

Rethinking the design office:

in which organizational structure will today's innovative architecture thrive?

Abstract

Case studies into the physical, social and organizational structures of three innovative architectural firms identified decisive five factors. Literature research into organizational innovation and creativity brought forward three environmental elements for innovation: group creativity, autonomy and resources. this paper aims to illustrate that the structures that make up these firms are facilitating the environmental elements for creativity and thus enable these firms to remain innovative.

Keywords: Innovation, creativity, resources, group creativity, autonomy, collective

Methods

The methods used in this explorative research is a case study where is searched for patterns between the structures that make up these firms. These patterns or factors are thereafter compared to existing literature on creativity and innovation in order to explain how these factors facilitate innovation.

Introduction

The growing firm

Businesses grow, at least that's what they aim for. In architecture that is not any different, most architectural offices start out with a single group of likeminded people, a team of equals. There is no need for any organizational structure and decisions are made by consensus. Most architectural firms start out with a bright idea, an innovation of some sort. Coxe (1986) defined this type of firm as a practice centered, strong idea firm. This idea propels the group of architects forward in the profession. From here the firm grows in number of employees, number and size of projects and capital.

Although each firm is unique, the growing firm passes a number of stages that each have its own characteristics and challenges.

The Young firm - Firms that just start with their practice have around one to five members. There is no need for hierarchy, all members are equal. They have a strong ethos and are verry client oriented.

These firms are building portfolio and are developing their own style. Their main concern is having enough projects to survive and they will choose projects that are either good for building their portfolio or for making income (Marks, 2016). Although young firms are still finding out what they are and are limited by financial means. There is a strong desire to do good architecture the process of developing creates a collaborative bond (Fillerup, 2008).

The Medium firm – In this stage the firm is called after the names of their partners. They have built a successful practice in around fifteen years. They have grown to about thirty employees and the first layer of management is brought in place so the partners can keep focusing on the design work. They have developed a niche portfolio in a couple of sectors that brings in regular work. If the firm needs to expand this will be the work of the management in place (Marks, 2016).

Traditional firm

The traditional firm is an established firm, the office has made a name for itself and grew through several stages. There are many different firms with different goals and different organizational strategies. These firms share a number of typical characteristics

The traditional firm has around 30 to 100 employees, spread over various functions and ranks. Of the architects that started the firm a few have moved on to work elsewhere, the ones that still work at the office are likely to work as partners and lead the firm together with a managing partner.

Started with an innovation, the traditional firm has continued to work with this discovery and became expert at this field. This means that according to Coxé (1988) the firm has moved from a strong idea to a strong service typology firm.

Because the architects main endeavor is to design and not to manage an organization, a managing partner has joined the lead architect(s). In order to manage an organization of this size various layers of hierarchy have come in place (Marks, 2020)

In this Hierarchy individuals are ranked according to their status or authority (Cambridge Dictionary, 2020). hierarchy and bureaucracy are viewed as classical and orthodox and may have become a dirty-word in modern organizational theory, nevertheless many organizations still use a more or less hierarchical organization.

Hierarchy is considered the most efficient way to order a social system. There is a vertical organization of tasks; actors report only to the rank above. different elements of the organization are bound in one pyramid, ordered from high at the top to low at the bottom. Elements like: financial reward, creative freedom and authority both in management and design decisions. The system guarantees a kind of order, stability, protection, conservation and a balance of power between leaders and followers. It offers advantages for higher and perspective for the lower rankings, a direction to grow in the company (Diefenbach, 2012). The use of this system inevitably structures not only functional relationships but also social relationships.

One of the downsides of the hierarchical system is that per definition there is an inequality in access to certain resources, privileges and social ranks. It represents institutionalized inequality, some are privileged others are not (Diefenbach, 2012).

One way street

Some common developments are one directional. The development is easier made in one, progressive direction that's why a lot of firms develop this way. At first growth is a possibility and a chance to the firm, but at some point growth could turn into a necessity for sustaining the growing company.

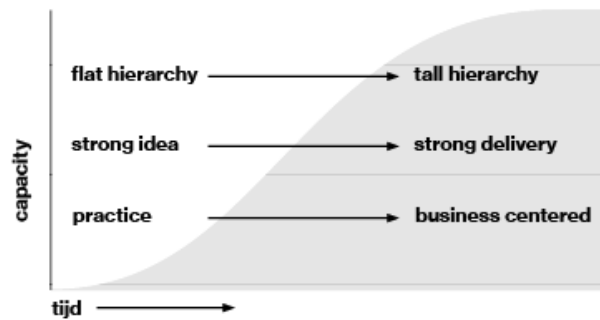


Figure 1 'one way streets' own image

The second is the development in type of product. Many firms start out with an innovation, which means they are strong idea oriented. Then they start to be experts in this field and they become strong service oriented. At some point this service becomes standardized and the firm becomes strong delivery which means they are efficient in what they deliver. Not every firm moves through all possible stages, but the transition only goes in one direction (Coxe, 1988).

The third is the goal. Almost all firms start out as practice oriented. They make architecture because that's what architects do. But a number of firms become more business oriented. Once a firm has investors and sets financial goals they have to maintain doing so. Mainly focused towards financial growth.

The last one is hierarchy. The hierarchical system represents a division in organizational structures. Hierarchy grows into a firm; layers are forming as the firm grows. New layers of hierarchy will grow gradually but to reduce the number of layers reformation is needed from time to time.

Firms grow in a certain way, influenced by organizational factors rather than just architectural considerations. But what if innovation is placed back at the core of the architecture firm. Would it be possible to find out what structures of the architectural firm are most suited to facilitate innovation and bring these into practice?

Research question

Many architectural innovations are developed by young firms, but a number of more established firms preserve their innovative power. How do these firms organize their innovativeness? What is the interplay between creativity, innovativeness and organizational structures? How is innovativeness preserved in the long run? To gain insight in these matters a number of younger and more established are studied. Therefore the main question of this thesis is:

What are the structures of successful innovative firms and how can the understanding of these structures help growing firms to maintain their innovative nature?

To answer this main question the following sub-questions were formulated:

What are the organizational structures firms with a high performance in creativity and innovation?

In what ways do these organizational characteristics facilitate creativity and innovation?

How can these characteristics be preserved when innovative firms grow to maturity?

Theoretical framework

To delineate the theoretical framework used in this study the following concepts will be defined and the relationships between the concepts will be explained. To understand how the identified structures support innovation, an understanding of how innovation is formed within an organization is needed. The paragraph will start with defining 'innovation and creativity'. In addition the difference between 'individual creativity' and 'group creativity' will be highlighted. Furthermore the organizational context of innovation will be addressed. Eventually the difference between incremental and radical innovation will be explained.

