioner reports that open-plan offices are disliked, participants appreciated the new office space. A well-planned and highly participative program of change management led to positive perceptions of aesthetic design, open communication, collegiality, egalitarianism and inclusiveness.
(Sundstrom et al., 1982)	Privacy and communication in an open-plan office: A Case Study	What is the satisfaction regarding privacy and communication, afforded by the office environment, after a relocation from a conventional to an open-office plan office?	Survey on the office environment, 6 months prior and 6 weeks after moving from a convential office to an 'open-plan' office.	Neither satisfaction with communications nor perceptions of noise changed after relocation, but satisfaction with privacy declined among former occupans of walled offices.
(Stang Våland & Georg, 2014)	The socio-materiality of designing organizational change	What are the managerial implications of adopting a design attitude to organizational change.	Single case study.	A design attitude allows for multiple contributions to organizational change processes that can help reduce anxiety among those involved. The approach calls for openness, experimentation and the ability to balance different concerns. It can provide new ways of attending to resistance and produce valuable inputs to shaping organizations.

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Table 13 papers on the transformation of the workplace. Main finding as cited from the paper.

Authors	Title	question	Method	main finding
(Brooks, 1972)	Office landscape does it work?	Is a landscape style of office suitable for a companies varied operations, in view of the claims of economy with increased productivity?	Survey through the use of semantic scales	Clearly space adaptability is a direct function of management policy and practices either in the landscaped environment or in the conventional office wherein employees bring in personal items and decorations
(Chilton & Baldry, 1997)	The effects of integrated workplace strategies on commercial office space	What is the theoretical back-ground to the development of these workplace strategies and what are the factors which are most significant for space users and which influence personal and corporate performance?	survey 3 companies	the level of satisfaction perceived by the employees in their working environment even after the six-month post-occupancy period was reasonable while the strong link between aspects of the design of the workplace and operational efficiency was clearly estab-lished It would however have been expected that after such high levels of investment a greater level of satisfaction would have been achieved
(Duffy et al, 2011)	Purpose, process, place design as a research tool	how design variables - specifically spatial arrangements and adjacencies can be best deployed to improve working practices in order to help creative organisations to enhance the performance of working groups ?	Observations of space use over time and questionnaires	the processes by which innovation is encouraged and the quality of places where innovation can become customary should be given as much attention as the search for innovation itself Fundamental findings from the investigation was how dissatisfied people were with their current workplace Across the two groups only 34 per cent said they were satisfied to any extent
(Ekstrand & Karsten Hansen, 2016)	Make it work! Creating an integrated workplace concept	What is the relationship between organisational flexibility and individual adaptation in the implementation of integrated workplace concepts	semi-structured interviews, observation studies and analysis of secondary material	To fully achieve the intended ends organisational cultural and managerial aspects need to be aligned with the interconnected workplace concept To create alignment the concept also needs to be supported by a process of continual improvement and organisational learning
(Engelen et al, 2016)	Do active design buildings change health behaviour and workplace perceptions	Does moving to a health-promoting building have an effect on the office workers?	A survey 2 months before moving and 2 months after	Moving to an active design building appeared to have physical health-promoting effects on workers but workers' perceptions about the new work environment varied
(Giddings & Ladinski, 2016)	Implementation of a local authority workspace strategy in the UK The case of Gateshead Metropolitan Borough Council	What is the implementation of a workspace strategy within Gateshead Metropolitan Borough Council?	survey	The results show that government targets for office space utilisation have been exceeded thus supporting more efficient property asset management The research has also established that the employees are generally satisfied with their new workspace
(Halvitigala & Reed, 2015)	Identifying adaptive strategies employed by office building investors	to what extent investors address tenants' changing demand for office space with reference to layouts in new and existing office buildings	A qualitative study comprising in-depth individual interviews	Building structures and layouts are designed to be modified quickly and cost effectively to address tenants' changing needs Implications affecting tenant demand for flexible spaces on their lease contracts were also identified
(Higgins et al, 2000)	Influences on Australian organisations' new space demands	How can you identify and evaluate the factors influencing organisations' new space decisions?	surveys	An index of degree of importance constructed from the results can provide a new platform for corporate real estate planning and a strategic approach to commercial property market decisions
(Hirst & Humphreys, 2013)	Putting Power in its Place The Centrality of Edgelands	What is the relationship between a new strategic centre office building and a paper storage unit situated in an "edgeland" Edgelands are interfacial areas between town and country and are sites where essential but despised functions are located (Shoard, 1992)	interviews and observations	"modernization' involves attempts to create a purified space constructed only from human and material actors deemed "modern' and expel that which is designated as outdated
(Hongisto et al, 2016)	Refurbishment of an open-plan office - Environmental and job satisfaction	Is there a relationship between the quality of the physical environment and employee satisfaction?	A quasi-field experiment was conducted in an open-plan office of 135 employees after refurbishment 2 surveys before and after the refurbishment	Significant improvements were found in nearly all inquired aspects of environmental satisfaction They could be logically traced to the physical changes provided by the refurbishment The improvements could also be supported by the physical measurements Both environmental and job satisfaction were improved Qualified change management involvement of employees and carefully designed refurbishment agenda were together believed to be the main reasons for the improvement of job satisfaction
(McElroy & Morrow, 2010)	Employee reactions to office redesign A naturally occurring quasi-field experiment in a multi-generational setting	What are the human reactions to the company's office redesign effort?	survey	employees assigned to the redesigned office environment report less workspace and more distractions than those who remained in a cubicle environment but that this finding was moderated by age generation Employees moved to the newly redesigned space reported more favorable perceptions of culture and work-related attitudes with no age moderating effects Taken together results provide support for the theory that office redesign is an effective strategy for implementing organizational change
(Meijer et al, 2009)	Effects of office innovation on office workers' health and performance	what are the effects of an innovative office concept on the health and productivity of the office workers	questionnaires of 138 workers at baseline and 6 and 15 months afterwards an implementation of innovative office concept	Perceived productivity increased significantly 15 months after the implementation It is concluded that innovative office concepts had no or limited effects on work-related fatigue health changes and productivity but some positive effects on workers' general health and upper extremity complaints in the long term
(Morrow et al, 2012)	Influencing organizational commitment through office redesign	Does office redesign affects organizational commitment and what is the effect of employee perceptions of the broader work environment in this relationship?	survey	perceptions of innovation and collaboration mediate the effects of office redesign over and above negative personal reactions such that affective organizational commitment is enhanced among those experiencing reconfigured offices
(Sivunen & Putnam, 2020)	The dialectics of spatial performances The interplay of tensions in activity-based organizing	What types of tensions surface in enacting workspaces in everyday activities and how do they stem from the dialectical interplay among conceived, perceived, and lived spaces?	1 case organisation, observations and semi-structured interviews	The study suggests that embracing tensions through managing the fluidity and flux of space gives rise to adaptability Thus in orchestrating workspace changes it calls on organizational members to attend to mobility constellations of objects and materiality and temporal boundaries in navigating space rather than focusing on fixtures and designs

