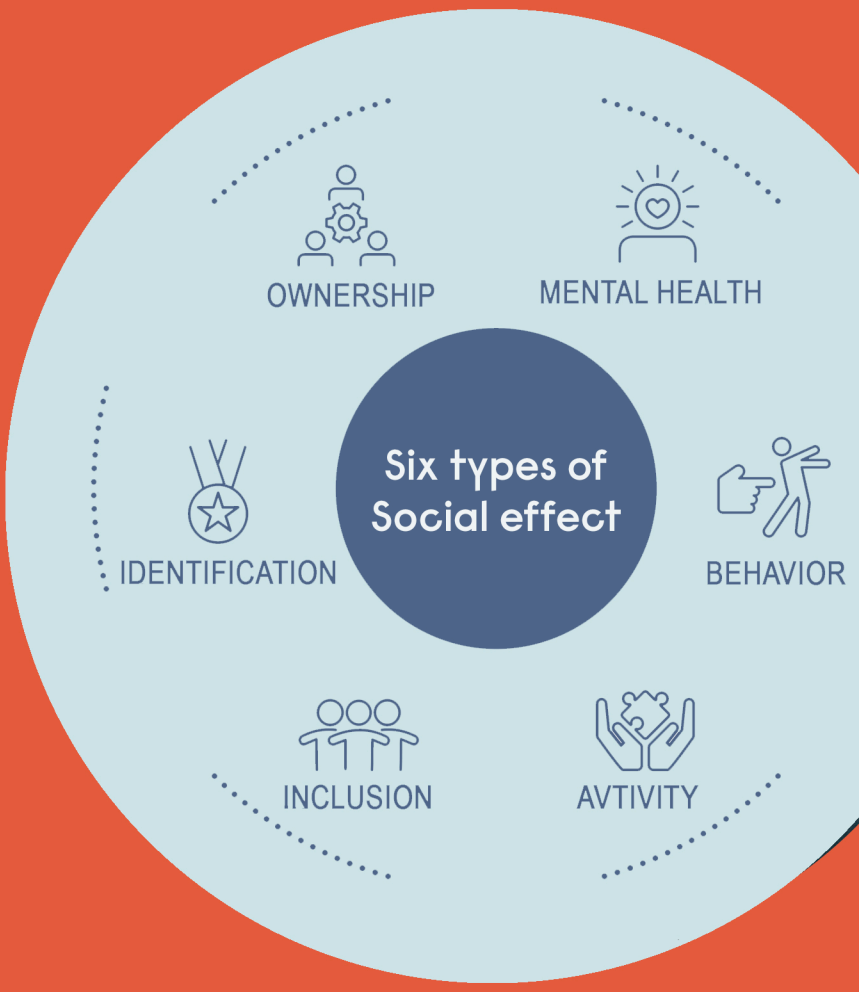
Internship Project Portfolio

Company analysis, Product analysis & reflection report



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RUC Carlberg

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Pre-reflection report

How it all began

During the summer of 2018 I worked at a center for youth with cognitive disabilities. I had given up my career as a freelance designer and photographer and felt that I needed to figure out whether I was destined to follow the footsteps of the rest of my family and become a pedagog. I did not last more than three months. I thought the work environment was unhealthy and that the users did not get the care and attention they deserved. But what kept me up at night was how this new building where I was working, was lacking any consideration regarding the users. Although around eighty percent of our users needed wheelchairs, theise did not fit inside the restrooms. There were no places where the users could get shielded from the many sensorial inputs, which resulted in some having severe attacks, where they either hurt themselves or others. Sometimes we had to fixate them to ensure that they did not cause any harm. It was clear that the architects had put little thought into the user's needs.

I started seeing more and more examples of new buildings that had severe flaws regarding the social well-being in these places, which eventually led to my enrollment in Spatial Designs and Society. To this day I am still shocked by how little evaluation and user involvement play in the building and architecture industry. Fortunately I was lucky enough to become an intern in a company that focuses on exactly that. The following project portfolio is an analysis inspired by a six months internship at Carlberg Aps during the fall of 2020. The portfolio focuses on the important methodology used by the company, but also the challenges that arise when evaluating the social impact of buildings.

First, I will look at the company Carlberg Aps and their work with *social bricks* and thus social sustainability. Then the paper will dive into one of their recent projects where they designed and executed the baseline for a before-after measurement of a dining hall and kitchen, at a boarding school for children with learning disabilities. Here I will take a closer look at the methodological challenges, especially when establishing a baseline in a Covid-19 affected world, but also the gains that this obstruction caused. The internship portfolio is finished with a reflection on the six month period at Carlberg, how I quickly became a part of the team and how their work area relates to my master programme in Spatial Designs and Society at Roskilde University.

Company analysis

Social Bricks: Putting the social back in sustainability

Introduction

Social sustainability has been neglected in the building industry and priority has been given to economic and environmental sustainability (Woodcraft et al. 2012, p 7). This has resulted in few resources that directly address the question of how to create places that are socially sustainable (ibid, p 15). However, within recent years, a bigger attention regarding indoor climate has increased the focus on social sustainability. We spend ninety percent of our time indoors (more accurately 86,7 percent, Klepeis, 2001, p 50). A quick google search on this topic shows that institutions and organisations such as RealDania, DTU, Miljøstyrelsen etc. use this reference to put indoor climate on the agenda, and underline its importance. Figures show that an unhealthy indoor climate can cost society an estimate of 615 billion danish crowns (Healthy Home Barometer, 2017). This has led to an increased attention and research concerning indoor climate. When we look at the certification for social sustainability (DGNB), many of the factors regard our physical well-being inside buildings, often in terms of indoor climate. Although our physical well being in buildings is an important factor of social sustainability, it expands beyond indoor climate. One of the few companies that do work with unfolding the other important factors is Carlberg ApS. They work with an approach called *social bricks* to ensure the social needs in the physical shaping of buildings. This analysis will look at how Carlberg work and how their approach to architecture and buildings, can be applied to the general building industry to ultimately answer the following research question:

> *How can social bricks help justify the importance of social sustainability in the building industry, in a time where economic and environmental sustainability is prioritized?*

The paper starts by introducing the state of the art for social sustainability and the built environment. It then continues on, introducing the company Carlberg and how they work with *social bricks*. From there the paper will look at the strength of working this way and how the building industry could benefit from incorporating social bricks into their design processes, due to the many benefits that come with this way of working.

State of the Art

There have been major knowledge developments regarding social sustainability when it comes to public and urban spaces. Jan Gehl & William Whyte have been the pioneer contributors and have changed the way we think about spaces and how they are used (Stevens, 2014, p 271). However, the same development has not happened when we focus on the life inside buildings, despite the fact that Ingrid Gehl put environmental psychology on the agenda back in the 1970s in Denmark, when she published her book Bo-Miljø (1971). Here she wrote that "Laws and regulations for construction ensure that a number of financial and technical requirements are met. But the human qualities that a building in the welfare state must meet today are not described, are not enshrined in law and are far too poorly fulfilled[1]" (Gehl, 1971, 6).

A report done by VIVE in 2019 underlines the lack of development within knowledge and experience regarding the effect of physical spaces on the social and pedagogical efforts, both nationally in Denmark and internationally (Siren, 2019). However, we are affected constantly by our physical environment, not only when we are outside in public and urban spaces.

Sarah Williams Goldhagen has been trying to understand how any built environment affects us. She uncovers this question by turning to neuroscience and environmental psychology (Goldhagen, 2019, xiii) . Lastly, Carlberg is one of the few companies that aim to broaden the focus on the effect of physical spaces on the social and pedagogical efforts and work with it in praxis.

Carlberg ApS

In the fall of 2019, Carlberg started having a specialised profile focusing on social sustainability. Before, the company was called Carlberg/Christensen and focused both on environmental and social sustainability. They currently consist of two full-time employees, one with an ethnology background and the other with a background in planning, as well as a few associated consultants (and me as an intern). Carlberg now work solely with social sustainability doing evaluations of buildings and places, strategic city development, and partaking in building processes. Another informal, but extremely valuable service that the company provides is being the mediator in the different building processes. Often, many different parties are involved in the building processes, with individual agendas and ways of seeing the world. This interdisciplinarity is underlined by Quetin Stevens: "Clients, designers and regulators of urban space have aesthetic preferences and representational objectives which may limit the usefulness of

[1] "Love og bestemmelser for byggeriet sikrer, at en række økonomiske og tekniske krav er tilgodeset. Men de menneskelige kvaliteter, et byggeri i velfærdssamfundet i dag må opfylde, er ikke beskrevet, er ikke lovfæstet og er i alt for ringe grad opfyldt"

spaces." (Stevens, 2014, p 20). Carlberg's role as a mediator in these projects can be extremely important to ensure the satisfaction of the different parties but ultimately to ensure the best end product.

Social Bricks

As mentioned, one of the major approaches that Carlberg work with is *social bricks*. It was not until 2017 that the term social bricks was adapted in the field of welfare architecture, but it is still rather new and the methodology is still developing. Back in 2016, a seminar with architects, funds, builders, researchers and leaders within the social area, gathered to discuss the meaning of the physical buildings for the social work targeted vulnerable and marginalised groups. The wake of this started a long process of screening the current research in the field and developing a method to start building more user focused in the future (Carlberg, 2017, p 2). This resulted in the new term *social bricks*:

> *"Social bricks* is an approach to modern welfare architecture, where knowledge of the impact of the physical environment on people is used to design physical frameworks that measurably elevate the effect of social and pedagogical work. The purpose is to create maximum social value within the construction budget"[2] (ibid, p 3).