1. Innovation and creativity

Innovation is a process or product that is sought after by many organizations, innovation brings a field of research into further development. Organizations' motivation can be economic advantage or a next step in their practice. Many organizations mention innovation in their mission statement. The term is used so often that it is difficult to navigate in the search for actual innovation.

Innovation is seen as organic, arising from activities within an organization. Its appearance is unpredictable and complex. In the literature innovation is defined as: *the successful implementation of creative ideas within an organization*. The key element for organizational innovation is individual creativity. Creativity and Innovation are closely related and are seen as essential parts of the same process. They have a symbiotic relation: they both influence and need each other (Amabile, 2016). Creativity is the ability to make new things or connections, the concept of creativity will be further addressed below. If an organization has the goal to innovate they have to provide the right environment for individual creativity. Throughout this research there is often talked about elements from two perspectives, from the organizational and from the individual point of view.

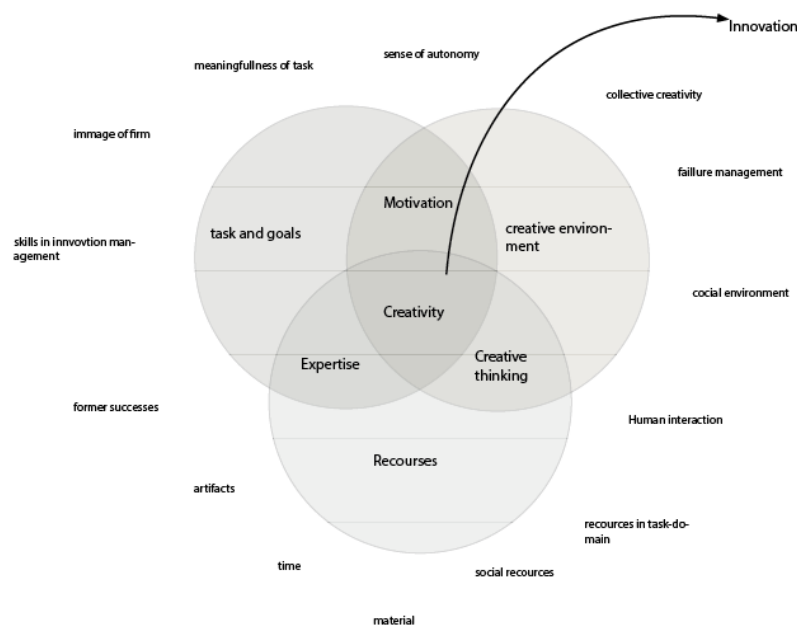


Image2: own image based on Amabile's (1988) theory

Organizational innovation is produced by three main principles, motivation to innovate, work environment and resources in the task domain. The right support and resources have to be in place in order for creative individuals to be productive. These elements are directly linked individual to creativity.

In order for an organization to innovate they have to provide the right environment for individual creativity. The physical driver for creativity are the resources (in the outer ring, image 2); they facilitate organizational creativity (in the circles) and individual creativity (in the triangles) if every piece is in place an optimal environment for innovation could be formed.

Individual Creativity

Creativity is seen as a human trait or process that is prior and essential to innovation (Amabile, 2016). A definition of creativity that is still commonly used is of Morris Stein (1953): *“that process which results in a novel work that is accepted and tenable or useful or satisfying by a group at some point in time”*

Three main aspects are important in this definition. First ‘novelty’ the main assessment but mere novelty is not enough because the process could very well be random. Some definitions use originality, which holds bonds with novelty as well with authenticity. The second aspect is ‘tenable, useful or satisfying’ meant is that it is of value Amabile (1988) makes the distinction between utility used for the operational definition and appropriateness as a conceptual definition. The third defining element is ‘by a group at some point in time’ meaning that there is some sort of social consensus and possibility for discussion that is bound by place and time.

Novelty emerges from human interaction either interaction between an individual and a situation or interaction between individuals. Within Amabile’s (1988) multi-level interactionist model of creativity, creativity is believed to derive from the complex interaction of person and situation, influenced by the past and current situation. External influences, like society and environment, are essential to the forming of creativity.

Creativity as described by Amabile (1988) has three major constituents, these expertise, creative thinking and task motivation. These pillars influence each other and the creative outcome some of these component specific skills can be learned, or influenced others are personal.

Creative thinking is characterized by an appropriate cognitive style for heuristic problem solving, a conducive work style and the ability to create novel ideas or variations. This skill depends on training, experience in idea generation and personality traits.

Expertise or Domain relevant skills in case of the architects are architectural training and knowledge of the built environment. Besides this technical skills required and domain relevant talent. These skill depends on innate cognitive abilities and perceptual skills as well as formal and informal education in the task domain. If one sees expertise as dots in a field of knowledge and skills, creativity would be connecting the dots by means of innovative processes.

Task motivation mainly consists of intrinsic motivation. Task motivation is a positive attitude to do the task and perceptions of personal motivation to perform the task. It depends on initial motivation, presence or absence of salient extrinsic constraints and ability to deal with these, and personality characteristics (Amabile, 1988).

Intrinsic motivation is the driving force for creativity. An individual that is motivated from within will produce more valuable creative work. People can be intrinsically motivated by interest, enjoyment, satisfaction, challenge of the task etc. Intrinsic motivation can be influenced by external factors these factors can either higher or lower the motivation. Factors that may influence motivation in a positive way, are having a sense of autonomy, meaningfulness of work, positive atmosphere, sense of progression and former successes (Amabile, 2016). Unnecessary layers of bureaucracy, unclear tasks or harsh evaluation of new ideas could have a negative effect on an individual's intrinsic motivation.

Extrinsic motivations like pressures such as deadlines or incentives and recognition can be a stimulus on top of the existing intrinsic motivation but only if the moral is already high. They can also be a deviation depending on the motivation beforehand.

The idea that creativity is merely a mental process has changed since Amabile published her research in 1988. Zhou (2014) recognizes that creativity is the product of complex interplay between the actor and its context.

Group creativity or collective creativity

In situations where more than one person is involved in a creative process group creativity is emerging. Group creativity is the act of having a creative process where more than one actors are part of the process. With group creativity there is a complex creative interaction that produces the creative construction (Amabile, 1988).

