(Un)folding Office Spaces

How to balance the “me” and “we” in times of a nomadic work life?
Putting the choice on the table: Unfolding the personal workspace.

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“We can do anything at any time in any place. Daily life is liquefied in a continuous undefined shell with no specific space or time.”

Javier Mozas, Architect and Urbanist

1 Workforce, A better place to work, a+t architecture publishers, 2014, page 5
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exploded, isometric view
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Introduction

How to balance the “me” and “we” in times of a nomadic work life?

Putting the choice on the table:

Unfolding the personal workspace.

Through mobile devices and the resulting independence from the physical office, leisure time and recreation with friends and family have become blurred with work. The necessity of spending 40 hours a week behind the same desk from early in the morning until the end of the working day seems to be a relic of the past for many. Nevertheless, the proximity of people in offices and the associated feelings of belonging and exchange of thought provide the fertile soil for innovation. Togetherness is still relevant for cooperations in capitalist economies around the globe. During the working day, phases of concentration and collaboration alternate. Distraction through movement in the peripheral vision or acoustic disturbance are well-known phenomena while sharing spaces with several others.

On the other hand, collaborative moments are crucial to solving complex issues which require diverse competences. This contradicting dilemma is extremely difficult to resolve, a ‘wicked problem’ which requires flexibility of thought and adaptable solutions developed through architects’ and designers’ close consultation with the final users.

According to an article from Harvard Business Review - "There’s a natural rhythm to collaboration. People need to focus alone or in pairs to generate ideas or process information; then they come together as a group to build on those ideas or develop a shared point of view; and then they break apart again to take next steps. The more demanding the collaboration task is, the more individuals need punctuating moments of private time to think or recharge".

But how could an improved spatial setup better enable these contradicting needs to be met, without the need for physical relocation depending on the task at hand? The problem is that workers aren’t getting enough of an ingredient that’s essential to the formula for engagement: occasional privacy, states office manufacturer Steelcase. "Most workplaces today are designed to provide collaboration for many and privacy for only a select few."

These two excerpts describe the focal point of this thesis project - the investigation of the balance between the public and private spheres in the workplace through a space making tool for table-based work.

Observation:
85 Tables in the studiospace
76.5% individual separation/wall
23.5% table in original setup

A higher level of enclosure, through self-build walls, close to passages and doors has been detected.

In our open-plan studio space at Konstfack, all students have the privilege of their own desk. Yet after just a few weeks in autumn when the term starts, little self build walls are ‘growing’ between the desks. All of them different in height, size, materiality. This observation sparked my imagination to investigate the field of open-plan workspaces which many of us will go on to occupy throughout our working lives, through the conception of a foldable tabletop device.

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Introduction

1 definition: a problem that is difficult or impossible to solve because of incomplete, contradictory, and changing requirements that are often difficult to recognize. "Tackling wicked problems: a public policy perspective". Australian Public Service Commission, 25 October 2007.


3,4 steelcase 360° magazine, the privacy crisis, issue 48, page 1 and 2, release date unknown.
konstfack
college of arts, crafts and design
studio, spatial design

inspiration, self build walls
The Concept

My aim is to enable people to meet the varying demands of living and working in a distracting world. I will do this by reimagining the relation between a horizontal table surface and vertical partition wall.

Can the fixed room-separating acoustic element be reinvented as a movable unit which can be carried around and adjusted by the user within a few seconds to create a more customized working space? This will be a flat pack object in three different sizes connecting qualities of both suitcase and acoustic wall divider, being both portable and able to be temporarily fixed in place.

Unfolding like an envelope to be almost as big as the table surface, this will also provide a blank canvas, a surface to be customized by each individual employee through use of colour, additions such as family pictures, or functional aspects such as organizing post its. As ‘Identity Architects’ Ippolito Fleitz Group note, “dedicating our time and mind to a company and its corporate identity does not mean submitting to a uniform. This is where design comes into play.”

Within the framework of a table top, different prototypes and variations explore the adjustment of the immediate personal space. Using existing structures such as the standard office desk with measurements around 1400x800mm. This flat surface may be used as an interface for lightweight, temporary unfoldable additions.