Based on the meetings, Carlberg were asked to develop a tool that could help the work with social effects of architecture. It was very important that the tool did not consist of specific requirements concerning the acoustic and daylight etc., but rather it was based on social values.They developed *the effect prism* which points out six types of social effects, which the physical space has a well-documented influence on. The effect prism can be used both as a development tool and an evaluation tool. Rather than assimilating a building program where you write specific criterias for the building requirements, the effect prism is built on values. The development of the effect prism is in many ways an example of how Carlberg work in general with a focus on values.

The core of the approach is to make the purposes of the social work or the pedagogical effort the center for the design of the physical framework. It requires a developer with clear visions for

[2] "Sociale Mursten er en tilgang til moderne velfærdsarkitektur, hvor man anvender viden om det fysiske miljøs indvirkning på mennesker til at designe fysiske rammer, som målbart løfter effekten af det sociale og pædagogiske arbejde. Formålet er at skabe maksimal social værdi for anlægskronerne".

the social and educational work, and architects who listen to both professionals and users (ibid, p 4). When this succeeds, Carlberg have experienced how you can both raise the quality of life for individual users, but also contribute positively to the socio-economic effects in the form of faster recovery, stronger communities, better learning and increased health (ibid, p 5).

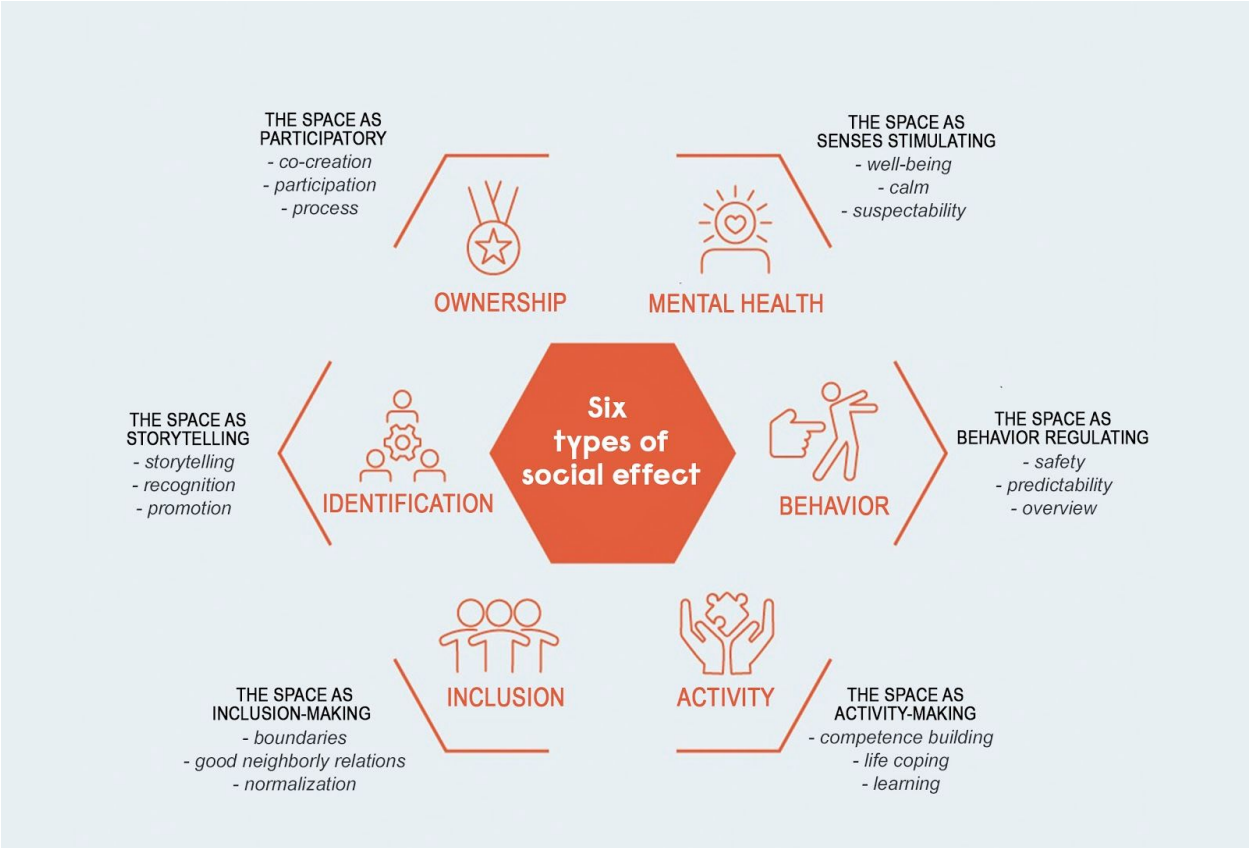

Figure 1 The Social effect prism. It shows the six categories for social effect which are possible to achieve through design and design processes. (Carlberg, 2017, p 9).

As mentioned, the effect prism consists of six types of social effects; *mental health, behavior, activity, inclusion, identification and ownership*. *Mental health* focuses on the physical spaces as senses stimulating, referring to focus on the materials, lighting, colors and nature as tools to create a space that is perceived as calm and thereby affecting both the well-being and susceptibility of the users. Many of these factors point to the indoor climate but, as the prism illustrates, social sustainability is much more than that. Even within the factors of mental health, the effect prism goes beyond indoor climate and expands beyond the factors that are typically measured in DGNB[3].

[3] The certification for social sustainability,

Behavior focuses on the physical spaces as regulating behavior by ensuring safety and predictability. This can be achieved by ensuring a visual overview of the space, intuitive way-finding and individuals ability to control the amount of stimuli.

Activity refers to the physical spaces ability to activate the users, their learning and competence building. This is not only about including activity space such as kitchens and gardens, but also thinking about how the users are incorporated in the space and how to facilitate partaking and activity.

Inclusion focuses on effects such as community building. Having common areas and bridge-building to other groups of the society can build a greater sense of normalization and inclusion in society. Often, many of the users feel marginalized and cut off from society. The focus on inclusion is an attempt to combat the exclusion from society.

The *identification* of the space focuses on symbolic value such as worthiness, recognition and pride. These elements can often be achieved through the last factor which is *ownership*. Here the focus is on the importance of involving the users in the process and the decision making, so they feel heard, valued and that they are a part of creating the place, which creates a sense of ownership. User involvement is not only important when designing welfare architecture, but is seen as a general vital part of the building process (Fabian and Samson, 2015, p 38). Kenneth Balfelt Team is another small but influential danish company that works with social sustainability. Instead of social bricks, they have user participation as their core value in their processes (ibid, p 32). They have inspired a way to successfully include the users so that they feel heard (Ibid, p 55). The team often includes the users, not only in the design process but also in the construction process (Balfeldt, 2019). They have teamed up with Carlberg on various projects and together they have inspired a new way of working with user participation through books, lectures and with their projects (Fabian and Samson, 2015, p 58).

To assess this new tool, the effect prism was tested as an evaluation tool on six different building projects back in 2017, where it was known that the users' needs had been incorporated in the design process of the buildings, through methods that have later inspired the effect prism and by having builders that were knowledgeable about the built environments effect on their users. This evaluation resulted in a report that underlined the social and economic benefits of working with the effect prism[4].

[4] *Sociale mursten: Seks eksempler på arkitektur, som gør en forskel for socialt udsatte*

The fish in the ocean

To understand the importance of the work that Carlberg do, it is necessary to look at who they work for and with, but also in which way they work during a building process. Over the years, Carlberg have built a profound relationship with some of the funds working to improve the social life of humans. Their biggest clients are RealDania and Den A. P. Møllerske Støttefond. They have also established a professional relationship to the municipality of Copenhagen. Carlberg both get commissions by writing applications to projects but often also get assigned directly by the funds. To explain exactly how this works, we will look at one of their current projects: the building of a new dining area and kitchen for a boarding school for children with learning disabilities. The school originally applied for funds from Den A. P. Møllerske Støttefond. The fund then contacted Carlberg and told them to make a new application together with the school, where they applied for a bigger sum of money, to include the focus of social bricks. The application then got accepted and Carlberg are now making an evaluation before and after the new dining area and kitchen, as well as being an ongoing partner in the project ensuring the incorporation of the user needs in the architect's design. This case will be explained further in the product analysis.

Designing great buildings can be difficult. Therefore multiple disciplines and research is needed to ensure that we built the best we can. Evaluating buildings before and after is extremely important so that we can learn from our developments and mistakes and improve it for future buildings. It is not just about troubleshooting or whether the buildings fail to fulfill the expectations. Evaluation is also important to have a better understanding of what works and why something sometimes does not work as intended.