Novelty as a key element of creativity is understood to emerge from human interaction. When two people with different or even crossing intentions form consensus in conversation a complexity is reached that neither of them can foresee (Buur & Larsen, 2010). Group creativity is dependent on, but not simply the aggregation of, individual members' creativity. Although some creative insights are really the result of one individual's internal thought processes, others come from a complex collective interaction within an organization and these are qualitatively different (Amabile, 2016).

Innovation as the product of creative processes is understood to be the emergence of new meaning in often conflictual conversations. This means that interaction between people with different intentions can be a fruitful environment for creativity. Human beings are seen as essentially social; we are conscious and self-conscious (Mead, 1934). Sociality also gives us the ability to cooperate and reach consensus, whereas at the same time we can conflict and compete. Our consciousness is formed by communication and in conversation knowledge and attitudes are formed. Consciousness, "knowing and mind are social processes where meaning emerges in the social act of gesturing and responding." (Buur & Larsen, 2010, pp. 2)

Collective creativity is not simply an accumulation of individual creativity of participants, but new meaning is formed. And not only new meaning but also a qualitatively different outcome can be expected. In individual creativity personality and style are stronger, and in group creativity there is more coherence (Woodman, 1993). As mentioned before social consensus plays an important role in the validation of innovation in the way same social consensus can be brought into conversation in group creativity.

2. Organizational innovation

Organizational creativity

Innovation often appears to be quite static and hard to influence on an organizational level. However the human component of innovation, creativity, can be influenced by different structures of the organization. Individual creativity is the key to organizational innovation. To understand how individual creativity can be influenced one must take into consideration the components of creativity.

Organizational innovation can be divided into three constituents. Similar to the theory of Amabile, based on her research I would like to suggest three other components: resources (1), tasks and goals (2) and creative environment (3). These three parts each can influence creativity on the individual level in different ways either in a positive or a negative way.

Resources in the task domain stimulate creativity. Resources are the physical driver of innovation and creativity. Resources could be artifacts, former successes, archive work etc. Timing is also important, some pressure from time to time can be stimulating but not having sufficient time to develop and explore will counteract creativity and innovation (Amabile, 2016).

Organizational motivation to innovate can also contribute. For example having clear organizational goals, autonomy in how to meet these goals, mechanisms for developing new ideas, participative or collective decision-making, recognition for creative efforts and support for risk-taking individual initiative and having a positive attitude towards failure. Creativity can also be blocked by harsh evaluation of new ideas, constraints, unclear or shifting goals, or ignoring and overreacting to problems, or over-emphasis on status quo (Amabile, 2016).

The creative environment is basically everything a person comes in contact with while working on a creative task, within and outside of the organization. The work environment will influence a person in different ways, for example by stimulating the motivation or interaction between actors (Amabile, 1996). Work environment consists of actor and contextual factors and is an open system sensitive to broader socio-cultural forces (Zhou, 2014).

An organization consists of many structures that make up the work environment, mainly referred to are the organizational structures like management, hierarchy and rules. But there are additional structures which make up the firm like the physical structure or of the building, the social structures like friendships and informal communication or image of the company. All these patterns are of influence on the creative environment.

Incremental and radical innovation

In the literature we also find two main types of innovation. On the one hand there is incremental innovation. When a certain process or product is developed this can also be seen as optimization of the system in and around a particular innovation. On the other side of the spectrum would be a breakthrough. Radical Innovation is said to take place when a new system emerges, new dominant design within a new set of core design concepts (Henderson and Clark, 1990).

Incremental and radical innovation are related processes, but the environments to develop one or the other are significantly different (Connor and McDermott, 2004). Where incremental innovation is

structured and systematic radical innovation is unpredictable and needs a different environment to achieve. Connor and Mcdermot (2004) did research on radical innovation within established firms in the product design industry.

For organizations incremental innovation is a necessity; it helps the firm to remain relevant and optimize processes. This type of innovation is plannable and this is where established firms mainly thrive in. a hierarchical setup works well because incremental innovation can be planned and has clear resources. Teams consist of 5 or 6 members each experts in a different field. High systemization in different managing levels are in place. Strong formal communication is essential (Connor and Mcdermot, 2004).

Breakthroughs or radical innovations are uncertain but can vastly influence in markets with great economic potential for the firm and bring progress for the practice as a whole. The process of radical innovation is more fluid and comes with economic uncertainty. Mainly startups or entrepreneurial figures thrive in this environment. Small teams of multidisciplinary individuals excel in this type of innovation because they tend to work in a broader scope. Individual initiative is essential and should be stimulated (Connor and Mcdermot, 2004).

In established firms there are often systems in place that counteract radical ideas from developing. Decisions move slow through the hierarchical setup and bureaucracy often stagnates the process because of the uncertain and fluid character.

The creative process is more an individual act than an organizational accomplishment. The link between a problem and a possible solution is something that happens in a single individuals brain (Amabile, 2016). It is seen that the informal internal network of an organization is used. People who know people within the firm and not the established corporate constructions of communication (Connor and Mcdermot, 2004).

Results

A1 Theoretical research results

The structures that make up the design office influence creativity and innovation in a number of ways. . In the theoretical part three environmental elements appeared that are important to consider: group creativity, autonomy and resources. When the office structures form in order to support these, the environment can be optimized for creativity and thus innovation

1. Group creativity

When people collaborate it is not simple that the work is divided, but people work together to perform tasks the outcome is something that could not have been foreseen by the individuals. On an organizational level collaboration can be stimulated and is part of the creative environment. On an individual level collaboration is working in the spectrum of creative thinking, and therefore an essential part of the creative process. Novelty is especially formed by interaction between individuals, and social consensus is needed to will assessed whether novelty is innovative.

2. **Autonomy** Many authors have researched the importance of autonomy in the creative process. Autonomy is linked in research to individual creativity, intrinsic motivation and harmonious passion.

Individuals with strong autonomy orientation are naturally drawn to situations of self-determination, they are more likely to view existing situations as “autonomy promoting” and are more likely to base their choices on personal goals and interest and not on organizational control (Ryan & Deci, 2000). Autonomy oriented individuals experience self-determination more often. The individuals make organizational values into their identity unconsciously (Liu, Chen & Yao, 2011). They create a work environment for themselves in which they experience autonomy.

Individuals with lower personal individual autonomy orientation are more likely to suffer from a lowered intrinsic motivation by a controlling environment. Autonomy has been identified to stimulate individual creativity and has been showed to be one of the most important factors in the work environment to stimulate individual creativity (Amabile, 1988).

3. Resources

Innovation and the creative process depend on certain elements described as resources. These resources are the raw building material for innovation. resources could consist of physical elements like materials or artifacts or non-physical like time or social bonds.