The foldable structures might be also used as a mobile micro-space in other areas of life, whether on the kitchen table for homework, or to unfold privacy in public environments such as libraries. This very portable home office can easily be used and stored in small modern apartments, a convenient supplement for space-starved urban life. The concept unfolds an interior within an interior, independent of the envelope of the building.

Within the ideation process, investigating the relationship between wall and table, different concepts were explored. How could the prototype take its lead from tectonic movements, or be materialised as a kind of spatial ‘collar’? Could a spatial divider even be a blow up device?
Ideation Phase (bend, flip, inflate...)
But if we are, to begin with, the relationship between wall and table, how does one define these two elements?

Rem Kohlhaas describes the wall as follows in the book ‘Elements of Architecture’: “The meaning of the wall is just as diverse as the uses of a vertical surface can be, but there are at least two essential functions: Providing structure, and dividing space. The two can be separated...the bearing wall and the partition wall.”

But if that is a wall, then what is a table? “A table is a piece of furniture, its essence a horizontal plane lifted off the ground by a frame. It differs in size and distance from the ground.”

The relation between the vertical partition wall and the horizontal surface of the table plate has been investigated within the project.

Wall / Table

1 rem kohlhaas, elements of architecture walls, schubur, page 267, 2014
2 tisch und stuhl, kleine geschichte des sesselthwerdens, die zeitschrift der kultur, zürich heft 4, hajo eickhoff, 1995
http://www.hajo-eickhoff.de/sitzen/tisch-und-stuhl/

Table by Wim Rietveld and Friso Kramer for Ahrend de Cirkel, 1950s

Exhibition walls by Rem Kohlhaas at Stedelijk Museum, Amsterdam, 2017
Transformation, from horizontal to vertical surfaces
wood veneer, prototype, scale 1:10

mdf / leather hinge, no scale
1:1 prototype:
table top envelope, medium size
material substitute - mdf, paint
silicone, pinewood hinge

casting preparations
In times of a dematerialization of the workplace into an increasingly digital realm, the sensory qualities and sustainable use of material have been important to the project.

The comparison of different lightweight bio-composites has been examined through research, tests, and prototypes. A key method in the prototyping process is the investigation of folding techniques and tectonic deformations, transforming flat surfaces into three-dimensional forms and back again with great care for material-specific details.

The key requirements were that the material is bendable yet durable, providing a flat, solid surface stable enough to lean on whilst writing or drawing. The material should be lightweight, sustainable, as well as having a certain material stiffness through the addition of rib structures.

First I investigated bio-composites and their structural potential in the design of office furniture. In Stockholm’s materials library, I found the biocomposite “Triflon”, made out of hemp fibers and polypropylene or PLA: a material best known for its use in 3D printing. It has been developed for the automotive and building industry. I met with the founder of the company and he gave me material to test after discussions of the potential production costs use of this material might entail, due to high molding costs.

The second material which might be suitable for the product is “Durapulp”, a wood-plastic composite. It consists of natural wood-fibers and PLA as a binder. I was aiming for simplicity through the use of one solid material - hinges, supports or spare parts should be avoided. So I had a closer look at bending and folding logics, as shown in drawings and prototypes.

Innovation through Materiality; Like many designers, I was aiming for innovation through the use of relatively new materials - though the latter made it extremely difficult to prototype in small quantities due to high cost.

Most of the progress in the field of furniture design can be seen through new material inventions, such as the use of bendable plywood in the 50s.

Another major concern was to create a product which is sustainable and doesn’t end up on a landfill at the end of its life cycle. However, a decrease in durability is, unfortunately, one consequence of using wood-pulp based biocomposites instead of synthetic fossil-based materials.

A preliminary material choice has been made. The use of ‘Durapulp’ seems the most promising final material for the concept.
Material Requirements (bend, hard, stiff, light)
fold details

double-sided rarefaction

one-sided rarefaction

double-sided triangular rarefaction

different levels of enclosure

double-sided triangular rarefaction

fold principle
For Wilm Fuchs, Professor at Kunsthochschule Burg-Giebichenstein, “the attraction of folding lies in the permanent transformation of materials as well as in the possibility to switch reversibly between two states.”