Carlberg's involvement in the different steps of the building processes depend from assignment to assignment. However, they tend to work in a very specific way. This can be understood by looking at the graph below, which they call 'the fish'. The graph illustrates the different phases in a typical building process, and the part that Carlberg play (light blue):

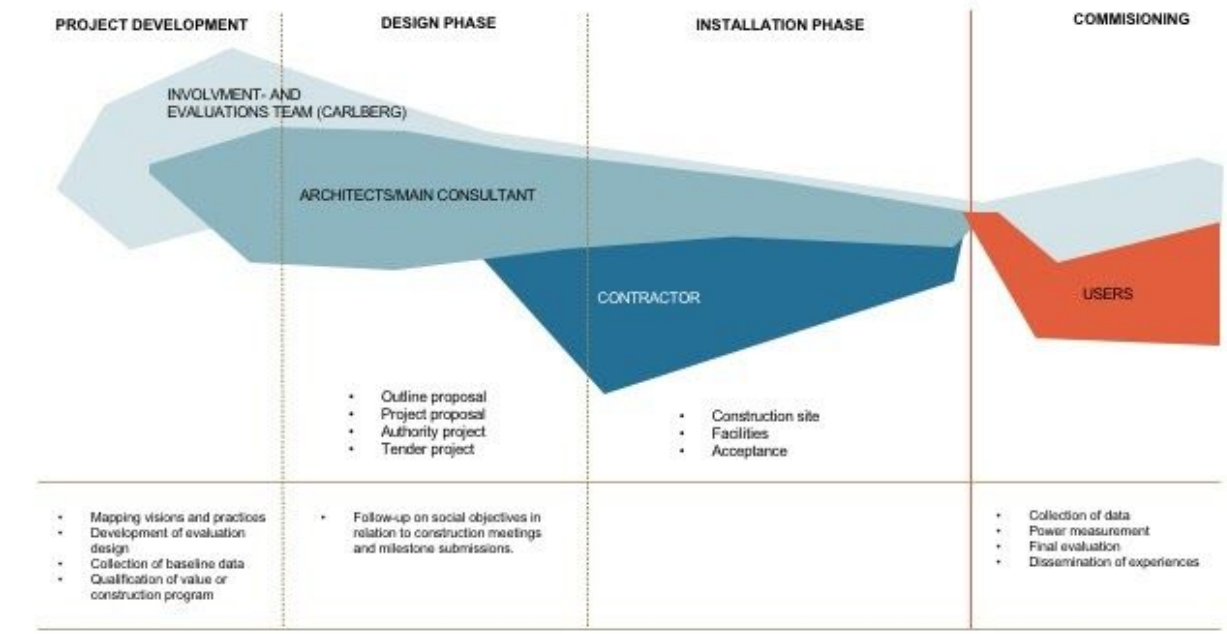

Figure 2 The building process of social bricks (Carlberg, 2017).

Building projects do not only have many different phases, but depending on scale they also have different partners involved. Carlberg prefer to be involved from the beginning to the end, (illustrated by the light blue area called ‘involvement and evaluations team’ in the graph above) to ensure that the social factors are included in the building bricks and in the architect's design. Carlberg starts by making a baseline analysis of the current building (unless it is a completely new building). During the baseline evaluation Carlberg gain valuable insight regarding the users' needs and their role afterwards becomes ensuring that they are incorporated into the design. Many of the issues established during the baseline are collected to inform the architects during the design phase. Carlberg often contribute or even facilitate user involvement workshops, to ensure that the architects incorporate and listen to the user needs. Rather than encouraging wishlists of desired features, the workshops focus on defining the values and the current challenges that the users face. Throughout my time as an intern, I observed how many of the architects that Carlberg have worked with are often not used to this phase, and ensuring that user needs are incorporated in the design, often becomes a challenging but necessary task.

Change is needed in the building industry

We spend billions on buildings without knowing the social impact they have on people and whether they work as intended. One way to combat this is by adapting the approach of social bricks and by starting to evaluate current building projects so we can learn from them and build better in the future. Goldhagen (2019, p 41) have beautifully argued for this importance:

> *"The more we learn about how people actually experience the environment in which they live their lives, the more obvious it becomes that a well-designed built environment falls not on the continuum stretching from high art to vernacular building, but on a very different sort of continuum: somewhere between a crucial need and a basic human right".*

To validate this argument we will take a greater look at some of the challenges that the current building industry is facing, to better understand how working with social bricks can combat these challenges.

Back in 2012 Juhanii Pallasma wrote the small book "*The Eyes of the Skin: Architecture and the Senses*". He was worried about the visual dominance in architecture and how it overpowered the other senses as avant garde architects seemed more interested in the visual exterior at the expense of the interior (Pallasmaa, 2012, p 94). Pallasmaa especially wanted to bring attention to the sense of touch and underline its importance. He argued that our sense of belonging and well-being is rooted in our original history as hunters and farmers which lies hidden in our bodies (ibid, p 93). He thought that the design processes in architecture had been condensed to a passive visual manipulation (ibid, p 29). Although the visual focus in architecture has resulted in amazing building structures, it has not endorsed our sense of being rooted in the world (ibid, 35). Although "The Eyes of the Skin" is a part of many architecture school's curriculum, we still see the vision dominating the building industry to this day (ibid, 11). Pallasmaa's overall argument ties well together with the concept of social bricks and the mental health factor of the effect prism; that we should focus more on how it feels to be in the buildings rather than solely how they look.

The importance of evaluating buildings through the use of social bricks can also be understood by looking at the theories of Dorst (2019) and Simonsen et al. (2010). Dorst argues that you need to move from a problem to a solution space and constantly evaluate the product. He puts the problem in the center of the design process and argues how you constantly need to revisit

the problem (p 61). Similarly, Simonsen et al. highlight the importance of synergies and describe the design process as iterative and contextual (Simonsen et al., 2010, p 27). They write that "Designing involves the intention of problem-solution." (Ibid, p 29). They elaborate that the problem-solution space provides the framework to solve a given problem or something that needs to be changed and that the design must be the artifact, which should be the catalyst for the more desirable situation (Ibid). Dorst and Simonsen et al. both speak of the design processes in a concrete design, however, building practices need to be seen as one big design process where you go back and forth, to combat the many pitfalls we often see in new buildings structures. This idea of problem and solution space should not only be seen as a way of working in a concrete design process but also to be adapted to the design process of the overall building industry, which is why Carlberg's focus on evaluating buildings is so important. Slagelse Psychiatric Hospital is a great example of what happens when we fail to incorporate social bricks. The hospital has received multiple awards for its aesthetic architecture, but was quickly denounced by the users as the treatment rooms at the hospital have glass walls that are neither soundproof nor tinted, which made them feel uncomfortable and unsafe (Due, 2016, p 7). If we do not figure out whether the structures we build work as intended, then we do not revisit the problem space and cannot find the solutions for future projects.

The last argument for expanding the use of social bricks can be understood by turning to Madsbjerg and Rasmussen (2014). They argue how our assumptions of human behavior in businesses can prevent finding the solutions to problems, leading companies in a fog (p 7). The problem is that businesses see people as predictable, rational decision makers when in reality many of our decisions and choices exist below the threshold of our awareness (ibid, p 16). If we apply the focus on assumptions to the building industry, we can therefore rarely predict exactly how people behave or what they want. Rather than assuming, we need to spend resources looking at how they actually behave, and ask questions that cater to their values using approaches such as social bricks rather than our exact behavior, since we are often unaware of such. Whyte has made a similar argument when talking about the use of public space. He argues that our behavior changes and is often unpredictable and can be different from one person to another (Stevens, 2014, p 279). It is therefore important to question our assumption and evaluate the current use and behavior otherwise we risk not finding the solutions and becoming better at building with the social factors in mind.

The above arguments have emphasized the potential of implementing social bricks to improve the social sustainability of buildings. However, working with social bricks also improves economic sustainability. At Esbjerg Psychiatric Hospital the number of psychiatric patients who experienced either compulsory medication or forced fixation with a belt was reduced with 30.7 percent a year after they had moved into the ward where social bricks had been at the center of the building process (Carlberg, 2019, p 25). The previously closed section with narrow corridors and small bedrooms was replaced with an overall disposition of the rooms, lighting and material based on knowledge of what creates calmness, minimizes stress and increases the well-being and security of both patients and staff. According to the staff, this has made it possible to introduce a completely new way of dealing with patients (ibid).

Social bricks improve social sustainability and economic sustainability. Although the link to economic sustainability has not been covered in this analysis, one could say: what is the point of environmental sustainability if we do not thrive in the environment that we are in? The point of this analysis is not to point out that social sustainability is more important than economic and environmental sustainability but rather that they should be seen as equally important factors for ensuring overall sustainability in the building industry.

Conclusion

This analysis has argued for the benefits of focusing on social sustainability and social bricks in a time where economic and environmental sustainability is often prioritized, by looking at the work of Carlberg. Their approach using social bricks and the effect prism has highlighted the enormous learning potential in the social area, which can be transferred to the rest of the building industry and enable us to develop healthier and more well-functioning homes, workplaces and institutions in the future. Despite the fact that social bricks are still a fairly new way of working, Carlberg have demonstrated that there is both a huge social and economic potential in building more socially-oriented. Jan Gehl wrote the popular book *Life Between Buildings (2000)*, but since we spent 90 percent in-door, we need to shift our attention to the *life inside buildings* as with the work of Carlberg.

Despite the importance of implementing social bricks and changing the way we build, it can be challenging to document the effects. It is often difficult to point out the direct correlation between a positive change for the individual and the design principles for the building or the physical changes. The following product analysis will highlight these challenges and the potential pay-off, by looking at the baseline evaluation for a new dining hall in a boarding school for children with learning disabilities.

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Product analysis

Evaluating social factors

Introduction

From the previous analysis, it is clear that working with social bricks can improve the well-being of the users. However, implementing the effect prism and including consultants such as Carlberg in the process is costly. The funds therefore demand quantitative evidence of the impact, also to help broaden the use of social bricks. Measuring the well-being of people is a factor of many things and there is never a direct link between the physical structures and the social improvements (Carlberg, 2017 p 14). However, a big part of working with social bricks is evaluating buildings and sometimes making a before-after evaluation to quantify the benefits of the physical changes.

This product analysis will take a deeper look at designing such an evaluation, the benefits but also the challenges of using quantitative data when incorporating social bricks in the building process. The paper will dive into the case study of making the evaluation design for a new dining area and kitchen at Dybbøl Efterskole. Then I will look at the challenges that were brought upon implementing the evaluation design and establishing a baseline during the Covid-19 pandemic, creating another level of obstruction. The main research questions guiding the analysis therefore are:

Which methodological challenges do you face when quantifying social factors to prove the benefits of building with social bricks? To what extent can you establish a baseline in a Covid-19 affected world? And which consequences have the disruption of the baseline caused for the final result and the users?