On an individual level resources could be material, social, artifacts, documentation, inspiration or former successes.

Documentation or Information in the task domain is very important, but it is equally important to have information from different sources and of variety. Maquettes or drawings of older projects that have been successful and project the image of the firm could be used as inspiration or motivation. sufficient management of these resources is important, this could be done in the form of an archive. inspiration (Amabile, 2016)

Creative people externalize creative ideas by producing, physical materials like modelmaking supplies, or a computer are examples of resources. The externalized ideas are made into artifacts that hold creative ideas in many design offices you find a lot of these artifacts scattered around the workplace as a form of inspiration (Kristensen, 2004).

On an organizational level resources are an essential part of the innovation management, by having sufficient resources in place a creative environment can be created and maintained. The basic resources are everything an organization can provide in order to enhance the creative process.

B1 Casestudy sheets

View additions 1, 2 and 3

B2 Case study results

	TAC	OMA	Assemble
collaboration	"uncommonly democratic methods are practiced", "The way of working has been described as a "motivated anarchy" the excitement and involvement that is generated in doing the work."	uses a system that where they label and categorize everyone's design models after so that they are depersonalized after they discuss the models collectively and make choices based on consensus. The system is not about the individual but about making it work.	has a high degree of collaboration, they work together in different groups to form ideas and maintain a collective ownership of ideas. They collaborate not only among each other but also with other creatives outside of their firm.
Communal identity	"The firms philosophy centered around collaboration, design by consensus, and equal ownership"		Assemble has an identity centered around hands on architecture, craftsmanship and social projects.
Collective working	"there was no leader, all members are equal, there was one regulating project leader per project. "who was free to accept or reject these statements to maintain the integrity of the original concept" "payrate is based on growth of the company and equal among employees.		"Assemble maintains a flat hierarchy, every member of the team is equal" "office roles like manager or HR rotate and are not attached to status or payrate" "democratic and co-operative working method that enables built, social and research-based work at a variety of scales"
Connection to social resources	The TAC Office was on the Harvard campus, the office has strong connections to pedagogy and education.	Oma Use their 'iconic' Image to attract young bright graduates with similar ambitions. There are a lot of intern and junior architect places, these people often work at the firm for a short period. But with the possibility that the right people grow into the firm.	"public cafe, this is the first step to attract social resources in the form of creatives. the cafe also functions as a bonding mechanism for the office. ", "inside the yardhouse houses rental workshops to attract creative."
Creative space	"each cube is personalized with art and personal elements, through the building you find a lot of art and former successes" The courtyard of the office was shared with other firms which is a big source of inspiration and spillover.		"the office has a free character like a house, its not a place where people go to work, but is has a vibrant atmosphere where people go to socialize and create this creates a strong sense of autonomy. " "the office is full of artifacts, former successes, story's etc. "

For this research I have conducted a case study among three well known firms. These firms have in common that they are all strong innovators. Using Coxe's (1988) definition they would categorize as strong idea firms or having started as such. In the case study sheets a number of different structural aspects are considered. On the basis of these structures each firm is independently studied. After comparison five important factors are found. It is expected that these factors contribute to the ability of these firms to innovate and maintain the ability to innovate.

1. Collaboration – group creativity

Different strategies are used in order to be able to maintain strong collaboration and collective ownership of ideas. Choices are made by consensus collaboration group creativity has qualitative benefits over combined individual creativity.

2. Communal identity – Autonomy

The firms all have a strong identity. Collective identity is formed by interaction within the group, it is social construct that is reflected in the ideology and work of the firm. Individuals draw their personal identity partially from the collective identity.

Collectives have a large overlap with communities, a social unit consisting of durable relations (Cambridge Dictionary,2020) members of a community share a sense of identity, belonging and ideas. Because of the shared identity, there is a safe place to share ideas. A community is characterized by collaboration and connections (Groves, Marlow, 2016).

Motivation is strongly related to identity when someone shares the identity of the organization and their individual goals are aligned with the organizational goals someone's autonomy orientation is stronger which makes one more likely to be intrinsically motivated to do work.

3. Collective working – Autonomy, Group creativity

Collective working methods are in place, like maintaining a flat hierarchy where authority is taken as a role. Authority, creative freedom, choices and financial reward are not bound together in a layered system but on a system based on equality. Even when there is a hierarchical business structure in place there are systems to provide creative freedom and consensus in decision-making.

The Individual is central and there are no bureaucratic boundaries that limit interaction. Each individual has personal projects, like other work or interests. Work produced under their collective name has a specific ideology.

A collective is business that functions as a creative community. The collective structure often opposes traditional hierarchical business structures. The most important characteristics are: there is little or no hierarchy, each individual is autonomous, equal, and has its own place in the collective. Choices are made by social consensus both about the firm and the designs.

Because of the shared identity and work in a nonhierarchical system there will be a strong autonomy orientation. community or collectives share characteristics that lay at the basis of innovation and creativity like: collaboration, safe environment, shared interests, goals and collective ideas.

4. Connection with social resources- Resources

The firms have systems in place in order to 'harvest' social resources. These social-resources consist of: spillover, inspiration, ideology or potential employees with a similar mindset and ideas. The methods to gain these social resources fit the identity of the firm, therefore the right people are attracted. Expertise is one of the three main pillars for creativity and the main way to reach that is to find expert people that share the same ideology as the firm.

5. Creative space – Autonomy, Resources

The design office is a layered system that provides structure and at the same time freedom where needed. The construction is a grid that leaves a lot of space for interpretation. The routing of the spaces is often a sequence of spaces that require that one walks through or along other spaces of work. The interior walls form job specific spaces: offices, focus boxes and meeting rooms like open

'pods'. The interior consists mainly of cupboards and big working tables that are used in almost every architecture office. The arrangement of these tables is very specific and reflects a lot about the identity of the firm, tall hierarchy has different special needs than collaboration.

Over the interior spreads a 'layer of stuff' That is architecture specific artifacts, resources, archiving books models posters and open laptops are scattered around the office. also the content of this layer is very specific for each firm, its identity, type of staff and methods.

Nonphysical elements like the social environment are an important part of the creative space in these offices.

Work environment autonomy is one of the most important factors in stimulating ones intrinsic motivation and thus creativity. Individuals are more creative in an environment that stimulates self-expression and personal ideas and emotion and will suffer creatively my exinitic motivational factors like pressure or bonusses.

The creative space holds the resources needed for creativity and innovation, it is the framework for creative outcome.