But folding can be tricky. An interesting and difficult detail of the design was the meeting of three surfaces in one corner. It took several prototypes in wood and paper for me a while to find a good way to develop that join, working with different scales and paper prototypes as well as visualizations representing the actual material.
detail 01
slide lock
tectonic surface variations
flexible clip holding up sidewalls

detail 02 c
corner detail
tectonic surface variations
meeting of three surfaces
flat pressed table envelope
material, durapulp
Thomas Demand

Paper artwork by Thomas Demand possesses a high level of precision and an uncanny feeling of real and unreal, prompting me to also work with paper as a model making material.
Paper Prototypes

- Paper prototype
  Scale: 1:6
  Exploration of details
table top envelope
isometric, sectional view
arch detail and slide lock
Developing and reacting to a self-appointed brief in form of a master-thesis is a challenging and non-linear process. Point of departure was a reflection on previous projects, own interests, personal development potential as well as researching a relevant issue.

As described earlier, the own experience of working within an open-plan studio was a key moment at the beginning of the project.

Through mind-mapping, topics related to the future of work got collected and connected, accompanied by first reflections, and readings of relevant books and magazines.

Though the more general contradicting need of concentration and collaboration, which is part of the work of many people became the leading question. The interplay between architecture and objects within the space were the next discovery while visiting offices and looking at historical references. The build, more static architectural envelope is mostly not flexible enough to react on changing needs of companies. Therefore the elements independent of the shell, such as vertical walls, tables, partitions became a focus of interest.

Inflatable ‘walls’ connected to the ventilation system were an early concept idea. As I wanted to move beyond good intentions and fun design proposals, developed for the sake of innovation and entertainment - a more practical, hands-on solution which could have actually impact for many became the center of attention. Then the parameter of the desk came into play.

Furthermore, a project connecting architectural, spatial relations with the focus on details in the field of furniture design seemed to be an interesting and demanding task.

Quite early in the project a ‘minimum viable product’ made from cheap cardboard was developed and tested on the own desk. The folded down wall, allowed the joyful and unobtainable exchange with peers, while folded up focus on a specific task could be improved.

The concept got translated into another, more stable material such as MDF. Different Sidewalls got attached to test the effects. Using 3d-printing for detailed solutions, such as the sideload holding up the walls was another step in the development.

A risk in the design process is to focus too much on one answer to the set question. Therefore other variations around the table got explored. Looking also into artists work, such as the foldable art pieces ‘Bichos’ by the Brazilian artist Lydia Clark. But similar foldings and bending of paper stripes, as well as concepts inspired by a shirt’s collar didn’t meet the same level as the earlier idea of the envelope.

Within the process over 100 paper models were produced, to test radiuses, variations, and colors. A vinyl cutting machine allowed a higher level of precision, especially in a smaller scales such as 1:10.

Collaborations with companies distributing innovative bio-composites materials such as ‘Durapulp’ and ‘Trifilon’ were another aim during the project. Actual meetings, emails, and phone calls were time demanding and not always successful. Persistence was one of the abilities I could improve during that time.

Nevertheless, the discussions about materiality and production processes helped to see the limits and possibilities. During the Stockholm Furniture fair, for example, I had a long conversation with a molding expert, running a company on the west coast of Sweden.

Previous projects I could link were a foldable bed, a revolving door LED-installation for Osram or a floating lake Sauna. All these projects are connected through common attributes such as movement, adjustment and changing states.

Improved woodworking techniques, general model building abilities, writing a report documenting the daily work were other leanings of the project.

To summarize I can look back to an exciting and challenging time within a different cultural and academic context of Konstfack. Presenting my work several times in front of local architects and designers as well as international guest critics has been an interesting experience.
Timeline
Selection of office spaces, influencing technology and inventions shaping offices in the past and future

1857 Public Elevator
Elisha Otis
New York, USA

1866 Ring Binder
Friedrich Soennecken
Bonn, Germany

1873 Typewriter
E. Remington and Sons
Ilion, New York, USA

1876 Telephone
Alexander Graham Bell
Boston, Massachusetts, USA

1885 Structural Steel Frame
William Le Baron Jenney
Chicago, Illinois, USA

1886 Ring Binder
Friedrich Soennecken
Bonn, Germany

1902 Air Conditioning
Willis Carrier
Brooklyn, New York, USA

1906 Larkin Administration Building
Frank Lloyd Wright
Buffalo, New York, USA

1937 Task Orientated Furniture
Frank Lloyd Wright for Metall furniture Co. / Steelcase
New York, USA

1939 Johnson Wax Headquarter
Frank Lloyd Wright
Racine, Wisconsin, USA

1956 Bürolandschaft
Quickborner Team, Wolfgang and Eberhard Schnelle
Hamburg, Germany
1964 Action Office Furniture System
Robert Probst, Herman Miller Inc.
Ann Arbor, Michigan, USA