To answer these questions, I start by explaining the used methodology for this analysis. I will then present the case study and explain the evaluation design, its use and users and how it has been developed. From there we will look at the methodological challenges that derive during the design process and question whether you *can* establish a baseline during a pandemic. The paper will then argue for the benefits of conducting the evaluation design, despite the obvious objections, and discuss how we can replicate the intervention that Covid-19 has created, in future building processes.

Methodology

The product analysis is drawing on participant observation during a six month period as a full-time intern at Carlberg, where my key assignment was to develop an evaluation design. This work has created a large data set and experience with evaluation design. The importance of such data is highlighted by Laurier (2010) who states that “the best participant observation is generally done by those who have been involved in and tried to do and/or be a part of, the things they are observing” (p 32). Similarly, Daynes (2018) explains that it is “by ‘being there’ that the ethnographer collects data, and it is also his presence that establishes the validity of his work to the audience” (p 5).

However, as an intern my role exceeded beyond participant observation. I was not only observing the work of Carlberg, I was also taking a key part, and my own involvement in the product played a huge role in the final result. I was constantly influencing the design with my academic background. My role and thus the data collection, therefore falls somewhere in-between auto-ethnography and participant observation, but my analysis is based less on writing to explore my personal experience, such as in auto-ethnography (Larsen, 2014 p 60), and more on the methodological challenges that we experienced when developing the design. In conclusion, the data for the product analysis is based on a variety of data sources including field notes, meeting logs, previous reports, meeting minutes, and informal interviews as well as data from the evaluation design, which create a rich data volume.

As the product analysis is based on the evaluation design, the methodology behind the evaluation design needs explanation as well as my role as an intern.. Carlbergs evaluation design is based on a principle-oriented approach (Quinn Patton, 2018), where previous work has guided the design, influenced by the values of the school's pedagogical work. The new dining area and kitchen are not measured on the ability to meet specific technical requirements, but rather on the ability to create the social effects that Dybbøl Efterskole wants to be able to live up to with its overall vision.

Overall, the evaluation design has been developed from Carlbergs’s previous knowledge and thereby the effect prism, current knowledge in the field, feedback from the funds, workshop with the school management and principal, interviews with teachers and students, observations and internal and external meetings. The importance of such variety in data sources for both the product analysis and the evaluation design is highlighted by Dressler and Oths who indicate that “the goals of social science research are complex and cannot be achieved by relying solely on

one way of knowing" (Bernard, 2014, p 468). This point is not only relevant in social science, but also a key in the way that Carlberg works with evaluations.

The relationship between my colleague and I during the process of developing the evaluation design, can be understood by turning to Schön (2008), where the student learns by observing the designer's way of thinking, rather than him imposing it on her. I had a similar role as an intern and based on my academic knowledge, I pushed back whenever I did not understand our way of working and we both experienced reflection-in-action (Schön 2008, p 124). To get to the final design, we (my colleague and I) constantly went back and forth between problem and solution space when facing methodological challenges. Dorst (2019) explains how this process is seen as a co-evolution of the product, creating reflection-in-action (p 65). Having an outsider perspective on the product (me) ensured that Carlberg did not take anything for granted by solely relying on their default knowledge.

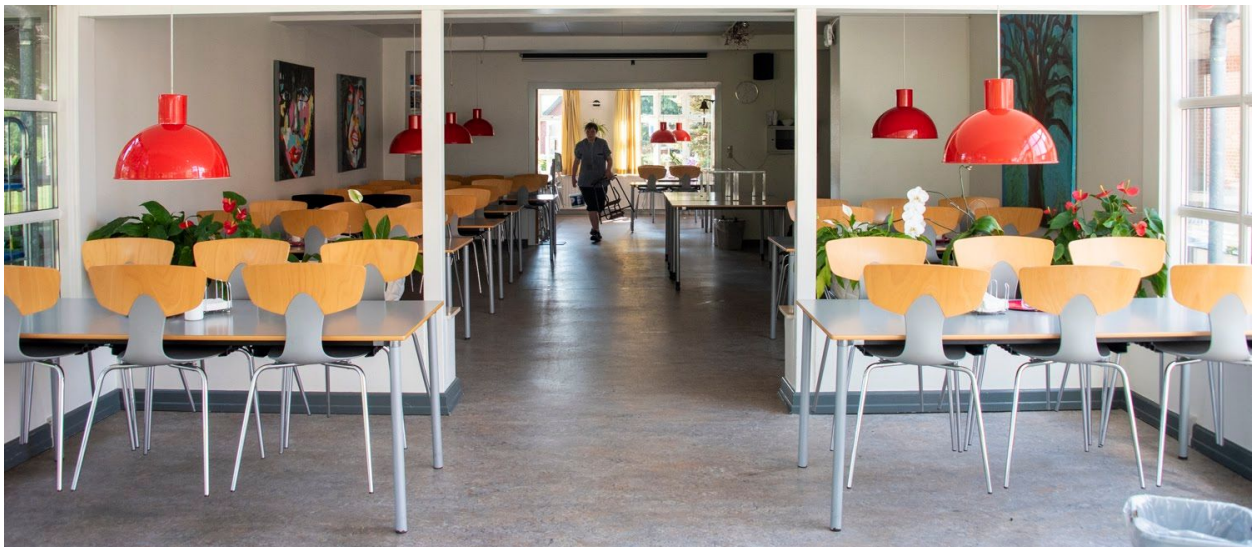
Framing the product

Before diving into the construction of the evaluation design, I will quickly present the case and the process leading to the design of the evaluation. Dybbøl Efterskole is a boarding school in southern Jutland in Denmark for children with different learning challenges. Back in 2019, the school received 14,9 million danish crowns to build a new dining hall and kitchen, from the fund *Den A.P. Møllerske Støttefond* (Carlberg, 2020). The fund has earmarked 750 millions (DKK) for what they call social efforts. This poll is further divided into three different programs, one of which is *better physical spaces for socially disadvantaged children*. This specific program encourages the use of Social Bricks and focuses on social construction with measurable effect (Program 3, 2020). It was established after the development of social bricks back in 2017 as the fund was part of this preliminary project, which as explained in the company analysis, led to the concept of social bricks.

The challenges that the students at Dybbøl Efterskole face are very different. Common to all, however, is that they have various learning challenges. Among the students, there is a tendency for them to carry around diagnoses such as ADHD, Tourette's, OCD, Autism Spectrum Disorders and others (Dybbøl Efterskole, 2020, p 18). Many of the school's students thrive on a high degree of predictability and structure, and are often particularly sensitive to sensory impressions. This applies to sound, light and sense of touch, but also sensory impressions from the presence of other people.

The spatial challenges of the dining hall and kitchen area

Over the last twenty years, a doubling of the number of students at Dybbøl Efterskole has put pressure on the physical environment. Over the years, the dining hall has been expanded with “bud shots” in three rounds (picture 1). The dining room also suffers from poor acoustics and indoor climate, which means that many of the school's students are challenged by participating in the meals. The headmaster estimates around 30-50 percent of the students are challenged during the dining situation (Dybbøl Efterskole, 2020, p 14). The kitchen is also affected by lack of space in both the production kitchen and storage facilities, which makes it challenging to cook for the approximately 100 people (employees and students). In addition, narrow walk-through and work areas as well as many nooks and crannies challenge particularly sensitive students and students with anxiety, when participating in the kitchen.



Picture 1 The dining hall at Dybbøl Efterskole. Picture by Kathrine Norsk.

The role of Carlberg

The school’s management has limited experience when it comes to measuring the social effects of building with social bricks and their fund application was originally rejected. However, Den A. P. Møllerske Støttefond found the project interesting and made the school contact Carlberg. Together with the school, Carlberg rewrote the fund application, to ensure that the new building project will contribute to the development of new knowledge about the connections between the physical space, the pedagogical efforts and the students' well-being (as quickly mentioned in the Company analysis). The main user of the evaluation design is Carlberg as they are assigned the evaluation task and therefore uses the design to conduct the before and after evaluation.

However, the funds as well as the school can be seen as important users as well, as they are the ones benefiting from the design.

As mentioned in the company analysis Carlberg prefers to be involved from the beginning to the end of the building process. The figure below (figure 3) shows the role that the evaluation design plays in the building process in general and thus in the case of constructing the new dining area and kitchen at Dybbøl Efterskole. The figure also shows how the evaluation design both is a part of the summative track of the process, but also plays a part in informing the building program (formative track), which will be elaborated on later on (p. 29).

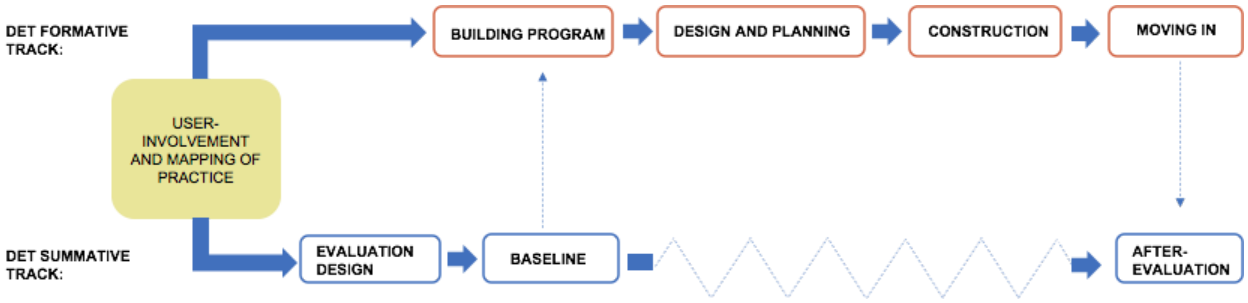


Figure 3 The role of the evaluation design

Developing the Evaluation Design

The evaluation design is a document that gives an account of the goals for the construction's supporting effect on the social efforts at Dybbøl Efterskole. It also describes the sub-goals and indicators that are measured, as well as the methods that will be used to gather the needed data. The document ends with a roadmap that outlines how and when the empirical data is collected for the baseline analysis.