Discussion

This thesis is mainly a exploratory research into the structures that support organizational creativity. The cases that are researched are very specific. Although they would all classify as strong idea firms their output and methods are very different. Therefore these individual cases can only be used to point out elements that innovative firms have in common. The description and understanding of these elements are theoretically based. But these elements are not proof for what organizational structures produce 'better' innovation. Therefore more firms should me researched and the categorizations need further refinement. .

The cases are not completely random, they showcase firms that maintain a collective or collaborative working style. These three cases show what important factors are when working this way. Compared to the theoretical research these factors seem to be very much in line with the environmental elements for creativity.

Conclusion

The question central in this research was: *What are the structures used by successful innovative firms and how can the understanding of these structures help growing firms to maintain their innovative nature?*

Three environmental factors for creativity have been defined: Group creativity, autonomy and resources. These elements could be the basis for an office structure that supports creativity in an optimal and enduring way.

Three case-studies have been conducted among innovative firms with an innovative record. In the analysis of the cases five important structural factors were identified: collaboration, communal identity, collective working, connection with social resources and creative space.

These five structural elements support a way of working that facilitates the environmental factors for creativity. To summarize this, the innovative success of these firms can be explained by their 'collective character'.

Most Young firms have an environment very much suited for creativity and innovation although they might not have the experience or capacity to develop these. When firms grow they do so along a number of paths these paths are 'one way streets'. As a side effect these bring systems into the organization that could be counterproductive to innovation.

When innovation is the main purpose a collective structure is more suitable for this than the traditional business structure. The firms incorporated in this case study have found a way to grow without losing the characteristics needed to stay innovative.

Recommendation

Further research into collectives and how collective work is needed, the collective as a business structure has to be defined more carefully and knowledge should be expended in order to perform conclusive research. This study points out that five structural elements are of relevance: collaboration, communal identity, collective working, connection with social resources and creative space. The greatest challenge at the moment would be to further investigate how firms that work as a collective could grow while maintaining their collective properties.

The focus of this research was directed mostly into the ability of a firm to innovate. Other factors such as financial stability, market structure and development will also influence the results and should be taken into account in future research.

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Images

Image 1: 'one way streets' personal image based on theory

Image 2: 'creativity and innovation' personal image based on theory

2. Case-study

Assemble

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ASSEMBLE



General

founded in 2010 Assemble started out as a single project when a group of friends decided to make a project out of one of the many empty gasstations in london.

this single project brought together most of the bodys now forming the multidsciplinary collective. Assemble has since delivered a diverse and award-winning body of work, whilst retaining a democratic and co-operative working method that enables built, social and research-based work at a variety of scales, both making things and making things happen.

Assemble is workspace provider for designers, fabricators and artists. We design, build and manage workspace and shared workshop facilities with the aim to enable and support collaboration across disciplines.

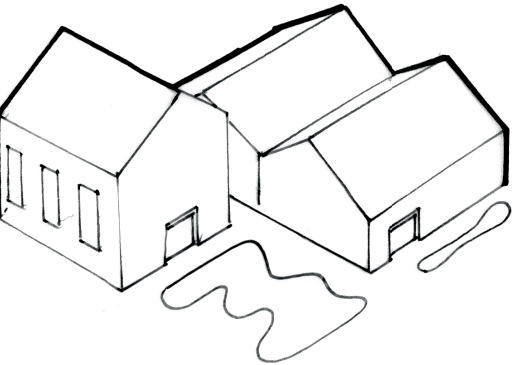
They have developed a number of strategies that address the gap between the people and the space and make cities more malleable. Instead of having a city that is opaque and unquestionable, Assemble work to spotlight invisible spaces and make the city a playground of possibilities.

STATISTICS

Location: Stratford, London E15, UK
year: 2010 (first generation)
size: 18 partners
Type of work: mixed discipline, social projects
Type of client: self-initiated or public sector
philosophy:
Typology: sequence of spaces
character: social



Sugarhouse studio



4. Office spaces - The office spaces consist of **flex desks**. The users have the autonomy to pick a place that suits thier work. in the office **big tables** allow to create a creative invironment by unrolling drawings and make use of recources. different recources are seen like **documentation, former successes** and **artifacts**.



1. courtyard and yardhouse - The **public courtyard** is used for housing events and **attracting social recources**. the yardhouse has a **big colourfull facade** that acts **like a big sign**. inside the yardhouse houses **rental workshps** to attract creative.

Project process and decision making

Decision making is done by collective consensus. Projects are started when 2 or more people agree to work on a certain project. They will have the final say.

Keywords: consensus, collective.

Leadership, management Organisationstructure

Assemble works with a flat hierarchy, every member of the team is equal. Because they all have different skill-sets they form duos that take the lead over a particular project. Once a week they have a meeting presenting the progress. Different office roles are divided like HR, Housekeeping and Finance.

Keywords: flat hierarchy, office roles, collective.

theory

The office has a smart strategy to atract social recources, inspiration and creative minds. it consist of multiple layers, the first layer is the cafe where people come into contact with the office and the workshop. they also have a rental workshop called the yardhouse with this system they build the community they need to be able to work. the facade of the yardhouse functions as a big sign saying we are here and you are welcome.

the office has a free caracter like a house, its not a place where people go to work, but is has a vibrant atmosphere where people go to socialise and create this creates a strong sense of autonomy. that helps them create a buisness out of social engeneering and innovation.

the office is full of artifacts, former succeses, storys etc. this is not a problem because they are all the first generation architects of the firm. when new people would join that dont have such a connection with these ellements it could work counteractive.



3. workshop - the office has a **big private workshop**, the workshop is also **full of artifacts** creating a sense of ownership for the people that know the story of this artifact. The main feature of the workshop is the **big comunal toolwall** this inspiers and the tools are always at hand.



2. public cafe - Assemble has a public cafe, this is the first step to attract social recources in the form of creatives. the cafe also functions as a bonding mechanism for the office.

Type of staff, and recruitment.

- Assemble consists of 18 members, all around the same age.
- Most of the members started the company together.
Most are architects some of them are in other creative fields.

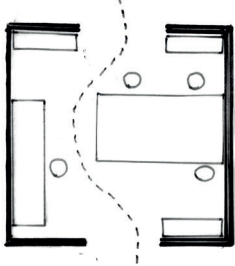
Keywords: interdisciplinary(creative fields), collective, same age, 18 member, same interests

Marketing approach ,type of clients and funds

Assemble works mainly for the public sector or with self initiated projects. Fund are low and come from different sources.