1987 Inner Street
Niels Torp for SAS
Stockholm, Sweden

1972 Centraal Beheergebouw
Herman Hertzberger
Apeldoorn, Netherlands

1968 First VR / AR head mounted display
Ivan Sutherland and his student Bob Sproull
Cambridge, Massachusetts, USA

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1989 World Wide Web
Tim Berners-Lee
Geneva, Switzerland

1998 The Fun Office
FAT Sam Jacobs, Sean Griffiths, Charles Hollander
Amsterdam, Netherlands

2005 First Official Coworking Space
Brad Neuberg
San Francisco, California, USA

2017 Creative Coworking Space Alma
Tham & Videgård
Stockholm, Sweden

1958 Accessible Suspended Ceiling
Donald A. Brown
Westlake, Ohio, USA

1958 Curtain Wall
Mies van der Rohe
New York, USA

1958 Curtain Wall
Mies van der Rohe
New York, USA

1958 Curtain Wall
Mies van der Rohe
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New York, USA

Timeline
Evolution of the Office Space

Throughout history office spaces have adapted to changing business models and improving technology in the search for the best layout for productivity: from the early 20th century Taylorist offices with its multiple table rows and high density yet open plan layout, through Art Deco style offices at the end of the roaring 20s. Followed by innovations such as the ‘Bürolandschaft’ movement in the early 50s.

Probst’s Action Office system from the 1960s was followed by a dark chapter of cubical farms, then later came the internet-led virtual office of the 1990s, when the desk itself became a “portal into the digital world.”

To begin with, I looked into early office structures of the 19th century. The monumental Larkin Administration Building, a ‘mail-order soap’ company headquarter built for around 1800 workers in 1906 in Buffalo New York. It was one of Frank Lloyd Wright’s first public buildings and is an interesting example of an office layout designed for “efficiency, productivity, and cooperation among its employees”.

This example of ‘Taylorist inspired’ architecture has its origin in the developed concept of efficiency by the consultant Frederick Winslow Taylor. When the industrial revolution was at its peak, he was one of the first to realize that every job can be broken down into tasks and each task can be timed with a stopwatch. Looking at the historic photographs, a high density of employees sitting opposite each other at long tables is noticeable. The feeling of being watched and easily replaceable might have been a result of this layout. This form of clerical work suited repetitive tasks such as processing around 5000 soap orders a day. Employees’ privacy and personal influence on the office design was not a priority at that time.

In order to understand what has been and therefore predict how the future might look like, I have investigated in detail some of these historic office spaces as well as developments in office furniture design.

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1. monography, identity architects, ippolito fleitz group, fram publishers, page 40
2. https://flwright.org/researchexplore/wrightbuildings/larkincompanyadministrationbuilding
A virtual reality workshop of another class at Konstfack inspired me to digitally rebuild the Johnson Wax Office by Frank Lloyd Wright with a 3D programme. It is visually an iconic open space, with its thin mushroom pillars and glass ceiling. It has been constructed in 1939 for the Johnson Wax company in an industrial area 200 miles north of Chicago.

Questions of hierarchy and the relation between inside and outside were interesting while looking at this reference.

According to an article published by the British office manufacturer Morgan Lovell, even offices being built almost 40 years later than the Larkin Administration Building haven’t been a “major departure from Taylorist principles.”

The 1930s Johnson Wax Streamlined Office was, however, “more aesthetically pleasing than the offices of the previous decade, and while it retained the Taylorist structure of private managers’ offices being separate from the workers’ floor, it did encourage increased interaction between employees.”

Industrial factory-esque interiors were replaced by an Art Deco style for a more pleasant working environment. However, despite beautiful glass roof lights, a lack of windows prevented connection to the outside world. Nevertheless, the Johnson Wax Office is a remarkable working space, which succeeded in providing a more pleasant work environment which was less densely populated than in earlier times.