The evaluation of the new buildings is structured as a pre- and post-evaluation. Therefore, the evaluation work starts by setting a number of goals for the expected supporting effect of the new construction, and a number of indicators are designated for each goal. These goals and indicators are developed by Carlberg in close collaboration with the school's management team. Then, a baseline analysis (pre-evaluation) is prepared, which describes the current state of the selected indicators prior to construction. When the construction has been completed and taken into use, a similar post-measurement is made, which is compared with the baseline to assess the social effects caused by the new construction, using the exact same indicators and data methods.

The starting point of the evaluation design for Dybbøl Efterskole is based on the three overall objectives for the building project; *Community feeling, well-being and food edification.* They

have developed from their overall mission: "professional and human development in a committed and formning community"[5]. From the three objectives, Carlberg, drawing on the effect prism, developed a number of sub-goals and indicators that elaborate on what community building, well-being and food edification means at the school and what indicators you need to look at to demonstrate the success of the new space.

Figure 4 Evaluation design for Dybbøl Efterskole (Carlberg 2020).

[5] "*Faglig og menneskelig udvikling i et forpligtende dannende fællesskab"*

The above figure (figure 4) illustrates all the parameters for the evaluation design of Dybbøl Efterskole and the connection between the three objectives, the sub-objectives and the indicators that it consists of. To give an example, one of the sub-objectives of *well-being (yellow)* is *the students well-being in the dining hall* (2.2 in the middle ring). The indicators of this sub-objective are *indoor climate, universal design, spatial control and the satisfaction with the physical space* (the outer ring). These indicators are then incorporated into the data collection using a number of different data methods. There will be an overlap between some sub-objectives and indicators, as the objectives can be seen as prerequisites for each other. For example, the experience of being part of the community contributes to the student's general well-being, just as well-being is a prerequisite for being able to have the courage to try new things and develop new social relationships.

Data methods for the evaluation

In order to shed light on the often complex and indirect connections between the physical environment and social practice, the evaluation design uses several indicators and different types of data. It allows for a triangulation of data and thus more in-depth explanations as well as a greater validation of the outcome. The strengths of triangulating was highlighted earlier by Dressler and Oths (Bernard, 2014, p 468) but is also one of the key arguments of Flyvbjerg (2006). This triangulation is a combination of both qualitative and quantitative data.

The qualitative data consists of semi-structured interviews with the school's staff and students as well as ethnographic field observations. The data was collected over a period of four days in total, during two field trips in September and October 2020. The quantitative data was collected during fall 2020 and consisted of a survey answered by the student body; six weeks registrations of indoor climate using five IC-meters[6], installed in the dining hall, the kitchen and the arrival hall; and registration of attendance during meals, eating habits etc. during a five week period.

Quantifying social factors

Now that the evaluation design and its use has been explained, I will look at some of the challenges that we faced during the development of the product. Despite the thorough use of triangulation of data, the evaluation design faced some methodological challenges due to a set of quantitative criterias from the A.P. Møllerske Støttefond. In previous projects, the fund has seen the power of introducing quantitative effect changes. I observed how, when the fund is

[6] A measuring equipment for registering indoor climate. It measures temperature, CO^2, noise-level and humidity.

able to say: *The new building has resulted in a reduction in the number of psychiatric patients who experienced compulsory medication or forced fixation by 30.7 percent*[7], the investment in social bricks is communicated very strongly and effectively. In general, the fund wants to increase the use of social bricks in the building processes and quantitative numbers work as an effective tool to communicate the necessity of widening the use of social bricks and building better welfare architecture:

> *"The fund therefore supports projects where the individual building benefits its specific target group, while knowledge is built up and disseminated at the same time, which can lead to a greater spread."*[8]
>
> *(Program 3, 2020)*

Even though quantitative data can be an effective communication tool, the problem is that we seldom question the numbers, and often take them for granted as the objective truth (O'Dwyer & Bernauer, 2014, p 14). As mentioned earlier, there is never a direct link between the physical structures and the social improvements. Quantifying social factors is easier said than done. In the above example, it is impossible to prove that the improvement solely happened due to the new physical construction. It is expectively also a factor of other things, which both the fund and Carlberg are well aware of.

I will now look at the challenges that this focus on quantitative effect has caused, when creating the evaluation design at Dybbøl Efterskole. I will start by looking at the state of the art regarding quantitative numbers. Then I introduce the quantitative goals from the fund application and the challenges we faced when developing a valid evaluation design that would produce the intended data result and how we solved this challenge. I finish off by looking at the obstacle that made the methodological challenges even more apparent; the covid-19 pandemic, which will lead into the final section of the paper.

State of the art: Numbers and quantitative data

Crump (1990) sees numbers as a simple fact of life and his book *The anthropology of numbers* is the first attempt to find out how people use and understand numbers, and the way it is infiltrated in our way of understanding numbers. Often the cliff between quantitative and qualitative research has been described as a war - fought with words instead of weapons (O'Dwyer & Bernauer, 2014, p 10). An acceptance of mixed methods in 2009 have resulted in

[7] A hypothetical example based on observations.
[8] *"Fonden støtter derfor projekter, hvor det enkelte byggeri gavner sin konkrete målgruppe, men hvor der samtidig opbygges og spredes viden, som kan føre til en større udbredelse."*

the wall starting to crumble, but it is still there (ibid). One of the reasons why quantitative research still positions itself superior is that once the intervening variables have been stated, the validity is usually not of much continuing concern (ibid, p 14).

Flyvbjerg (2006) puts focus on the sharp separation that is often seen between qualitative and quantitative methods. He highlights the misunderstandings of case study research, not to be interpreted as a rejection of quantitative methods, but as an argument to acknowledge both approaches and that it is often the combination of both quantitative and qualitative methods that will do the task best (Flyvbjerg, 2006, p 241-242).

Simirarily, Flick (2011) argues that it is not so much a question of whether the data is quantitative or qualitative, but rather the essential part of a good research is a clear and focused research design (p 14). Furthermore he highlights the strength of triangulation to improve the quality of the research (ibid, p 8).

The authors show how quantitative numbers therefore have a long tradition, and are by many still seen as the superior data in academic research.

The quantitative goals from the fund

Due to the power of quantitative data, the fund earmarked a category for widening projects that works with quantitative effect change. This is the category that the project at Dybbøl Efterskole falls under, and the fund application was required to outline a number of quantitative effect goals that they expected that the new building would result in. The application includes six quantitative goals which quickly forge a number of challenges *(Dybbøl Efterskole, 2020, p 14)*.

The first general challenge was that they are based on estimates made by the headmaster and written before the baseline had been established. To take an example, the goal “the proportion of students who associate the eating situation with peace and community feeling should increase from 75% to 90%”*(ibid),* is based on an intuition of the current association with peace and community feeling among the students. The headmaster has no idea whether they are consistent with how the students actually feel. Of course he has a valuable idea because he knows his student body well, but there is a big chance that the numbers are far from the actual result of a survey.

Secondly, none of the goals have been questioned whether or not they are measurable. If we think of the ideas of Flick (2011), the focus on a good research design is a major instrument securing the quality of its result (p 2). However in this case, the research design has not been questioned. This is due to the fact that although Carlberg has been on board and partly has the responsibility for establishing the quantitative goals, it is during a part of the

process where they have not been granted money for the work yet. It is therefore easy to understand why Carlberg would pay little interest to the possibility of carrying out these quantitative goals, because at the state of writing the fund application, they know that the quantitative goals *sell* in order for the application to be approved*,* and it is easier to mold the goals, after the funding has been granted.

Example of challenge: registered time with students

We will now look at an example of a goal that needed to be molded due to its challenging measurability. The school has two students interning in the kitchen for a one week period. This is both to assist the kitchen staff but also to give the students valuable knowledge about food, hygiene and the practical production in an industrial kitchen. The school wants to improve the food edification with the new building. In the fund application, one of the effect goals therefore is: "*The time that the kitchen staff has in a direct food-forming situation with students - for example in the form of peer training - must increase by 50%. Estimated from 1 hour to 1.5 hours daily with direct, guiding adult contact."* (Dybbøl Efterskole, 2020, p 14)[9].

When figuring out how to quantify this goal, we ran into a number of challenges. Due to Covid-19 regulations, the kitchen staff now had to serve the food, and the students ate in two shifts, which meant that the kitchen staff (two full-time employees) had to spend two hours serving food during breakfast and lunch, leaving less time to have in-depth contact with the students. When we interviewed the staff, they expressed that they were on the brink of having a breakdown.

Another challenge with quantifying the goal was that the kitchen staff was constantly going in and out of helping students. They have many different tasks and a huge workload, and rarely had more than a few minutes with the students, before they had to be somewhere else. In order to measure their time spent with students, one had to sit in the kitchen with a timer, creating a very unnatural setting and unethical research due to the spatial limitations (the small kitchen) and putting up cameras would demand too many hours of data analysis.

The last challenge is that the time spent with the students depends on the student's capabilities and their motivation. Some students are very self-propelled, while others have limited experience in a kitchen. If one were to carry out the data collection explained above, the situation would vary from week to week and not represent the general average time that the

[9] *"Den tid, som køkkenpersonalet har i en direkte maddannende situation med elever –eksempelvis i form af sidemandsoplæring – skal stige med 50%. Anslået fra 1 time til 1,5 time dagligt med direkte, vejledende voksenkontakt."*

staff spends with the children and would therefore require a huge data sample to ensure the quality of the data (Flick, 211, p 11).