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Appendix B – Form of consent

Research: Employee experiences of workplace change, as caused by Covid-19
Institution: TU Delft
Graduation organisation: Savills
Interviewer: Leenke Jense

Please tick the appropriate boxes

	Taking part in the study	**yes**	**no**
1	I have read and understood the information for this research study. I have been able to ask questions about the study and my questions have been answered to my satisfaction.	☐	☐
2	I consent voluntarily to be a participant in this study and understand that I can refuse to answer questions and I can withdraw from the study at any time, without having to give a reason.	☐	☐
3	I understand that the information will be captured as an audio-recorded interview, with the purpose of transcribing and analysing the information.	☐	☐

	Use of the information in the study	**yes**	**no**
4	I understand that information I provide will be used for academic purposes for the graduation project and corresponding presentation at TU Delft, unless indicated that certain information is confidential.	☐	☐
5	I understand that personal information collected about me that can identify me, [e.g. my name or e-mail address], will not be shared beyond the study team and will be destroyed when this study is complete.	☐	☐
6	I understand that the transcript will not identify me by name but will use the study code and that the original digital recording will be erased once the accuracy of the transcript has been confirmed.	☐	☐
7	I agree that my information can be quoted in research outputs		
8	I understand in case that this research will be published, I will not be identified as a participant in this research in any publication.	☐	☐

	Future use and reuse of the information by others	**yes**	**no**
9	I give permission for the publication of the completed graduation thesis in the TU Delft educational repository, of which the anonymized transcripts have helped contribute to the results, to be used for future research and learning.	☐	☐

Signature

Name of participant   Date   Signature

Appendix C – Interview protocols

1. Exploratory semi-structured interview protocol

Start
- Thank you
- Intro Leenke
- Master thesis TU Delft
- Goal: gain deeper understanding of process of change
- Recordings

General
- Scope of work?
- Current Covid-measures set in place
- Return to office

Work routine & activities
- Before and after corona
- Interaction with colleagues
- Personal empowerment

Process
- Experience of transition
- What is the change process? Abrupt?
- Role of organisation
- Personal empowerment
- Communication
- Culture

Workplace
- Ideal
- Value most & least?
- Has concept altered?

Expectations

- Work from home
- Company culture
- Ways of working / routine
- What positive change

Is there something that you would like to add about your workplace, workplace habits and activities that you consider relevant for this research?

End

- Thank you
- Next: analyse and survey
- Share results

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2. Embedded organisational study (Dutch)

Start

- Bedankt voor meedoen.
- Onderzoek: verandering op de werkplekervaring door Corona. Deel 1 focus: veranderproces, ervaring thuiswerken. Deel 2 richt zich op toekomst: Waarom kom je naar kantoor? Hoe zou jij het naar het kantoor gaan vormgeven?
- Informed consent form getekend?

Algemeen - 1

- Mag ik vragen wat je leeftijd is, en hoe lang je werkt voor Savills?
- Wat is je functie en wat zijn de werkzaamheden in de functie?

Waarom naar kantoor? – 2

- Wat zijn de top 3 redenen waarom je naar kantoor komt? Waarom?
- Waarom is het kantoor hier noodzakelijk voor?
- Voor welke werkactiviteiten is het essentieel dat je naar kantoor komt? Waarom?
- Hoe loste je dit op ten tijde van thuiswerken?

Het toekomstige kantoor -3

- Noem bij de volgende aspecten wat je zou willen doorzetten, stoppen of veranderen/ opstarten.
  - Meetings
  - Interactie collega's
  - Organisatiecultuur
  - Scheiding werk-privé
  - Fysieke werkplek

Aspect	Doorzetten	Stop	Starten	Hoe?
Meetings				
Interactie collega's				
Organisatiecultuur				
Scheiding werk-privé				
Fysieke werkplek				

- Bij elk aspect: hoe wil je dit veranderen?
- Waarom wil je dit veranderen?
- Wordt je door de organisatie betrokken in het vormgeven van het naar kantoor gaan?
- Zie je het realiseren van het ideale kantoor iets wat de organisatie doet of waar je zelf aan bij draagt?

Is er nog iets wat je wilt toevoegen?

Bedankt voor het deelnemen aan het interview!