This tendency towards trying to create a comforting, home-like environment which lets you forget about the outside world can be seen in companies around the globe to this day. It is an ambiguous issue - on the one hand, time being spend at the office increases in quality, while on the other hand, the line between home and work becomes blurred.

This latter point is critical, as people are lacking time to recover and spend time separated from the workplace. According to Leeson Medhurst, a workplace consultant at ‘Fourfront Group’, “work is no longer a place we go, it is something we do”.

This trend has been particularly fueled by large big tech companies in San Francisco such as Google, with the invention of the ‘fun office’. Colorful, childlike environments mimic outside scenarios like beaches and skiing resorts, which were previously places of recreation. In an article published in 2013, British Architect Sam Jacobs demands the end of this ‘tyranny of fun’ in office design.

My project tries to react to basic human needs of temporary privacy without being a toy or gadget in this way.

Johnson Wax Building - Evolution of the Office Space
The structuralist architect Herman Hertzberger built one of the greatest open plan offices in the 70s. It consisted of many nested, private spaces. They were meant to be personalized as the Action Office plan shown on the next pages, but not totally private. The walls were untreated, so it was an invitation for employees to make the workplace their own.

This idea of personalization should also be incorporated in the foldable desk envelopes I am developing in this project.

Furthermore, this insurance company office building has court-yards with balconies, bridges and meeting places. As a result, the workplaces are connected both horizontally and vertically, and the building enhances a non-hierarchic atmosphere between the around 1000 employees. These vertical-horizontal relationships have been investigated through my adaptable space-dividing designs, too.

Hertzberger put special emphasis on the desk configuration, which can be seen in the graphic on the following page. Desks were placed back to back with a ledge in between, a central zone which provided private storage. This configuration of a shared middle part had also been used previously at the Bibliothèque National in Paris. This smart use of storage also allowed for a higher degree of privacy. This dual function, serving on the one hand as a space divider and also helping to organize office utilities, will be another aim for further development of my project.
interior, centraal beheer gebouw 1972
Apeldoorn, Netherlands
Herman Hertzberger

Examples of making places as primary building components

Aerial view, centraal beheer gebouw 1972
Apeldoorn, Netherlands
Herman Hertzberger

Office table with raised ledge

VOORBEELDEN VAN HET MAKEN VAN PLEKKEN ALS PRIMAIRE BOUWCOMPONENTEN

Evolution of the Office Space
In the late 1960s American inventor, Robert Probst developed an office system called ‘Action Office 1’ in cooperation with the famous designer George Nelson for the office company ‘Herman Miller’. One of his approaches inspired me in my process: “Offices were changing very quickly, and the only way to adapt to what was going to happen was to have as little design as possible and be accommodating.”

Two following aspects of this quote are worth looking at on a deeper level. The idea of “as little design as possible” became a leading concept throughout my project. This approach is also part of Dieter Ram’s ‘10 principles of good design’ which he developed in the late 70s while developing products for the German homeware and electronics company Braun. His concepts and design approach of ‘Less, but better’ strongly inspired technology design in the recent decade, such as the design of the iPod.

Concentrating on the essential aspects of the design such as the folding logics were important in my own process, to achieve a long-lasting design proposal which could be a helpful device for many to increase self-reflection and concentration in distracting environments.

However, the use of color and possible customization through the final users could have been tested and communicated better to avoid an overly functional appearance of the idea. It is one of the aims for the next weeks and months to explore these aspects of representation and testing further.

Furthermore, the extreme fast pace at which offices have to adapt nowadays requires inexpensive, adaptable yet sustainable solutions. Therefore my aim was to translate these qualities of the ‘Action Office’ programme into a portable device, as the economy, office spaces, and work life have become more dynamic since the 70s.

Reflection: Investigating the history of office design helped to understand the changing role and importance of the individual as described in the previous sections.

Looking at past and contemporary offices, caused my general aim of empowering employees in adjusting their working space according to their needs and personal preferences, regardless of existing office concepts developed through interior architects and product designers. It can be seen and criticized as a plaster, solving issues of privacy and lacking personalization, which are symptoms of today’s working landscapes.
Evolution of the Office Space

George Nelson and Robert Propst
Action Office, 1968
Contemporary coworking space Alma

According to the architects Tham & Videgård who transformed the former Beckman’s design college in the center of Stockholm into a coworking space describe the brief by the client as follows: “With Alma, the client wanted to create a members’ club and co-working space aiming to unite Sweden’s creative crowd.”