All these challenges created sleepless nights, trying to figure out how we could create a valid quantitative design. New possible solutions were constantly developed based on observations and dialogue with the already time pressured kitchen staff. We constantly went back and forth between the problem and solution space (Dorst, 2019, p 61), developing registration schemes for the kitchen staff, which they then tested, but quickly concluded that they had a hard time answering. The schemes included different forms of questions such as: ‘How many minutes do you spend with the students in an hour?’, 'How busy have you been today?’. But every time we tried a new registration design its validity and possibility fell flat because of the many challenges.

After weeks of testing and going back and forth between problem and solution space, we ended up back at the problem space and ultimately had to reach out to the fund. We presented the challenges that we faced with the design and the fund agreed that due to the current situation with Covid-19 and the presented methodological challenges, it was impossible to quantify. Instead, the data ended up focusing more on qualitative descriptions of the current situation in the kitchen, based on interviews and field observations. In this example, we were not able to triangulate and combine quantitative and qualitative methods as Flyvbjerg recommends (2006, p 242), despite the benefits.

The task of quantifying social bricks is still a work in progress as explained in the company analysis and the field has only been investigated for a few years. However, the funds focus on quantitative data undermine the importance of qualitative data. The constant use of numbers may generate “true mathematical concepts which can be recognised because they do not embody regularities of our sensory experiences of the physical environment, but regularities of these regularities and relations between them at a high order of abstraction.” (Crump, 1990, p 4). Here Crump argues how quantitative data only explain the frequency of sensory experiences but not the experience itself. We can use the quantitative data to see how many students feel comfortable in the dining hall through different variables, but we cannot use it to understand why. In the example with the kitchen interns, we discovered that it was more valuable to describe the quality of the time they have together with the interning students and how the rooms accommodate that, rather than measuring the time spent in minutes or the frequency of different variables.

Fortunately we were able to measure most of the other effect goals but the above is just one out of many methodological challenges that we faced during the development of the evaluation design. The general issue goes back to the argument previously explained by Dwyer & Bernauer (2014) that once the intervening variables have been stated, the validity is usually not of much continuing concern (p 14). With the history of quantitative dominance, highlighting these challenges, a plea to be more critical towards quantitative data and forcing its use can be misleading. Attention needs to be brought to the validity and use of quantitative data, to avoid quick quantitative statements of the effects that that new architecture has caused, without the qualitative nuances and attention to the explanations behind the variables.

The challenges we faced come back to Flick's arguments of focusing on a good research design (Flick 2011, p 5) and in this case it was the (poor) preliminary research design that in some situations inhibited a measurable data collection. It is important to secure the quality of the quantitative data (ibid p 2), and question whether you measure what you think you measure and what you are interested in demonstrating with your data. Similar to the ideas of reflection-in-action (Dorst, 2009), Flick argues that the research design should be a reflexive process (Flick, 2011, p 3) from the beginning of the process to the end.

The above example has demonstrated the importance of a good research question and that not all social factors are quantitatively measurable. Generally a combination of qualitative and quantitative data creates the strongest research, but the most important question to ask yourself is, what you want the data to show - even when you have a fund pushing for quantitative effect goals. The funds focus on quantitative data confirms the continuing preference of quantitative data. In this case it is Carlberg's job to push back whenever it does not make sense, and remind the fund of the qualities of qualitative data. Quantitative data is a powerful tool to advocate positive changes, but needs to be used carefully and only when it makes sense, not at all cost.

Beyond the power of demonstrating a clear before-after quantitative improvement the following section will demonstrate another pivotal challenge we faced. Despite the fact that humans appreciate certainties, this is an illusion more often than we like (Rauws, 2017, p 32). We live in a world of deep uncertainties and wicked problems, and due to the changes caused by the pandemic, establishing a baseline is suddenly not as easy as one may think.

Establishing a baseline during a pandemic

Although the valuability of quantitative data is an important topic that needs careful attention, the evaluation design, which is the fundament for the baseline research, was challenged by an even bigger issue: the Covid-19 pandemic. Suddenly the foundation of the baseline data was

jeopardized by the simple fact that the baseline was no-longer a base, as the school had been making changes to follow the Covid-19 regulations. This questioned if the quantitative and qualitative differences from the before and after evaluation might not be as different, as if the baseline was established prior to Covid-19[10].

It is thereby easy to argue that the current evaluation design is unable to establish a baseline, because the data is not representing the challenges that the school experienced before the pandemic. In short a world going through a pandemic is not *the base*. As a developer of the evaluation design, I often found myself questioning why we then carried on. At times I was left frustrated and did not feel like it made sense. One simple reason to proceed was that the money had been released by the funds, so we had a task to complete. However, I wanted to see if I could find a more analytical reason that could help justify our work with the baseline. The following section will start by outlining the changes that the school made due to Covid-19. We will then turn to the theories of *situated knowledge*, to understand the benefits of carrying out the baseline evaluation, despite the obvious methodological pitfall.

The Covid-19 restrictions effect on Dybbøl Efterskole

Due to Covid-19 the school had to make a number of changes to the current dining situation. These initiatives have changed the way students and teachers use space in a wide range of areas: They eat all meals in two shifts divided into their housing groups to ensure that there is enough space between the tables (figure 5), where before they mixed and ate all together with free seating at dinner. Another initiative was the doubling of entrances and exits to the dining hall, before there was only one, improving the flow in and out of the dining hall. They have also established one meter stripes in the food line to ensure the distance to other students (all students must keep a one-meter distance to each other except the people from their own housing group). Finally, teachers sit at separate tables to comply with the one-meter rule.

[10] Carlberg expects the after evaluation to be conducted long after the pandemic regulations have been repealed.

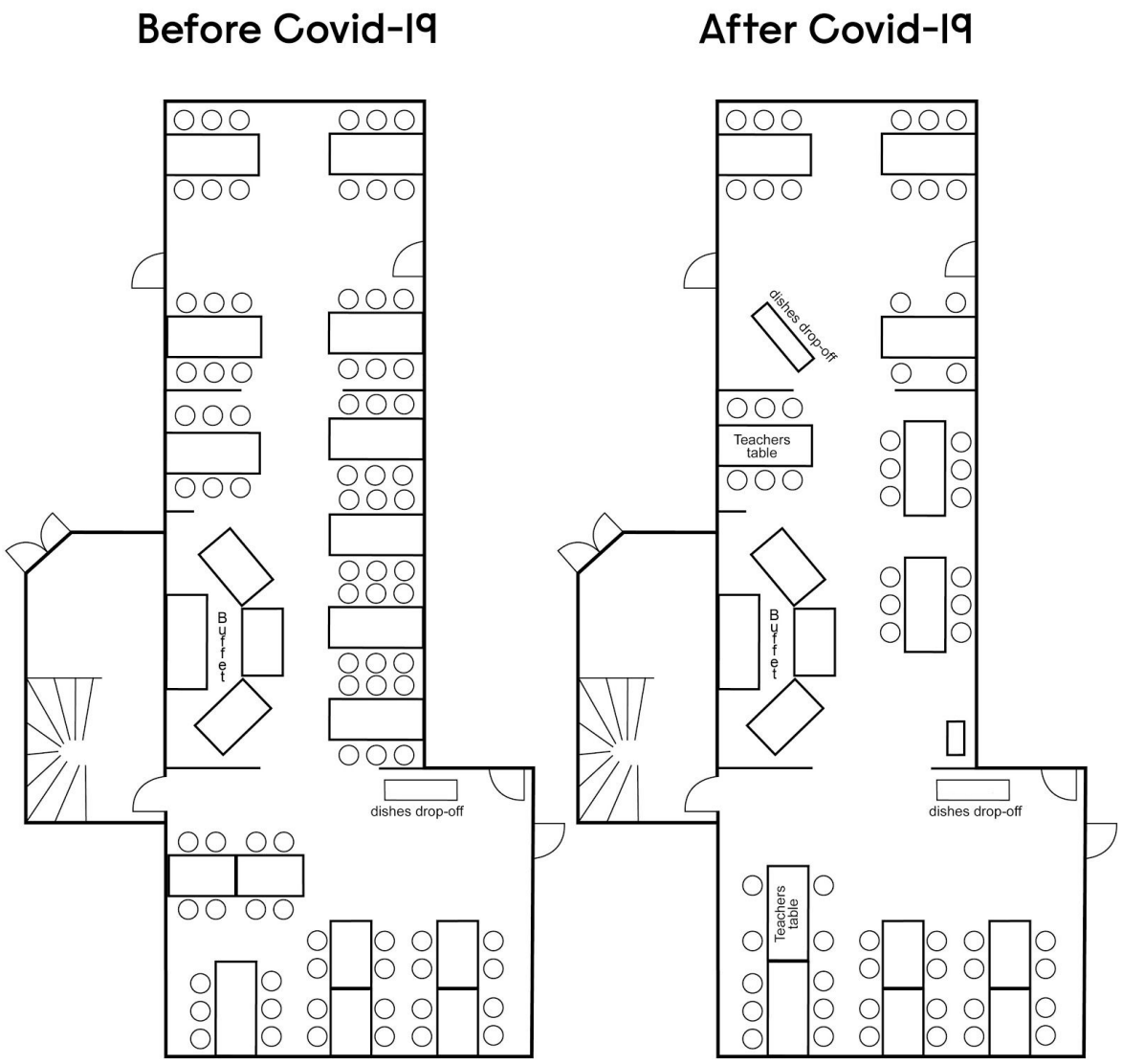


Figure 5 The reduction of tables and seats in the dining area (Kathrine Norsk)

During observations and interviews with the students and teachers regarding the dining situation, it became clear that many of the challenges that the students experienced before Covid-19, had been reduced by the new adjustments. Generally, the students felt more comfortable in the dining area. The changes resulted in more space and thus more personal space, better flow and reduced noise. All important spatial criterias, especially for people with various challenges and psychological diagnosis (Carlberg, 2017, p 7). These changes also improved the food edification, as the kitchen staff could now motivate the students to try new

things. The teachers also observed how, due to the increased well-being, more students had energy to eat their meal compared to before the pandemic[11].