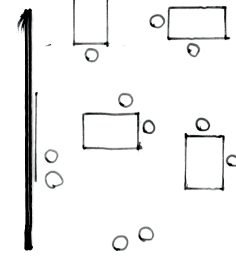
Keywords:

Desk orientation



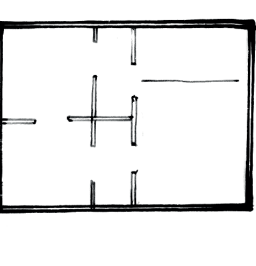
Free standing desks / Flex working / Different work invironments.

critique space



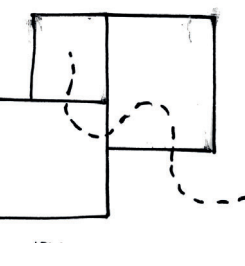
The cafe / Seperated from work-space / Informal

Typology

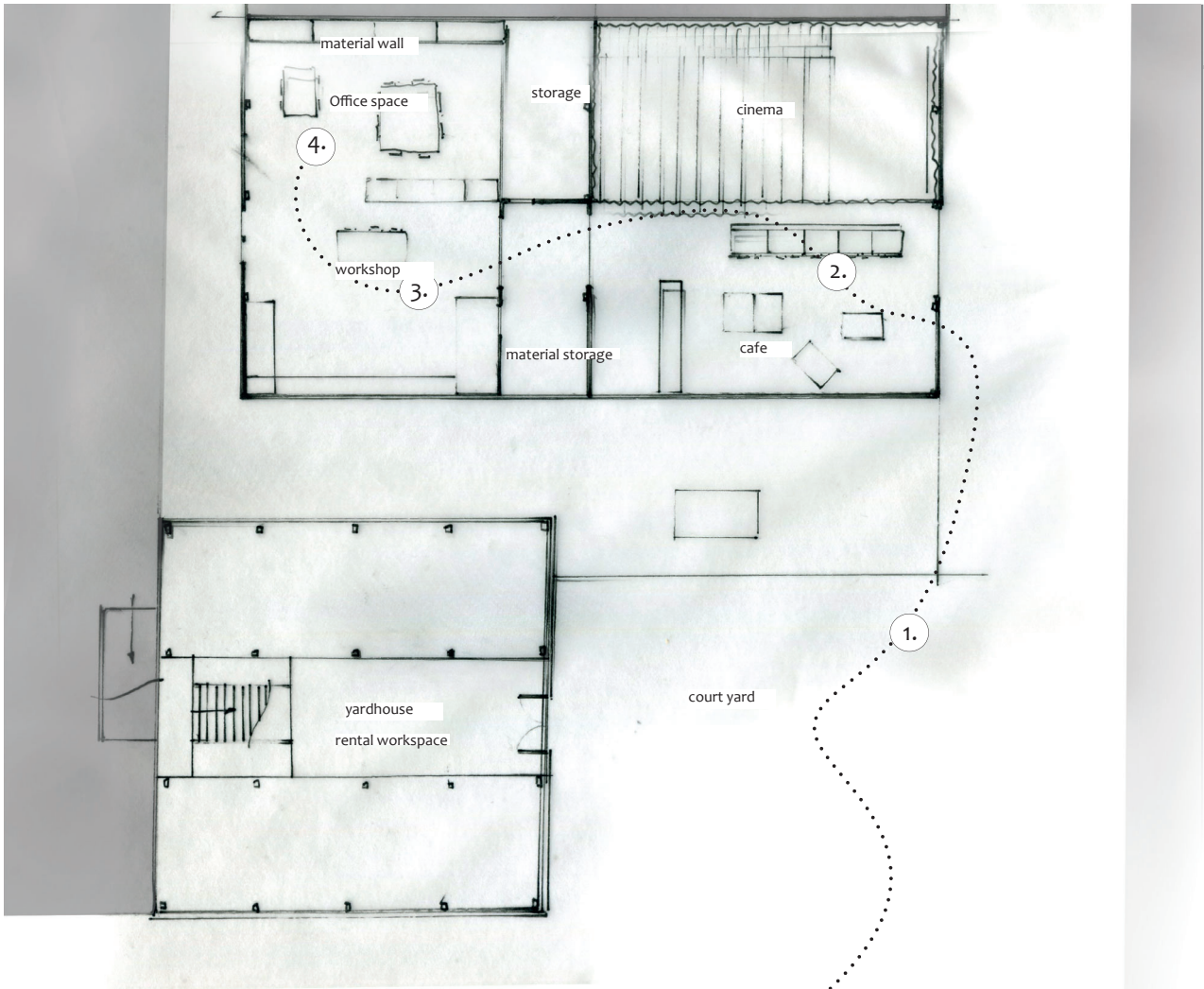


House / Industrial campus space

Circulation



Connected spaces / Sequence of Spaces



Rewards and motivation. And financial system

-Members are choosing the projects themselves, and remain autonomous.
-50 %of project income is for assemble and 50% for the project group.
-Every hour spend is paid, payment is fairly low. Equally paid.

Keywords: Autonomy, every hour paid, equally payed.

Relation to physical space

Whats unique to the sugar-house concept is that assemble delivers the space, and within that space makers build their own workshop-space and by doing that they deliver their part of participation to the project. Assemble shares the studio and in that way they get inspired and make connections.

Keywords:

Relation to Innovation

Assemble developed strategies that address the gap between the people and the space and make cities more malleable. Instead of having a city that is opaque and unquestionable, Assemble work to spotlight invisible spaces and make the city a playground of possibilities. They don't address innovation, but say that interdisciplinary work creates something interesting

Keywords: developed stategys, make citys malleable,

Management / Hierachy

HR
BAR
MANAGER
FINANCE
PROJECT LEADER

random rotation

OMA

Office for Metropolitan Architecture



General

OMA and its spinoff the architectural thinktank AMO are described on their website as:
OMA is an international practice operating within the traditional boundaries of architecture and urbanism. AMO, a research and design studio, applies architectural thinking to domains beyond.

OMA is one of the most well known firms in the Netherlands, the main office of the practice is still housed in Rotterdam but the firm rather identifies as being international. OMA is led by eight partners and has offices in Rotterdam Hong Kong, Beijing, Doha, Dubai and Sydney. The office currently has around 250 employees, varying in numbers depending on the projects. Most people work in the Rotterdam office.