Visiting the ‘creative’ space shortly after the opening and a year later was an interesting insight into a phenomenon which evolved globally around the world. Cooperations book tables and real estate according to temporary needs instead of investing in own property.

Often employees of small and medium scale companies work next to self-employed freelancers. Furthermore, the exchange of ideas and networking possibilities are another driving force for this development.

The aesthetically pleasing environment creates, on the other hand, a comforting atmosphere, on the other hand, the level of perfection might inhibit actual creative expression. This observation has been confirmed by a graphic designer spending more time at Alma.

The mix of informal meeting situations, such as the picknick like dining tables and benches allow for collaboration. While fixed office situations are also bookable.

Nevertheless, the timeless concept with a high level of detail stands out compared to other coworking spaces, I have visited in Stockholm, Hongkong, and Amsterdam.
creative space, alma, 2017
potential use of table envelopes in the dining area
visualization
creative space, alma, 2017
potential use of table envelopes
in the dining area
Testing the Hypothesis

Investigating the history of office design helped me to understand the changing role and importance of the individual within a cooperation as well as the changing spatial setups, table configurations and trends described in the previous sections.

Looking at past and contemporary offices piqued my interest in empowering employees to adjust their working spaces according to their needs and personal preferences.

Offering the option to use it is one of the ‘core values’ - too often people have to work in certain environments due to economic constraints, so this gives back a level of choice to the employee. Questions of ownership and the human need to claim territory are raised, especially within increasing trends for hot-desking.

The concept is thus also a conversation piece, posed as a question as to what we really want and need from the spaces in which many people spend most of their time throughout their adult working lives.

Returning from history to contemporary times, another part of my method was talking to those people who would be potential users of my product.

Informal interviews were conducted and offices of different scales and branches in Germany, Netherlands, China, and Sweden visited.
Interviews

This short overview of three particular memories and all the other conversations I had were extremely helpful to validate ideas or to question misguided assumptions. As a designer, there’s a risk to draw conclusions based on own experiences and view of the world.

To summarise this learning I would state following aspects will be important for future development, the idea to increase personalization which goes beyond picking a personal image for the computer desktop seems to be a wish of many.

Dutch software engineer
Swedish online bank
28 years
The company recently relocated to a new open-plan office space located in a previous factory from 1890. I learned how important immediate communication between senior and junior web developers is to solve complex coding tasks. Furthermore, technology and personal computer screen setups demand a dedicated desk.

The mobility of the employees within an open-plan is therefore not possible. Table islands with separating walls are a common setup within the company. As concentration is important for the digital coding work, headphones are used by most of the employees to reduce acoustic disturbance. In addition following interview partner stated how easily distraction through movement in the peripheral happens and the time it takes to refocus.

Technology, as we know it today, can be incorporated in the design if people work on laptops or one single screen. (Opening on the side of the envelope). More advanced setups limit the folding up and down of the table top envelope.

French fashion engineer
Stockholm based fashion brand
25 years
After moving to a new office outside the city center. First table configurations planned by architects and superiors didn’t fulfill the needs of the workers. But set guidelines made it difficult for them to articulate their wish for change. Furthermore, standing tables were not part of the refurbishment as one of the founders has an aversion towards them.

This interview illustrated the need to incorporate the final users’ needs instead of portraying corporate identity through architecture.

Swedish property manager
Insurance company
40 years
Visiting an insurance company located in another former factory introduced me to the concept of activity-based work. Employees have different set-ups within a building they can choose from. As none of the desks is dedicated to an individual employee, the personal computer and other belongings are carried around in bag packs or briefcase like containers.

Staff members are expected not to occupy a preferred desk over a whole day or returning to the same place every day. For deep work, meetings and jobs which demand concentration. Library-like spatial setups within glassed boxes have been added over time.

These findings shows there’s not one perfect solution for every task. The logistic element of carrying computers, pens, and papers might be incorporated in the design, to avoid using the envelope and a backpack.

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40 years
Visiting an insurance company located in another former factory introduced me to the concept of activity-based work. Employees have different set-ups within a building they can choose from. As none of the desks is dedicated to an individual employee, the personal computer and other belongings are carried around in bag packs or briefcase like containers.