It was clear that the students had benefited from the new adjustment. To investigate whether there are benefits from executing the evaluation and baseline research, despite the drastic changes, we will now turn to the ideas of *situated knowledge*.

Theoretical framing of situated knowledge

One theory that can help justify carrying on with the current evaluation design is Donna Haraway's ideas of situated knowledge (1998, 1991). Situated knowledge is a contrast to the scientific aim of objectivity and aims to reveal the limits and impossibility of objectivity. Haraway argues for an epistemology based on *situated knowledge*. She posits that "by acknowledging and understanding the contingency of their own position in the world, and hence the contestable nature of their claims to knowledge, subjects can produce knowledge with greater objectivity than if they claimed to be neutral observers." (Harraway, 1998, p 595–596). She further explains situated knowledge: "We live in a world of connections and it matters which one get made and unmade" (Harraway, 1991, p 43). She argues for the importance of connections and understanding one's position in the world, which she believes has greater value than aiming for objectivity. The idea of situated knowledge spring from feminist theory and argue for the power of experiences and connection and denounce the tendency to be too critical and thereby reject studies with many variables and inconsistencies, because they will always help improve our understanding of the world in some way or another (Harraway, 1991, p 597).

Situated knowledge at Dybbøl Efterskole

It is easy to critique the use of the evaluation design, maybe too easy. Building on Haraway, Karen Barad argues that critique is too easy, that it is overrated, overemphasized and overutilized (Dolphijn & Tuin, 2012, p 2). She refers to the criticism of the valuability of qualitative data (ibid) and generally challenges the division of the natural sciences and the humanities. Rejecting scientific studies because they have too many variables is from Barad's perspective seen as the easy way out, and not very constructive for the development of knowledge (Dolphijn & Tuin, 2012, p 6).

In the context of Dybbøl Efterskole, Barad and Harraway would argue that, instead of discussing the extent to which it is possible to establish a baseline during a pandemic, it is much

[11] Lack of space and noise have previously resulted in many students being challenge during meals and having a hard time focusing on eating their food or generally losing their appetite or staying away (Dybbøl 2019, p 14)

more valuable to look at the insight that the disruption has given and what it can bring to the school and the process. If we apply the ideas of situated knowledge, it becomes evident that the process of establishing the baseline, the data collection and the conversations with the users have a valuable impact. The next section will look at these impacts and how the evaluation design and the baseline strengthen both the process and the final design as well as methodological development of social bricks through connections, creating positive consequences for the users and the final result.

Improved building program

As previously mentioned (figure 3 p 18), the evaluation design and the baseline has two purposes; the evaluation itself (the summative track) and collecting important and nuanced insights regarding the needs of the users in relation to the physical space. These insights are then translated into a number of design principles and requirements for the building program, which are given to the architect (the formative track). The evaluation design thereby plays an important role in the final design.

The Covid-19 changes have led to interesting perspectives on alternative ways of doing things that have proven positive for the students' well-being and ultimately the design principles. This formative purpose is nothing new, however, due to the changes, the insights and thereby the design principles have been far greater than at any other project Carlberg have worked on. It has almost added a new layer to the design process where the changes have forced the users to evaluate both the before and after Covid-19 spatial configuration of the dining area. This has resulted in the data being extremely rich in regards to spatial awareness.

The changes due to Covid-19 have resulted in a stronger building program, creating a more successful end result due to the many connections made while collecting data. These connections, argues Harraway, improve our understanding of the world (Harraway, 1991, p 597). We spent a total of seven days at the school making connections by interviewing students and teachers, carrying out workshops and collecting quantitative data. Combined with the changes made due to Covid-19, which had made the users more aware of how the physical space affected them, it has impacted the building program to an extent greater than normally.

User awareness

As briefly mentioned above, the data collection for the baseline, *forced* the users to become aware of the physical space. Our questions and processes expanded their horizon and made them more thoughtful about the physical factors. An example of this is how the school principal announced at a meeting that the project was in fact ”not a building project but a pedagogical

project". Here, we saw a clear shift in his mental thinking about the project as his awareness of the power of the physical spaces on the student and teacher's well-being had increased. Harraway argues that these connections improve the users understanding of their own position in the world (Harraway, 1998, p 596). Goldhagen further argues for the importance of spatial awareness:

> *"Our bodies are shaped by the environments in which we live and have evolved, and much of our internal cognitive life takes place outside language and below the level of our conscious awareness [...] There's no such thing as a "neutral" environment: your built environment is either helping you, or it's hurting you. So, if we are not aware that something is affecting us, then society's failure to accord built environmental design the immense value that it deserves, makes some sort of perverse sense [...] As it is now, there's this mass of buildings of which we're only dimly aware." (Goldhagen, 2017 p 27-31)*

This highlights how we often lack spatial awareness, however, changes due to the pandemic and the baseline research improved the users spatial awareness. This developed their ability to notice whether a built environment helps or harms them and thereby improving their well-being. Ultimately, as argued above, creating a better built environment for the future users of the school, because their reflections were incorporated in the building design.

Increased knowledge development

The influences of the evaluation design extend beyond the school and the users. Working with social bricks and implementing before and after evaluations, is still a rather new field, as explained in the company analysis. The work at Dybbøl efterskole therefore also plays an important role in the methodological development of such processes. Carrying on with the evaluation design has improved Carlberg and the fund's methodological knowledge. The challenges of establishing quantitative goals at Dybbøl Efterskole, have made Carlberg and the funds more aware of the challenges that generally occur during the evaluation process and, especially for Carlberg, the importance of a good research design (Flick, 2011, p 14). The Covid-19 changes additionally increased the knowledge of the importance of space and noise reduction, when designing for people with special needs. All the connections and the increased awareness, which Goldhagen and Harraway appeal for, improved the knowledge of the social effect of physical buildings and ultimately improved the work with social bricks and adding to our knowledge of the built environment's effect on people.

Lastly, Covid-19 added a new step to the process - a form of intervention. The evaluation design was no longer solely a before-after evaluation but included an intervention that forced positive change for the students, improved the design principles of the building program and made the user more open towards change.

Would it be possible to apply the intervention that Covid-19 created in our future design and evaluation processes to extract the benefits? To answer this, we turn to behavioral theory and John Kotter who has been acknowledged as a guru within the field of change management. His eight step model gives advice on how to change internal structure and make an organization open to change (Kotter, 2012, p 13). In the case of future evaluations processes in the building industry, Kotter's first and last steps are relevant; *create a sense of urgency* and *anchoring the new approach in the culture* (Kotter, 2012, p 23). In many ways, Covid-19 helped push this *sense of urgency* in the changes that the school made to the dining area. It forced a new way of thinking and increased the users openness to changes, which has proven to be extremely valuable for the process. The increased openness to change is confirmed by one of the kitchen staff:

> *"If you had told me that I would be serving the meals every day before the Covid-19 happened, I would never have agreed, but now, because I can see how much they (the students) benefits from it, and how they try new things because I can nudge them, and that we have a stronger relationship, I can never go back to how it was before"*[12]

This increased openness to change is difficult to replicate and therefore makes *anchoring the new approach in the culture* difficult to achieve in future building processes, without another pandemic or the likes. Although Kotter underlines the potential benefits of establishing changes, he does not give the answers to exactly how we could add this layer of intervention in design processes. Kotter's steps to change simply verify its potential and benefits.

The above examples has shown how the process and thus the many connections have resulted in an increased awareness the users, an even stronger formative track resulting in a substantial design principles for the upcoming building, increase knowledge in the methodological challenges when working with social bricks and increased knowledge regarding the spatial needs of children with various learning challenges.

[12] "*Hvis du havde fortalt mig, at jeg ville servere måltiderne hver dag, før corona skete, ville jeg aldrig have gået med til det, men nu, fordi jeg kan se, hvor meget de (studerende) får ud af det, og hvordan de prøver nye ting, fordi jeg kan skubbe dem, og at vi har et stærkere forhold, kan jeg aldrig gå tilbage til, hvordan det var før"*

Nothing is permanent except change

It is difficult to give an exact answer on how to replicate the same urgency that Covid-19 has created and whether it is even possible. We have witnessed how politicians created changes more rapidly during Covid-19 than with the climate crisis, because the level of urgency is more visual and tangible. Despite the challenge, this paper ends with two short suggestions to the implementation of intervention and awareness in future processes; knowledge sharing and introduction of an experimental phase in future building processes.

From the process at Dybbøl Efterskole, Carlberg unintentionally obtained examples and knowledge on the power of experimenting with spatial changes. To replicate the intervention, knowledge sharing is a vital factor for future actors to understand its potential. However, building processes are costly, and it often comes down to the budget. This is where the funds come into play. They need to realise that if they want to improve social sustainability and thereby the well-being of disadvantaged people, we need to test more. The fund should earmark more funding for testing different spatial conditions.

Rather than having a before and after evaluations, future processes would benefit from having a baseline, an *intervention* and then and after evaluation and thereby *anchoring a new approach in the culture* (Kotter, 2012, p 23). Carlberg needs to use its great relationship with the funds and encourage this shift, by presenting the benefits that we saw from the changes that occurred due to the Covid-19 adjustments at Dybbøl Efterskole.

It is easy to carry on with the way that we used to, once the pandemic is behind us. However, ahead lies an important task in remembering the benefits that came with the disruption of the pandemic and attempting to implement a similar intervention by experimenting with spatial design in building processes.

Conclusion

This analysis uncovered the challenges of quantifying effect goals at Dybbøl Efterskole and thereby the importance of a good research question. It showed that not all social factors are quantifiable, but the continuing preference of quantitative data from the fund requires Carlberg to push back and remind the fund of the qualities of qualitative data. Although quantitative data is a powerful tool to advocate positive changes, it needs to be used carefully.