OMA was founded in 1975 by Rem Koolhaas, Elia zenghelis, and artists Madelon Zoe Zenghels in London, of which Rem Koolhaas is the only one left. The practice was in the first years mainly known as paper architects, with different projects that Nourished the political debate. The competition design for the dutch parlement put the office in the spotlights around the world. Over the years the firm had big reformations, and in 1995 almost went bankrupt, after a reformation in 2005 the company has 8 equal partners and the company grew to one of the biggest and most renown firms today. With many world famous projects like the Seattle library and the CCTV tower in Beijing.

OMA's main office was housed in the katshoek in the center of Rotterdam building for at least 20 years, since September they moved to a building close by with more floorspace.

STATISTICS

Location:

Heer Bokelweg 169, Rotterdam, NL

year:

1975

size:

8 partners

Type of work:

metropolitan, ‘icons’

Type of client:

Corporate

philosophy:

Avoiding the Obivious

Typology:

Street

character:

Iconic, striving for relevance



theory

The office uses a openfloorplan with fixed work spaces, each team uses one or more tables. each room has a specific function and is labelled with signage. some rooms are the modeldisplay, archive, modelworkshop en meeting rooms
The Katshoek Building was build in 1966, it was build as a collection-office building as it still is today. The building has a solid concrete construction and band windows around. Big open floor surfaces in a 8 by 4 meter grid of columns. On the first glance the OMA office looks like a corporate office building, the interior has a high degree of standardization. Interior walls are made of glass spanning from floor to ceiling. The desks are separated by archive cabinets. Big office tables for 8 people are shared with fixed spaces.

Each room has a clear use, the offices are located along the north façade, the meeting rooms consist of glass free standing boxes and the offices have an open floor office arrangement. Signage fixes the use of a space printed on the door. Resources appear to be closely managed, and neatly archived this is also stated by the partners in interviews.
Over this canvas off standardized corporate office elements you find a layer of posters, notes, scattered drawings, open laptops, models and books that is in vast contrast with the glass box appearance of the office. like the thin layer of fertile jungle soil causing the whole system to bloom. this layer is thin and fragile on the glass backdrop, but highly important for the creative environment because this is where it really happens.

The high degree of standardisation, with the very adaptable layer of “work” stands synonym for the high degree of turnover that the company has, within the younger layers of staff there is no commen knowledge of the meaning behind certain artifacts, this would have a counteractive effect on the creativity because it forms a sense of not being in place in the environment.



1. Entrance - The entrance of the building isnt designed as part of oma its the entrance to the office building but once inside you are welcomed by an OMA desk. this way of entering is typical for office buildings. it marks a **strong division** between who belongs in the building and who doesnt.



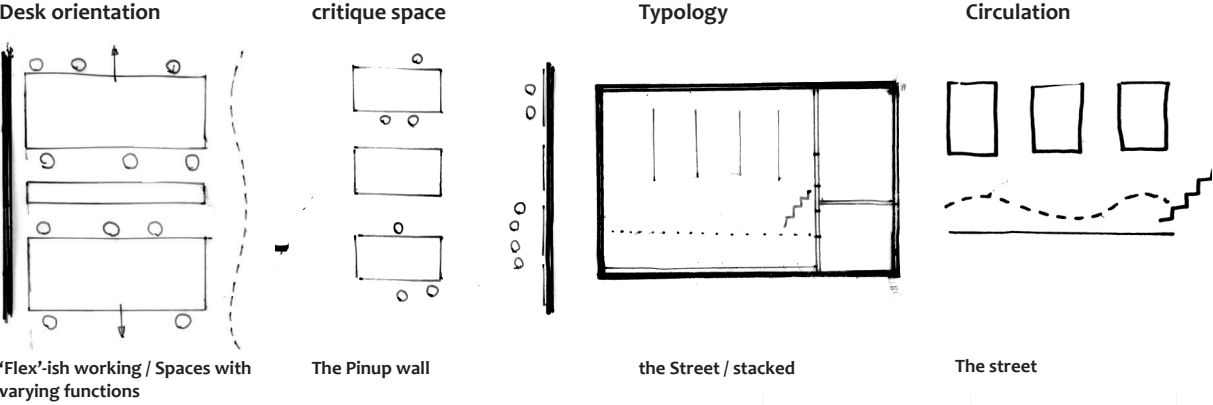
4. conference room - quite typical for the office are the conference rooms and glass box meeting spaces. they have a high degree of formality. these spaces have a very different caracter than the more informal pinupwall that is also used to criteque work.



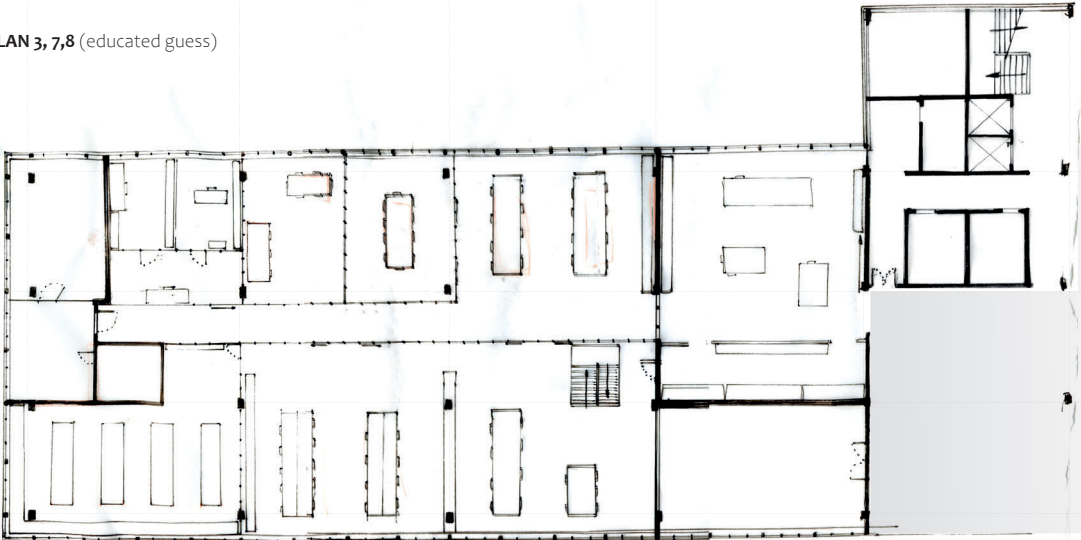
3. model room - the model room has a prominent place in the building, its part of the **archiving system** of OMA but also functions as a motivation in the form of **former succes**. The model room is also used for **PR** a lot of interviews in youtube are hosted in this room.