Staff members are expected not to occupy a preferred desk over a whole day or returning to the same place every day. For deep work, meetings and jobs which demand concentration. Library-like spatial setups within glassed boxes have been added over time.

These findings shows there’s not one perfect solution for every task. The logistic element of carrying computers, pens, and papers might be incorporated in the design, to avoid using the envelope and a backpack.

Dutch software engineer
Swedish online bank
28 years
The company recently relocated to a new open-plan office space located in a previous factory from 1890. I learned how important immediate communication between senior and junior web developers is to solve complex coding tasks. Furthermore, technology and personal computer screen setups demand a dedicated desk.

The mobility of the employees within an open-plan is therefore not possible. Table islands with separating walls are a common setup within the company. As concentration is important for the digital coding work, headphones are used by most of the employees to reduce acoustic disturbance. In addition following interview partner stated how easily distraction through movement in the peripheral happens and the time it takes to refocus.

Technology, as we know it today, can be incorporated in the design if people work on laptops or one single screen. (Opening on the side of the envelope). More advanced setups limit the folding up and down of the table top envelope.
first concept visualization
exhibition design
paper models od metal rods
As part of the thesis-project, I exhibited the research material and investigations of spatial relations in the form of several paper prototypes at the scale of 1:10. Within a spatial matrix consisting of a grid of 161 holes, several constellations of the table envelopes can be visually explored. Different heights represent contemporary office landscapes with height adjustable tables. This setup drew the attention of people passing by. The abstract tables caused also a misreading of the objects as chairs which hasn’t been expected before.

The folding principles of the prototypes themselves also inspired the plywood podium, where the woodgrain has been carefully cut to enhance the visual effect of one piece.

Furthermore, several prototypes, material samples, and tryouts are exhibited within a staged office environment to invite the visitor into the design process. An early question I asked myself: How the exhibit design compared to art? I decided to invite the public into the design process through a collection of objects and materials, as well as drawings and representations. For people outside the field of architecture and design, some aspects of this setup might have been difficult to read, such as changing scales.

Alongside the models, a collection of 6 drawings visualize parts of the design development and representations of historic and contemporary office space solutions. The chosen format of 40x30cm could have been bigger to improve the readability from the distance.

Reflecting on Exhibition: Communication of the concept could have been enhanced through a stronger emphasis on the final 1:1 piece in a spatial scenario, as well as informing the visitors about scale through scale figures in the smaller models.

During the 10 days of the exhibition, discussions were had around the product and its potential use, giving new perspectives on how it might be developed further.

For example, a visiting child psychotherapist was excited at the prospect of trialing the product with children struggling with attention-deficit disorders such as ADHD. She believed it could help them to combat the troubles they have with the concentration in an environment with many potential distractions, whilst still sharing a space with their peers.

Furthermore, first companies got interested in a potential development of the product.
Exhibition

Exhibition/Office Spaces

How to balance the "me" and "we" in times of economic work life

framed drawings
30x40 cm
clip frames
exhibition title
vinyl cut black

podium
plywood 12mm
prototypes in paper (gmund cotton, 300g)
scale 1:10
2mm metal rods
grid, 1:1 holes
podium
plywood 12mm
prototypes in paper (gmund cotton, 300g)
scale 1:10
2mm metal rods
grid, 161 holes

laser-cut prototypes
scale 1:1
mdf, tape
white cardboard, glue
prototype table
framed drawings