The analysis continued by demonstrating the effect that the Covid-19 pandemic had on the baseline analysis. Rather than focusing on the limitations, the analysis shed light on the many benefits that carrying on with the baseline caused. The pandemic has forever changed the school and they will not go back to how it was before, even when the restrictions are

repealed. They have firsthand experience of how the spatial factor's influence the students' well-being. In addition, Covid-19 made the quantitative methodological challenges more visible but more importantly, the changes helped shed light on simple factors that drastically improved the overall well-being of the students; more space, less noise.

The changes due to Covid-19, has shed light on the evaluation process' effects on the final product, the user's awareness of spatial design and the methodological development of social bricks. These benefits need to be included in future design processes. This paper is a plea to a more careful use of quantitative goals and to replicate similar interventions and spatial experimentation in future processes in the building industry.

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Reflection report

The road to a successful internship

Half a year seems like a long time, but with an exponential learning curve, time passed by so quickly. When reflecting back on my last half a year as an intern at Calberg, a few factors seemed to ensure a successful, challenging and incredible internship period. This reflection report will highlight the factors that led to success and the challenges I did run into along the way. I finish this report by drawing a line back to my master programme in Spatial Designs and Society (SDS).

Being a part of the team

From the very beginning I did not feel like an intern. I felt as though I was part of the team. It started at the internship interview, where I had a great chemistry with my two future colleagues. I was furthermore invited to introduction meetings with our clients, before the internship had even started. Here we had long train rides and talked for hours, not only about social bricks but found common interests in outdoor life and cooking. Lastly, my first week started with two long field trips, one to Dybbøl and one to Esbjerg. Rather than sitting at the desktop reading their previous reports, I was thrown right into it, and it felt great.

Throughout the first couple of days, I started noticing what made me feel so welcome and so relaxed. I normally have high expectations to myself, and the company worked in a field I was really passionate about, so a lot was at stake. One thing that had an effect was the introduction meeting on my second day. While chatting over pastry and being introduced to our various upcoming projects my boss told me: *"Do not worry about whether you are contributing enough. We are a small company and there will sometimes be bottlenecks preventing me from assigning you certain tasks"*. This one sentence from my boss made me relax more about my contribution. Throughout the next couple of weeks my other colleague was good at ensuring that I had tasks to work on, and generally I cannot remember any days where I came to the office without knowing what to work on. There was constantly a variety of interesting assignments, both individually and in collaboration with my colleagues without it being too big of a workload.

Another important comment from my boss was at a field trip to Holbæk during the first couple of weeks: *"After a meeting like this, we should have a follow-up, where you can ask questions. It's really important that you do not hold back. Your opinion matters to us".* This comment made me much more confident with speaking my mind, whenever there was something I did not understand or something I was curious about, and I started asking a lot of

questions generally. Each time I was met with an answer that acknowledged my point of view, and sometimes it led to new ways of doing things. I never felt as if my point of view did not matter, and I admired how, despite working within this field for centuries, I never felt stupid for asking obvious questions.

Covid-19 changed the way we did most things in 2020. Fortunately, because the company is so small, I continued to work at the office together with my two colleagues. This opportunity felt utterly important to me as an intern; to create a collegial relationship with my colleagues and to get constant feedback and work together more easily. It is so much easier to understand someone's tone and the nuances of their comment or feedback, when you sit together. I have discovered that I work better together with people, and working at distance, constantly in front of a screen affects my motivation negatively. I have been extremely grateful that I was able to go to the office every day and work alongside my colleagues.

Lastly, I felt that my academic profile fitted well into the company. This also resulted in the fact that I was given a lot of responsibility at times and assigned as the project leader at smaller projects. Looking back, I used both my photography and visual literacy skills from my bachelor degree in design and photography (from Savannah College of Art and Design), I used my project leadership skills from my one year project leadership programme (KBH+ Projektakademiet), and my analytical and theoretical knowledge from the SDS programme. I even used my skills from my time as a freelancer, to work structured and independent when needed. Lastly, my job at the center for youth with disability and my many years working at a nursing home, has given me important insight about the praxis of welfare institutions and what it feels like working in such places.

During the last half a year I was involved in various tasks, some of which were: Conducting interviews with students and teachers, executing workshops for users, writing the evaluation design and baseline report, developing questionnaires, registration schemes and interview guides, photographing a place for homeless people and the spatial challenges that they are experiencing, creating various visual content and graphs, researching state of the art for By&Havn, analyzing quantitative data, arranging study trips to relevant places, photographing our different processes and many more. Even my baking skills improved as I made a habit out of bringing homemade bread for our monday morning meetings.

Calm seas do not make skillful sailors

Despite the many factors that led to an exciting and successful internship, it was not all beer and skittles and I did face numerous challenges along the way.

Even though I received great feedback at my internship evaluation meetings and despite the previously explained acknowledging attitude of my colleagues, I still suffered from feeling like an imposter. I had days where I could not sleep at night, because I did not feel like I lived up to my own and their expectations, even though their satisfaction with my work effort had just been confirmed. To combat these negative feelings, I started talking with one of my colleagues about it, who was very understanding and explained that she had similar feelings herself earlier in her career. Similarly, it helped to attend the internship seminar and experience that everyone else felt just the same at their internship. One of our seminars almost seemed like therapy. Lastly, I discovered that too busy a schedule often triggered these imposter thoughts. I started blocking out time in my calendar where I did not make any plans and began practicing mindfulness, to figure out a way to handle these periods with excessive thoughts. All of these factors improved my mental health, so I could focus on my internship and the internship report.

The other big challenge I faced was balancing going in-between being a student and an intern. It was at times really difficult to be critical of the work of Carlberg, especially as this was my first time working in the field. I got so sucked into their way of working. Especially with the company being so small and quickly feeling like a part of the team, I sometimes had a hard time to look at the work from a bird's eye perspective. This challenge became more apparent when writing the report as I sometimes felt as though I was analysing myself. At times the SDS theory and the academic way of writing felt so far away from what I was doing. Even though Carlberg also work with analysis and draw on theoretical knowledge, it is still used in a much more practical and pragmatic way. Inspired by the ideas of Karen Barad, rather than searching for critical arguments of the way Carlberg work, I wanted to focus on the knowledge contribution that they bring, because I find their way of working extremely valuable to the building industry.

It took time for me to get back to the academic way of writing and using theory. Despite Carlberg and SDS being closely linked, I also discovered that the focus on social bricks and welfare architecture had played a little role in the SDS curriculum, smaller than anticipated, when I first applied for the programme.

Comparing Carlberg with the SDS programme

Despite the fact that our degree is called Spatial Designs and Society, little focus has been on the buildings we are inside, but much rather the surrounding areas and the urban public spaces. The spatial effects in welfare architecture was my interest from the beginning of my studies, but I was surprised by how little I had learned in this regard during my first year at SDS. Few of the theories from the SDS course have been focusing on the constructions and social effect of

buildings on people. It seems as though the theories of home and atmosphere are the closest link to the work with the indoor environment. This lack of academic focus became even more apparent when I started working at Carlberg. But this issue is underlying the lack of development within social bricks more generally (as commented on in the Company analysis), more than the lack of focus in the SDS program.

That being said, my one year as an SDS student have been extremely important for my success at Carlberg. I would not have had the same written communication and analytical confidence, had I worked for Carlberg before I started my SDS studies. The theoretical groundwork from SDS has been relevant for the field that Carlberg works in and the general knowledge of Spatial Design has laid the important fundament which I have built on during my internship. Carlberg has developed my field interest and have further improved my analytical and consultancy skills.

My internship at Carlberg has helped me remember why I started studying SDS in the first place. It confirmed my interest in building evaluations and welfare architecture and has helped me find my sweet spot (figure 6). For now I will continue at Carlberg as a student, alongside writing my master thesis in school evaluations (POEs). Whether my future will be at Carlberg or somewhere else, only time will tell.

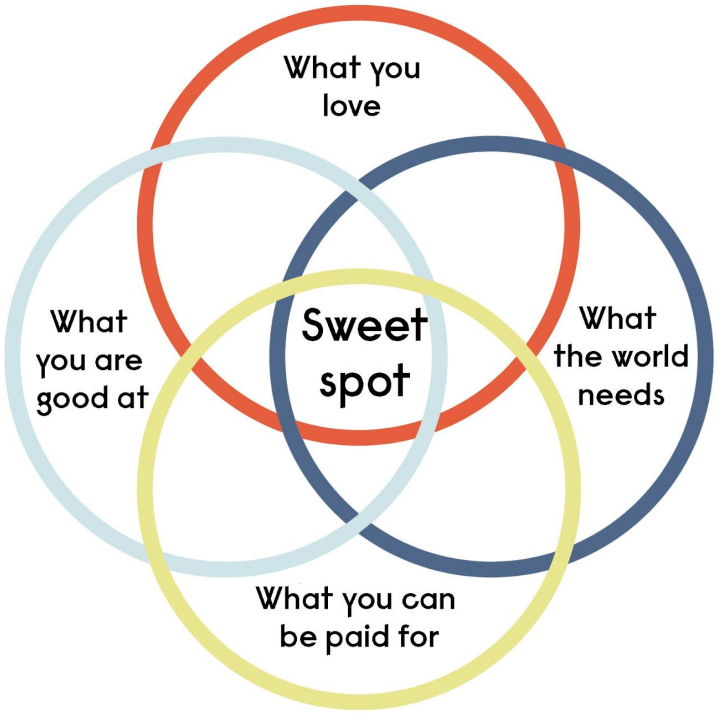

Figure 6: You sweet spot - the combination of what you are good at, what you can be paid for, what you love and what the world needs. (graph by Kathrine Norsk)