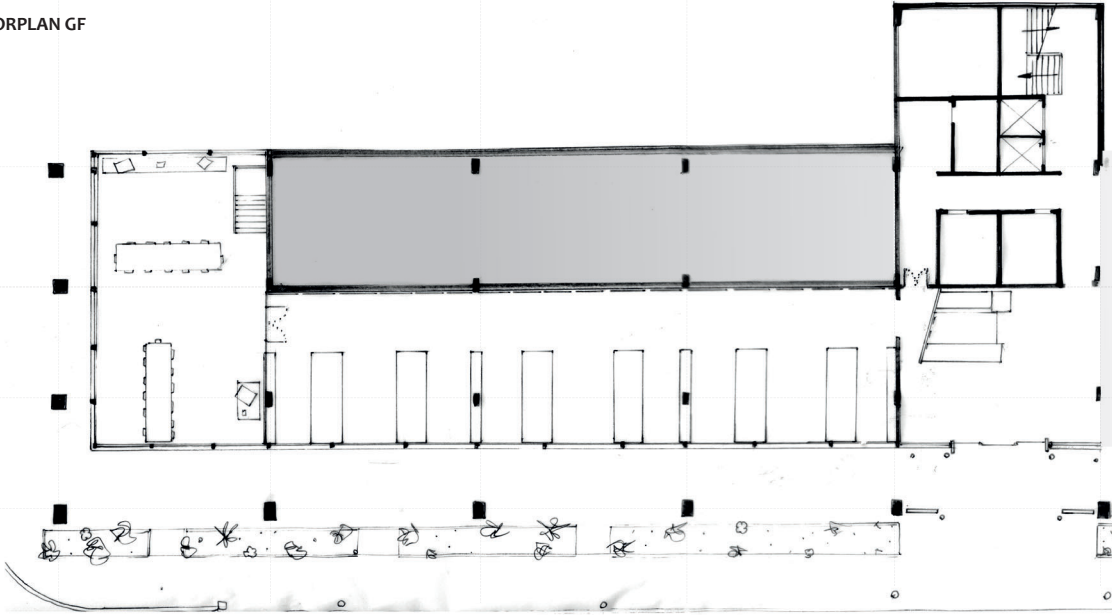
studio space - OMA has a **standardised studio set** up troughout the building, **big work tables** with fixed workspaces for 8 people, **cupboards** next to it and a standard lighting fixture above ontop of this standardised layer a layer of books drawings plans and artifacts form the **personalised creative invironment**.



FLOORPLAN 3, 7,8 (educated guess)



FLOORPLAN 6F



Project process and decision making	Leadership, management Organisationstructure	Type of staff, and recruitment.	Marketing approach ,type of clients and funds	Rewards and motivation. And financial system	Relation to physical space	Relation to Innovation	Management / Hierachy
Conversation is mainly done by presentations and models, everyone within a project team can bring in ideas, ideas are categorized and labeled and choices are made in social consensus (in 1990) Keywords: consensus, hierarchical.	Although OMA has a structure where everybody can bring in ideas the organisational setup is really traditional, with an hierarchical setup and dictionmaking. Keywords:	OMA has a big staff, they recruit mainly young architects most of them work there only for a few years. Keywords:	Only clients of proudly presented projects are considered. Keywords:	Freedom of time management. But peer pressured. They can be productive without being constrained by fixed working hours. Keywords:	Models books and archives are the core of OMA. Are the artifacts together with an advanced archiving system. Different phases of the project are on different floors. One a projects advances it moves up in floors. The office has an open plan, trajectory are formed by the people that walk a certain route everyday(pp.51) Keywords: Floors with different functions and routes made by people.	A system that is capable of harvesting, questioning and producing ideas. New ideas are created in an environment of young ideas.herefore AMO’s research projects can be found emerging economies. OMA capitalized new and unexpected ideas. Keywords: system of new ideas, capitalizing novelty.	strong hierarchy/ fixed job description

TAC



General

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STATISTICS

Location: 46 Brattle StCambridge, MA, VS
year: 1945 - 1995
size: 8 partners
Type of work: Architecture, collective, modernist
Type of client: first Residential , later corporate
philosophy: Collaborative, functionalism
Office Typology: cubicle landscape
character: experimantal / modernist



theory

Het gebouw de katshoek is gebouwd in 1966, het gebouw is gebouwd als verzamel-kantoorgebouw het heeft een robuuste beton constructie en grote vloervelden. Op het eerste gezicht lijkt het kantoor van oma een typisch kantoor gebouw. Het interieur heeft een grote mate aan standaardisatie, de binnenwanden bestaan voor een groot deel uit ruiten van vloer tot plafond. Grote werktafels voor acht personen worden afgewisseld door lage archiefkasten.

Het kantoor heeft een open plattegrond met vaste werkplekken, per team word gebruik gemaakt van een of meerdere tafels. Ruimtes zijn duidelijk bestemd voor een bepaalde functie zo heb je de modeldisplay, archive, modelworkshop en meeting rooms
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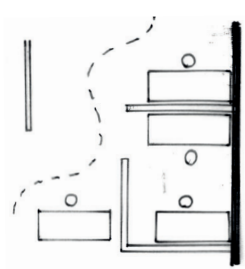
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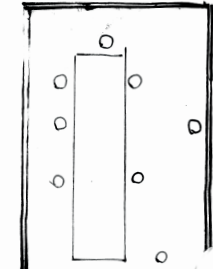
Project process and decision making	Leadership, management Organisationstructure	Type of staff, and recruitment.	Marketing approach ,type of clients and funds	Rewards and motivation. And financial system	Relation to physical space	Relation to Innovation	Management / Hierachy
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Keywords: consensus, hierarchical.	Keywords:	Keywords:	Keywords:	Keywords:	Keywords: Floors with different functions and routes made by people.		random rotation

Desk orientation



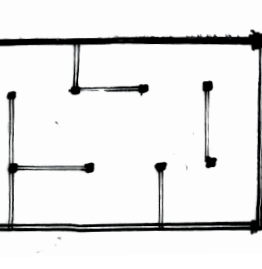
Free standing desks / fixed desks / cubicle landscape

critique space



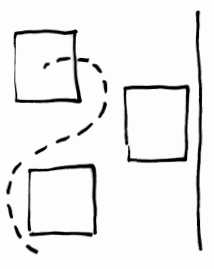
meeting room / Seperated from workspace / formal

Typology



House / Industrial campus

Circulation



cubicle landscape / labyrinth

FLOORPLAN 2, 3, 4 (educated guess)



FLOORPLAN GF (educated guess)