exhibition space
prototype table
framed drawings
podium with paper models 1:10
<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Slide Lock, Fragment, MDF, Paint, Scale 1:1</td>
</tr>
<tr>
<td>02</td>
<td>Pressed Biocomposite Durapulp (30% PLA, 70% Wood Fibre)</td>
</tr>
<tr>
<td>03</td>
<td>Raw Biocomposite Durapulp (30% PLA, 70% Wood Fibre)</td>
</tr>
<tr>
<td>04</td>
<td>Arch Detail, Fragment, MDF, Paint, Scale 1:1</td>
</tr>
<tr>
<td>05</td>
<td>Fold Details, Paper, Scale 1:1</td>
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<tr>
<td>06</td>
<td>Paper Models, Scale 1:6</td>
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<tr>
<td>07</td>
<td>Rib Detail, PLA, 3mm, 2mm</td>
</tr>
<tr>
<td>08</td>
<td>Hinge Details, PLA, 3mm, 2mm two-sided rarefaction</td>
</tr>
<tr>
<td>09</td>
<td>Hinge Details, PLA, 3mm, 2mm one-sided rarefaction</td>
</tr>
<tr>
<td>10</td>
<td>Hinge Details, PLA, 3mm, 2mm two-sided triangular rarefaction</td>
</tr>
<tr>
<td>11</td>
<td>Reference, Egg Box, Paperpulp, Colourform</td>
</tr>
<tr>
<td>12</td>
<td>Wood veneer Prototypes, Scale 1:10</td>
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<tr>
<td>13</td>
<td>Standard Plastic Clip</td>
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<tr>
<td>14</td>
<td>Silicone Hinge</td>
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<tr>
<td>15</td>
<td>MDF, Leather Hinge</td>
</tr>
<tr>
<td>16</td>
<td>Unpressed Composite Trifilon (50% PP, 50% Hemp)</td>
</tr>
<tr>
<td>17</td>
<td>Pressed Composite Trifilon (50% PP, 50% Hemp)</td>
</tr>
</tbody>
</table>
Glossary

catalogue of expressions related to work environments

Concentration: The Ability to think carefully about something you are doing and nothing else.
Cambridge Advanced Learner’s Dictionary, Page 286

Collaboration: The situation of two or more people working together to create or achieve the same thing.
https://dictionary.cambridge.org/dictionary/english/collaboration

Hot-desking
Desks which, like the concept of hot bedding, are used by several people in different shifts or on different days
Book, Workforce, a better place to work, a+t architecture

Multi-generation Workforce
The following generations all co-exist in the current workplace:
Generation Z [1996-2010] is the next line.
Book, Workforce, a better place to work, a+t architecture

Office: An office is described as “a room, set of rooms, or building used as a place of business for non-manual work.”
English - English Dictionary, V&S Publishers, Page 421

People-Centric Workspace
The term derives from people-centred development strategy, a movement aiming to empower communities and people against institutions. In terms of work organization, it reflects the will to improve the quality of work space in accordance with employee needs rather than production requirements.
Book, Workforce, a better place to work, a+t architecture

Table: a flat surface, usually supported by four legs, used for putting things on
https://dictionary.cambridge.org/dictionary/english/table

Third Places
Places where administrative, creative or business tasks unrelated to the home (first place) or the traditional office (second place) are performed. Main features are informality, security being open to the public and good atmosphere. Examples of third spaces are: libraries, cafeterias, community centres, book stores, parks… The term was described by Ray Oldenburg in his book The Great Good place 1989.
Book, Workforce, a better place to work, a+t architecture

Wall: a vertical structure, often made of stone or brick, that divides or surrounds something.
https://dictionary.cambridge.org/dictionary/english/wall

Work: an activity, such as a job, that a person uses physical or mental effort to do, usually for money
https://dictionary.cambridge.org/dictionary/english/work

Work Modes
Focusing, collaborating learning and socializing. These are the four ways in which the knowledge worker operates according to the Gensler Workplace Survey 2008
Workforce, a better place to work, a+t architecture
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Series: Anders Arbeiten
“Großraum hat ausgedient” Interview with Udo-Ernst Haner
“Vorsicht, Home-Office!” Sebastian Balzter
“Schreibtisch verzweifelt gesucht!” Nadine Oberhuber
“Das Ende der Papierberge” Anna Steiner

Article: The History of the modern workplace, Dwell by Patrick Sisson

Article: The Collaboration Curse, The Economist

Article: The “Taylorist office” is dead – long live the “Taylorist Office”
Leeson Medhurst

“The future of Work” Report by Bene

“The office cubicle: from commercial flop to best-selling design classic”
Andrew Shanahan

360° The Creative Shift
Solving 21st century problems
Steelcase

The Privacy Crisis
Taking a Toll on Employee Engagement
Steelcase

Flow: Versunken im Augenblick
Corinna Pfeifer, Gina Wolters, Nora Hein

Designing your own workspace improves health, happiness and productivity,

Article, Flexkontor för alla trots kritik, Ulrika Fjällborg